



NARUC
National Association of Regulatory
Utility Commissioners

What's Ahead for Coal and Carbon Capture

Thursday, March 20, 2025

Moderator: Chair Angie Hatton, Kentucky Public Service Commission

Panelists:

Phillip Graeter, Director of Energy & Environmental Markets, Energy Ventures Analysis

Benjamin Dierker, Executive Director, Alliance for Innovation and Infrastructure

Housekeeping



SLIDES WILL BE SHARED WITH
REGISTERED ATTENDEES AFTER
TODAY'S WEBINAR



ASK QUESTIONS AT ANY TIME
USING THE Q&A BOX IN THE
TOOLBAR



QUESTIONS WILL BE ASKED
AFTER ALL PANELISTS HAVE
SHARED

THE CURRENT STATE OF U.S. ENERGY MARKETS

NARUC Webinar

virtual

March 20, 2025

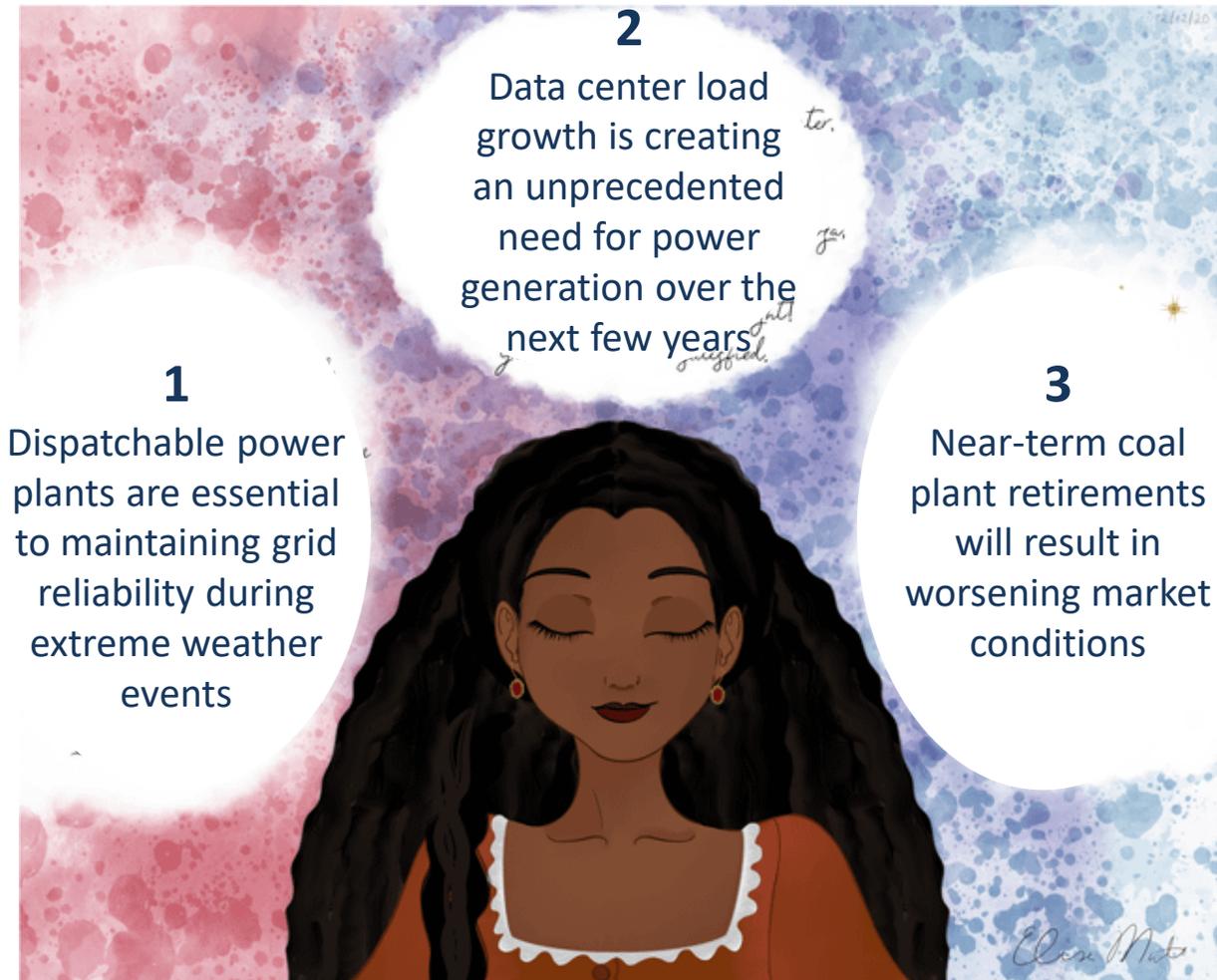


ENERGY VENTURES ANALYSIS

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ANGELICA SCHUYLER REALIZES 3 FUNDAMENTAL TRUTHS AT THE EXACT SAME TIME

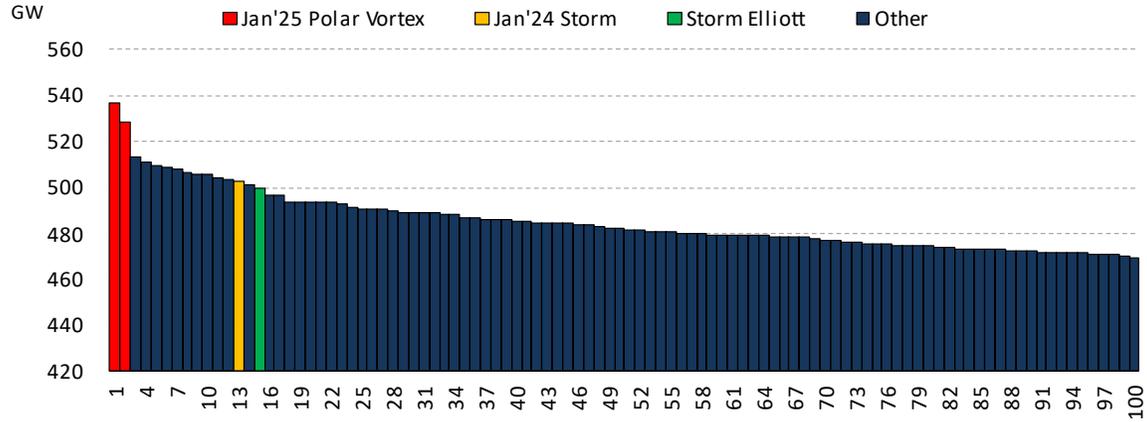


**TRUTH #1: DISPATCHABLE POWER PLANTS ARE ESSENTIAL TO MAINTAINING GRID RELIABILITY
DURING EXTREME WEATHER EVENTS**

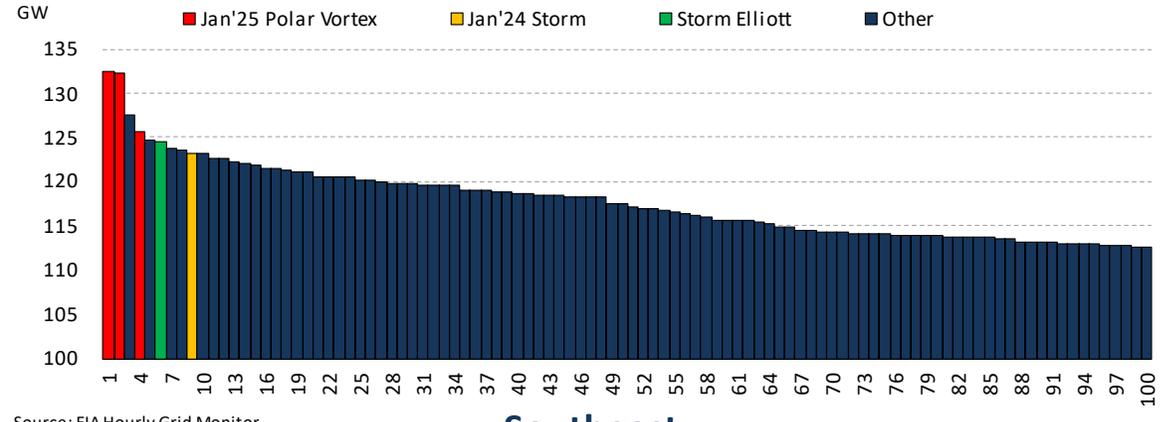


2025 JANUARY POLAR VORTEX BROUGHT RECORD-BREAKING COLD TO LARGE PARTS OF THE EASTERN U.S., SHATTERING ELECTRICITY DEMAND RECORDS IN MANY POWER MARKETS

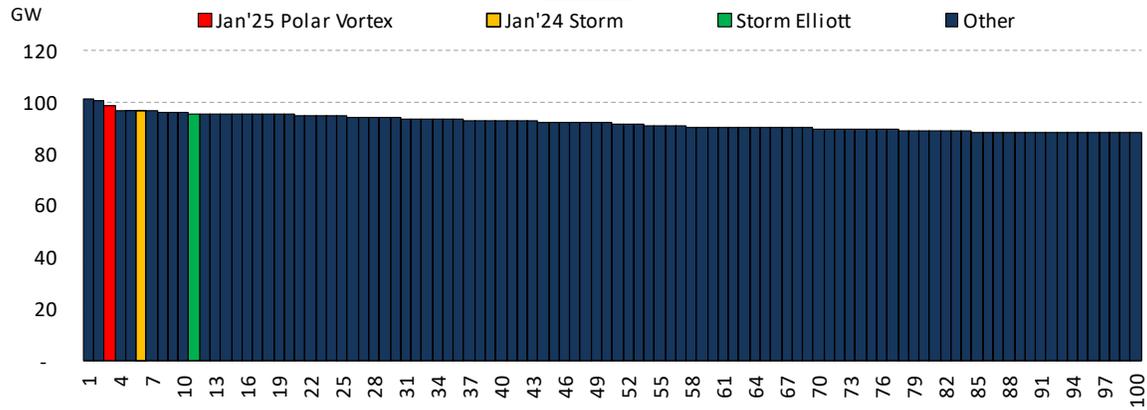
Eastern U.S. - Total



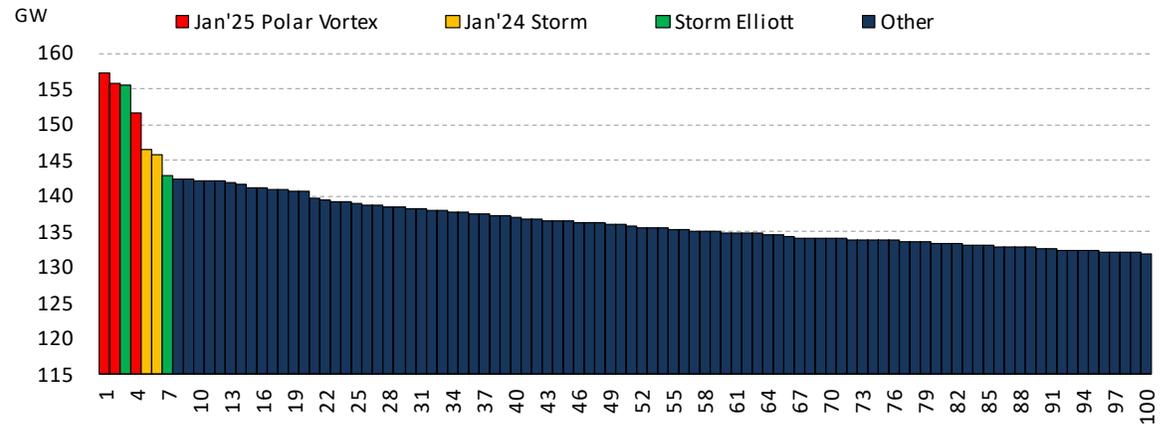
PJM



MISO

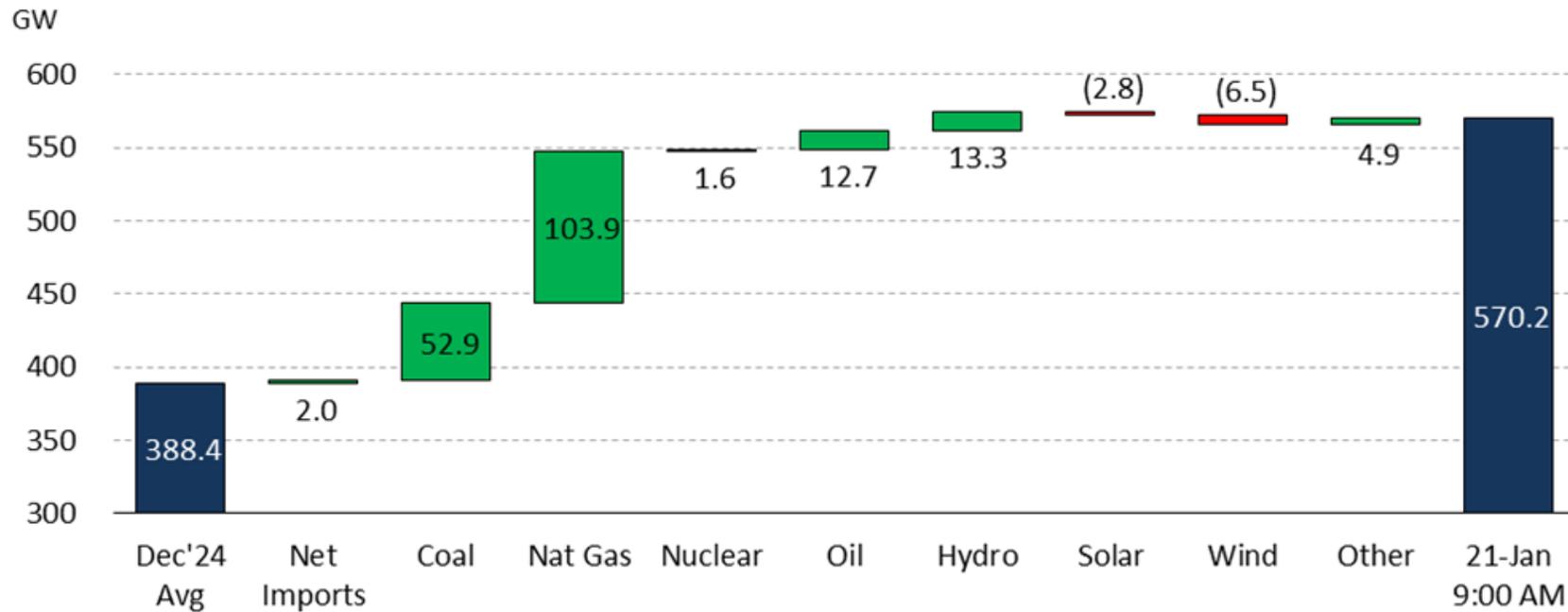


Southeast



WHEN ELECTRICITY DEMAND SPIKED, U.S. POWER MARKETS RELIED ON DISPATCHABLE GENERATION TO MEET DEMAND

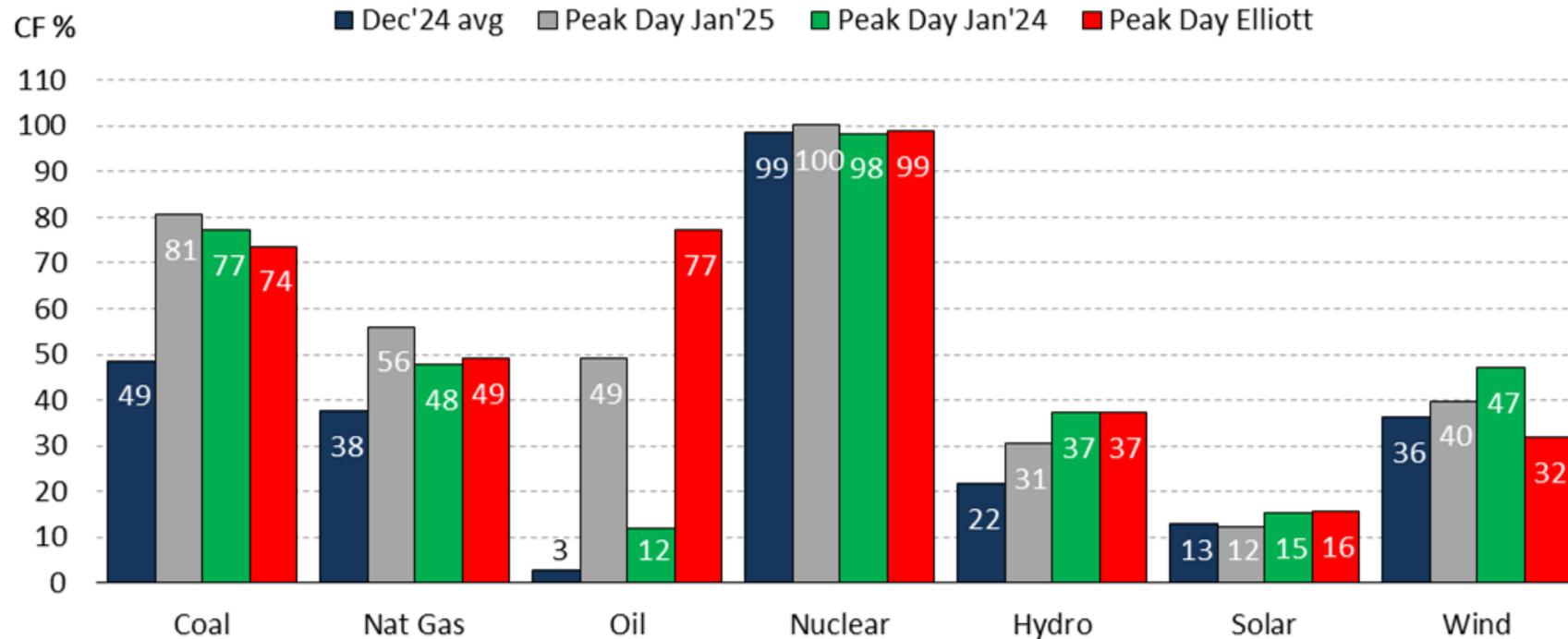
Eastern U.S. – Incremental Generation during Polar Vortex Event



Source: EIA Hourly Grid Monitor

DURING EXTREME WEATHER EVENTS, DISPATCHABLE GENERATION CAN INCREASE OUTPUT TO MEET DEMAND, WHILE SOLAR & WIND DEPEND ON PREVAILING WEATHER CONDITIONS

Eastern U.S. – Capacity Factor by Fuel Type During Extreme Weather Events



Source: EIA Hourly Grid Monitor & EIA 860 data

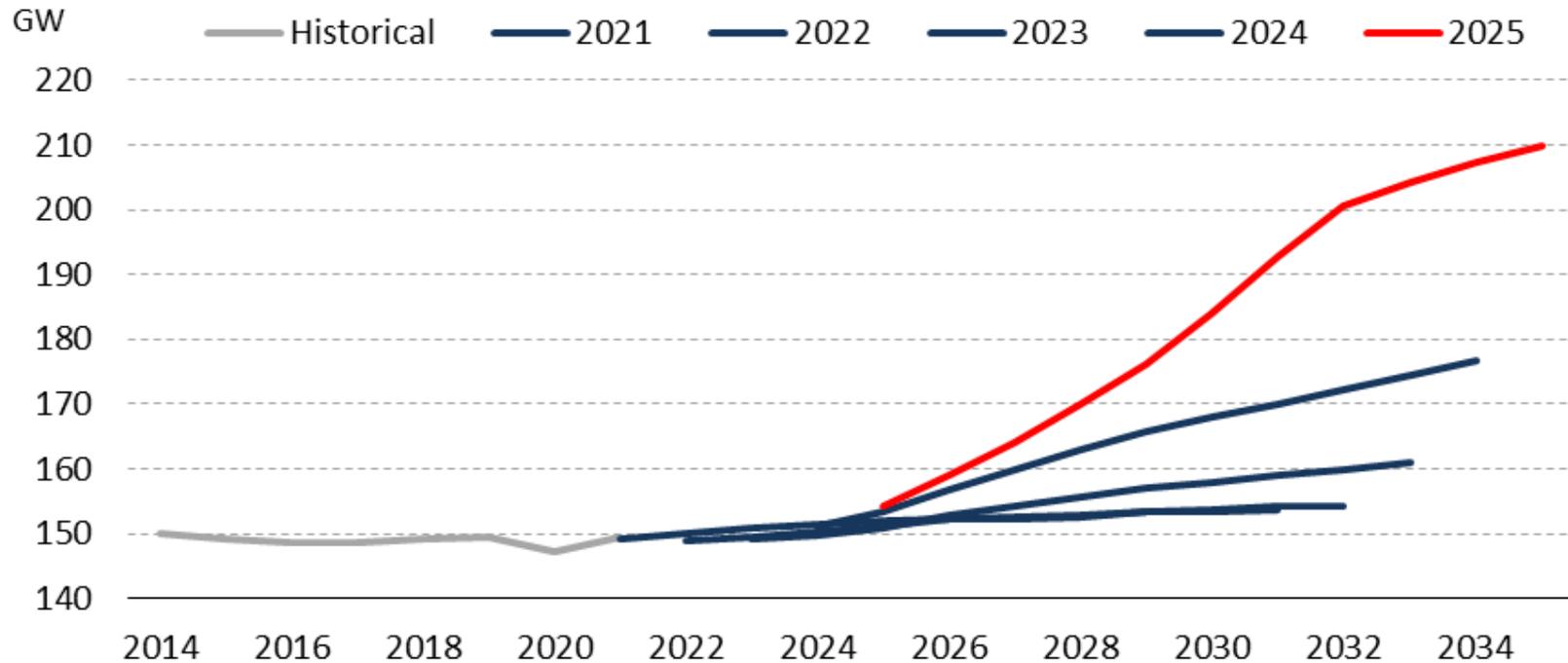
The full report can be found [here](#)

TRUTH #2: DATA CENTER LOAD GROWTH IS CREATING AN UNPRECEDENTED NEED FOR POWER GENERATION OVER THE NEXT FEW YEARS

FORECAST ELECTRICITY DEMAND GROWTH DUE TO DATA CENTERS AND ELECTRIFICATION IS STAGGERING

PJM Peak Summer and Winter Demand Forecast

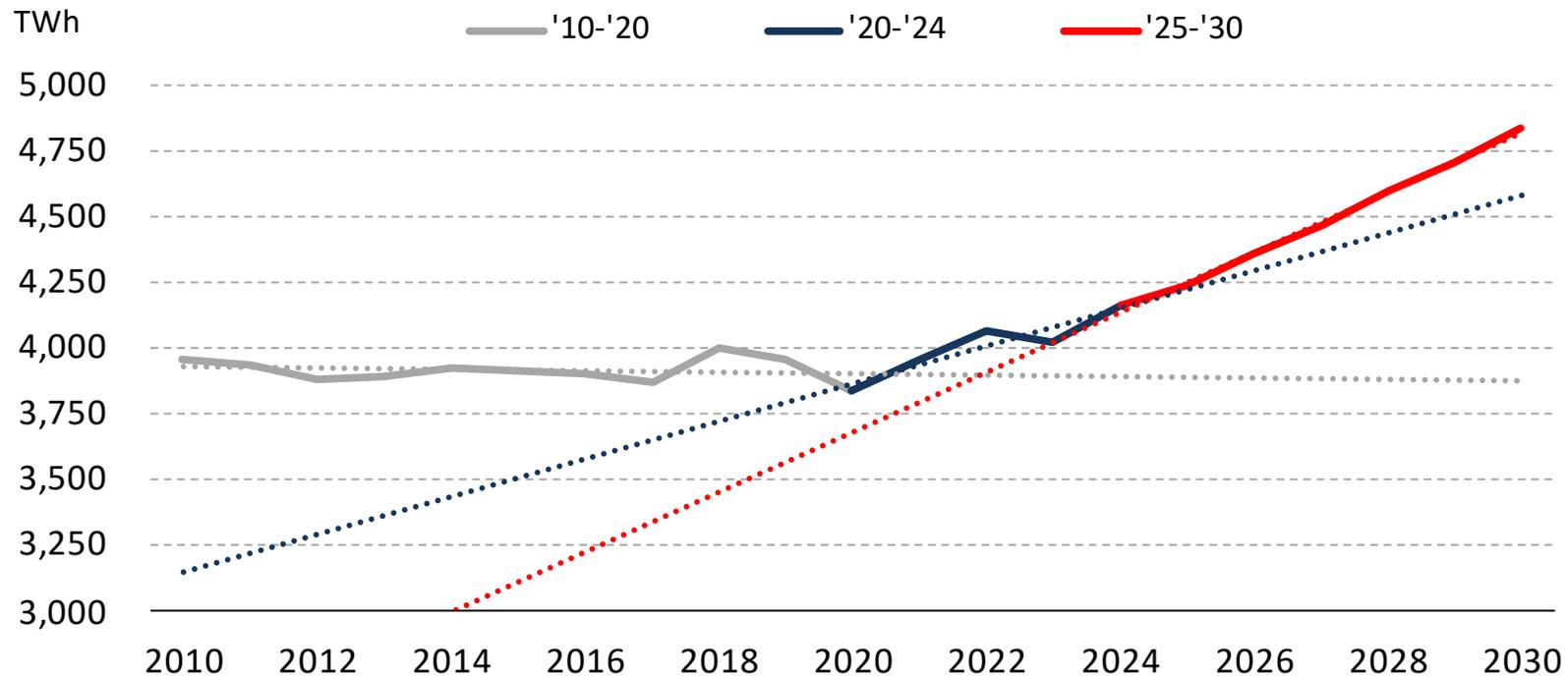
PJM 10-Year Summer Peak Forecast



Source: PJM Interconnection

AFTER YEARS OF NEAR-ZERO ELECTRICITY DEMAND GROWTH, THE U.S. PREPARES FOR A NEW ERA DRIVEN BY AI & DATA CENTERS

2010 to 2030 U.S. Lower-48 Electricity Demand

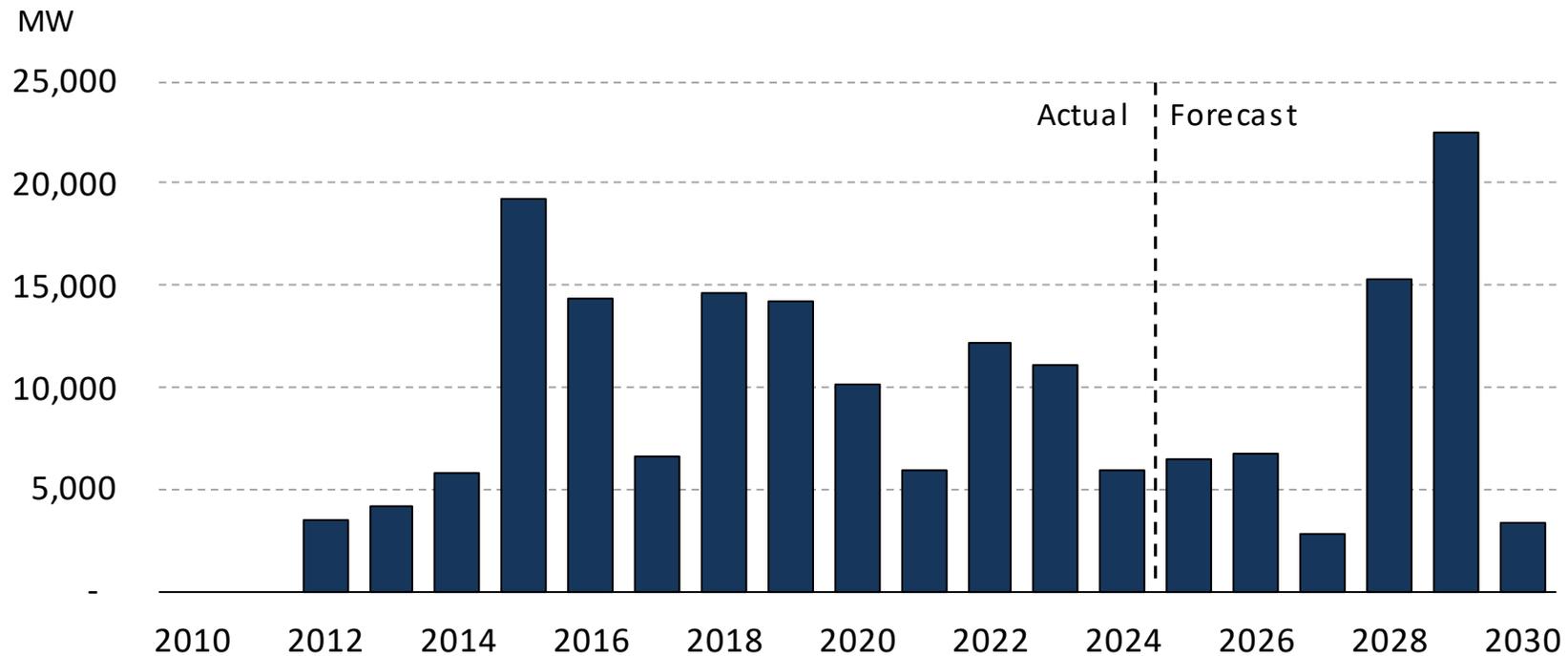


Source: EVA 2025 Q1 U.S. Energy Market Outlook

TRUTH #3: NEAR-TERM COAL PLANT RETIREMENTS WILL RESULT IN WORSENING MARKET CONDITIONS

UPCOMING COAL RETIREMENTS DRIVEN BY “OLD” CCR/ELG RULES ARE LIKELY TO RIVAL MATS LEVELS

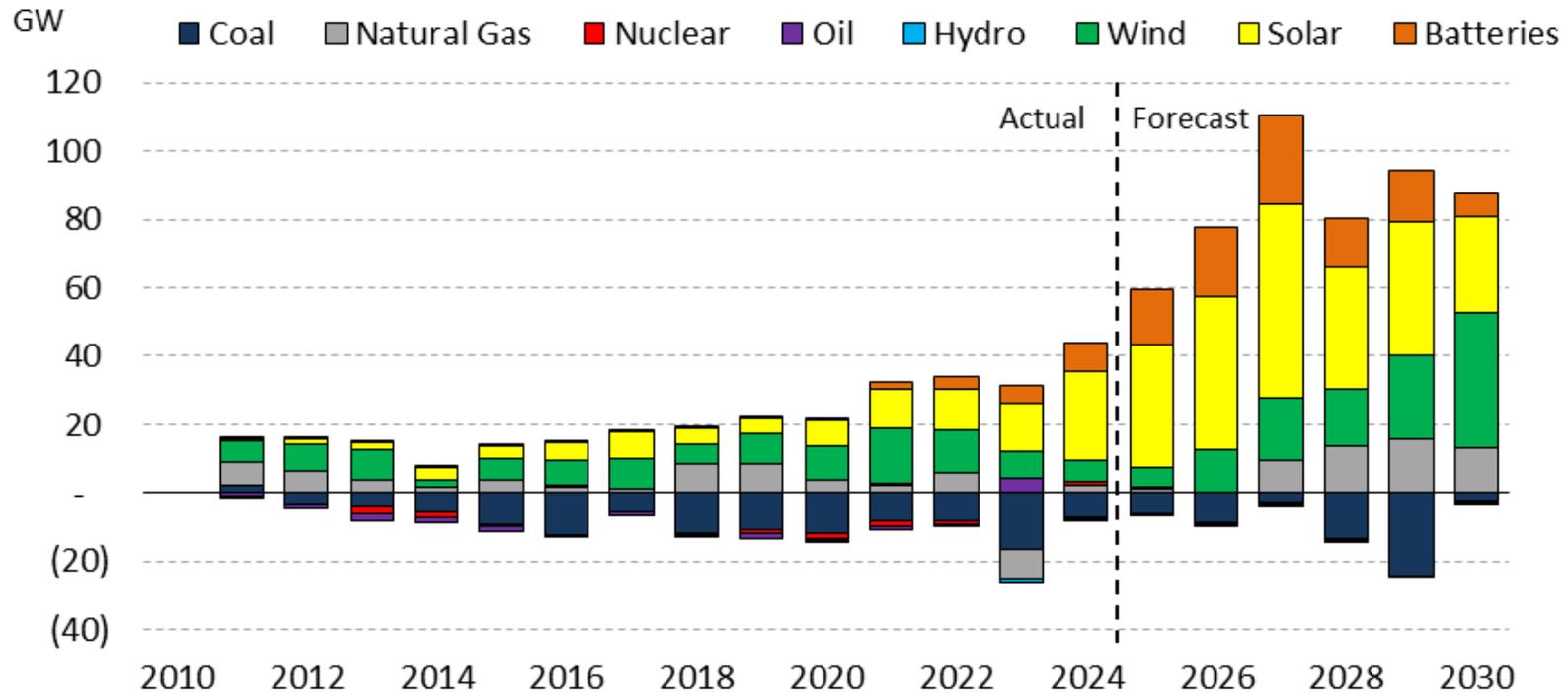
2010 to 2030 Annual U.S. Lower-48 Coal Plant Retirements



Source: EVA 2025 Q1 U.S. Energy Market Outlook

TAX CREDITS INCLUDED IN THE 2022 INFLATION REDUCTION ACT ARE DRIVING EXPONENTIAL GROWTH IN NEW WIND, SOLAR & BATTERY PROJECTS WHILE COAL PLANTS CONTINUE TO RETIRE

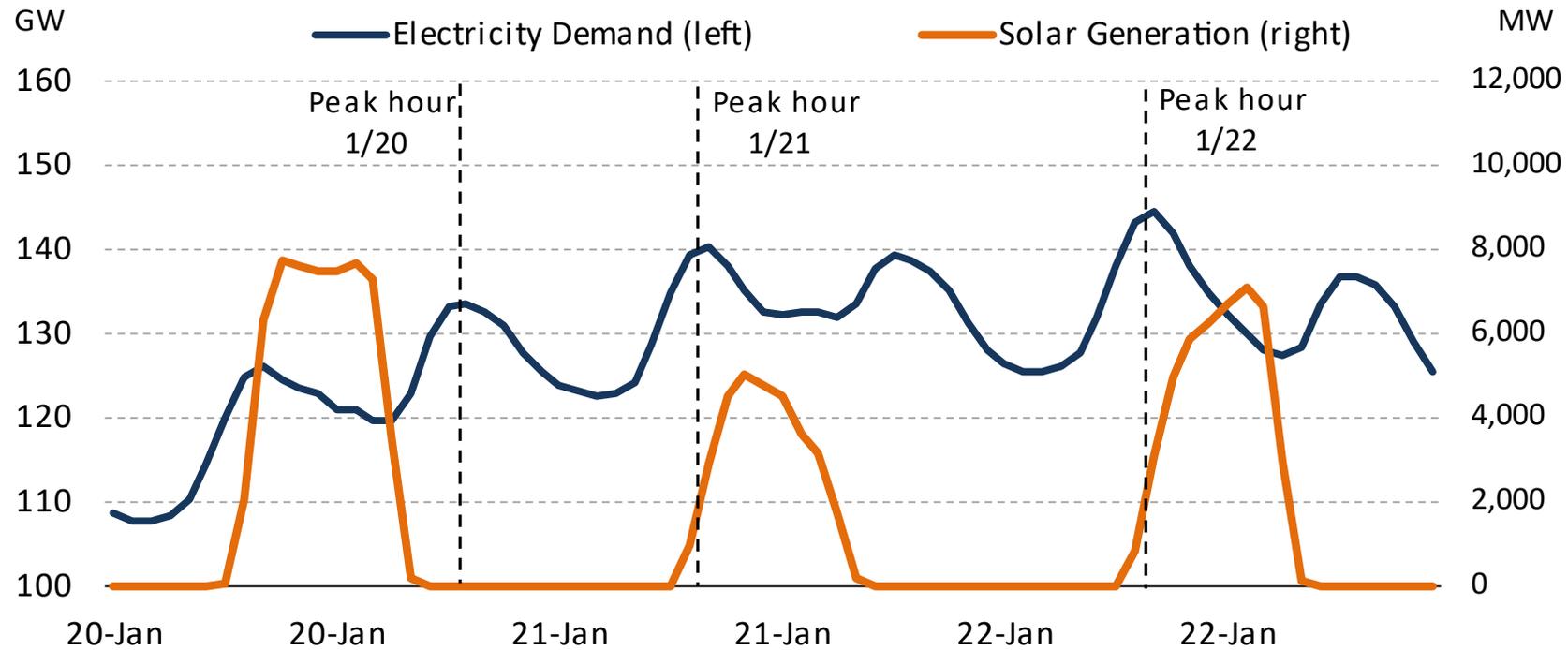
2010 to 2030 Annual U.S. Lower-48 Electric Capacity Additions/(Retirements) by Fuel Type



Source: EVA 2025 Q1 U.S. Energy Market Outlook

AS MORE REGIONS EXPERIENCE PEAK DEMAND AND SYSTEM STRESS DURING WINTER MONTHS, NEW SOLAR PLANTS DO LITTLE TO INCREASE RELIABILITY

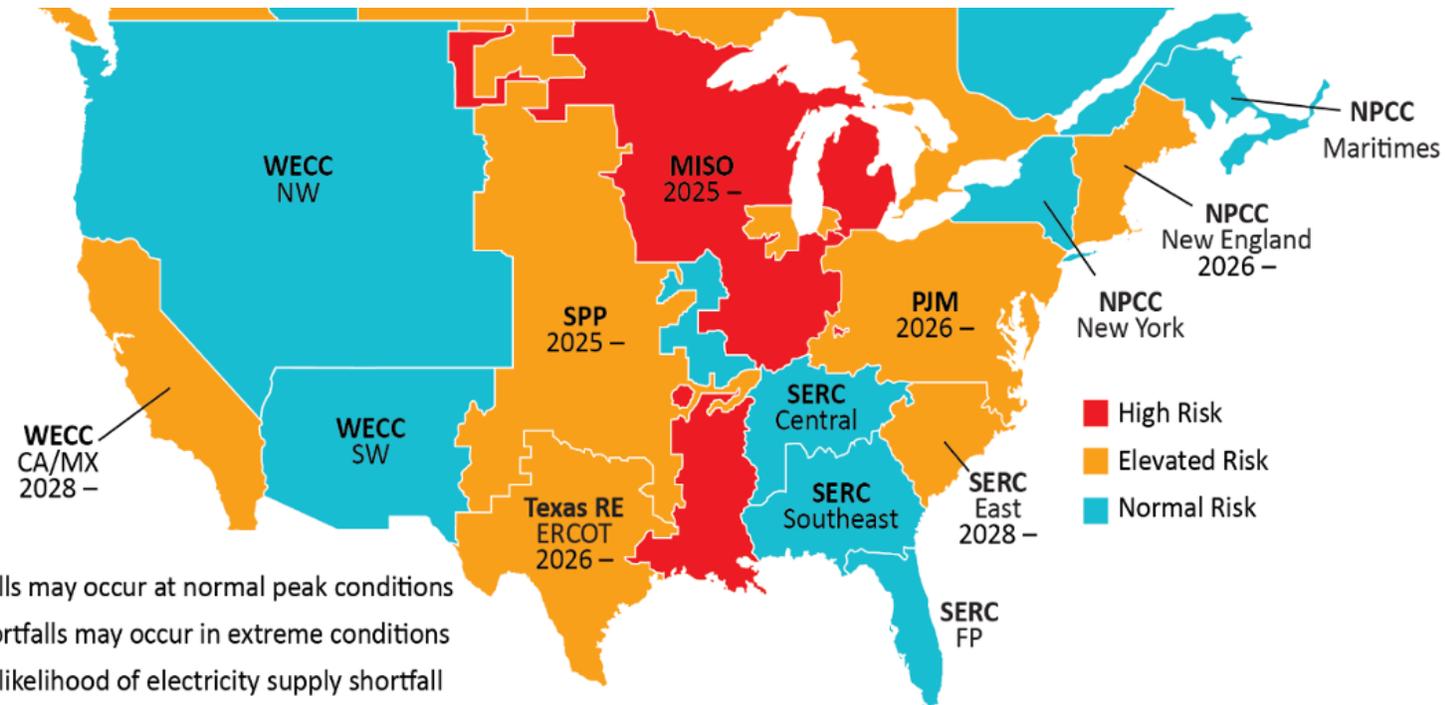
PJM Hourly Electricity Demand vs. Solar Generation: 20-Jan-25 to 22-Jan-25



Source: EIA Hourly Electric Grid Monitor

NERC'S LATEST LONG-TERM RESOURCE ASSESSMENT SHOWS POSSIBLE RESOURCE INADEQUACY FOR EIGHT DIFFERENT POWER MARKETS AS EARLY AS 2025

2024 NERC Long-Term Resource Assessment



TRUMP ADMINISTRATION ANNOUNCED RECONSIDERATION OF A WIDE RANGE OF ENVIRONMENTAL REGULATIONS, BUT SEEMS TO STOP SHORT OF IMPACTING IMMEDIATE COAL PLANT RETIREMENTS

■ Rules to be reconsidered:

- 2024 GHG Rule (*2030-2038 compliance deadlines*)
- 2024 CCR Legacy Ash Pond Rule (*May 8, 2028 compliance deadline*)
- 2024 ELG Rule (*Dec 2029/Dec 2034 (retirement exemption)*)
- 2024 MATS Rule (*July 2027/28 compliance*)
- 2023 Good Neighbor Rule (*stayed – no current compliance requirement*)
- Regional Haze SIPs (*various timelines*)

■ Rules not reconsidered:

- 2016/2020 ELG Rule (*Dec 2025/Dec 2028 (retirement exemption)*)
- 2016/2020 CCR Rule (*CCR closure by Oct. 17, 2028*)

MAIN TAKEAWAYS

- 1. 2025 Polar Vortex highlighted the importance of dispatchable generation, ideally with on-site energy storage to protect against supply chain disruptions (natural gas vulnerable during winter events – see winter storms Uri & Elliott)**
- 2. Fossil fuel generation is likely to continue its downward trend despite substantial electricity demand growth due to exponential renewable energy buildout supported by expanded 2022 IRA tax credits**
- 3. Trump admin appears unlikely to reconsider old environmental regulations, which force a tremendous amount of coal retirements in 2028/29**

PRESENTATION BY:

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Announcements

- Save the date! NARUC will be facilitating a site visit to the Mill Creek Generating Station during the MACRUC Conference in Louisville, KY on June 25, more details TBA
- Abstract submissions are open for the NARUC Summer Policy Summit through April 9. Visit www.naruc.org to submit!