New York ISO
Independent System Operator

State of the Grid

Rich Dewey
President & CEO

Delivering the #gridofthefuture

We are over 625 engineers, operators, analysts, economists and technologists dedicated to operating and maintaining a reliable & sustainable power grid

Independent | **Non-profit** | **Highly regulated**

A Powerful Purpose

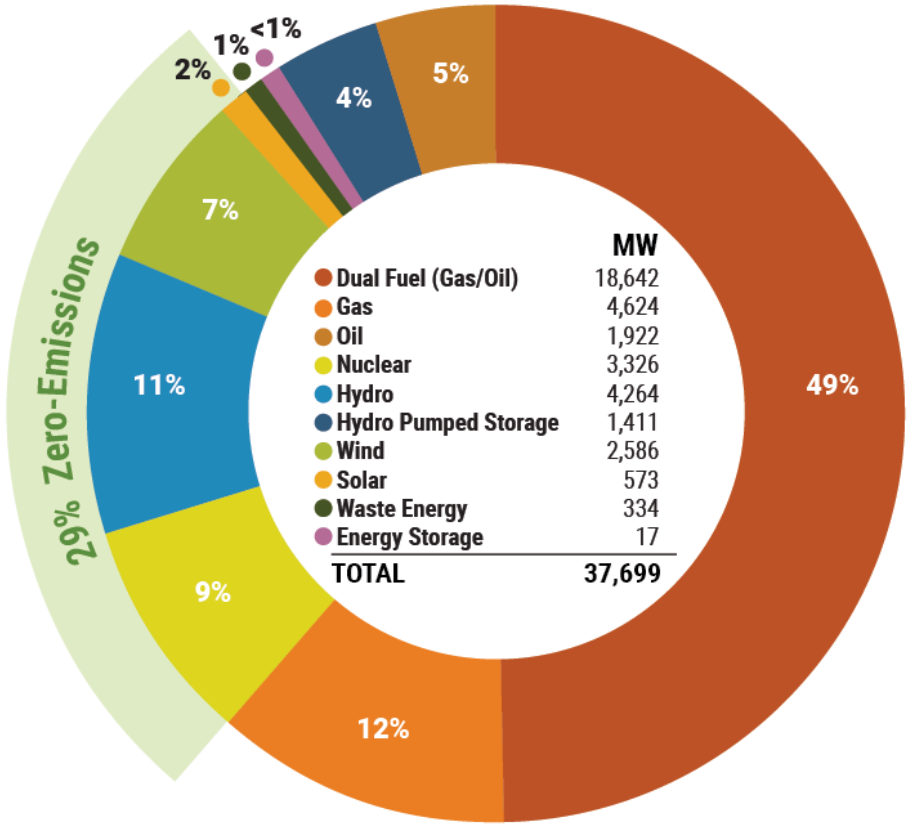
We are dedicated to a reliable, sustainable power grid and competitive markets.

- **Maintaining** and enhancing regional reliability
- **Operating** open and fair wholesale electricity markets
- **Planning** the bulk power system for the future
- **Providing** fact-based information to policymakers, stakeholders and investors

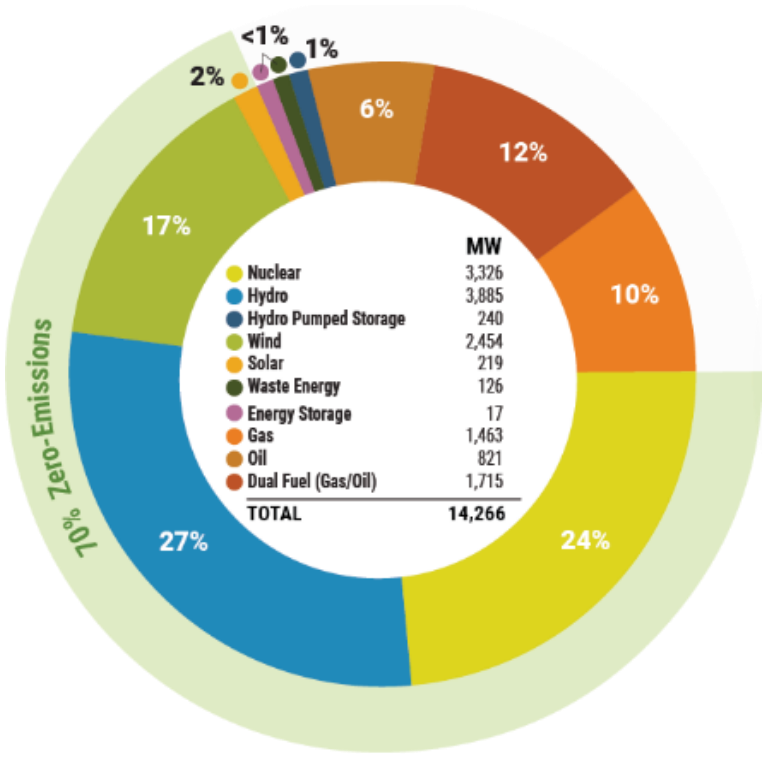
Current State of our Generation Fleet

Generating Capacity by Fuel Source: 2025

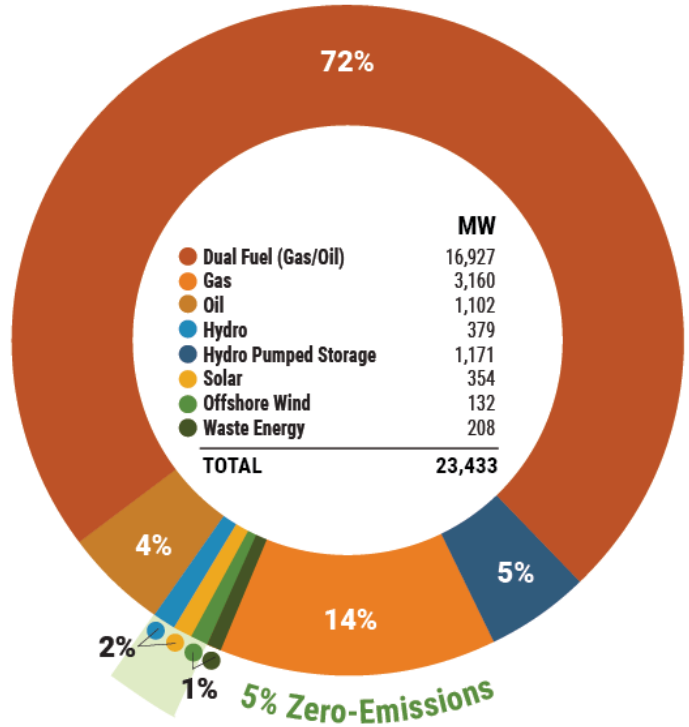
NYCA



Upstate (Zones A-E)



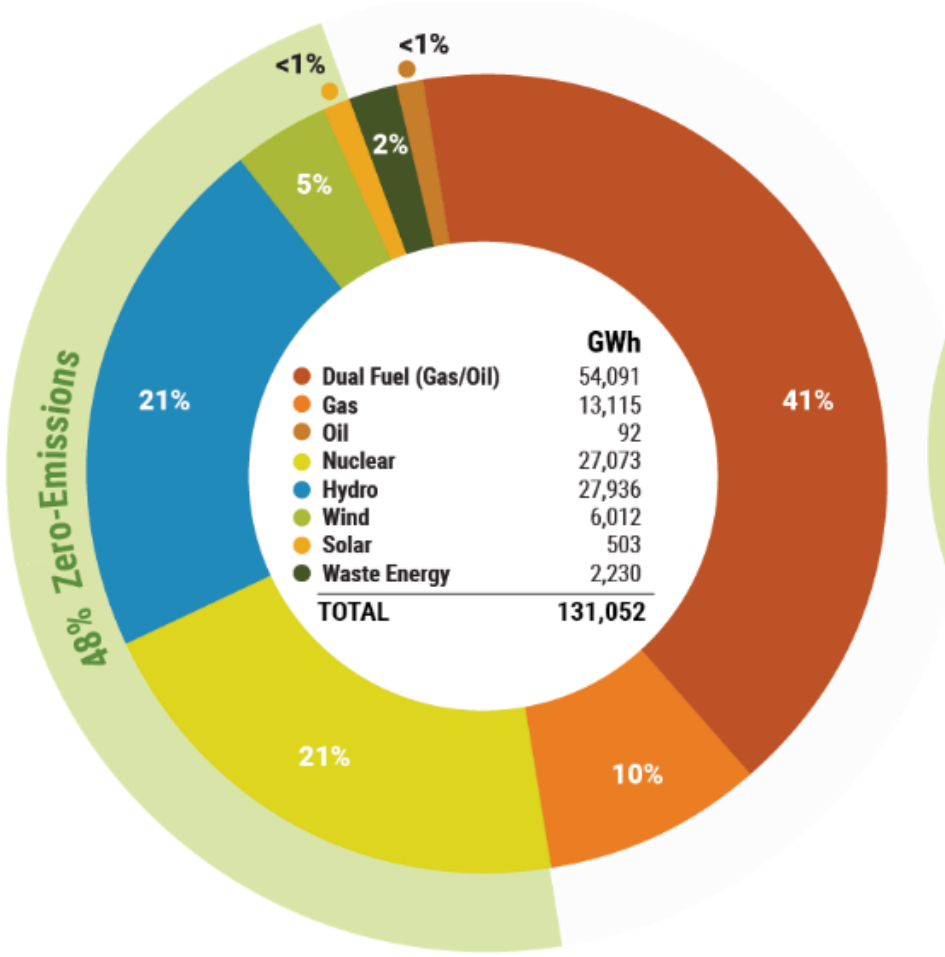
Downstate (Zones F-K)



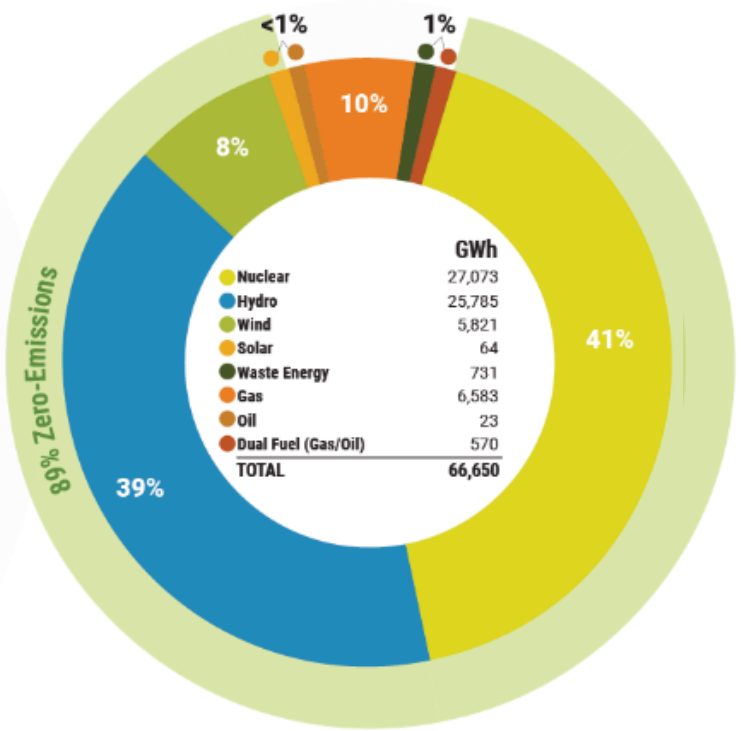
Generating Capacity is the maximum electric output a generator can produce

Energy Production by Fuel Source: 2024

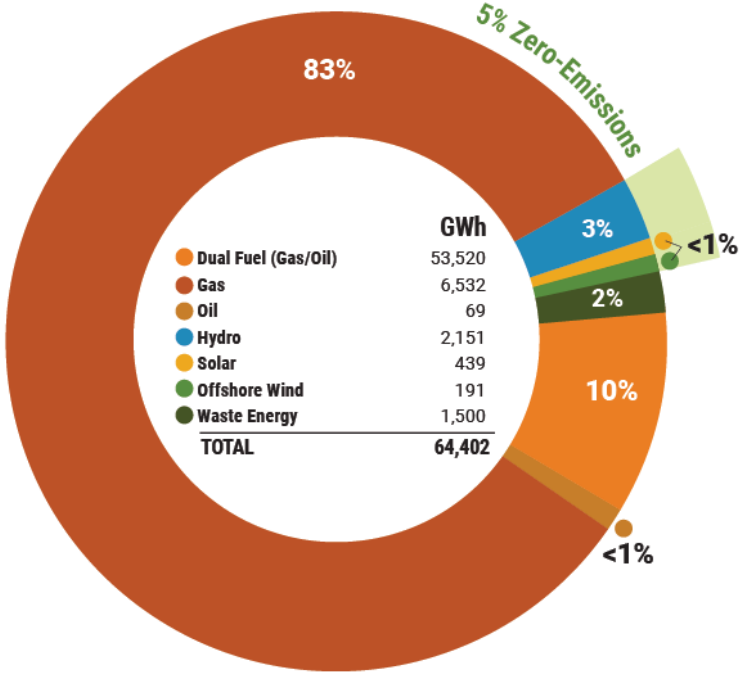
NYCA



Upstate (Zones A-E)



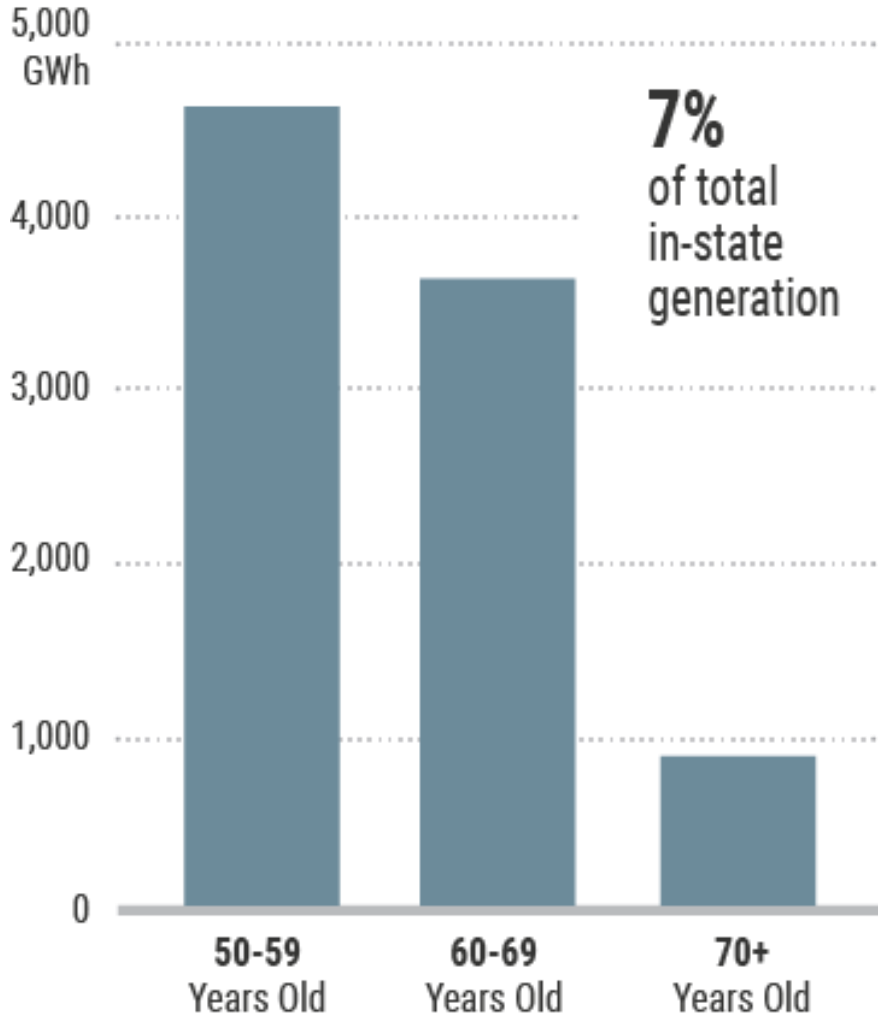
Downstate (Zones F-K)



Energy is the amount of electricity a generator produces over time

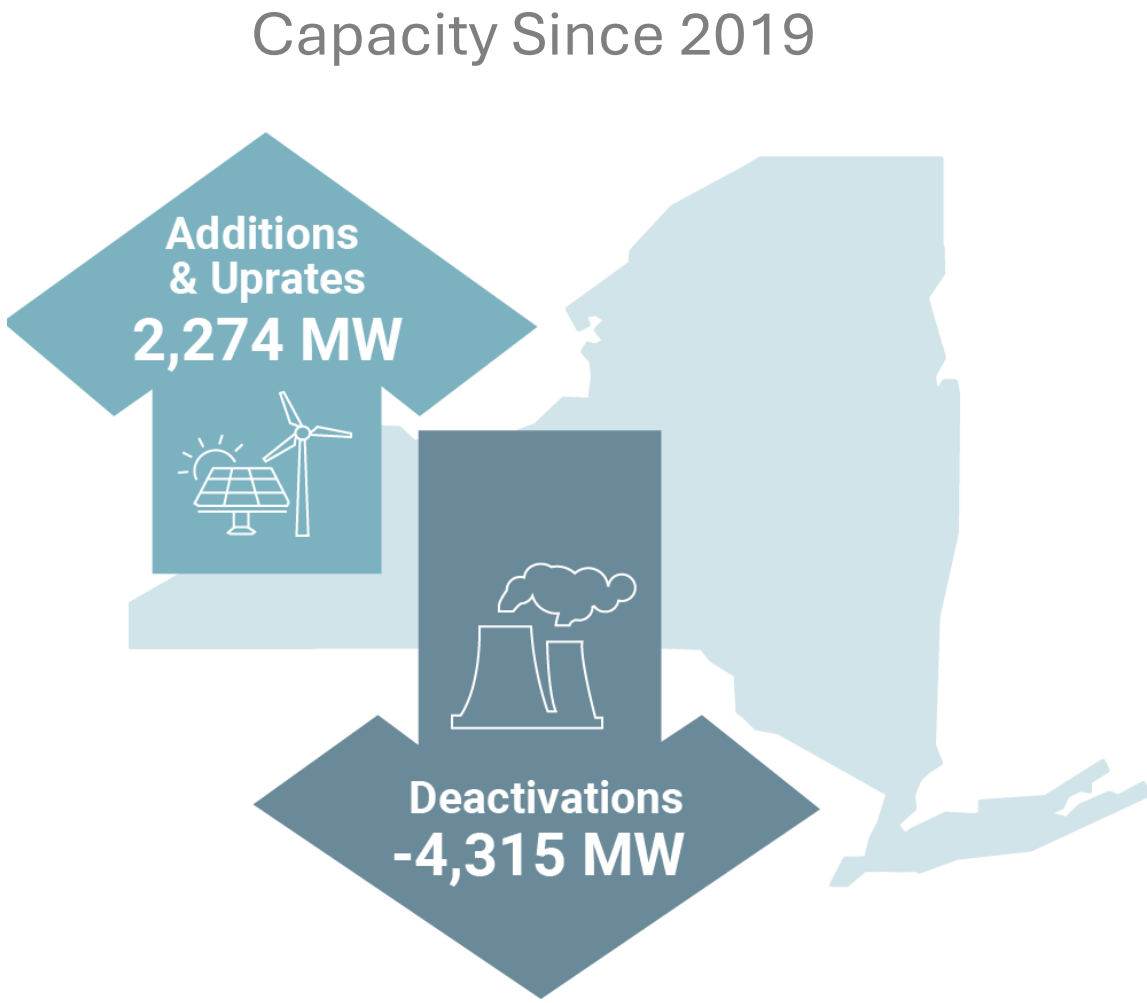
Aging Fossil Fuel Generation

- More than 25% of our current fossil fuel-based generation has been in operation for **more than 50 years.**
- While supplying 7% of the energy generated in 2024, the oldest generating units in the fleet support reliability during peak demand periods, making them essential to avoid outages.
- As equipment ages, it is more prone to breakdowns and failures.



Additions, Uprates, and Retirements

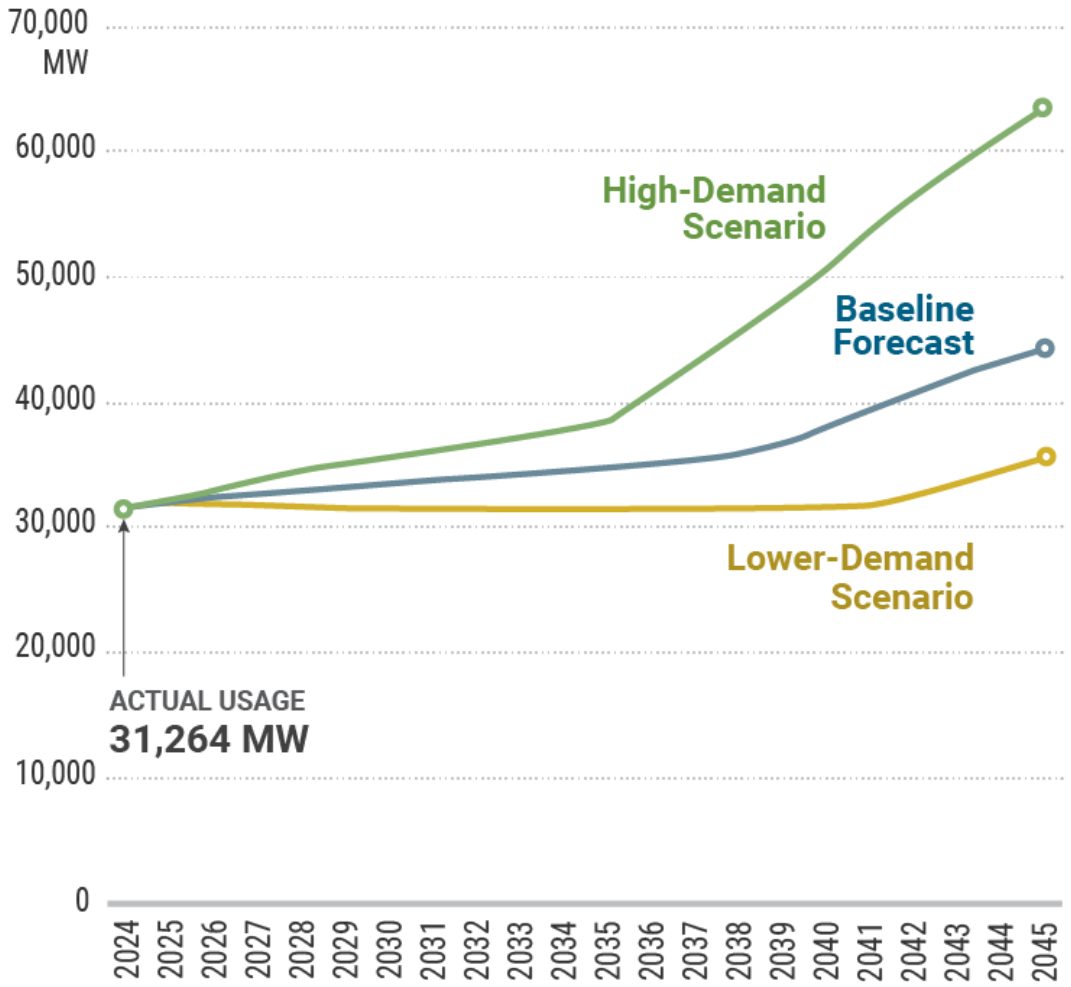
- Growing imbalance between generator deactivations and additions contributes to shrinking reliability margins
  - Deactivating resources tend to be dispatchable and located downstate
  - Generator additions are largely renewable resources located upstate
  - New resources do not provide the same reliability services as exiting resources



Demand Trends and Planning for Future Grid Reliability

Actual and Forecast Peak Demand

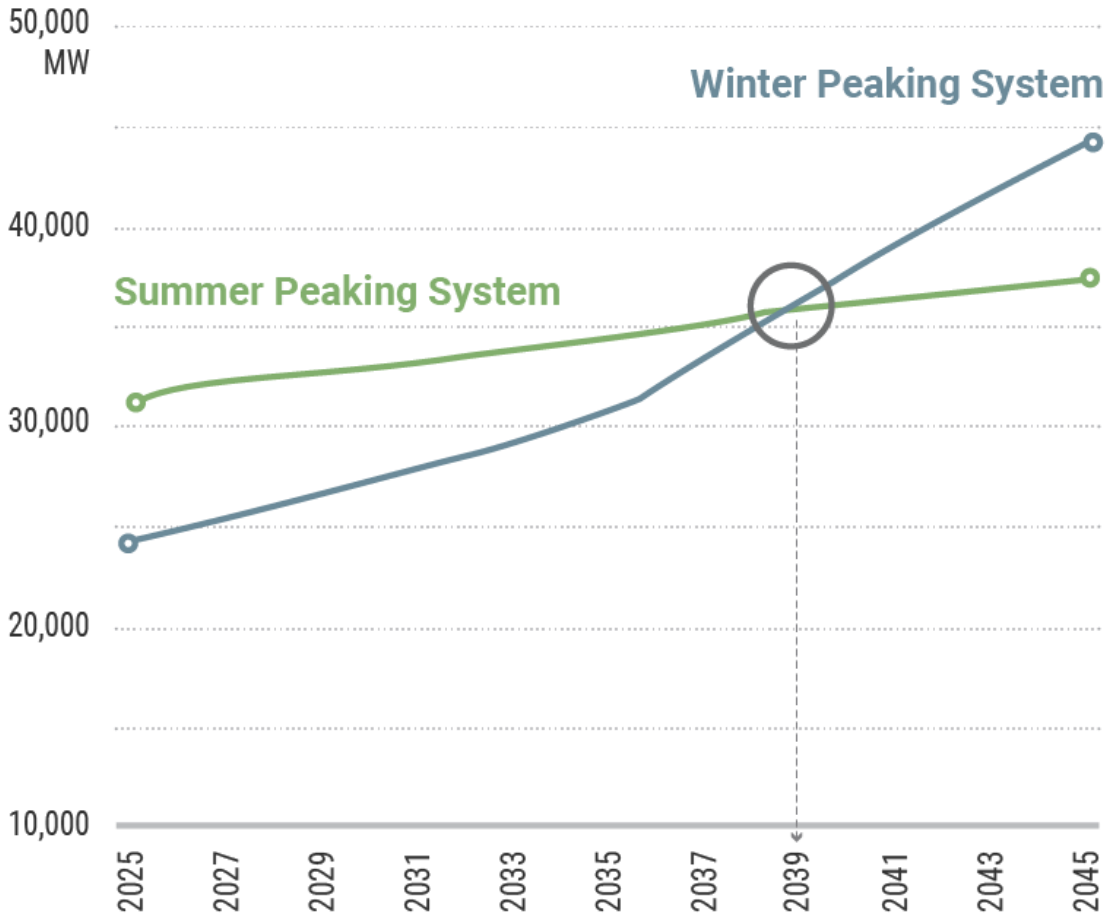
Electric Energy Demand Forecast in New York State (MW): 2024-2045



Demand Trends: Peak Demand Forecast

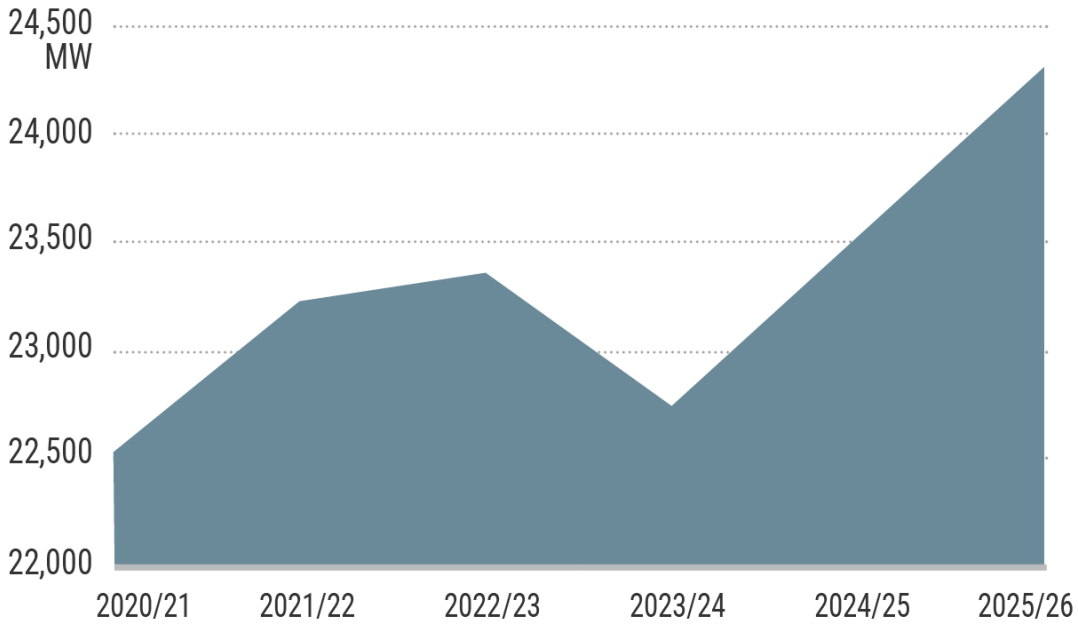
- The NYISO winter and summer peak load forecasts suggest that electrification will drive a shift in NY from a summer-peaking system to a winter-peaking system.
- The timing and degree of this shift will be influenced by EV and heat pump technology adoption.

Electric Summer & Winter Peak Demand: 2025-2045



Winter Reliability

- As New York rapidly becomes a winter-peaking system firm natural-gas availability becomes a binding reliability constraint.
- Natural gas is prioritized for residential heating in winter; generators without firm gas transportation face curtailments or higher risk of unavailability at peak times, making fuel security a central reliability concern.
- Winter demand could rise rapidly (up to ~1,200 MW annually by 2030), further narrowing reliability margins.

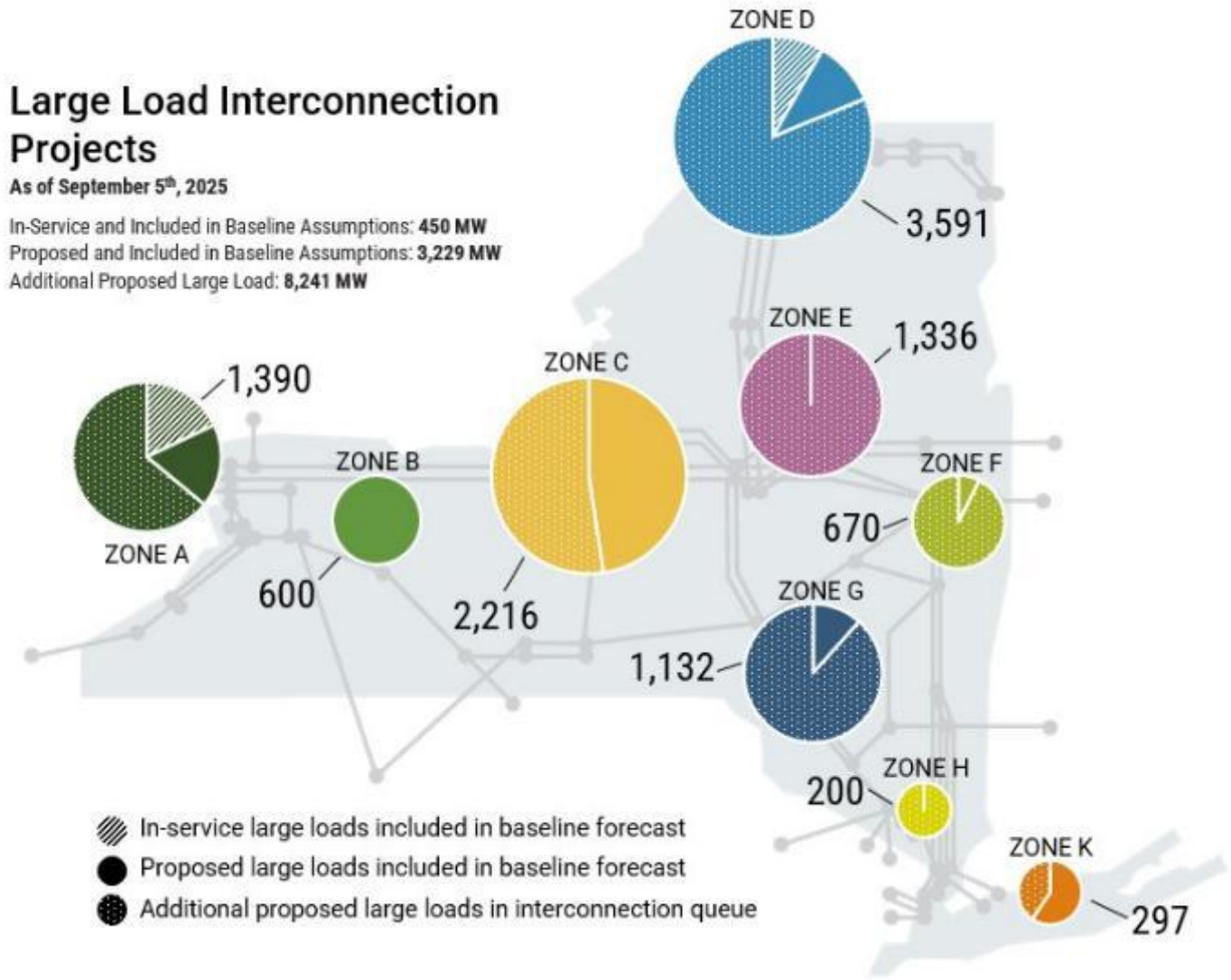


- More demand for electricity means more gas consumption by generators for production - amplifying fuel-availability risks in cold snap conditions.
- In winter 2024–25, NYISO saw limited flexibility on the gas system; some units derated ahead of forecasted gas procurement shortfalls.
- Dual-fuel capability (gas/oil) is critical: downstate dual-fuel units can switch to oil when gas is constrained, but heavy oil burn during extreme cold can deplete inventories, creating follow-on risks if resupply is delayed.

The Impact of New, Large Loads on the Grid

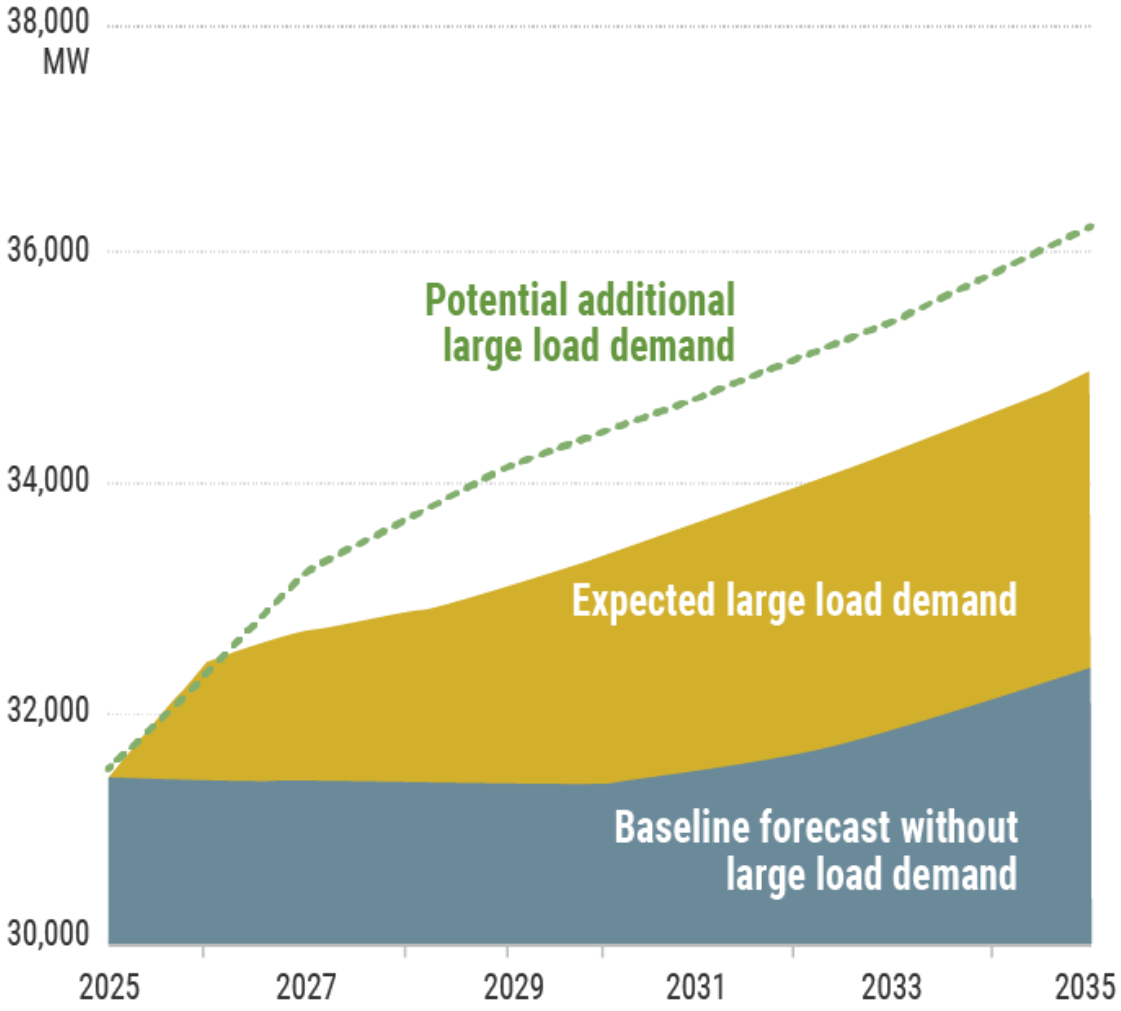
Large Load Development

- Interconnection queue contains over 11,000 MW of new load projects.
- Data center loads can come online quickly, far outpacing the development of new supply.



Large Load Summer Demand Uncertainty

- There is uncertainty over the timing and operational characteristics of large loads seeking to connect to the grid
  - NYISO's baseline forecast expects 2,567 MW of large load demand by 2035
  - Other scenarios project more than 4,000 MW



7 Generating Projects Totaling 3,493 MW Have Begun Construction since CLCPA

Projects That Have Completed NYISO's Interconnection Process Since 2019

Resource Type	Capacity (MW)	Projects
Combined Storage/Solar	780.0	4
Energy Storage	2,058.9	24
Offshore Wind	1,740.0	3
Solar	5,460.5	64
Wind	1,694.8	8
DC Transmission	2,550.0	3
Total	**14,284.2**	**106**

Current Cluster Study Under Review

NYISO Zone	Co-located Storage	Storage	NG	OSW	Solar	Wind	Total
A	650	930	-	-	-	246	1,826
B	170	100	-	-	-	-	270
C	130	1,890	-	-	510	292	2,822
D	-	375	-	-	300	760	1,435
E	400	175	-	-	300	-	875
F	-	920	-	-	100	-	1,020
G	-	1,699	-	-	-	-	1,699
H	-	250	-	-	-	-	250
J	-	1,676	-	-	-	1,310	2,986
K	-	1,107	-	-	-	1,321	2,428
Total	1,350	9,122	-	-	1,210	3,929	15,611

- In addition to completed projects, the NYISO is currently studying ~90 projects representing more than 15,600 MW of new clean energy capacity.
- Process will conclude in the 4th quarter of 2026

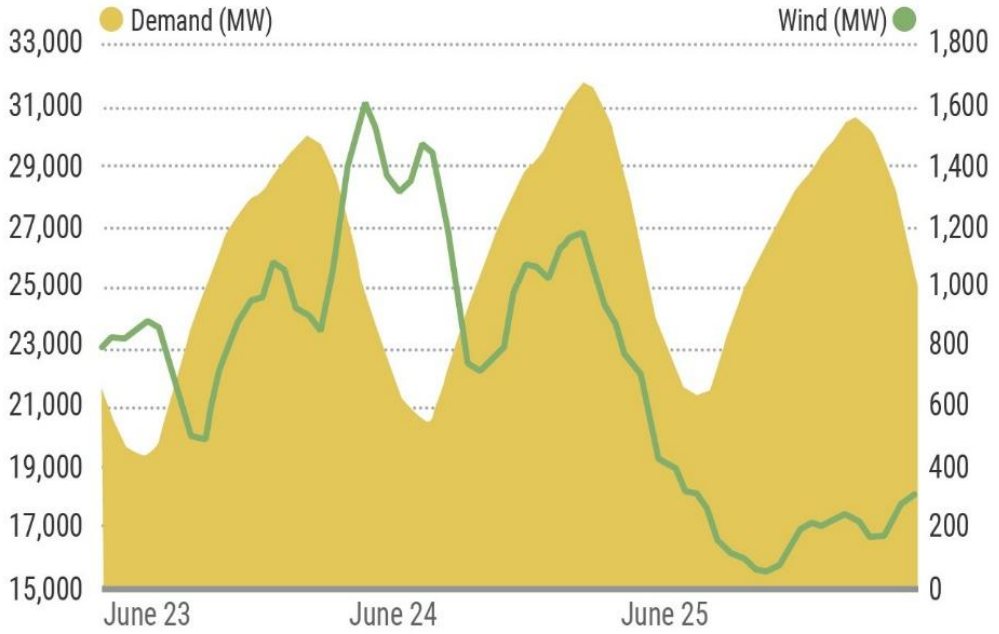
2025 Heatwave & 2026 Cold Spell

Important Observations and Lessons Learned

June 23-25 Heatwave

- Hotter than expected temperatures tested the grid.
- Demand reached 31,857 MW.
  - Highest peak recorded since 2016.
- Renewable resources and demand response programs helped shave the peak.
- Without these contributions, New York may have surpassed its all-time summer demand of 33,956 MW.

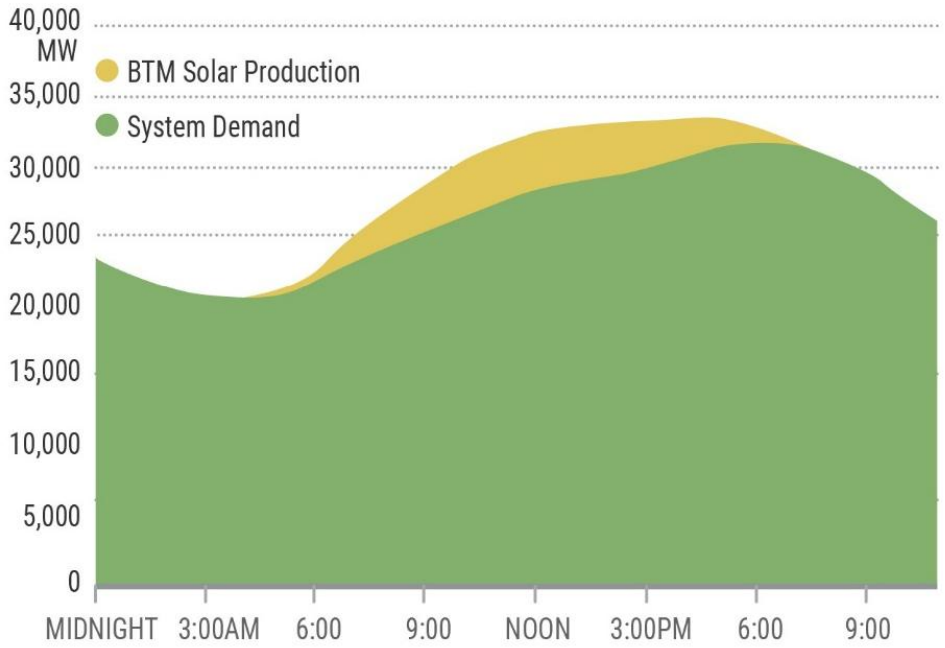
Wind Energy Production During June Heatwave



June 23-25 Heatwave (Cont.)

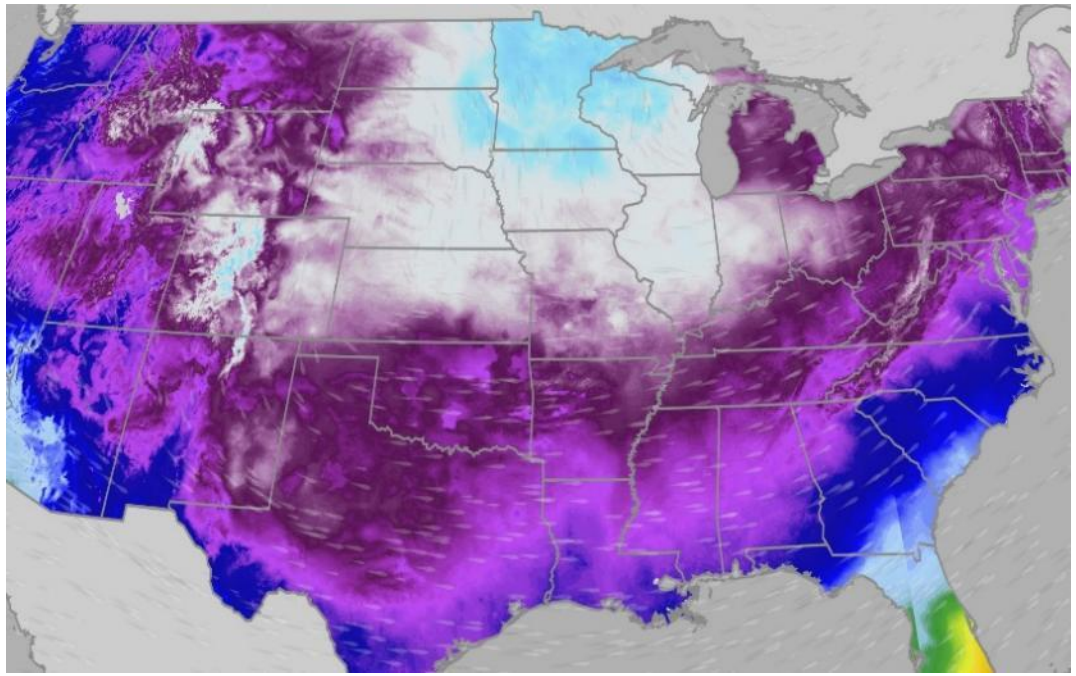
- However, a sharp decline in wind on the 25th required NYISO operators to activate aging peaker plants.
- More than 3,000 MW of aging capacity became unavailable.
- Neighboring grid operators curtailed 2,000 MW of scheduled exports into New York to maintain their own reserves.
- To maintain adequate reserves, emergency electricity was secured from Canada and the Midwest.

BTM Solar Contribution to Reducing Demand, June 24



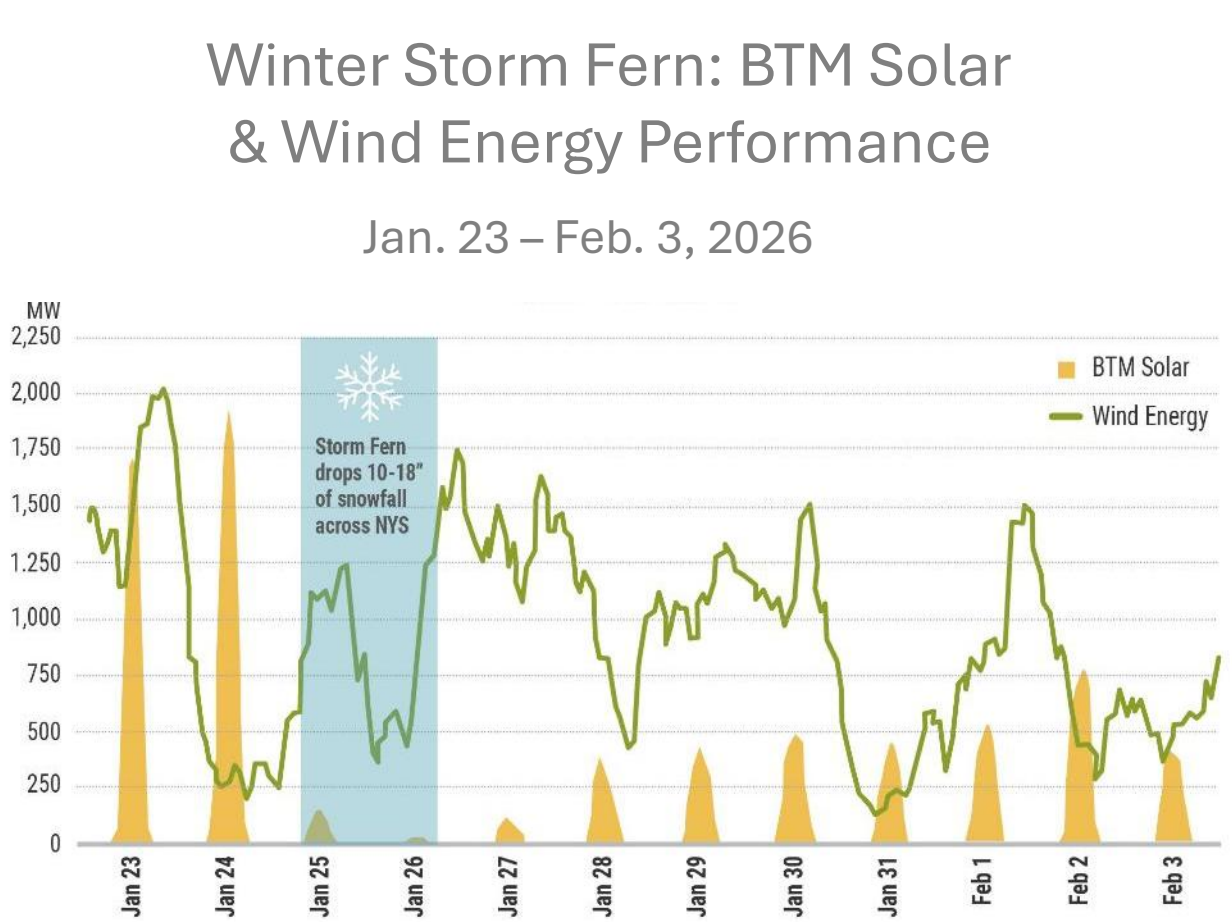
Weather Overview: Jan. 21 – Feb. 1

- A deep Arctic air mass plunged temperatures well below seasonal averages from January 21–29, with wind chills as low as –20°F across parts of the Midwest and Northeast.
- From January 23–26, Winter Storm Fern producing snow, sleet, freezing rain, and ice across large portions of the Plains, South, Midwest, and Northeast.
- In New York, most areas of the state saw more than a foot of snow and colder than average winter temperatures during this period. Wind chill conditions reached as low as -30° toward the end of the cold snap.
- These conditions led Governor Hochul to declare a State of Emergency on January 23.



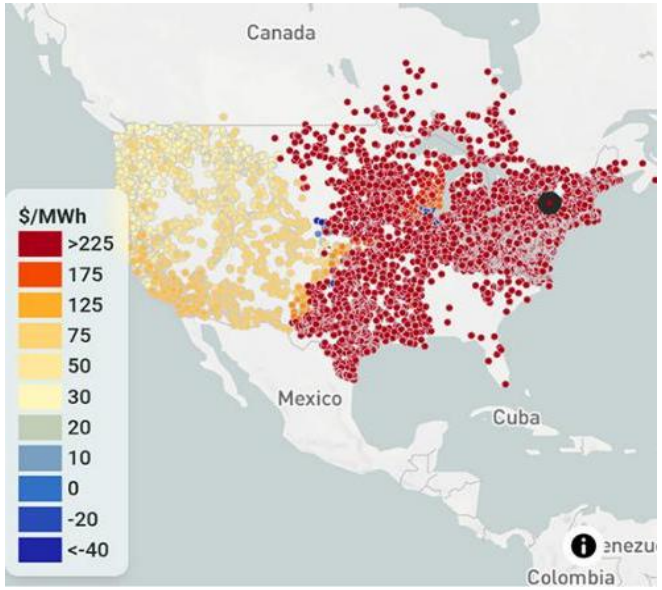
Impact on Grid Operations

- Electricity demand was elevated for the duration of the event, peaking at over 24,000 MW on two days and well above 23,000 MW on most other days.
- Between 1,200 MW and 3,000 MW of planned capacity was unavailable each day driven by forced outages of fossil-fuel generators and snow-covered solar panels.
- Wind resources contributed as much as 2,000 MW at one point but as little as 150 MW at other times.
- Statewide demand response was activated for six consecutive days during the event. Last winter, this emergency procedure was used just twice.

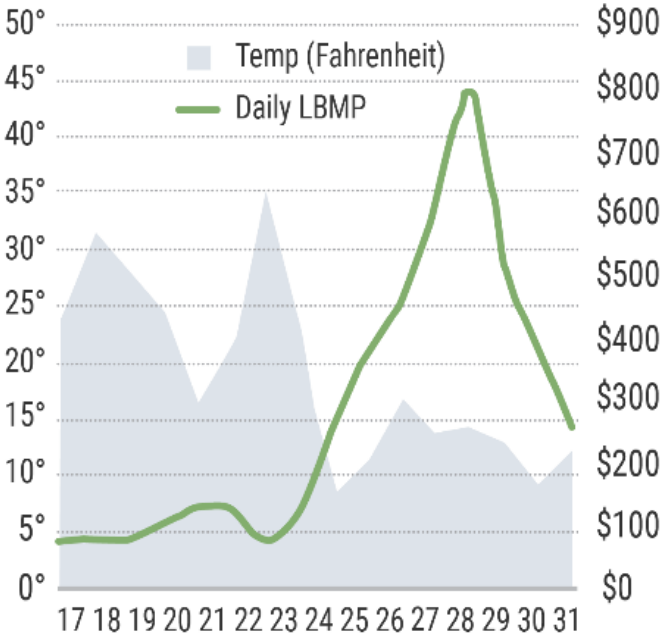


Impact on Energy Prices

- Demand for natural gas soared during the event with EIA reporting natural gas withdrawal totaling 360 billion cubic feet.
- As a result, natural gas spot prices spiked by more than 500% between Jan. 21-23.
- Natural gas spot prices were especially elevated in New York fluctuating in $50-$200/MMBtu range, with reports of spot quotes in excess of $300/MMBtu.
- Since natural gas serves as a leading fuel for electricity generation in New York, wholesale electricity prices also rose during the event with the monthly average cost of electricity reaching $192/MWh.



Electricity Prices Across the United States



January 2026 Temperatures and Energy Prices

Questions?

Visit our Power Trends page to view or download:

- *2025 Power Trends Report*
- Summary Fact Sheet
- Figures & Graphics

And more…

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