

Winter 2025-2026 Assessment & Winter Preparedness

Aaron Markham

Vice President, Operations

NYSRC Executive Committee

November 14, 2025

Agenda

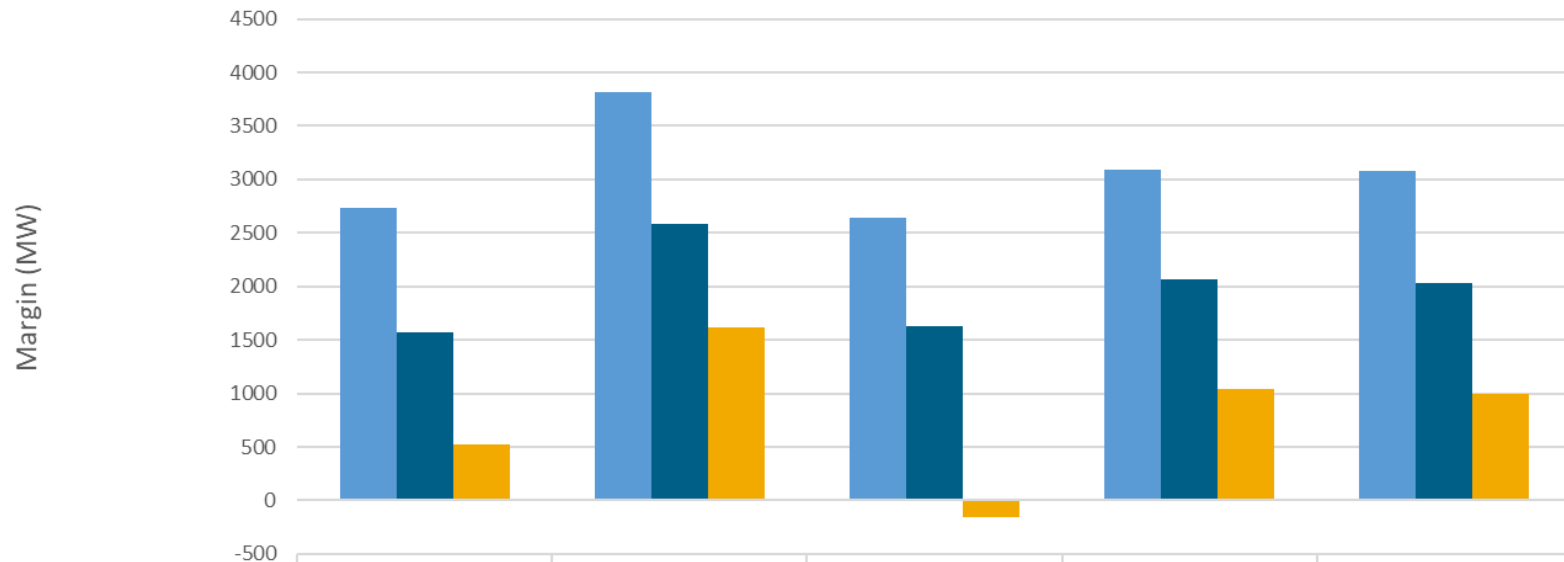
- **Key Observations**
- **Winter 2025-2026 Capacity Assessment**
- **Winter 2025-2026 Preparedness**
- **Infrastructure Updates**
- **Appendix A: Regional and Local Fuel Inventories & Fuel Prices**
- **Appendix B: Near Term Fuel and Energy Security Assessment**

Key Observations – 2025-2026 Winter Assessment

- The NYISO anticipates sufficient winter capacity margins assuming all firm fuel generation is available under normal and extreme weather conditions
 - 3,074 MW - capacity margin for 50-50 peak forecast conditions
 - 2,035 MW - capacity margin for 90-10 peak forecast conditions
 - 993 MW - capacity margin for 99-1 peak forecast conditions
- Winter capacity margins assuming only firm fuel generation available are consistent with the results described above.
 - Future reductions in winter capacity margins, disruptions in fuel supplies or other winter operational concerns may result in operational challenges during extreme cold weather events.

* Non-firm fuel generation capacity includes gas fired generation capacity without firm gas transportation contract arrangements. All other generation types are considered firm. Firm fuel and non-firm fuel references for this assessment do not relate to the implementation of “firm fuel” characteristics elections for capacity accreditation starting with the 2026-2027 Capability Year.

Winter Capacity Margins (Firm Fuel)



	Winter 21-22	Winter 22-23	Winter 23-24	Winter 24-25	Winter 25-26
■ Baseline - Only Firm Fuel	2730	3812	2641	3094	3074
■ 90/10 - Only Firm Fuel	1566	2583	1625	2069	2035
■ 99/1 - Only Firm Fuel	525	1619	-161	1045	993

2025-2026 Winter Capacity Assessment & Comparison

Line	Item	2024-2025	2025-2026		
		Baseline Forecast	Baseline Forecast	90th Percentile Forecast	99th Percentile Forecast
1a	Winter Generation Capacity ¹	40,562	40,080	40,080	40,080
1b	SCR - ICAP Values ²	802	1,026	1,026	1,026
1c	Net Purchases & Sales	759	1,203	1,203	1,203
1	Total Capacity Resources	42,058	42,309	42,309	42,309
2	Assumed Unavailable Capacity (Gen + SCR) ³	-6,090	-6,109	-6,109	-6,109
3 = 1 + 2	Net Capacity Resources	36,032	36,200	36,200	36,200
4	Peak Load Forecast	23,800	24,200	25,239	26,281
5	Operating Reserve Requirement	2,620	2,620	2,620	2,620
6 = 4 + 5	Total Capacity Requirement	26,420	26,820	27,859	28,901
7 = 3 - 6	Capacity Margin	9,612	9,380	8,341	7,299

1. Reflects the 2025 Load & Capacity Data report (Gold Book) existing capacity plus projected and actual additions and deactivations during the 2025-2026 Capability Year

2. The total value of 1,026 MW includes Special Case Resources (SCRs) that have or are expected to transition to the Distributed Energy Resource (DER) aggregation participation model.

3. Derates: 1,897 MW for wind, 396 MW for hydro, 2,667 MW for thermal units, 849 MW for utility-scale or front-of-the meter (FTM) solar, 7 MW for energy storage, and 275 MW for SCRs.

- 2024-2025 actual winter peak load was 23,521 MW on Wednesday, January 22, 2025, at hour ending (HE) 18
- The all-time winter peak was 25,738 MW, set on Tuesday, January 7, 2014

Winter Capacity Assessment – Firm Fuel Scenarios

Line	Item	2025-2026 Baseline Forecast	2025-2026 90th Percentile Forecast	2025-2026 99th Percentile Forecast
1a	Available Generation Capacity Resources	40,080	40,080	40,080
1b	SCR - ICAP Values	1,026	1,026	1,026
1c	Net ICAP External Imports	1,203	1,203	1,203
1	NYCA Resource Capability	42,309	42,309	42,309
2	Total Projected Capacity Outages	-6,109	-6,109	-6,109
3 = 1 - 2	Net Installed Capacity Resources	36,200	36,200	36,200
4	Load Forecast	24,200	25,239	26,281
5	Operating Reserve Requirement	2,620	2,620	2,620
6 = 3 - 4 - 5	Capacity Margin	9,380	8,341	7,299
7a	Subtract All Gas Only Units and Duct Burner Capabilities^{1,2,3}	8,701	8,701	8,701
7 = 6 - 7a	Capacity Margin, Loss of Gas	680	-359	-1,401
8a	Add Back Units with Firm Gas Contracts	2,394	2,394	2,394
8 = 7 - 8a	Expected Capacity, Loss of Non-Firm Gas Case	3,074	2,035	993

1. "Loss of Gas" values may change, values shown based upon partial results of 2025-2026 Fuel Survey

2. "Duct Burner" derates account for approximately 400 MW

3. There is 693 MW of non firm gas capability in Load Zones A-E and 5,272 MW is in Load Zones F-K

The baseline, 90th percentile, and 99th percentile Winter NYCA Peak Day daily average temperatures are 14 °F, 6 °F, and -1 °F respectively. Based on the most recent reporting of minimum operable temperatures in the 2025-2026 Fuel Survey, some firm generation could be unavailable at temperatures corresponding with high load forecasts:

- 90-10 daily average temperature: 963 MW

90-10 daily minimum temperature: 1,631 MW

- 99-1 daily average temperature: 2,949 MW

99-1 daily minimum temperature: 10,490 MW

2025 Emergency Operating Procedures

Procedure	Effect	2025 MW Value
Emergency Demand Response Programs	Load Impact	1
Voltage Reductions	Load Impact	524
Voluntary Industrial Curtailment	Load Impact	250
General Public Appeals	Load Impact	74
Emergency Purchases	Additional Resources	As Available
Thirty Minute Reserves to Zero	Allow Operating Reserve to Decrease to Largest Single Contingency	1,310
Total Emergency Operating Procedures		2,159

Note: The procedures listed above are not an exhaustive list of operator actions available to avoid load shed.

Winter 2025-2026 Operational Preparedness

- NYISO Operations is monitoring regional fuel supplies. U.S. Energy Information Administration (EIA) data indicates oil inventories both regionally and throughout the United States are similar to last year and historical averages.
- Seasonal and weekly fuel surveys indicate oil and dual fuel capability generation have sufficient start-of-winter oil inventories (but lower than past years' inventories). See figure in Appendix B titled "Total Weekly Oil Inventory in MWh"
- NYISO Operations has surveyed most generating stations to discuss past winter operations, preparations for the upcoming winter, including last dual fuel operation, cold-weather preventative maintenance, fuel procurement arrangements, and fuel switching capabilities.
- NYISO Operations' coordination of transmission and generation maintenance outages helps mitigate the reliability impact of such outages during extreme cold weather periods.

Winter 2025-2026 Operational Preparedness

- The NYISO has participated in various communications and coordination efforts with NERC, state agencies (NYDPS, NYSERDA), other ISOs/RTOs, and the natural gas industry, including Interstate Natural Gas Association of America (INGAA), Natural Gas Supply Association (NGSA), Northeast Gas Association (NGA), NY gas pipelines, and NY gas local distribution companies (LDCs)
- NERC Project 2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination is a 2-phase project looking to address the key recommendations from the *Federal Energy Regulatory Commission (FERC), NERC, and Regional Entity Joint Staff Inquiry into the February 2021 Cold Weather Grid Operations* resulting in changes to the TOP-002 Standards that went into effect October 1, 2025.

Winter Storm Uri/Elliott Response

- The NYISO continues to monitor and evaluate important events and ongoing industry actions in response to potential winter reliability concerns such as the *FERC, NERC, and Regional Entity joint inquiry into the December 2022 Winter Storm Elliott Grid Operations*.

The following factors enhanced reliability in NY during the event:

- diverse fuel/energy resource mix in NY including dual fuel capability
- low temperature conditions were aligned with the NYISO's forecast design criteria for the winter period, coupled with reasonable load forecast performance and responsible efforts of generators and transmission owners
- Interconnections with neighboring control areas allowed for the import/export of energy
- The NYISO led a review of load shedding processes/procedures and coordination of the gas-electric critical infrastructure survey with the New York Transmission Owner Planning Working Group (TOPWG) and is defining processes to comply with changes to the EOP-011 Standard, which take effect October 1, 2026
- Implemented rules to support Critical Electric System Infrastructure Load (CESIL) by excluding participation of CESIL in NYISO-administered demand response programs from NYISO Demand Response Programs

Gas-Electric Coordination

- **A communications protocol is in place with NY state agencies to improve the speed and efficiency of generator requests to state agencies for emissions waivers if needed for reliability**
 - Protocol was leveraged in January 2018 and proved effective in facilitating communications between parties
- **An emergency communications protocol is in place to communicate electric reliability concerns to pipelines and gas LDCs during tight electric operating conditions**
 - Cooperative process with interstate pipelines and LDCs for providing OFO information to the NYISO
- **FERC Order No. 787**
 - The NYISO modified its Code of Conduct (ISO OATT Attachment F) to accommodate pipeline requests for reliability information
- **Participated in NAESB Joint Wholesale Electric Quadrant (WEQ), Wholesale Gas Quadrant (WGQ), and Retail Markets Quadrant (RMQ) Business Practices Subcommittee meetings to effectuate improved communication and coordination protocols, particularly those that occur during critical periods of operation.**

Situational Awareness

- **Formation of the Energy Security team in the Grid Transition department**
- **Control Room gas-electric support**
- **Video boards**
 - Northeast interstate pipeline system is displayed
 - Operational Flow Orders are displayed with readily detectable visualization techniques
 - Continuously enhancing weather displays to analyze potential impacts on NY generation and loads
 - Increased visibility into gas nomination, procurement, and critical notices via 3rd party information supplier
- **A web-based, fuel survey “portal” provides generator fuel information to the operators**
 - Updated weekly by generators
 - Updated daily during cold weather conditions, upon request by the NYISO
 - Added Communications Module functionality to follow-up on survey responses
- **Efforts such as Energy Assessments help identify and quantify risk further in advance of real time.**

Other Winter Operational Challenges

- **Intra-day Gas Procurement-** Gas-only fired generating resources are likely to be unavailable for operation if not scheduled in the day-ahead energy market due to the difficulty in procuring intra-day gas
- **Alternate Fuel Replenishment–** Generator burn rates of alternative fuels can exceed replacement rates during extreme cold weather conditions
- **Emissions Limitations–** Use of alternate distillate fuels by oil or dual fuel capable generation may be further restricted by emission limits
- **Retail Gas LDC Priority -** Gas LDC retail gas demand has priority over electric power generation

Generation Additions

Station Name	Nameplate MW
Flat Hill Solar	20
Grassy Knoll Solar	20
Yellow Barn Solar	160
Clear View Solar	20
Transit Solar	20
SunEast Scipio Solar	18
Riverhead Expansion (Calverton Solar)	36
Total Additions	294

*Includes new capacity since Winter 2024-2025 and nameplate capacity of resources currently anticipated to be in service before December 15, 2025.

Generation Deactivations

Station Name	Nameplate MW
Astoria GT 1	-16
Glenwood GT 1	-16
West Babylon 4	-52.4
Shoreham 2	-18.6
59 St GT 1	-17.1
Madison Wind Power	-11.6
Far Rockaway GT1	-60.5
Far Rockaway GT2	-60.5
Pinelawn Power 1	-82
Total Deactivations	-334.7

*Generation deactivations include capacity changes since Winter 2024-2025

Transmission Operations

Equipment	Voltage (kV)	Status
Marcy South Series Compensation	345	Out-of-Service
Hudson – Farragut (B3402) and PAR	345	Out-of-Service
Marion – Farragut (C3403) and PAR	345	Out-of-Service
Smart Path Connect Transmission Upgrade	230, 345	In Service
Dover PAR	345	In Service

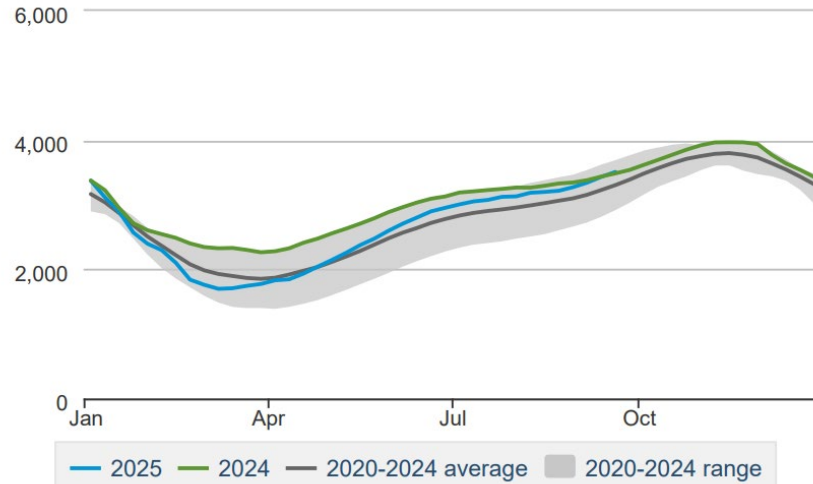
Appendix A

Regional and Local Fuel Inventories

Natural Gas Underground Storage Levels

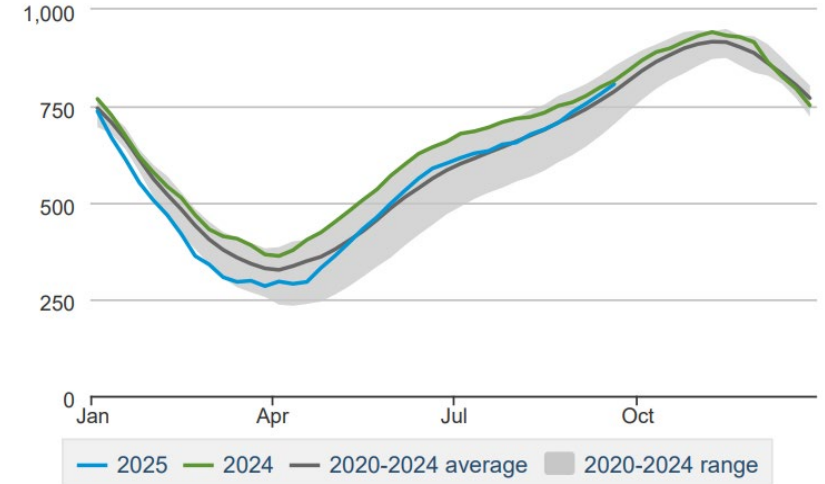
Lower 48 weekly working gas in underground storage

billion cubic feet



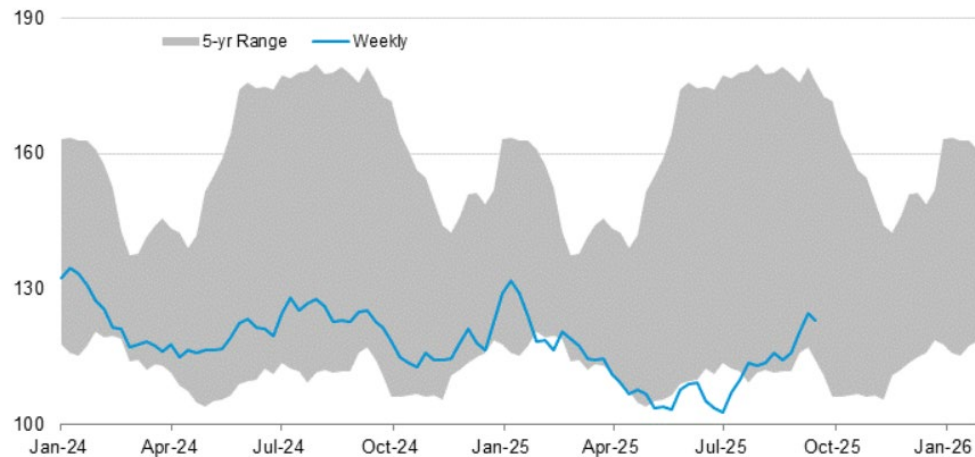
East region weekly working gas in underground storage

billion cubic feet



Distillate Inventories

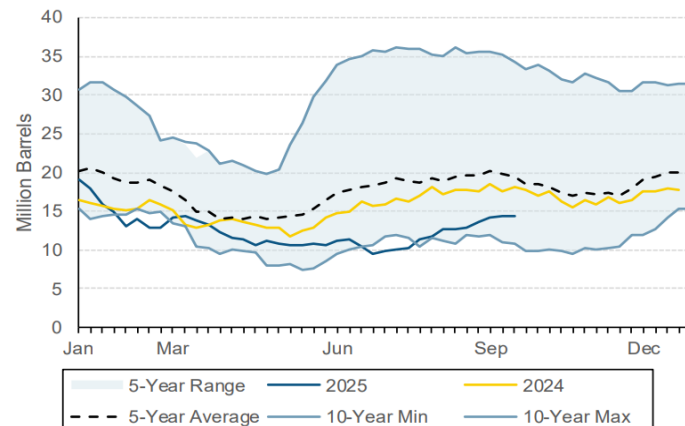
U.S. distillate stocks
million barrels



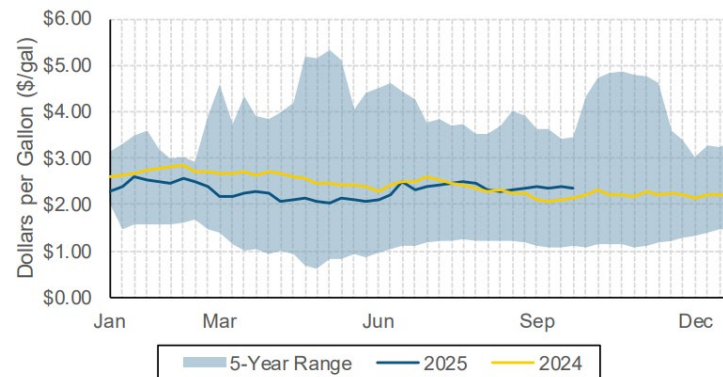
Data source: U.S. Energy Information Administration

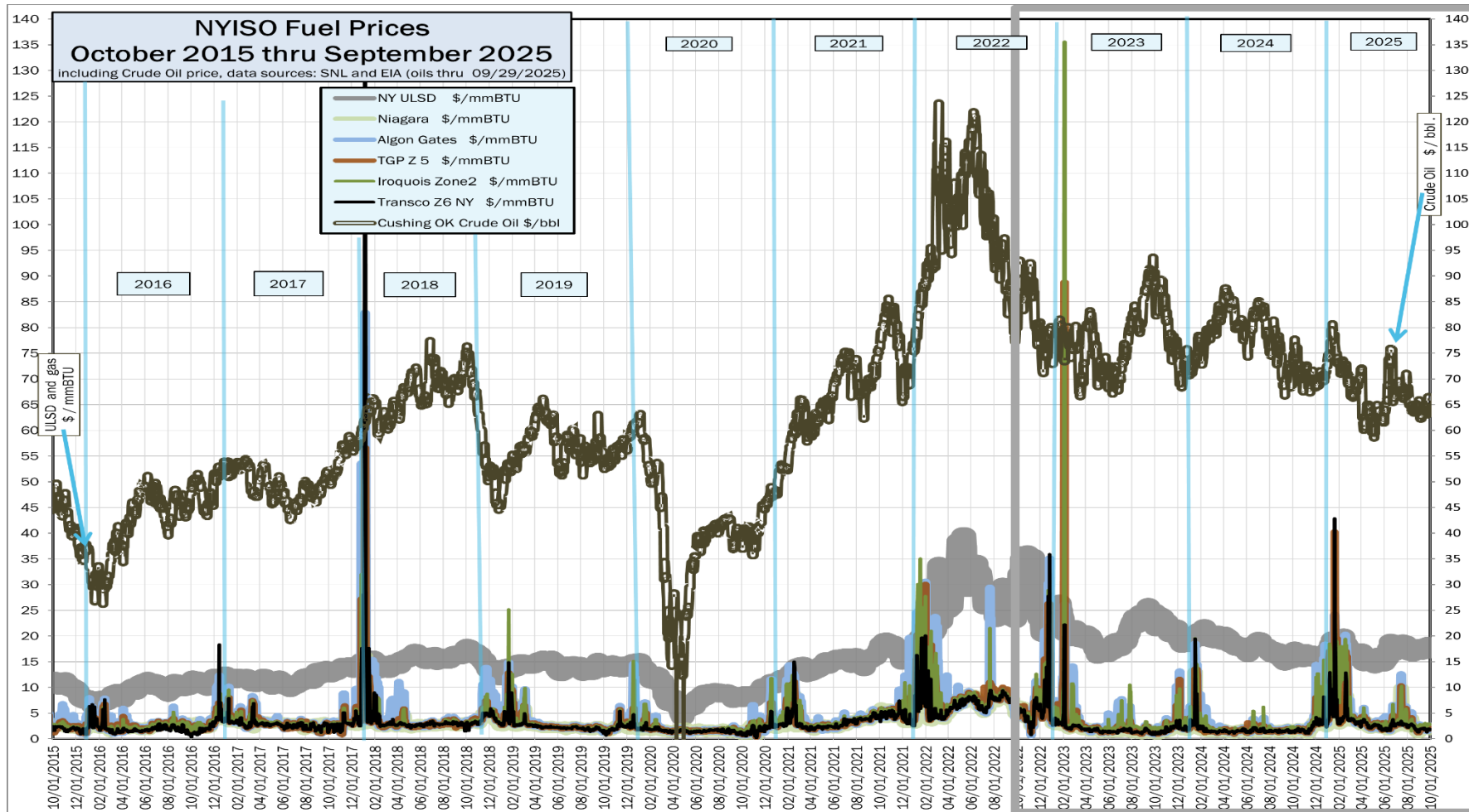


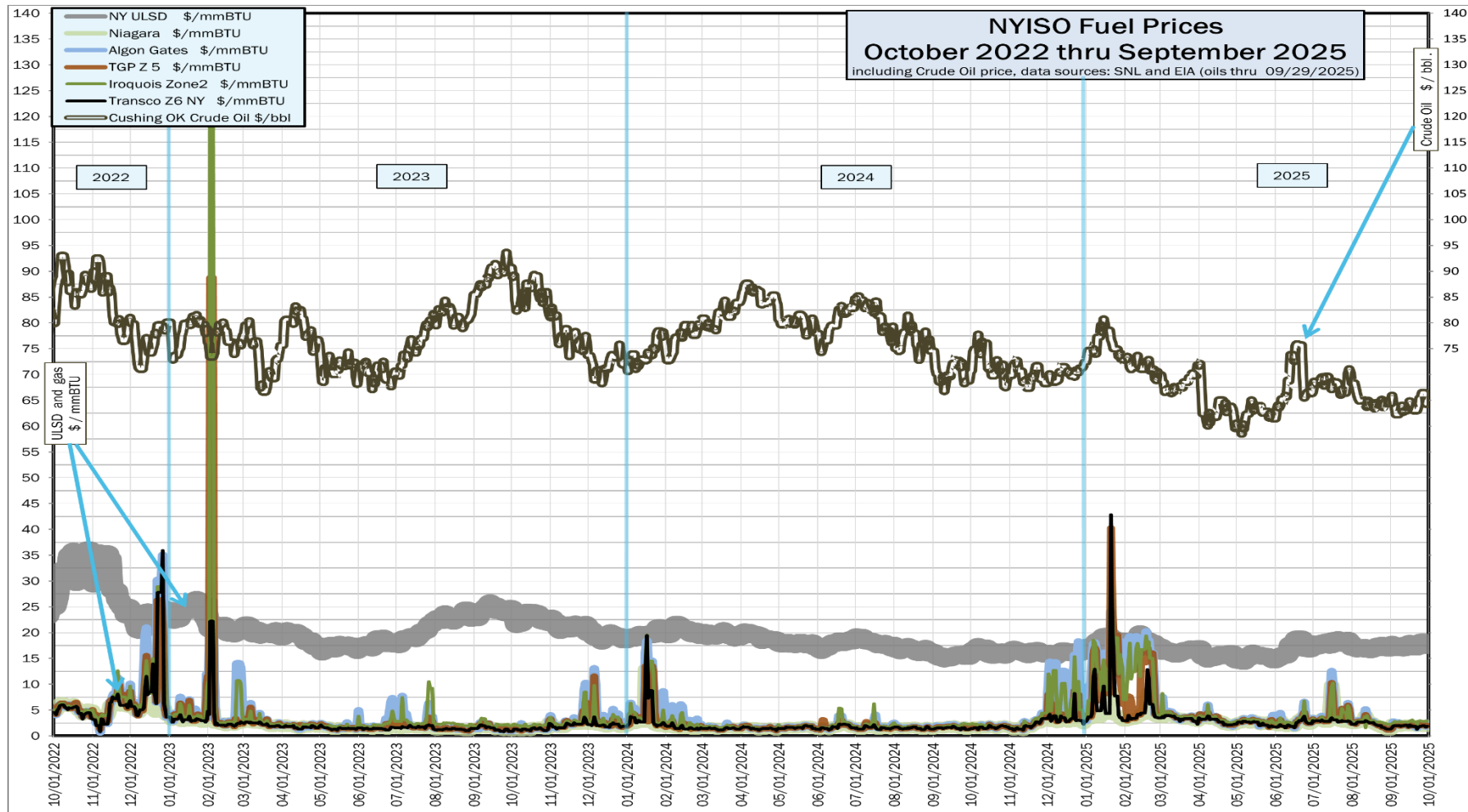
Distillate Fuel Oil (0-15 ppm Sulfur)

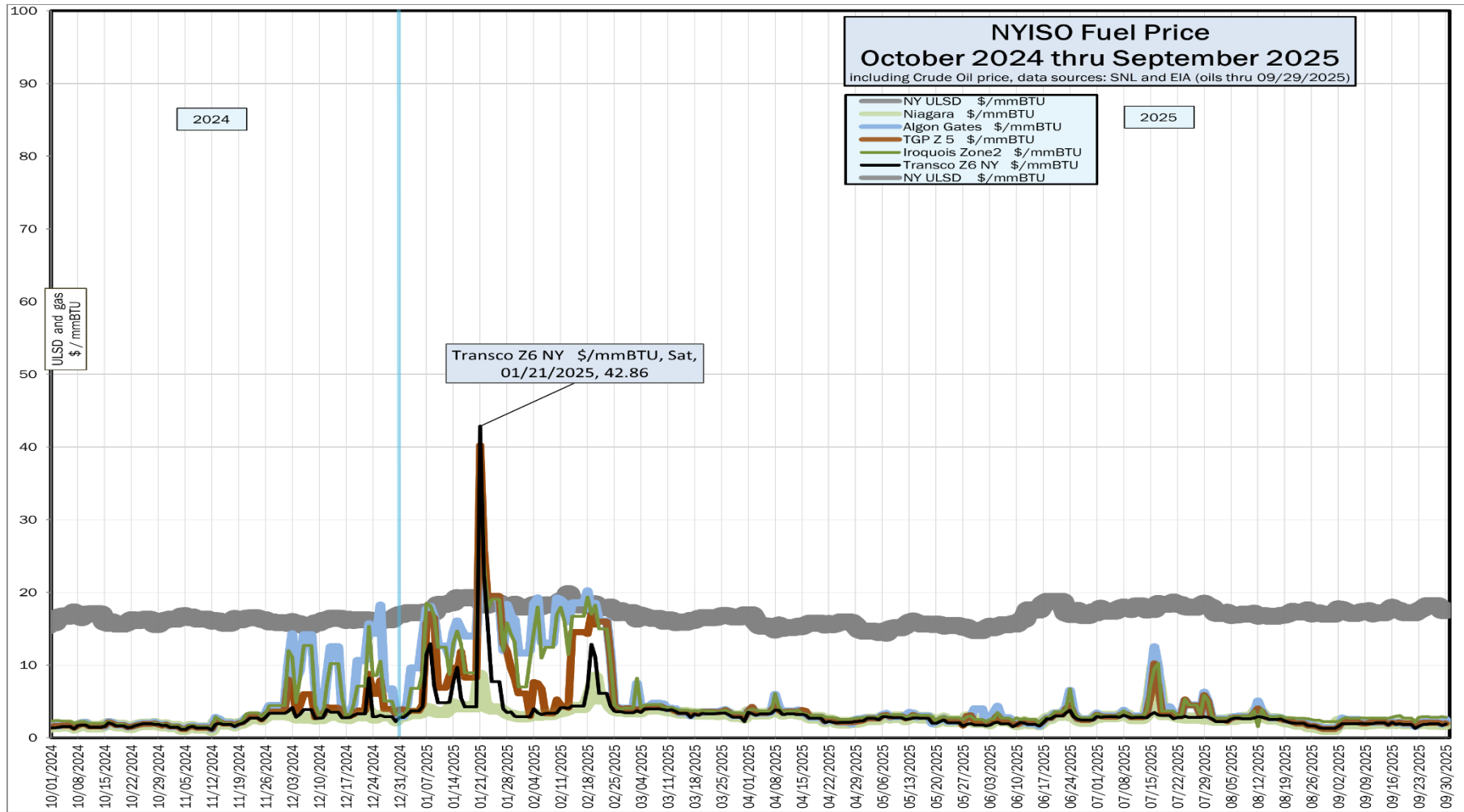


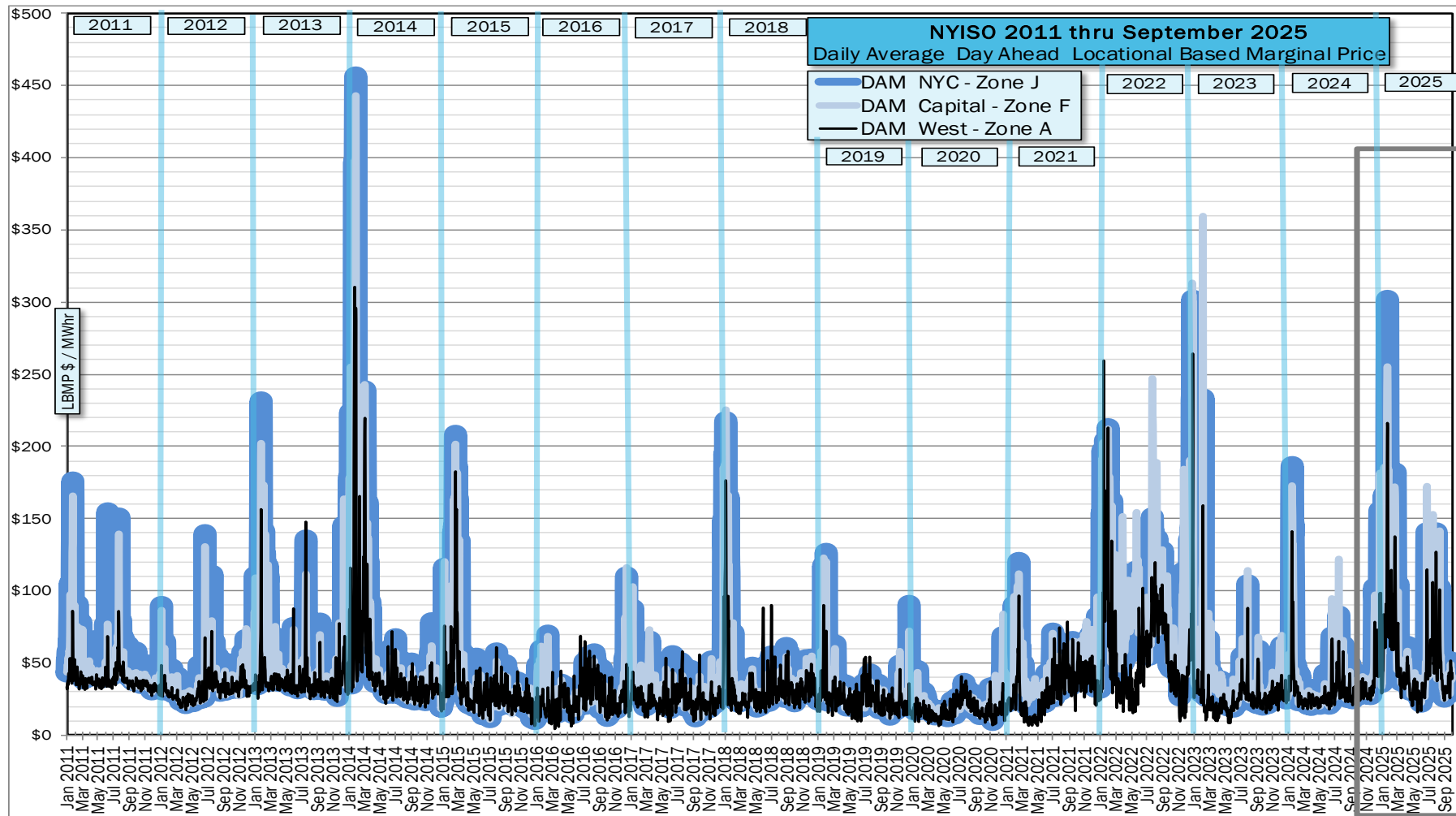
Ultra-low Sulfur Diesel New York Harbor Average Weekly
Spot Prices

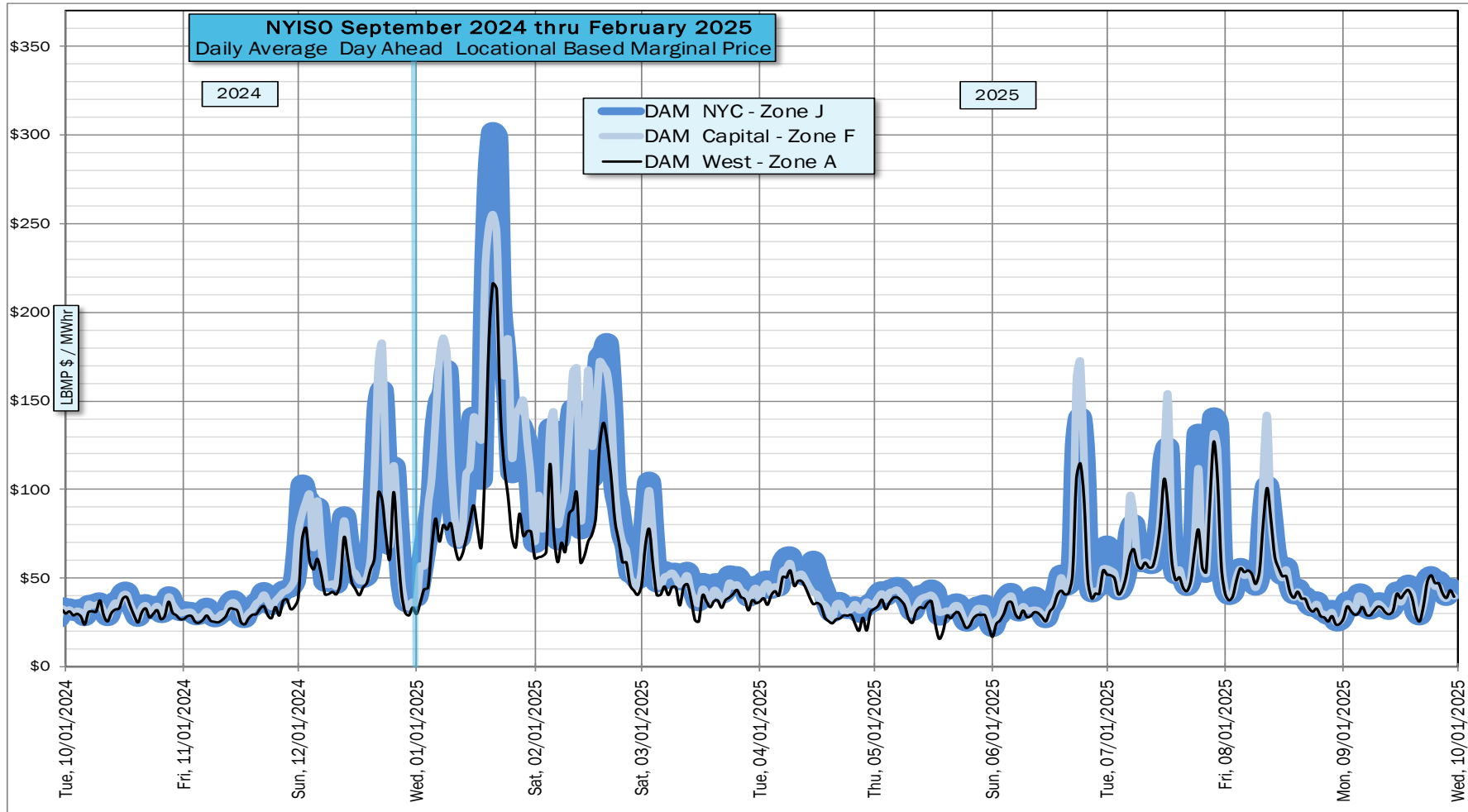












Appendix B

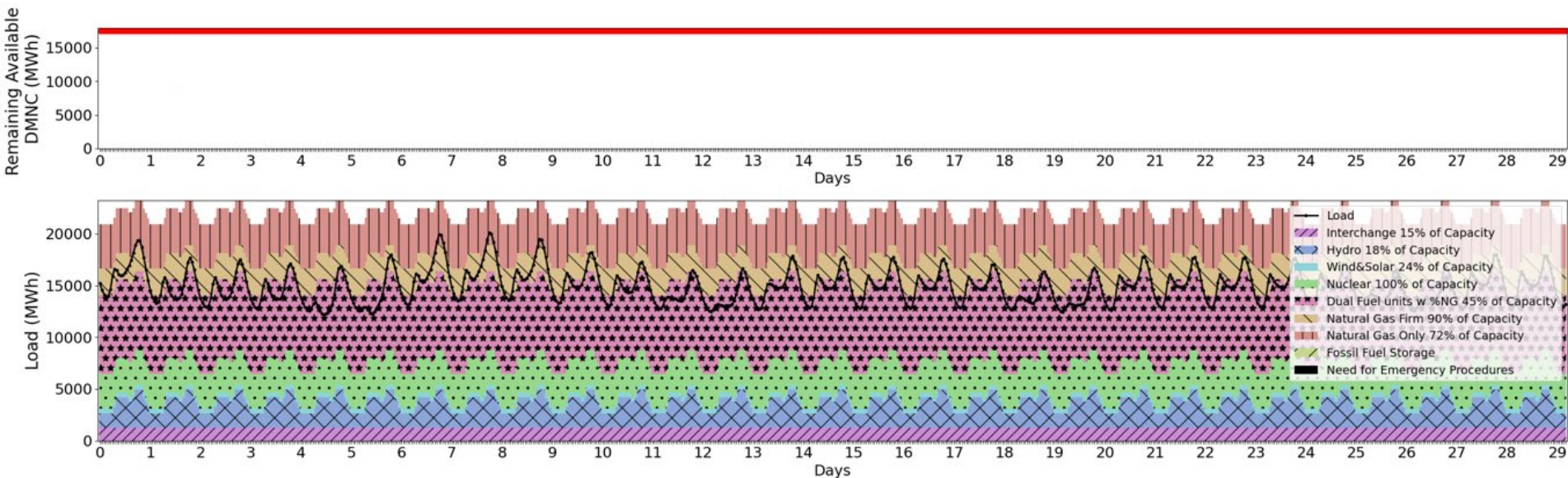
Near Term Fuel and Energy Security Assessment

Operations Energy Assessment Tool

- **The NYISO's Energy Assessment tool gives provides the NYISO the ability to:**
 - Observe the reported fuel inventory levels and scheduled replenishments
 - Monitor the load forecast up to 30 days in the future
 - Apply commitment/dispatch assumptions to monitor fuel/energy shortfalls
 - Model scenarios and disruptions similar to the prior Fuel and Energy Security (FES) studies conducted by Analysis Group (AG) in 2019 and 2023

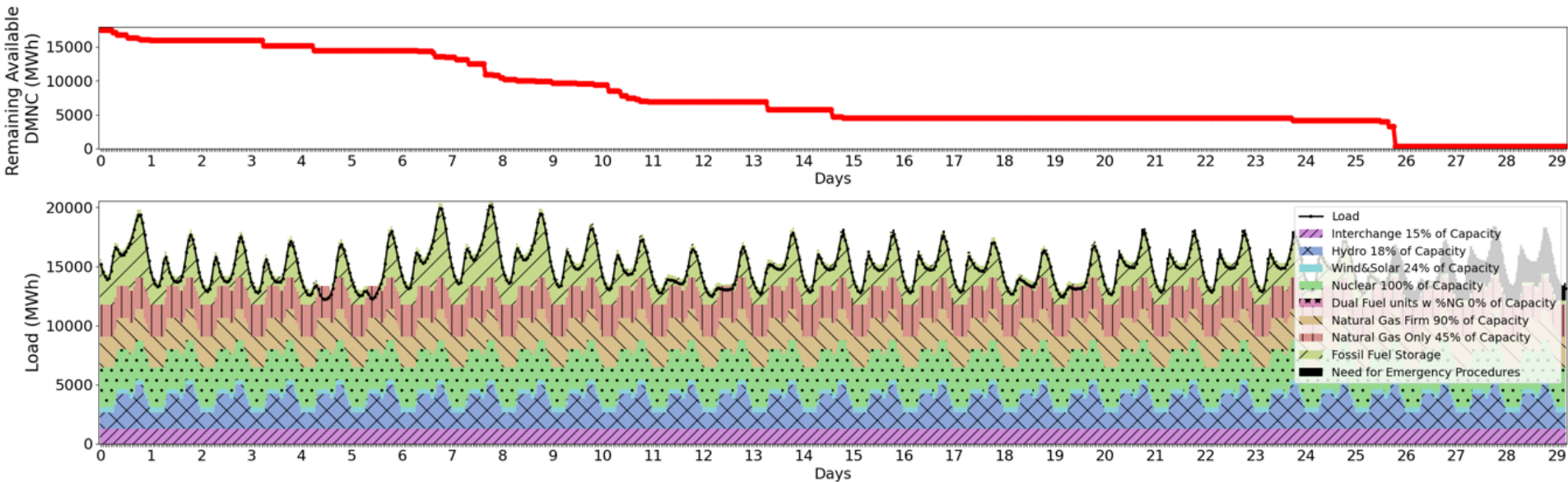
Energy Assessment Tool – Conditions: Forecast (Typical Spring or Fall Day)

- No/minor scheduled deliveries (1.66 million MWh)
- Low shoulder season loads (Peak hourly demand = 19,976 MW)
- Gas available for firm and gas-only units, 50% dual fuel capable MW from gas



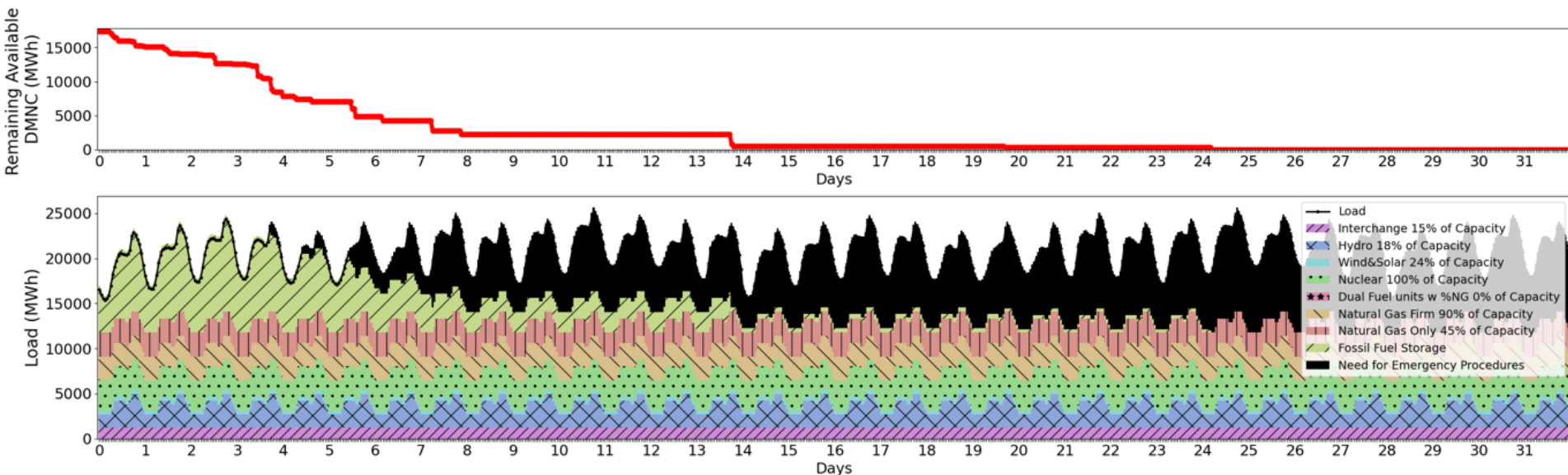
Energy Assessment Tool – Conditions: Forecast, Limited Gas Availability

- No/minor scheduled deliveries (1.66 million MWh)
- Low shoulder season loads (Peak hourly demand = 19,976 MW)
- Limited gas-only generation (4,500 MW), no gas for dual fuel units



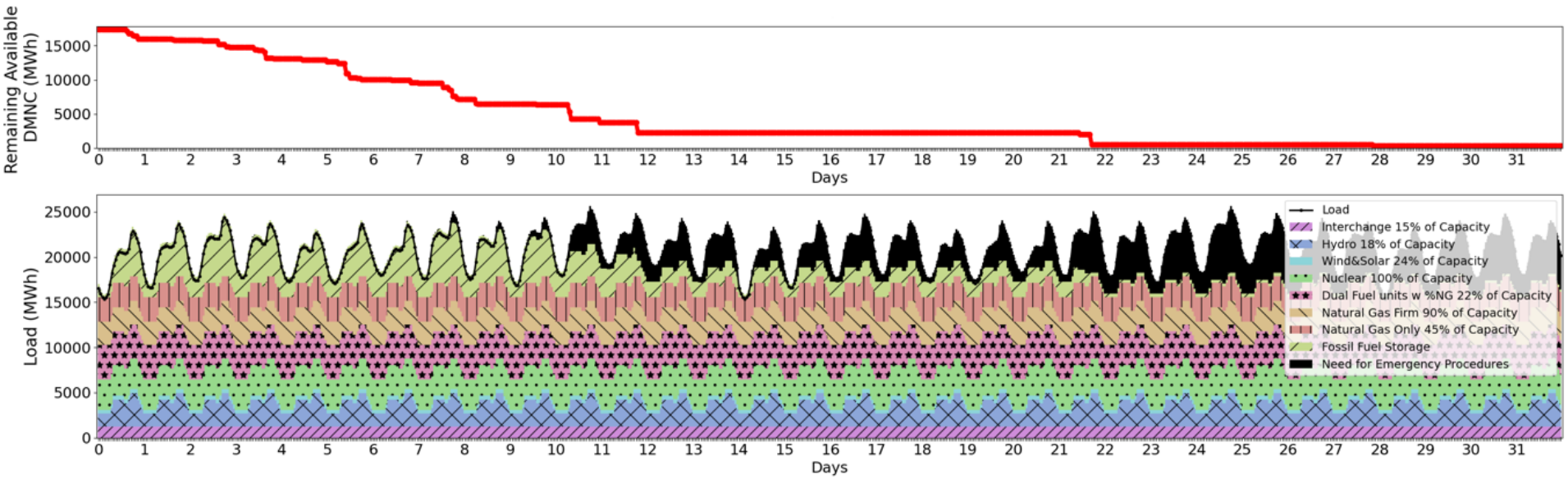
Energy Assessment Tool – Conditions: Extreme Cold, Limited Gas Availability

- No/minor scheduled deliveries (1.66 million MWh)
- Extreme Cold Weather Load Forecast (Similar to winter 2017-2018, 25,200 MW)
- Limited gas-only generation (4,500 MW), no gas for dual fuel units



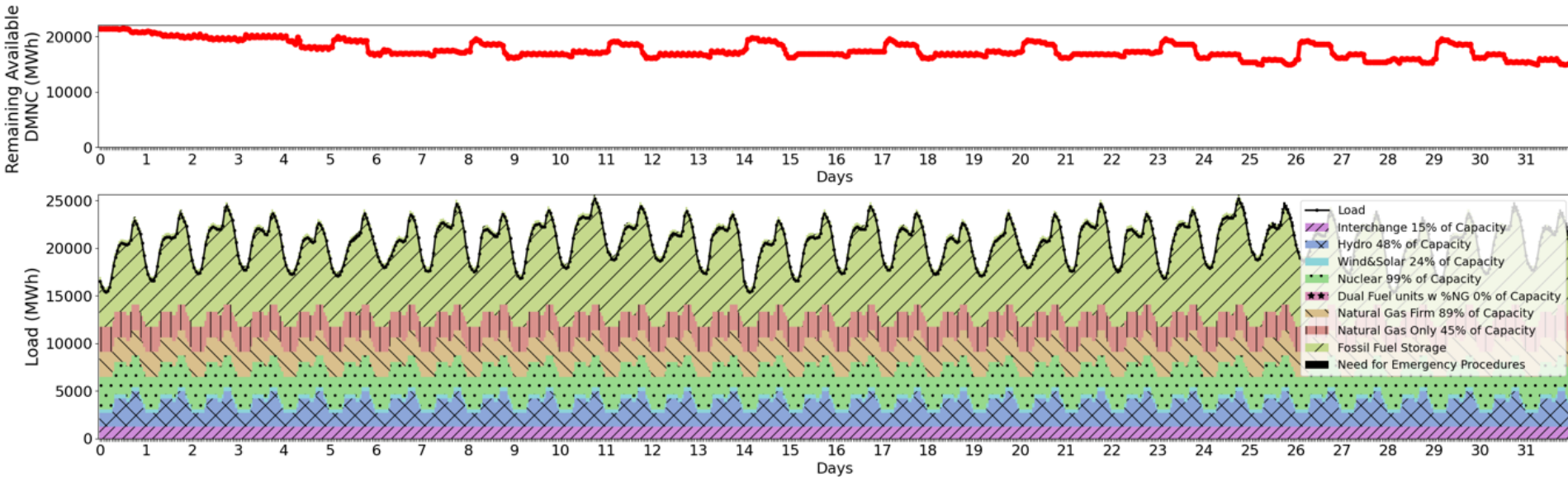
Energy Assessment Tool – Conditions: Extreme Cold, Some Gas for Dual Fuel Units

- No/minor scheduled deliveries (1.66 million MWh)
- Extreme Cold Weather Load Forecast (Similar to winter 2017-2018, 25,200 MW)
- Gas available for firm and gas-only units, 25% dual fuel capable MW from gas

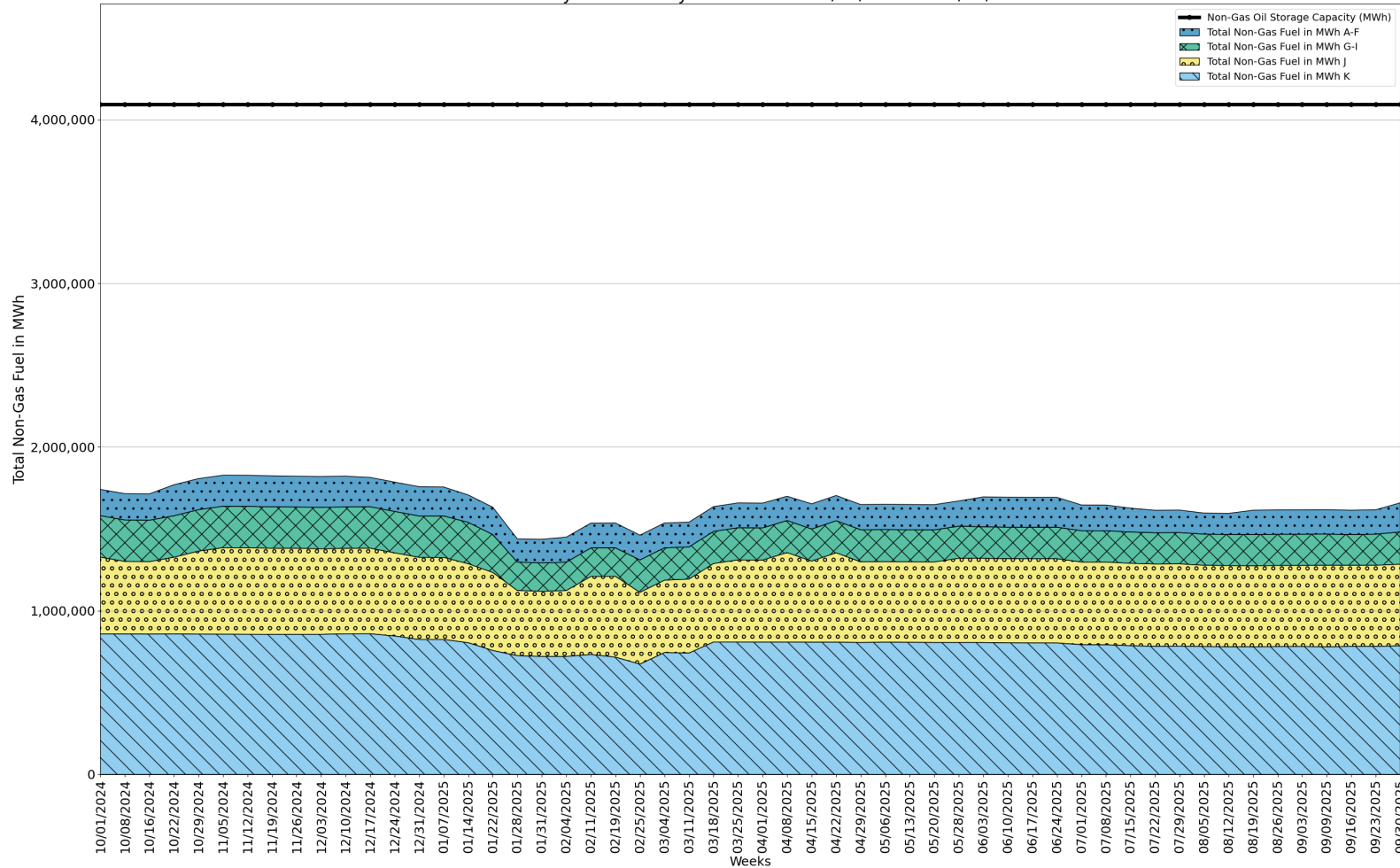


Energy Assessment Tool – Conditions: Extreme Cold, Limited Gas Availability

- Generator Fuel and Emissions Reporting (GFER) survey refill assumptions similar to AG FES models
- Extreme Cold Weather Load Forecast (Similar to winter 2017-2018, 25,200 MW)
- Limited gas-only generation (4,500 MW), no gas for dual fuel units



Total Weekly Oil Inventory in MWh from 10/01/2024 to 09/30/2025



Our Mission & Vision



Mission

Ensure power system reliability
and competitive markets for New
York in a clean energy future



Vision

Working together with stakeholders
to build the cleanest, most reliable
electric system in the nation