Kevin Flynn
Chief Counsel, FERC Relations

September 2, 2022

VIA ELECTRONIC FILING

The Honorable Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Re: Presentations for September 8th New England Winter Gas-Electric Forum, Docket No. AD22-9-000

Dear Secretary Bose:

ISO New England Inc. (the "ISO") respectfully submits the attached presentations for the September 8th New England Winter Gas-Electric Forum ("Forum"). The presentations are from Stephen George, Director, Operational Performance, Training and Integration at the ISO, and Mike Knowland, Manger, Forecast and Scheduling at the ISO. Mr. George is a panelist on the first panel, Historical Context of New England Winter Gas-Electric Challenges. Mr. Knowland is a panelist on the second panel, Concerns for Winter 2022/23 and Future Winters. The ISO is filing these presentations in advance of the Forum to provide background information on the panels' topics.

Respectfully submitted,

/s/ Kevin Flynn
Kevin Flynn
Chief Counsel, FERC Relations
cc: Service List for Docket No. AD22-9-000 (via email)

ISO New England Inc.
One Sullivan Road
Holyoke, MA 01040-2841
413-535-4177
Kflynn@iso-ne.com

New England Winter Gas-Electric Forum

Panel 1: Historical Context of New England Winter Gas-Electric Challenges

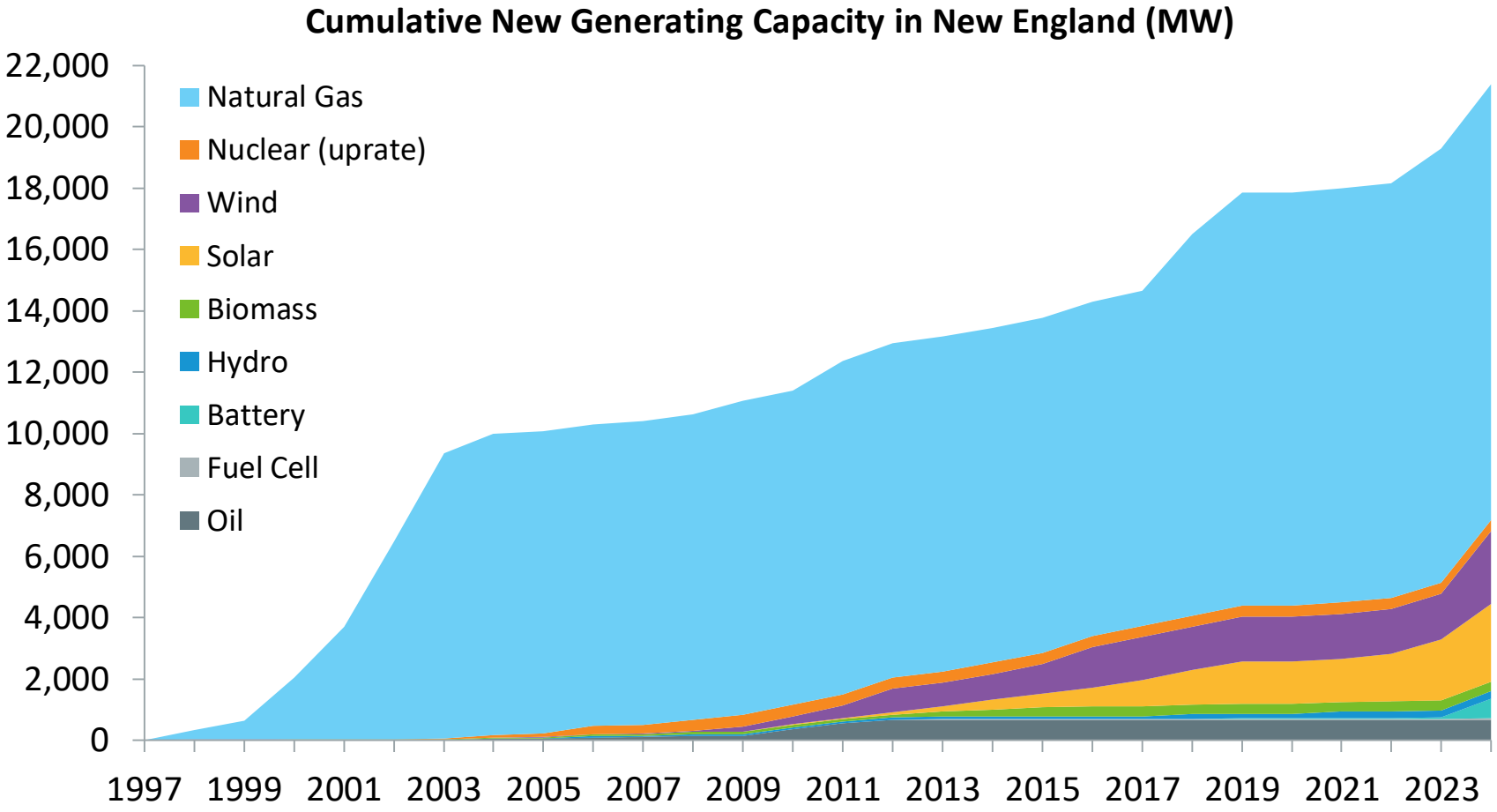
Stephen George

DIRECTOR, OPERATIONAL PERFORMANCE, TRAINING & INTEGRATION

NEW ENGLAND'S RESOURCE MIX

The generation fleet is undergoing a transition from predominantly gas-fired to renewable – but there is a risk that retirements and demand outpace new development

For the Past Two Decades, Natural Gas Has Been the Dominant Fuel Source for Generating Capacity Built in New England

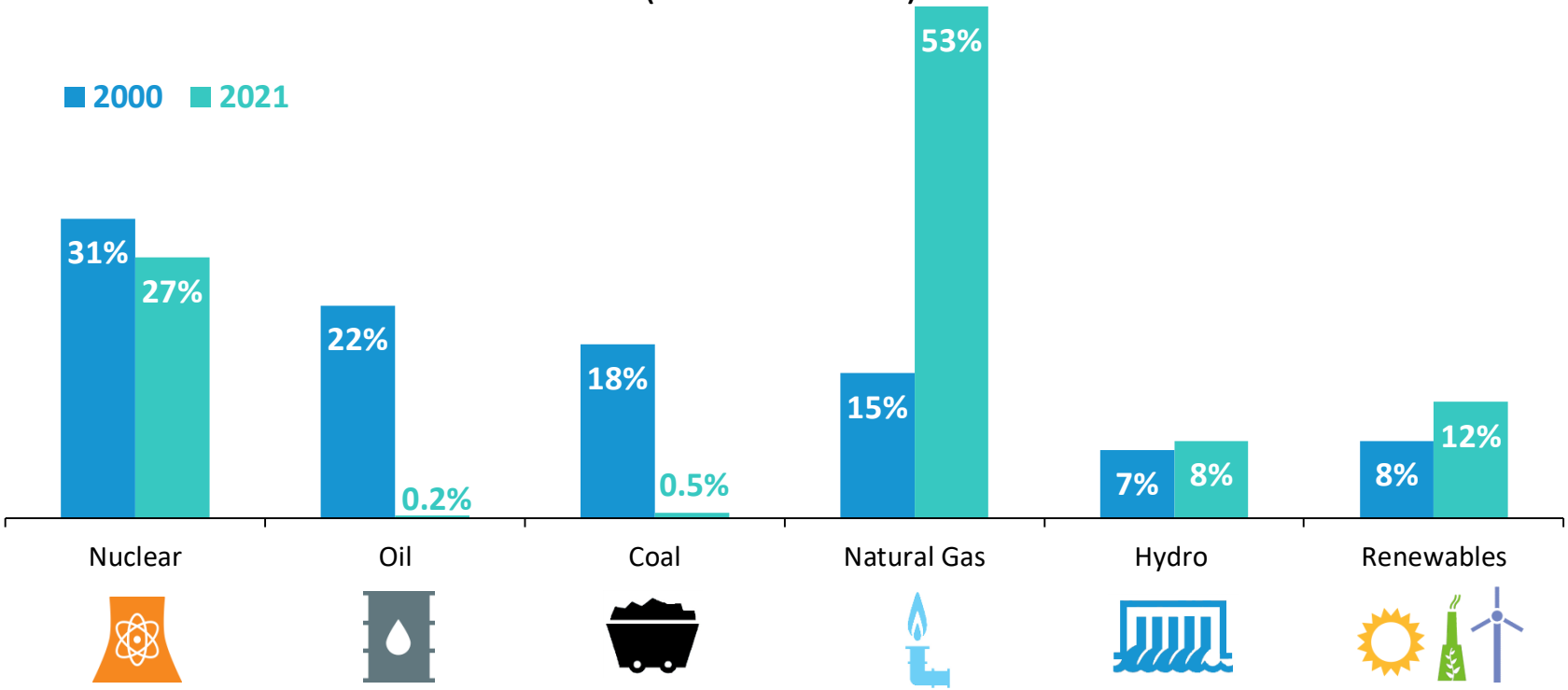


Note: New generating capacity for years 2021 – 2024 includes resources clearing in recent Forward Capacity Auctions.

The Region Currently Gets Most of its Energy Supply from Natural Gas

The fuels used to produce the region's electric energy have shifted as a result of economic and environmental factors

Percent of Total **Electric Energy** Production by Fuel Type
(2000 vs. 2021)

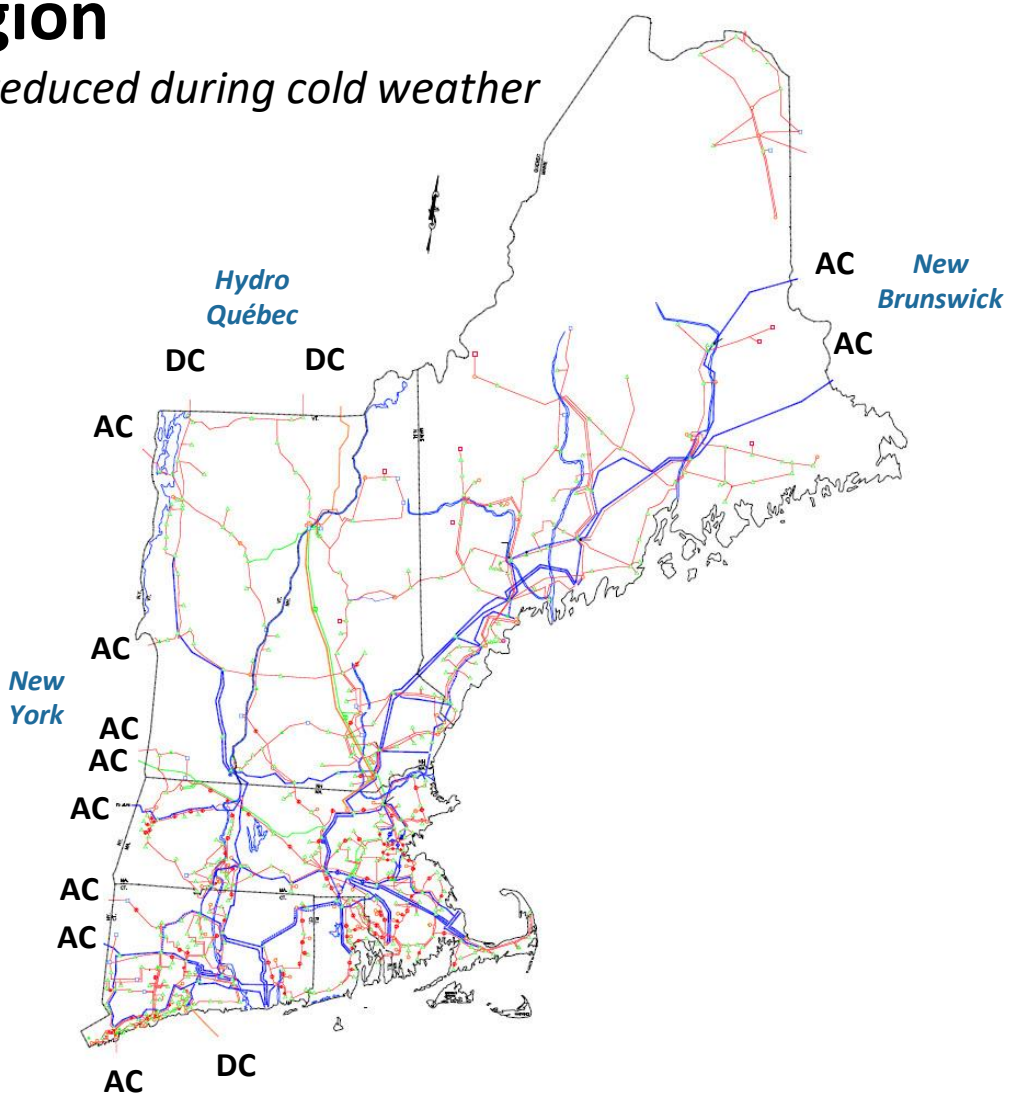


Source: ISO New England Net Energy and Peak Load by Source; data for 2021 is preliminary and subject to resettlement
Renewables include landfill gas, biomass, other biomass gas, wind, grid-scale solar, municipal solid waste, and miscellaneous fuels.
This data represents electric generation within New England; it does not include imports or behind-the-meter (BTM) resources, such as BTM solar.

Imports From Neighboring Areas Provide Significant Energy Supply To The Region

But availability of additional imports is reduced during cold weather

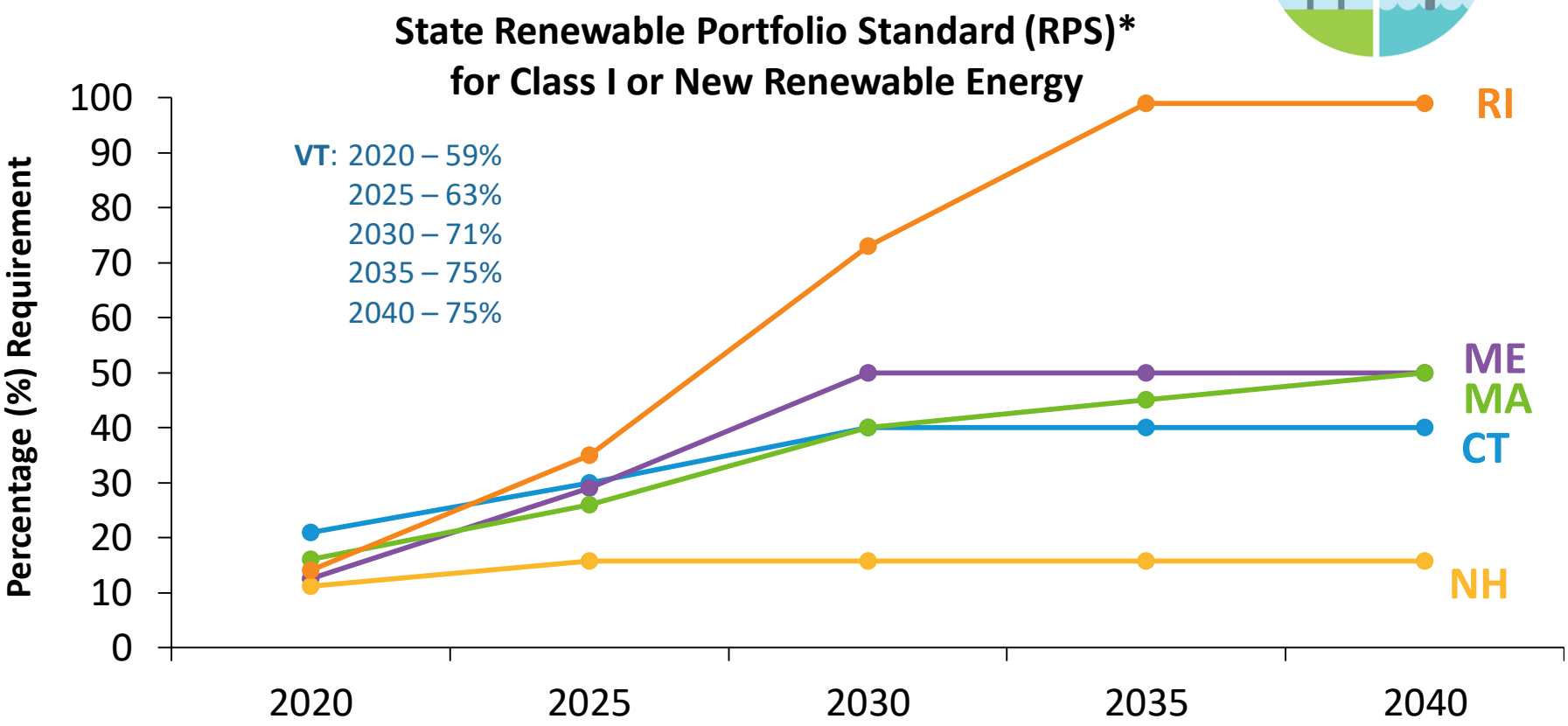
- 16% of the region's energy needs were met by imports in 2021
- AC ties with New York and DC ties with Hydro Québec typically operate at high levels during periods of cold weather leaving minimal additional import capability during stressed system conditions



Note: AC stands for Alternating Current and DC stands for Direct Current

Renewable Energy Is on the Rise

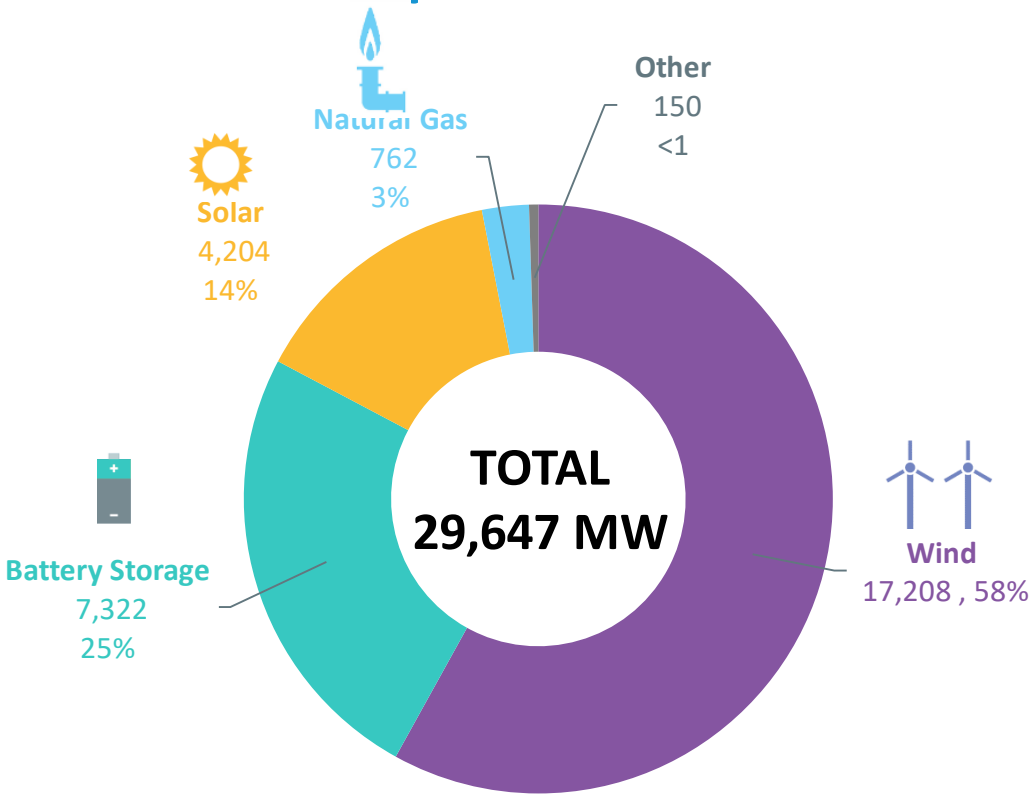
State policy requirements are a major driver



Notes: State RPS requirements promote the development of renewable energy resources by requiring electricity providers (electric distribution companies and competitive suppliers) to serve a minimum percentage of their retail load using renewable energy. Connecticut's Class I RPS requirement plateaus at 40% in 2030. Maine's Class I/IA RPS requirement increases to 50% in 2030 and remains at that level each year thereafter. Massachusetts' Class I RPS requirement increases by 2% each year between 2020 and 2024, 3% each year between 2025 and 2029, reverting back to 1% each year thereafter, with no stated expiration date. New Hampshire's percentages include the requirements for both Class I and Class II resources (Class II resources are new solar technologies beginning operation after January 1, 2006). New Hampshire's Class I and Class II RPS requirements plateau at 15.7% in 2025. Rhode Island's requirement for 'new' renewable energy reaches 100% in 2033. Vermont's 'total renewable energy' requirement plateaus at 75% in 2032; it recognizes all forms of new and existing renewable energy and is unique in classifying large-scale hydropower as renewable.

Wind Power Comprises Almost Two Thirds of New Resource Proposals in the ISO Interconnection Queue

All Proposed Resources



Source: ISO Generator Interconnection Queue (August 2022)
FERC Jurisdictional Proposals; Nameplate Capacity Ratings
Note: Some natural gas proposals include dual-fuel units (with oil backup).
Some natural gas, wind, and solar proposals include battery storage. Other includes hydro, biomass, fuel cells and nuclear uprate.

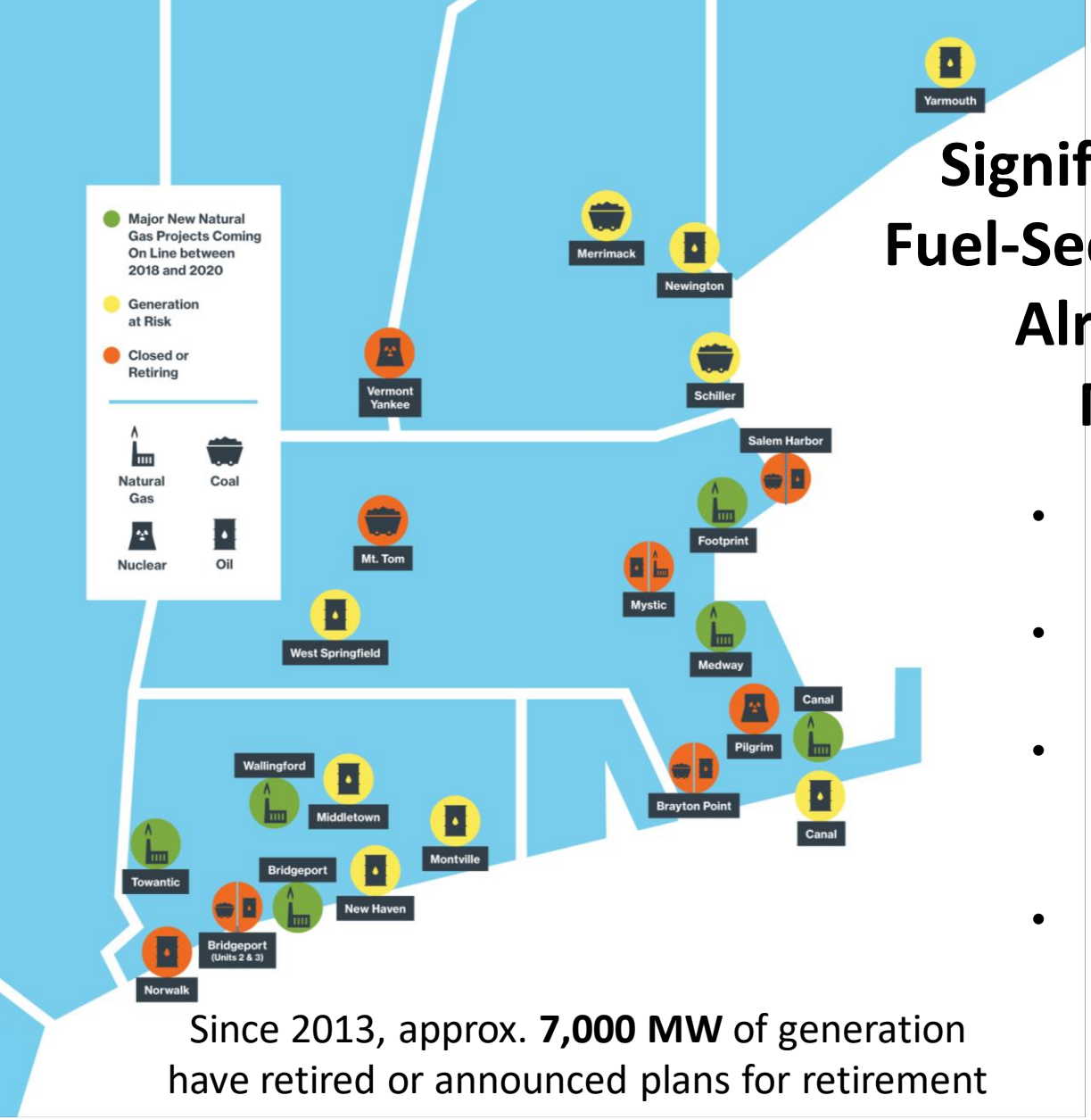
Proposals by State

(all proposed resources)

State	Megawatts (MW)
Massachusetts	17,246
Connecticut	4,826
Maine	5,482
Rhode Island	1,095
New Hampshire	809
Vermont	90
Total	**29,647**

Source: ISO Generator Interconnection Queue (August 2022)
FERC Jurisdictional Proposals

Significant Retirements of Fuel-Secure Resources Have Already Occurred, with More on the Horizon



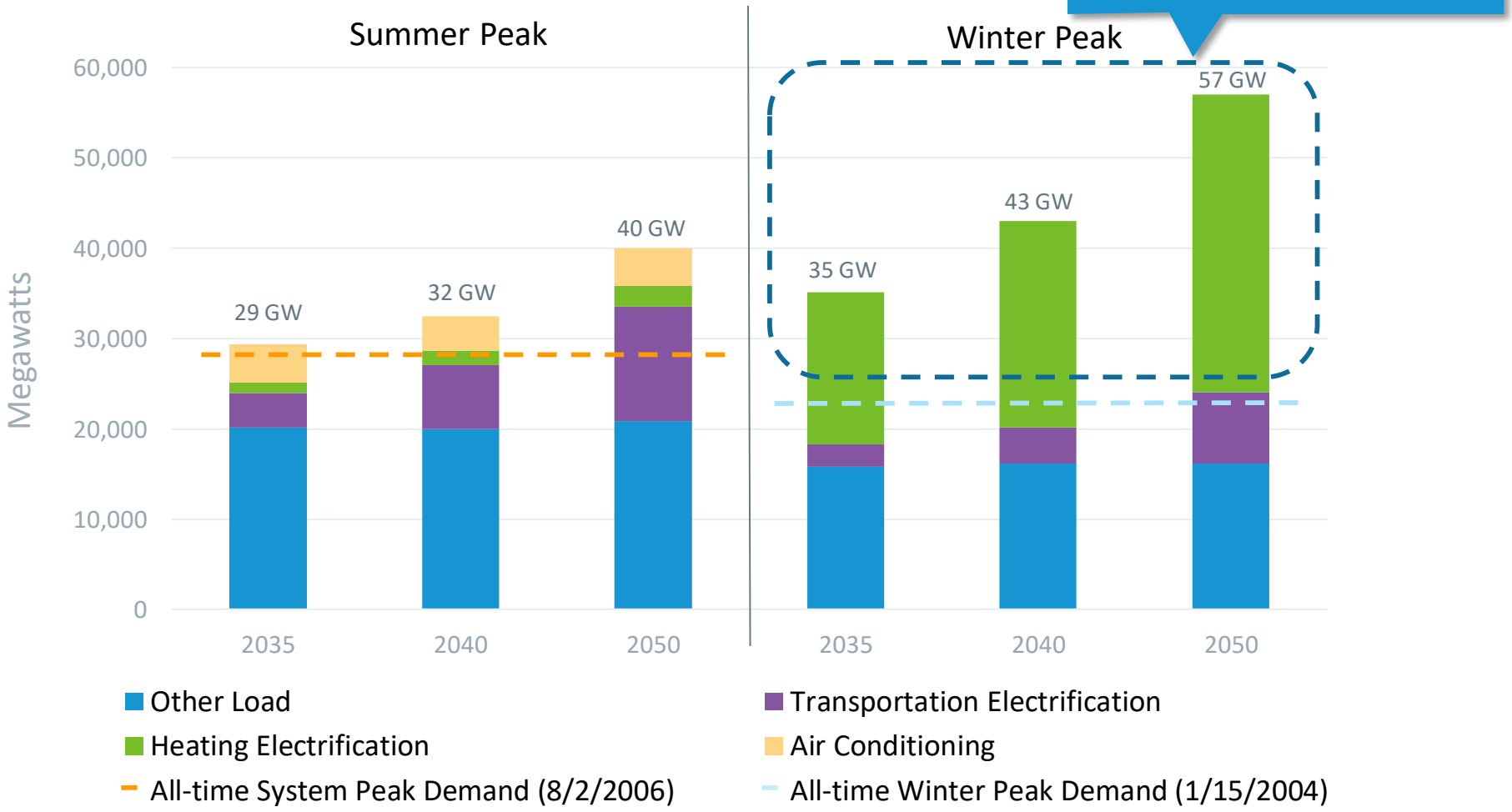
Since 2013, approx. **7,000 MW** of generation have retired or announced plans for retirement

- Predominantly *coal, oil*, and *nuclear* resources
- 5,000 MW of remaining oil units are *at-risk* of retirement
- Generator retirements occur *on schedule*, but new resources are often delayed
- The region is now dependent on *imported LNG* and *oil* to provide peaking energy supplies in the winter

Source: ISO New England Status of Non-Price Retirement Requests and Retirement De-list Bids (January 2022)

Study Indicates that Demand Will Grow Substantially and Peak in Winter

Region needs to address **energy adequacy** risk to support higher load levels



NEW ENGLAND'S FUEL INFRASTRUCTURE

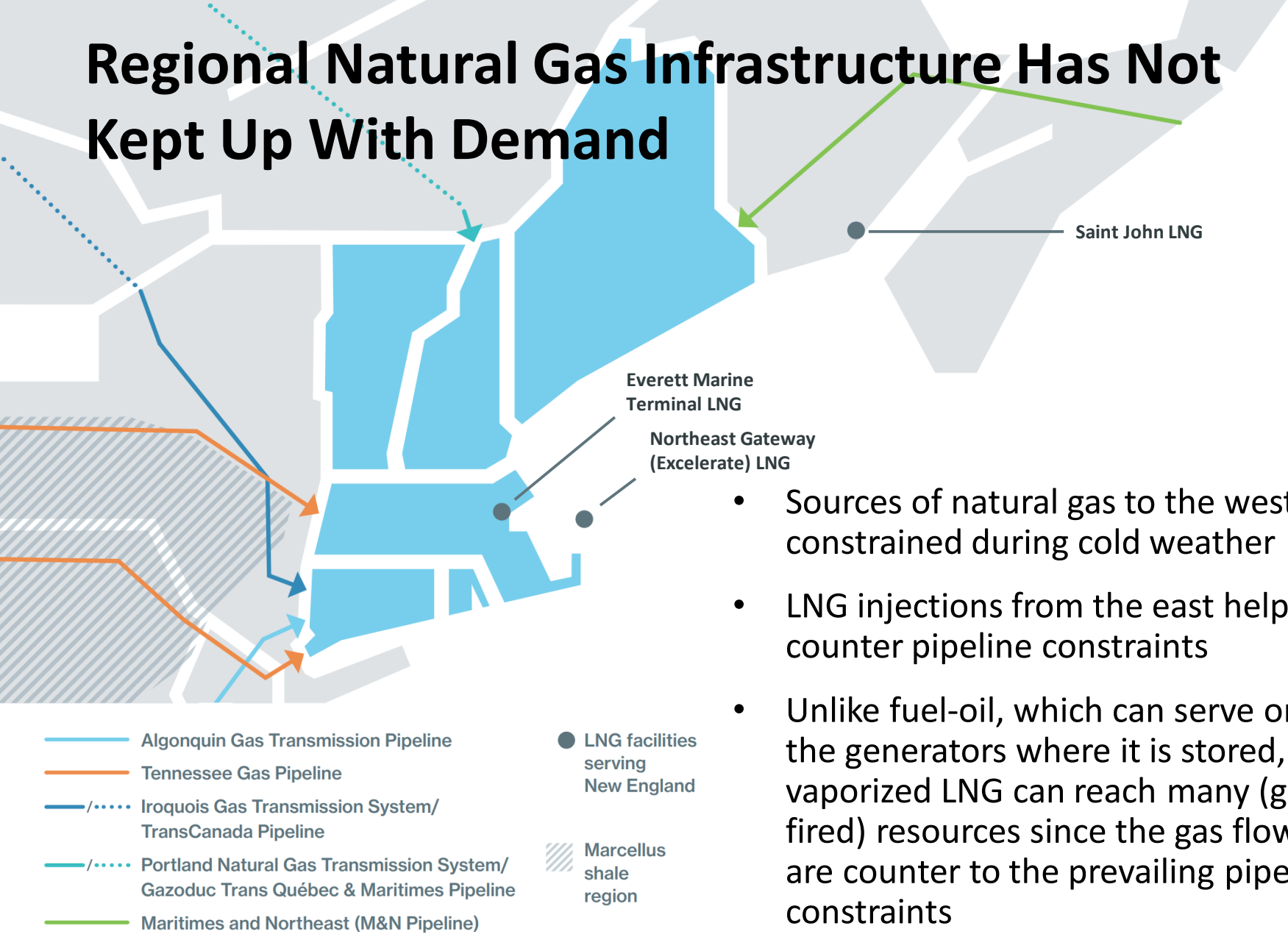
Gas supply does not meet demand in winter; fuel-oil helps, but is limited by its concentration at inefficient units and difficulty with replenishment during extreme cold weather

New England is Natural Gas Constrained

Generation Fuel Mix Shifts During Cold Weather With Changes in Electricity Demand and Economics

- During cold weather, the increased consumption of both natural gas and fuel-oil for heating reduces availability of these fuels for electric generation
- Constrained supply chains exacerbate this concern. New England is at the end of the interstate pipeline system.
- New England does not have indigenous fossil fuel extraction and lacks large-scale fuel storage such as the large underground natural storage facilities found in other parts of the country
- To a large degree, the region's generating fleet relies on fuels imported by ship, truck, pipeline, or barge from elsewhere in the United States or abroad
  - Deliveries of LNG and fuel-oil can take several days to weeks to arrive at regional facilities, or longer in extreme weather conditions

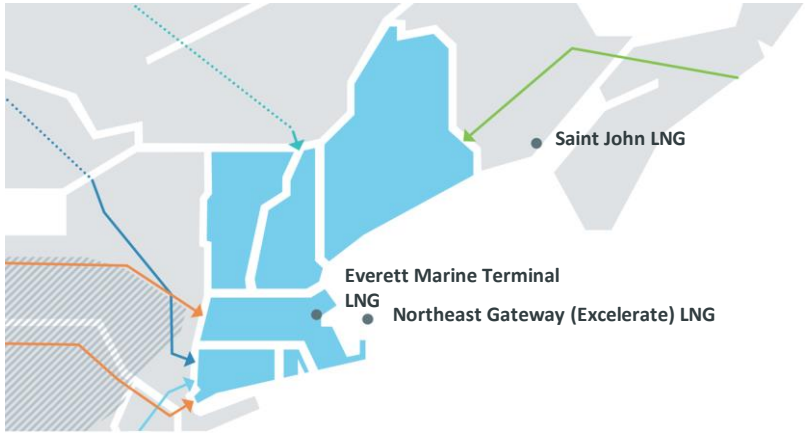
Regional Natural Gas Infrastructure Has Not Kept Up With Demand



- Sources of natural gas to the west are constrained during cold weather
- LNG injections from the east help counter pipeline constraints
- Unlike fuel-oil, which can serve only the generators where it is stored, vaporized LNG can reach many (gas-fired) resources since the gas flows are counter to the prevailing pipeline constraints

LNG Injections Are Critical to Meeting New England's Energy Needs During Cold Weather

- Over the past ten winters (Dec-Feb), the region has averaged ~31.7 Bcf of LNG usage; the highest usage was ~42.9 Bcf in 2012/13, lowest usage was ~20.0 Bcf in 2021/22

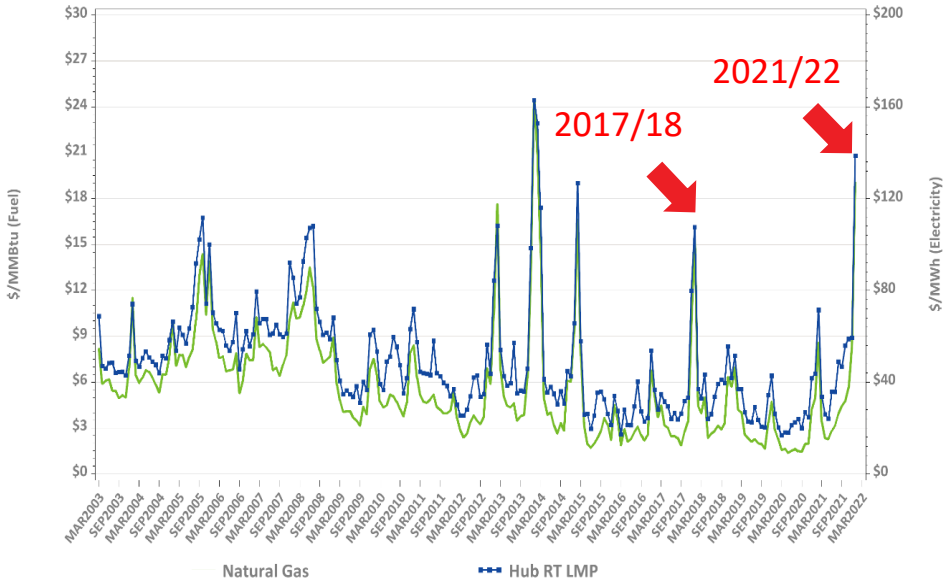


- Everett Marine Terminal (Everett, MA)
  - 3.4 Bcf of LNG storage capability
  - Only source of gas for Mystic 8 and 9 (*scheduled to retire May 31, 2024*)
  - Capable of vaporizing gas to Algonquin and Tennessee Pipelines (~435 Mmcf/d), National Grid LDC (~235 Mmcf/d), and can support trucking LNG (~100 Mmcf/d) to satellite facilities
- Saint John LNG (Saint John, New Brunswick, CA)
  - 10 Bcf of LNG storage capability
  - Capable of vaporizing gas (up to 833,000 MMBtu/day) into the M&N pipeline for use in New England
- Northeast Gateway - Excelerate (offshore of Salem, MA)
  - LNG ships typically holding ~3 Bcf dock at offshore buoy and vaporize gas (capable of up to ~400,000 MMBtu/d) directly into the Algonquin Pipeline hub line

Pipeline Constraints Make New England Dependent on LNG Imports, Resulting in Volatile Natural Gas and Electricity Prices, *and Higher Oil Usage*

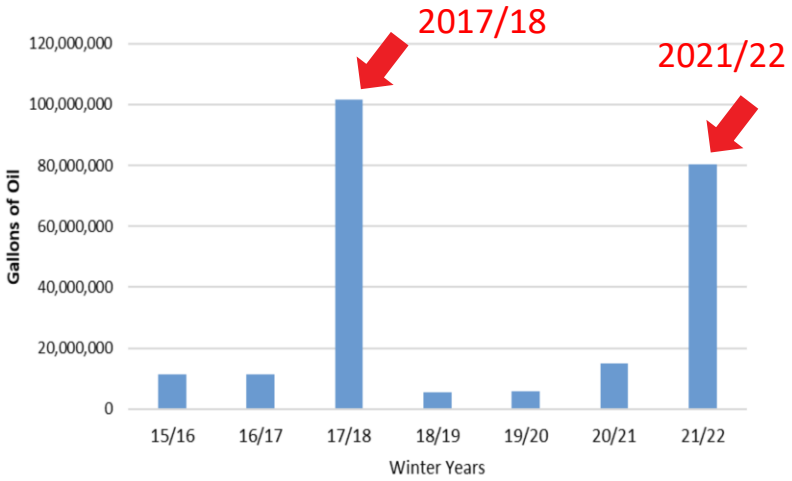
Monthly Avg. Fuel Price and RT Hub LMP

New England experienced 2nd highest January prices



Total Winter Oil Burn Per Year

From 2015/16 to 2021/22



Winter 2021/22 weather was moderate compared to 2017/18, but natural gas prices reached near-all-time highs

Winter 2021/22 fuel-oil burn of ~80 million gallons was three times the previous three winters combined

Regional Fuel-Oil Generating Capability and Storage Capacity Is Significant

But most storage is at older units and replenishment can be difficult in cold weather

- New England has significant fuel-oil fired generating capability
  - Approximately 12,700 MW total (based on winter capability)
  - A majority, ~70%, uses lighter distillate fuel-oil (DFO) while the balance, ~30%, uses heavier residual fuel-oil (RFO)
- Regional dual-fuel capability provides valuable flexibility
  - ~6,600 MW of gas-fired resources are also capable of operating on DFO when natural gas supplies are constrained or when fuel-oil is economic
- Regional fuel-oil storage capacity is approximately 240M gallons
  - New England's six RFO stations account for ~70% of all fuel-oil storage capacity, but only ~30% of all oil-fired generating capability
- Replenishment of fuel-oil inventories is critical during cold weather, yet supply chain logistics can become stressed at the same time (as observed in during the 2017-18 cold snap)
  - Generating capability of DFO resources, which have smaller fuel-oil storage tanks, is likely to diminish very quickly if those resources are operated continuously without replenishment

"CLOSE CALLS" IN PAST WINTERS

New England remains vulnerable to fuel supply shortages and correlated contingencies, particularly during extreme cold weather conditions

“Close Calls” Provide Historical Context For New England’s Winter Challenges

- A cold snap in mid-January 2004 first brought attention to concerns about the region’s fuel security risks
  - Record high winter electricity demand coincided with the unavailability of substantial quantities of generating capacity, much of which was gas-fired
  - The system experienced a deficiency of operating reserve which is normally maintained to ensure the reliability of the system[1]
- In January 2014 the reliability of the New England power system was again threatened by severe cold weather during a polar vortex event
  - Constrained fuel supply infrastructure contributed to significant operational challenges and price volatility
- More recent events (as described on the following slides) once again highlight the vulnerabilities of the region’s natural gas and stored fuel infrastructure and reinforce that New England remains vulnerable to fuel supply shortages and correlated contingencies, particularly during extreme cold weather conditions

1 – Final Report on Electricity Supply Conditions in New England During the January 14 – 16, 2004 “Cold Snap”

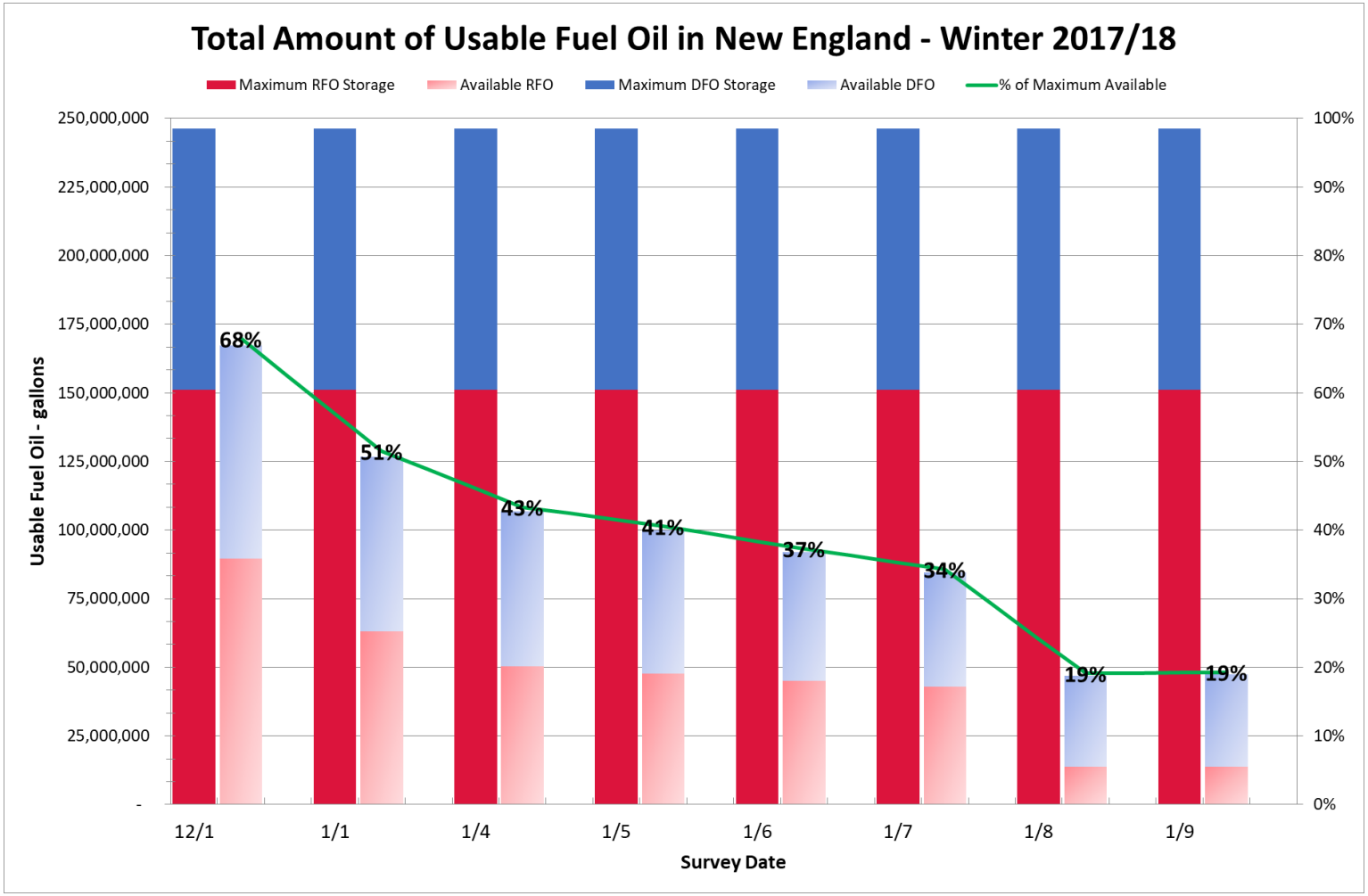
Winter 2017-18 Cold Snap

As the events unfolded, the region was days away from running out of usable fuel

- Between December 25, 2017 and January 8, 2018, all major cities averaged temperatures below normal for at least 13 consecutive days; 10 days averaged more than 10°F below normal
- The two-week period was marked by significant reductions in gas availability
- Gas and oil price inversion led to high fuel-oil usage (*see* next slide), and posturing of several oil-fired resources was required to maintain fuel reserves
- Timely LNG injections to the pipelines from the Everett Marine Terminal and Saint John LNG facilities provided significant reliability benefits
- Oil-fired resources utilized ~84M gallons of oil, more than what was used during all of Winter 2021-22
  - Several units had concerns about reaching federal and/or state emissions limitations
- Weather conditions highlighted the challenges of fuel replenishment during extreme weather conditions, as frozen waterways impacted barge deliveries of fuel-oil and trucking limitations made replenishment difficult

Winter 2017-18 Cold Snap Led to Significant Fuel-Oil Usage

Replenishment Was Challenged by Extreme Weather Conditions



This chart is the ISO's best approximation of usable fuel-oil discounting for outages, reductions, or emissions

January 2022 Events Highlight Risks Associated with Correlated Contingencies During Cold Weather

- During the two-day period of January 11-12, 2022, New England's power system experienced several events that highlight risks associated with correlated contingencies
- Temperatures for the peak hour on 1/11 were forecasted to be 12°F and 11°F for Boston and Hartford, respectively
- Surplus capacity for the peak hour on 1/11 was expected to be ~1,278MW including imports of 1,204MW and 1,448MW from NYISO (NY AC ties) and Hydro Quebec (Phase II), respectively
- As the 1/11 operating day progressed, the following unanticipated events took place:
  - Communication from NYISO that imports to New England would likely be reduced during the peak hour due to constraints in New York
  - The trip of one half of the Phase II facility (followed by uncertainty regarding the continued operation of the other half of the facility)
  - The loss of approximately 1,100MW of generating capability

January 2022 Events, continued…

- On the afternoon of 1/12, the ISO received notice of the loss of the single electric power feed to the Saint John LNG facility
  - The loss of injection from the facility resulted in additional demand on remaining pipelines and concerns that pressures on the M&N pipeline would be impacted
- On both days ISO was able to rely on the commitment of additional generating resources to make up for any actual and/or anticipated shortfalls caused by these unexpected events
- These sequential large contingency losses (or potential losses) did not result in any reliability issues
  - Had these events been closer together or occurred coincident with extreme cold weather conditions there would likely have been issues maintaining reliability

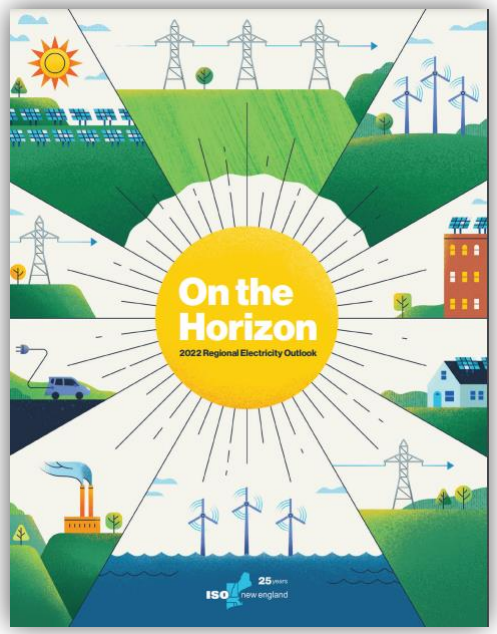
LOOKING FORWARD

Historical Events Are Informative, But the Risks Will Evolve as the Region Transitions

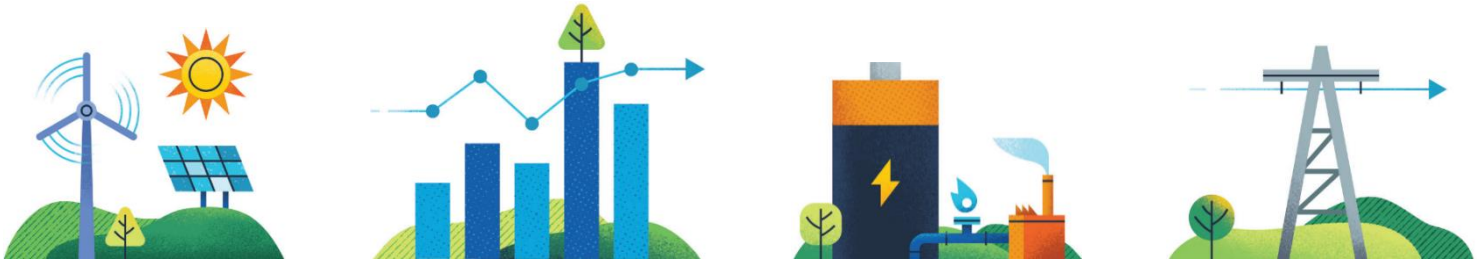
- While the region has been able to manage through significant operational challenges, a confluence of factors including the evolving resource mix, changes to the demand profile due to the electrification of heating and transportation sectors, and the impacts of climate change may further stress system reliability
- ISO and the region have initiated several studies to inform the understanding of risks and decision-making as the transition takes place:
  - Future Grid Reliability Study
  - 2050 Transmission Study
  - Operational Impacts of Extreme Weather Events Study, in collaboration with the Electric Power Research Institute (EPRI)

There Are Four Pillars Necessary to Support a Successful Clean Energy Transition

1. **Significant amounts of clean energy** to power the economy with a greener grid
2. **Balancing resources** that keep electricity supply and demand in equilibrium
3. **Energy adequacy**—a dependable energy supply chain and/or a robust energy reserve to manage through extended periods of severe weather or energy supply constraints
4. **Robust transmission** to integrate renewable resources and move clean electricity to consumers across New England

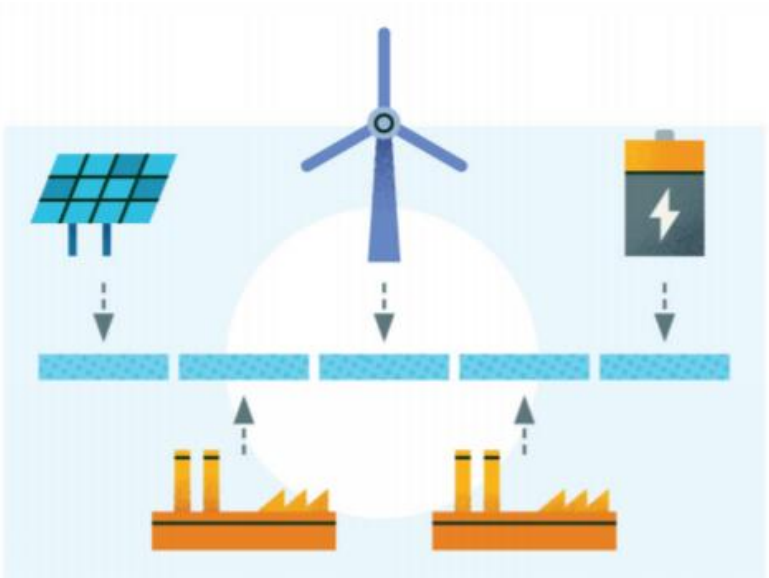


2022 Regional Electricity Outlook



New England Will Need Balancing Resources to Keep Electricity Supply and Demand in Equilibrium

- Variable, renewable resources will eventually become the new "baseload" resource and produce most of the electrical energy
- Balancing resources will be necessary to "*fill in*" the energy gaps, which may last from seconds to weeks, and occur when renewable resources are not available or are not producing at full capacity
- Balancing resources will continue to be dependent on natural gas and other stored fuels as an energy source until the region develops clean, long duration energy sources



Conclusions

- New England has vast renewable energy potential
  - Large-scale onshore and offshore wind development
  - Additional hydropower from Québec
  - Elective transmission projects (e.g., renewables in Northern Maine)
- New England needs a plan to ensure energy adequacy to fully support the region's transition to clean energy resources and the electrification of transportation and heating sectors
- New England needs to ensure that we retain enough existing infrastructure, and stabilize fuel supply chains until clean energy is available in sufficient quantities

New England Winter Gas-Electric Forum

Panel 2: Concerns for Winter 2022/23 and Future Winters

Mike Knowland

MANAGER, OPERATIONS FORECAST AND SCHEDULING

ISO and Regional Stakeholders Will Continue to Assess Energy Adequacy

- Energy Adequacy will continue to be a concern beyond this winter because of limited infrastructure and vulnerability to large source-loss contingencies, which short-term programs will not address
- As a longer-term effort, the ISO is assessing the risks of extreme weather via the Operational Impacts of Extreme Weather study, which is being conducted in collaboration with EPRI and discussed with stakeholders
  - With those study results, the region then can consider various options for addressing identified risks (from infrastructure investments to wholesale market designs)
- LNG imports are critical to meeting New England's energy needs during cold weather
  - The region is dependent on global cargoes arriving at import terminals in Everett, Massachusetts and Saint John, New Brunswick
  - The region has occasionally received cargoes from Excelerate Energy at the Offshore Buoy
  - For the foreseeable future, LNG is important as the region transitions to clean energy

ASSESSMENT OF WINTER 2022/23

A supplemental program would be expensive, would not address the region's core energy adequacy issues, and could undermine aggregate market performance

Meanwhile, the ISO's actions, including retention of the Mystic units and their associated LNG facility and the implementation of a 21-day look-ahead, will position the region as well as possible, given the circumstances

Assessment of Winter 2022-2023

- The ISO performed an assessment of winter 2022-2023 and presented its recommendations to stakeholders in July 2022
  - ISO conducted an operational energy analysis with inputs based on recent fuel surveys and discussions with resource owners regarding expected fuel inventories and replenishment strategies for facilities with stored fuel capabilities
- The assessment concluded that:
  - ISO expects to be able to operate through a mild winter reliably
  - ISO expects to be able to operate through a moderate winter reliably, but may rely on established capacity deficiency procedures (OP-4)
    - This is equivalent to the 2017/18 winter
  - More extreme cold weather will require deliberate actions to maintain the integrity of the interconnected bulk power system, including stored fuel replenishment, environmental and transportation waivers, coordinated cross-sector public appeals for conservation, and the potential for shedding of firm load
    - This is equivalent to the 2013/14 winter

Assessment of Winter 2022-2023, continued

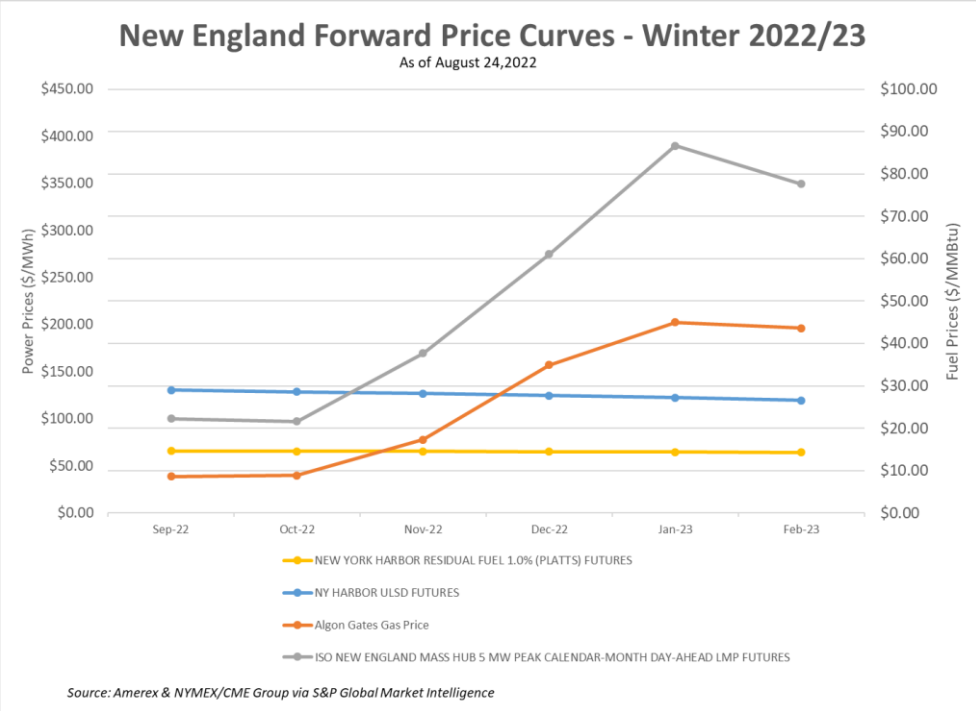
- ISO reviewed the pros/cons of instituting a 2022/23 program based on past Winter Reliability Programs or the upcoming Inventoried Energy Program
  - Neither program is expected to provide sufficient benefits given prevailing market conditions (next slides)
  - They may undermine the performance of the market and other resources' performance incentives
  - The costs are significant
- Given these issues, the ISO will rely on prior measures taken to enhance regional energy adequacy

Fuel and Energy Prices Suggest Market Signals Will Incent Fuel Procurements for Upcoming Winter

- The price spread between forward electricity and fuel for winter 2022/23 is sufficiently high that oil-fired units could 'lock-in' winter margin by selling electricity forward and buying fuel for the winter now (and likely through fall)
- These incentives exist without any program in place for winter 2022/23 that provides further revenues associated with the procurement of fuel
- Based on recent replenishment activities and discussions with resource owners, ISO anticipates more replenishment prior to winter
  - Additional fuel-oil replenishment is expected to increase the region's aggregate fuel-oil inventory from ~77.4M gallons (~32.5% of max) to ~110M gallons (~46% of max) prior to winter

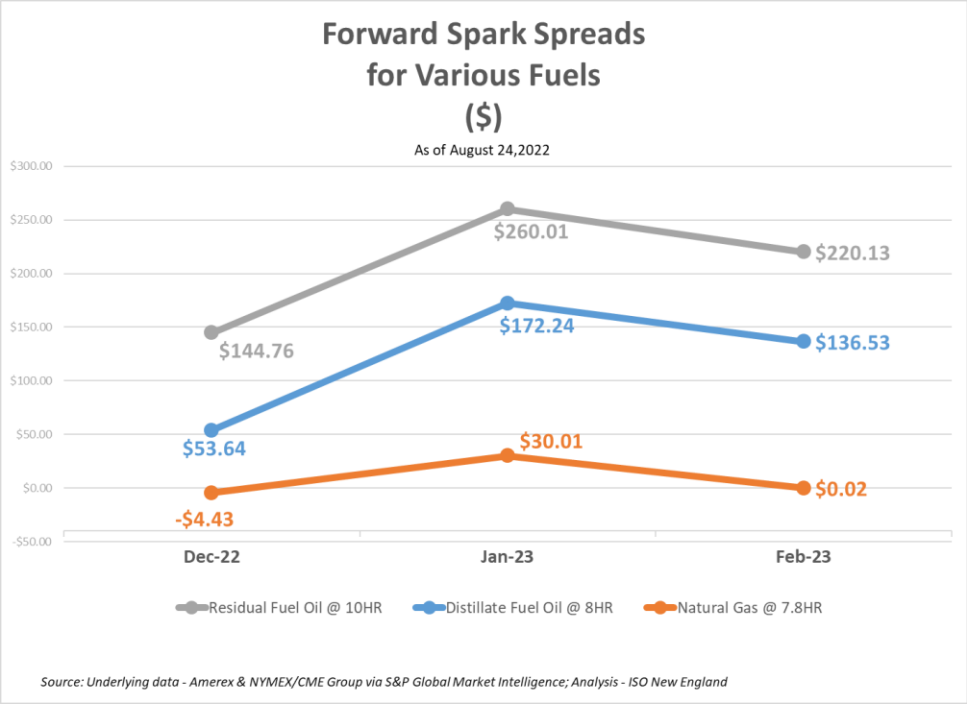
Winter 2022/23 Forward Markets Outlook

- On-peak, winter, Day-Ahead LMP's are trading above $300/MWh
- Winter Algonquin Citygate Natural Gas is trading above $40/MMBtu
- Fuel-oil is a less expensive winter fuel than natural gas in the forward markets



Winter 2022/23 Forward On-peak Spark Spreads

- DFO is "in the money" at typical New England plant heat rates (RFO even more so)
  - E.g., an 8 heat rate unit earns expected profits of $95 per MWh when buying oil and selling energy in January
- Current forward markets allow DFO/RFO generators to hedge price risk and lock-in healthy margins for the upcoming winter
- Strong market signal for generators to acquire fuel oil ahead of winter even without a winter program



Note: In the above chart, HR = Heat Rate, expressed in MMBtu/MWh

LNG Capabilities and Expectations

- Unlike fuel-oil, which can serve only the generators where it is stored, vaporized LNG can reach many (gas-fired) resources since the gas flows counter to prevailing pipeline constraints
  - This makes LNG storage more versatile than equivalent oil
- Each 3 Bcf LNG tanker has the energy equivalent of 20M gallons of fuel-oil
  - ISO expects ~110M gallons of fuel-oil for winter
- Over the past ten winters (Dec-Feb), the region has averaged ~31.7 Bcf of LNG usage; the highest usage was ~42.9 Bcf in 2012/13, lowest usage was ~20.0 Bcf in 2021/22
- For winter 2022/23, the ISO expects LNG availability to be close to recent historical averages

Importance of Mystic and Everett

- New England is retaining Mystic 8 & 9 under a Cost-of-Service agreement (until June 1, 2024)
  - Approximately 1,700 MW of generation within an import constrained area
- Retention of Mystic 8 & 9 includes Everett LNG
  - 3.4 Bcf of LNG storage in the largest load center in New England with the connection points and necessary equipment to vaporize gas to two major natural gas pipelines as well as the gas LDC in Boston.
  - In addition to serving 1,700 MW at Mystic station Everett is capable of injecting gas to the system equivalent to 2,700 MW of generation, thereby providing a total daily quantity of gas equivalent of 4,400 MW to the New England power system

WINTER 2022-23: RELIANCE ON OPERATIONS AND MARKETS IMPROVEMENTS

Markets enhancements have created flexibility and incentives for generators, and enhanced situational awareness practices, including the 21 day forecast and Gas Utilization Tool, provide visibility into system conditions and fuel availability

Measures To Enhance Regional Energy Adequacy

- ISO has worked with regional stakeholders to enhance energy adequacy and situational awareness, including:
  - Market enhancements such as Energy Market Opportunity Cost and Energy Market Offer Flexibility mechanisms to better reflect fuel cost in electric market offers, and a Pay-for-Performance incentive in the Capacity Market to create significant financial risk for resources that cannot deliver energy during shortage conditions
  - Better alignment of the New England day-ahead market timeline closing and posting before the NAESB Timely cycle nomination deadline
  - Advanced operational awareness measures and energy forecasting processes, including the implementation of, and on-going refinements to, the 21-Day Energy Assessment (discussed further in this section)

Multi-faceted Approach to Promoting Readiness for Winter Operations

- Situational awareness enhancing outreach and communication activities including Generator Winter Readiness Surveys and pre-winter seminars
- Routine coordination efforts with interstate natural gas pipelines and annual assessment of critical natural gas infrastructure facilities
- Frequent generator fuel and emissions surveys before and during the winter seasons to monitor fuel inventories and replenishment plans by station and in the aggregate
  - Surveys may range from weekly to daily based on system conditions
- Performance of seasonal system capacity and energy outlooks, including long-term (90 day) winter energy assessments and periodic 21-day energy assessments

ISO New England's Industry Leading Gas-Electric Coordination Process

- ISO New England has a long history of coordination between gas pipeline and electric system operators
  - Closely in alignment with the NERC *Reliability Guideline: Gas and Electric Operational Coordination Considerations*
  - FERC Order 787 allows for sharing of non-public operational information; and ISO New England Information Policy and Electric/Gas Operations Committee Operations Communication Protocol support Order 787
  - ISO shares forecasted hourly generator dispatch with pipelines, aggregated and allocated to specific gas pipeline meters by name/number
  - Natural gas pipeline information is displayed to ISO System Operators on the Gas Utilization Tool
  - Evaluation of scheduled gas vs. forecasted generation provides enhanced situational awareness to ISO System Operators
  - Direct communication with gas control is key to understanding the indications from all reports and displays available to operators

https://www.nerc.com/comm/RSTC_Reliability_Guidelines/Gas_Electric_Guideline.pdf

ISO's Gas Utilization Tool: Real-Time Situational Awareness of Interstate Gas Pipelines

- ISO-NE has developed a suite of tools to provide an awareness of gas-electric conditions to operators at ISO and the individual pipelines Gas Control operations centers
  - Gas reporting and calculation tools are used to highlight deficiencies in supply for the expected demand on the pipelines at generators
  - Forward looking analyses estimate the amount of gas generation that would be unavailable due to inadequate gas supply, by estimating the demand for gas by industrial and local distribution gas distribution companies' customers, as well as gas-fired generators, compared to the capability of the natural gas pipeline system, including LNG injections into the regional gas infrastructure.
- Gas Utilization Tool displays gas pipeline information on a one-line diagram to enhance awareness of gas flows in the region

21-Day Energy Assessment & Alert Thresholds

- In order to identify and communicate potential reliability issues, ISO performs a weekly 21-day energy assessment and posts the results on the public website
  - Based on latest responses to generator surveys, planned outages, weather forecast, load forecast, and fuel availability assumptions
  - Ability to simulate multiple scenarios each day
- Proceduralized thresholds for declaring Energy Alerts or Energy Emergencies based on the assessment results showing the need for voltage reductions, public appeals, or load management actions in specific timeframes
  - Days 6 through 21: **Energy Alert**
  - Days 1 through 5: **Energy Emergency**

Requests for Government and Cross-Sector Assistance

- ISO and resource owners may request state and federal government assistance
- In order to minimize or alleviate need for extreme measures such as shedding of firm load, ISO and/or resource owners may request:
  - Jones Act waivers to move available LNG from Maryland and Louisiana to New England
  - Waivers of emissions and/or air permitting limitations (if alternate fuel is available) under 202c of the Federal Power Act or state statutes
  - Waivers of Department of Transportation restrictions on drivers for fuel deliveries
  - Activation of military staff and equipment to move fuel supplies
- ISO may request multi-day emergency conservation measures under OP-4 and request states to assist with cross-sector energy appeals for conservation of liquid fuels and natural gas

CONCLUSION

Conclusions

- ISO New England expects to reliably serve demand through a mild to moderate winter
- Based on recent discussions with resource owners and considering market conditions and incentives, ISO is anticipating that stored fuel replenishment will occur in advance of the winter. Throughout the balance of the year and winter season, ISO will be closely monitoring natural gas pipeline conditions as well as regional LNG and fuel oil inventories. ISO will communicate energy adequacy concerns via the 21-Day Energy Assessment process and may request government and cross-sector assistance should the need arise.
- A number of factors continue to impact the operation and energy adequacy of the New England power system including, but not limited to, changing weather norms and more extreme weather conditions, fuel infrastructure capabilities, and most notably, the resource mix
- Market enhancements and operational tools have been developed over the past several years to maximize the utilization of the existing infrastructure and give system operators better visibility of system conditions
- New England depends on LNG to serve winter natural gas demand now and will continue to rely on LNG while managing through the transition to a clean energy future