Final Gas System Long-Term Plan Addendum

Case 24-G-0248
July 2, 2025

nationalgrid

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Acronyms and Abbreviations

AE - Accelerated Electrification
Bcf - Billion Cubic Feet
BQI – Brooklyn Queens Interconnect
CEV - Clean Energy Vision
CLCPA - Climate Leadership and Community Protection Act
CNG - Compressed Natural Gas
DAC - Disadvantaged Community
DPS – Department of Public Service
Dth – Dekatherm
EPA – Environmental Protection Agency
ExC - Enhancement by Compression
FERC - Federal Energy Regulatory Commission
GDP - Gross Domestic Product
GHG – Greenhouse Gas
GLF - Gas Load Forecast
IPCC - Intergovernmental Panel on Climate Change
LAI – Levitan & Associates, Inc.
LDC - Local Distribution Company
LNG - Liquefied Natural Gas
LTP - Long-Term Plan
MDth - Thousand Dekatherms
MRI - Metropolitan Reliability Infrastructure
$MTCO_2e$ – Metric tons of carbon dioxide equivalent
NESE - Northeast Supply Enhancement
NERC - North American Electric Reliability Corporation
NJDEP - New Jersey Department of Environmental Protection
NO_2 - Nitrogen Dioxide
NPAs- Non-pipe alternatives
NPCC - Northeast Power Coordinating Council
NYISO - New York Independent System Operator
NYPSC - New York Public Service Commission
NYSERDA - New York State Energy Research and Development Authority
NYSDEC - New York State Department of Environmental Conservation
PADEP – Pennsylvania Department of Environmental Protection
PA - PA Consulting
PM - Particulate Matter
Psig - Pounds per Square Inch Gauge
PV – Present Value
RFI - Request for Information
RFP - Request for Proposal
SCC - Social Cost of Carbon
SO_2 - Sulfur Dioxide
TETCO – Texas Eastern Transmission Corporation

1. Executive Summary

1.1. National Grid's Commitment to Reliable, Affordable, and Sustainable Energy

Natural gas and electricity are essential for daily life and economic activity. New York families and businesses depend on natural gas to meet more than 68% of heating demand, and to fuel nearly half of all electric generation in New York State.[1] Natural gas is most essential in the winter, when energy demand is highest, and frigid temperatures can make home heating a matter of life and death. On the coldest days of the winter New York City's gas network provides nearly three times the energy delivered by the electric grid on a peak summer day, underscoring its foundational role in maintaining energy system reliability.[2]

National Grid's gas network is a critical component of the region's energy infrastructure. As a regulated public utility, National Grid is responsible for ensuring our customers have access to the gas they need today and in the future. We are committed to fulfilling this important public service obligation to our customers and to the people of New York, and to working with regulators, policymakers, and stakeholders to achieve our shared goals for an affordable and sustainable energy future.

1.2. Our Long-Term Plan

National Grid filed its 2025 Final Gas System Long-Term Plan ("LTP") on March 7, 2025.[3] This addendum is an informational supplement to the LTP. It does not alter the content of the LTP itself or its recommendations.

Per the Commission's order establishing the LTP process, the LTP's purpose is to "establish planning and operational practices that best support customer needs and emissions objectives while minimizing infrastructure investments and ensuring the continuation of reliable, safe, and adequate service to existing customers."[4]

In compliance with the Commission's order, National Grid's LTP assesses the benefits and costs of potential pathways for achieving New York's and National Grid's shared emissions goals and recommends policy and regulatory innovations necessary to put those shared goals within reach.[5] The LTP explains that National Grid's gas network needs upgrades to maintain reliability in Downstate New York. Without major reductions in gas use or access to new supply sources, National Grid's LTP states that demand could outpace supply during the coldest winter hours in the coming years, potentially leading to disruptions of gas service during these critical times.[6]

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[1] EIA. (n.d.). *U.S. Energy Information Administration - EIA - independent statistics and analysis*. New York Net Electricity Generation by Source, Feb. 2025. https://www.eia.gov/state/?sid=NY
[2] Pathways to carbon-Neutral NYC: Modernize, Reimagine, Reach. (2021, April). Retrieved from https://www.nyc.gov/assets/sustainability/downloads/pdf/publications/Carbon-Neutral-NYC.pdf
[3] Case 24-G-0248, In the Matter of a Review of the Long-Term Gas System Plans of The Brooklyn Union Gas Company d/b/a National Grid NY, KeySpan Gas East Corporation d/b/a National Grid, and Niagara Mohawk Power Corporation d/b/a National Grid, *Final Gas System Long-Term Plan* (March 7, 2025).
[4] Case 20-G-0131 – Proceeding on the Motion of the Commission in Regard to Gas Planning Procedures; Order Instituting Proceeding. March 19, 2020.
[5] Id.
[6] Id.

The LTP's overarching finding is that any viable pathway to reduce gas system emissions consistent with the targets in New York's Climate Law cannot be achieved under current policy and regulatory frameworks.[7] Given the increased demand for energy that New York is experiencing today, the slower than expected scale of growth in renewable energy, and the likelihood of even greater growth in energy demand in the near future, a careful reexamining of existing policies and regulations is necessary to make progress toward the Climate Law's targets.[8]

Chapter 9 of the LTP includes detailed recommendations for actions that National Grid, policymakers, and regulators can take together to further the innovations necessary to enable a secure and affordable gas decarbonization transition.[9]

Pertinent here, the LTP also identified the potential imbalance between gas supply and demand, and the complex and costly stopgap measures National Grid must rely upon to maintain system reliability during periods of peak demand and/or disrupted supply.[10] Congestion on the pipelines that deliver gas to National Grid's gas distribution system, combined with increasing energy demand by customers served by the Company's network, have significantly increased the risk that severe winter weather and/or a supply disruption will cause large-scale gas outages in Downstate New York, potentially jeopardizing the safety and well-being of the region's residents and businesses.

We look forward to continuing our work with the Commission and stakeholders through the LTP process to develop the new policies necessary to plan and build the energy system of the future. The purpose and scope of this addendum, however, is to address urgent challenges and emergent potential solutions to near-term system reliability – a topic relevant to the LTP but outside the scope of the National Grid's policy and regulatory recommendations and the scenario analysis presented in the Company's LTP filing.

1.3. Addendum to NY LTP Filing

This addendum evaluates the implications, for customers of National Grid's gas distribution system and for energy consumers statewide, of Transcontinental Gas Pipe Line Company, LLC's ("Transco") proposed Northeast Supply Enhancement ("NESE") project, which Transco reinitiated in May 2025 and is currently seeking federal and state permits for construction and operation.[11] Approved by the Federal Energy Regulatory Commission ("FERC") in 2019, NESE would significantly enhance reliability and relieve energy supply constraints in New York City and Long Island by improving Transco's upstream facilities including piping and compression, as well as enabling up to 400 thousand dekatherms per day ("MDth/day") of firm supply from Station 195 to be delivered to the Rockaway Transfer Point, then into Transco's Rockaway Delivery Lateral where Transco interconnects with National Grid's gas distribution system at Floyd Bennett Field ("FBF").[12]

Given the urgent system resiliency challenges outlined in the LTP and reaffirmed in this Addendum, the Company undertook a comprehensive evaluation of NESE's potential impacts on reliability. In

[7] Case 20-G-0131 – Proceeding on the Motion of the Commission in Regard to Gas Planning Procedures; Order Instituting Proceeding. March 19, 2020.
[8] Id.
[9] Case 24-G-0248, In the Matter of a Review of the Long-Term Gas System Plans of The Brooklyn Union Gas Company d/b/a National Grid NY, KeySpan Gas East Corporation d/b/a National Grid, and Niagara Mohawk Power Corporation d/b/a National Grid, Final Gas System Long-Term Plan (March 7, 2025).
[10] Id.
[11] Transco, LLC. "Petition for Supplemental Certificate for the Northeast Supply Enhancement Project," Docket No. CP17-101-003, filed June 6, 2025. FERC eLibrary.
[12] Case 24-G-0248, In the Matter of a Review of the Long-Term Gas System Plans of The Brooklyn Union Gas Company d/b/a National Grid NY, KeySpan Gas East Corporation d/b/a National Grid, and Niagara Mohawk Power Corporation d/b/a National Grid, Final Gas System Long-Term Plan (March 7, 2025).

addition, the assessment considered the statewide benefits and costs associated with NESE to ensure a thorough understanding of its overall value to the system and customers.

Several recent material developments external to National Grid are also considered in this evaluation:

- Reports from the Northeast Power Coordinating Council ("NPCC") and from the New York Independent System Operator ("NYISO") have reset expectations around electric sector reliability risks today and in the future as New York makes progress toward the Climate Law's emissions reduction targets.[13,14,15]

- Offshore wind deployment has been significantly delayed, increasing the reliance on existing gas-fired power generation.[16,17]

- Large energy-intensive economic development projects are driving up demand for energy today while demand for electric vehicles and heat pumps will increase in the coming decades, straining electric resource adequacy and increasing the need for gas-fired generation.[18]

The Commission's order instituting the LTP process establishes guidelines for scenario analysis and the comparison of "traditional capital projects" against alternatives.[19] Given the urgent need to address risks to gas system resiliency, the renewed consideration of Transco's NESE proposal, and the fact that the Commission's review of the Company's LTP is in its final stages, the Company is submitting this Addendum to provide the Commission with its latest findings on the potential benefits of NESE. The Company respectfully requests that the Commission review and acknowledge the findings and recommendations presented in this evaluation.

1.4. Urgent Energy System Reliability Risks

Numerous recent reports highlight the fact that gas supply infrastructure constraints pose an urgent threat to the reliability of the energy system in Downstate New York. Recommendations presented to the State Energy Planning Board in June 2025 by NYSERDA state that "[r]eliability and resiliency should be considered when evaluating investment in new gas supply infrastructure, including the potential to reduce vulnerability to upstream supply disruptions or other gas system constraints."[20] The FERC and the NYISO have raised alarms about the potential for significant electric system reliability challenges in the region due to insufficient gas supply.[21]

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[13] Northeast Power Coordinating Council ("NPCC"). "Winter 2024-2025 Reliability Assessment." https://www.npcc.org/library/seasonal-assessments

[14] NYISO. (2025). Power Trends 2025. Retrieved from NYISO: https://www.nyiso.com/documents/20142/2223020/2025-Power-Trends.pdf

[15] New York ISO. (2024, November 19). 2024 Reliability Needs Assessment (RNA). Retrieved from New York Independent System Operator: https://www.nyiso.com/documents/20142/2248793/2024-RNA-Report.pdf

[16] US EIA. (2024, July 9). Cancellations reduce expected U.S. capacity of offshore wind facilities - U.S. Energy Information Administration (EIA). Today In Energy. https://www.eia.gov/todayinenergy/detail.php?id=62445

[17] Bolyard, J. (2025, January 31). Increased reliance on natural gas for power generation. https://www.trioadvisory.com/resources/increased-reliance-natural-gas-power-generation

[18] NYISO. (2025). Power Trends 2025. Retrieved from NYISO: https://www.nyiso.com/documents/20142/2223020/2025-Power-Trends.pdf

[19] Case 23-G-0147, In the Matter of a Review of the Long-Term Gas System Plans of Consolidated Edison Company of New York, Inc. and Orange and Rockland Utilities, Inc., Order Regarding Long-Term Natural Gas Plan and Requiring Further Actions (N.Y. Pub. Serv. Comm'n, Sept. 20, 2024)

[20] New York State Energy Planning Board, *State Energy Plan Pathways Analysis Presentation*, June 25, 2025, Slide 65. Available at: https://energyplan.ny.gov

[21] NYISO. (2024, November 19). 2024 Reliability Needs Assessment (RNA). Retrieved from New York Independent System Operator: https://www.nyiso.com/documents/20142/2248793/2024-RNA-Report.pdf

The gas network operates without a contingency margin, with no excess capacity reserved for emergencies like unexpected demand spikes or supply disruptions. Inadequate upstream gas supply infrastructure has therefore left New York City and Long Island at an increased risk of a catastrophic gas system outage. Temporary solutions, such as mobile compressed natural ("CNG") gas injection sites, are critical for peak day operations but are not scalable beyond current operations.[22] Maintaining service during high-demand conditions can require up to 240 CNG truck deliveries per day navigating ice- and snow-covered roads, an approach that is logistically complex, weather-dependent, and inherently risk-intensive.[23]

The risk of gas outages was starkly highlighted during Winter Storm Elliott in December 2022, when extreme cold led to increased demand and supply disruptions, forcing National Grid to curtail service to interruptible customers and activate emergency measures to maintain firm service.[24] According to Jim Robb, President and CEO of the North American Electric Reliability Corporation ("NERC"), "had the weather not warmed up on Christmas Day, it is highly likely that natural gas service would have been disrupted to New York City."[25]

The consequences of service loss during a cold weather event would be severe. If gas pressure falls below minimum operating thresholds, service disruptions could spread rapidly across portions of the network. When pressure in a gas network collapses, each customer location must be physically shut off, tested, and safely relit by trained personnel. These procedures are resource-intensive, especially in densely populated areas like Downstate New York, and can take days, weeks, or months to complete, impacting all customers including the elderly, medically dependent individuals, and those without alternate heat sources.[26,27]

Events like Winter Storm Elliott are likely to be more frequent and more severe in the future due to climate change. The Intergovernmental Panel on Climate Change ("IPCC") assigns a "high confidence" to the scientific evidence that weather "events with a low likelihood in past and current climates will become more frequent, and there is a higher chance of occurrence of *historically unprecedented* [emphasis added] events and surprises."[28] The Company has also experienced and observed reliability threats on "blue sky" days when weather is not a factor, from damages to gas infrastructure caused by third-parties to upstream equipment failures.

Energy system reliability is essential for economic competitiveness. New York's economy is growing faster than any state in the Northeast, driven by investments in energy-intensive sectors such as artificial intelligence and cloud datacenters, and advanced manufacturing.[29] Resolving energy supply constraints and associated system reliability risks is therefore highly consequential for New York's economic future. As the global race for AI and processing capacity heats up, ensuring New York can

[22] Case 24-G-0248, In the Matter of a Review of the Long-Term Gas System Plans of The Brooklyn Union Gas Company d/b/a National Grid NY, KeySpan Gas East Corporation d/b/a National Grid, and Niagara Mohawk Power Corporation d/b/a National Grid, Final Gas System Long-Term Plan (March 7, 2025).
[23] Id.
[24] FERC & NERC. (2023, November 7). FERC, NERC release final report on lessons from Winter Storm Elliott. Retrieved from https://www.ferc.gov/news-events/news/ferc-nerc-release-final-report-lessons-winter-storm-elliott
[25] Id.
[26] Id.
[27] Id.
[28] Seneviratne, S.I., et al. 2021. Weather and Climate Extreme Events in a Changing Climate. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., et al. (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 1513–1766. Available at: https://www.ipcc.ch/report/ar6/wg1/chapter/chapter-11/
[29] U.S. Bureau of Economic Analysis. (2025, March 28). Gross Domestic Product by State and Personal Income by State, 4th Quarter 2024 and Preliminary 2024. https://www.bea.gov/sites/default/files/2025-03/stgdppi4q24-a2024.pdf

attract and retain these investments and meet the needs of the state's growing economy on time and reliably is a critical challenge.

1.5. Rationale for Considering Infrastructure-based Solutions like NESE

National Grid's duty as a regulated public utility is to ensure the reliability, resilience, and safety of the energy networks depended upon by the families and businesses it serves. In addition to reliability challenges discussed above, gas supply constraints have forced the Company to rely on stopgap emergency measures like trucked CNG to prevent a catastrophic gas outage. National Grid is proud of its workers and contractors whose tireless efforts have kept the gas flowing to our customers even under extreme conditions, but the risk of a winter peak supply shortfall in Downstate New York is increasing, and that risk will accelerate as demand for energy continues to grow.

National Grid is obligated to evaluate any proposal to remediate any imbalance between the demand for energy and the supply of natural gas into our distribution network, and to share the findings of that evaluation with the Commission.[30] Together with Iroquois Gas Transmission System's ("Iroquois") Enhancement by Compression Project for which the Company has already subscribed for service, Transco's NESE is the only material near term proposal that National Grid is aware of to address Downstate New York's looming energy system resilience crisis.[31] While the Iroquois ExC Project provides critical deliverability and reliability to the eastern end of the Company's service territory, NESE offers similar benefits to the western end of the system. Both projects comprehensively improve reliability of gas service to all National Grid's Downstate New York customers.

NYISO warns that without additional gas supply, winter electric reliability deficiencies could emerge as soon as 2029–30, making near-term action increasingly urgent.[32]

Key Findings:

Net Benefit: This evaluation finds that the aggregate benefits of NESE – enhancing energy system reliability, lowering energy costs, and reducing greenhouse gas and air pollution emissions – are likely significantly greater than the project's cost to National Grid's gas customers if National Grid were to enter into an agreement with Transco to deliver gas transported by NESE to customers in New York.[33] The project has the potential to generate **net societal benefits of approximately $4 billion or more** between 2028 and 2043.[34]

- *Energy System Reliability:* NESE would reduce reliance on single points of failure, address a potential near-term supply shortfall, lessen dependence on trucked gas operations, and help address electric system supply deficiencies.
    - NESE would increase the reliability of Transco's critical gas transmission system by adding compression and pipeline loops. This reduces the probability of a catastrophic gas outage in Downstate New York, protecting against the loss of life and significant economic costs such an event would cause. For example, system degradation would have been less severe had NESE been operational at the time of Winter Storm Elliott.

[30] Case 20-G-0131, Order Instituting Proceeding (issued March 19, 2020).
[31] Note that the Iroquois ExC project, while not sufficient to resolve supply constraints, would remain necessary to ensure system reliability if NESE were to be put into service.
[32] NYISO. (2024). Power Trends 2024. Retrieved from NYISO: https://www.nyiso.com/documents/20142/2223020/2024-Power-Trends.pdf
[33] Levitan & Associates, Inc. (2025) Assessment of Economic Benefits in NYISO's Wholesale Electricity Market Attributable to Transco's Northeast Supply Enhancement Project.
[34] Id.

- The project would reduce the risk of supply shortfalls during peak demand by increasing firm supply by about 13% relative to current Downstate New York contracted capacity[35] while reducing reliance on trucked gas, enhancing the gas network's ability to deliver gas where and when our customers need it.
- Further, NESE would enable additional gas supplies to be made available to generators during periods when firm gas customers do not require them, which would enhance fuel security and support electric system reliability at a time of growing deficiencies in these areas.

- *Energy Affordability:* NESE would help lower electricity bills for New Yorkers by as much as $6 billion with $2.75 billion in savings flowing directly to Downstate residents (Zones J-K).[36]
  - Generator fuel costs are a primary determining factor for the price of electricity, and NESE would increase the supply of natural gas relative to demand, pushing down the price of natural gas and of the electricity it generates.[37]
  - Analysis by Levitan & Associates, Inc. ("LAI") suggests NESE can save New Yorkers $6 billion on electricity costs between 2028 through 2043.[38]
  - NESE would also allow National Grid to avoid procuring supplies for three of its CNG sites, avoiding approximately $48.3 million in annual gas supply costs.[39]

- *Economic Development:* NESE would directly create jobs and add to Gross Domestic Product ("GDP"), reduce electricity costs for residential and commercial customers, and ensure energy system capacity to support economic development including large loads.
  - The FERC concluded in 2019 that "the overall economic effects resulting from the Project would be beneficial at the state, local and county levels" and that the project "would create economic stimulus to the affected areas."[40] Project construction would support 3,186 direct and indirect job-years in the tri-state area and generate approximately $22.7 million in state and local tax revenue.[41] Transco estimated the project would contribute $23.7 million to New York State's GDP.[42]
  - Notably, these estimates do not include benefits to the New York economy (e.g., jobs, tax base, induced demand) from potential new large loads that would not otherwise be able to access energy they need for their operations.

- *Environmental Benefits*: NESE would reduce emissions of greenhouse gases ("GHG") and other air pollutants.
  - NESE could reduce GHG emissions by approximately 13,000 tons from 2025-2042, the equivalent of taking 2,811 cars off the road for a year, by enabling conversions from higher-emitting fuels like residual and distillate heating oil, and by reducing diesel fuel consumed by CNG trucks.[43]
  - Oil-to-gas conversions and reduced trucking will also reduce air pollution, including emissions of PM 2.5, Nitrogen Oxides ("NO_x"), Sulfur Oxides ("SO_2"), and mercury,

[35] FERC, Document No. 14971390, available at: https://elibrary.ferc.gov/eLibrary/filedownload?fileid=14971390
[36] Levitan & Associates, Inc. (2025) Assessment of Economic Benefits in NYISO's Wholesale Electricity Market Attributable to Transco's Northeast Supply Enhancement Project.
[37] Id.
[38] Id.
[39] Id.
[40] FERC, Final Environmental Impact Statement for the NESE Project, Part 1, Docket No. CP17-101-000, issued January 25, 2019. Available at: https://www.ferc.gov/sites/default/files/2020-05/part-1.pdf
[41] Id.
[42] Williams Transcontinental Pipeline Company. (2017, June). Economic impacts analysis (Attachment 5). Retrieved from http://northeastsupplyenhancement.com/wp-content/uploads/2017/06/FINAL-Williams-NESE-Analysis-5-24-2017.pdf
[43] Environmental Protection Agency. (2025, June 12). Greenhouse Gas Emissions from a Typical Passenger Vehicle. Retrieved from https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle

improving public health outcomes and quality of life.[44]

Important considerations:

- *Customer Bill Impact:* Transco's preliminary estimate of the cost to construct NESE is approximately $1.064 billion. The Company estimates the project would result in the average National Grid residential gas customer's bill increasing by about 3.5%, or about $7.50 per month.[45] However, the substantial wholesale electric cost savings associated with the project will benefit all New York electric customers, including those who are also National Grid gas customers.

- *Climate Leadership and Community Protection Act ("CLCPA") Compliance:* Building and operating NESE would not delay or impede progress toward National Grid and New York's shared climate and emissions reduction goals. Indeed, as discussed herein, NESE supports emission reduction goals by providing a safer, cleaner and more efficient alternative to the hundreds of trucks carrying CNG throughout New York City during peak periods that would otherwise be required. Nothing in this addendum alters National Grid's long-term plan for a cleaner energy future, and the Final LTP as filed in March 2025 continues to reflect the Company's most current decarbonization scenario analysis, action plan, and recommendations for policy and regulatory action to enable the transition to a clean energy future.[46]

1.6. Delivering for New York's Customers

The evaluation presented in this Addendum concludes that NESE is a timely and effective response to energy system reliability risks in Downstate New York. NESE is projected to increase firm supply by approximately 13%, reduce reliance on potential single points of failure, and lessen dependence on complex CNG operations, thereby enhancing service continuity especially during peak winter conditions and upstream disruptions.

Additionally, NESE aligns with New York and National Grid's affordability goals. According to the Company's evaluation presented in this Addendum, the project has the potential to create net societal benefits between $3.9 billion to $4.4 billion over 15 years, significantly outweighing project costs. The evaluation confirms that NESE will not hinder progress toward CLCPA targets. Instead, it supports emissions reductions and air quality improvements by facilitating fuel-switching and avoiding the use of diesel trucks for CNG supply.

While NESE is not a standalone solution for long-term decarbonization, it complements National Grid's CEV scenario and fits within a phased infrastructure strategy initiated in 2008. The project represents a prudent step to ensure service continuity and support the energy transition. The Company urges the Commission to acknowledge these findings and consider the reliability, affordability, and environmental benefits of NESE within New York's evolving energy landscape. This Addendum does not change the recommendations of the Company's 2025 LTP or its commitment to energy efficiency and non-pipe alternatives but rather addresses immediate reliability risks while aligning with long-term decarbonization goals.

[44] Environmental Protection Agency. (2025, June 12). Greenhouse Gas Emissions from a Typical Passenger Vehicle. Retrieved from https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle
[45] These figures do not include incremental gas customer bill savings from optimization of the gas supply portfolio, which occur when excess capacity not required for flexibility or reliability is released and/or sold to third parties, including power plants. Most of the proceeds of this activity are credited back to gas customers by National Grid.
[46] See the Company's Non-Pipe Alternatives Implementation Plan filed on May 7, 2025, for more detail on the steps the Company is taking to implement NPAs.

2. Challenge: Urgent Energy System Reliability Risks

2.1. Gas System Context and Reliability Considerations

The gas system not only delivers energy directly to homes and businesses for heating, cooking, and industrial processes like manufacturing, but also provides the fuel for gas-fired electricity generation. Across all end uses, natural gas accounts for about half of annual total energy consumed in the State.[47] On the coldest winter days, New York City's gas network delivers nearly three times the energy provided by the electric grid on a peak summer day.[48] This scale disparity highlights the essential role of the gas system in maintaining winter reliability and the magnitude of risk posed by supply constraints. As the state's largest gas utility, National Grid's gas distribution network is an integral component of this system, serving 2.5 million gas customers across the state.49,50 Downstate, the Company's gas network serves 1.9 million customers in New York City and Long Island.[51]

The ability of National Grid's gas network to reliably meet customer energy demand is at risk due to a combination of factors detailed below. Under current conditions any unforeseen events like cold weather and/or upstream supply disruptions could cause an acute gas supply shortage, resulting in both gas and electric outages across New York City and Long Island.

Two key factors have shaped today's system reliability challenges:

- Growing demand for energy, overall, driven by economic development and public policy
- Insufficient supply of energy, including constrained gas supply infrastructure

2.2. Growing demand for gas and electricity

Future energy market conditions are highly uncertain, and accurately forecasting the supply, demand, or price of any form of energy years into the future is inherently challenging. This uncertainty must be acknowledged when planning to future customer demand to ensure that firm gas supply is available. The Company estimates natural gas demand for its core customers, which include most residential and commercial customers, on the coldest day of the year, referred to as the design day demand.[52] This represents the amount of gas that must be supplied to firm customers without interruption (in contrast to 'non-firm' customers whose usage can be curtailed and who are assumed to switch to alternate fuels during periods of extreme cold, including design day conditions).[53]

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[47] EIA NY State Profile and Energy Estimates, 2023. Total energy excludes gasoline for transportation, and imported electricity

[48] Pathways to carbon-Neutral NYC: Modernize, Reimagine, Reach. (2021, April). Retrieved from https://www.nyc.gov/assets/sustainability/downloads/pdf/publications/Carbon-Neutral-NYC.pdf

[49] National Grid. (2021, May). KEDNY and KEDLI: 2021 Joint Proposal. Retrieved from National Grid: https://www.nationalgrid.com/document/141696/download

[50] New York State Grid Connect. (n.d.). Introduction to National Grid. Retrieved from NYSERDA: https://gridconnect.nyserda.ny.gov/nygc-home/utility-profiles-information/national-grid/

[51] National Grid. (2021, May). KEDNY and KEDLI: 2021 Joint Proposal. Retrieved from National Grid: https://www.nationalgrid.com/document/141696/download

[52] Design day demand refers to the forecasted amount of gas needed if Central Park in New York City experiences an average temperature of zero-degree Fahrenheit during a 24-hour period

[53] This statement excludes customers that take firm service from National Grid but purchase their gas themselves or from a gas marketer outside of the Customer Choice program (e.g., firm power generation).

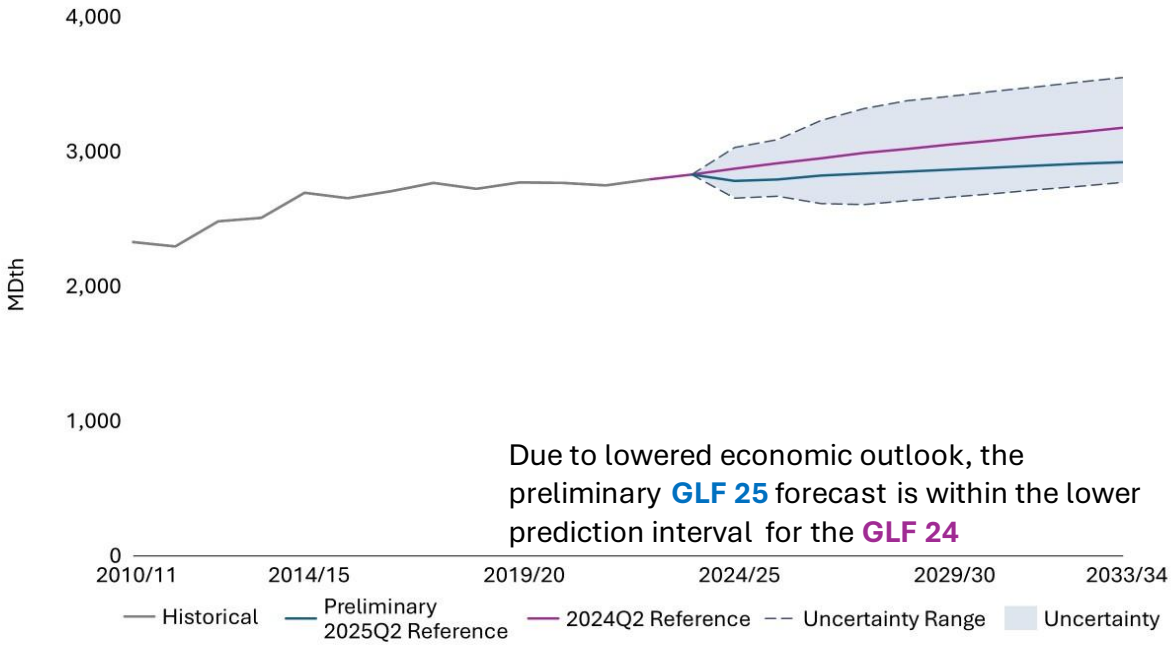
Design day forecasts exclude gas used for electricity generation because most generators opt to pay a discounted rate to National Grid in exchange for a lower service priority (i.e., non-firm). As a result, the gas system is not designed or sized to supply these customers during design day conditions. In addition, these generators are often capable of switching to alternate fuels (fuel oil), ensuring that natural gas remains available for non-generation customers who have no alternative to natural gas for heating.

The Company's Gas Load Forecast ("GLF") process, described in detail in Chapter 4 of the LTP, integrates a range of economic projections, demographic variables, appliance efficiency assumptions, and energy price forecasts to produce a ten-year outlook of expected design day demand (the *Reference Case*).[54] Each spring, the GLF is updated to reflect evolving market conditions. Beyond the first ten years, the Reference Case forecast is extrapolated through 2050 and is considered a scenario demand assessment rather than a precise forecast, reflecting the increasing uncertainty over longer time horizons.

The 2024 Gas Load Forecast indicated that a supply-demand imbalance could arise as early as the winter of 2027/28. However, a preliminary analysis of 2025 forecast suggests a slower rate of demand growth, which may delay the projected supply gap until 2041/42. It is important to note that this initial assessment is subject to further refinement and requires comprehensive hydraulic modeling to determine the timing and extent of the supply shortfall. Each year's forecast is strongly influenced by the most recent macroeconomic developments and how significantly they have changed since the previous forecast. Two major drivers for the change in the preliminary 2025 forecast are attributable to assumptions of lower regional economic growth rates and the impact of declining oil prices on fuel-switching behavior. This underscores the sensitivity of forecasts to changes in economic conditions. The most recent baseline demand scenario continues to show growth in design day demand, with a compound annual growth rate of 0.55% between 2025 and 2035 and 0.35% between 2025 and 2050. These forecasts fall within the prediction intervals established in prior reports, highlighting both the ongoing trend of demand growth and the inherent variability in long-term projections.

[54] Case 24-G-0248, Final Gas System Long-Term Plan, supra note 3, at Chapter 4.

Figure 2-1: Downstate New York Firm Design Day Prediction Interval (MDth)



Source: National Grid final (2024) and preliminary (2025) design day forecasts for Downstate New York

As can be seen in Figure 2-1, the annual gas load forecast includes a prediction interval around the Reference Case forecast. This interval reflects the inherent volatility in external events like economic outlooks, customer and technology trends. For the preliminary GLF 25, external indicators were less robust than anticipated due to a general economic slowdown, resulting in a lower demand forecast and a delayed projected supply gap for NY. Should New York's economy undergo a robust recovery in the upcoming months, the subsequent forecast will incorporate the corresponding rise in energy demand. This increase, which is not accounted for in the preliminary GLF 25, has the potential to significantly accelerate the projected supply gap, potentially aligning with the date forecasted for 2024.

Even as the pace of demand growth has slowed, the Company continues to receive a high volume of early-stage inquiries from large commercial and industrial customers seeking new gas service. As of April 2025, active proposals total approximately 700 Dth per hour, with additional projects under discussion with over a dozen other large-scale project developers looking for significant quantities of natural gas to support various applications including data centers, advanced manufacturing, civil infrastructure, transport hubs, biomedical research facilities, hotels, casinos, convention centers, shopping malls, and large residential complexes. While these requests are not yet included in the formal demand forecast due to their preliminary nature, they represent potential incremental load that could materially affect future system requirements.

Given the lengthy lead times and the complex nature of developing new gas infrastructure — where capacity must be added in significant increments rather than through small, incremental expansions — and considering the serious consequences of supply shortages during periods of extreme

weather, the Company maintains that timely investment in additional firm capacity is both prudent and essential. The ongoing growth in design day demand, continued market interest, and inherent forecast uncertainty together create conditions where the risks associated with inaction far exceed the costs of proactive planning and investment.

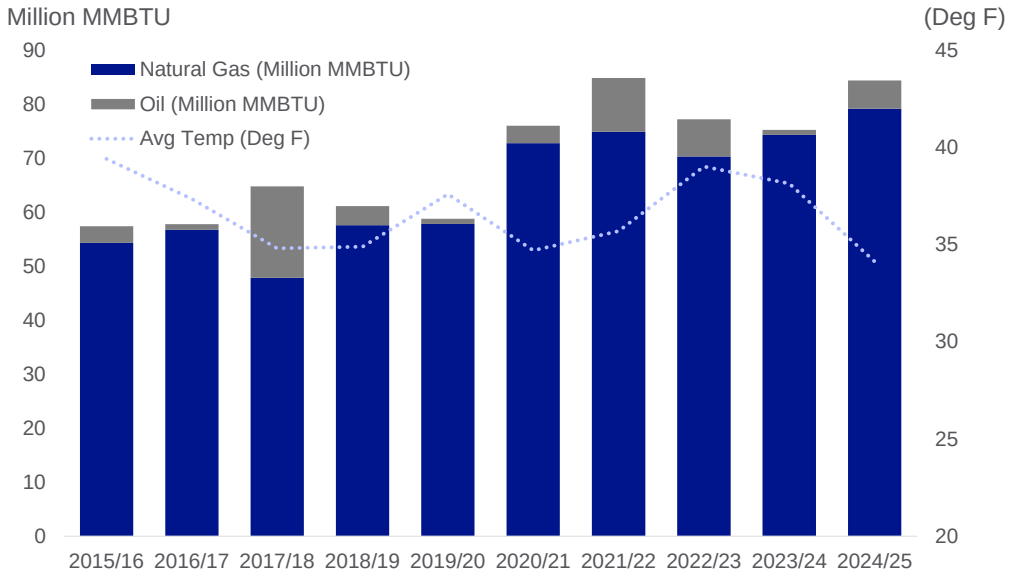
The Company is committed to continuously improving its modeling processes to minimize year-over-year fluctuations in forecasts. The Company will collaborate closely with the Department of Public Service ("DPS") to regularly review underlying assumptions, ensuring that infrastructure investments align with the long-term interests of customers and remain consistent with state policy objectives.

Electric sector demand is growing even more rapidly. According to NYISO, "large energy-intensive economic development projects are driving up demand for electricity" for the first time in a decade.[55] Large load projects in the NYISO interconnection queue have increased from about 1 GW in April 2022 to 6.2 GW by the end of April 2025 and the rate of growth in new applications is accelerating.[56] During April and May 2025 over 2 GW of new load joined the queue.[57] Additionally, there is significant early-stage development activity for large load projects in New York State. For example, the US Department of Energy has issued a Request for Information ("RFI") to explore AI infrastructure deployment at sites such as Brookhaven National Laboratory in Long Island.[58] While not included in current forecasts, such activity illustrates potential future growth in localized electric demand.

In the 2025 Power Trends Report, NYISO stated "With natural gas serving as the primary fuel for more than 60% of the generating capacity in the state, potential fuel constraints can have serious consequences for grid reliability."[59] Despite the fuel constraints identified by NYISO, natural gas demand from Downstate electric generators remains high. During the 2024/25 winter, three of Brooklyn Union Gas Company d/b/a National Grid NY's ("KEDNY") all-time top-ten throughput days occurred, reflecting continued reliance on the Company's gas distribution network even under constrained conditions.[60] Nearly all generation facilities are classified as interruptible customers, and many are capable of switching to oil when gas capacity is limited or are served directly by interstate pipelines or third-party marketers. As a result, their usage is not included in local distribution company ("LDC") forecasts of firm gas demand. However, the frequency of peak-day throughput events, as well as the continued and potentially growing demand for natural gas for electricity production demonstrated in Figure 2-2, suggests that gas-fired generation continues to play a critical role in meeting winter electric demand. Recommendations presented by NYSERDA to the State Energy Board in June 2025 concluded "[t]he gas system remains a significant energy delivery resource in all cases over the study period which will require continued investment for safe and reliable provision."[61]

[55] NYISO. (2025). Power Trends 2025. Retrieved from NYISO: https://www.nyiso.com/documents/20142/2223020/2025-Power-Trends.pdf
[56] NYISO. (2025, June 11). Interconnection Process. Retrieved from NYISO: https://www.nyiso.com/interconnections
[57] Id.
[58] U.S. Department of Energy. (2025, April 10). *Request for information to inform public bids to construct AI infrastructure.* Retrieved from https://www.energy.gov/sites/default/files/2025-04/RFI%20to%20Inform%20Public%20Bids%20to%20Construct%20AI%20Infrastructure%20%28website%20copy%29%20-%202025.04.10.pdf
[59] NYISO. (2025). Power Trends 2025. Retrieved from NYISO: https://www.nyiso.com/documents/20142/2223020/2025-Power-Trends.pdf
[60] Based on internal analysis and Supervisory Control and Data Acquisition ("SCADA") data.
[61] See State Energy Planning Board, *State Energy Plan Pathways Analysis Presentation*, supra note 20, Slide 24.

Figure 2-2: Winter Fossil Fuel Consumed by Electric Generators in Downstate NY (Dec-Feb)



Source: EIA 923 data. Temperature data from Yes Energy for Islip, Long Island.

As design day gas demand from sources not reflected in the Company's adjusted baseline forecast increases, and gas system capacity remains static, the volume of gas available for electric generation during peak conditions may decline. Because this dynamic is not captured in the adjusted baseline forecast, it reinforces the need for a more integrated gas-electric planning process — one that accounts for coincident peak demand across both systems, particularly during winter extremes or supply disruptions. The Company views this coordination as a critical element of a "modernized gas planning process."[62] This increasing demand — both forecasted and emerging — places additional pressure on already constrained gas infrastructure, as discussed in the following section.

2.3. Energy Supply Infrastructure Constraints

Maintaining adequate gas supply into Downstate New York has been a longstanding challenge, due to both infrastructure constraints and permitting complexity. In 2020, the Independent Monitor appointed by the DPS identified the need for additional supply-side solutions and recommended that National Grid work with DPS and local officials to evaluate long-term options.[63] The Company took several steps in response, including development of the Distributed Infrastructure Solution and increased attention to energy efficiency and demand response programs.

Despite these efforts, the Monitor's Closing Report acknowledged that key obstacles remained unresolved. These included uncertainty around project permitting and the limited scalability of demand-side measures. These same structural barriers persist today. For example, permitting

[62] Case 20-G-0131 Proceeding on Motion of the Commission in Regard to Gas Planning Procedures March 29, 2020, https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7B2BE6F1CE-5F37-4A1A-A2C0-C01740962B3C%7D

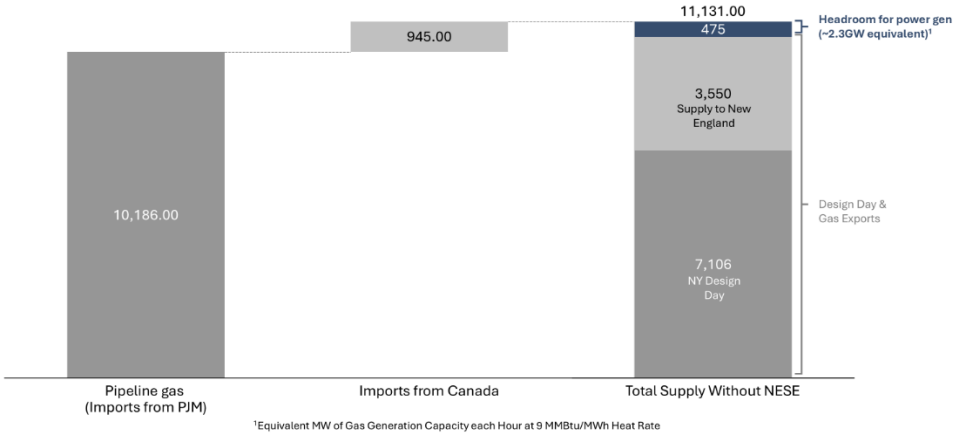
[63] Case 19-G0678 Monitor's Closing Report Perkins Coie LLP (September 14, 2021)

delays have affected both the Greenpoint Vaporizers 13/14 Project and Iroquois's ExC Project — even as regional demand continues to grow.[64,65]

Considering these persistent constraints, the Company has expanded its evaluation of non-pipe alternatives ("NPAs") and other distributed solutions, including leak-prone pipe replacement strategies. However as referenced in Section 2.2.5 of the LTP, DPS Staff noted that "the existing assets relied upon by Con Edison and National Grid have little to no headroom for Design Day growth and these utilities are already overly relying on CNG".[66] These observations reinforce the importance of evaluating all feasible solutions, including upstream infrastructure projects, to ensure continued reliability for customers. This is consistent with the recent update presented to the State Energy Board by NYSERDA that noted the "Gas system remains a crucial energy delivery system across all cases, and regional variation and peak day needs could require new gas system infrastructure."[67]

These dynamics were also reflected in a NYISO study, performed by the Analysis Group, which estimated that for the winter of 2023/24, the gas pipeline system would have 475 million cubic feet ("MMcf") spare capacity, equivalent to ~2.4GW of electric generation capacity – approximately 10% of current winter electric peak demand.[68,69] This limited headroom underscores the broader energy system's vulnerability to demand growth, weather volatility, and delays in infrastructure expansion.

Figure 2-3: New York State Design Day Pipeline Gas Supply vs Demand for Winter 2023/2024 (MMcf/d)



Source: https://www.nyiso.com/documents/20142/41258685/Analysis-Group-2023-Fuel-Security-Study-Final.pdf

[64] Donovan, L. (2022, May 9). State delays decision on National Grid expansion of Greenpoint gas facility—again. City Limits. Retrieved from https://citylimits.org/2022/05/09/state-delays-decision-on-national-grid-expansion-of-greenpoint-gas-facility-again/

[65] New York State Department of Environmental Conservation. (2025, February). Iroquois Enhancement by Compression Project – Response to Comments. Retrieved from https://dec.ny.gov/sites/default/files/2025-02/iroquoisrespcmmexcprj.pdf

[66] DPS letter to DEC, Feb 26, 2024, "DEC Application IDs: 3-1326-00211/00001 (Dover Compressor Station); 4-1922-00049/00004 (Athens Compressor Station)", page 8, available at https://dec.ny.gov/sites/default/files/2024-02/dpsresponseletter.pdf

[67] New York State Energy Planning Board. (2025, June 25). Board meeting slides - June 25, 2025. New York State Energy Plan. https://energyplan.ny.gov/-/media/Project/EnergyPlan/files/BoardMeetingSlides-62525-FINAL.pdf

[68] Equivalent MW of gas generation capacity each hour at 9 Dth/MWh heat rate.

[69] Hibbard, P. C. (2023, November). Fuel and Energy Security in New York State. Retrieved from Analysis Group, Inc. Prepared for the NYISO: https://www.nyiso.com/documents/20142/41258685/Analysis-Group-2023-Fuel-Security-Study-Final.pdf

2.4. Serious Risk of a Gas Outage

2.4.1 Operating a Zero-Margin Gas System

Most New York gas utilities currently operate their gas systems with zero contingency or operating margin. Unlike the electric grid, which maintains contingency reserves to protect against the unexpected, the Company's gas networks are operated with no built-in reserve supply or capacity margin. The absence of reserves limits the system's ability to absorb unplanned disruptions, particularly during periods of peak demand.

Like the gas distribution network, the interstate pipeline system also operates without a reserve margin. Pursuant to FERC regulations intended to ensure infrastructure rightsizing, interstate pipelines may not hold facilities in reserve.[70] All constructed capacity must be made available for customer use. In the event of an upstream equipment failure during peak demand, pipeline operators would have no choice but to make emergency repairs to their complex facilities, which may take hours, days, or even months, putting LDCs like National Grid at an elevated risk of supply curtailment due to the absence of contingency arrangements at the interstate level.

These structural limitations create heightened exposure for Downstate New York, where the gas distribution network depends on a small number of interstate delivery points and lacks built-in redundancy. During peak winter periods, available capacity is closely matched to forecasted demand, and reliable service depends in part on contracted third-party supply. In this context, even a minor disruption upstream or at a critical delivery point can materially affect the Company's ability to maintain uninterrupted service.

2.4.2 Threats to Gas Reliability

In the absence of reserve capacity, the Company and its customers face risks of system outages during extreme cold weather events, upstream supply disruptions, or outages of on-system supply assets (e.g., liquefied natural gas ("LNG") facilities).[71] Temporary solutions such as the Company's five mobile CNG injection sites play a vital role in supporting peak day operations, but their deployment is logistically intensive. On high demand days, maintaining service to customers in New York City and Long Island can require up to 240 CNG truck deliveries navigating congested road networks under snow, ice, and wind conditions.[72] These assets provide essential support but are not scalable beyond current configurations to serve as substitutes for long-term infrastructure solutions.

During extreme weather events, such as a winter storm coinciding with upstream pipeline constraints or limited LNG vaporization capacity, significant portions of the Downstate system could face cascading outages. This risk was made plain in December 2022 when Winter Storm Elliott brought days of extreme cold to the Eastern US, driving up demand for energy while also disrupting the supply of natural gas by freezing production equipment.[73] As load surged and pipeline flows tightened, National Grid was forced to curtail interruptible customers and activate emergency assets to protect firm service. According to Jim Robb, President and CEO of the NERC, "had the weather not warmed up on Christmas Day, it is highly likely that natural gas service would have been

[70] 15 U.S.C. § 717f(a) (2018)
[71] National Grid Asks All Customers in Downstate New York to Immediately Reduce Gas Usage. (2024, December 24). https://www.nationalgridus.com/News/2022/12/National-Grid-Asks-All-Customers-in-Downstate-New-York-to-Immediately-Reduce-Gas-Usage/
[72] 24-G-0248, In the Matter of a Review of the Long-Term Gas System Plans of The Brooklyn Union Gas Company d/b/a National Grid NY, KeySpan Gas East Corporation d/b/a National Grid, and Niagara Mohawk Power Corporation d/b/a National Grid, *Final Gas System Long-Term Plan* (March 7, 2025). See section 5.2.
[73] Id.

disrupted to New York City."[74] The FERC and NERC's joint report on Winter Storm Elliott also reported that if the cold weather had lasted longer New York City would have faced large scale outages.[75]

Extreme weather events like Winter Storm Elliott demonstrate how quickly conditions can shift from stable to intensely strained, even when demand remains below design day levels. Temperatures were not near design conditions and the Company had not planned to utilize its LNG facilities, leaving them available as a critical buffer. Improving conditions on the interstate pipeline network as well as National Grid's rapid deployment of LNG supplies at Greenpoint narrowly avoided customer outages. Notably, although the Company had not yet reached Design Day demand, system margins were sufficiently tight that on-system assets were essential to maintaining reliable service.[76] Had a similar event occurred under colder conditions, without stabilization of the upstream pipeline network, or with LNG already committed, firm customer service may have been at greater risk. While the Company is enhancing its ability to pre-stage CNG trailers at certain sites for faster deployment, they too are required at near-design temperatures (i.e., they do not represent excess supplies), and the trailers must be cycled twice per day (120 trailers per cycle) to provide sustained support, limiting their flexibility as contingency resources.

While extreme weather is a clear risk, recent events show that gas system reliability can also be threatened by unplanned upstream disruptions even during normal conditions. In Downstate New York, where supply is already tight, incidents such as valve closures, compressor failures, and other mechanical issues have occurred as recently as winter 2024/25, sometimes requiring emergency actions to maintain service. These examples illustrate that significant reliability challenges can emerge even without severe weather. On-system use of LNG and CNG to mitigate these issues was avoided due to the management and timely resolution of these issues, but they are not available as mitigation measures under design conditions, as they become part of the minimum supply need at that point. Additionally, the possibility of malicious events, such as the 2021 cyberattack that shut down the Colonial Pipeline Company's system, highlights broader infrastructure vulnerability.[77] Large scale customer service interruptions that reduce demand to match the available supply are the only existing mitigation measures once design conditions occur because the gas system does not have the N-1 equivalent to electric generation reserves.

A loss of service, particularly during cold weather, can have serious consequences. If gas pressure drops below minimum operating thresholds, service disruptions can propagate rapidly across portions of the network. Full restoration following a shutdown of residential and commercial services requires pressure stabilization, purging, and manual relighting of individual premises. These procedures are labor-intensive and time-consuming, particularly in dense urban areas. Vulnerable populations, including elderly, medically dependent, and heat-insecure customers face heightened risk during extended outages, which could last days, weeks, or months at the peak of winter.[78]

When network pressure collapses, each service location must be manually shut off, tested, and safely relit by trained personnel. A recent example occurred in January 2019, when more than 7,000

[74] FERC, NERC Release Final Report on Lessons from Winter Storm Elliott. (2023, November 7). Retrieved from Federal Energy Regulatory Commission: https://www.ferc.gov/news-events/news/ferc-nerc-release-final-report-lessons-winter-storm-elliott
[75] Id.
[76] Case 24-G-0248, In the Matter of a Review of the Long-Term Gas System Plans of The Brooklyn Union Gas Company d/b/a National Grid NY, KeySpan Gas East Corporation d/b/a National Grid, and Niagara Mohawk Power Corporation d/b/a National Grid, *Final Gas System Long-Term Plan* (March 7, 2025). See section 5.2.1.
[77] U.S. Department of Energy. (n.d.). Colonial Pipeline Cyber Incident. Retrieved from Office of Cybersecurity, Energy Security, and Emergency Response: https://www.energy.gov/ceser/colonial-pipeline-cyber-incident
[78] FERC, NERC Release Final Report on Lessons from Winter Storm Elliott. (2023, November 7). Retrieved from Federal Energy Regulatory Commission: https://www.ferc.gov/news-events/news/ferc-nerc-release-final-report-lessons-winter-storm-elliott

customers on Aquidneck Island in Rhode Island lost service during subzero conditions.[79] Restoration required over 1,000 workers, lasted nearly a week, and included support from the National Guard.[80] A subsequent investigation led by the Rhode Island Division of Public Utilities and Carriers found that the outage was caused by a confluence of events: demand spikes in excess of contractual limits by many of Algonquin Gas Transmission's customers due to sudden low temperatures, a power failure at the Fields Point LNG facility, and a valve malfunction at a meter station in Weymouth, MA.[81] The incident underscores that the gas system, while integrated, relies on continuous balancing, flow coordination, and delivery redundancy, and that the failure of only a limited number of components under stress can produce widespread service impacts, and further that the magnitude of the restoration effort and outage duration experienced by customers are substantial.[82] A widespread gas outage in Downstate New York with the potential for more gas customers to be affected is likely to be significantly more challenging to restore.

2.4.3 Threats to Electric Reliability

Constraints on gas supply into Downstate New York can also threaten the reliability of the local electric grid. Most downstate power generators rely on fuel delivered by National Grid's gas distribution network to produce electricity, which itself depends on deliveries from the interstate pipeline network. These facilities generally do not contract for firm gas transportation capacity and are therefore unable to secure gas supplies during periods of constrained supply, especially during the winter heating season. Many of these plants are dual-fuel capable and can switch to oil, providing essential reliability support. However, this capability depends on oil delivery logistics and storage inventories, particularly during prolonged cold weather.

These fuel risks have been documented in prior regional assessments:

- The Northeast Power Coordinating Council ("NPCC") study on Northeast electric and gas reliability, published in 2025, states: "Extreme cold weather conditions lasting longer than the three-day periods modelled in this study could add additional stress to the network of gas pipeline and storage and oil storage infrastructure in New York and New England, thereby heightening electric reliability challenges if oil inventory cannot be replenished on a timely basis."[83]
- The Analysis Group's study, "Fuel and Energy Security in New York State," published in November 2023, emphasizes the inherent risks of depending on delivered fuels and the increased potential for loss of load events when natural gas availability is low or when the ability to rely on stored fuel energy is restricted due to weather conditions or other factors.

[79] National Grid. (2019, January 21). National Grid Restoration Effort on Aquidneck Island Will Impact 7,100 Gas Customers. Retrieved from National Grid: https://www.nationalgridus.com/News/2019/01/National-Grid-Restoration-Effort-on-Aquidneck-Island-Will-Impact-7%2C100-Gas-Customers/

[80] Id.

[81] Summary Investigation Into the Aquidneck Island Gas Service Interruption of January 21, 2019. Investigation Report by the State of Rhode Island Division of Public Utilities and Carriers. October 30, 2019. Available at: https://ripuc.ri.gov/sites/g/files/xkgbur841/files/eventsactions/AI_Report.pdf

[82] PHMSA. *Rhode Island Natural Gas Outages: Summary Report of Pipeline Safety Investigation*. U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration, September 2019. https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/docs/regulatory-compliance/pipeline/accident-investigation-division/72801/rhode-island-natural-gas-outages-summary-report-web.pdf

[83] Ciampoli, P. (2025, January 8). Northeast Power Coordinating Council Details Key Findings from Gas/Electric System Study. Retrieved from American Public Power Association: https://www.publicpower.org/periodical/article/northeast-power-coordinating-council-details-key-findings-gaselectric-system-study

For example, the study notes that during previous cold periods, the rivers around New York City have frozen solid, preventing oil units on the rivers from refuelling by barge.[84]

Gas-fired generators will remain essential to balancing New York's electric system, especially as winter demand increases. While the system currently peaks in summer, NYISO projects winter electric demand will grow by 6,700 to 14,000 MW by 2040, primarily due to building electrification.[85,86] This growth will require a substantial increase in gas use for power generation during peak winter conditions, almost certainly outpacing available supply if upstream constraints are not addressed. In addition to serving growing winter peaks, gas-fired units are frequently dispatched on short notice to balance hourly load swings and compensate for the variability of wind and solar. NYISO expects this ramping capability to become even more critical as the share of intermittent renewables increases.

NYISO reinforces these concerns, warning that challenges to maintaining a reliable electric grid will become "more acute in the coming years," and that limited natural gas availability during winter peaks could lead to "statewide deficiencies as soon as winter 2029–30" — or sooner, depending on demand growth and extreme weather.[87] Even as the grid moves toward the Climate Act's 2040 decarbonization goal, NYISO has stated that "natural gas will continue to be necessary to maintain grid reliability during the transition period."[88]

2.4.4 Single Points of Failure: Localized Infrastructure Vulnerabilities

In several critical areas of the network, a single component failure could interrupt gas service to thousands of customers. In most regions, if a single high-capacity gas asset fails — a pipeline lateral, a compressor, a supply injection point — there is no built-in redundancy. These locations rely on high-capacity assets with limited or no alternatives, a condition that introduces outsized risk relative to other sectors of the energy system.

These challenges are particularly pronounced in the Company's service territories, where geography, permitting constraints, and land use limitations have historically constrained system expansion. In these areas, options for physical redundancy are limited, increasing reliance on critical assets that must remain operational under a range of conditions, including severe weather, cybersecurity threats, and dynamic market pressures. Portable supply solutions like CNG play an important role in supporting peak-day operations, but they are not a substitute for permanent, flexible infrastructure.

Recognizing these risks, the Company continues to implement targeted mitigation measures, including:

- Enhanced monitoring and control systems for early detection of abnormal conditions
- Sectionalizing valves and emergency bypasses to limit the scope of impact

[84] Hibbard, P. C. (2023, November). Fuel and Energy Security in New York State. Retrieved from Analysis Group, Inc. Prepared for the NYISO: https://www.nyiso.com/documents/20142/41258685/Analysis-Group-2023-Fuel-Security-Study-Final.pdf
[85] New York Independent System Operator. (2025). Power Trends 2025. Retrieved from New York Independent System Operator: https://www.nyiso.com/documents/20142/2223020/2025-Power-Trends.pdf
[86] New York Independent System Operator. (2025, April). 2025 Load & Capacity Data Report: Lower Demand Scenario Tables I-3B-L. Retrieved from https://www.nyiso.com/documents/20142/51231901/2025-Gold-Book-Lower-Demand-Scenario-Tables.xlsx/32aa010a-b43f-f5b4-fde7-789f7b79a689
[87] New York Independent System Operator. (2025). Power Trends 2025. Retrieved from New York Independent System Operator: https://www.nyiso.com/documents/20142/2223020/2025-Power-Trends.pdf
[88] Id.

- Network integration and looping projects to create limited alternate flow paths
- Flexible supply arrangements to strengthen operational response options

While these measures reduce exposure, the absence of structural redundancy in key areas continues to present elevated risk, particularly during extreme conditions or system stress.

In addition to reliability challenges, constrained gas supply into Downstate New York has significant implications for affordability, particularly for electric customers, who are exposed to volatile gas prices during peak winter periods.

2.4.5 Electric Affordability

Several forces have shaped the relationship between New York's natural gas and electricity markets: an influx of natural gas-fired generating capacity over the past 25 years, the retirement of over 2,000 MW at the Indian Point Nuclear reactor from 2020 to 2021, and the ongoing delays to clean energy development, including uncertainty surrounding the ability to scale offshore wind, due in part to shifts in federal policies.[89] The confluence of these forces has resulted in gas-fired generators consuming 37% more natural gas in New York in 2024 compared with 2019, while pushing gas pipeline capacity to its limits during peak gas demand periods.[90]

Because power generators base their energy market offers on daily gas prices, gas price volatility has a direct impact on wholesale electricity costs. In New York, electric market prices are strongly influenced by daily city gate spot gas prices, particularly during winter months, when solar output is reduced and natural gas units often set the marginal price.

Despite continued access to low-cost gas across much of the country, Downstate New York experienced significantly higher and more volatile spot prices for natural gas used in electric generation during the 2024/25 winter.[91] On one such day, gas at Transco Zone 6 Citygate, the key pricing hub for New York City, exceeded $90/Dth, while gas at Pennsylvania's Dominion South Point hub was priced below $9/Dth.[92] The U.S. Energy Information Administration reported that Transco Zone 6 NY reached an intraweek high of $97.90/Dth on January 17, 2025, the third-highest nominal price since 1998, ahead of a holiday weekend cold snap that threatened production and tightened pipeline availability.[93]

As shown in the table below, elevated natural gas prices were a key driver of wholesale electricity cost increases in New York during the 2021/22 and 2024/25 winters, both marked by colder weather and tight gas market conditions. Wholesale natural gas prices at New York's Transco Z6 pricing hub and the estimated wholesale electricity costs in Downstate New York during this past winter were the highest in recent history. Higher wholesale electric energy market costs, in turn, produce higher retail prices for electric customers.

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[89] U.S. Energy Information Administration. (2022, April 8). *U.S. nuclear electricity generation continues to decline as more reactors retire*. Retrieved from U.S. Energy Information Administration: https://www.eia.gov/todayinenergy/detail.php?id=51978

[90] *New York Natural Gas Consumption by End Use* (2025) *U.S. Energy Information Administration*. Available at: https://www.eia.gov/dnav/ng/ng_cons_sum_dcu_SNY_a.htm (Accessed: 13 June 2025).

[91] U.S. Energy Information Administration. (2025, January 23). *Natural Gas Weekly Update*. Retrieved from U.S. Energy Information Administration: https://www.eia.gov/naturalgas/weekly/archivenew_ngwu/2025/01_23/#tabs-prices-3

[92] Id.

[93] U.S. Energy Information Administration. (2025, January 27). Forecast wholesale power prices and retail electricity prices rise modestly in 2025. Retrieved from Short-Term Energy Outlook: https://www.eia.gov/todayinenergy/detail.php?id=64384

Figure 2-4: Winter Wholesale Electricity Costs and Natural Gas Prices in Downstate NY

	19/20	20/21	21/22	22/23	23/24	24/25
Wholesale Electricity Costs in Downstate NY ($ Billions)	$0.6	$1.0	$2.1	$1.5	$1.0	$2.3
TransCo Z6 Prices Gas Prices ($ per MMBTU)	$2.2	$3.7	$6.9	$6.1	$3.4	$9.9

Source: Data sourced from S&P Global, Yes Energy, Company Analysis

2.5. Converging Risks and the Need for Long-Term Solutions

The challenges described in this section — limited physical redundancy, growing winter electric demand, rising gas use for generation, and extreme price volatility — point to a systemic constraint in Downstate New York's energy infrastructure. While electric affordability risks are real, the most immediate concern remains gas system reliability, particularly for firm service customers.

As described in Section 2.2, the Company is receiving growing interest in new or expanded gas service from large customers. These requests represent potentially significant incremental demand that will need to be met alongside existing core load. Without corresponding increases in firm gas supply, the system will face compounding stress from both unserved customer needs and heightened risk of service disruption.

NESE would deliver new firm capacity into the Downstate gas network, increasing supply availability at a critical delivery point. The following section presents an independent evaluation of NESE's costs and benefits, with a focus on how it could mitigate reliability risks, accommodate forecast and non-forecast demand growth, and help stabilize energy costs for customers.

3. Infrastructure Solutions to Reliability Challenges

3.1. Background: Historical Efforts to Address Reliability Concerns in Downstate NY

National Grid has long prioritized gas system reliability in Downstate New York. In 2008, the Company developed a phased infrastructure strategy to ensure safe and reliable service to Downstate customers while also supporting emissions reductions by reducing reliance on heating oil. The approach was socialized with DPS Staff and designed to enable incremental additions of supply capacity as demand evolved, while managing customer costs. It included both new upstream supply connections and targeted enhancements to the Company's gas distribution network.

Phase 1 of the strategy involved construction of the Rockaway Delivery Lateral by Williams, designed to transport up to 647 MDth/day of natural gas into National Grid's Downstate system.[94]

[94] Williams. (2015, May 15). Rockaway Delivery Lateral and Northeast Connector Pipeline Projects Complete, Now Flowing Natural Gas to New York City. Retrieved from MarketScreener: https://www.marketscreener.com/quote/stock/WILLIAMS-COMPANIES-INC-14884/news/Williams-Rockaway-Delivery-Lateral-and-Northeast-Connector-Pipeline-Projects-Complete-Now-Flowing-20383327/

That full capacity was available when the lateral entered service in 2015.[95] The project also included the Brooklyn-Queens Interconnect, a National Grid investment that linked the new delivery point at Floyd Bennett Field to the broader distribution system.[96]

While the Rockaway Delivery Lateral itself does not introduce new supply, it created a new physical delivery point — the Rockaway Transfer Point — at the intersection of the Rockaway Delivery Lateral and the Lower New York Bay Lateral. This configuration allows National Grid to shift gas originally headed to the Long Beach gate station to Floyd Bennett Field, giving the Company the operational flexibility to balance deliveries between two major gate stations and draw from the least-cost available gas on Transco.

Figure 3-1: Transco Rockaway Delivery Lateral Map

Source: https://pgjonline.com/magazine/2015/july-2015-vol-242-no-7/web-exclusive/rockaway-lateral-northeast-connector-projects-complete-flowing-to-nyc

Initial upstream supply was provided through Williams' Northeast Connector Project, which entered service alongside the lateral.[97] That project added 100 MDth/day of firm capacity by upgrading compression at three existing Transco facilities in Pennsylvania and New Jersey.[98] It also established a direct path from Transco's Station 195 to the Rockaway Transfer Point.[99]

Together, these Phase 1 investments improved supply reliability, increased operational flexibility, and supported New York City's clean energy goals. The Rockaway Delivery Lateral was specifically

[95] Williams. (2015, May 15). Rockaway Delivery Lateral and Northeast Connector Pipeline Projects Complete, Now Flowing Natural Gas to New York City. Retrieved from MarketScreener: https://www.marketscreener.com/quote/stock/WILLIAMS-COMPANIES-INC-14884/news/Williams-Rockaway-Delivery-Lateral-and-Northeast-Connector-Pipeline-Projects-Complete-Now-Flowing-20383327/
[96] Id.
[97] Id.
[98] Id.
[99] Id.

named in PlaNYC 2030 as a priority initiative to reduce urban air pollution from high-sulfur heating oil.[100]

The need for additional supply capacity in this area was reinforced during major system stress events, including Superstorm Sandy and the extreme winters of 2013/14 and 2014/15.[101,102,103] The phased strategy anticipated that further supply enhancements would be needed as demand grew and system risks evolved, leading to the next step in the plan: the New York Bay Expansion Project.

Phase 2 of the strategy was Transco's New York Bay Expansion Project, which increased capacity on the existing Transco system to its current levels. The project delivered an additional 65 MDth/day to the Rockaway Transfer Point and 50 MDth/day to the Transco Narrows delivery point, for a combined total of 115 MDth/day.[104]

New York Bay Expansion was developed to provide firm transportation capacity to meet rising demand and enhance system reliability in the New York City metropolitan area. The project used existing Transco corridors and included compression upgrades and targeted facility enhancements. It entered service in 2017.[105]

The scope included:[106]

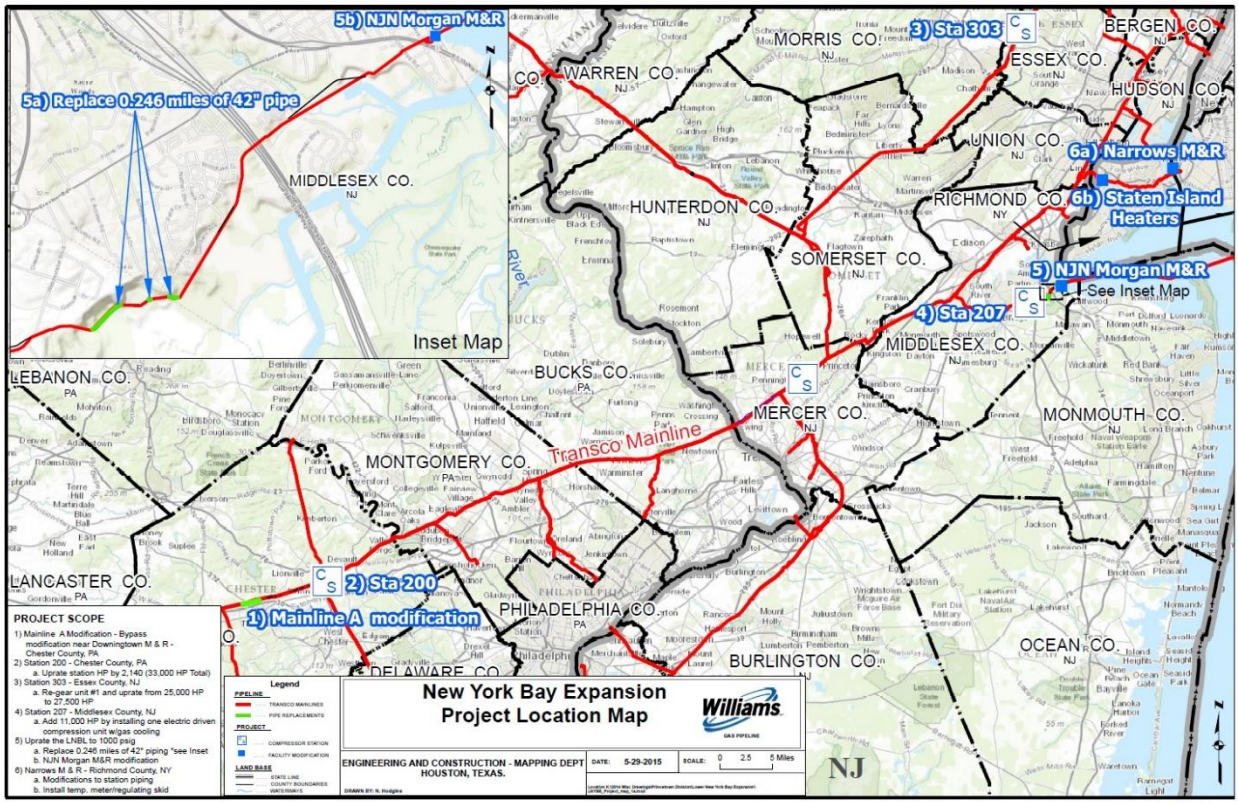
- Compression upgrades at three Transco compressor stations:
  - Station 200 in Chester County, PA: modified to increase horsepower
  - Station 207 in Middlesex County, NJ: added a new gas-fired compressor unit
  - Station 303 in Somerset County, NJ: upgraded to support increased flow

- Meter station and terminal upgrades:
  - Enhancements at the Narrows Meter Station in Richmond County, NY
  - Additional equipment at the Long Island Extension and Rockaway Transfer Point
  - Minor piping modifications at the Lower New York Bay Lateral interconnection

- Pipeline modifications:
  - Approximately 0.25 miles of 42-inch pipe replacement at Station 200 to handle higher capacity[107]

[100] City of New York. (2023). PlaNYC: Getting Sustainability Done. Retrieved from https://climate.cityofnewyork.us/wp-content/uploads/2023/06/PlaNYC-2023-Full-Report.pdf
[101] Glorioso, C. (2022, October 27). Remember the gas shortage after Sandy — Is energy infrastructure better fortified now? Retrieved from NBC New York: https://www.nbcnewyork.com/news/remember-the-gas-shortage-after-sandy-is-energy-infrastructure-better-fortified-now/3926937/
[102] Federal Energy Regulatory Commission. (2014, October 16). 2014–2015 winter energy market assessment. Retrieved from https://www.ferc.gov/sites/default/files/2020-05/10-16-14-A-3.pdf
[103] New York Independent System Operator. (n.d.). Lessons learned: How the 2014 polar vortex helped make the New York energy grid more reliable. Retrieved from https://www.nyiso.com/-/lessons-learned-how-the-2014-polar-vortex-helped-make-the-new-york-energy-grid-more-reliable
[104] Transcontinental Gas Pipe Line Company, LLC. (n.d.). New York Bay Expansion Fact Sheet. Retrieved from Chester County Planning Commission: https://chescoplanning.org/pic/PDF/NYBFactSheet.pdf
[105] Williams Companies. (2017). Transco Fall Update 2017. Retrieved from https://www.1line.williams.com/Transco/files/presentations/2017CSFallUpdate.pdf
[106] Transcontinental Gas Pipe Line Company, LLC. (n.d.). New York Bay Expansion Fact Sheet. Retrieved from Chester County Planning Commission: https://chescoplanning.org/pic/PDF/NYBFactSheet.pdf
[107] Docket No. CP15-527-000, (2016, February). *Environmental Assessment for the New York Bay Expansion Project.* Federal Energy Regulatory Commission. Retrieved from https://www.ferc.gov/sites/default/files/2020-05/CP15-527-EA.pdf

Figure 3-2: Transco New York Bay Expansion Project Location Map



Source: https://gascompressionmagazine.com/2016/11/16/new-compression-will-give-nyc-more-gas/

Following Phase 2, National Grid identified NESE as the third phase of its long-term reliability strategy. While demand growth continued, the severe winters of 2017/18 and 2018/19 underscored the system's limited margin and exposed the risks of sustained cold weather coinciding with constrained supply.[108] NESE was advanced to address these vulnerabilities by providing substantial new upstream capacity and enhancing the flexibility and resilience of the Downstate network.

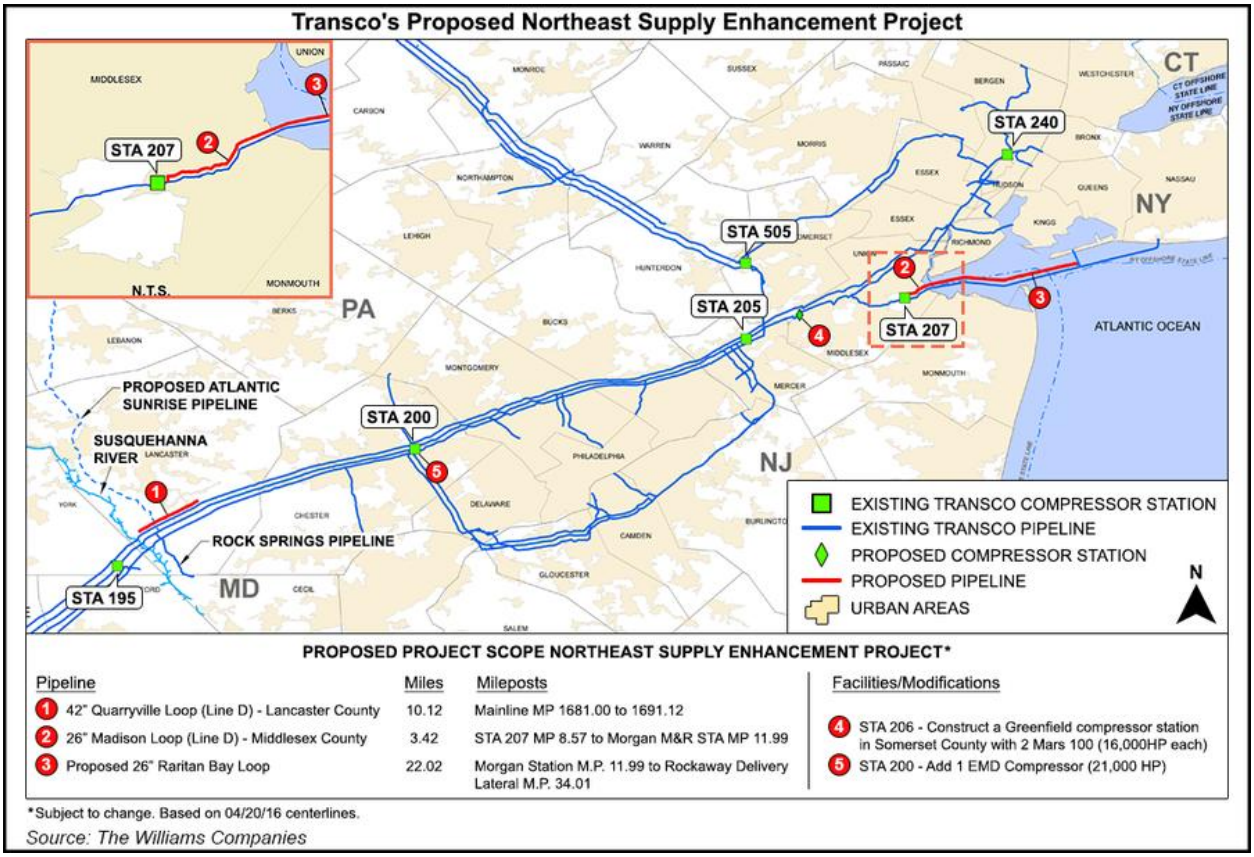
NESE would deliver an incremental 400 MDth/day from Transco's Station 195 in Pennsylvania to the Rockaway Transfer Point.[109] The Rockaway Delivery Lateral and the Floyd Bennett Field gate station were originally designed to accommodate this full volume, anticipating a future expansion.[110] In addition to increasing total supply, NESE provides critical reliability benefits, including improved redundancy, pressure support, and operational optionality, as further discussed in Section 4.

[108] Domenech, J. (2022, October 18). Out of gas: New York's blocked pipelines will hurt Northeast consumers. Retrieved from Manhattan Institute: https://manhattan.institute/article/out-of-gas-new-yorks-blocked-pipelines-will-hurt-northeast-consumers

[109] Federal Energy Regulatory Commission. (2019, January). Northeast Supply Enhancement Project Final Environmental Impact Statement Part 1. Retrieved from Federal Energy Regulatory Commission: https://www.ferc.gov/sites/default/files/2020-05/part-1.pdf

[110] Case 24-G-0248, In the Matter of a Review of the Long-Term Gas System Plans of The Brooklyn Union Gas Company d/b/a National Grid NY, KeySpan Gas East Corporation d/b/a National Grid, and Niagara Mohawk Power Corporation d/b/a National Grid, Final Gas System Long-Term Plan (March 7, 2025).

Figure 3-3: Transco Northeast Supply Enhancement Project Map



Source: https://www.naturalgasintel.com/news/ferc-to-prepare-eis-for-transcos-northeast-expansion-project/

The project includes:[111]

- Approximately 10 miles of 42-inch pipeline loop in Lancaster County, Pennsylvania (known as the *Quarryville Loop*)
- Approximately 3.4 miles of 26-inch pipeline loop in Middlesex County, New Jersey (the *Madison Loop*)
- Approximately 23.5 miles of 26-inch offshore pipeline in New Jersey and New York waters (the *Raritan Bay Loop*)
- A new 32,000-horsepower compressor station in Franklin Township, New Jersey (*Compressor Station 206*)
- Additional compression added at Compressor Station 200 in Chester County, Pennsylvania

NESE is designed to interconnect with the existing Rockaway Delivery Lateral and deliver firm supply to National Grid's Downstate system. In addition to expanding upstream capacity, the project enhances reliability by increasing operational flexibility and strengthening the supply network across constrained areas. Some modifications to existing facilities, including adjustments at the Floyd

[111] Gonzales, L. (2025, June 26). FERC to prepare EIS for Transco's Northeast Expansion Project. Retrieved from Natural Gas Intelligence: https://www.naturalgasintel.com/news/ferc-to-prepare-eis-for-transcos-northeast-expansion-project/

Bennett Field gate station, would be required to accommodate the additional volumes. These benefits and implementation details are discussed further in Section 4.2.1.

3.2. Supplemental Supply Projects and Reliability Considerations

In addition to the phased Transco strategy, the Company has identified other infrastructure options that provide critical reliability benefits across the Downstate New York network. These include the Iroquois ExC Project, upgrades to Greenpoint Vaporizers 13/14, and the existing suite of CNG operations.

The Iroquois ExC Project is a committed infrastructure initiative needed to meet growing Design Day and Design Hour demand on eastern Long Island.[112] It will deliver 62.5 MDth/day of firm capacity directly to the South Commack gate, a key point of entry for high-pressure service in Suffolk County.[113] ExC improves system resilience by enabling gas flow from South Commack west into Nassau County, allowing National Grid to reduce reliance on Transco's Long Beach delivery point during upstream supply shortfalls. While ExC enables firm load growth in one of the region's most constrained areas, it also strengthens service continuity and reduces exposure to single points of failure (see Section 2.4.4). Any growth on the eastern portion of Long Island, from residential to large-scale generation, depends on supply from South Commack. The in-service date is targeted for November 1, 2027, pending receipt of remaining approvals, primarily from the Connecticut Department of Energy and Environmental Protection.[114]

Greenpoint Vaporizers 13/14 remain under consideration. If NESE is placed in service, the Company expects that the additional supply would negate the design day need for the Greenpoint upgrades. However, the vaporizers would still provide important system reliability benefits including improved vaporization rates, redundancy for low-pressure networks, and contingency support in the event of upstream supply issues that may warrant further evaluation depending on demand growth and future modelling.

CNG injection continues to serve as an essential but limited part of the Company's winter weather operations. The current configuration including five injection sites on Long Island has been fully deployed to support winter reliability under design conditions. While effective in the near term, CNG is subject to multiple limitations, including weather-related transport risks, operational complexity, and reliance on off-system supply chains. The Company anticipates that the in-service of permanent infrastructure may enable reduced reliance on CNG injection sites. These changes will be evaluated through ongoing capacity planning and hydraulic modelling, using updated demand forecasts.

Together, these infrastructure elements form a layered approach to reliability: ExC addresses high-growth needs in eastern Long Island, Greenpoint provides potential reinforcement in Brooklyn and Queens, and CNG offers flexible backup across the network. While each project plays a different role, the Company's goal remains clear: to maintain safe, reliable, and resilient gas service for customers across Downstate New York, while adapting to future system needs and policy requirements.

[112] New York State Department of Environmental Conservation. (2025, February). Iroquois Enhancement by Compression Project – Response to Comments. Retrieved from https://dec.ny.gov/sites/default/files/2025-02/iroquoisrespcmmexcprj.pdf

[113] New York State Department of Public Service. (2024, February 26). Response letter to DEC regarding the Iroquois Enhancement by Compression Project. Retrieved from New York State Department of Environmental Conservation: https://dec.ny.gov/sites/default/files/2024-02/dpsresponseletter.pdf

[114] Fox, S. D. (2025, June 8). Only one last permit needed for Brookfield gas compressor expansion project to move forward. Retrieved from CT Post: https://www.ctpost.com/news/article/brookfield-gas-expansion-pipeline-iroquois-newyork-20360601.php

3.3. Emerging Opportunity: Williams' Revival of NESE

On May 29, 2025, Transco filed a petition with the FERC requesting reissuance of its Certificate of Public Convenience and Necessity to authorize construction and operation of NESE.[115] Transco's NESE proposal comes at a time when market demand for firm gas capacity and affordable energy is growing rapidly, and reliability challenges are becoming more acute, especially gas-constrained areas like Downstate New York.

Transco has requested that the FERC reissue its Certificate of Public Convenience and Necessity for NESE by August 29, 2025.[116] This would enable construction to proceed and the project to enter service by November 2027.[117] Transco is currently working with the New Jersey Department of Environmental Protection ("NJDEP") and New York State Department of Environmental Conservation ("NYSDEC") to obtain required Clean Water Act Section 401 certifications. The Pennsylvania Department of Environmental Protection ("PADEP") issued its certification in 2018.[118]

4. Benefits & Costs of NESE

This section evaluates the anticipated benefits associated with NESE against its costs. The Company's evaluation finds that NESE would improve the reliability of New York's energy systems, reduce the cost of electricity, reduce gas customer costs for CNG peaking services, benefit the economy, and reduce GHG emissions and air pollution. Projected wholesale electric cost benefits and savings from avoided CNG outweigh the costs customers would pay for the project, generating net benefits of between $4 billion and $4.5 billion and a benefit-cost ratio between 2.5 and 3. The benefits of improved system reliability and reducing the probability of a catastrophic and economically disruptive energy system outage are not quantified here, but are nonetheless substantial and further strengthen the value case for the project.

4.1. Project Benefits

4.1.1 Energy System Reliability Enhancement

NESE would increase firm gas supply to Downstate New York by approximately 13% relative to current contracted levels. This incremental capacity would reduce the risk of supply shortfalls during periods of peak demand, particularly in the winter heating season. It would also reduce the Company's reliance on trucked CNG, which is subject to weather-related transportation risks, logistical constraints, and off-system supply availability. The Company anticipates that if NESE goes in service, it could scale back CNG operations from five active injection sites to two, providing logistical and cost-related benefits for customers and reduce emissions from trucking.

NESE is also designed to enhance Transco system reliability by introducing a second delivery path between Compressor Station 207 and the Rockaway Delivery Lateral. Each pipeline segment would be capable of transporting more than half of the total daily volume, reducing exposure to single-point failures along the Lower New York Bay Lateral. This configuration could support more flexible maintenance scheduling and mitigate operational risk during emergency response situations.

[115] Transcontinental Gas Pipeline Company, LLC. (2025, May 29). Petition of Transcontinental Gas Pipeline Company, LLC for Expedited Reissuance of Certificate Authority. Retrieved from Township of Franklin Somerset, NJ: https://www.franklintwpnj.org/home/showpublisheddocument/30924/638841979298213140
[116] Id.
[117] Id.
[118] Id.

If NESE had been in service during Winter Storm Elliott, the additional 37 miles of pipeline and associated line pack would have improved pressure stability across the system. While the underlying supply-demand dynamics of the storm would not have changed, the existence of a parallel path to the Rockaway Delivery Lateral would have delayed pressure degradation and created additional time to respond to worsening conditions.

The project could also support planned maintenance activities. For example, the Company intends to conduct tank maintenance at Holtsville in 2026, with CNG serving as a limited backup to offset a portion of daily output during non-peak periods or in the event of delays. By contrast, there is no comparable backup available for Greenpoint LNG. If Greenpoint were taken offline for maintenance, there would be no alternate local source of supply for the KEDNY network. NESE could serve as a partial contingency in that context, similar to the way CNG helps mitigate risk for KEDLI. While neither option replaces LNG, both can reduce exposure during planned or unplanned outages.

Regionally, the project would improve system flexibility across the constrained northeast market. Additional upstream capacity could extend pipeline maintenance windows, enable shifts between Transco and Texas Eastern Transmission Corporation ("TETCO") deliveries, and provide supply to non-firm customers who would otherwise rely on delivered fuels. These effects would support lower-cost gas access and reduce localized emissions.

Finally, NESE would provide benefits to electric system reliability by reducing the need for oil-fired generation in New York City and Long Island during gas-constrained periods. Additional firm supply could reduce interruptions for non-firm generation customers that are supply-constrained but not infrastructure-limited. Since NYISO dispatches generation based on cost and system reliability, both factors could improve, while emissions from gas-fired units would remain below those from alternate fuels.

4.1.2 Energy Affordability

Because of the high correlation between natural gas spot prices and wholesale electric prices (see Section 2.4.5), natural gas price reductions associated with NESE would translate directly to wholesale electric price reductions and resultant economic benefits to New York electric customers.

National Grid retained the services of Levitan & Associates ("LAI") to perform a long-term economic benefits analysis of NESE to quantify the resulting wholesale electricity market cost savings expected to be realized by New York electricity customers.

As further described and detailed in the LAI report, the pipeline capacity constraint-relieving NESE has the potential to generate significant cost savings to electric customers in New York by reducing the price of natural gas available to the region's power generators, and thus the wholesale and retail electric energy prices in New York. State-wide, NESE delivering 400 MDth/day of gas supply into Rockaway Transfer station is projected to result in nominal average wholesale energy market cost savings for New York retail electric customers of approximately $670 million per year from 2028 through 2042.[119] These savings correspond to a total present value ("PV") of approximately $6.0 billion in 2028 assuming a 7% discount rate used by LAI .[120] Around 45% of those benefits would be expected to accrue to electric customers in New York City and Long Island. While National Grid evaluated costs and benefits over the initial fifteen-year term of Williams' proposed NESE contract, there may be opportunities beyond 2042 to generate additional benefits for electric customers in NY.

[119] Levitan & Associates, Inc. (2025) Assessment of Economic Benefits in NYISO's Wholesale Electricity Market Attributable to Transco's Northeast Supply Enhancement Project.
[120] Id.

The incremental capacity from NESE would enable the Company to de-risk its CNG operation and control costs to customers. The Company would only contract for supply for two of the five CNG sites. The Company estimates avoided gas supply costs associated with CNG of approximately $48.3 million per year. As noted in the LAI report, there would be an additional $1.7 million in operating savings per site.[121]

At a state-wide level the substantial wholesale savings plus the additional savings from a reduced dependency on CNG costs have the potential to significantly exceed the cost of NESE providing a boost to New York's state economy. These cumulative statewide benefits associated with avoided CNG costs and wholesale electricity market benefits are estimated to exceed NESE's costs by a ratio of 2.5 to 3.0.

To the extent that the Company has short-term (i.e., less than one year) excess supplies and/or capacity in its portfolio, as is often the case in the off-peak season, the Company utilizes capacity release and/or off-system sales transactions for optimization when possible. Most revenues are returned to customers. This is a long-established practice that defrays millions of dollars each year for customers as a credit against the fixed costs of the gas supply portfolio. The Company evaluates the portfolio for excess capacity or supplies annually, seasonally, monthly, and daily. Its objective is to first identify the least-cost supplies to serve customers, and then to optimize to the extent possible without impacting reliability. The Company will not encumber assets via optimization that are needed to ensure reliable service to customers. While historically the Company has experienced consistent growth in customer requirements year-on-year, should there be a sustained period of decline in load, as contracts come up for renewal, the Company will evaluate the necessity to retain both supply and capacity contracts to further minimize costs to customers. At this time, the Company is unable to project with confidence optimization revenues resulting from NESE capacity due to market volatility but would expect incremental revenues.

[121] Levitan & Associates, Inc. (2025) Assessment of Economic Benefits in NYISO's Wholesale Electricity Market Attributable to Transco's Northeast Supply Enhancement Project.

Figure 4-1: 2028-2042 Estimated Benefits & Costs Summary Table

Benefits	**2028 PV Benefits ($M)[122]**
Upstate New York (A-E)[123]	$1,946
Capital District and Lower Hudson Valley (F/G-H-I)[124]	$1,318
Downstate New York (J-K)[125]	$2,750
Total Wholesale Electricity Savings Benefit[126]	**$6,013**
CNG Savings[127,128]	$520
Total Benefits	$6,534

Costs	**2028 PV Costs ($M)[129]**
Expected Pipeline Costs[130,131]	$2,092 - $2,518
Preliminary Capitalized Infrastructure Upgrades[132]	$69
Total Costs	$2,160 - $2,587

Benefits and Costs	**2028 PV Net Benefits and Costs ($M)[133]**
Total Benefits	$6,534
Total Costs	$2,160 - $2,587
Cost Benefit Ratio	2.5 – 3.0
Cost Benefit Net	$3,946 - $4,373

[122] All Values are expressed as 2028 present value estimates, using a 7% discount rate
[123] Levitan & Associates, Inc. (2025) Assessment of Economic Benefits in NYISO's Wholesale Electricity Market Attributable to Transco's Northeast Supply Enhancement Project.
[124] Id.
[125] Id.
[126] Id.
[127] Includes estimated avoided supply costs associated with three (3) facilities and projected annual operating expenses of approximately $1.7 million per CNG site.
[128] CNG savings are assumed to remain constant in nominal terms over a 15-year period.
[129] All values are expressed as 2028 PV estimates, using a 7% discount rate. All cost estimates are preliminary and are based on the information available at the time of this filing.
[130] These values reflect a present value calculation of an expected fixed capacity charge rate of between $1.47/Dth/month and $1.77/Dth/month over 15 years, using a 7% discount rate.
[131] These are preliminary estimates and assume the fixed capacity rate remains flat in nominal terms over a 15-year period.
[132] Refers to the estimated present value of investments in National Grid's gas distribution infrastructure required to accommodate the incremental natural gas volumes associated with NESE and ensure reliable delivery to end-use customers.
[133] Values are expressed as 2028 present value estimates, using a 7% discount rate.

4.1.3 Economic Development Benefits

GDP Multiplier Effects of Cost Savings
The savings from lower energy prices translate to more disposable income for households. Electricity cost savings in the commercial sector will channel some of their savings to employees, which will also enhance household disposable income levels. These two dynamics will act as economic stimuli as households increase their spending in their local economies. These economic benefits are in addition to the direct wholesale electric market savings captured by LAI's modeling of forecast wholesale electric market savings.

Job Creation
According to Transco's 2019 FERC petitions, the construction of NESE is expected to support approximately 3,186 direct and indirect job-years, with 936 of these job-years occurring within the immediate project study area.[134] This construction effort is anticipated to generate around $234.1 million in direct and indirect labor compensation, of which approximately $85.8 million will be realized locally.[135]

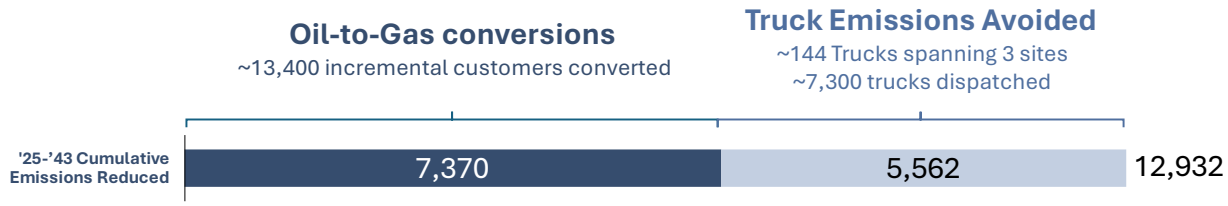
State & Local Tax Revenue
According to the economic impact analysis considered in FERC's certification of the project in 2019, the project is expected to contribute significantly to the local and state economies.[136] It is estimated to generate $23.7 million in GDP for New York State, alongside $1.1 million in state tax revenues and $1.2 million in local tax revenues.[137] Furthermore, the project will incur approximately $9.8 million annually in submerged land easement fees for the new pipeline, which will further bolster local economic activity.[138]

4.1.4 Environmental Benefits

NESE could result in the reduction of 12,932 metric tons of carbon dioxide equivalent ("$MTCO_2e$") of GHG. Emissions would be reduced by enabling the continued conversion of oil heating systems to natural gas, and by reducing emissions associated with CNG trucking, as shown in Figure 4-2.[139] Together, these two sources are equivalent to removing approximately 2,811 passenger vehicles from the road for a full year.[140] NESE was also found to have emissions benefits in MJ Bradley's 2019 report on the project.[141]

[134] Federal Energy Regulatory Commission. (2019, January). *Northeast Supply Enhancement Project Final Environmental Impact Statement Part 1*. Retrieved from Federal Energy Regulatory Commission: https://www.ferc.gov/sites/default/files/2020-05/part-1.pdf
[135] Id.
[136] Williams Transcontinental Pipeline Company. (2017, June). *Economic impacts analysis* (Attachment 5). Retrieved from http://northeastsupplyenhancement.com/wp-content/uploads/2017/06/FINAL-Williams-NESE-Analysis-5-24-2017.pdf
[137] Id.
[138] Id.
[139] Assumes emissions factors found in NYSERDA (2023, May), Fossil and Biogenic Fuel Greenhouse Gas Emission Factors, Report 22-23.
[140] Environmental Protection Agency. (2025, June 12). *Greenhouse Gas Emissions from a Typical Passenger Vehicle*. Retrieved from https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle
[141] M.J. Bradley & Associates LLC. (2019, June 11). *Life Cycle Analysis of the Northeast Supply Enhancement Project*.

Figure 4-2: Cumulative emissions reduced by NESE from '25-'42 (MTCO2e)[142]



NESE will enable approximately 13,400 additional customers to convert from high-emission heating oil to cleaner-burning natural gas. These conversions are expected to reduce emissions by approximately 7,370 $MTCO_2e$ between 2025 and 2042 (57% of total avoided emission) and will also lower emissions of harmful criteria pollutants such as PM2.5, NO_x, and SO_2. These benefits are particularly important in densely populated urban areas such as New York City where exposure to air pollution is a persistent and growing concern.

In addition, the firm pipeline capacity enabled by NESE will eliminate the annual need for three CNG injection sites and displace 144 trucks used to supply those sites. Over the period from 2025 to 2042, this equates to approximately 432 trucks dispatched annually, resulting in a cumulative emissions reduction of roughly 5,562 $MTCO_2e$.[143]

4.1.5 Consistency with the CLCPA

NESE is consistent with New York's progress toward the Climate Law's emissions reduction targets. According to NYISO, "natural gas will continue to be necessary to maintain grid reliability" as New York progresses towards its 2040 electric sector targets.[144] The valuable role of National Grid's gas distribution network to support a more cost-effective decarbonization transition is articulated in the Company's LTP. NESE will help ease costs and enhance energy system flexibility while maintaining system reliability throughout the transition to a cleaner energy future.

This evaluation finds that NESE would not alter the conclusions of the LTP scenario analysis. In the LTP filing the Company selected the Clean Energy Vision ("CEV") scenario as the recommended basis for a pathway to a decarbonized gas system.[145] The CEV represents a balanced approach to gas decarbonization by accelerating electrification, energy efficiency, and low-carbon fuels. The Company's LTP scenario analysis found that the net benefits of the CEV scenario were greater than the net benefits of the Accelerated Electrification ("AE") scenario, although the costs of both scenarios outweigh the benefits.[146] The net societal cost of the CEV and AE scenarios were found to be $205 billion and $217 billion, respectively.[147] The cost to customers of NESE – between approximately $2.2 billion and $2.6 billion – would have no meaningful effect on either scenario's benefit-cost ratio, demonstrating that NESE would therefore not impede progress toward either scenario. Given the significant benefits of NESE, including the significant electric system cost reductions, the Company believes the project would likely lower the net societal costs of achieving the Climate Law's goals.

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[142] Analysis and estimates developed based on factors from NYSERDA's 22/23 emissions factors.
[143] Assumes 144 trucks would be cycled three times per heating season, including for testing, staging, and dispatch during extreme cold weather events.
[144] New York Independent System Operator. (2025). Power Trends 2025. Retrieved from New York Independent System Operator: https://www.nyiso.com/documents/20142/2223020/2025-Power-Trends.pdf
[145] Case 24-G-0248, In the Matter of a Review of the Long-Term Gas System Plans of The Brooklyn Union Gas Company d/b/a National Grid NY, KeySpan Gas East Corporation d/b/a National Grid, and Niagara Mohawk Power Corporation d/b/a National Grid, Final Gas System Long-Term Plan (March 7, 2025).
[146] Id.
[147] Id.

Further, as our energy system evolves, there is a significant risk that disadvantaged New Yorkers, including those living in Disadvantaged Communities ("DACs"), historically marginalized groups, and lower-income New Yorkers, will disproportionately bear the costs associated with the transition from gas. As discussed in the LTP, these groups often face greater barriers to electrification and could face greater cost increases due to a transition to cleaner energy.[148] To address these challenges and ensure a fair and just energy transition, it is imperative to explore policy and regulatory options that protect not only current consumers but also future generations who may face significantly higher energy costs. For a comprehensive discussion on affordability and equity in gas decarbonization policy, please refer to Chapter 9 of the LTP, which outlines strategies to mitigate the impacts of the energy transition on vulnerable populations while promoting equity in energy access and affordability.[149]

4.2. Project Costs and Dependencies

There are two categories of costs associated with the project (see Figure 4-3):

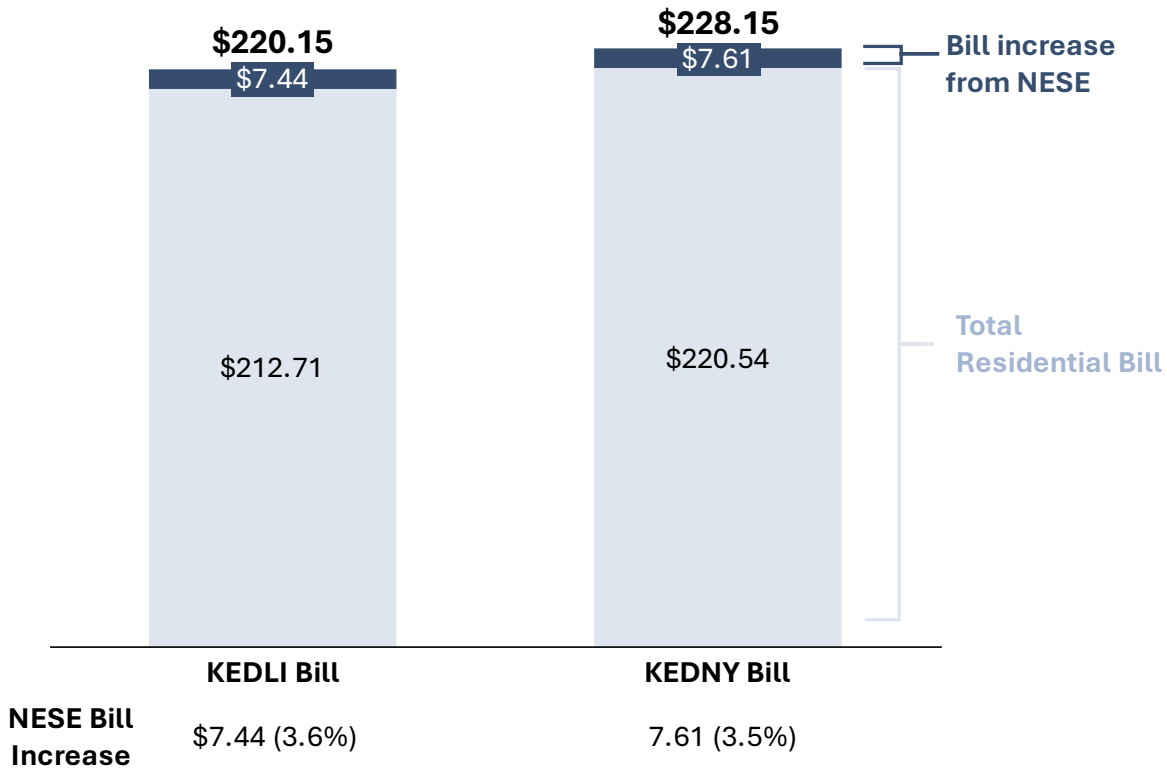
- The cost of NESE, which would be recouped by Transco through an expected demand charge of $1.47/Dth.

- The cost of National Grid gas distribution infrastructure capital upgrades is necessary to ensure the incremental gas supply provided by NESE can be delivered to the customers who need it.

The cost of NESE on the average National Grid residential gas heating customer's monthly bill is estimated to be $7.44 in KEDLI and $7.61 in KEDNY, an increase of approximately 3.5%. This impact would be substantially offset by the reduction in annual downstate electric bill savings and other cost savings discussed in Section 4.

[148] Case 24-G-0248, In the Matter of a Review of the Long-Term Gas System Plans of The Brooklyn Union Gas Company d/b/a National Grid NY, KeySpan Gas East Corporation d/b/a National Grid, and Niagara Mohawk Power Corporation d/b/a National Grid, Final Gas System Long-Term Plan (March 7, 2025).
[149] Id.

Figure 4-3: NESE Bill Impacts on KEDLI and KEDNY



Absent any change in cost recovery mechanisms the Company intends to seek cost recovery for all gas costs via existing mechanisms, including the Gas Adjustment Clause ("GAC") and Transportation Adjustment Clause ("TAC"). At the time of filing the Company is evaluating other cost recovery mechanisms that could result in mitigating certain cost to customers. To the extent gas capacity credits are generated as described in section 4.1.2, revenues will be returned to gas customers via existing mechanisms.

4.2.1 Necessary Incremental Capital Infrastructure Projects

As noted in Section 3.1, National Grid and Transco planned and designed our existing infrastructure to accommodate 400 MDth/day of additional capacity on the Rockaway Delivery Lateral, through FBF, and into the Brooklyn Queens Interconnect ("BQI") (see Figure 3.1Figure 3-1) using a phased approach. With the demand growth that occurred since NESE was originally proposed, National Grid will need to invest in the new downstream infrastructure envisioned as part of the larger plan soon after NESE comes online. These upgrades are necessary to improve reliability and ensure that the system maintains adequate pressure to transport the additional gas closer to the distribution system for overall increased throughput and efficiency. The two infrastructure projects that enable this are: a) the Marine Park Regulator Station, and b) Additional Flow Control at the Lake Success Metering Facility.

Marine Park Regulator Station: This proposed regulator station, to be sited north of the existing FBF facility, enables BQI to operate at the higher pressures needed to accept all incremental NESE gas and move it closer to the distribution system. The existing FBF facility will be modified to increase the outlet pressure and flow metering capability to accommodate NESE by Transco. These modifications will allow the incremental gas volumes to flow efficiently, improving overall throughput, reliability, and system efficiency. These upgrades will need to be online as soon as practical following the in-service date for the pipeline and are currently expected to cost ~$40 million.

Additional Flow Control at Lake Success Metering Facility: The New York Facilities Agreement between National Grid and Con Edison is an important mechanism to coordinate gas deliveries between the two systems using shared infrastructure to minimize unnecessary duplication. Additional flow control at the existing Lake Success Metering Facility will facilitate deliverability of incremental NESE gas and is critical to ensuring National Grid can comply with the New York Facilities Agreement flow limitations. This upgrade will need to be online within the first five years of the in-service date for NESE and is currently expected to cost ~$10-15 million.

In 2019, National Grid indicated there was a need for the Metropolitan Reliability Infrastructure ("MRI") Project as a necessary capital project to accommodate the full volume from NESE plus some incremental contingency flow. National Grid may still propose MRI Phase 5, the only phase not constructed, in a future rate case as a component of its pipeline integrity program, but the current system configuration utilizing MRI Phases 1-4 is sufficient to receive the full volume from NESE.

5. Conclusions and Recommendations

Based on the analysis presented in this Addendum, the Company finds that NESE represents a timely and practical response to emerging energy system reliability risks in Downstate New York. As a regulated public utility, the Company has a duty to safeguard the reliability, affordability, and safety of the systems its customers depend on — particularly during times of elevated risk. NESE would increase firm supply by approximately 13%, reduce exposure to single points of failure, and enable scaled-down reliance on logistically complex and risk-intensive CNG operations. These enhancements would materially improve the ability of the gas network to maintain service during peak winter conditions and upstream disruptions.

In addition, NESE would contribute to statewide affordability objectives. Analysis by LAI estimates net societal benefits between $3.9 billion and $4.5 billion over a 15-year period, driven by reduced wholesale electricity costs and avoided gas peaking expenditures. These benefits outweigh project costs by a factor of 2.5 to 3.0, offering a favorable cost-benefit profile for both gas and electric customers.

The Company's evaluation further concludes that NESE would not impede progress toward the CLCPA targets. On the contrary, by facilitating fuel-switching away from heating oil, displacing diesel-powered CNG trucks, and enhancing energy system optionality during the transition, NESE would support emissions reduction efforts and near-term air quality improvements.

NESE complements National Grid's CEV scenario and fits within a phased infrastructure strategy planned since 2008. The project reflects an incremental, tangible step toward preserving service continuity, protecting customers, and supporting ongoing energy transition efforts. The evaluation reaffirms that reliability, affordability, and climate compliance must be treated as co-requirements of modern energy planning, not as competing goals.

In light of these findings, the Company asks that the Commission acknowledge the findings and recommendations of this evaluation and give due consideration to the potential system-wide reliability, affordability, and environmental benefits of NESE within New York's evolving energy landscape, while also considering the gas supply needs identified by NYISO and NYSERDA discussed above. This Addendum does not alter the recommendations of the Company's 2025 Long-Term Plan, nor does it signal a shift away from energy efficiency, electrification, or non-pipe solutions. Rather, it evaluates a discrete, infrastructure-based opportunity to address immediate system reliability risks while maintaining alignment with New York's long-term decarbonization objectives.