

New York ISO
Independent System Operator

2026 Reliability Needs Assessment (RNA)

A Report from the New York Independent System Operator

DRAFT

For October ~~15~~28, 2026 ~~OC~~MC

Table of Contents

Executive Summary **6**

Key Trends Affecting Reliability 7

Actionable Reliability Needs 8

Emerging Reliability Risks and Dependencies 13

Impact of Uncertainty and Scenario Risks 15

Reliability Value of Potential Solutions 17

Next Steps 18

Introduction **20**

Background **22**

State of the Grid 22

The Role of Competitive Wholesale Markets 30

Short-Term Assessment of Reliability (STAR) Findings 33

Recommendations from CRP: Planning for Uncertainty 34

Electric Grid Trends **36**

Demand Growth and Forecast Uncertainty 36

Increasing Large Loads 41

Planned Project Additions and Resource Removal 43

Aging Generation 48

Winter Fuel Availability 51

Future Import and Emergency Assistance Availability 52

Actionable Base Case Results **54**

Statewide Resource Adequacy 54

Lower Hudson Valley 62

New York City 63

Long Island 65

Rest of State 67

Scenarios **70**
Scenario Descriptions 70
Climate Policy Advancement Scenario 73
Large Loads Scenario 76
Economy Slows Scenario 78
Outlook Contract Scenario 81
Inverter-Based Resources Voltage Control Scenario 83
Other Informational Scenarios 84
Potential Solution Combinations for a Reliable System 85
Findings **88**
Statewide Resource Deficiency Need 88
Lower Hudson Valley Reliability Need 89
New York City Reliability Need 90
Statewide Voltage and Stability Concerns 91
Uncertainty in the Planning Horizon 92
Next Steps and Future Studies **97**

List of Figures

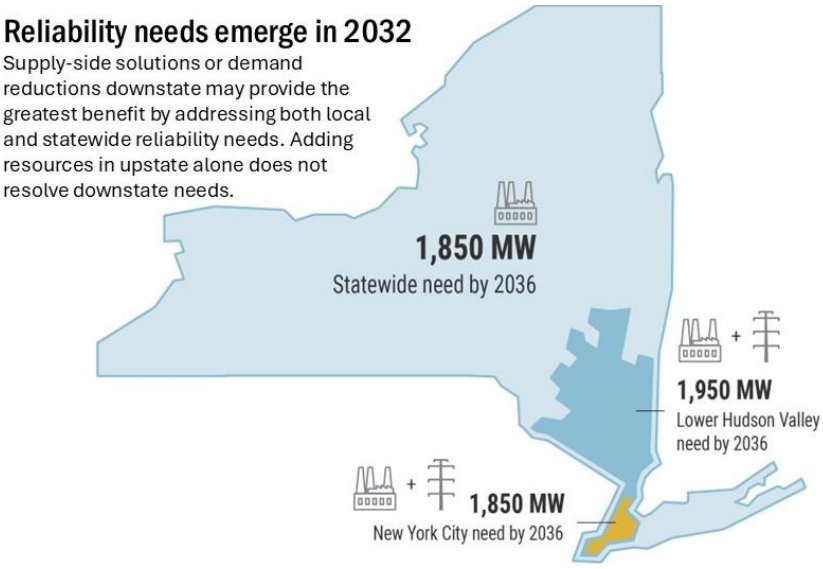
Figure 1: NYISO's Comprehensive System Planning Process 20
Figure 2: Overview of RNA Report 21
Figure 3: NYCA Load Zones 23
Figure 4: Summer Installed Capacity by Fuel Source — Statewide, Upstate, and Downstate New York: 2026 23
Figure 5: Energy Production by Fuel Source — Statewide, Upstate, and Downstate New York: 2026 25
Figure 6: Statewide resource availability for summer 2026 26
Figure 7: Historical Generating Capacity Fuel Mix in New York State 27
Figure 8: Voltage Support Service Calls in Recent Operations 28
Figure 9: Unavailable Capacity by Unit Age in the July Heatwave 29
Figure 10: NYISO Activated SCR Calls (Excluding Tests) in Recent Operating History 30
Figure 11: Projects Identified to Address 2025 Q3 STAR New York City Need 34
Figure 12: Projects Identified to Address 2025 Q3 STAR Long Island Need 34
Figure 13: Major Factors Impacting the Demand Forecast 36
Figure 14: 30-Year NYCA Summer Peak Forecast – Coincident Peak 37
Figure 15: 30-Year NYCA Winter Peak Forecast – Coincident Peak 37
Figure 16: NYCA Baseline Summer and Winter Peak Forecast Impacts 39
Figure 17: NYCA Higher Demand Summer and Winter Peak Forecast Impacts 40
Figure 18: Non-Large Load Demand Growth Assumption and Range 41
Figure 19: Large Load Projects in the 2026 RNA and the NYISO Interconnection Queue 41
Figure 20: RNA Large Load Forecast Range of Assumptions (MW) 42
Figure 21: RNA Large Load Forecast Summer Coincident Peak by Load Type (MW) 43
Figure 22: Nameplate Capacity Additions and Removals Since 2019 (Up to June 2026) 44
Figure 23: Base Case Additions, Removals, Net Imports, and Load (MW) 45
Figure 24: Planned 2036 Zero-Emission Fuel Mix by Zone 46
Figure 25: Planned Project Additions Assumption Range 48
Figure 26: NY Fossil Generation Age through the RNA Horizon 49
Figure 27: Aging Generation Trend - P90 vs P95 vs P99 50
Figure 28: Aging Generation Assumption Range 51
Figure 29: Winter Fuel Assumption 52
Figure 30: Imports and Emergency Assistance Assumptions and Ranges 53
Figure 31: NYCA Resource Adequacy LOLE Results 55
Figure 32: NYCA Resource Adequacy Results with Additional Reliability Indices 56
Figure 33: Zonal and NYCA Load Ratio Perfect MW Capacity 57
Figure 34: Zonal Compensatory MW Study Year 10 (2036) Map 58
Figure 35: LOLE after Each EOP Step 59
Figure 36: Resource Adequacy Contribution by Emergency Operating Procedure 59
Figure 37: Statewide Resource Adequacy Margin by Emergency Operating Procedure 60
Figure 38: Resource Adequacy Impact of the Propel NY Project 62
Figure 39: Lower Hudson Valley Summer Transmission Security Margin – Existing & Planned Resources 63
Figure 40: NYC Summer Peak Transmission Security Margin – Existing & Planned Resources 64
Figure 41: Long Island Summer Peak Transmission Security Margin – Existing & Planned Resources 65
Figure 42: Long Island Transmission Security Margin without Propel NY 66
Figure 43: State Electric Map Highlighting Voltage Issues 67
Figure 44: Needs Resolved by Local Transmission Plans 69
Figure 45: Key Assumptions for Scenarios and Reasonable Range 71
Figure 46: Scenario Assumptions 72
Figure 47: Summary of Analysis Performed on Each Scenario 72
Figure 48: Climate Policy Advancement - Resource Adequacy 73
Figure 49: Climate Policy Advancement - Lower Hudson Valley Transmission Security Margin 73
Figure 50: Climate Policy Advancement - New York City Transmission Security Margin 74
Figure 51: Climate Policy Advancement - Long Island Transmission Security Margin 75
Figure 52: Large Loads Scenario - Resource Adequacy 76
Figure 53: Large Loads Scenario - Lower Hudson Valley Transmission Security Margin 76
Figure 54: Large Loads Scenario - New York City Transmission Security Margin 77

Figure 55: Large Loads Scenario - Long Island Transmission Security Margin 78
Figure 56: Economy Slows Scenario - Resource Adequacy 78
Figure 57: Economy Slows Scenario - Lower Hudson Valley Transmission Security Margin 79
Figure 58: Economy Slows Scenario - New York City Transmission Security Margin 80
Figure 59: Economy Slows Scenario - Long Island Transmission Security Margin 80
Figure 60: Contract Case Scenario - Resource Adequacy 81
Figure 61: Contract Case Scenario - Lower Hudson Valley Transmission Security Margin 82
Figure 62: Contract Case Scenario - New York City Transmission Security Margin 82
Figure 63: Contract Case - Long Island Transmission Security Margin 83
Figure 64: LOLE across the Other Informational Scenarios 84
Figure 65: Potential Reliability Contribution of 500 MW by Resource Type 86
Figure 66: Resource Adequacy Margins by Zone and Statewide 89
Figure 67: Lower Hudson Valley Summer Peak Transmission Security Margin – Existing & Planned Resources 89
Figure 68: NYC Summer Peak Transmission Security Margin – Existing & Planned Resources 90
Figure 69: Scenario Resource Adequacy Margin 93
Figure 70: Scenario Summer Lower Hudson Valley Transmission Security Margin 95
Figure 71: Scenario Summer New York City Transmission Security Margin 95
Figure 72: Scenario Summer Long Island Transmission Security Margins 96

Executive Summary

This 2026 Reliability Needs Assessment (RNA) evaluates the reliability of the New York bulk electric grid through 2036, considering forecasts of peak power demand, planned upgrades to the transmission system, and changes to the generation mix over the next ten years.

This RNA identifies three Reliability Needs: a statewide resource deficiency beginning in 2033, a transmission-constrained deficiency in New York City beginning in 2032, and a related need in the Lower Hudson Valley also beginning in 2032. Taken together, the findings indicate that maintaining a reliable grid will require at least 1,850 MW of new generation resources appropriately located with the necessary operating characteristics and coupled with transmission capability necessary to deliver those resources. In-state transmission alone will not resolve the statewide need.

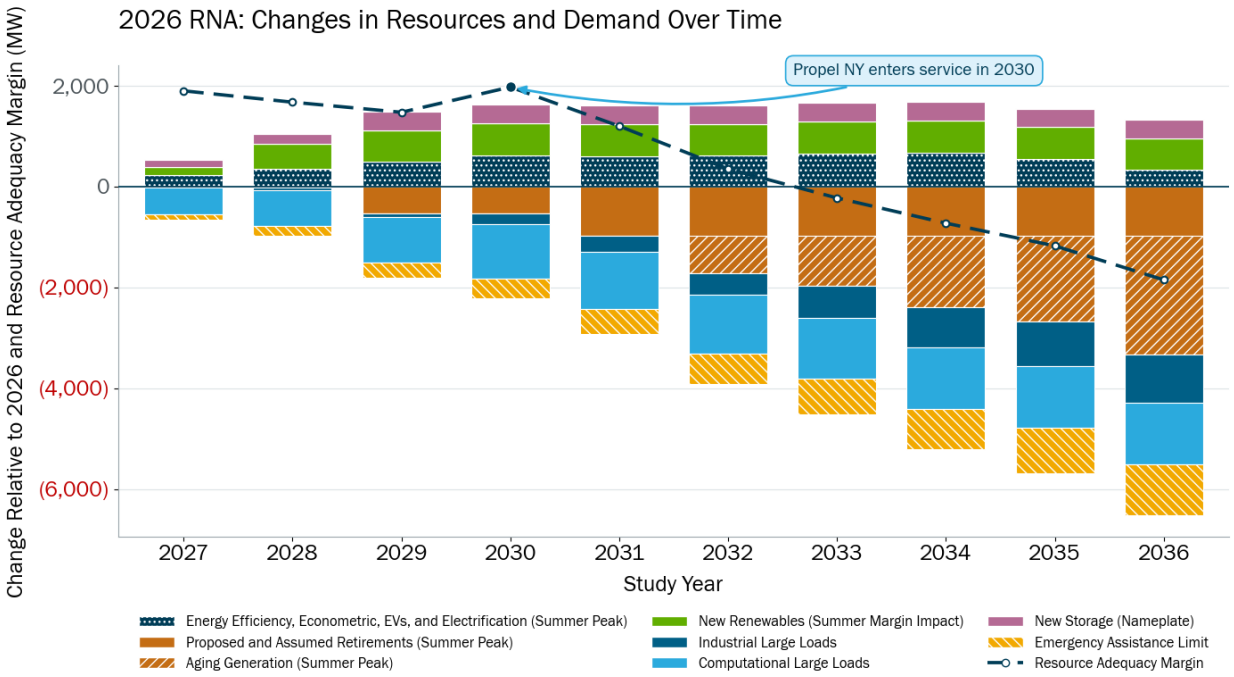


The combination of growing demand and increasing risk to the availability of New York's aging generation fleet requires immediate attention. Projected growth from data centers, advanced manufacturing, and other large loads presents a challenge for maintaining reliability. The solutions needed to maintain reliability, particularly new or repowered generation and major transmission facilities, require substantial time for development, regulatory approvals, permitting, construction, and testing. Although the identified Reliability Needs begin in under six years, the long lead times for infrastructure solutions make these needs a present-day planning and development priority. Delayed action would leave fewer options, increase reliance on emergency measures, and heighten the risk that needed resources will not be in service when the system requires them.

Following the completion of the RNA and if reliability needs remain after consideration of updates to plans and forecasts, the NYISO will solicit and evaluate market-based solutions and regulated solutions through the development of the 2027-2036 Comprehensive Reliability Plan. The NYISO will evaluate solutions through the Reliability Planning Process, but maintaining reliability will also require timely regulatory and permitting actions by New York State and investment by market participants.

Key Trends Affecting Reliability

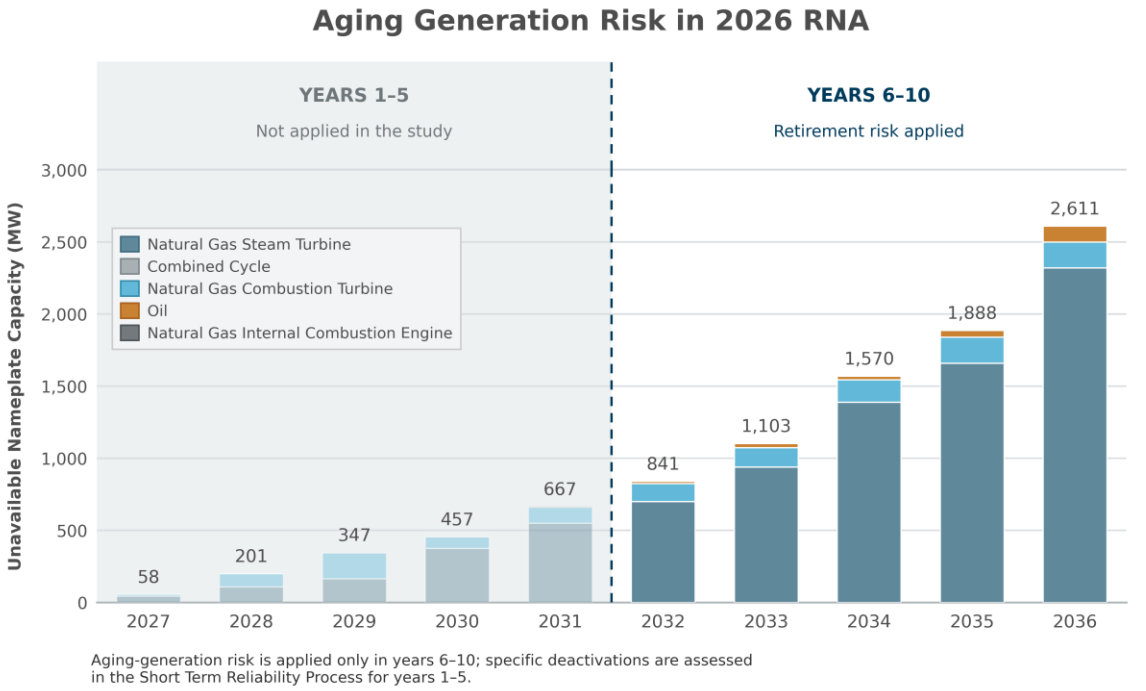
The RNA findings reflect the convergence of several trends: growing electricity demand, greater uncertainty and limitations regarding assistance from neighboring regions, and significant reductions in available in-state energy supply. The growing demand is especially driven by approximately 2,700 MW of planned large loads, including 1,000 MW of industrial facilities and 1,700 MW of computational data centers across the state. Although requests for large load development exceed 14,000 MW statewide, the RNA reflects only those projects that have progressed sufficiently to be incorporated into the demand forecast. Neighboring regions are also experiencing similar demand growth, resulting in less opportunity for assistance during mutually stressed system conditions. These trends cause a greater dependency and strain on New York's generation fleet, which is expected to experience more deactivations in the coming years. The RNA accounts for the planned retirement of 1,471 MW of existing generation, including the 517 MW of New York Power Authority small gas plants after 2030, along with the reduced availability of generation due to fuel constraints and aging power plant risks. The figure below summarizes the relative reliability impacts, both positive and negative, of these trends.



New York has the oldest generation fleet in the entire country. In particular, a significant

portion of New York's generation fleet will be over 70 years old by 2036, well beyond the life expectancy of these types of facilities. Recent operating experience demonstrates that the risks associated with an aging fleet are no longer a future concern. Unexpected deactivations, equipment failures, forced outages, and extended maintenance periods have increasingly reduced available generation, highlighting the growing uncertainty surrounding the long-term availability of the existing fleet.

To reflect the increasing risks associated with relying on an aging generation fleet, the 2026 RNA incorporates a projection of expected unavailable capacity in the later years of the study horizon as shown in the figure below. This results in approximately 2,600 MW of nameplate capacity assumed as unavailable by 2036, nearly all of which is concentrated in New York City and Long Island. The reliability implications extend beyond the loss of megawatts alone, as many of the affected generators provide the operational flexibility, voltage support, and on demand energy production that underpin reliable grid operations. The projected reduction in available generation underscores the importance of urgent development of replacement resources and other solutions capable of maintaining reliability as the existing fleet ages.



Actionable Reliability Needs

The RNA assesses a "base case" set of assumptions to identify actionable Reliability Needs if there is a violation of applicable reliability criteria. The three Reliability Needs described below

arise under different reliability criteria and system conditions, but each reflects an insufficient amount of available supply to reliably serve projected demand. The statewide resource adequacy need reflects an overall shortage of available resources, while the New York City and Lower Hudson Valley needs reflect insufficient resources available within, or deliverable to, those constrained localities.

The NYISO quantifies Reliability Needs using a planning measure that assumes capacity is always available whenever needed. As a result, the reported needs should generally be viewed as a minimum benchmark. The contribution of an actual solution depends on factors such as when it can operate, how long it can sustain output, its fuel availability, and its location on the transmission system. Consequently, the amount of actual infrastructure needed to address a Reliability Need will be greater than the reported value and can vary significantly depending on the type of solution.

The RNA findings indicate that supply-side solutions or dependable demand reductions located in New York City and the Lower Hudson Valley may provide the greatest overall reliability benefit because they can simultaneously address both local and statewide needs. Transmission investments remain important for improving access to resources and reducing local constraints, but they cannot fully offset a statewide shortage of available generation. The NYPA small gas plants demonstrate this dynamic. Although these facilities entered service in 2001 and are among New York's newer conventional generators, their assumed retirement driven by state law materially contributes to each of the three identified Reliability Needs.

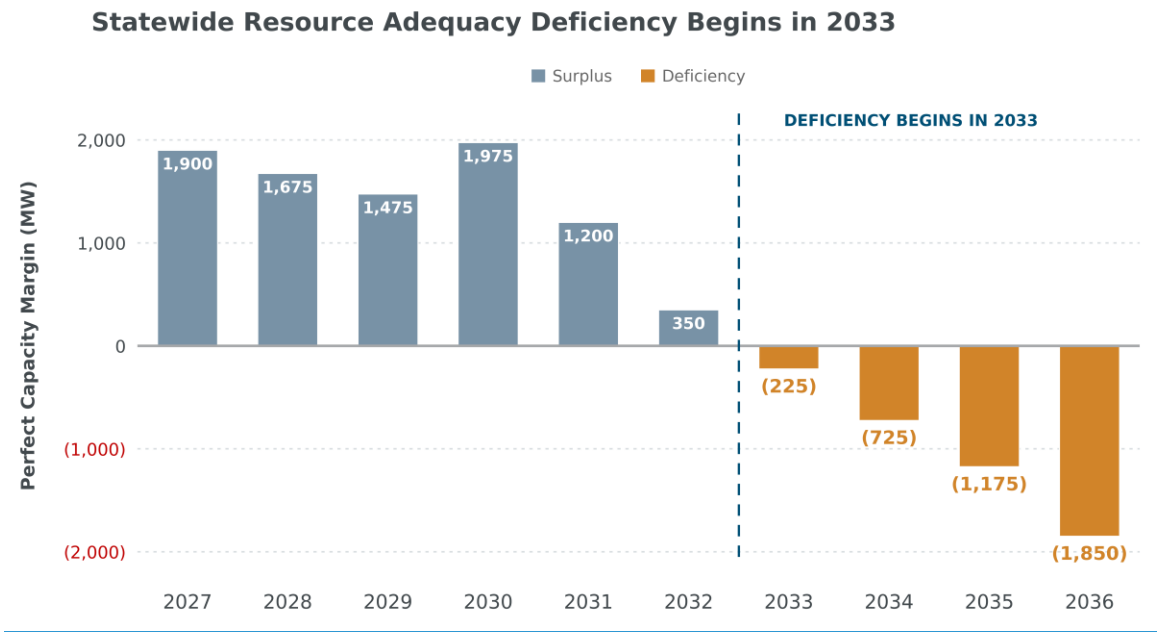
The Reliability Needs identified also comport with observed operational experience. Resource performance combined with extended periods of high system demand have driven prolonged periods of system stress. In the summer and winter, grid operations is increasingly relying on emergency actions to manage reliability.

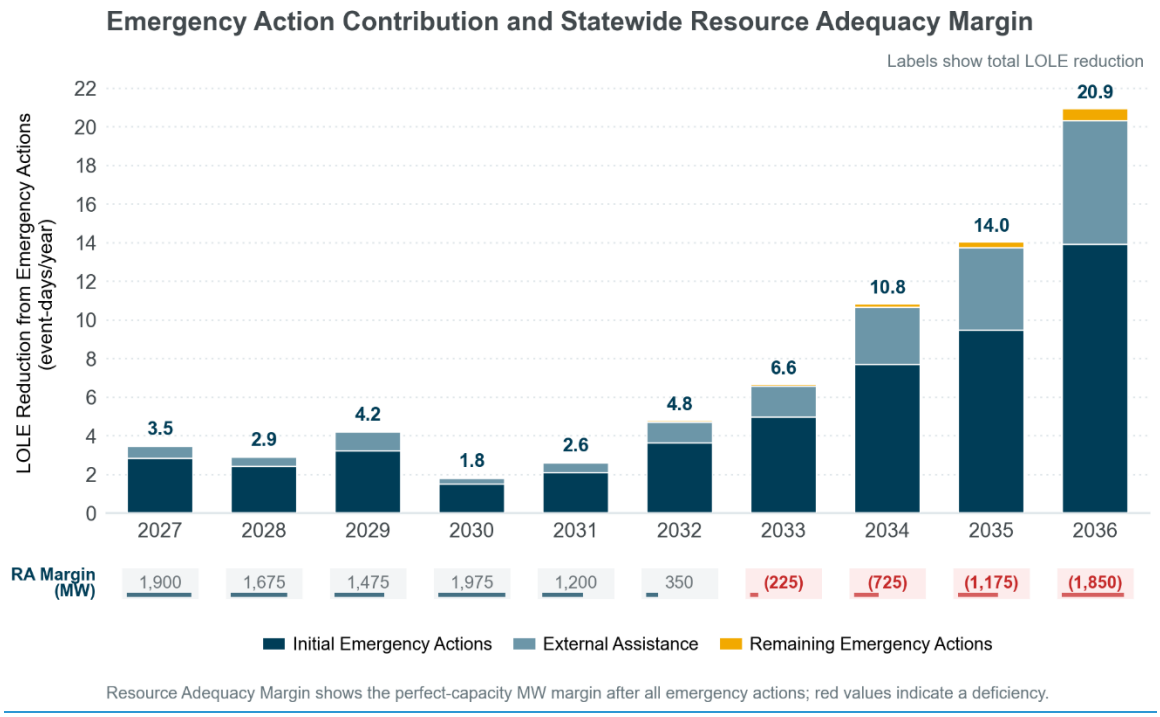
Statewide Resource Adequacy Need

Beginning in 2033, the planned statewide resources are insufficient to reliably serve forecasted demand, based on the resource adequacy loss-of-load-expectation criterion. The deficiency in 2033 is initially 225 MW and rapidly gets worse through 2036 with a deficiency greater than 1,850 MW as demand increases and the risks of aging generation reduce existing supply. Unlike many previously identified reliability needs, this deficiency is not primarily driven by internal transmission constraints and cannot be addressed with transmission solutions. A statewide resource adequacy need is a strong indicator that supply solutions are critically needed to provide a grid that is reliable and can support further economic development. Given the statewide nature of

the Reliability Need, Central Hudson, Con Edison, Long Island Power Authority, National Grid, New York State Electric & Gas, Orange & Rockland, and Rochester Gas & Electric are designated as the Responsible Transmission Owners and required to submit a regulated backstop solution(s) to address the need, which may be triggered if sufficient market-based solutions do not materialize.

While the identified deficiency begins in 2033, reliability conditions tighten well before a criterion violation occurs. The analysis indicates increasing reliance on emergency operating procedures and external assistance to maintain reliability, reducing the system's ability to withstand unexpected changes in demand, resource performance, or imports. The contribution of emergency actions to maintaining reliability increases from approximately 3.5 days per year in 2027 to approximately 21 days per year by 2036, illustrating a system that is becoming increasingly dependent on measures intended for infrequent emergency conditions. The reliability risks primarily occur during the summer months throughout the planning horizon. However, winter risks grow in the later years and account for approximately 40% of the risk by 2036 due to increasing demand for building heating and fuel-related constraints on electricity generation. These results suggest that maintaining reliability will require solutions capable of supporting the system across a wider range of operating conditions and seasons. To date in 2026, grid operations has taken emergency actions well in excess of the projected 3.5 days, an indication that the concerns raised in planning studies may be an operational reality well in advance of projections.



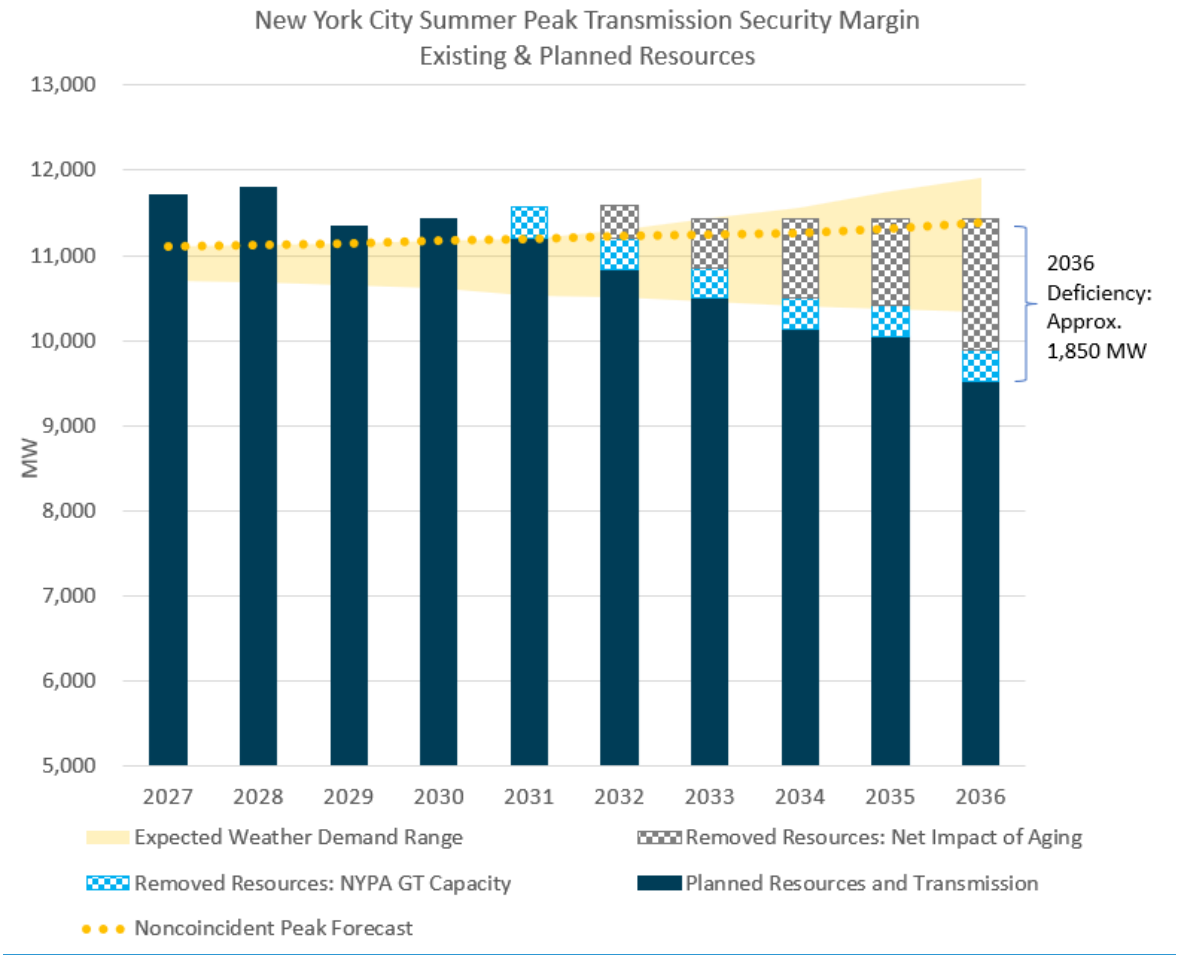


New York City Transmission Security Need

New York City is deficient by approximately 400 MW for seven hours in summer 2032, with the deficiency growing to approximately 1,850 MW for fifteen consecutive hours during the peak demand day in summer 2036. The deficiency also is observed in the winter with a deficiency of approximately 800 MW for sixteen consecutive hours in 2036. The identification of both summer and winter deficiencies indicates that effective solutions must provide reliable performance for a long duration across a broad range of seasonal conditions. The extended deficiency periods underscore the value of resources capable of sustained operation in isolation or combination, as resources with limited energy duration, such as energy storage, may not remain available for the full period of system need. The Reliability Need occurs within Con Edison's Transmission District. Therefore, Con Edison is designated as the Responsible Transmission Owner and required to submit a regulated backstop solution to address the need, which may be triggered if sufficient market-based solutions do not materialize.

This transmission security Reliability Need is a continuation of the deficiencies identified in recent Short-Term Assessments of Reliability. Those deficiencies are mitigated in the near-term horizon through the temporary retention of the Gowanus and Narrows barges and the addition of the Champlain Hudson Power Express line. However, reliability margins decline over time as electricity demand grows and the supply decreases due to the planned retirement of the NYPA

small gas plants after 2030 coupled with the increasing risk of other aging power plants.

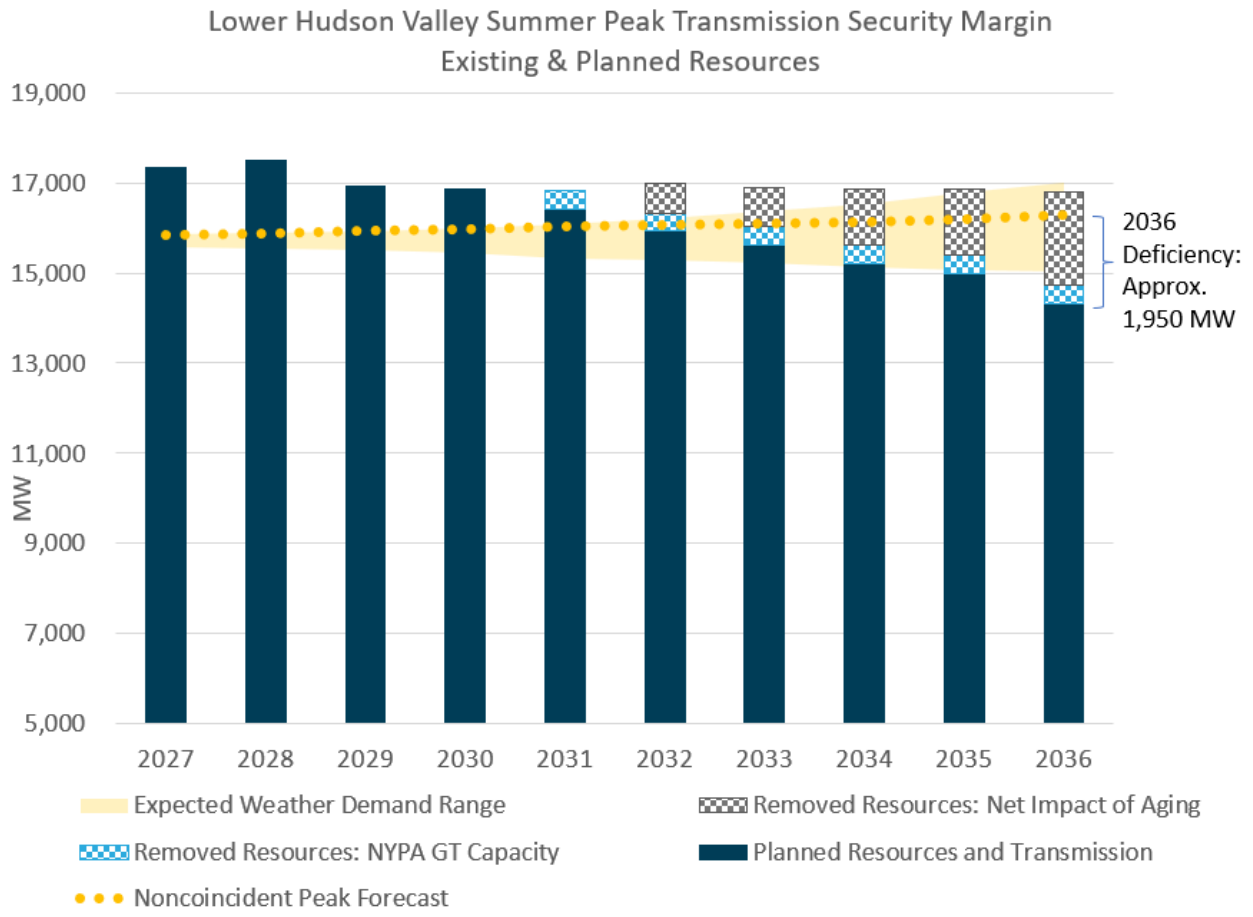


Lower Hudson Valley Transmission Security Need

The Lower Hudson Valley is deficient by approximately 130 MW for two hours in summer 2032, increasing to approximately 1,950 MW for seven consecutive hours during the peak demand day in summer 2036. The Lower Hudson Valley transmission security Reliability Need is driven by the same principal factors as the New York City deficiency: forecast demand growth, the projected effect of aging generation, and the assumed retirement of the NYPA small gas plants. Winter transmission security margins remain sufficient throughout the study period. The Lower Hudson Valley need arises within the Transmission District of several Transmission Owners; therefore, Central Hudson, Con Edison, New York State Electric & Gas, and Orange & Rockland are the Responsible Transmission Owners for developing a regulated solution, which may be triggered if sufficient market-based solutions do not materialize.

This transmission security Reliability Need is a continuation of the trend of deficiencies identified in recent Short-Term Assessments of Reliability ~~(STARs)~~ driven by generator

deactivations in New York City and Lower Hudson Valley.



Emerging Reliability Risks and Dependencies

In addition to the actionable Reliability Needs, the RNA highlights several base case findings that illustrate broader reliability challenges facing the New York bulk electric system.

System Voltage Performance

Maintaining proper voltage levels is becoming increasingly challenging under certain operating conditions, creating significant challenges in operating the electric grid reliably on a daily basis. The analyses demonstrate that applicable criteria can continue to be maintained; however, doing so may require extensive use of available voltage-control measures and operational actions, leaving limited flexibility for operators to respond to real-time changes in system conditions.

Consistent with observations discussed in the 2024-2035 Comprehensive Reliability Plan, the

results suggest that a comprehensive buildout of dynamic reactive support, such as STATCOMs, synchronous condensers, and SVCs, can provide broad system benefits by improving voltage control, enhancing operational flexibility, and supporting the efficient use of existing transmission facilities.

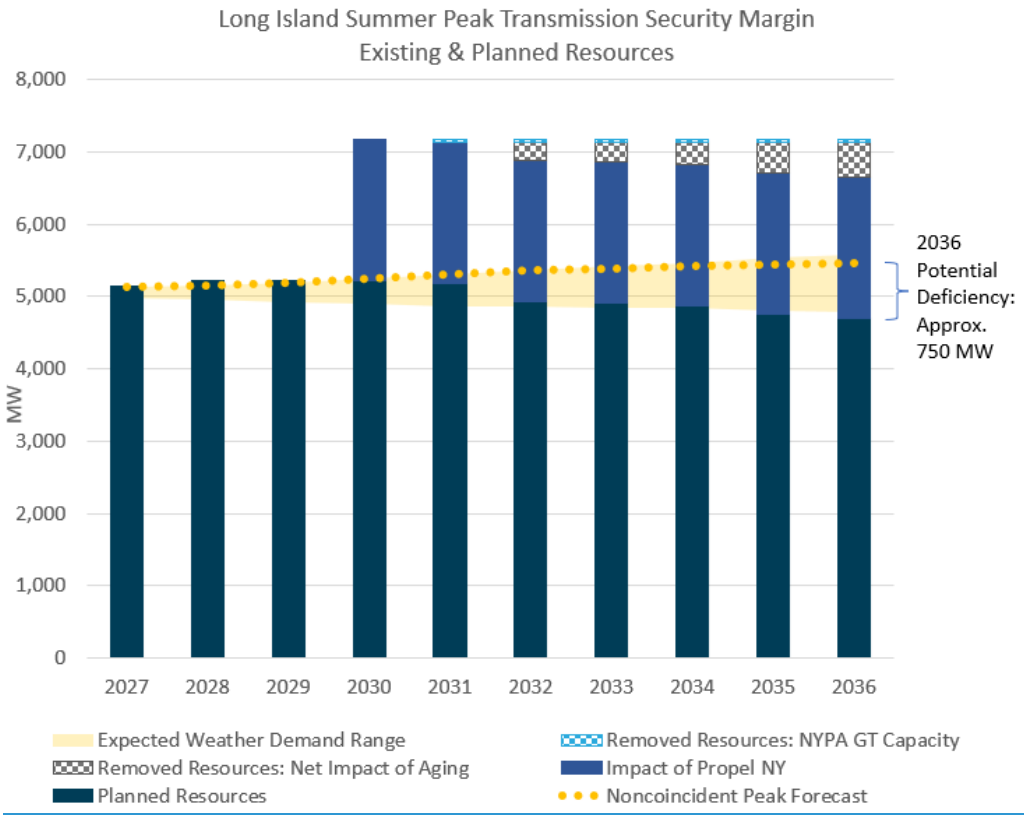
Large Load Growth

Large loads are a significant contributor to the statewide deficiency. Unlike traditional load, which varies by season and time of day, many large loads are expected to operate near their maximum demand for much of the year, creating a more persistent need for supply. The 2026 RNA includes approximately 2,700 MW of existing and proposed large loads that have made meaningful progress toward development, including manufacturing facilities and data centers. While ~~manufacturing~~certain loads are inherently not flexible, data center loads may be capable of reducing demand during stressed system conditions if appropriate interconnection requirements, market mechanisms, or contractual arrangements are established. If all new planned data center large loads (excluding those currently in service) are flexible and curtailed during peak demand periods, the statewide resource need in 2036 would reduce from approximately 1,850 MW to 850 MW.

Long Island Reliability Benefits from Transmission

The RNA finds that Long Island reliability is maintained throughout the ten-year horizon, but with very slim margins in the near-term and would become deficient as early as summer 2030 if not for the benefits from the Propel NY public policy transmission project.

With Propel NY in service by May 2030, additional tie lines will strengthen the connection between Long Island to New York City and the rest of the state, and Long Island transmission security margins remain sufficient throughout the planning horizon as shown in the figure below. Furthermore, the transmission project provides significant benefits to statewide resource adequacy. Without the Propel NY project, the statewide deficiency would occur a year sooner and would be roughly 550 MW larger. This demonstrates that the Propel NY project will provide significant reliability benefits beyond meeting the public policy needs for which it was selected in 2023.



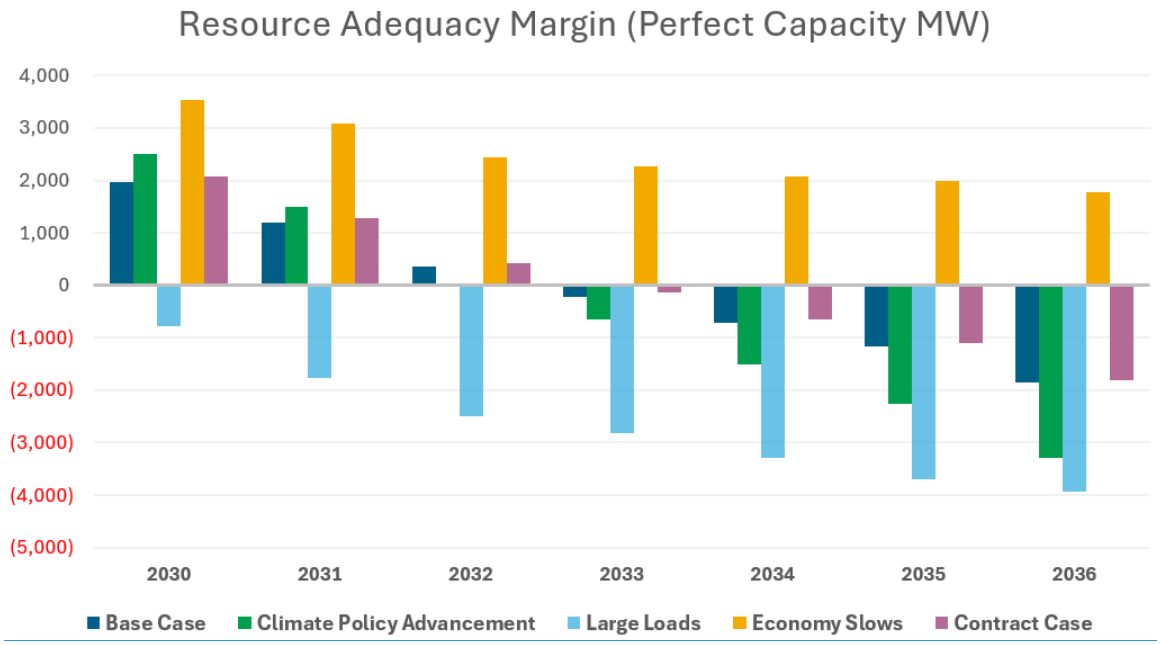
Impact of Uncertainty and Scenario Risks

The 2026 RNA includes a structured scenario-planning framework developed to evaluate the impact of uncertainty on future reliability outcomes. For this RNA, the scenario analyses are informational and are not used to identify actionable reliability needs. The five scenarios below were developed through extensive stakeholder discussions, and examine a range of plausible futures reflecting uncertainty regarding demand growth, large load development, generation availability, project development, imports, and other key planning assumptions:

- **"Climate Policy Advancement"** – Tests reliability impacts of policy-driven resource changes towards a reduced-emissions future, including accelerated retirements, increased transportation and heating electrification, and additional clean generation.
- **"Large Loads"** – Evaluates reliability under higher large-load growth assuming more aging generation is retained and having lower imports as neighboring systems would experience similar load growth.
- **"Economy Slows"** – Examines a lower-growth future with reduced demand and delays to planned resource projects.
- **"Outlook Contract"** – Evaluates the system using generation and transmission project assumptions consistent with the Outlook Contract Case, adding all generation projects with financial commitments (e.g., NYSERDA and offshore wind REC contracts) and NYPSC-approved transmission projects as of May 2026.

- **"IBR Voltage Control"** – Assesses how inverter-based resources and changing power flow patterns affect voltage performance and reactive power needs. Only transmission security analysis was performed for this scenario.

Resource adequacy results show deficiencies consistent with or significantly worse than the base case across the scenarios, with the "Economy Slows" scenario being the only exception with sufficient supply. Although certain scenarios show margins comparable to or better than the base case in the early years, they exhibit deficiencies of similar or greater magnitude by 2036. The transmission security results across the scenarios were more consistent with the base case with no new violation identified and only the "Climate Policy Advancement" scenario showing worse New York City and Lower Hudson Valley deficiencies.



The scenario analysis demonstrated the value of evaluating reliability across multiple plausible futures and gained experience in executing scenario design, stakeholder engagement, and interpreting study results. These lessons will help inform ongoing Reliability Planning Process reforms.

Other informational scenarios were analyzed to test the robustness of the analysis in this RNA, to identify risks to reliability, and to inform the nature of potential solutions. Key takeaways from these scenarios include the following.

- If aging generators are modernized, repowered, or replaced such that their capability remains available to the grid, reliability outcomes improve significantly. The Lower

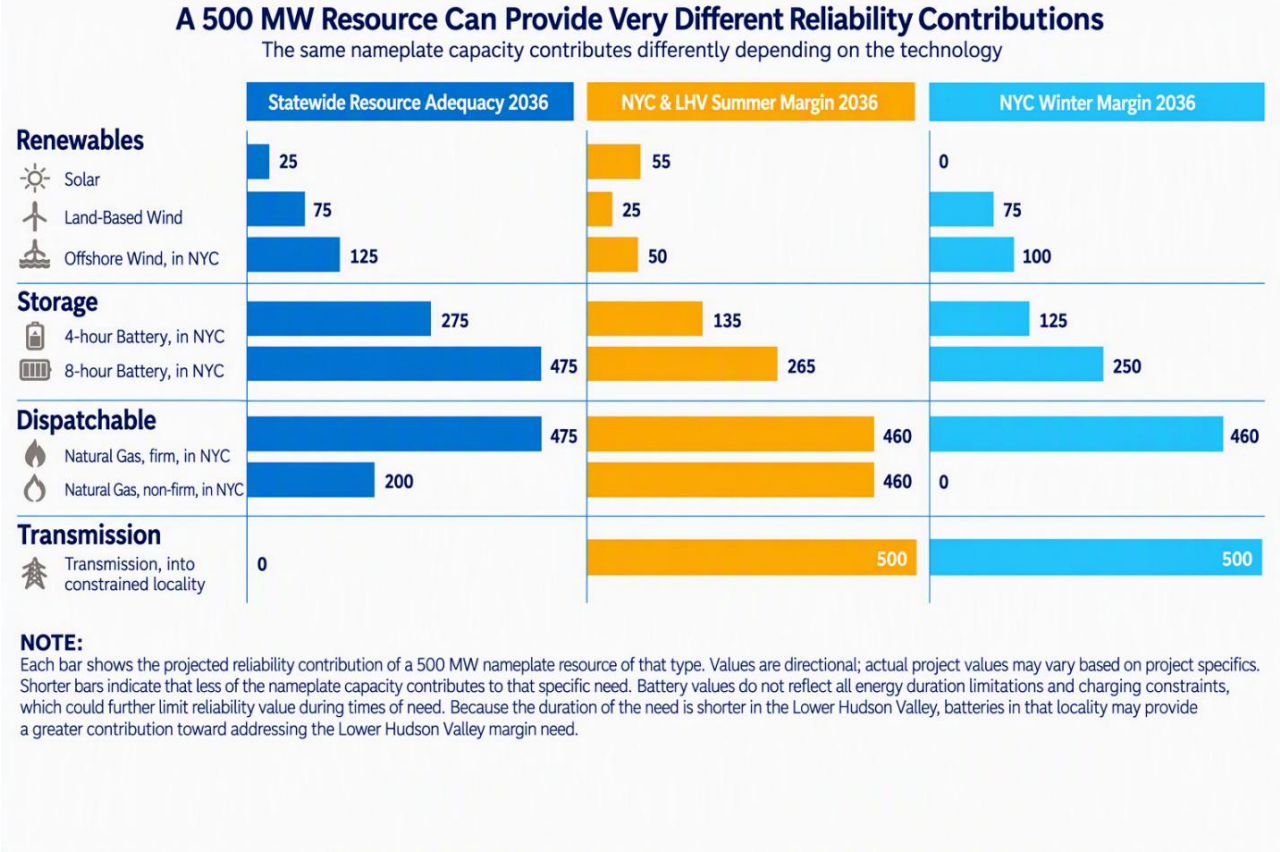
Hudson Valley transmission security margin would remain sufficient throughout the study horizon and statewide resource adequacy would remain within criteria until 2036, although the New York City transmission security margin would still become deficient beginning in 2032.

- If the forecasted large load growth through 2036 does not materialize, there would not be statewide deficiencies. Alternatively, if the demand from computational large loads was flexible or co-located with dependable generation, the statewide deficiency would not occur until 2036.
- Without contracted imports from NYISO's neighboring systems, the statewide deficiency would begin as early as 2028.
- If planned transmission and generation projects do not enter service and provide their planned capability, the statewide deficiency would occur as early as 2029, and the Long Island transmission security margin would be deficient starting in 2027. The Propel NY project would resolve the Long Island deficiency when it enters service in 2030, but planned generation additions remain necessary to avoid statewide deficiencies.

Reliability Value of Potential Solutions

There are currently projects under development that could help address the identified reliability needs but were not sufficiently advanced for inclusion in the base case. For example, there are 2,800 MW of solar, 160 MW of land-based wind, and 1,600 MW of battery storage projects that have already completed the interconnection study process and accepted their cost allocation but have not reached a level of development for inclusion in the RNA. Many more projects are currently active in the NYISO interconnection process, including more than 14,000 MW nameplate of solar, wind, and battery storage in the 2024 Transitional Cluster Study, which is nearing completion.

Understanding that additional capacity will be required to address the identified Reliability Needs and could include projects currently under development, the RNA provides some directional guidance on the impact of generic projects on the needs but does not attempt to identify specific additional facilities. The following table highlights the varying resource adequacy and transmission security margin value of building a 500 MW nameplate project with different resource types. These values are only intended to be directional, as the actual impact or value that a project the identified Reliability Needs will vary based on the specifics of the project. Given the long duration of the deficiencies in New York City (up to 16 hours) and Lower Hudson Valley (up to 7 hours), storage projects would likely not provide the reliability value set forth below, unless they are combined with other solutions that are not duration limited.



Next Steps

Following approval of the RNA, the NYISO will request eligible updates to the base case that may reduce or eliminate the identified reliability needs. Updates may include changes in the status of generation and transmission projects, Local Transmission Owner Plans, demand forecasts, demand response resources, large load assumptions, or other system developments that satisfy the applicable inclusion rules. These updates are intended to capture practical development milestones and new information that improve confidence in whether projects, resources, and forecasts will materialize as expected. If reliability needs remain after those updates, the NYISO will solicit and evaluate market-based solutions, regulated backstop solutions, and alternative regulated solutions through the development of the 2027-2036 Comprehensive Reliability Plan.

The nature of the identified needs reinforces the importance of considering a broad range of potential solutions. Internal transmission can be an effective component of solutions to locational needs in New York City and the Lower Hudson Valley, but transmission expansion alone cannot

resolve a statewide shortage of resources. Addressing the identified reliability needs will require new generation, repowering or modernization of aging generation, energy storage, dependable demand reductions, flexible large loads, additional transmission or imports, or combinations of these measures. Given the time required to permit, construct, and place major infrastructure into service, the identified Reliability Needs are not a future challenge but a present-day development priority.

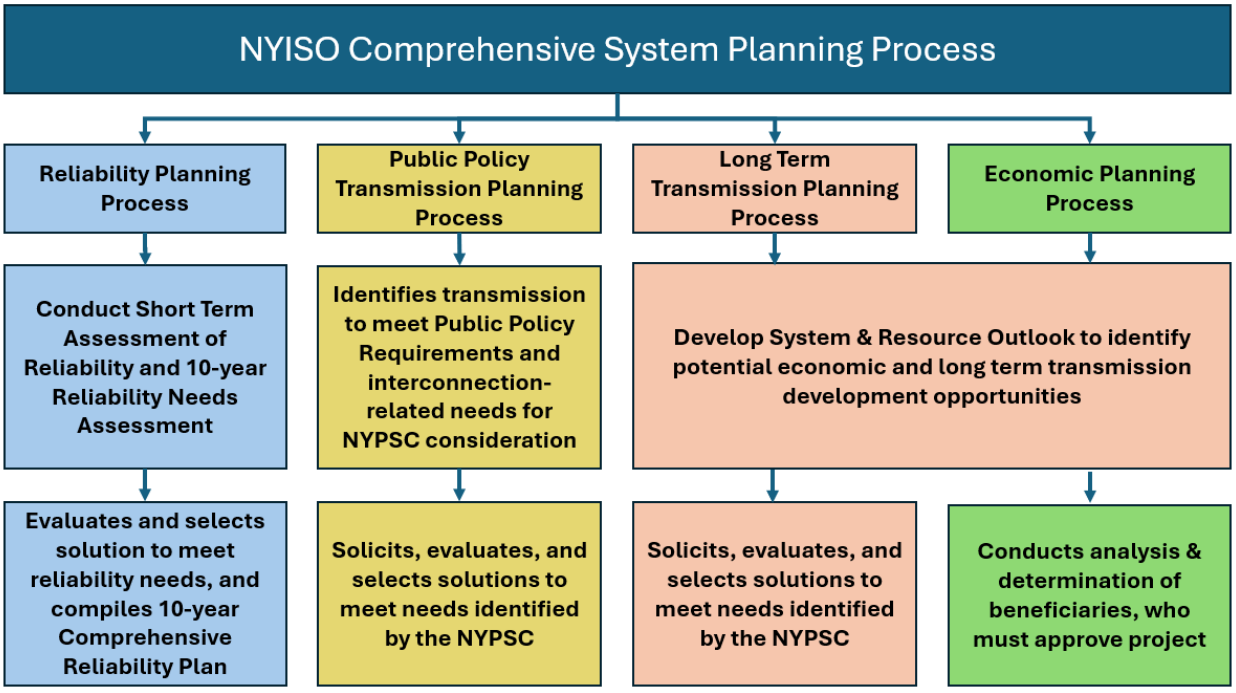
Through the Comprehensive Reliability Plan, the NYISO will assess whether proposed solutions are capable of addressing the identified Reliability Needs and will recommend a path forward consistent with its tariffs and reliability responsibilities. The timely development of new supply resources, however, depends on a broader set of state regulatory, permitting, and policy processes. As a result, maintaining reliability will require not only effective planning by the NYISO but also coordinated actions by New York State and market participants to enable the development of needed resources.

The NYISO will continue its effort to reform the Reliability Planning Process to establish a durable approach for using scenarios in future reliability need determinations and to improve the process for identifying, evaluating, and advancing supply-side solutions. The supply-side reforms will be particularly important in meeting the size and nature of the reliability needs identified in ~~the~~this 2026 RNA.

Introduction

This report sets forth the NYISO's 2026 Reliability Needs Assessment (RNA)[1] findings for the period of 2030-2036 (i.e., study year 4 through 10 following the start of the 2026 RNA). The RNA is the first component of the Reliability Planning Process (see Figure 1) and evaluates whether the planned New York State Bulk Power Transmission Facilities (BPTFs) will satisfy applicable resource adequacy and transmission security criteria throughout the study horizon. The Comprehensive Reliability Plan (CRP), which follows the RNA, is the second component of the Reliability Planning Process and serves as the regional plan for maintaining reliability during the study period, including the evaluation of potential solutions to any actionable reliability need identified in the RNA, which such need is referred to as "Reliability Need" in the OATT and this report.

Figure 1: NYISO's Comprehensive System Planning Process



The RNA assesses a base case representing anticipated future system conditions developed using established inclusion rules, planning assumptions, and available information as required under the Reliability Planning Process. The RNA identifies actionable reliability needs when assessments show that applicable reliability criteria are violated in the Base Case. If the RNA identifies a reliability need, the NYISO will quantify the need using compensatory megawatts (MW)

[1] Capitalized terms not otherwise defined in this report are defined by Attachment Y to the NYISO Open Access Transmission Tariff (OATT) and otherwise in the OATT and Market Administration and Control Area Services Tariff.

and proceed with the next phase of the Reliability Planning Process.

In addition to the Base Case assessment used to identify actionable reliability needs, the 2026 RNA evaluates a range of informational scenarios to examine how uncertainty in electricity demand, large load development, resource additions, generator aging, import availability, and other key planning assumptions could affect future reliability outcomes. These scenario results are informational and are not used to identify actionable reliability needs in this RNA. While not actionable, the findings from the scenario analyses provide a broader view on reliability risks beyond the Base Case and can inform solution development, future studies, and ongoing process reforms. The uncertainties surrounding key assumptions will be discussed in the Electric Grid Trends section and their application in scenarios will be covered in the Scenarios section.

Figure 2 provides an overview of the RNA report and the purpose of each section.

Figure 2: Overview of RNA Report

Section	Purpose
Background	Where the system stands today and recent developments relevant to reliability planning
Electric Grid Trends	Major trends affecting reliability and how they are represented in the RNA Base Case and scenarios
RNA Base Case Results	Actionable reliability results
Scenario Results	Informational results for a wider range of plausible futures
Findings	Reliability needs and other key conclusions from the RNA
Next Steps	How the results will be addressed through the Reliability Planning Process

An overview of the Reliability Planning Process is illustrated in Figure 1 and Figure 2 in Appendix B and is described in the Reliability Planning Process Manual.

Background

This section provides context for the RNA's results and findings. It first describes the state of the New York electric system, including recent challenging operating experiences. It then summarizes recent Short-Term Assessments of Reliability (STARs), which highlight many of the same risks and system conditions that are examined in this longer-term analysis. Finally, it introduces the planning framework developed by the NYISO and stakeholders to address uncertainty and the role of the NYISO's wholesale markets in providing for the reliability of the system.

State of the Grid

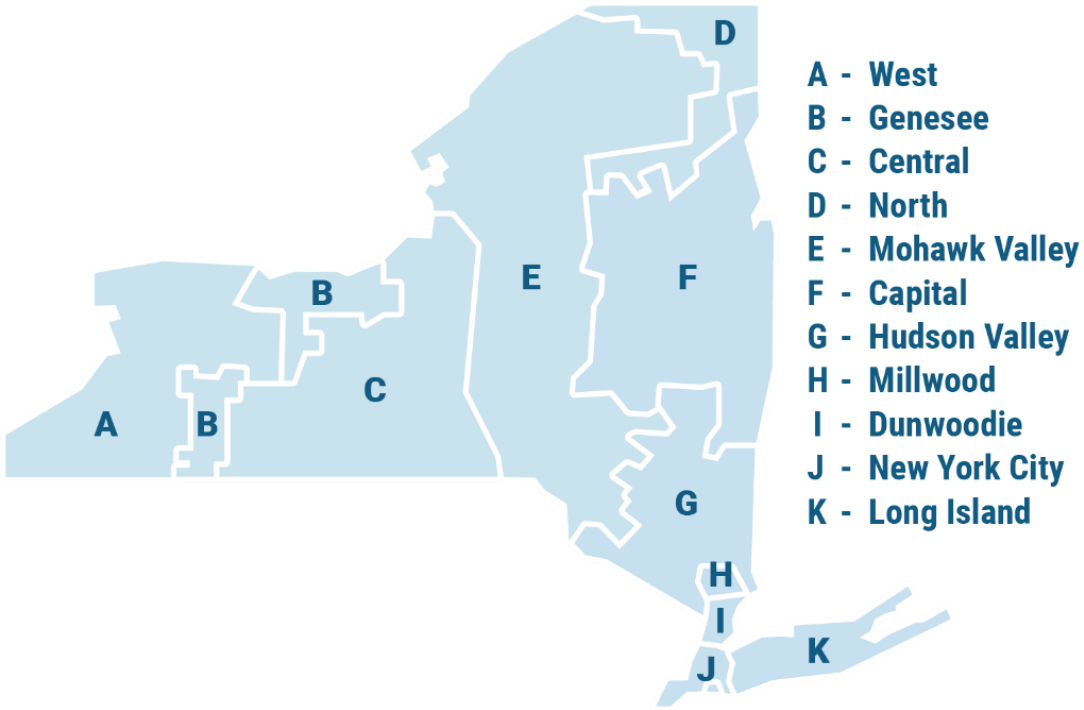
This RNA evaluates the reliability of the New York Electric bulk electric grid through 2036. Understanding the system's current composition and recent operating experience provides important context for the conditions evaluated over that ten-year horizon. This section describes today's resource mix and demand, as well as recent operational challenges involving voltage control, aging generation, and increasing reliance on emergency actions[2].

Resource Mix, Capacity, and Demand

The New York Control Area (NYCA) is composed of 11 geographical zones from western New York (Zone A) through Long Island (Zone K). This report refers to these zones to provide locational details regarding system demand, projected resource mixes, and anticipated transmission constraints. A map of the NYCA zones is shown in Figure 3.

[2] For additional information on the state of the electric grid in New York, the *Load & Capacity Report* ("Gold Book") and *Power Trends* are independent sources of information and analysis on New York's electric system.

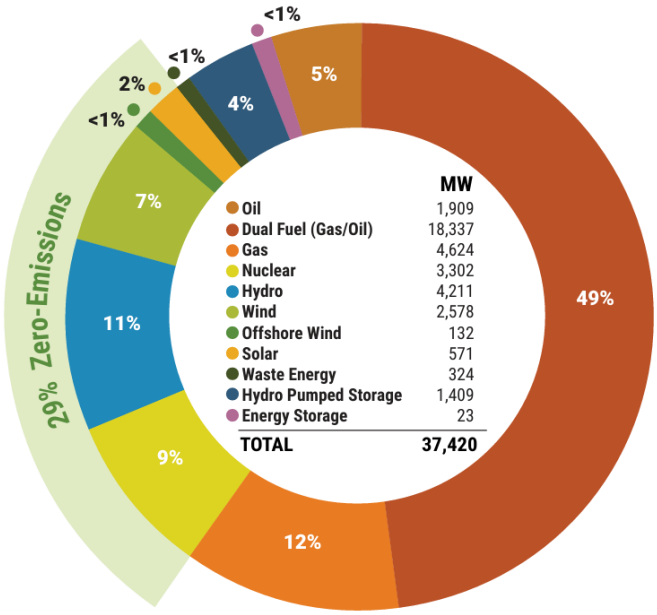
Figure 3: NYCA Load Zones



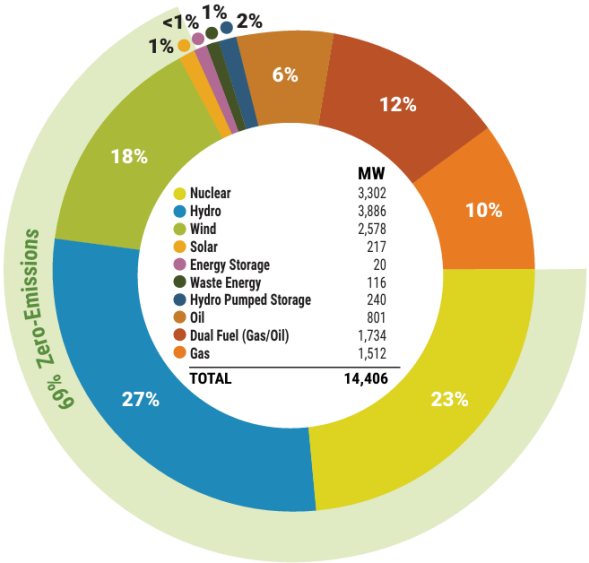
A summary of the current system resources is provided below; Figure 4 depicts the projected mix of resource capacity that was expected to be available for the 2026 summer capability period, and Figure 5 provides the energy production by fuel sources in 2025. In 2025, zero-emission resources made up 87% of upstate production, while fossil units located downstate made up 95% of the production from that region.

Figure 4: Summer Installed Capacity by Fuel Source — Statewide, Upstate, and Downstate New York: 2026

NYCA Summer Installed Capacity, 2026



Upstate Summer Installed Capacity, 2026 (Zones A-E)



Downstate Summer Installed Capacity, 2026 (Zones F-K)

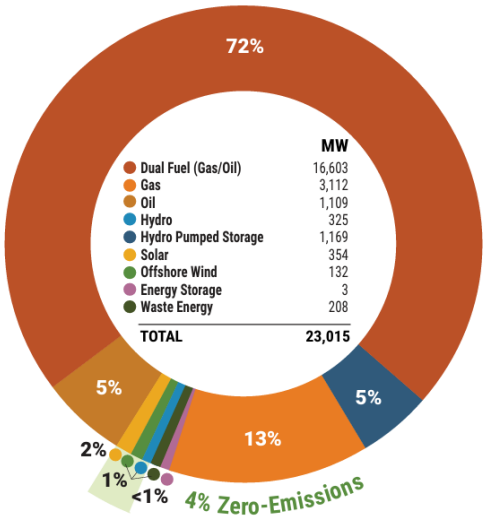
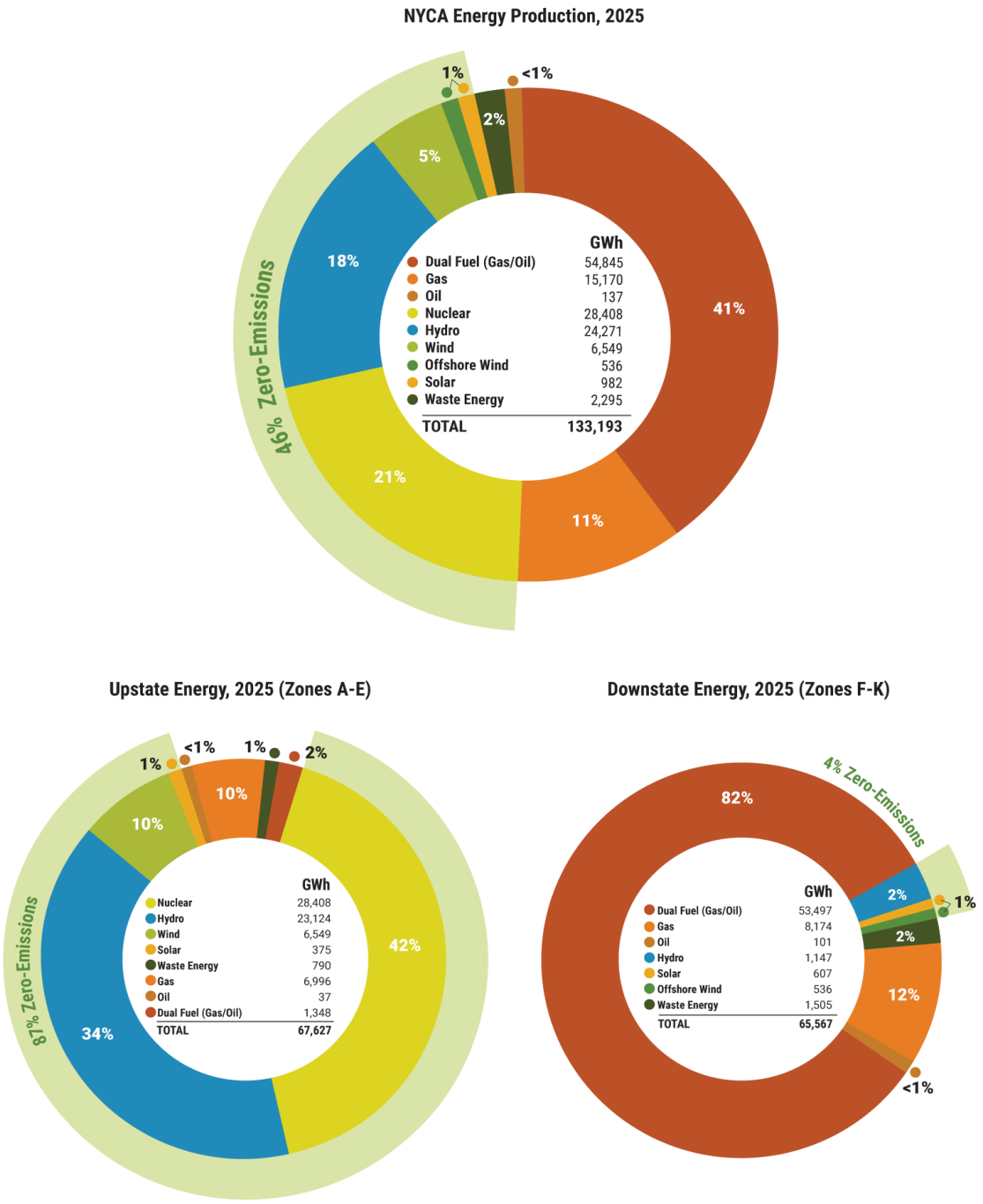


Figure 5: Energy Production by Fuel Source — Statewide, Upstate, and Downstate New York: 2026

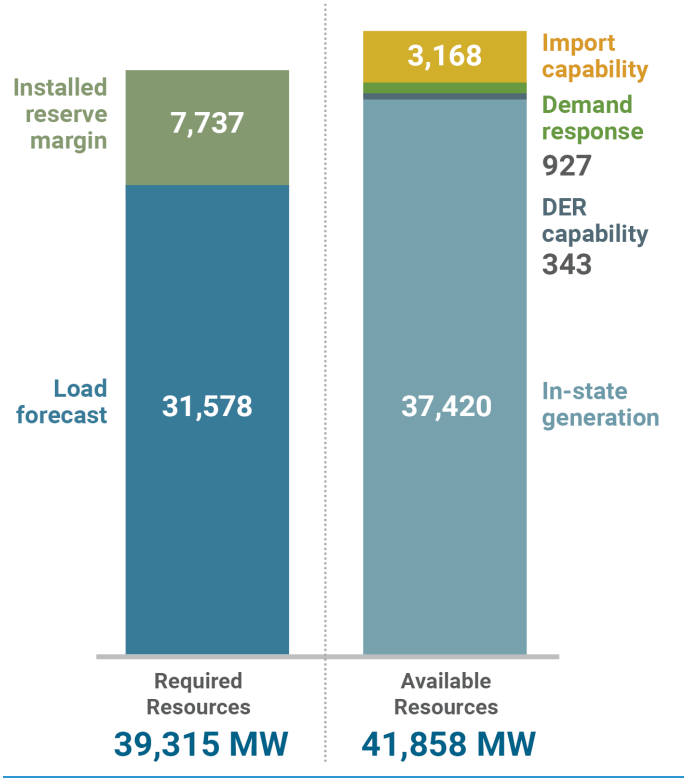


Total resource capability in New York for the summer of 2026 was projected to be 41,858 MW, which includes 37,420 MW of generating capability, 927 MW of demand response, 343 ~~distributed energy resource~~MW of Distributed Energy Resource (DER) capability, and 3,168 MW of net long-term purchases and sales with neighboring control areas.

The New York system's minimum Installed Reliability Margin (IRM) is established every year by the New York State Reliability ~~Committee~~Council (NYSRC). The IRM represents the minimum level of capacity, beyond the forecasted peak demand, which must be procured to serve consumers. The IRM is established every year for ~~each~~the following capability year (May 1 through April 30) and is used to quantify the minimum capacity required to meet the Northeast Power Coordinating Council (NPCC) and NYSRC resource adequacy rules. The NYISO, in assisting the NYSRC, analyzes forecasted demand, supplier performance, transmission capability, and factors such as extreme weather, to measure the grid's ability to meet reliability requirements. NYSRC has noted in several of its annual Installed Capacity Requirement Technical Study reports[3] that the inclusion of intermittent resources to the grid is a leading factor in establishing higher IRM requirements. The IRM for the May 1, 2026 - April 30, 2027, capability year is 24.5% of the forecasted NYCA peak load, representing a slight increase from the 24.4% established last year. Based on a projected summer 2026 peak demand of 31,578 MW and the IRM~~,~~ of 24.5%, the total installed capacity requirement for the upcoming summer capability period (May 1, 2026, through April 30, 2027) is 39,315 MW.

Figure 6: Statewide resource availability for summer 2026

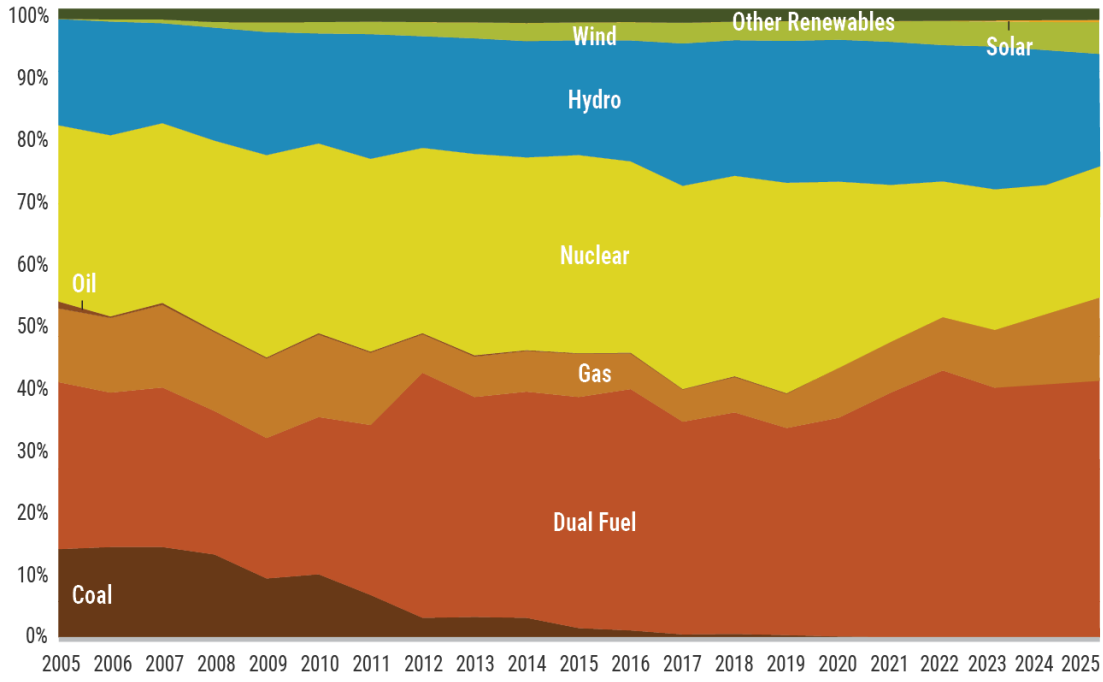
[3] NYSRC's IRM Reports: https://www.nysrc.org/wp-content/uploads/2025/12/2026-IRM-Study-Technical-Report.pdf



The historical generating capacity fuel mix in New York State from 2005 through 2025 is depicted in

Figure **7** below.

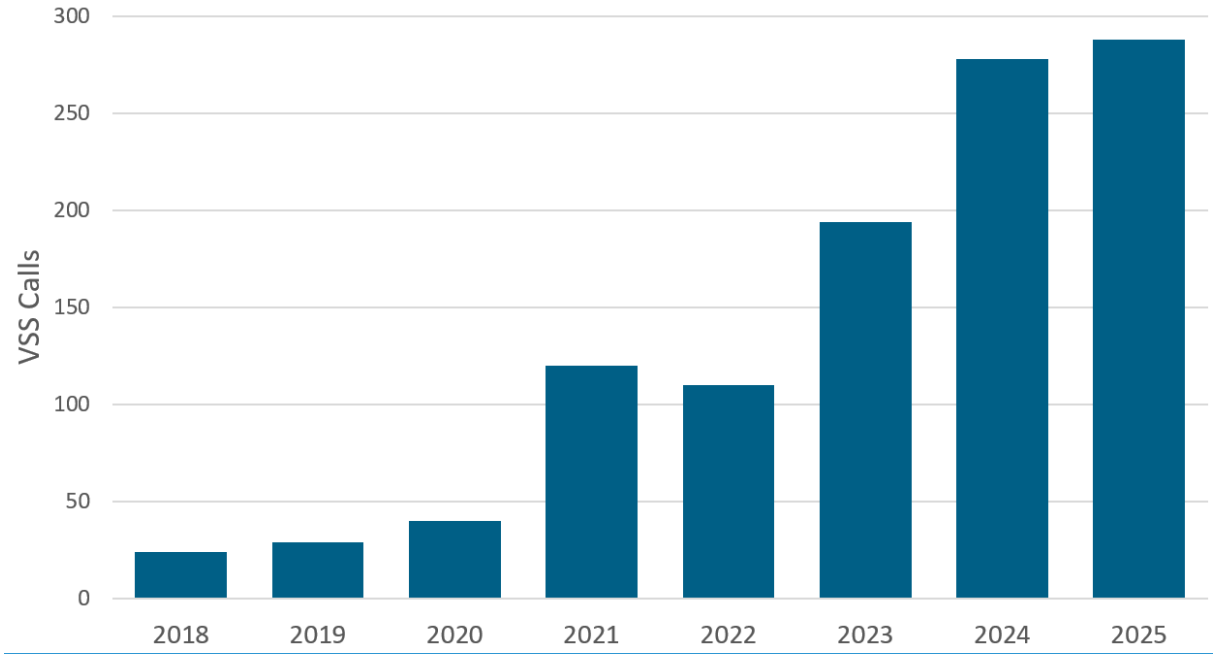
Figure 7: Historical Generating Capacity Fuel Mix in New York State



Operating Challenges

These system characteristics provide the backdrop for several operational challenges already emerging on today's grid. Regulation of power system voltage is essential for New York's grid to operate. Voltages must be maintained within narrow limits in real-time, and the system must be configured such that the failure of a power system element will not lead to excessively high or low voltages. Recent operations have required numerous mitigation measures to handle high voltage conditions that occur during periods of low load levels when the power flowing on transmission lines is low. Mitigations include voltage support service calls, operating dynamic reactive devices out of their normal mode, and taking transmission lines out of service. Figure 8 focuses on voltage support service calls in particular, and shows increasing use from 24 calls in 2018 to 288 calls in 2025. Increasing dependence on voltage mitigation action requires NYISO operators to fine tune the system configuration to "just right" conditions to maintain voltages while keeping the system secure against the next contingency, leaving little to no operational flexibility.

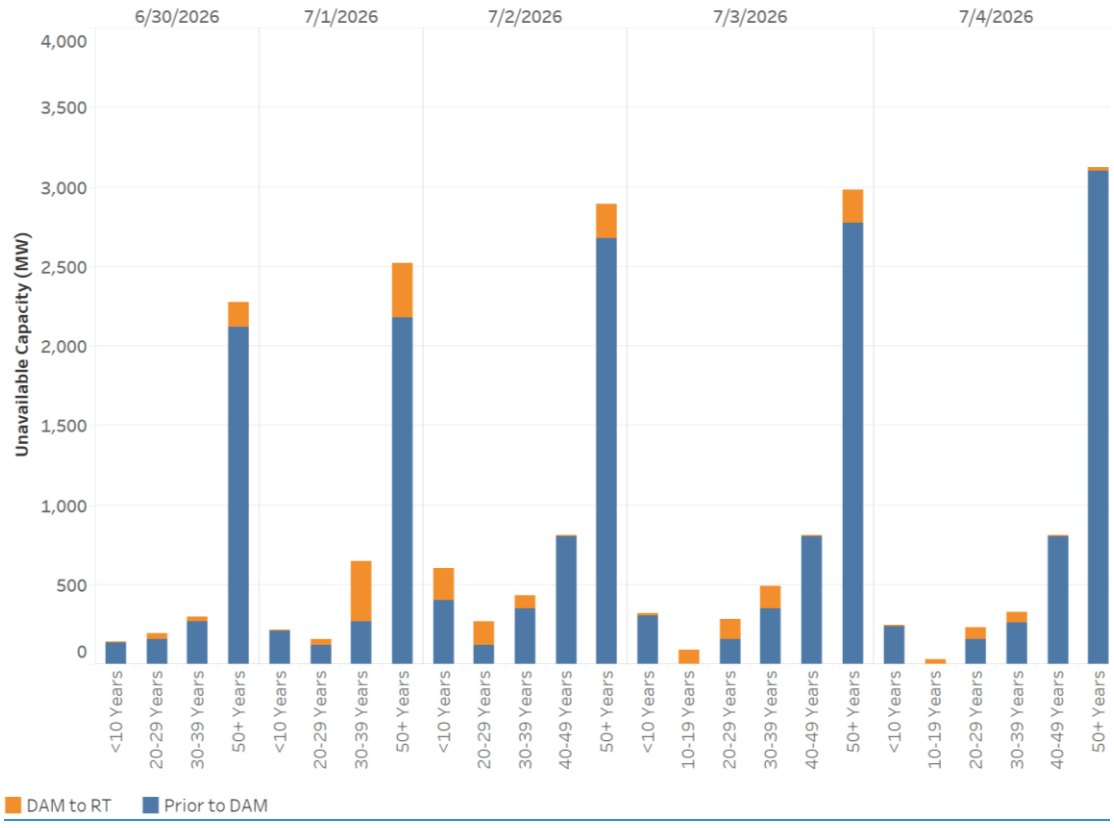
Figure 8: Voltage Support Service Calls in Recent Operations



While the low-load conditions created most of the voltage-control challenges, peak conditions place a different type of strain on the system. During peak and near peak demand, system

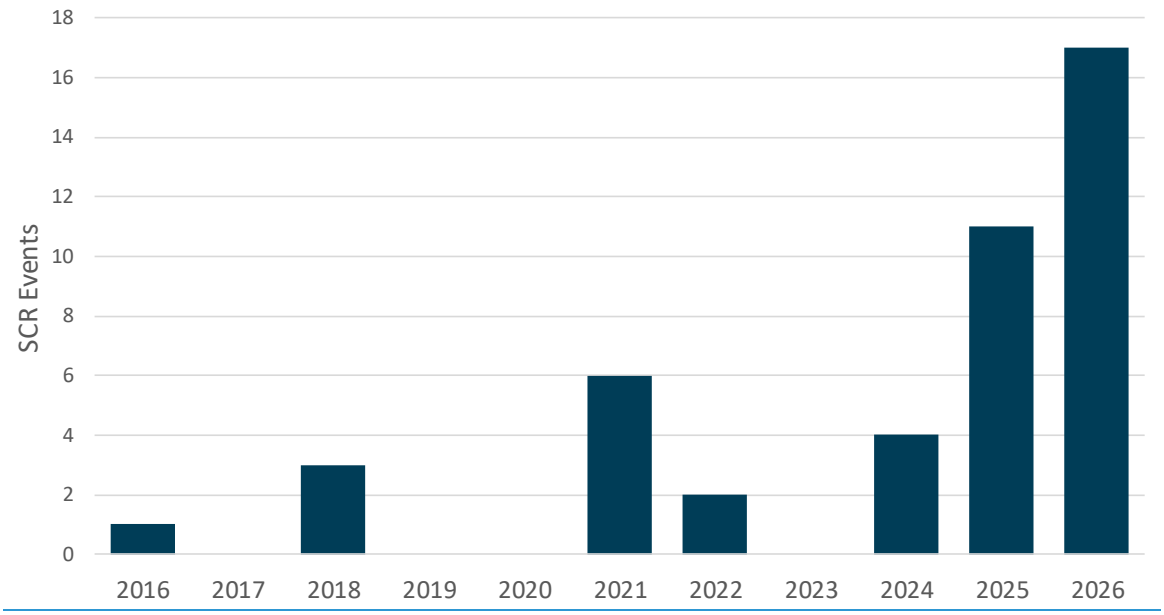
conditions require nearly all generating units to be dispatched, and the use of emergency operating procedures to reduce overall demand and find resources to serve the rest. During the most stressed system conditions, aging and infrequently dispatched units aren't always able to come into service due to unexpected failures of electrical and mechanical equipment. In the July 2026 heatwave that occurred between June 30, 2026 and July 4, 2026, Figure 9 demonstrates that fossil generation unavailability was disproportionately concentrated among units older than 50 years. While these units comprise less than half of New York's installed fossil capacity, they accounted for the vast majority of unavailable capacity throughout the event. Notably, new forced outages continued to occur on successive days of the heatwave, causing unavailable capacity from the oldest age cohort to grow over time and exceed 3,000 MW by July 4. The concentration of outages among the oldest generating resources underscores the increasing operational and reliability risks posed by an aging fleet, particularly during extended periods of high demand and elevated temperatures when dependable generation is most critical. As the age of the fleet continues to advance in future years, these risks are expected to increase.

Figure 9: Unavailable Capacity by Unit Age in the July Heatwave



Tight operating conditions like those experienced during the July 2026 heatwave often require usage of Special Case Resources (SCRs) and Emergency Operating Procedures (EOPs) to keep the system online. Figure 10 highlights the increasing frequency of NYISO activated SCR calls in recent years.

Figure 10: NYISO Activated SCR Calls (Excluding Tests) in Recent Operating History



This upward trend shows an increasing reliance on SCRs to maintain the grid. SCRs and EOP steps are intended to allow operators to navigate true emergencies. As system conditions continue to tighten, there is a growing risk that SCR calls and EOPs will become routine parts of reliability management, leaving no remaining tools for operators to handle unexpected emergency conditions. These recent operating experiences provide important context for the short- and longer-term reliability concerns evaluated through the STARs and this RNA.

The Role of Competitive Wholesale Markets

Competitive wholesale electricity markets have successfully facilitated efficiency gains on the grid by reducing fuel consumption and lowering consumer costs. Competitive wholesale electricity markets also shift the risk and cost consequences of resource investment and operational decisions from consumers to electricity suppliers. An added benefit of wholesale markets is that competition among resources rewards economic efficiency.

Wholesale markets are also designed to attract and retain enough supply in the most beneficial locations to provide needed reliability services. Within today's system there is a predominance of large-scale controllable resources that can be dispatched by operators to respond to system needs. The NYISO is taking numerous steps to ensure its markets continue to attract investment in resources that are controllable and can respond quickly to changing system conditions that will be necessary to balance the varying supply from wind and solar in the future.

How NYISO's Wholesale Electricity Markets Work

Each day, the NYISO conducts wholesale electricity auctions for market participants to buy and sell electricity. These auctions schedule sufficient electricity generation to match consumer demand, delivering reliable electricity with the least-cost mix of resources available to the grid.

These daily electricity auctions provide for minute-to-minute reliability, with market signals responding to changing conditions and continuously adjusting output levels of suppliers to match the instant needs of the grid.

For these daily auctions to function efficiently, operators need a longer-term view into what supply resources will be available to the grid. The NYISO achieves this certainty through its Installed Capacity (ICAP) market, which promotes reliability by compensating suppliers for committing to be available to the grid whenever needed. The NYISO conducts ICAP market auctions on a seasonal and monthly basis to offer suppliers and developers transparent locational pricing signals that reward availability, performance, and the resource's contribution towards reliably serving load.

Taken together, competitive wholesale energy, ancillary services, and capacity markets are fundamental to providing consumers reliable, lowest-cost power and an essential tool for achieving public policy objectives. The NYISO is continuously working with its stakeholders to identify ways to refine and enhance its markets in response to policies and the changing resource mix.

Enhancing Wholesale Electricity Market Design

The NYISO's market design must provide proper incentives to new and existing resources that can respond to and follow dispatch signals in all types of conditions, harnessing competition to minimize consumer costs while maintaining reliable service and assisting with the achievement of policy goals. Further, with many conventional resources slated to retire due to emissions restrictions, markets will also be relied on to sufficiently incentivize investments in new technologies, which may include long-duration storage, hydrogen fueled generators, and other non-emitting, dispatchable technologies.

The NYISO has identified certain key market enhancements to maintain the alignment between emerging reliability needs and market incentives. The NYISO has and is continuing to work with stakeholders to address these market enhancements, which include the following projects in 2027:

DER Market Enhancements

Distributed Energy Resources (DER) are small generation facilities (20 MW and below) and load curtailment resources that may be aggregated together to participate in the wholesale markets and provide grid services using the DER participation model. The rules governing participation of DERs have just recently come into effect in New York, a first in the nation, and participation from resources ~~have~~has just begun. Large loads could leverage this model to provide grid services when it is economic to do so, which could reduce the need for additional generation resources to support large loads.

Further work with stakeholders to enhance the DER participation model continues. As more resources enter the DER participation model, additional enhancements and revisions have been identified for consideration. For example, the NYISO is examining revisions and enhancements to the model to provide DERs additional flexibility to better reflect their operating characteristics, such as receiving fixed schedules prior to the operating day.

Reliability Attribute-Based Capacity Pricing for Transmission Security

The Reliability Attribute-Based Pricing for Transmission Security project aims to enhance the ICAP market's ability to reflect transmission security needs. The two tenets of power system reliability are resource adequacy and transmission security. The current ICAP market structure primarily compensates for resource adequacy and only indirectly compensates resources for transmission security. Pricing transmission security aims to enhance transparency and investment signals in areas where transmission limitations become the prevailing reliability risk, reduce reliance on out-of-market reliability contracts, and support more efficient grid planning. Current and future ~~Market Participants~~market participants may gain clearer guidance on which resource attributes are most valued, encouraging innovation and targeted development of resources that support grid resilience. The NYISO will engage with stakeholders to evaluate such ICAP market enhancements to better account for transmission security needs and the ability of capacity to incent investment in those needs in order to maintain bulk system reliability.

Competitive ~~Power~~Electricity Markets Role in the Transition

Competitive electricity markets are fundamental to providing consumers reliable, lowest cost power and an essential platform for achieving public policy objectives. The NYISO is leading the

way in meeting the challenges ~~before us~~ahead. The NYISO's leadership in developing innovative market design enhancements demonstrates ~~our~~the focus on innovation. The NYISO will continue to be actively engaged with stakeholders and policymakers on the path to a reliable, affordable, and lower emissions grid for New York.

Short-Term Assessment of Reliability (STAR) Findings

The NYISO's Short-Term Reliability Process (STRP) evaluates reliability needs arising within the first five years of the planning horizon, with particular focus on Near-Term Reliability Needs that are expected to arise within the first three years. Through the quarterly Short-Term Assessments of Reliability (STARs), the NYISO evaluates changing system conditions, including demand forecast updates, generator availability, transmission facility status, generator deactivation notices, and the progress of planned transmission and generation projects. When reliability needs are identified through the STRP, the NYISO solicits and evaluates market-based, regulated transmission, and other eligible solutions to maintain compliance with applicable reliability criteria. As described below, recent STARs have found reliability needs in New York City, Long Island, and Lower Hudson Valley in the short-term horizon. While these needs are addressed in the STRP, the underlying trends driving the needs persist and become more pronounced in the longer-term horizon evaluated in the RNA.

The 2025 Quarter 3 STAR identified reliability needs associated with the proposed retirement of generators in New York City and Long Island, while also identifying an emerging reliability need in the Lower Hudson Valley locality. The assessment concluded that reliability in New York City and Long Island would remain dependent on the timely completion and demonstration of planned transmission and generation projects' capabilities (see Figure 11 and Figure 12). The findings demonstrated that the combination of growing demand, transmission limitations, and uncertainty regarding future planned facilities was resulting in increasingly tight reliability margins.

Figure 11: Projects Identified to Address 2025 Q3 STAR New York City Need

	Queue Pos.	Proposed Solution Developer	Project Name	Nameplate (MW)	Proposed In-Service
Proposed Solution	N/A	AlphaGen	Existing Gowanus & Narrows Retention	608	Existing
	Queue Pos.	**Developer/Interconnection Customer**	**Project Name**	**Nameplate (MW)**	**Proposed In-Service**
Other Projects (Permanent Solutions)	631/887	CHPE LLC	NS Power Express	1,250	In-Service
	0827	Lighthouse Arthur Kill, LLC	Arthur Kill Energy Storage 1	15	Winter 2026
	0931	East River ESS, LLC	Astoria Energy Storage	100	Winter 2026
	0737	Empire Offshore Wind LLC	Empire Wind 1	816	Winter 2027
	1289	New York Power Authority / New York Transco LLC.	Propel NY Energy - Alternate Solution 5	-	Summer 2030

Figure 12: Projects Identified to Address 2025 Q3 STAR Long Island Need

Projects to Identifed to Address Long Island Need

	Queue Pos.	Proposed Solution Developer	Project Name	Nameplate (MW)	Proposed In-Service
Proposed Solutions	N/A	PSEG-LI/LIPA	Shoreham 1 (water injection)	52.9	Existing, water injection by May 1, 2027
			Shoreham 2 (water injection)	18.6	
			Glenwood GT 3 (water injection)	55	
			Far Rockaway 1	60.5	Existing
			Far Rockaway 2	60.5	
	Queue Pos.	**Developer/Interconnection Customer**	**Project Name**	**Nameplate (MW)**	**Proposed In-Service**
Other Projects (Permanent Solutions)	0766/0987	Sunrise Wind, LLC	Sunrise Wind	924	Winter 2028
	1289	New York Power Authority / New York Transco LLC.	Propel NY Energy - Alternate Solution 5	-	Summer 2030

More recently, the 2026 Quarter 1 STAR identified a Near-Term Reliability Need with the Lower Hudson Valley locality arising from the combined effect of generator retirement activity, forecasted demand growth, transmission limitations, and uncertainty regarding the timing and performance of planned projects. The Near-Term Reliability Need has since been resolved by CHPE entering service and demonstrating its planning power capabilities. However, the Lower Hudson Valley margins continue to erode during the planning horizon due to demand growth and anticipated retirement of the NYPA small gas plants.

The NYISO will continue to monitor the status of identified needs, the implementation of solutions, generator retirement plans, load growth, and project development through the short-term horizon in future STARs.

Recommendations from CRP: Planning for Uncertainty

The 2025-2034 Comprehensive Reliability Plan (CRP) identified recommendations to enhance the Reliability Planning Process. These recommendations included:

- ~~accounting~~Accounting for a wider range of plausible outcomes in reliability planning~~,~~
- ~~enhancing~~Enhancing resource adequacy metrics~~,~~
- ~~aligning~~Aligning reliability planning with operational realities~~, and~~
- ~~and improving~~Improving the ability to identify and evaluate supply-side solutions to

reliability needs.

In response, the NYISO is actively working with stakeholders on reforms to the Reliability Planning Process. As part of these efforts, the RPP Manual was revised in May 2026 to incorporate a new framework for the identification of scenarios in the RNAs. For ~~the~~this 2026 RNA, the scenarios created under this framework are for information only and are not used to declare actionable needs. Ongoing reform efforts will seek tariff and additional RPP Manual revisions, as needed, to employ the use of scenarios in the identification of actionable reliability needs. ~~The~~This 2026 RNA also highlights other themes identified in the 2025-2044 CRP, including persistent voltage support concerns in multiple areas of the system and the growing importance of supply-side solutions for addressing reliability needs. The ongoing reforms also seek to more effectively identify and enable supply-side solutions to the reliability challenges, such as those described in ~~the 2026~~this RNA.

Electric Grid Trends

New York's ~~power~~electric grid continues to evolve with the pace, scale, and composition of investment shaped by the implementation of policy objectives. Given the expected pace, complexity, and magnitude of the changes that are expected to occur in New York over the next ~~ten~~10 years, there are inherent uncertainty and variability in the assumptions for this RNA. This section highlights the key trends that will affect the reliability of the grid over the 10-year planning horizon and beyond. These key trends increase the uncertainty associated with long-term reliability planning and reinforce the need to consider a broader range of future system conditions.

For each trend, the 2026 RNA identifies a reasonable range of future conditions supported by available information. The RNA also explains how each trend is represented in the Base Case and scenarios. The NYISO reviewed the assumptions underlying the 2026 RNA with stakeholders at various meetings of the ESPWG and TPAS, and further details of the trends are contained in Appendix C.

Demand Growth and Forecast Uncertainty

This 2026 RNA uses the demand forecasts from the 2026 Gold Book. All forecasts account for economic growth and other factors. Critical components of the demand forecasts may increase or decrease overall demand and include, but are not limited to:

Figure 13: Major Factors Impacting the Demand Forecast

Increasing Factors	Decreasing Factors
Building electrification	Behind-the-meter solar generation
Electric vehicles	Energy efficiency
Large load projects	

The use of different demand forecasts has become increasingly important as the factors impacting load growth have changed significantly from historic drivers and result in evolving load patterns. Historically, changes in forecasted load were generally due to broad trends in economic growth and growth in energy efficiency and behind-the-meter (BTM) solar, with narrower bands of uncertainty. Recent load growth projections, however, are tightly tied to specific state policies contributing to the electrification of building space conditioning and transportation, as well as the increased interest in the interconnection of discrete large loads. The timing and magnitude of these

drivers are less certain. As a result, the NYISO considers a range of forecasts from the 2026 Gold Book.

The lower demand forecast represents a lower bound on forecast growth, including slower economic growth and rate of electrification. Efficient deployment of behind-the-meter generation and energy efficiency measures could also further reduce the net demand served by the bulk electric system. The higher demand forecast represents a higher bound on forecast growth, including faster economic growth and electrification and additional large load growth beyond what is included in the baseline forecast. The higher demand forecast includes more policy-driven electrification than the baseline forecast.

Figure 14: 30-Year NYCA Summer Peak Forecast – Coincident Peak

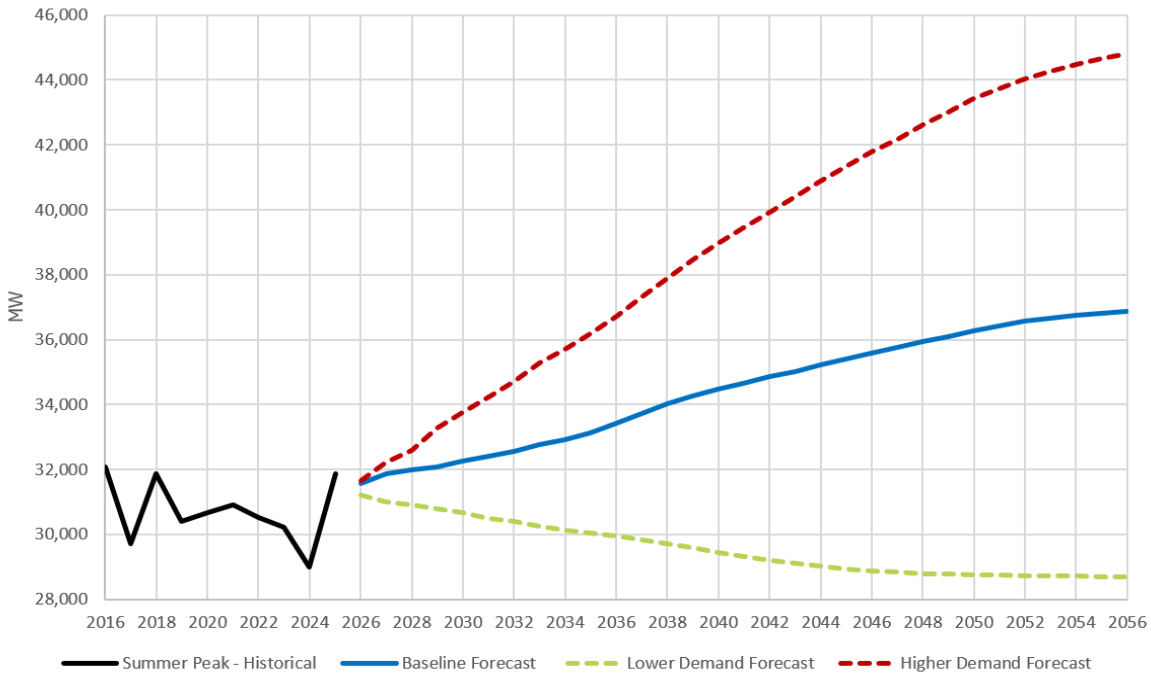
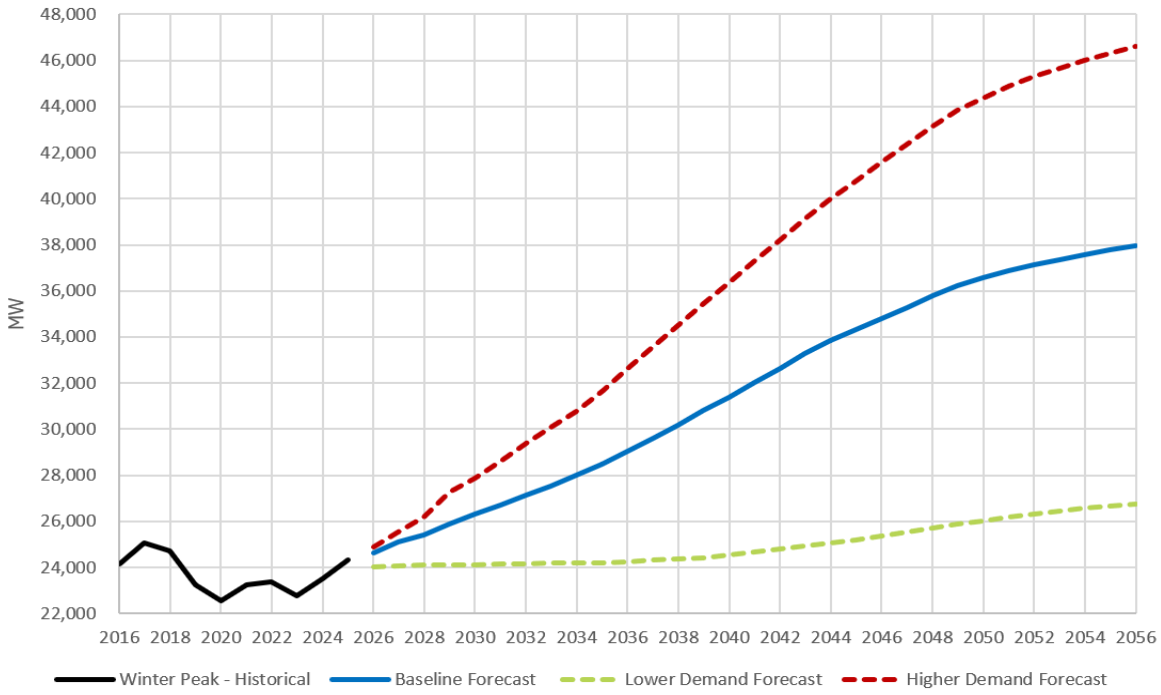
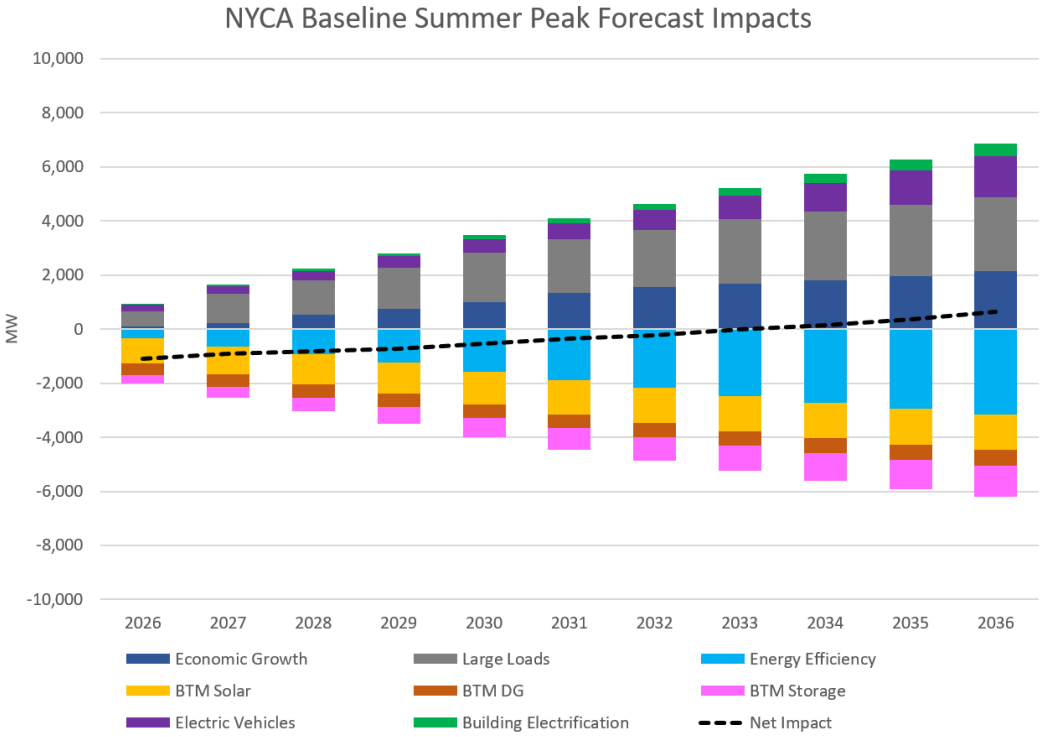


Figure 15: 30-Year NYCA Winter Peak Forecast – Coincident Peak



The figures below separate out ~~each component~~components of the projected summer and winter baseline coincident peak demand forecasts and quantify them either as an increase or decrease~~.~~ to the base load forecast. For example, ~~behind-the-meter (~~BTM~~)~~ solar resources (yellow) can be seen as a decrease in net demand, while electric vehicles (purple) can be seen as an increase in net demand. Notably, electrification and large loads have a significant impact on the projected increase in the forecasts. However, the scale of these projected increases due to the applicable component vary by forecast.

Figure 16: NYCA ~~baseline summer and winter peak forecast impacts~~Baseline Summer and Winter Peak Forecast Impacts



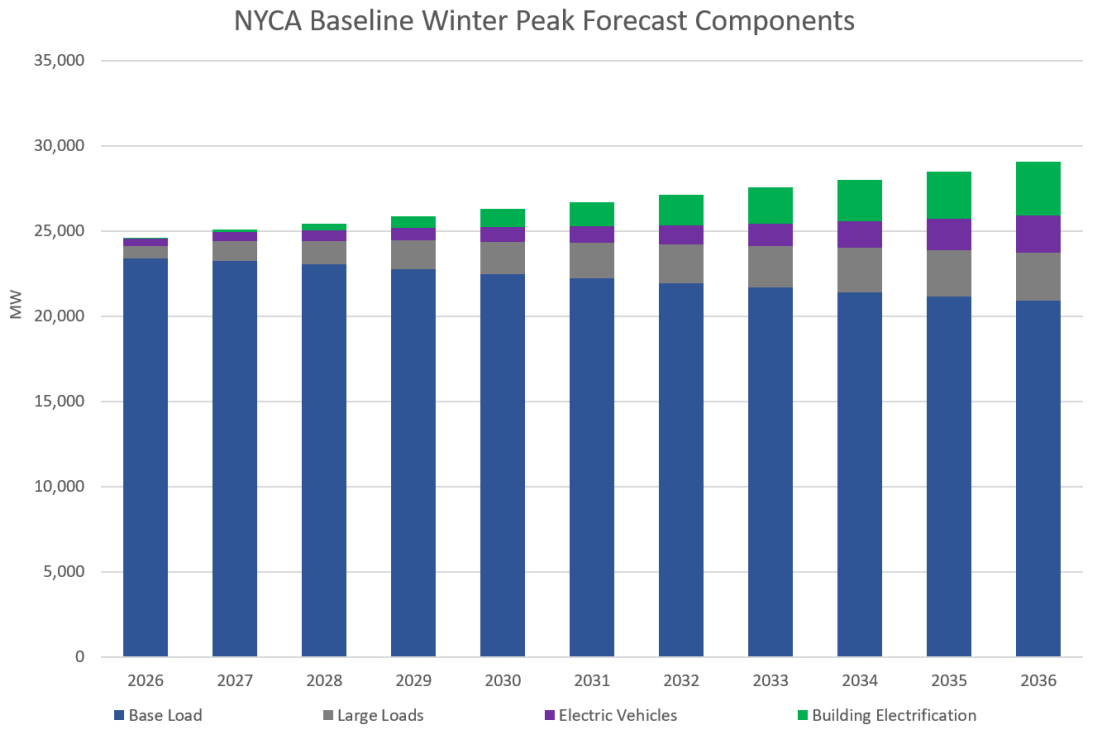
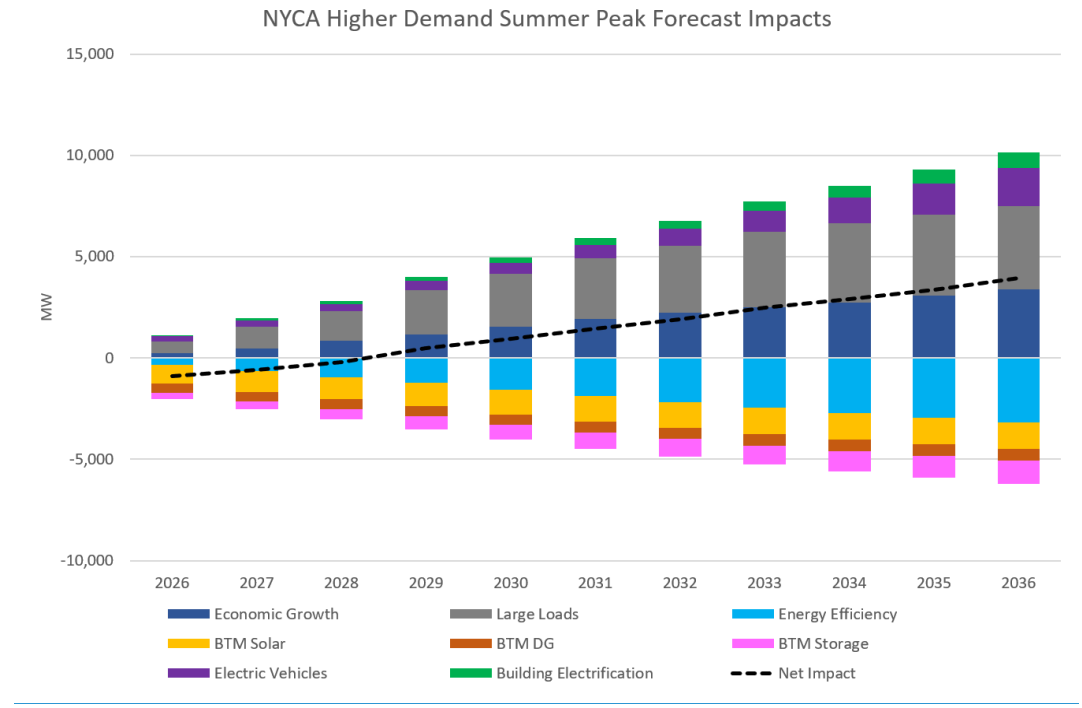


Figure 17: NYCA Higher Demand Summer and Winter Peak Forecast Impacts



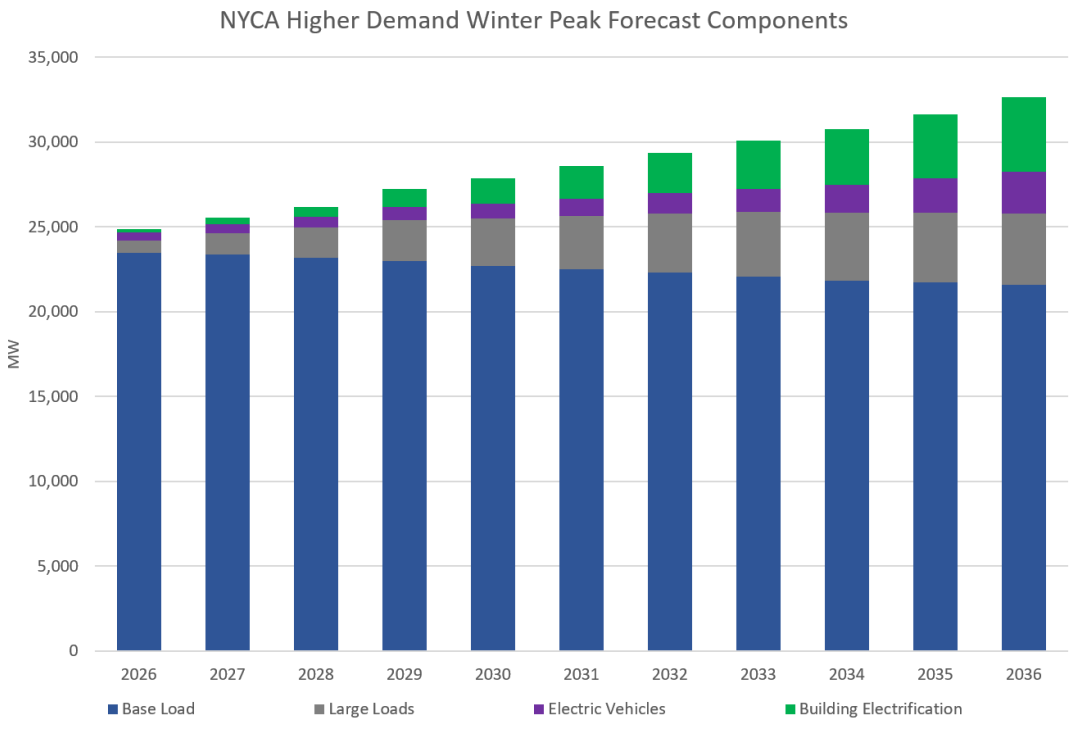


Figure 18 provides the non-large load demand growth assumption range and Base Case assumption.

Figure 18: Non-Large Load Demand Growth Assumption and Range

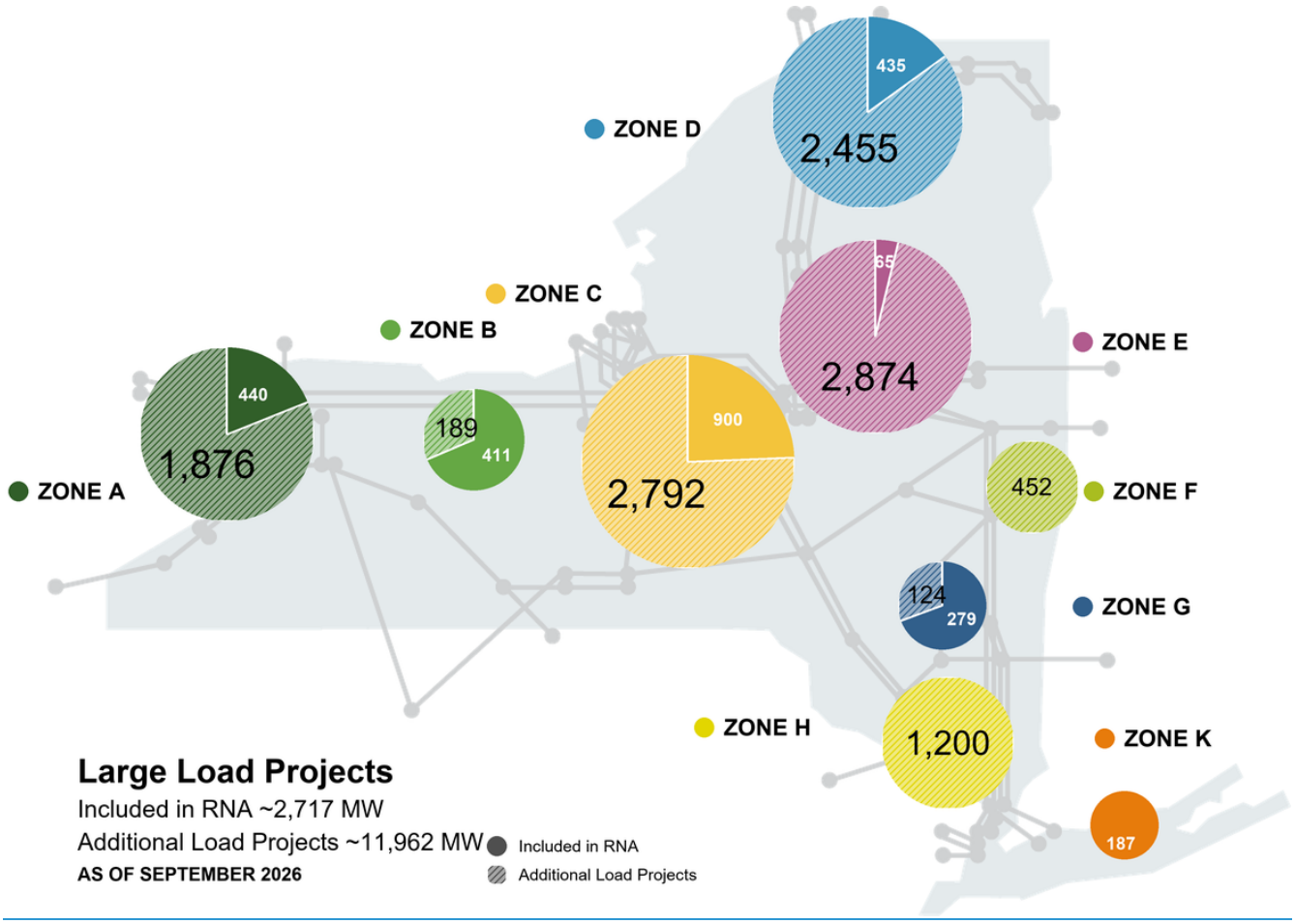
Assumption/Value	Lower Range	Base Case	Higher Range
Non-Large Load Demand Assumption	Gold Book Lower Demand Forecast	Gold Book Baseline Demand Forecast	Gold Book Higher Demand Forecast
Summer Coincident Peak Non-Large Load Demand (2036)	29,056 MW	31,251 MW	32,607 MW

Increasing Large Loads

Due to projected economic development over the next two decades, numerous new large loads are expected to interconnect to the New York system. These large loads are primarily proposed and expected to be concentrated in upstate New York. Most of these new loads consist of manufacturing facilities and data centers, including, for example, semiconductor fabrication, artificial intelligence, cryptocurrency mining, and data storage/cloud computing.

While only a few large load projects have been connected to the New York system in the past decade, the pace of new load requests in New York has grown dramatically over recent years. As of September 2026, the NYISO had 53 projects requesting to interconnect to the New York system for a combined total of over 14,000 MW of proposed large loads. It is projected that over the next decade numerous additional manufacturing and data center projects will be constructed and begin consuming relatively large amounts of electricity. As a result, varying large load projections are included across the forecasts, with the higher demand forecast including more than the baseline demand forecast. Figure 19 highlights the large load projects included in ~~the~~this RNA and additional large loads with active requests in the NYISO Interconnection Queue as of September 2026.

Figure 19: Large Load Projects in the 2026 RNA and the NYISO Interconnection Queue

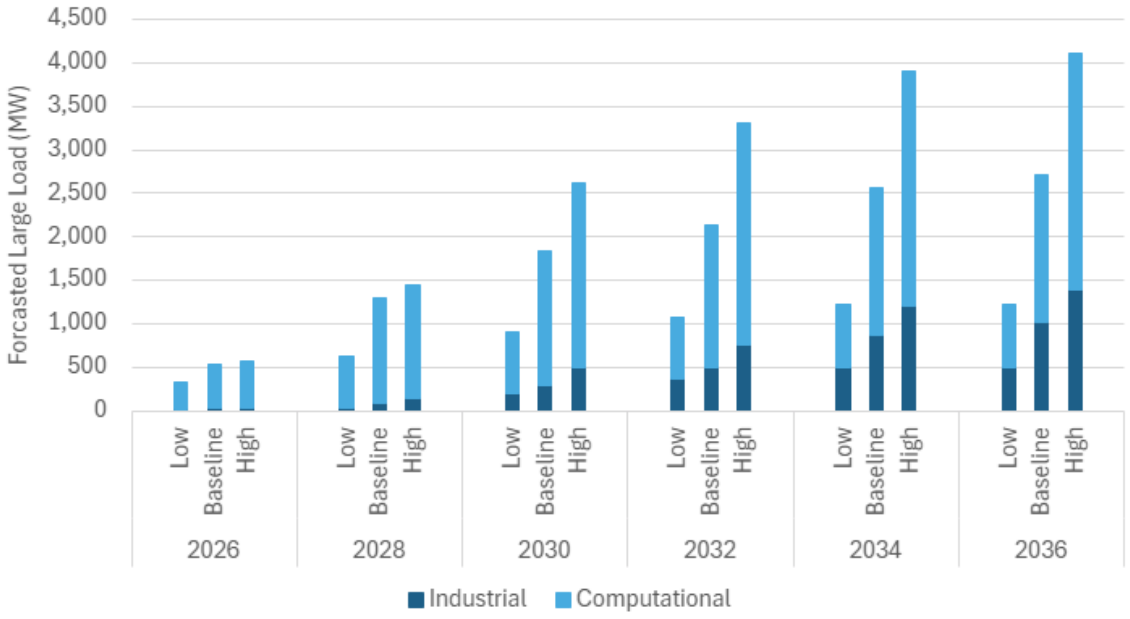


The table and chart below show (1) the large loads assumed in the baseline demand forecast, which are ~~assumed~~included in the Base Case and (2) the large loads assumed in the lower and higher demand forecasts, which are ~~assumed~~included in scenarios. Of the 2,717 MW of large loads assumed to be in service by 2036 in the baseline demand forecast, 1,741 MW are computational loads and 976 MW are other industrial loads.

Figure 20: RNA Large Load Forecast Range of Assumptions (MW)

Assumption/Value	Lower Range	Base Case	Higher Range
Large Load Forecast	Lower Demand Large Loads	Baseline Large Loads	Higher Demand Large Loads
2026 Summer Coincident Peak	337	538	578
2028 Summer Coincident Peak	620	1,292	1,439
2030 Summer Coincident Peak	914	1,831	2,617
2032 Summer Coincident Peak	1,081	2,131	3,312
2034 Summer Coincident Peak	1,221	2,554	3,910
2036 Summer Coincident Peak	1,221	2,717	4,113

Figure 21: RNA Large Load Forecast Summer Coincident Peak by Load Type (MW)



On June 18, 2026, the Federal Energy Regulatory Commission (FERC) issued a show cause order to the NYISO and FERC-jurisdictional Transmission Owners related to large and co-located load integration.[4] The NYISO has been working with stakeholders to develop reforms in response to FERC's order. For future planning cycles, the nature and impact of the large load trend in New York on the demand forecasts could change in response to such reforms.

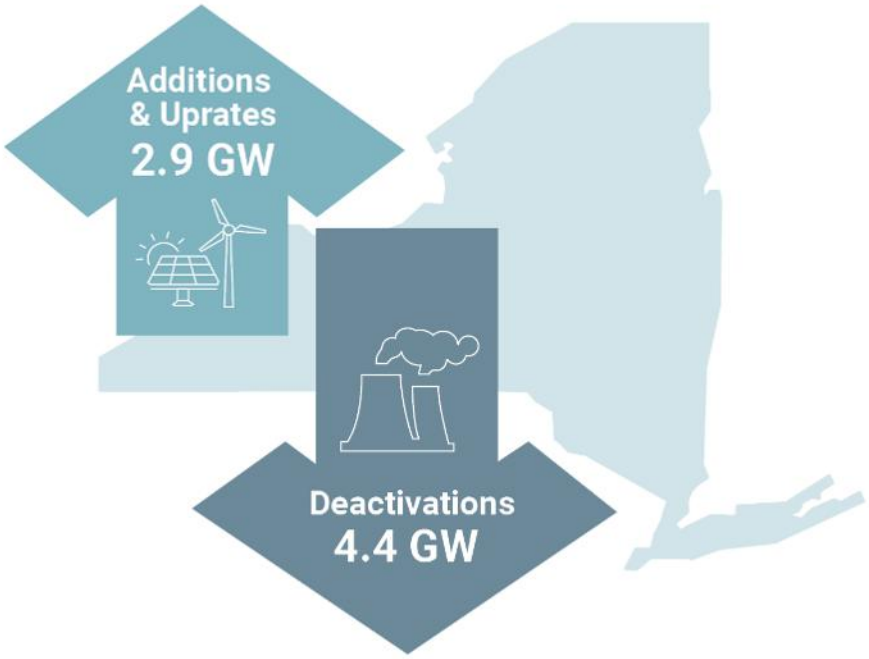
Planned Project Additions and Resource Removal

Since the enactment of the Climate Leadership and Community Protection Act (CLCPA) in 2019, the system has ~~seen~~experienced a change to the NYISO's resource mix with the deactivation of fossil-fuel resources and the addition of intermittent renewables. Generator deactivations are ~~also~~ outpacing new supply additions. Figure 22 shows the nameplate capacity added and removed over this period, highlighting a 1.5 GW deficit in nameplate capacity. This trend is exacerbated by the types of resources added and removed. Many of the deactivated fossil-fuel plants provided dispatchable, multi-hour output, and operational flexibility in a resource constrained area, such as New York City. New resources, primarily wind, solar, and shorter-duration storage, offer benefits but currently lack the full range of capabilities needed to sustain essential grid services during

[4] *New York Indep. Sys. Operator, Inc., et al.*, 195 FERC ¶ 61,216 (2026).

extended stress events.

Figure 22: Nameplate Capacity Additions and Removals Since 2019 (Up to June 2026)



The Reliability Planning Process Manual sets forth defined criteria for the inclusion or removal of resources in the creation or updating of the Base Case. Because many proposed projects that are studied in the NYISO's processes do not enter service when planned or at all, the Base Case includes only sufficiently advanced projects that can reasonably be relied upon for reliability.[5] Additions, therefore, must meet advanced interconnection, financing, procurement, or construction milestones. The Base Case includes approximately 6,200 MW of additional planned generation—. This includes 3,000 MW of solar, 200 MW of battery storage, 300 MW of combined solar and storage resources, 1,000 MW of land-based wind, and 1,750 MW of offshore wind.

These resource additions in the Base Case, however, do not represent the full development pipeline. Many resources continue to be under development to support New York's decarbonization goals. For instance, over 4,700 MW of nameplate generation have completed the NYISO's interconnection studies and accepted cost allocation but have not progressed sufficiently to be represented in the Base Case for the 2026 RNA. In addition to generation projects that have

[5] There are many factors beyond the NYISO's interconnection processes that influence whether a project begins construction or advances to completion. *See generally*, Since 2019, Clean Energy Projects Totaling More Than 14,000 MW Have Completed the Interconnection Process - NYISO.

completed the interconnection process, there are 87 Interconnection Requests in the Transitional Cluster Study, totaling over 15,000 MW of nameplate generation, as of September 2026. Furthermore, 52 new Interconnection Requests are in the initial stages of the 2026 Cluster Study, totaling over 12,000 MW of nameplate generation.

Similar to additions, the removal of specific existing resources from the Base Case requires that ~~the~~a facility satisfy the criteria set forth in the Reliability Planning Process Manual. For the 2026 RNA Base Case, approximately 950 MW of existing generation has been removed due to entering or being in a generator outage state or other planned unit deactivation or unavailability. Notable existing resources removed from the Base Case include the Gowanus and Narrows units (totaling 608 MW) due to being operationally impacted by the DEC Peaker Rule[6] and the NYPA small gas plants (totaling 517 MW) that are assumed retired at the end of 2030 due to state legislation.

Figure 23 below summarizes the changes in Base Case resource additions, removals, and net imports compared to the changes in summer and winter peak demand throughout the 10-year study period. Figure 24 summarizes the nameplate capacity of existing and additional renewable resources included in the Base Case for year 10. Further details on additions, removals, and net imports can be found in Appendix C.

Figure 23: Base Case Additions, Removals, Net Imports, and Load (MW)

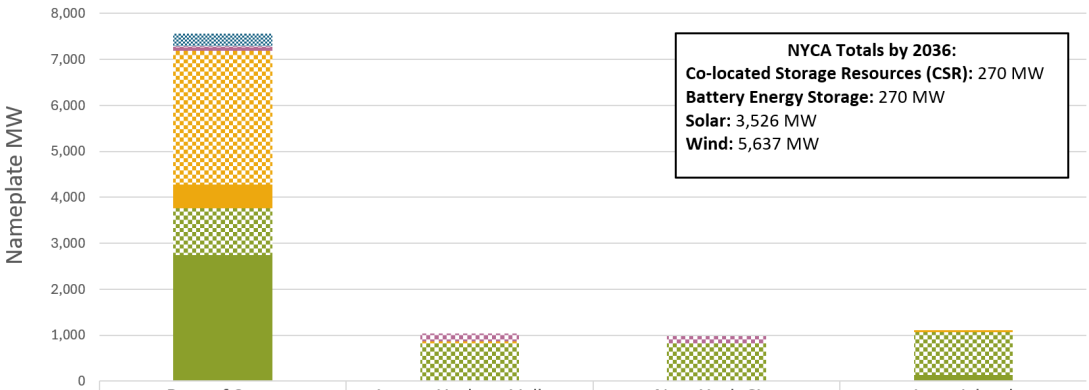
[6] On April 15, 2026, the NYISO issued a letter to the DEC designating the Gowanus 2 & 3 and Narrows 1 & 2 generators under the DEC Peaker Rule as needed to address ongoing reliability needs until May 1, 2029.

Year (1)	Addition (2)	Removal (3)	Summer Peak			Winter Peak		
			Net Imports (4)	Summer Baseline Coincident Peak	Large Load Demand (5)	Net Imports (4)	Winter Baseline Coincident Peak	Large Load Demand (5)
2026	90	0	3,211	31,578	538	849	24,620	707
2027	1,749	19	2,922	31,880	1,075	560	25,110	1,182
2028	5,095	19	2,922	31,980	1,292	560	25,410	1,351
2029	6,167	525	2,922	32,070	1,517	560	25,880	1,689
2030	6,167	525	2,922	32,250	1,831	560	26,310	1,908
2031	6,167	968	2,922	32,420	1,989	560	26,690	2,075
2032	6,167	968	2,922	32,560	2,131	560	27,120	2,250
2033	6,167	968	2,922	32,760	2,379	560	27,550	2,461
2034	6,167	968	2,922	32,920	2,554	560	28,000	2,623
2035	6,167	968	2,922	33,140	2,643	560	28,480	2,710
2036	6,167	968	2,922	33,430	2,717	560	29,060	2,784

Notes:

1. For Winter Peak, represents the winter beginning with the listed year (e.g. Winter 2034 is Winter 2034-2035).
2. Represents running total of MW based on the Nameplate Rating for the first summer peak period following the addition.
3. Represents Running total of MW based on the Summer Capability (DMNC) for the first summer peak period following removal. Danskammer Units and High Acres both are considered unavailable for the RNA period.
4. Net imports are based on ERAG MMWG values and firm transactions. CHPE is considered available for the RNA summer period. External imports from the Cross-Sound Cable in accordance with planned imports through early 2027, but starting in summer 2027 this import is assumed at 0 MW.
5. Large Loads are included in the Baseline Coincident Peak load forecats.

Figure 24: Planned 2036 Zero-Emission Fuel Mix by Zone



	Rest of State	Lower Hudson Valley	New York City	Long Island
CSR Additions	270	0	0	0
Battery Storage Additions	20	165	165	0
Existing Battery Storage	82	3	0	0
Solar Additions	2,902	50	0	0
Existing Solar	519	0	0	54
Wind Additions	1,020	816	816	924
Existing Wind	2,741	0	0	136

In addition to new generation projects, new transmission facilities are planned to enter service through Local Transmission Owner Plans and transmission projects selected through the NYISO's Public Policy Transmission Planning Process. In particular, ~~the 2026~~this RNA includes two key transmission facilities. First, the Champlain Hudson Power Express (CHPE) project is a 1,250 MW HVDC transmission line connecting New York City to Hydro-Québec. CHPE entered service in May 2026 and is assumed to be providing its planned capability in summer periods, but not in winter. Second, the Propel NY project, which was selected as the solution to the Long Island Offshore Wind Export Public Policy Transmission Need in 2023, is included in the Base Case with an expected in-service date of May 2030. The Propel NY project includes three new 345 kV tie lines between Long Island and southern New York and additional transmission buildout and reinforcement throughout Long Island. The Propel NY project substantially increases the amount of power that can be imported onto and exported out of Long Island.

Figure 25 provides the Base Case assumption and an assumption range for the addition of planned projects. Based on the review of future projects in the NYISO's Interconnection Queue, the higher and lower ranges for planned project additions are established below.

Figure 25: Planned Project Additions Assumption Range

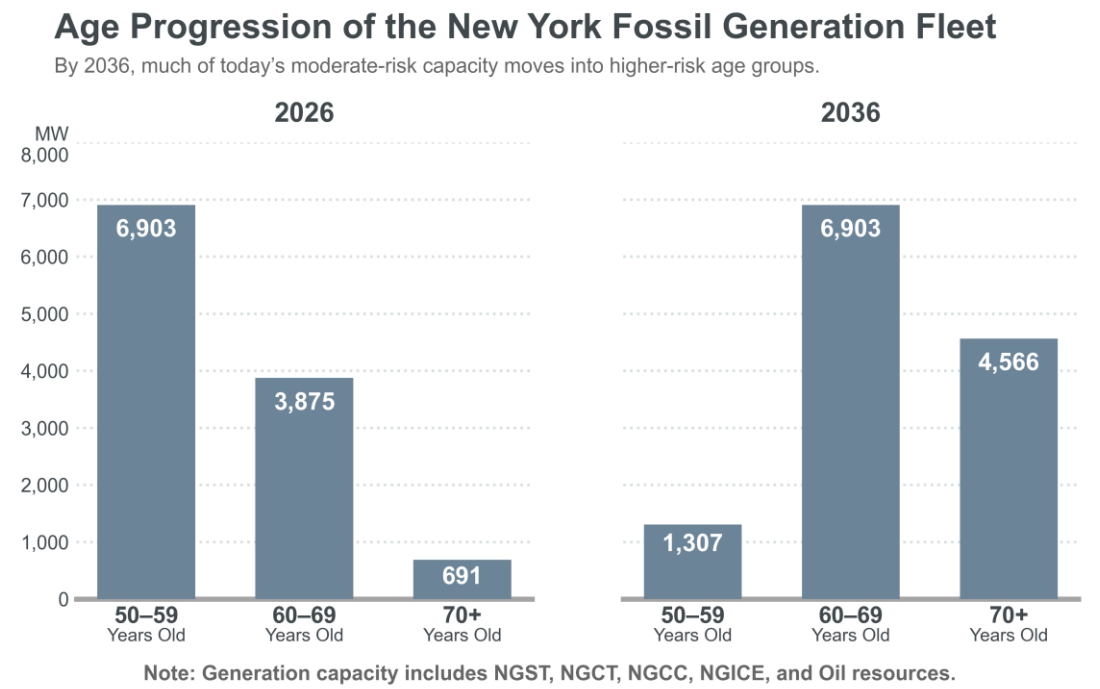
Assumption/Value	Lower Range	Base Case	Higher Range
Generator Inclusion Rule	Assume 5-Year Delay from ISD at Cost Allocation, if not under construction.	RPP Manual	All Cost Allocated
Nameplate of Projects Added by 2036	6,300 MW	6,300 MW	10,900 MW
Nameplate of Projects with Assumed Delays	850 MW	N/A	N/A
Transmission Project Inclusion Rule	N/A	RPP Manual	All NYPSC Approved (Including non-firm)

Aging Generation

A growing share of New York's generation fleet is reaching ages rarely seen among comparable generators nationwide. The 2025-2034 Comprehensive Reliability Plan identified the advanced age of New York's fossil-fueled generation fleet as an important planning consideration. Figure 26 builds on that assessment by showing how the evaluated New York fleet advances into older age categories over the 2026 RNA planning horizon.

Without accounting for potential retirements, additions, or changes in operating status, approximately 4.6 GW of today's fossil-fuel generation fleet will exceed 70 years old by 2036. Approximately 77% of that 2036 capacity is located in New York City. Figure 26 does not include a prediction of generator retirements. Instead, it just illustrates the growing amount of capacity reaching remarkably advanced ages and provides context for the retirement uncertainty considered in ~~the 2026~~this RNA.

Figure 26: NY Fossil Generation Age through the RNA Horizon



Generator age is a key variable in both generator retirement and performance. Historical retirement data in the United States show that fossil-fuel generator retirements generally occur for older units, and operational experience has demonstrated worsened performance (in terms of outage rate) with age. That said, age is not a guarantee of retirement, as older units may remain in service through continued maintenance and investment. As such, NYISO developed a statistical retirement risk model, available in Attachment H to the RPP manual, to better account for uncertainty around aging generation than a simple assumed retirement age for all units.

The model uses historical retirement information for existing and retired generating units to estimate the risk of retirement for units of a similar age and technology type. It does not predict the retirement of a specific unit or identify the reason for a future retirement. Rather, it represents potential aging-related unavailability in the later years of the planning horizon. The reliability impact may be particularly significant ~~where~~when older generation is located in constrained areas or ~~where~~when replacement capability is limited.

Retirement risk is represented for generators that reach a threshold age to account for the likelihood of retirement for such units that have outlived the vast majority of peer generating units. A 95th percentile threshold age, for example, means that generators are included in the model and begin contributing to aging generation risk when they reach the age by which 95% of historical

peer capacity ~~had~~has retired. Lower percentile thresholds capture more generators at younger ages, resulting in higher modeled aging risk, while higher thresholds capture fewer generators and lower risk estimates. Figure 27 explores the range of aging generation risk for a reasonable range of threshold ages. ~~The~~This RNA applies the aging generation risk as an unavailable capacity in the transmission security margin and resource adequacy evaluations. The aging generation risk is only applied in study years 6 through 10 since specific generator deactivations are evaluated in the STAR studies covering study years 1 through 5. For the reasons mentioned above, the aging generation risk is applied to the fossil-fuel fleet, but it is not applied for aging nuclear and hydro fleets as age is not as reliable a predictor of retirement/failure risk for these facility types.

Figure 27: Aging ~~generation trend~~Generation Trend - P90 vs P95 vs P99

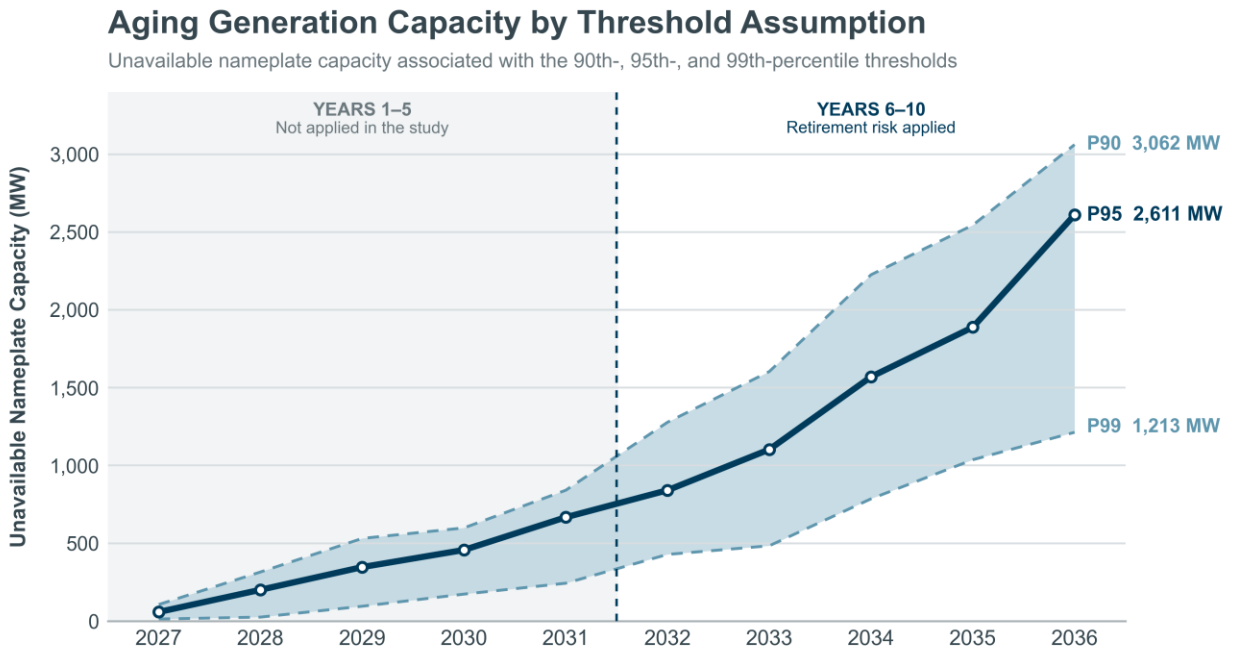


Figure 28 below provides the Base Case assumption and ~~assumption~~ range for aging generation. The first row provides the threshold age as a percentile, and the remaining rows quantify the ~~impact of changing that age~~threshold age in years, and unavailable nameplate capacity in 2036 for each percentile.

Figure 28: Aging Generation Assumption Range

Assumption/Value	Lower Range	Base Case	Higher Range
Threshold Age Percentile	P99	P95	P90
Threshold Age for a Natural Gas Steam Turbine	75 years	71 years	69 years
Threshold Age for a Natural Gas Combustion Turbine	61 years	57 years	56 years
Threshold Age for a Combined Cycle Turbine	75 years	69 years	66 years
Threshold Age for an Internal Combustion Engine	79 years	73 years	70 years
Threshold Age for an Oil Turbine	74 years	64 years	61 years
Statewide Unavailable Capacity in 2036	1,213 MW	2,611 MW	3,062 MW

Winter Fuel Availability

As New York winter demand is forecasted to grow rapidly over the next decade, renewable generation like solar and wind generation will not consistently provide the needed power at nighttime peak. The gas supply to electric generation plants is also expected to be even more strained than it is today. On the coldest days, the natural gas system capacity is fully utilized serving firm demand, such as residential heating, which limits the fuel available to gas only generators without firm contracts. These coldest days also correspond to peak winter demand periods when the gas generation fleet is needed the most.

To prepare, the New York State Reliability Council revised its reliability rules in 2024 to require the NYISO to plan for credible system conditions that model anticipated winter peak load and the unavailability of generation with non-firm gas contracts. To account for this reliability rule in the RNA, the NYISO assumes the unavailability of approximately 5,400 MW of generation, primarily in eastern New York, under expected winter weather peak demand conditions (statewide average 14°F). The specific modeling of gas unavailability in the Base Case analysis is described below:

- **Transmission Security** - In the winter peak cases, generation fueled by non-firm gas is modeled as out-of-service while non-firm dual-fuel units are modeled at the generation capability when running on their alternative fuel source.
- **Resource Adequacy** - In the winter months, the reduced capability described above is triggered when the demand exceeds that year's baseline winter coincident peak forecast.

Figure 29 provides the Base Case assumption for winter fuel availability.

Figure 29: Winter Fuel Assumption

Assumption/Value	Base Case Assumption
Firm Gas Method	Based on Generator Survey
Unavailable Winter Generation (No firm fuel)	5,200 MW Unavailable
Unavailable Winter Generation (Duct burner derates)	250 MW Unavailable

Future Import and Emergency Assistance Availability

On a daily basis, New York and neighboring systems import and export power with each other. Overall, New York continues to rely on its ability to import power from neighboring systems. Québec's HVDC ties provide controllable imports from mainly hydro power, while PJM, Ontario, and ISO-NE imports are more dependent on prevailing network conditions and resource availability. Constraints stemming from limitations such as available surplus resources during peaks (declining capacity reserve margins), as well as transfer capability of the NYISO interfaces with PJM, ISO New England, Ontario, and Hydro-Québec limit how much New York can rely on imports when needed, even more so when each system may simultaneously have similar needs.

NERC's 2025 Long-Term Reliability Assessment[7] (LTRA) spotlights intensifying resource adequacy risks throughout the North American bulk power system over the next ~~ten~~10 years. Uncertainty and lag in the pace of new resource additions are driving heightened concerns that the industry will not be able to keep up with ascending electricity demand from new data centers and large loads. To reflect the impact from neighboring systems' reduced future capacity margins, the resource adequacy model decreases the 3,500 MW statewide limit on emergency assistance by 100 MW each year of the planning horizon.

Figure 30 provides the Base Case assumption and assumption range for both contractual imports and emergency assistance. Notably, the NYISO did not consider a higher range that would include more imports in future years based on ongoing trends and planning reports from NYISO's neighboring systems.

[7] 2025 NERC LTRA link: https://www.nerc.com/globalassets/our-work/assessments/nerc_ltra_2025.pdf

Figure 30: Imports and Emergency Assistance Assumptions and Ranges

Assumption/Value	Lower Range	Base Case	Higher Range
Import Assumption	50% Reduction in outer planning years	Based on Existing Contracts and Schedules	N/A
2036 Imports (MW)	1,460 MW	2,920 MW	N/A
Emergency Assistance Limit Assumption	2,000 MW in all planning years	3,500 MW in 2026, decreasing by 100 MW each year to 2,500 MW in 2036	N/A

Actionable Base Case Results

The NYISO performed a comprehensive assessment of the reliability of the BPTFs using the Base Case to identify any violations or potential violations of the applicable reliability criteria for the New York electric system established by NERC, NPCC, and NYSRC. System reliability is determined by resource adequacy and transmission security analyses, described below, according to such reliability criteria:

- **Resource Adequacy** - The ability of the electric systems to supply the aggregate electrical demand and energy requirements of their customers at all times, taking into account scheduled and reasonably expected unscheduled outages of system elements.
- **Transmission Security** - The ability of the power system to withstand disturbances, such as electric short circuits or unanticipated loss of system elements and continue to supply and deliver electricity. Transmission security is assessed deterministically with potential disturbances being applied without concern for the likelihood of the disturbance in the assessment. Transmission security analysis is comprised of the following assessments:
  - **Steady-State Thermal** – Determines if the power flow on branch or transformer is higher than the applicable rating.
  - **Steady-State Voltage** – Determines if the voltage level at a bus in the system is within the acceptable range of voltage limits.
  - **Transient Stability** – Determines the ability of the system to maintain a state of equilibrium during and following disturbances.
  - **Short Circuit** – Determines if the system can clear faulted facilities reliably under short circuit conditions.
  - **Transmission Security Margin** – Determines the ability to meet load plus losses against the generation, interchanges, and temperature-based generation derates (total resources) for a certain locality within NYCA. Transmission security margins identify plausible changes in conditions or assumptions that might adversely impact the reliability of the system.

The 2026 RNA results are grouped by New York state regions. First, statewide resource adequacy is discussed, followed by transmission security and transmission security margin results for facilities in Rest of State, Lower Hudson Valley, New York City, and Long Island. Further details on the methodology used in the assessments and the results can be found in Appendix D and Appendix E.

Statewide Resource Adequacy

The resource adequacy assessment shows that there is a statewide resource deficiency with the Base Case exceeding the statewide resource adequacy criterion beginning in 2033 and continuing through the study period. As shown below in Figure 31, the deficiency is approximately 225 MW in

2033 and increases rapidly through 2036 to more than 1,800 MW as demand increases and aging generation reduces available supply. This statewide resource deficiency reflects an insufficient amount of available supply to reliably meet projected demand and operating reserve requirements. The resource deficiencies occur primarily during the summer months within the planning horizon. However, winter conditions contribute an increasing share of the Loss of Load Expectation (LOLE) in the later years, accounting for approximately 40% of annual LOLE by 2036, due to increasing demand from heating electrification, as well as fuel-related generation constraints becoming a more significant planning consideration.

Figure 31: NYCA Resource Adequacy LOLE Results[8]

Study Year	LOLE (event-days/year)			NYCA Margin (perfect MW)
	Annual	Summer	Winter	
Y2027	0.025	0.025	0.000	1,900
Y2028	0.032	0.032	0.000	1,675
Y2029	0.034	0.034	0.000	1,475
Y2030	0.019	0.019	0.000	1,975
Y2031	0.036	0.036	0.000	1,200
Y2032	0.074	0.074	0.000	350
Y2033	0.115	0.114	0.002	-225
Y2034	0.182	0.170	0.012	-725
Y2035	0.290	0.243	0.047	-1,175
Y2036	0.596	0.358	0.238	-1,850

Further supporting analysis from the resource adequacy assessment are discussed below, including additional metrics, reliability margins, reliance on emergency operating procedures, and the impact of internal transmission constraints.

Resource Adequacy Metrics

The NYISO evaluates resource adequacy using probabilistic simulations that capture the effects of uncertain future conditions, including variations in demand and effects of random forced outage of generation and transmission facilities. These simulations use a sequential Monte Carlo approach to calculate reliability metrics such as ~~Loss of Load Expectation (~~LOLE~~).~~. The analysis reflects the key drivers discussed in the Key System Trends section, including risks associated with an aging generation fleet (beginning in study year six) and limited emergency assistance expected from

[8] There is no criterion for summer or winter; the results are provided for information.

neighboring systems that are incorporated starting with the 2026 RNA. Additional modeling details, including the assumptions matrix and model description are provided in Appendix D.

Resource adequacy Base Case results are provided in terms of LOLE. LOLE is generally defined as the expected (weighted average) number of days in a given period (*e.g.,* one study year) when for at least one hour from that day the hourly demand is projected to exceed the zonal resources (event day). Within a day, if the zonal demand exceeds the resources in at least one hour of that day, this will be counted as one event day. The criterion for New York is that the NYCA annual LOLE shall not exceed one day in 10 years, or LOLE < 0.1 days/year.

LOLE accounts for events but does not account for the magnitude (MW) or duration (hours) of a deficit. Therefore, the NYISO calculates two additional reliability indices—Loss of Load Hours (LOLH) measured in event-hours/year, Expected Unserved Energy (EUE) measured in MWh/year, and Normalized EUE (NEUE) in parts per million.[9] LOLH and EUE provide further context on the extent of loss of load events but are provided only for informational purpose as there currently are no reliability criteria based on those indices. Figure 32 shows how LOLH, EUE, and NEUE rise at the end of the study period along with LOLE.

Figure 32: NYCA Resource Adequacy Results with Additional Reliability Indices

Study Year	LOLE	LOLH	EUE	NEUE
	event-days/year	hrs/year	MWh/year	ppm
Y2027	0.025	0.060	25	0.162
Y2028	0.032	0.083	34	0.217
Y2029	0.034	0.090	36	0.228
Y2030	0.019	0.044	26	0.162
Y2031	0.036	0.094	65	0.401
Y2032	0.074	0.222	170	1.039
Y2033	0.115	0.353	311	1.877
Y2034	0.182	0.600	524	3.121
Y2035	0.290	0.978	877	5.152
Y2036	0.596	1.986	1,823	10.537

[9] LOLH is generally defined as the expected number of hours per period (e.g., one study year) when a system's hourly demand is projected to exceed the zonal resources (event-hour). EUE, is generally defined as the expected energy (MWh) per period (e.g., one study year) when the summation of the system's hourly demand is projected to exceed the zonal resources. The Normalized EUE (NEUE) in parts per million (ppm) is the EUE divided by the Gold Book forecast and multiplied by 1,000,000. See NYSRC's "Resource Adequacy Metrics and their Application" available at: https://www.nysrc.org/PDF/Reports/Resource%20Adequacy%20Metric%20Report%20Final%204-20-2020[6431].pdf.

Resource Adequacy Margins

The resource adequacy margin quantifies how many MW of perfect capacity are needed to bring the system back to within criterion (compensatory MW), without attributing to a specific driver, such as generation unavailability or forecast increase. In the context of resource adequacy analysis, "perfect capacity" is capacity that is always available at full capacity when needed (e.g., not impacted by ambient temperature variation or unit unavailability, not subject to energy durations limitations, not assessed for transmission security or interface impacts). Two methods were used to compute resource adequacy margin/compensatory MW to indicate various ways a deficiency could be solved.

The NYISO calculated compensatory MW (when there is a violation) and resource adequacy margin (when there is surplus) using two methods:

- **Zonal Perfect MW** ~~capacity:~~Capacity- calculation performed one zone at a time to provide insights into the amount of MW that is needed in each zone to bring the system back to criterion. The zonal method is used to indicate relative benefit of adding resources in one zone compared to another.
- **Statewide (or NYCA) Load Ratio Perfect MW** ~~capacity:~~ Capacity-calculation performed by distributing perfect capacity across the state using seasonal load-based ratios to provide a representative system-wide allocation. The statewide method is used to describe the overall margin or deficiency observed in the RNA.

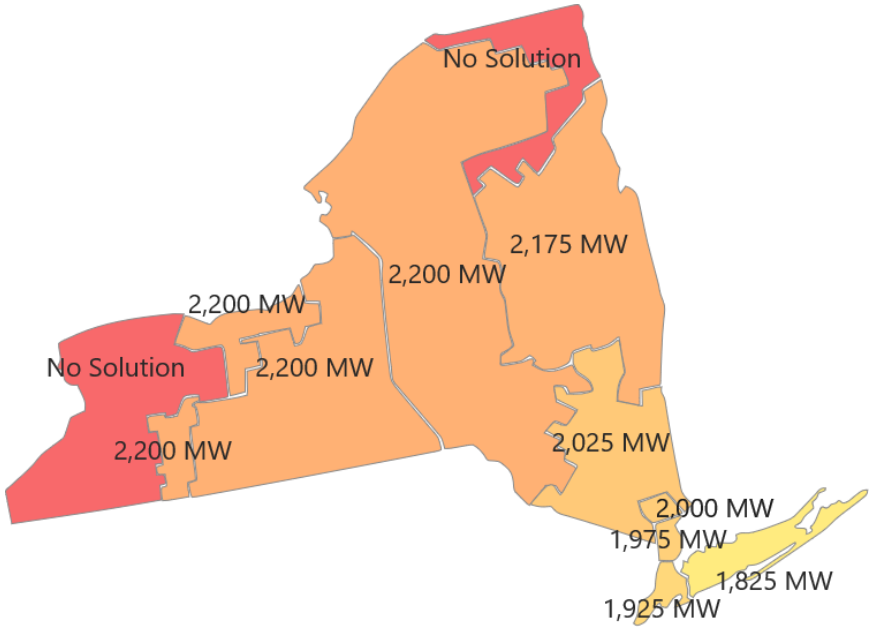
The results in Figure 33 indicate steadily declining reserve margins through 2032. Beginning in 2033, the system becomes capacity deficient, requiring increasing amounts of compensatory "perfect MW" capacity. The deficiency grows each year, from -225 MW in year 2033 to -1,850 MW by the final study year (2036).

Figure 33: Zonal and NYCA Load Ratio Perfect MW Capacity

Study Year	Zonal Method (perfect MW)											NYCA Method (perfect MW)
	A	B	C	D	E	F	G	H	I	J	K	
2027	1,875	1,875	2,350	2,300	2,350	2,350	2,350	2,350	2,350	1,925	450	**1,900**
2028	1,775	1,800	2,100	1,975	2,100	2,100	2,075	2,075	2,075	1,900	425	**1,675**
2029	1,625	1,600	1,725	1,700	1,725	1,725	1,700	1,700	1,700	1,575	375	**1,475**
2030	1,700	1,700	2,025	2,000	2,025	2,025	1,975	1,975	1,975	1,925	950	**1,975**
2031	1,250	1,225	1,275	1,250	1,275	1,250	1,200	1,200	1,200	1,200	725	**1,200**
2032	375	375	375	375	375	375	350	350	350	350	225	**350**
2033	-225	-225	-225	-225	-225	-225	-225	-225	-225	-225	-200	**-225**
2034	-800	-775	-775	-775	-775	-775	-775	-775	-775	-775	-700	**-725**
2035	-1,300	-1,300	-1,275	-1,275	-1,275	-1,275	-1,250	-1,250	-1,250	-1,250	-1,125	**-1,175**
2036	No Solution	-2,200	-2,200	No Solution	-2,200	-2,175	-2,025	-2,000	-1,975	-1,925	-1,825	**-1,850**

Note: "no solution" means adding perfect capacity in that zone alone cannot restore the statewide reliability criterion.

Figure 34: Zonal Compensatory MW Study Year 10 (2036) Map



Note: "no solution" means adding perfect capacity in that zone alone cannot restore the statewide reliability criterion.

Emergency Operating Procedures

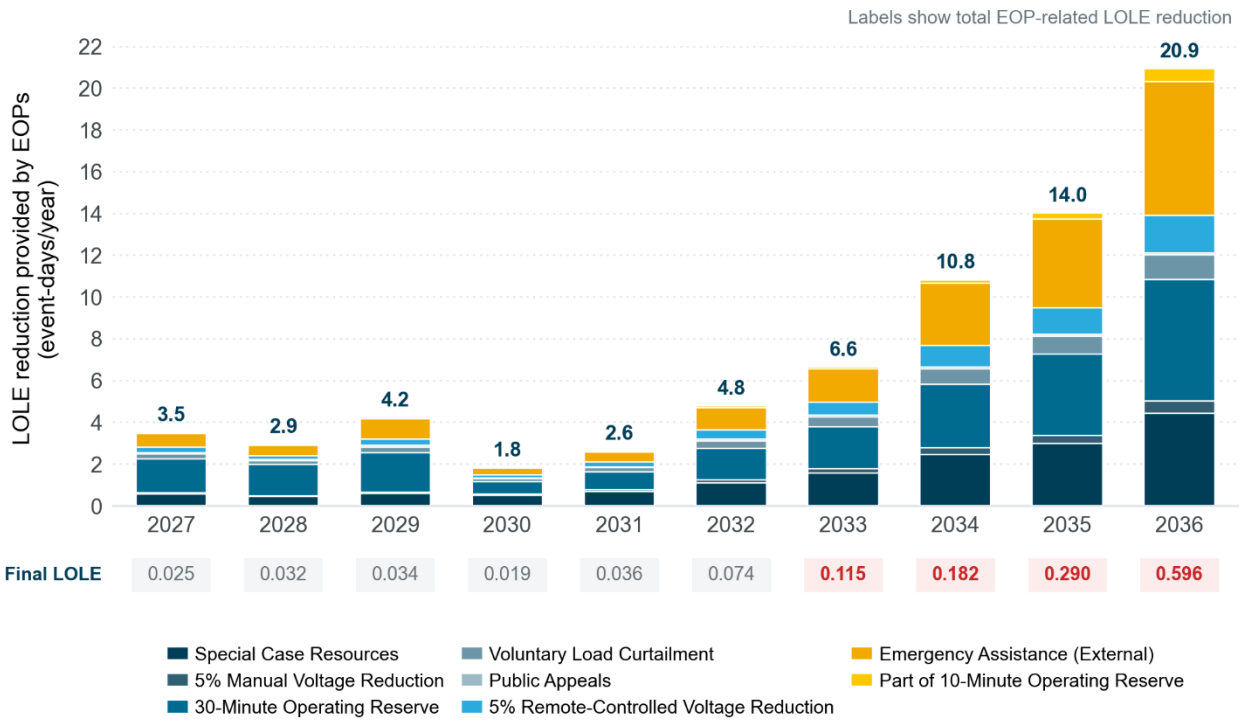
The New York resource adequacy model incorporates several emergency operating procedures (EOPs), such as operating reserves, Special Case Resources (SCRs), voltage reduction, public appeals, 10-minute reserve, 30-minute reserve, and emergency assistance from external areas. The LOLE results after utilizing each of the sequential EOP steps are shown in Figure 35. The contribution of each EOP step is evaluated based on the improvement in reliability it provides in the resource adequacy analysis. As a result, the values shown below reflect the relative reliability benefit of each measure rather than how often it would be activated in actual operations.

Figure 35: LOLE after Each EOP Step

LOLE after EOP Step (event-days/year)	Max MW (S) 2027	Max MW (S) 2036	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Pre-EOP results	-	-	3.524	2.972	4.258	1.861	2.676	4.849	6.762	10.999	14.307	21.527
Special Case Resources (SCRs)	593	593	2.969	2.541	3.668	1.372	2.003	3.750	5.193	8.551	11.328	17.102
5% Manual Voltage Reduction	68	78	2.895	2.487	3.601	1.308	1.910	3.611	4.979	8.234	10.939	16.497
30-Minute Operating Reserve	655	655	1.288	0.994	1.717	0.712	1.060	2.095	2.989	5.177	7.037	10.696
Voluntary Load Curtailment	267	267	1.048	0.815	1.463	0.574	0.857	1.740	2.524	4.459	6.191	9.525
Public Appeals	74	74	0.980	0.749	1.365	0.539	0.811	1.660	2.435	4.366	6.091	9.427
5% Remote Controlled Vol. Reduction	452	488	0.707	0.571	1.065	0.373	0.582	1.220	1.810	3.317	4.838	7.614
Emergency Assistance (External)	3,400	2,500	0.068	0.079	0.086	0.065	0.100	0.160	0.200	0.340	0.568	1.216
Part of the 10-Minute Op. Reserve	**860**	**860**	**0.025**	**0.032**	**0.034**	**0.019**	**0.036**	**0.074**	**0.115**	**0.182**	**0.290**	**0.596**
Total MW	**6,370**	**5,515**										

The analysis indicates increasing reliance on emergency operating procedures and external assistance to maintain reliability, reducing the system's ability to withstand unexpected changes in demand, resource performance, or imports. As shown in Figure 35 and Figure 36, the contribution of emergency actions to maintain reliability increases from approximately 3.5 days per year in 2027 to approximately 21 days per year by 2036. This increase illustrates ~~a system that is becoming more and more dependent~~the system's growing reliance on measures intended for infrequent emergency conditions.

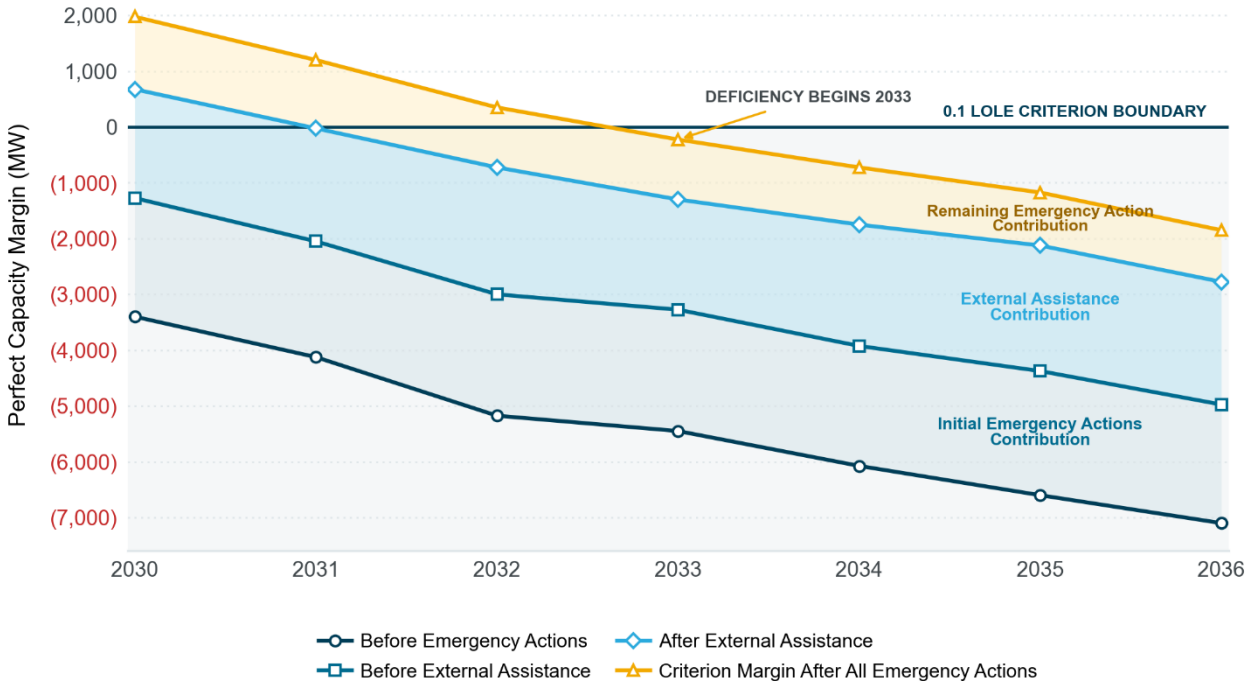
Figure 36: Resource Adequacy Contribution by Emergency Operating Procedure



Note: Each segment represents the reduction in LOLE between consecutive emergency actions.
Red Final LOLE values exceed the 0.1 event-day/year criterion.

Figure 37 shows the contribution of EOPs in another way by detailing the effective compensatory MW their use provides to the system. Collectively, the use of EOPs in place of resources during regular operation of the system increases the resource adequacy margin by approximately 5,200 to 5,500 MW. Comparing the relative contribution of the different EOP steps, the external assistance from neighboring systems (in addition to the contractual imports) provides nearly as much margin contribution as all other EOPs combined. This highlights the NYCA's continued reliance on neighboring systems. However, as those regions experience tightening margins similar to New York, they may be unable to provide assistance to New York during future system stress events.

Figure 37: Statewide Resource Adequacy Margin by Emergency Operating Procedure



Resource Adequacy Benefits of Transmission

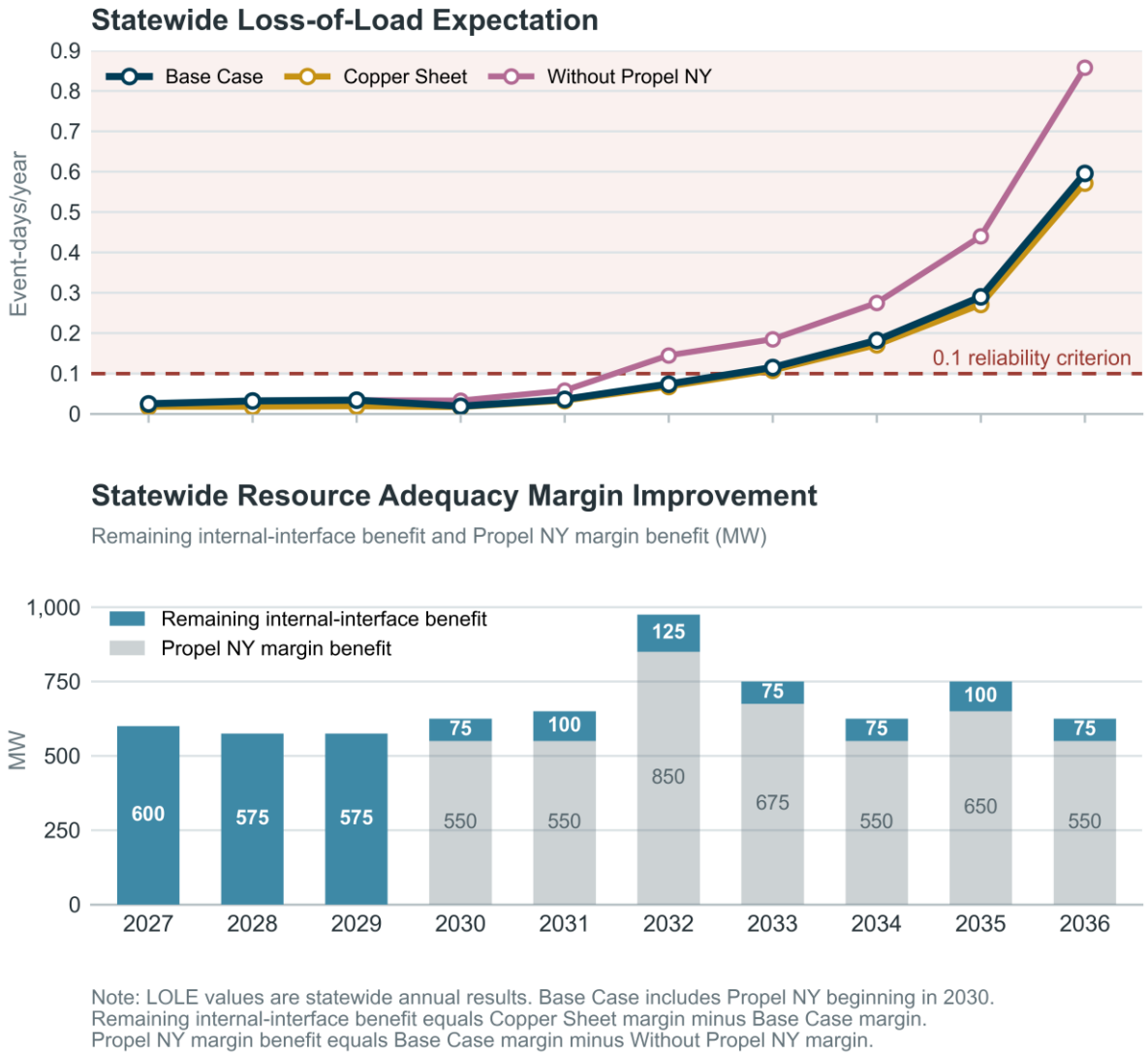
The statewide resource adequacy results reflect both the amount of available supply and the ability to deliver that supply throughout New York. Therefore, the RNA also examined two resource adequacy sensitivity analyses—one sensitivity that removed the Propel NY project from the Base Case and ~~the other~~another that eliminated all of New York's internal interface limits—to further assess the results. The analyses, as detailed below, illustrate the significant reliability benefits provided by major transmission investments already included in the Base Case, while also demonstrating that the remaining statewide deficiency is not primarily driven by internal transmission constraints.

Figure 38 shows that the Propel NY project contributes the equivalent of at least 550 MW of statewide compensatory MW due to the new zonal ties from Long Island to the rest of the state. Although the Propel NY project does not add resources to the NYCA, the project expands transfer capability and provides access to resources, thus providing significant statewide resource adequacy value.

The "Copper Sheet" sensitivity shows the additional margin benefit associated with removing all of the remaining internal interface limits, as if there was infinite transmission capability. After the inclusion of the Propel NY project, removing all other internal interface limits in New York only provides approximately 75 to 125 MW of additional margin.

While the addition of the Propel NY project delays the statewide resource adequacy deficiency by one year, removing all remaining internal interface limits does not delay the deficiency any further. The results indicate that internal transmission constraints affect statewide resource adequacy, but the deficiency in the later study years primarily reflects an overall shortage of available resources.

Figure 38: Resource Adequacy Impact of the Propel NY Project



Note: LOLE values are statewide annual results. Base Case includes Propel NY beginning in 2030.
Remaining internal-interface benefit equals Copper Sheet margin minus Base Case margin.
Propel NY margin benefit equals Base Case margin minus Without Propel NY margin.

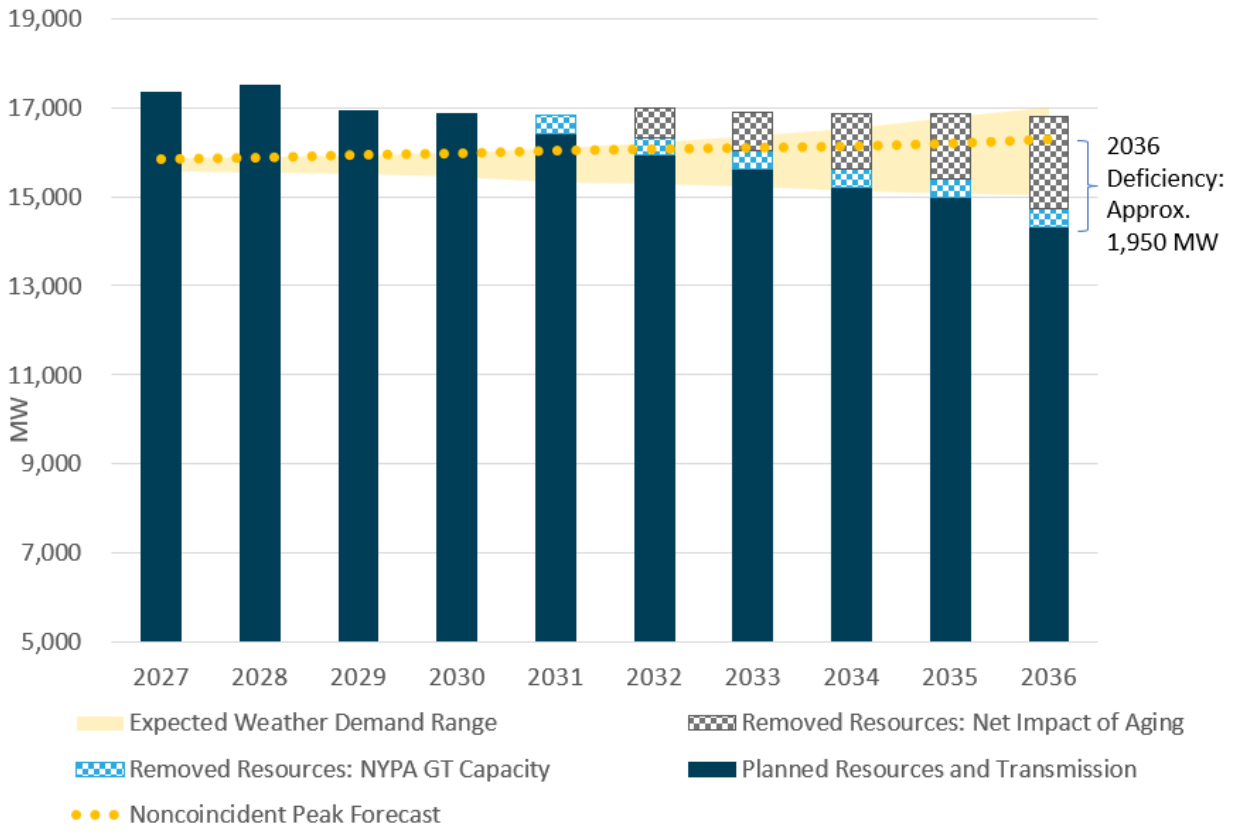
Lower Hudson Valley

Summer peak transmission security margin results for the Lower Hudson Valley are shown in

Figure 39. The margin is deficient starting in 2032 by 130 MW over 2 hours, worsening to 1,950 MW over 7 hours by 2036. The availability of the NYPA small gas plants (or equivalent replacements) would push out the need by a year and decrease the size of the need in 2036 by approximately 400 MW.

Winter peak transmission security margins for the Lower Hudson Valley are sufficient in all planning years.

Figure 39: Lower Hudson Valley Summer Transmission Security Margin – Existing & Planned Resources

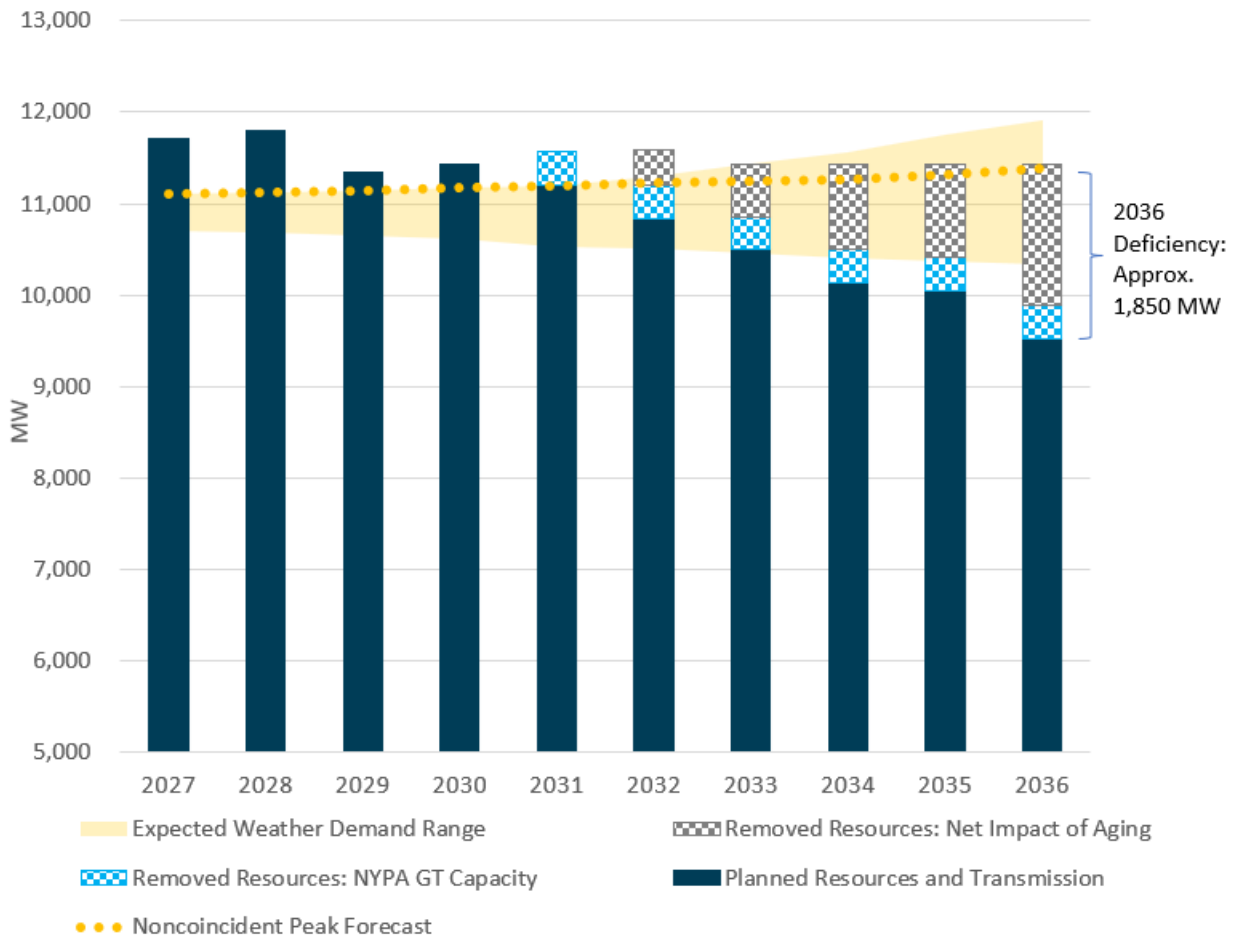


New York City

Summer peak transmission security margin results for New York City are shown in Figure 40. The margin is deficient starting in 2032 by 400 MW for 7 hours, worsening to a total deficiency of 1,850 MW for 15 hours in 2036. If battery energy storage resources are not available for discharge, Zone J would be deficient earlier by 130 MW for 3 hours in 2031. These deficiencies are driven primarily by the assumed unavailability of the NYPA small plants and aging generation risk. The availability of the NYPA small gas plants (or equivalent replacements) would push out the need

by a year and decrease the size of the need in 2036 by approximately 350 MW.

Figure 40: NYC Summer Peak Transmission Security Margin – Existing & Planned Resources



Winter peak transmission security margin for New York City is also deficient starting in winter 2036, with a total deficiency of 775 MW. Hourly results indicate that three hours are reliant on the availability of battery energy storage for discharge by 2035, and sixteen hours would be deficient by winter 2036.

Additionally, New York City generally had challenging voltage issues to resolve in the nighttime light load condition, with some specific buses involved including East View 345 kV, Tremont 345 kV, Mott Haven 345 kV, and Astoria 345 kV. For N-1-1 contingency combinations that removed two large voltage control devices, these and other stations initially had high voltages. System adjustments ~~required~~were able to resolve the high voltages ~~included~~, including generator voltage setpoint adjustments, CHPE HVDC terminal voltage setpoint adjustment, turning on switched

reactors, and over a dozen autotransformer ratio changes. After these adjustments, voltages in New York City were reduced to acceptable levels, but the extent of adjustments required is an indication this area of the system has voltage control difficulties in nighttime light load conditions when few generators are online.

Long Island

Both the summer and winter peak transmission security margins for Long Island are sufficient for the 2026 RNA planning years. Figure 41 shows the summer peak transmission security margin for Long Island. Figure 42 shows that the summer peak transmission margin would be deficient without the timely completion of the Propel NY transmission project by May 2030, beginning as a 30 MW deficiency in summer 2030, growing to 750 MW by summer 2036.

Figure 41: Long Island Summer Peak Transmission Security Margin – Existing & Planned Resources

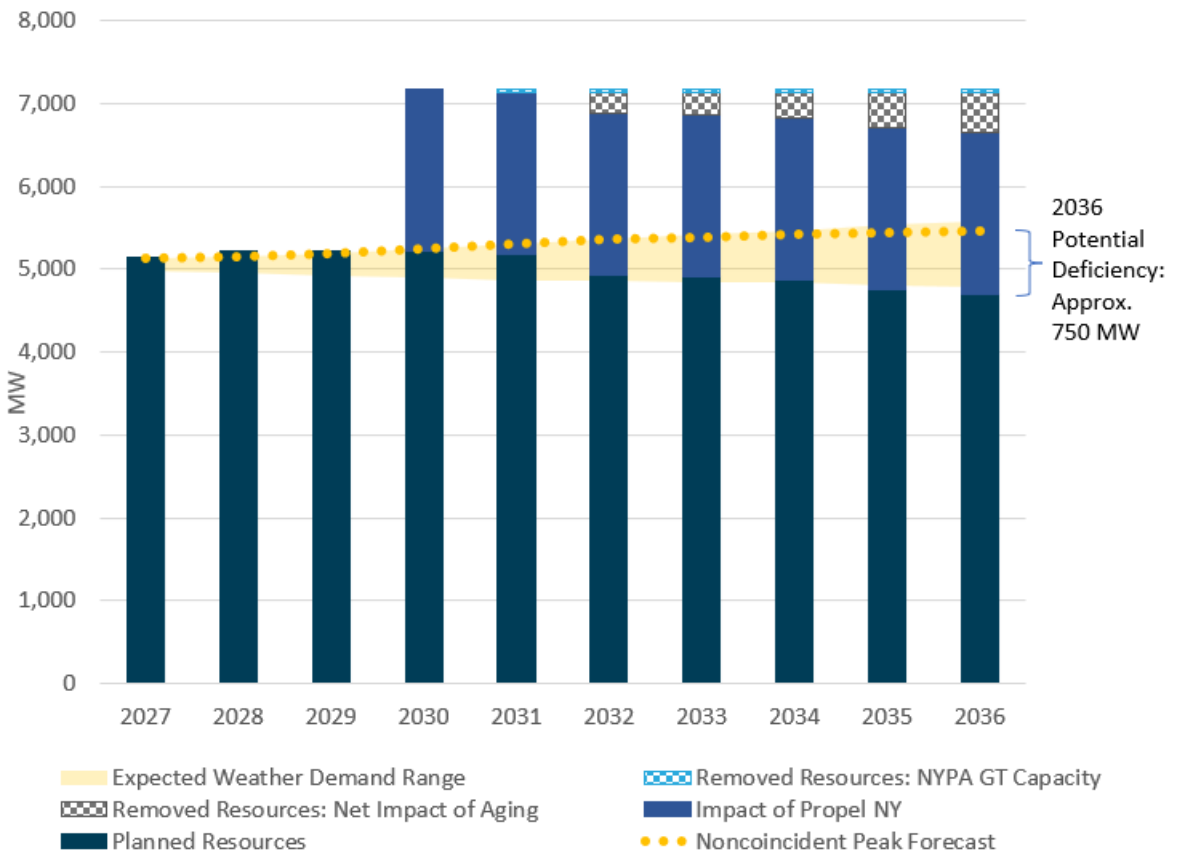
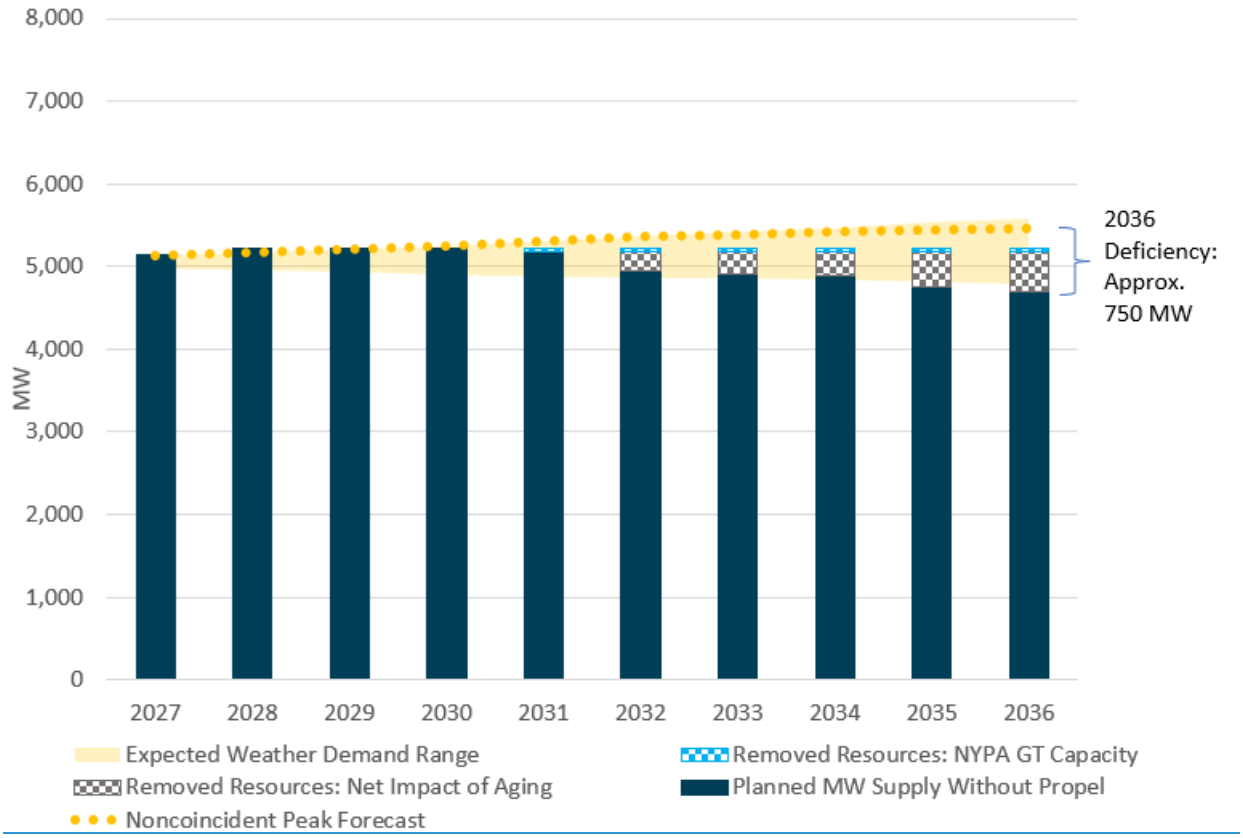


Figure 42: Long Island Transmission Security Margin without Propel NY



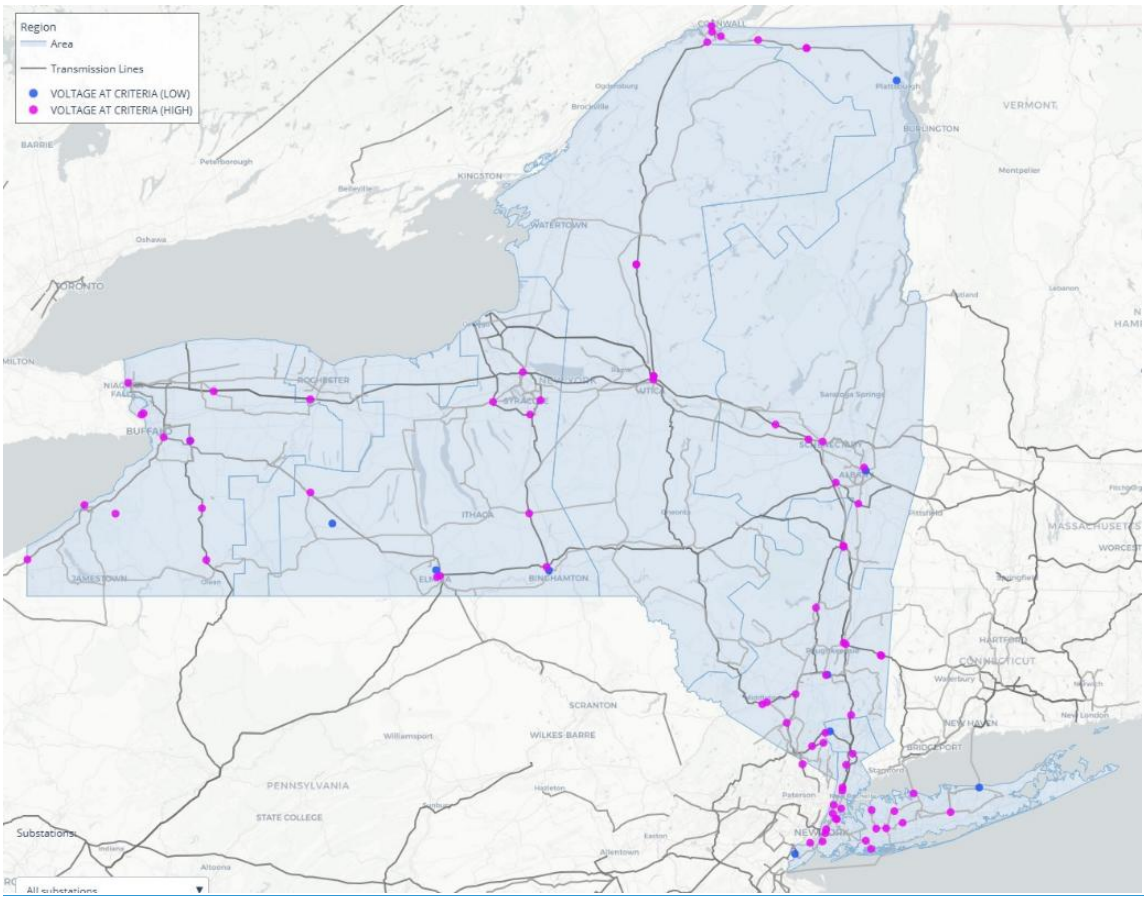
Rest of State

The 2026 RNA observed the following transmission security issues for facilities in Zones A through F, which is referred to as "Rest of State."

System Voltages at Limits

In assessing the transmission security, large portions of the system required extensive system adjustments to bring post-contingency voltages within allowable limits. As shown in Figure 43, in several locations of the system, depending on the system conditions it is possible to observe both instances of high and low voltage concerns. While not violations of reliability criteria, this indicates that maintaining system voltage will become increasingly difficult.

Figure 43: State Electric Map Highlighting Voltage Issues



Haverstock 345 kV, a bus located in Zone D, is one example of the difficult nighttime light load voltage control situations described above. For a certain N-1-1 contingency combination, Haverstock 345 kV is separated from nearby Moses generators that provide voltage control. High voltages at Haverstock 345 kV were initially present in the analysis until all nearby shunts were adjusted, multiple transformer taps were adjusted, and a local wind plant assumed to be in-service in this system condition, was adjusted to control voltage near its lowest voltage setpoint. With these adjustments, Haverstock voltages were brought down to within criteria but required ~~the use of~~using much of the reactive capability of this portion of the system.

Oakdale Thermal Overloads

Beginning with the 2025 Quarter 3 STAR, the NYISO has been reporting thermal overloads on an Oakdale 345/115/34.5 kV ~~transfer~~transformer as well as the Oakdale – North Endicott 115 kV transmission line as early as summer 2026 that worsen over time through the RNA horizon such that by 2036 the need is observed in both summer and winter peaks. This deficiency is also a Near-Term Reliability Need in the ~~Short-Term Reliability Process.~~STRP. However, NYSEG has a Local Transmission Plan (LTP) to address these thermal overloads, which is currently planned to be in

service by summer 2031. The NYISO has confirmed with NYSEG that this LTP is making reasonable progress toward entering service by the projected in-service date. Prior to completion of this project, NYSEG will utilize an interim operating procedure to address this overload. With the proposed interim load shed operating procedure and the local transmission plans, the NYISO will not solicit for solutions to address these issues but will continue to track the development of the local plans in the quarterly tracking process.

Figure 44: Needs Resolved by Local Transmission Plans

Need	LTP	Owner	Station	Description	In-Service Date	Notes
Oakdale Thermal Violations	Oakdale Rebuild	NYSEG	Oakdale 345 & Oakdale 115	Rebuild	Summer 2031	Expand existing 345 kV bus to 3 bay BAAH. Complete rebuild of 115 kV to 6 bay BAAH.

Fitzpatrick Generating Unit Instability

Stability analysis indicates that the Fitzpatrick nuclear generating unit may lose synchronism following a stuck breaker fault at the Scriba 345 kV station under very light load conditions. This stability issue is projected to emerge as early as spring 2027 and persist throughout the RNA study horizon. As the issue first appears within the horizon of the ~~Short-Term Reliability Process (~~STRP~~),~~ it will be further reviewed and addressed through that process.

Scenarios

This section presents the scenarios developed and analyzed in ~~the 2026~~this RNA to explore how uncertainty could affect reliability outcomes and change the nature of reliability risks. The RNA evaluated two types of scenarios, both of which are for information purposes only:

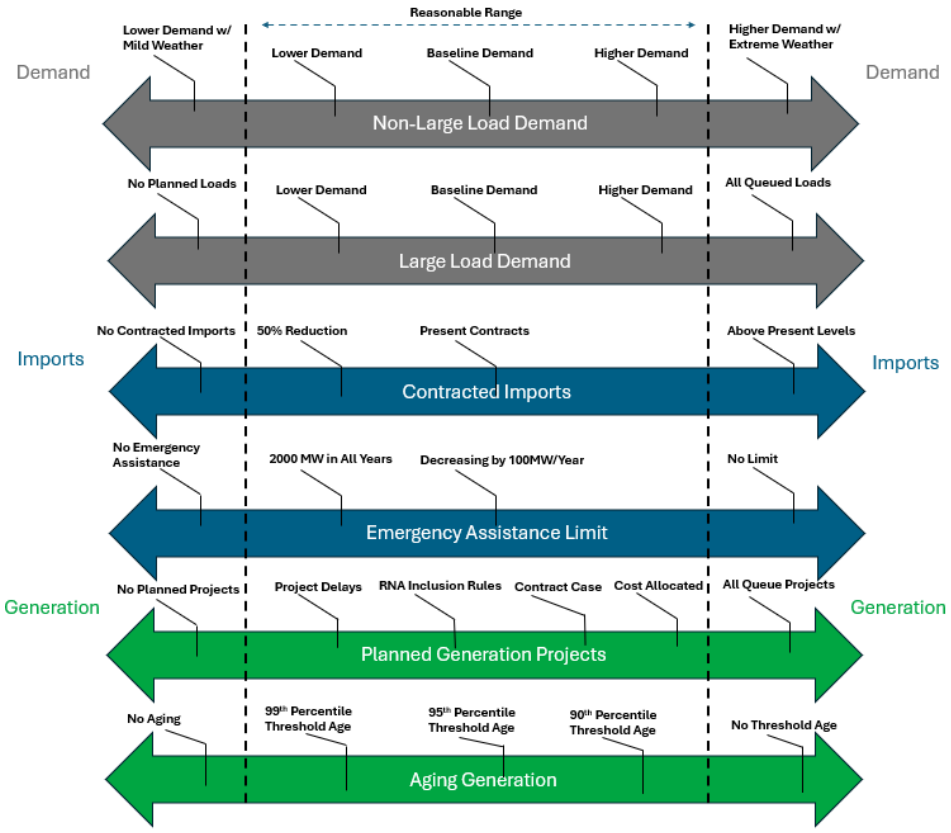
- ~~Five plausible~~Plausible scenarios (hereinafter, "Scenarios") that vary multiple assumptions from the Base Case with consideration of alignment with system trends, and
- "Other informational scenarios" and sensitives that may consider more extreme assumptions and provide additional insight into the analysis results.

For each of the Scenarios, this section provides a brief description of the scenario and summarizes the results (statewide resource adequacy, transmission security, and transmission security margin results, as applicable). A broader assessment of how uncertainty could affect reliability outcomes and alter the nature of reliability risks is provided in the Findings section. Results from other informational scenarios are also presented at the end of this section that further tested the robustness of the NYISO analysis and offer insight to potential solutions for identified Reliability Needs and risks. Further details on the scenario analysis are included in Appendix F.

Scenario Descriptions

In the development of the 2026 RNA, the NYISO identified the key assumptions to vary from the Base case, along with a reasonable range for each assumption, for the development of scenarios. The key assumptions and the reasonable ranges for each assumption were based on discussions with stakeholders. Figure 45 summarizes the reasonable ranges of the key assumptions and provides examples of assumption values that could fall outside this reasonable range. The ranges for key assumptions were also detailed for each of the factors in the Electric Grid Trends section. The Scenarios are put together by selecting a single value within this range for each of the key assumptions.

Figure 45: Key Assumptions for Scenarios and Reasonable Range



In accordance with the procedures in ~~section~~Section 3.3 of NYISO's Reliability Planning Process Manual, the NYISO, following discussions with stakeholders, selected five Scenarios out of several potential scenarios to represent a range of plausible system outcomes beyond the Base Case for the 2026 RNA. Each of the five scenarios described below examines key system trends by adjusting relevant system assumptions in the Base Case to reflect observed and/or projected conditions. For ease of reference, each scenario is named after the trend or assumption that most distinguishes it from the RNA Base Case. However, the scenario names are intended as shorthand and do not imply that the scenarios represent the full range or extreme outcomes of those trends.

- **"Climate Policy Advancement"** – Tests reliability impacts of policy-driven resource changes towards a reduced-emissions future, including accelerated retirements, increased transportation and heating electrification, and additional clean generation.
- **"Large Loads"** – Evaluates reliability under higher large-load growth assuming more aging generation is retained and reduced imports as neighboring systems would experience similar load growth.
- **"Economy Slows"** – Examines a lower-growth future with reduced demand and delays to planned resource projects.
- **"Outlook Contract"** – Evaluates the system using generation and transmission project

assumptions consistent with the Outlook Contract Case, adding all generation projects with financial commitments (e.g., NYSERDA and offshore wind REC contracts) and NYPSC-approved transmission projects as of May 2026.

- **"IBR Voltage Control"** – Assesses how inverter-based resources and changing power flow patterns affect voltage performance and reactive power needs. Only transmission security analysis was performed for this scenario.

Figure 46 sets forth the assumptions (columns) in each Scenario (rows) that are changed compared to the Base Case. A blank entry indicates that the Scenario uses the same assumption as the Base Case.

Figure 46: Scenario Assumptions

Scenario	Generation				Demand		Transmission		
	Aging Gen	Planned Projects	Land-Based Wind	Planned IBR Reactive Capability	Demand (non-LL)	Large Loads	Imports/Exports	Emergency Assistance Limit	Projects
Scenario A Climate Policy Advancement	Higher (Increased Aging Model)	Higher (Cost Allocated)			Higher				
Scenario B Large Loads	Lower (Decreased Aging Model)					Higher	Lower (All Imports)	Lower (2,000 MW)	
Scenario C Economy Slows		Delays – up to 5 years			Lower	Lower			
Scenario H IBRs Control Voltage		Higher (Cost Allocated)	Higher Output	Lower (Limited Power Factor)			Increased Imports (PJM) And Exports (HQ)		
Scenario J Outlook Contract Case		Contract Case							Phases 1 and 2

Each Scenario is designed to evaluate different uncertainties and reliability risks. As a result, not all analyses are applicable to every Scenario. Figure 47 summarizes the analyses performed for each Scenario.

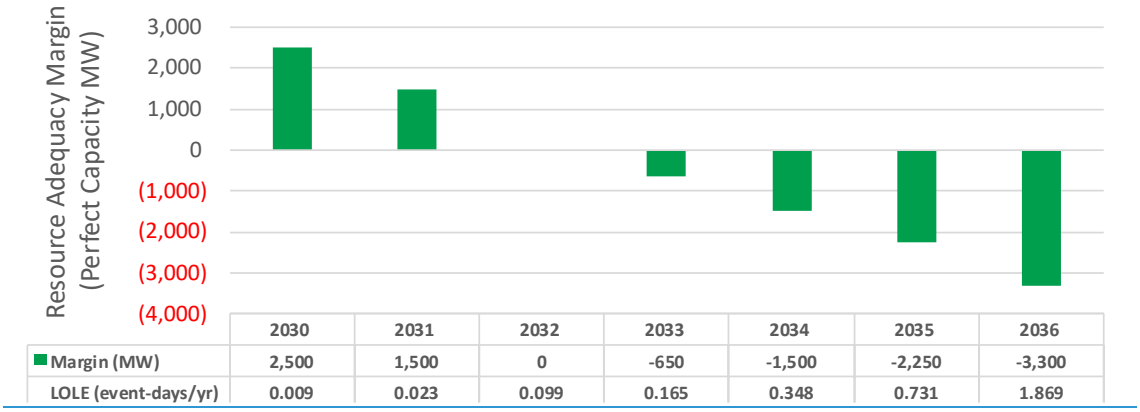
Figure 47: Summary of Analysis Performed on Each Scenario

Scenario Name	Resource Adequacy	Transmission Security Margin	Transmission Security
Climate Policy Advancement	☑	☑	
Large Loads	☑	☑	☑
Economy Slows	☑	☑	
IBRs Control Voltage			☑
Contract Case	☑	☑	

Climate Policy Advancement Scenario

The resource adequacy results for the Climate Policy Advancement Scenario are provided in Figure 48. Increased aging generation and electrification drive ~~loss of load expectation (~~LOLE~~)~~ deficiencies beginning in 2033, growing to a severe LOLE of roughly two event-days per year, compared to one event-day in two years in the Base Case. These occur despite this Scenario assuming the addition of over 4.5 GW nameplate of intermittent renewables and storage. Statewide resource adequacy margin reaches a substantial magnitude of -3,300 MW by 2036.

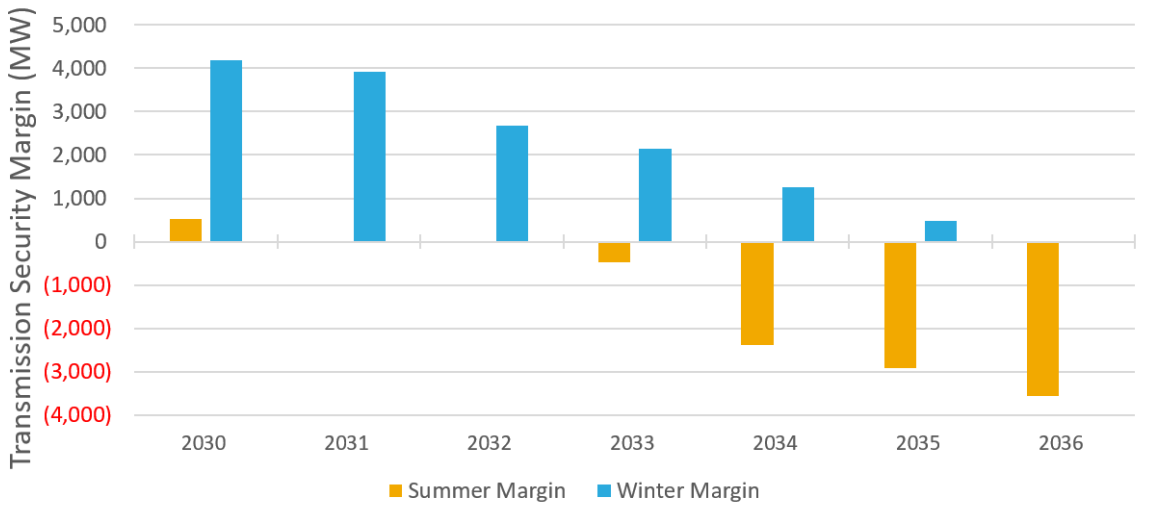
Figure 48: Climate Policy Advancement - Resource Adequacy



	2030	2031	2032	2033	2034	2035	2036
Margin (MW)	2,500	1,500	0	-650	-1,500	-2,250	-3,300
LOLE (event-days/yr)	0.009	0.023	0.099	0.165	0.348	0.731	1.869

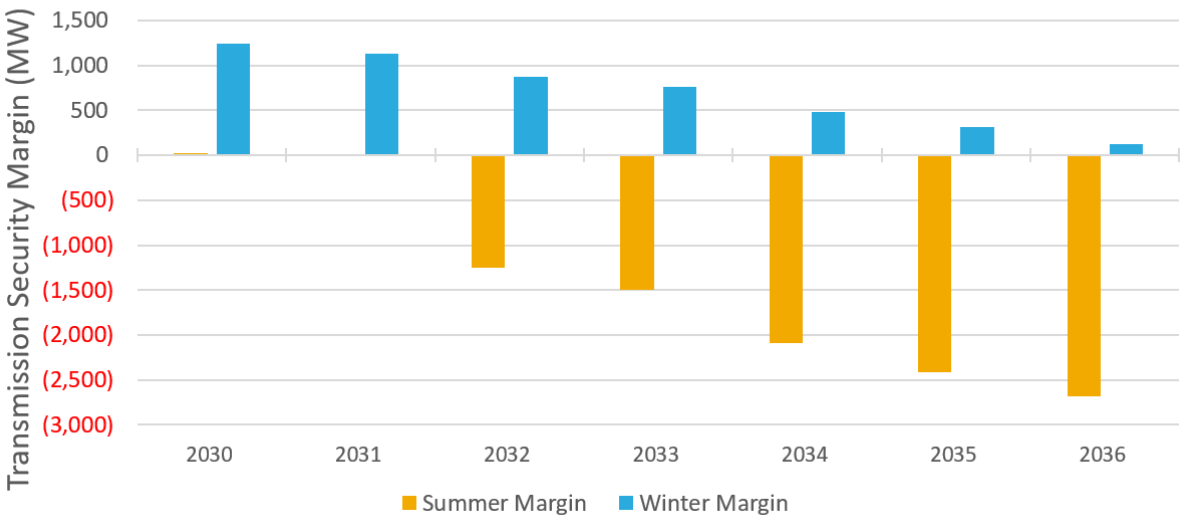
The Lower Hudson Valley transmission security margin results for the Climate Policy Advancement Scenario are provided in Figure 49. Summer peak margin results show deficiencies beginning in 2032, growing to 3,550 MW by 2036. These results indicate that increased aging generation and electrification lead to deficiencies of substantial magnitude, well above the Base Case deficiency of 1,950 MW for the Lower Hudson Valley. Winter peak margin results show positive margin in all years except 2036 with a margin of 0 MW, indicating that the winter margin is reliant on the availability of battery energy storage resources for discharge in the peak hour.

Figure 49: Climate Policy Advancement - Lower Hudson Valley Transmission Security Margin



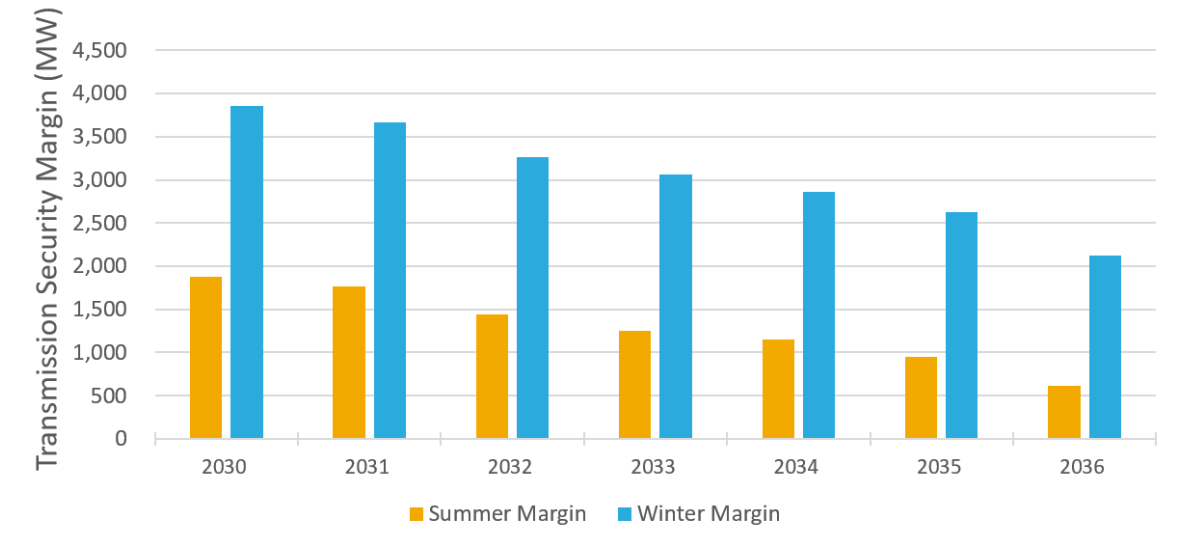
The New York City transmission security margin results for the Climate Policy Advancement Scenario are provided in Figure 50. Summer peak margin results show deficiencies beginning in 2032, growing to 2,700 MW by 2036. These results indicate that increased aging generation and electrification lead to deficiencies of substantial magnitude, well above the Base Case deficiency of 1,850 MW in New York City. Winter peak margin results show deficiencies starting in 2034 and growing to 1,550 MW by 2036.

Figure 50: Climate Policy Advancement - New York City Transmission Security Margin



The Long Island transmission security margin results for the Climate Policy Advancement Scenario are provided in Figure 51. Both the summer and winter peak margins for Long Island are sufficient in all planning years, with the summer margin narrowing to 600 MW by 2036. These results indicate that with the Propel NY transmission project in service, reasonable increases in aging generation and electrification would not lead to margin deficiencies on Long Island during the study period.

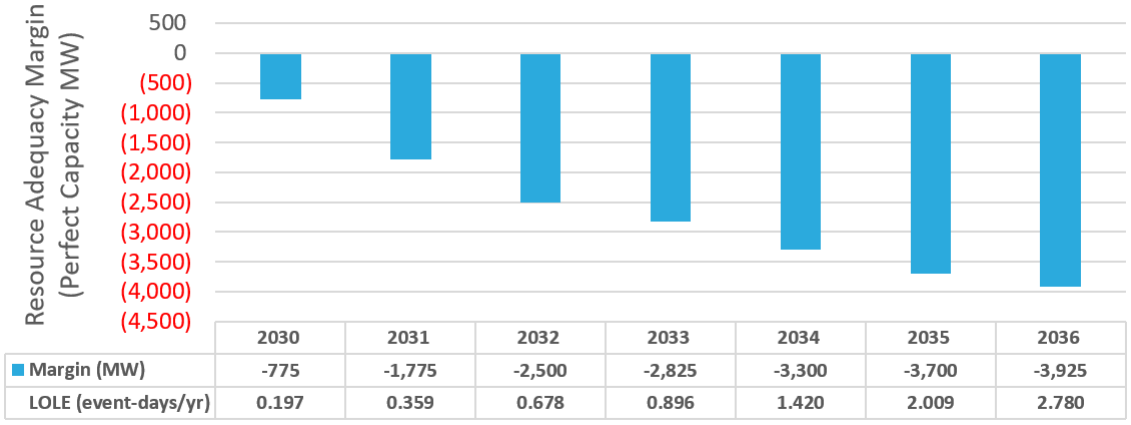
Figure 51: Climate Policy Advancement - Long Island Transmission Security Margin



Large Loads Scenario

Figure 52 displays the resource adequacy results for the Large Loads Scenario. Increased large loads and reduced imports drive urgent resource adequacy deficiencies beginning in 2029 and growing to a severe LOLE of nearly 3 event-days per year by 2036. Resource adequacy margin shows that 3,925 MW of statewide perfect capacity would be required to resolve the deficiency in 2036—a substantially greater magnitude than the Base Case, which requires 1,850 MW.

Figure 52: Large Loads Scenario - Resource Adequacy



	2030	2031	2032	2033	2034	2035	2036
Margin (MW)	-775	-1,775	-2,500	-2,825	-3,300	-3,700	-3,925
LOLE (event-days/yr)	0.197	0.359	0.678	0.896	1.420	2.009	2.780

Figure 53 depicts transmission security margin results for the Lower Hudson Valley in the Large Loads Scenario. Deficiencies were found in summer peak transmission security margin due to reduced imports (large loads are primarily sited upstate) beginning in 2031, which is one year sooner than the Base Case. This deficiency grows to 1,800 MW by 2036. The reduced aging generation assumption drives the magnitude of these deficiencies to taper off in later years, relative to the Base Case. The Lower Hudson Valley winter peak margin was sufficient in all planning years for the Large Loads Scenario.

Figure 53: Large Loads Scenario - Lower Hudson Valley Transmission Security Margin

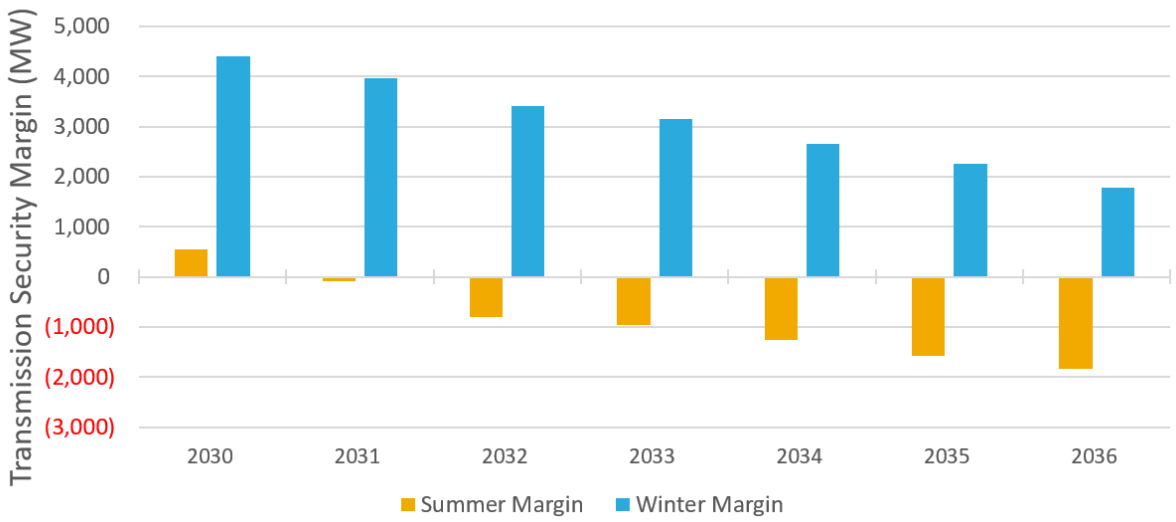
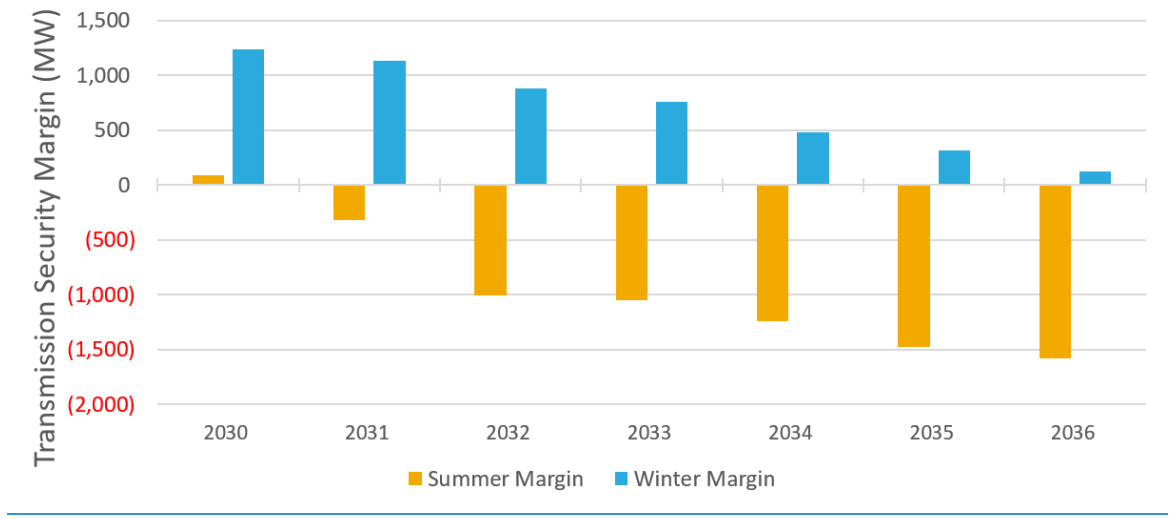


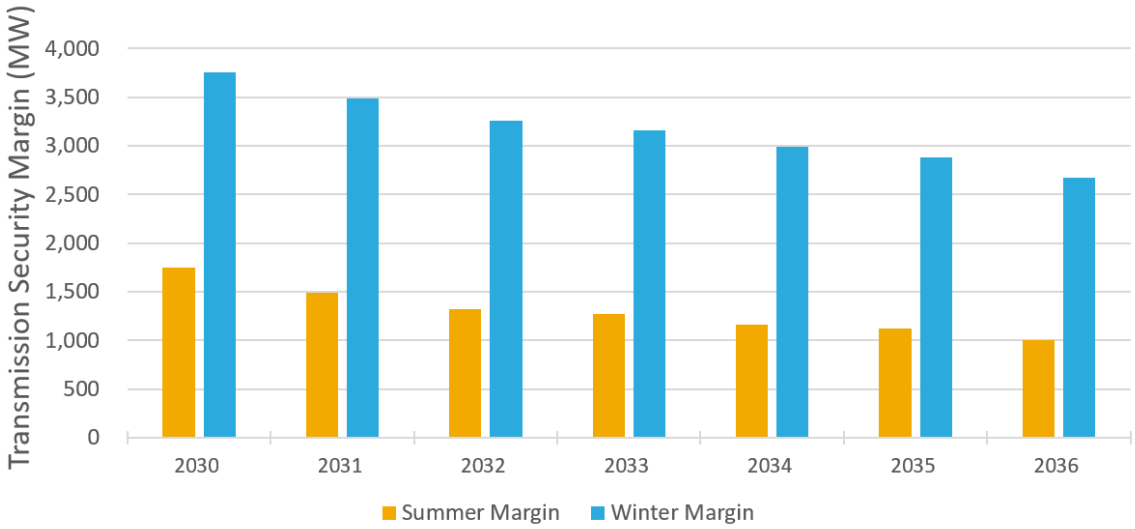
Figure 54 depicts New York City transmission security margin results for the Large Loads Scenario and shows deficiencies in summer peak margins starting in 2031, which is one year sooner than the Base Case. By 2036, the deficiency in summer margin grows to 1,575 MW. The winter peak margin is sufficient in all planning years but narrows to 125 MW by 2036.

Figure 54: Large Loads Scenario - New York City Transmission Security Margin



Long Island transmission security margin, for both summer and winter peak conditions, was sufficient in the Large Loads Scenario. As shown in Figure 55, the summer peak margin remains at 1,000 MW in 2036.

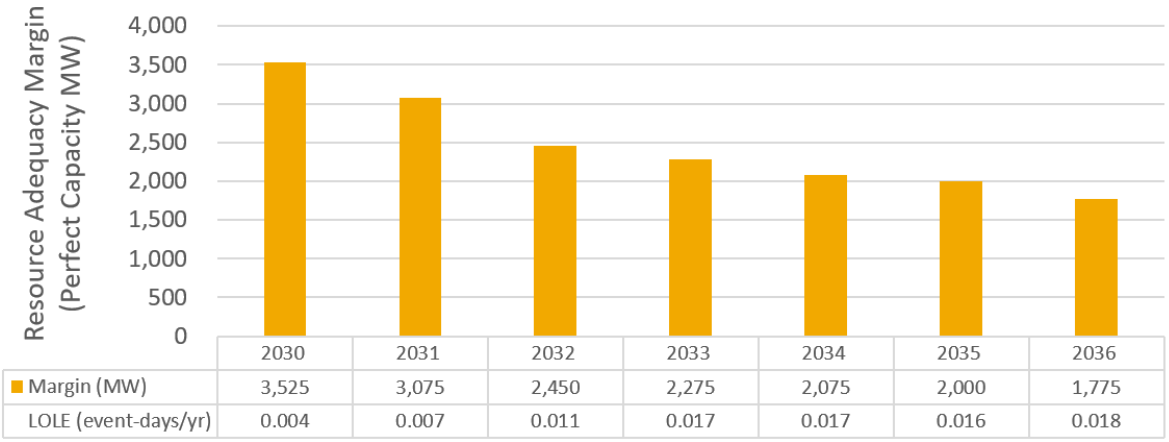
Figure 55: Large Loads Scenario - Long Island Transmission Security Margin



Economy Slows Scenario

Despite assuming that planned projects would be delayed, the Economy Slows Scenario shows that statewide resource adequacy would be sufficient in all planning years with reduced load growth. Figure 56 shows that the resource adequacy margin remains positive, reaching 1,775 MW by 2036, and that LOLE remains below the 0.1 event-day/year criterion

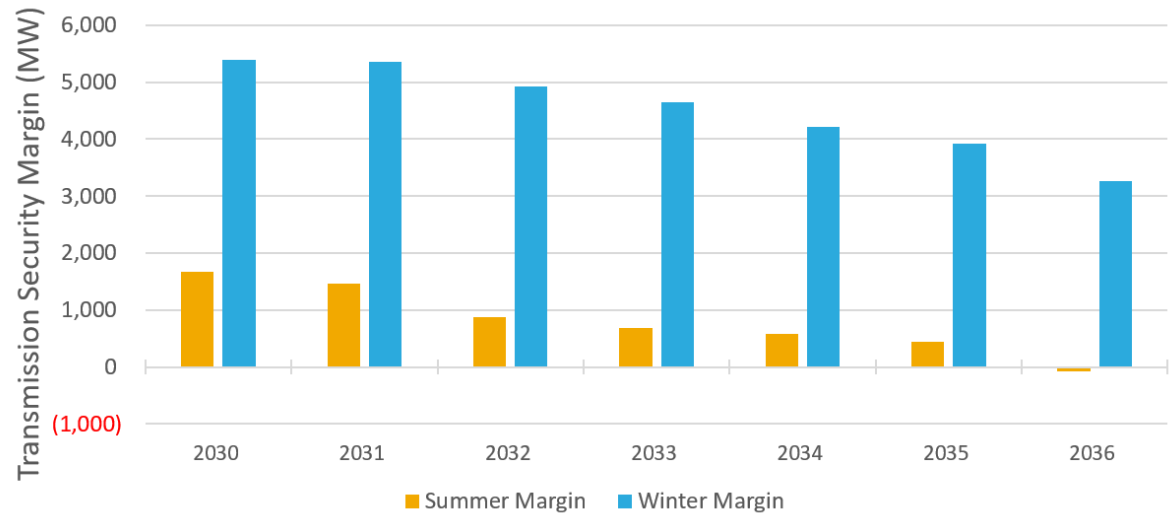
Figure 56: Economy Slows Scenario - Resource Adequacy



	2030	2031	2032	2033	2034	2035	2036
Margin (MW)	3,525	3,075	2,450	2,275	2,075	2,000	1,775
LOLE (event-days/yr)	0.004	0.007	0.011	0.017	0.017	0.016	0.018

For the Lower Hudson Valley, the Economy Slows Scenario shows positive margins with the exception of the summer peak transmission security margin in 2036. The magnitude of the deficiency is small at 75 MW. If left unaddressed, deficiencies would span one hour on the peak summer day. Since 2036 is the first year of the deficiency and given its size, there would likely be time to consider whether this deficiency would still exist as the system evolves.

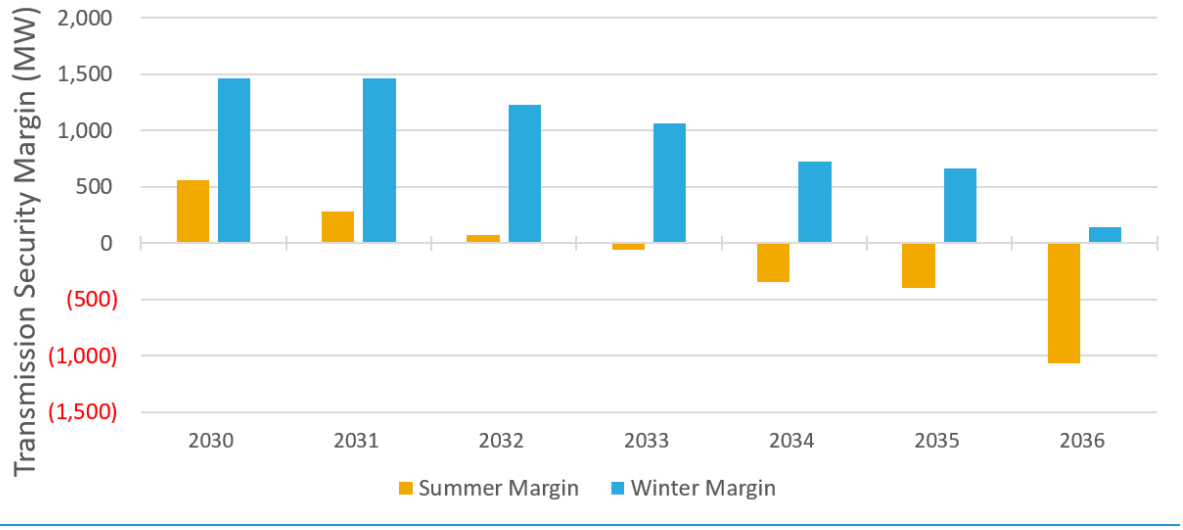
Figure 57: Economy Slows Scenario - Lower Hudson Valley Transmission Security Margin



For New York City, deficiencies occur earlier than year 10 for the Economy Slows Scenario, starting in year 2033, one year later than the Base Case. Figure 58 demonstrates that this deficiency

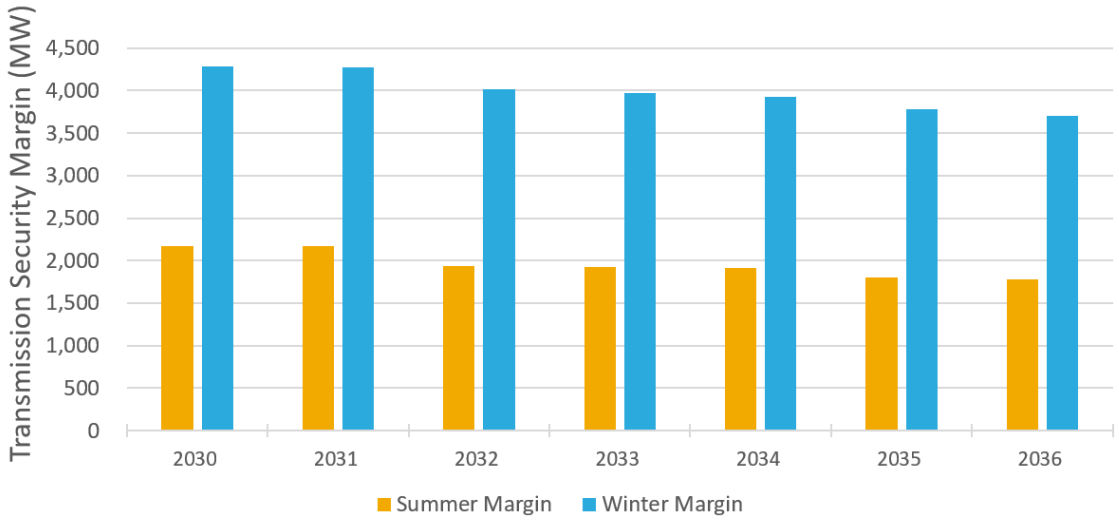
would grow to 1,050 MW by 2036. The winter peak transmission security margin is sufficient in all planning years, which narrows to 125 MW by 2036.

Figure 58: Economy Slows Scenario - New York City Transmission Security Margin



Sufficient summer and winter margins were found for Long Island in the Economy Slows Scenario, as shown in Figure 59.

Figure 59: Economy Slows Scenario - Long Island Transmission Security Margin



Outlook Contract Scenario

The resource adequacy results for the Outlook Contract Scenario in Figure 60 show deficiencies in the same years and of similar magnitude as the Base Case. Despite the addition of 700 MW of nameplate generation compared to the Base Case, the 2036 resource adequacy margin only improves to -1,800 MW from -1,850 MW. This highlights the impact of intermittency on the results, where intermittent resources may provide substantially lower perfect capacity than their nameplate.

Figure 60: Contract Case Scenario - Resource Adequacy



	2030	2031	2032	2033	2034	2035	2036
Margin (MW)	2,075	1,275	425	-125	-650	-1,100	-1,800
LOLE (event-days/yr)	0.017	0.032	0.068	0.107	0.171	0.274	0.569

As the additional projects are primarily upstate, the transmission security margin results in the Outlook Contract Scenario did not change in magnitude or the first year of violation compared to the Base Case. Figure 61 shows sufficient winter peak margin for the Lower Hudson Valley and summer peak margin deficiencies that begin in 2032 and grow to 1,950 MW by 2036. Figure 62 shows summer peak margin deficiencies in New York City that begin in 2032 and grow to 1,850 MW by 2036. New York City winter peak margin is deficient only in 2036 by 800 MW. Long Island margins are sufficient throughout the planning horizon for the Outlook Contract Scenario, as displayed in Figure 63.

Figure 61: Contract Case Scenario - Lower Hudson Valley Transmission Security Margin

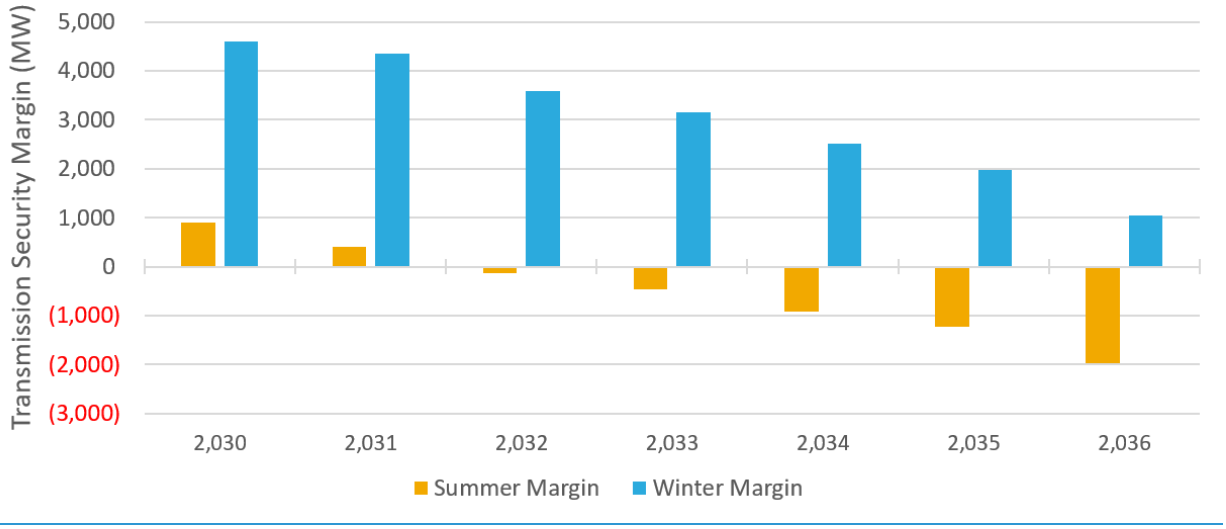


Figure 62: Contract Case Scenario - New York City Transmission Security Margin

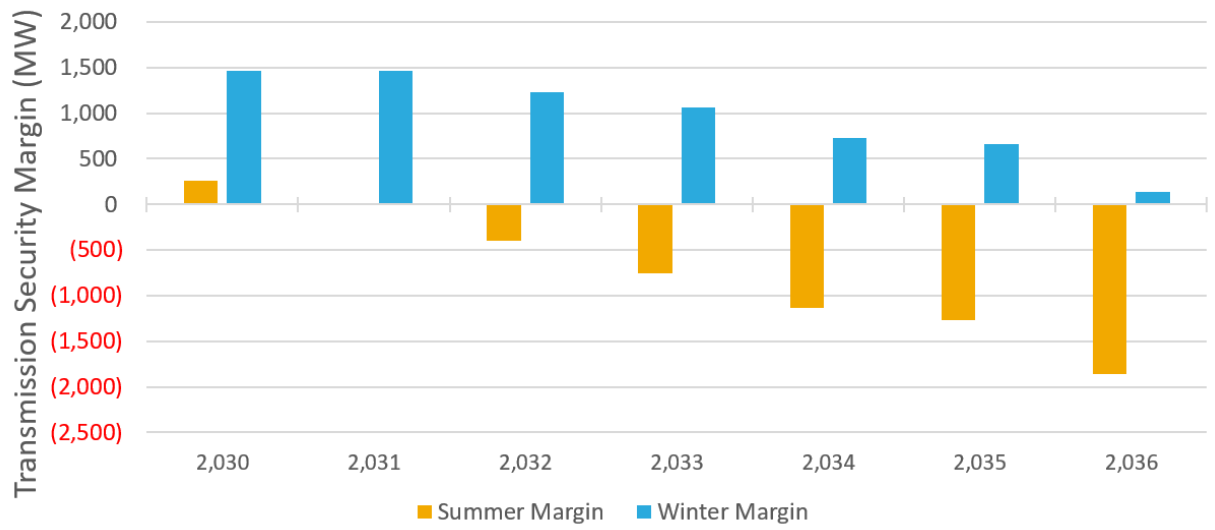
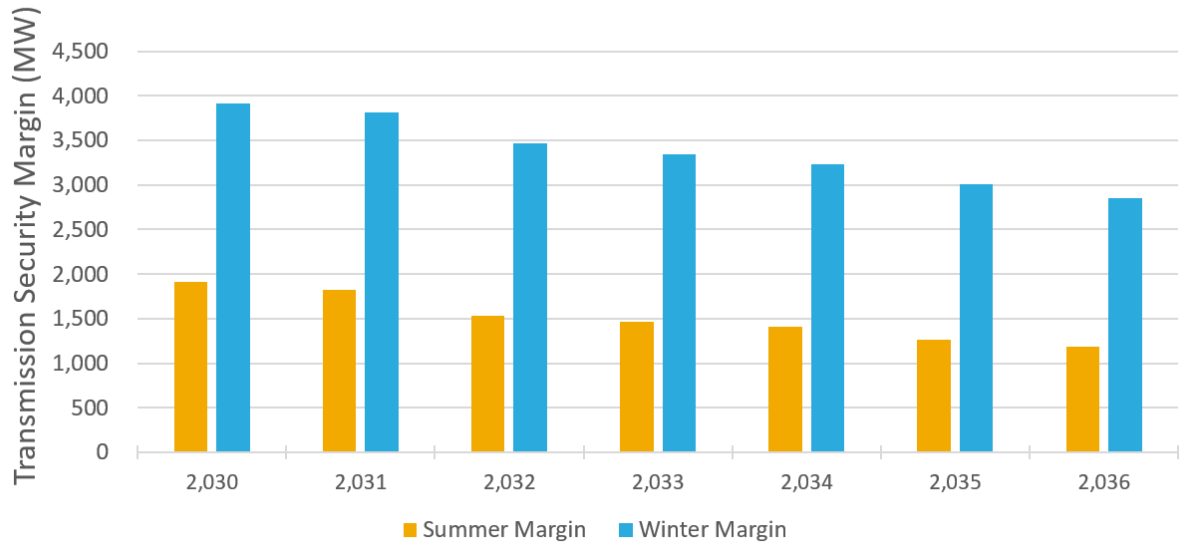


Figure 63: Contract Case - Long Island Transmission Security Margin



Inverter-Based Resources Voltage Control Scenario

Only transmission security analysis was performed for the IBR Voltage Control Scenario. After the use of applicable system adjustments to restore system voltages, no new transmission security violations were identified compared to the Base Case. However, this conclusion is dependent on intermittent resources being available to generate power and to provide voltage support during the

system conditions studied.

Other Informational Scenarios

In addition to the Scenarios discussed above, this RNA also considered other informational scenarios that considered extreme conditions or specific assumptions to inform the nature of the violations and potential violations identified in the Base Case and test the robustness of the analysis. Specifically, the results of the other informational scenarios identify key risks to reliability and help inform the nature of potential solutions to identified deficiencies within the Base Case. This section will briefly summarize the results and key takeaways from the other informational scenarios. Full results are provided in Appendix F. Figure 64 summarizes the LOLE results from resource adequacy analysis on the other informational scenarios together with the result for the Base Case and Scenario.

Figure 64: LOLE across the Other Informational Scenarios

Case	LOLE Y10 (event-days/yr)	Earliest Violation	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Loss of all Imports	4.245	2028	●	●	●	●	●	●	●	●	●	●
Large Loads Scenario	2.780	2029	●	●	●	●	●	●	●	●	●	●
Status Quo	2.159	2029	●	●	●	●	●	●	●	●	●	●
No Planned Generation Projects	1.591	2029	●	●	●	●	●	●	●	●	●	●
Chateaugay/CHPE limits	0.998	2032	●	●	●	●	●	●	●	●	●	●
Base Case without Propel NY	0.858	2032	●	●	●	●	●	●	●	●	●	●
Climate Policy Advancement Scenario	1.869	2033	●	●	●	●	●	●	●	●	●	●
Base Case	0.596	2033	●	●	●	●	●	●	●	●	●	●
No Voltage Limited Interfaces	0.594	2033	●	●	●	●	●	●	●	●	●	●
Copper Sheet	0.572	2033	●	●	●	●	●	●	●	●	●	●
Contract Case Scenario	0.569	2033	●	●	●	●	●	●	●	●	●	●
Climate Policy Advancement Scenario + 1 GW Nuclear Gen (Zone C)	0.909	2034	●	●	●	●	●	●	●	●	●	●
Addtl Flexible Large Loads	0.232	2035	●	●	●	●	●	●	●	●	●	●
No Aging Generation	0.100	2036	●	●	●	●	●	●	●	●	●	●
No Planned Large Loads	0.075	> 2036	●	●	●	●	●	●	●	●	●	●
Economy Slows Scenario	0.018	> 2036	●	●	●	●	●	●	●	●	●	●

● LOLE > 1.0 event-days/yr
● 0.1 < LOLE < 1.0 event-days/yr
● 0.05 < LOLE < 0.1 event-days/yr
● LOLE < 0.05 event-days/yr

The above resource adequacy results, as well as transmission security margin results, highlight key risks to reliability and inform the nature of potential solutions to the deficiencies in the Base Case, as summarized below:

- **Status Quo** – Within the context of ~~the~~this RNA, the Status Quo scenario demonstrates the importance of planned projects completing on time and providing their planned

capability. Planned projects include new generation projects, solutions to address Short-Term Reliability Process Needs, and transmission projects that are important for meeting growing demand over the planning horizon. In this Status Quo ~~scenario~~Scenario, resource adequacy violations would occur as early as 2029, and the Long Island transmission security margin would be deficient starting in 2027, growing to 950 MW by 2036, largely due to not having the Propel NY project in 2030, as planned.

- **No Planned Generation Projects**~~:~~ – Similar to the Status Quo scenario, this scenario removes the planned generation projects included in the Base Case but adds the Propel NY project on schedule in 2030. Statewide resource adequacy violations begin in 2029 and temporarily fall below criterion in 2030 when the Propel NY project enters service, but violations resume in 2031 through 2036. Additionally, Long Island transmission security margin would be deficient starting in 2027 but would be positive after the Propel NY project enters service in 2030. These results show that the reliability benefit of the Propel NY project does not fully replace the need for sufficient available resources.
- **No Planned Large Loads** – The No Planned Large Loads scenario shows that without the growth from the roughly 500 MW of large load represented in the 2026 baseline forecast (2,200 MW of large load growth between 2027 and 2036 is excluded from this other informational scenario), there would be no deficiency related to resource adequacy.
- **Additional Flexible Large Loads** – The Additional Flexible Large Loads scenario shows that if approximately an additional 1,050 MW of computational large loads are treated as flexible (e.g., demand response participation or co-location with generation), the resource adequacy deficiencies would be resolved until 2035 and also reduce the total deficiency in 2036.
- **No Aging Generation** – The No Aging Generation scenario indicates that if the unavailable capacity due to aging generation risk does not occur, the system would reach resource criteria in 2036 and the New York City transmission security margin would remain deficient starting in 2032, growing to 300 MW by 2036. The Lower Hudson Valley transmission security margin would be roughly 100 MW positive by 2036 if the unavailable capacity due to aging generation risk remains on the system.
- **Loss of All Imports** – The Loss of All Imports other scenario shows that resource adequacy is highly dependent on contracts from NYISO's neighboring systems. Without them, LOLE violations would begin as early as 2028.

Additional findings from the other information scenarios are discussed in the Appendix F.

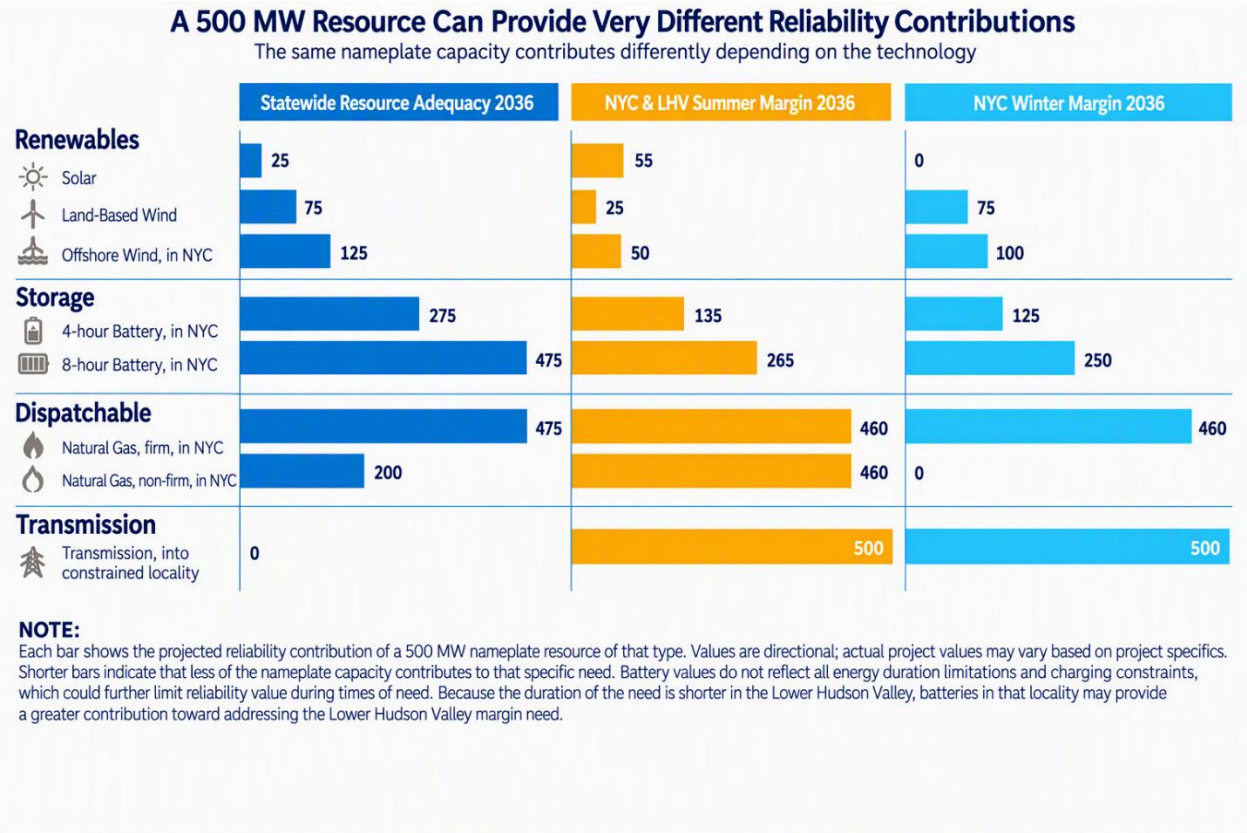
Potential ~~Pathways to~~ Solution Combinations for a Reliable System

To inform potential resolution of deficiencies observed in this RNA, the NYISO calculated the value of several technology types and used two scenarios to explore combinations of potential new and existing solutions. This information is only intended to be directional guidance. The actual impact or value that a project has on the identified Reliability Needs will vary based on the specifics

of the project.

Figure 65 highlights the varying resource adequacy and transmission security margin value of building a generic project with a 500 MW nameplate of different resource types. Dispatchable resources are highlighted separately in Figure 65, as they provide several important reliability attributes, further discussed in Appendix I. Additionally, given the long duration of the deficiencies in New York City (up to 16 hours) and Lower Hudson Valley (up to 7 hours), storage projects are unlikely to provide the reliability value set forth in Figure 65 unless they are combined with other solutions that are not duration limited. For example, the NYC summer margin deficiency extends over approximately 15 hours and totals 17,298 MWh, while only about 7,150 MWh of charging capability is available during surplus hours, leaving about a 10,150 MWh energy shortfall.

Figure 65: Potential Reliability Contribution of 500 MW by Resource Type



Considering the attributes and contributions detailed in Figure 65, two scenarios explored different potential ~~pathways~~solution combinations to resolve the Reliability Needs~~. These~~ in 2036. While these scenarios are illustrative ~~in nature and demonstrate~~, they show that multiple ~~pathways~~solution combinations are possible~~, but doing so requires treating the needs as a present-day priority due to the long lead times for infrastructure solutions~~.

- ~~New Resources Pathway~~**New Resource and Transmission Combinations** – Step 1 ~~on~~of this ~~pathway~~solution combination adds approximately 4,500 MW of projects that have completed the interconnection process but have not yet meet the RNA Base Case inclusion rules. Step 2 adds approximately 15,500 MW of active projects in the ongoing 2024 Transition Cluster Study. Step 3 adds a set of non-firm New York City transmission plans estimated to increase transmission capacity by 1,000 MW. This ~~pathway~~solution combination relies on a large set of non-firm projects becoming firm, beginning construction, and entering operation. It assumes the construction of new generation across the state but requires additional transmission into New York City in order to resolve deficiencies in that constrained portion of the system.
- **Resource Retention** ~~Pathway~~**Combinations** – Step 1 ~~on~~of this ~~pathway~~solution combination is retention or repowering of the NYPA small plants ~~and~~. Step 2 is retention or repowering of equivalent capacity of the Narrows and Gowanus generators. Step 3 is repowering or undertaking measures to mitigate the risk of approximately 2,250 MW of aging generation with the oldest generation resources in New York City. This ~~pathway~~solution combination relies on a significant quantity of fossil-fuel generation remaining online or being repowered with equivalent fossil-fuel generation. It concentrates efforts in New York City in order to simultaneously resolve the New York City margin, Lower Hudson Valley margin, and statewide resource adequacy deficiencies, due to the nested nature of the deficiencies.

The ~~pathways~~solution combinations evaluated in this RNA ~~are illustrative and~~ do not represent the only potential approaches to addressing the identified Reliability Needs. Rather, they serve as examples to show that the deficiencies can be resolved through ~~multiple combinations of~~ new resources~~,~~ and transmission expansion~~, and~~ or investment in existing resources~~, including approaches that~~. Solving the three Reliability Needs will likely require combination of multiple solution types, which may differ from ~~or combine elements of~~ the ~~pathways~~combinations evaluated in the scenarios~~.~~ or incorporate elements from both scenarios. However, ~~timely action~~treating the needs as a present-day priority is necessary given the long-lead times and regulatory requirements associated with major infrastructure development.

Details from analysis of these potential ~~pathways~~solution combinations are discussed in Appendix F.

Findings

The 2026 RNA identifies Reliability Needs for which the NYISO will continue to assess through the development of the 2027-2036 Comprehensive Reliability Plan. As more fully described below, the RNA identifies a statewide resource deficiency Reliability Need, a Lower Hudson Valley Reliability Need, and a New York City Reliability Need. It also highlights other key takeaways from the analysis on the reliability challenges facing the system and the broader conditions shaping the outlook over the study period.

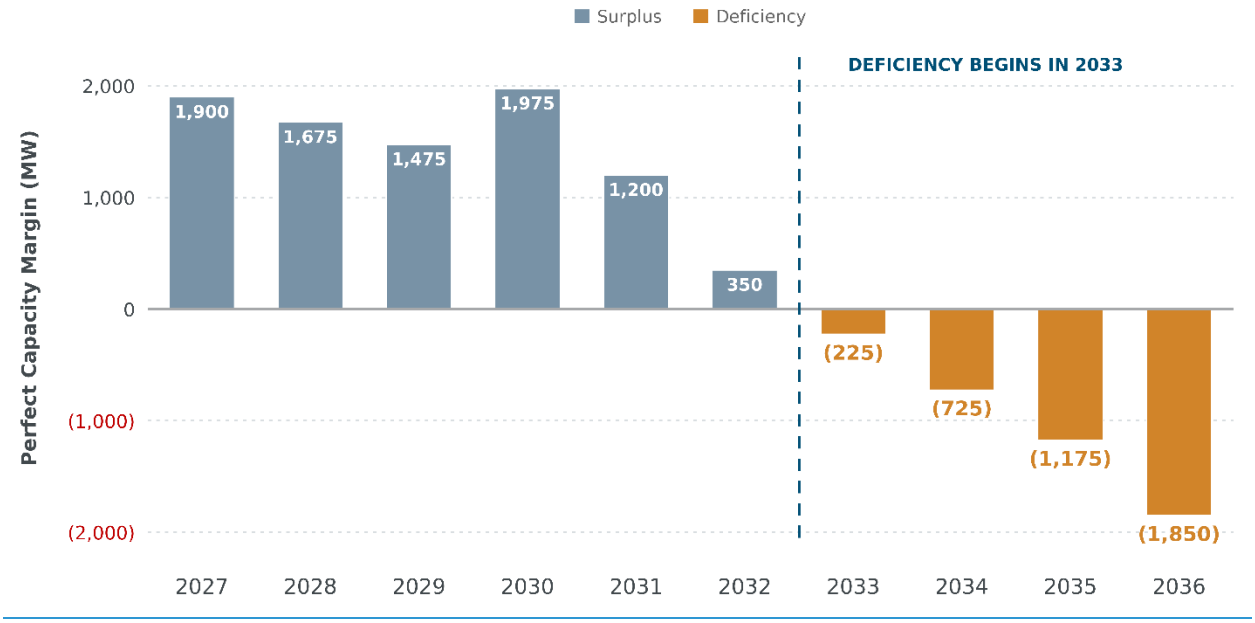
Although the three Reliability Needs arise from different criteria and occur in different areas of the state, each reflects the same underlying challenge. There is insufficient planned supply in New York State to reliably meet forecasted demand beginning in 2033. As a result, well-developed solution portfolios can help address multiple needs simultaneously. For instance, incremental generation or dependable demand reductions in New York City or the Lower Hudson Valley could contribute to resolving both the applicable locality need and the statewide resource adequacy need. Transmission solutions could address the local New York City and Lower Hudson Valley needs by increasing access to resources outside those localities, but internal transmission alone would not resolve the statewide shortage of available resources.

Statewide Resource Deficiency Need

Based on the results of the 2026 RNA, there is a statewide resource deficiency Reliability Need due to the Base Case exceeding the statewide resource adequacy criterion beginning in 2033 and continuing through the study period. This Reliability Need is approximately 225 MW in 2033 and increases rapidly through 2036 to more than 1,800 MW as demand increases and aging generation reduces available supply. This statewide resource deficiency reflects an insufficient amount of available supply to reliably meet projected demand and operating reserve requirements under the RNA assumptions.

The 2026 RNA quantifies the severity of the deficiency using compensatory megawatts. If distributed proportionally across New York, approximately 1,850 MW of additional perfect capacity would be required to address the deficiency.

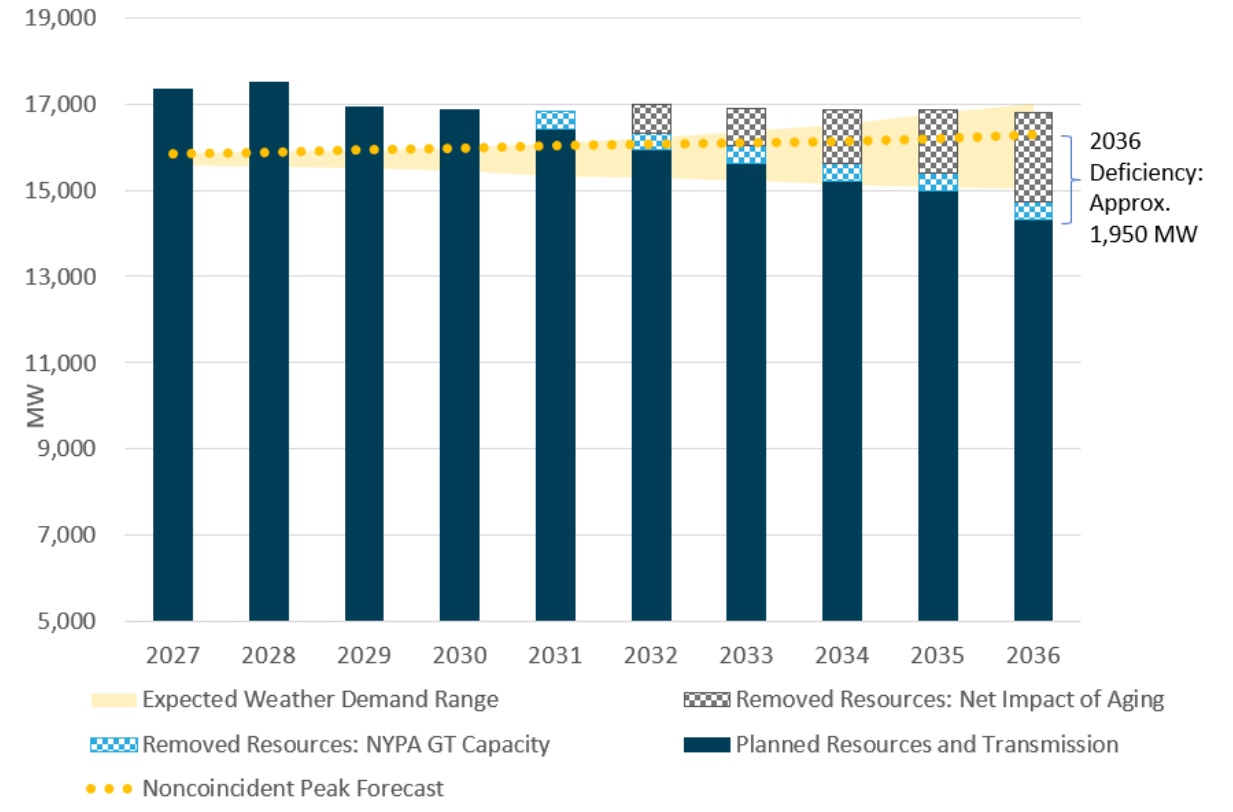
Figure 66: Resource Adequacy Margins by Zone, and Statewide



Lower Hudson Valley Reliability Need

This 2026 RNA finds a Reliability Need beginning in summer 2032 in the Lower Hudson Valley constrained locality. The need is primarily driven by reductions in the Lower Hudson Valley generation fleet due to the projected impact of aging generation, the assumed retirement of the NYPA small gas plants, forecasted increases in peak demand, and transmission limitations into the Lower Hudson Valley. Accounting for these factors, the BPTF will not be able to securely and reliably serve the forecast summer peak demand in the Lower Hudson Valley. The Lower Hudson Valley will be deficient by 132 MW for 2 hours (317 MWh) in summer 2032, worsening to 1,962 MW for 7 hours (8,997 MWh) in summer 2036.

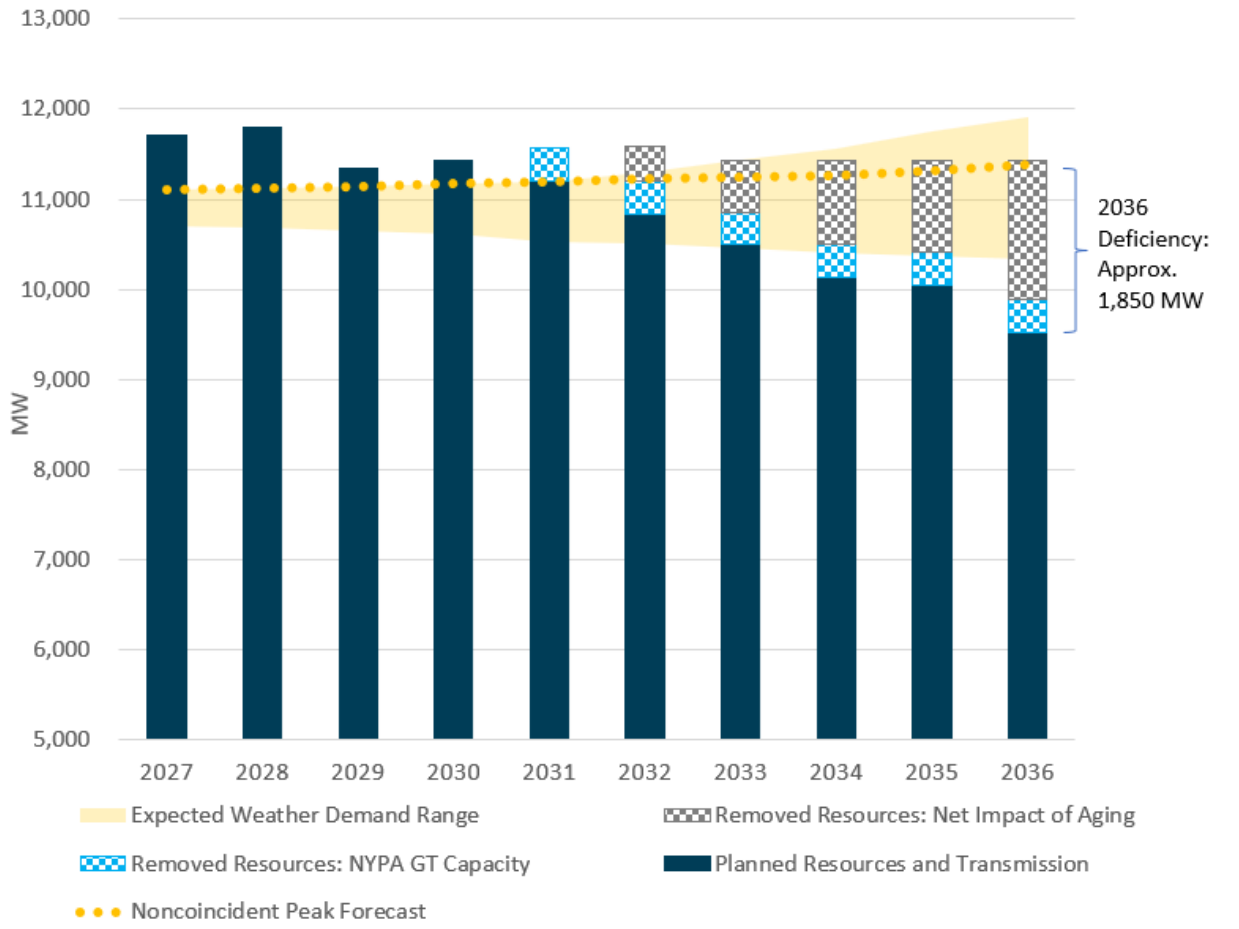
Figure 67: Lower Hudson Valley Summer Peak Transmission Security Margin – Existing & Planned Resources



New York City Reliability Need

This 2026 RNA finds a Reliability Need in the New York City constrained locality with a need beginning in summer 2032. The Reliability Need beginning in summer 2032 is driven by similar generation supply reductions as the Lower Hudson Valley and transmission constraints into New York City. Accounting for these factors, the BPTF will not be able to securely and reliably serve the forecasted summer peak demand in New York City. Zone J will be deficient by 396 MW for 7 hours (1,826 MWh) in summer 2032, worsening to 1,864 MW for 15 hours (17,298 MWh) in summer 2036.

Figure 68: NYC Summer Peak Transmission Security Margin – Existing & Planned Resources



This New York City Reliability Need is also observed in winter beginning in 2036. In addition to the same factors driving the summer deficiency, the winter deficiency is also heavily impacted by the assumed unavailability of non-firm gas under winter peak conditions. Based on these factors, the BPTF will not be able to securely and reliably serve the forecast winter peak demand in New York City. Zone J will be deficient by 794 MW for 16 hours (7,002 MWh) in winter 2036.

Statewide Voltage &and Stability Concerns

An important aspect of reliability is control of power system voltage. For New York's grid to operate and transfer power across the state, voltages must be maintained within narrow limits in real-time, and the system must be operated in a manner that any single failure on the system cannot cause a low or high voltage. Insufficient control of voltage can lead to equipment damage or even a blackout. Voltage requirements can also constrain the amount of power that may be moved across the state.

Analysis across the NYISO's planning studies have identified areas of concern for voltage control. While the system continues to be operated reliably, these areas of concern highlight the challenges that may limit efficient operation of the system in real-time and/or may lead to criteria violations in future planning studies if these trends continue. These voltage concerns are intended to inform and support proactive investment on the bulk and local systems and should not be interpreted as the NYISO identifying a transmission need due to an identified reliability criteria violation in this RNA.

- The RNA analysis revealed difficulty in maintaining voltage control, particularly in nighttime light load conditions. Maintaining voltages within applicable criteria required the use of all or nearly all voltage control devices in certain regions of the system. In several locations of the system, depending on the system conditions it is possible to observe both instances of high and low voltage concerns. As such, these locations may best be addressed through dynamic reactive capable devices.
- The RNA found that the Fitzpatrick generating plant could go unstable in light load conditions. The instability can be mitigated through increased dynamic reactive support that provides additional reactive power injection during and immediately following the fault to support voltage or other actions that increase the availability of dynamic reactive capability. A reactive compensatory analysis indicates that approximately 450 MVAr of dynamic reactive support would be sufficient to maintain synchronism for the studied event. As the instability first occurs in study year 2027, it will be further reviewed and addressed through that process~~.~~.
- In addition to localized voltage concerns at individual buses and substations, voltage performance can limit the amount of power transferred across certain major transmission interfaces before applicable thermal ratings are reached. Interfaces for which voltage performance can establish or affect operating transfer capability include Central East and UPNY-Con Edison.[10] The 2025-2044 System & Resource Outlook found that Central East continued to be the dominant constraint on system energy deliverability across the modeled Outlook scenarios. The Outlook analyses further indicated that improving dynamic voltage support could materially reduce Central East congestion and improve the utilization of existing transmission facilities.

Taken together, these results indicate that voltage control challenges are emerging from multiple system trends and cannot be effectively addressed through isolated project-specific actions, highlighting the need for a comprehensive, long-term strategy for dynamic voltage support.

Uncertainty in the Planning Horizon

The 2026 RNA finds that the planned New York power system will not meet the statewide resource adequacy criterion or transmission security criteria throughout the ~~ten~~10-year horizon for the Base Case assumptions. Understanding that there are uncertainties associated with the

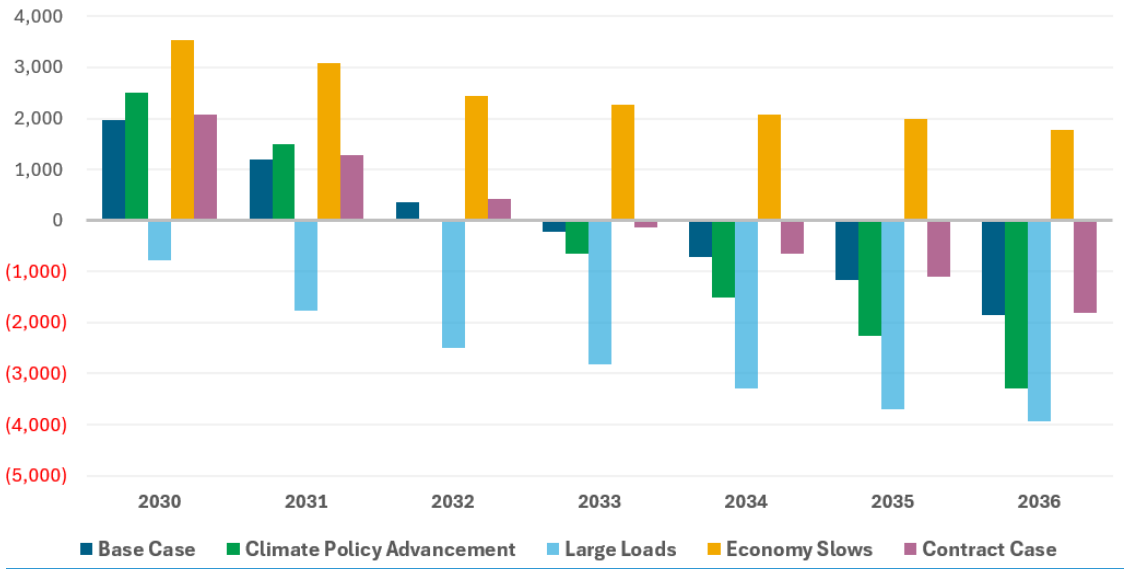
[10] The 2025 Comprehensive ATR notes several interfaces that are or become voltage limited in the planning timeframe including Volney East, Moses South, Central East, UPNY-SENY, and UPNY-Con Edison.

assumptions used in the Base Case due to, among other things, aging generation, future demand growth, and changing resource mix, the 2026 RNA analyzed five Scenarios and considered the collective results to quantify the uncertainty when considering a range of plausible future conditions.

Figure 69 compares resource adequacy results from the four Scenarios where resource adequacy analysis was performed with the Base Case and highlights the range of potential outcomes. The Climate Policy Advancement Scenario and Large Loads Scenario highlight risks of a statewide resource deficiency that is worse in magnitude, which could require additional resources to resolve compared to the deficiency identified in the Base Case. If the assumptions in these scenarios are realized and the deficiencies left unmitigated, the New York power system would experience loss of load events (i.e. load shed) about 2 days per year and 3 days per year, respectively, which is significantly greater than the 0.1 days per year criterion. The two Scenarios, which are built on fully distinct variations of the key assumptions in the Base Case—large load development and reduced imports compared to aging generation and electrification—both lead to similar results. Four of the scenarios show deficiencies beginning in 2033 and continue for a duration of four planning years through 2036.

In contrast, the Economy Slows Scenario stands out as having a positive margin in all planning years, illustrating that in certain alternative futures, such as a reduction in demand growth, there could be sufficient resource adequacy statewide.

Figure 69: Scenario Resource Adequacy Margin



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Figure 71 show the results from the transmission security margin analysis on the Scenarios during summer peak conditions for Lower Hudson Valley and New York City, respectively. These results highlight that the Large Load Scenario has the earliest occurring deficiencies that start in 2031, while the Climate Policy Advancement Scenario has deficiencies of more severe magnitude in later years, growing to 3,550 MW and 2,675 MW for the Lower Hudson Valley and New York City, respectively. Left unmitigated, the Climate Policy Advancement Scenario shows that the margin will be deficient for 17 hours in New York City, which is above the 15 deficient hours in the Base Case. For the Lower Hudson Valley, common deficiencies in these two Scenarios are present for five consecutive planning years, while in New York City, they are present for four consecutive planning years.

By 2036, all four of the Scenarios for which transmission security margin was analyzed show deficient margins in both localities. Even the Economy Slows Scenario, which uses the lower demand forecast for both large loads and non-large load demand growth, shows reliability risks in the Lower Hudson Valley and New York City. This indicates that transmission security margin deficiencies are common across all of the futures evaluated in this 2026 RNA. That said, only the Climate Policy Advancement Scenario shows worse transmission security margins in the outer years of the study period than the Base Case. If the deficiencies in the Base Case were addressed, it would be the only Scenario with remaining deficiencies.

Figure 70: Scenario Summer Lower Hudson Valley Transmission Security Margin

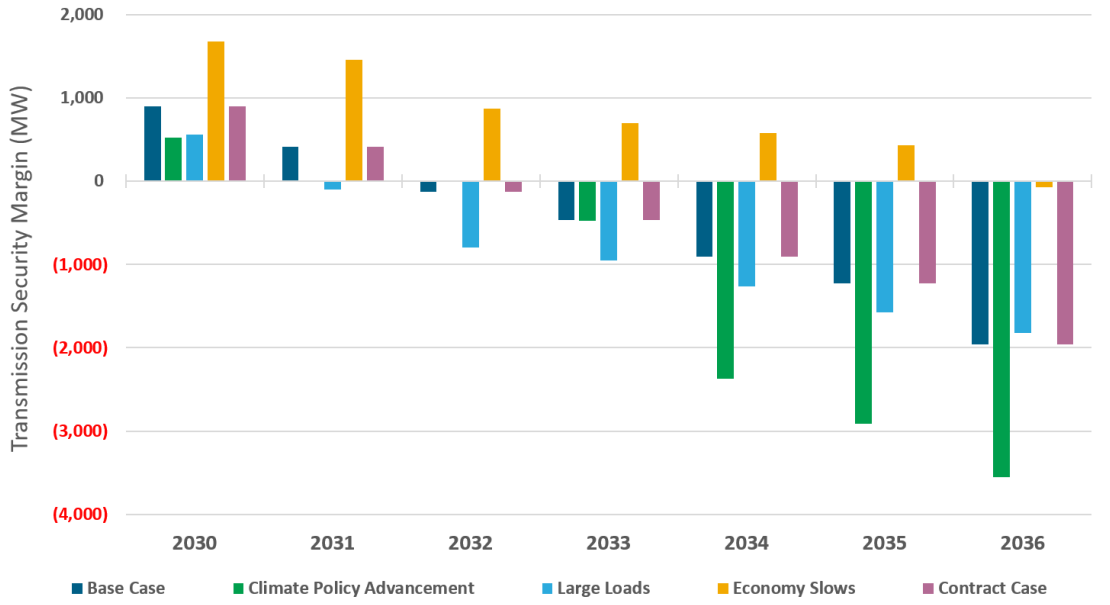
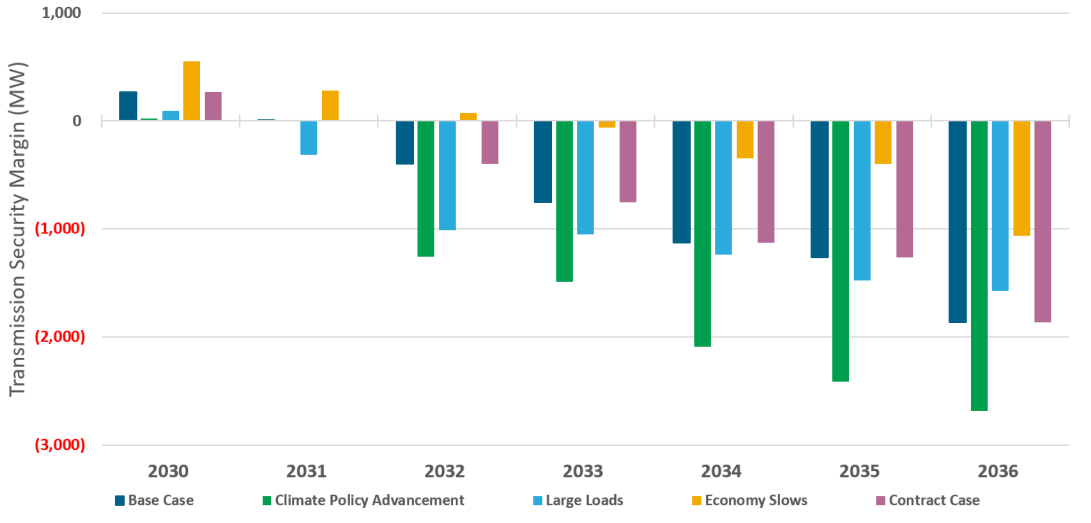
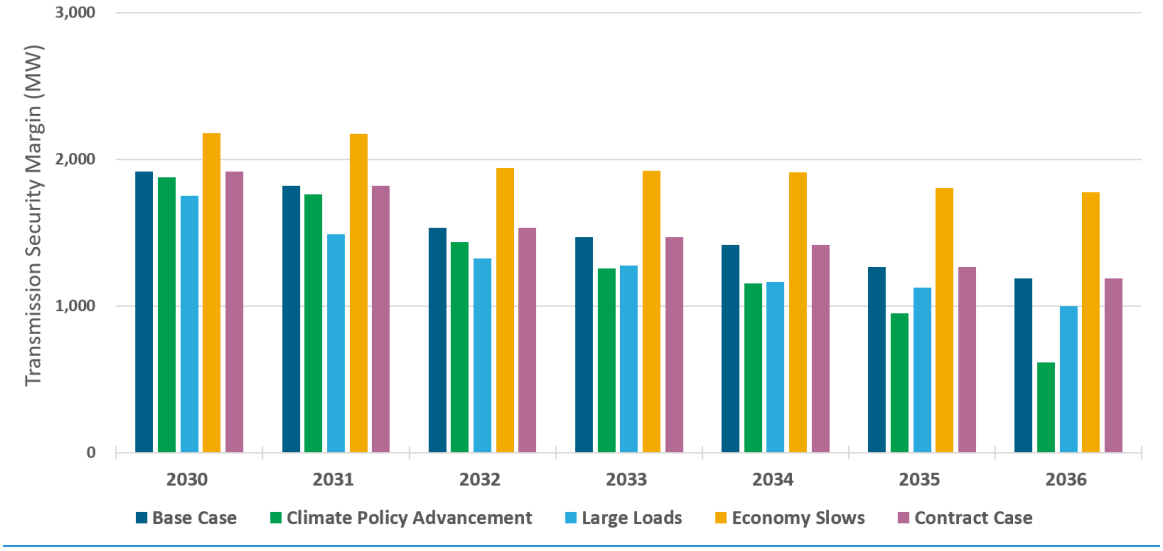


Figure 71: Scenario Summer New York City Transmission Security Margin



Long Island summer peak transmission security margins were sufficient across all the Scenarios and all study years. Figure 72 provides the range of results across the Scenarios, from which the Economy Slows Scenario has the greatest margin of 1,775 MW by 2036 and the Climate Policy Advancement Scenario has the narrowest margin of 600 MW by 2036. The futures in the four Scenarios reveal that Long Island will have sufficient transmission security margin. The consistency of findings provides support that future developments that are within the key assumptions for demand, generation and imports would be unlikely to alter the conclusion of the Base Case. However, the sensitivity performed without the Propel NY project indicates that positive Long Island transmission security margins are dependent on the timely completion of the Propel NY project by summer 2030. Any delay to the Propel NY project could pose a reliability risk.

Figure 72: Scenario Summer Long Island Transmission Security Margins



Next Steps and Future Studies

The NYISO designed its Reliability Planning Process to allow for updates in key assumptions and continuous evaluation of an ever-changing system. The RNA and CRP are part of a biennial planning cycle, while the STARs are performed every 90 days.

This 2026 RNA finds that there are Reliability Needs associated with both resource adequacy and transmission security margins over the study horizon. The resource adequacy Reliability Need is driven by projected statewide resource deficiencies beginning in 2033 and increasing through 2036. In addition, transmission security margin Reliability Needs are identified in New York City and the Lower Hudson Valley beginning in 2032 and increasing through 2036. Therefore, the NYISO will identify the Responsible Transmission Owners and other responsible entities, as applicable, in accordance with the NYISO OATT and Reliability Planning Process. The following are the next steps to be taken in the Reliability Planning Process.

RNA Base Case Update: Following approval of this 2026 RNA by the Board of Directors, the NYISO will incorporate eligible system updates to the RNA Base Case. Such system updates can include status changes of proposed projects, such as Local Transmission Owner Plans (LTPs), proposed generation and transmission, and load forecast or demand response. However, the resource adequacy assessment indicates that sufficient upstream resources may not be available to resolve the transmission security deficiencies through transmission solutions alone. As part of this step, the NYISO will consider only those updates that may reduce or eliminate the Reliability Needs and that met the inclusion rules.

Reliability Planning Process Reform: As recommended in the 2025-2034 CRP, efforts are ongoing to modify the Reliability Planning Process to (a) account for a wider range of plausible outcomes via scenario planning and (b) enhance the ability of supply-side solutions to address resource shortfalls. The scenario development and analysis in this RNA can be used to inform stakeholders on the proposed process for identifying scenarios that would be used in the identification of Reliability Needs and the nature of the analysis and the results. On the supply-side front, the NYISO is pursuing reforms to clarify how a broader range of solutions, such as load flexibility or mitigation of aging generation risk, can be evaluated. In the context of this RNA, supply-side solutions are especially important, as the identified resource adequacy needs cannot be solved by in-state transmission alone. The solution solicitation and CRP steps described below will reflect any reforms to the Reliability Planning Process that are in effect for the 2027-2036 CRP.

Solution Solicitation and Initial Review: If any Reliability Need remains after these Base Case

updates, the NYISO will solicit market-based solutions, regulated backstop solutions, and alternative regulated solutions to address the remaining Reliability Needs. Interested Developers can submit solutions within 60 calendar days from the solicitation. The Responsible Transmission Owner(s) must submit regulated backstop solution(s) to address the applicable Reliability Need(s). Any Transmission Owner or Other Developer can submit an alternative regulated solution, and any Developer can submit a market-based solution. The NYISO will review the solutions for completeness.

Comprehensive Reliability Plan: The CRP is prepared, in collaboration with stakeholders and interested parties, each planning cycle and reports on whether the BPTF will meet all applicable reliability criteria over the planning horizon. When the NYISO solicits solutions to a Reliability Need, the CRP documents the NYISO's determination of the viability and sufficiency of proposed solutions, the Trigger Dates of proposed regulated solutions, and any recommendations on the implementation of regulated solutions to maintain system reliability. Ultimately, the CRP will lay out the plan to meet the Reliability Needs identified in this RNA.