

Power System Trends in New York: Dispatchable-Emission Free Resources

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Session 1A: Resources for Firm Capacity Services

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Agenda

- **Current Power System Trends in New York**
- **Dispatchable Emission-Free Resources in New York**
 - Current Resources
 - Clean Energy Policies
 - Potential Future Resources
- **Role of Natural Gas Generation in New York**

Current Power System Trends in New York

NYISO By the Numbers

We are engineers, operators, analysts, economists, and technologists dedicated to a reliable and sustainable power grid

600+

Dedicated
employees

700

Power generating
units

33,956 MW

Record
peak demand in 2013

450

Wholesale
energy market
participants

11,200

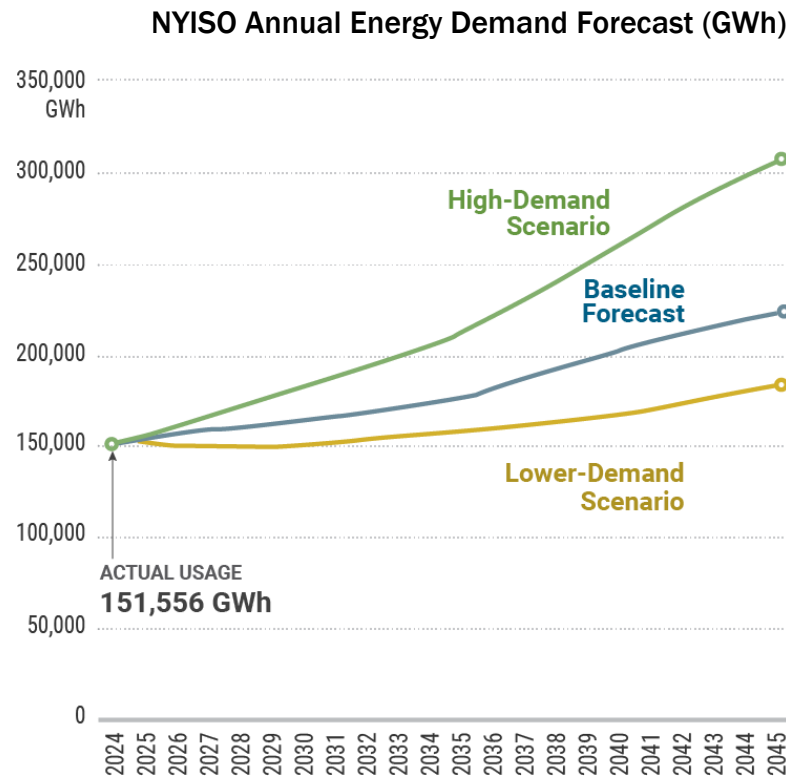
Circuit miles of
transmission managed
and monitored

151,556 GWh

Delivered to
New York
consumers in 2024

Power System Landscape in New York

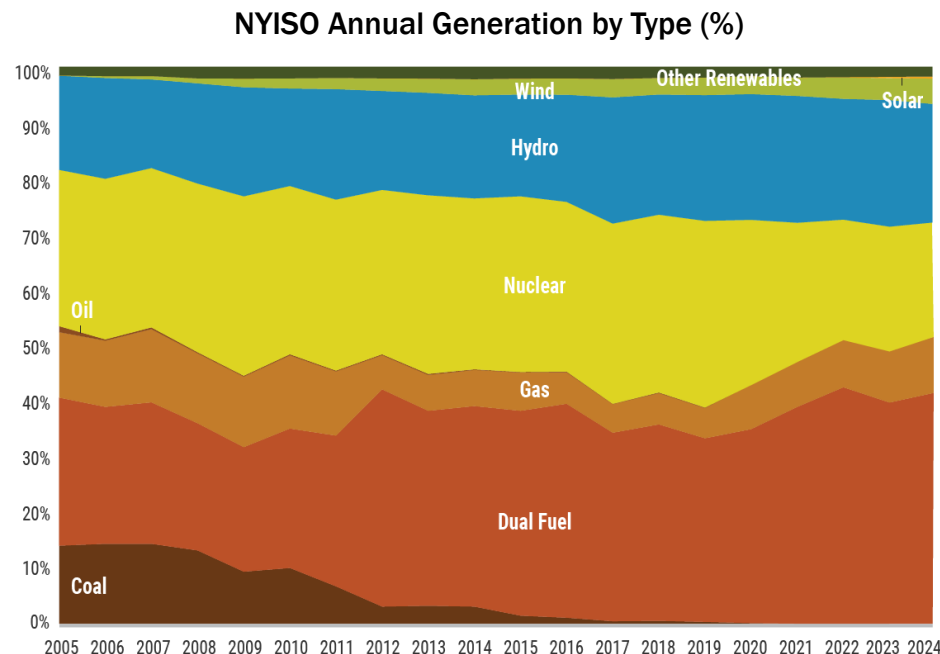
- Demand flat previous 5 years
- Policy driven electrification expected to increase demand annually through 2045
 - ~1-5% Annual Energy
 - ~0-2% Summer Peak
 - ~2-8% Winter Peak
- >10,000 MW of large loads in NYISO interconnection queue



Source: NYISO Goldbook & Power Trends Reports

Power System Landscape in New York

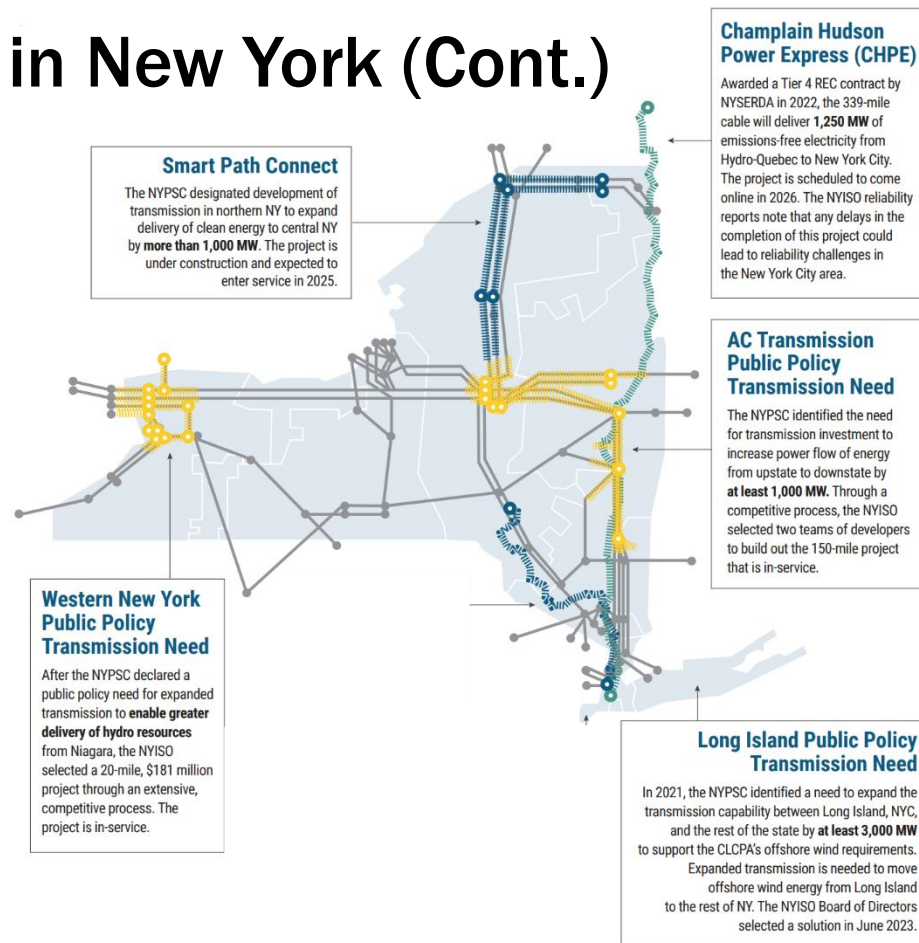
- Growth of renewables in previous 5 years
- Increasing share of natural gas generation due to retirements outpacing new generation



Source: NYISO Power Trends Report

Power System Landscape in New York (Cont.)

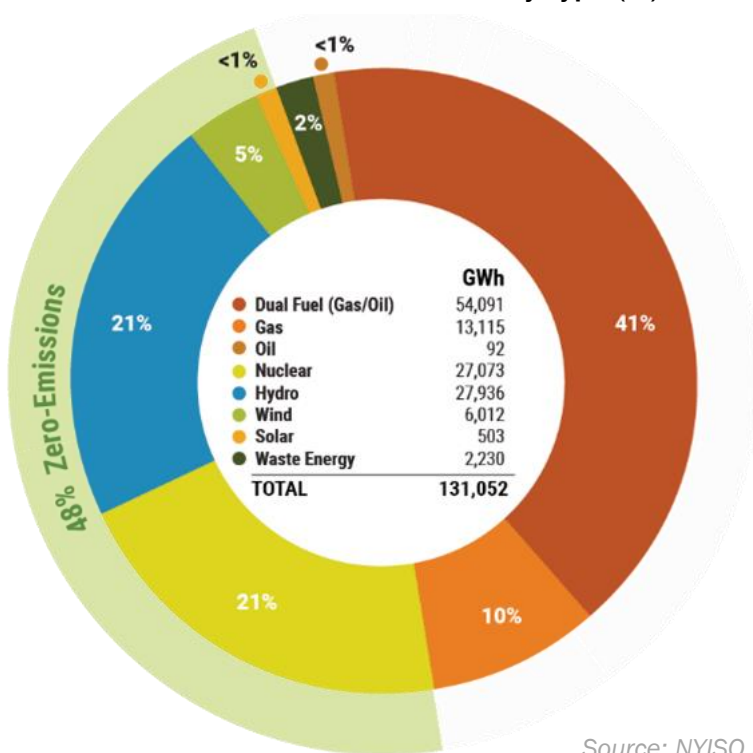
- Over \$10B of bulk transmission development in last decade resulting from the NYISO's Public Policy Transmission Planning Process and state-level efforts
- Projects generally targeted to increase transfer capacity for both existing and new generation



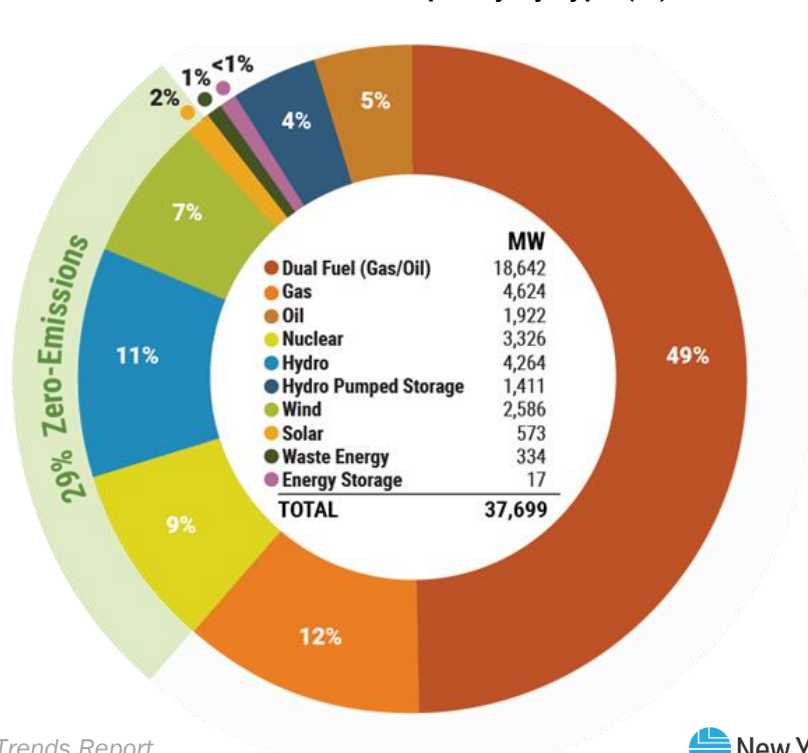
Dispatchable Emission-Free Resources (DEFRs) in New York

DEFRs in New York Today

2024 Annual Generation by Type (%)

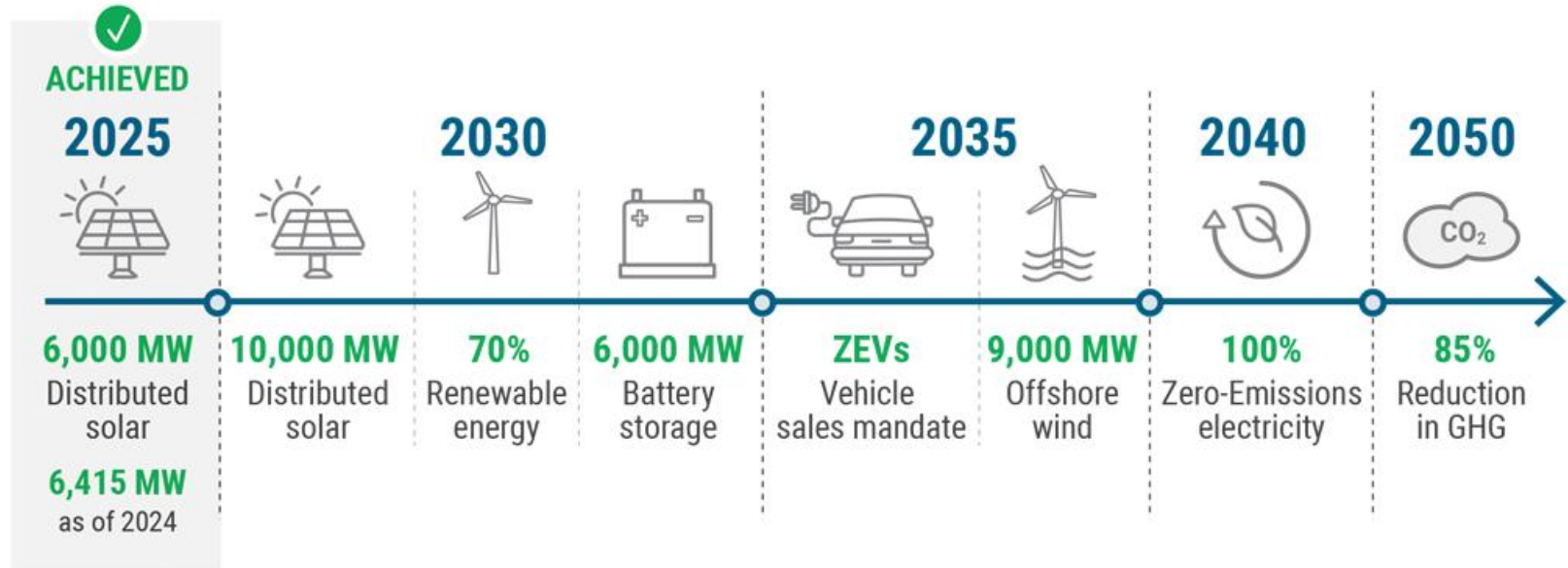


2025 Generation Capacity by Type (%)



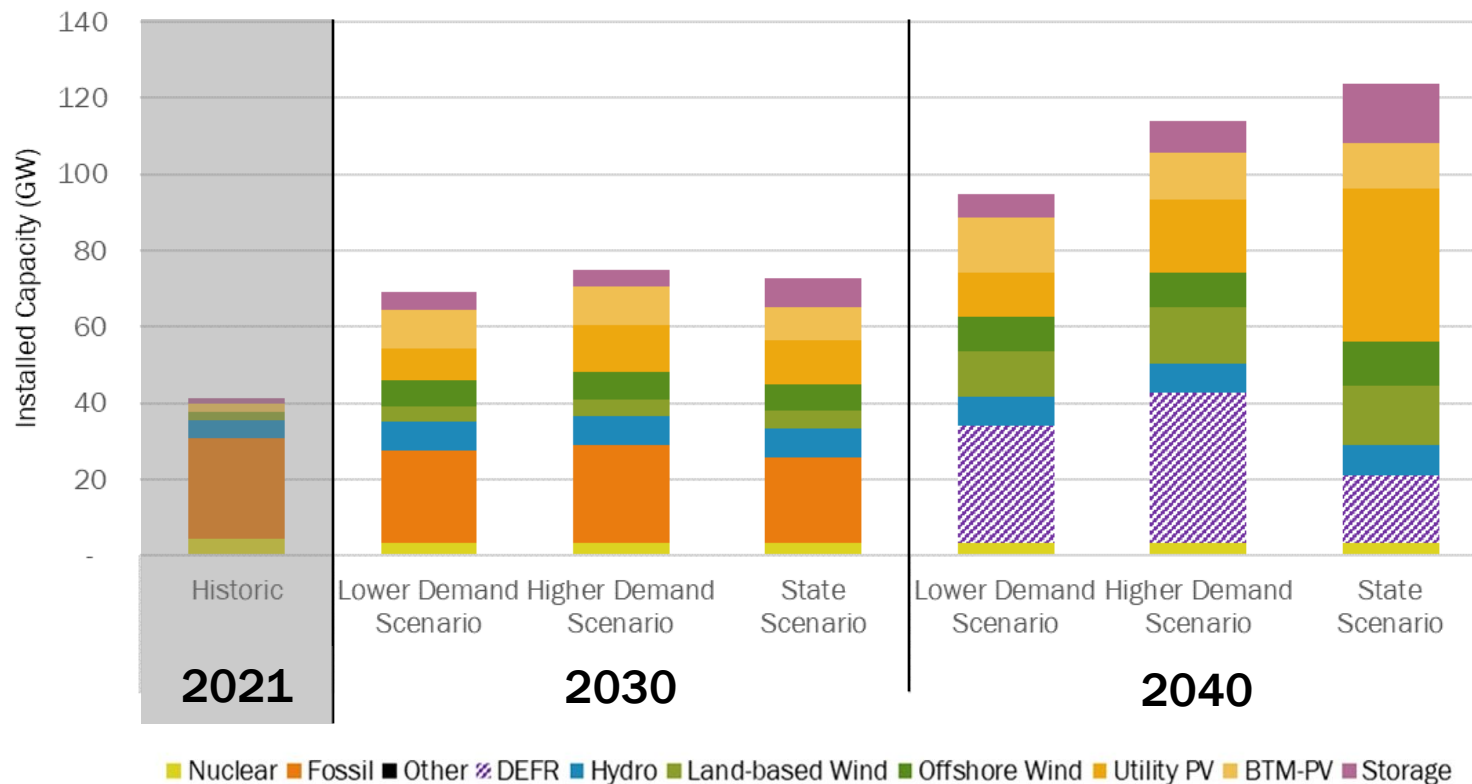
Source: NYISO Power Trends Report

New York State Clean Energy Policies



Source: NYISO Power Trends Report

DEFRs in New York in the Future



DEFERs in New York in the Future

■ How Much?

- Recent studies show about 20 – 40 GW of dispatchable emission-free generation is needed by 2040 to meet 100% zero-emission target

■ What Type?

- Existing hydro & nuclear
- New nuclear
- Storage
- Hydrogen?

■ Where?

■ When?

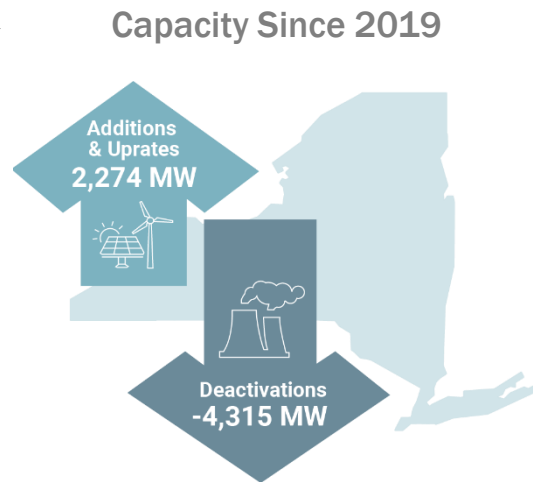
Hurdles for DEFRs in New York

- 1. Development timeline compared to policy targets**
 - 100% emission free by 2040
 - Supply chain limitations
- 2. New York State permitting challenges**
- 3. Magnitude of capacity needed**
 - 20-40GW of new DEFRs needed
- 4. Technology**
 - Nuclear, storage, hydrogen, other?
- 5. Cost**
 - New/advanced technology cost curves

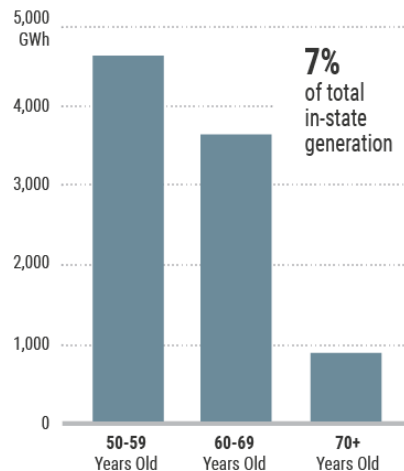
Role of Natural Gas Generation in New York

Role of Natural Gas Today

- Natural gas and dual-fuel resources required for energy and capacity needs today
- Recent NYISO reliability planning reports* have highlighted near-term reliability risks caused by load growth and retiring fossil generators



Aging Fossil Generation



Source: NYISO Power Trends Report

*NYISO 2025 Q3 STAR and 2025-2035 Comprehensive Reliability Reports

Role of Natural Gas During Transition

- With increasing demand, the reliance on an aging generation fleet, and development challenges for new generation, there will be a continued need for generation with the necessary reliability attributes
- New?
 - Increased efficiency
 - Reduced emissions
 - Permitting challenges
 - Higher cost (land, pipelines, etc.)
- Repowering?
 - Increased efficiency
 - Reduced emissions
 - Extended lifespan
 - Cost savings

Our Mission and Vision



Mission

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



Vision

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

