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ISO New England Overview and Regional Update

Connecticut General Assembly

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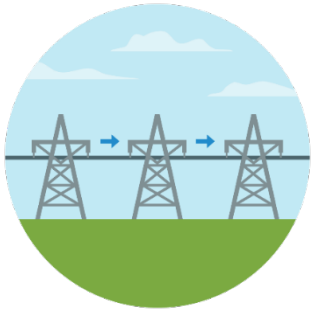
ISO New England Performs Three Critical Roles to Ensure Reliable Electricity at Competitive Prices

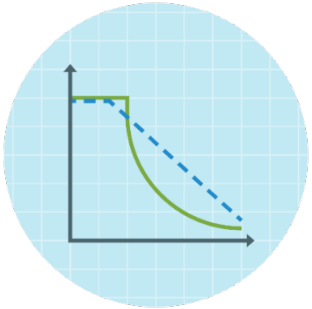
Grid Operation

Coordinate and direct the flow of electricity over the region's high-voltage transmission system



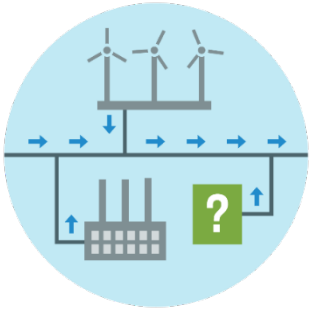
Market Administration

Design, run, and oversee the markets where wholesale electricity is bought and sold



Power System Planning

Study, analyze, and plan to make sure New England's electricity needs will be met over the next 10 years



ISO New England's *Mission and Vision*

Mission: *What we do*

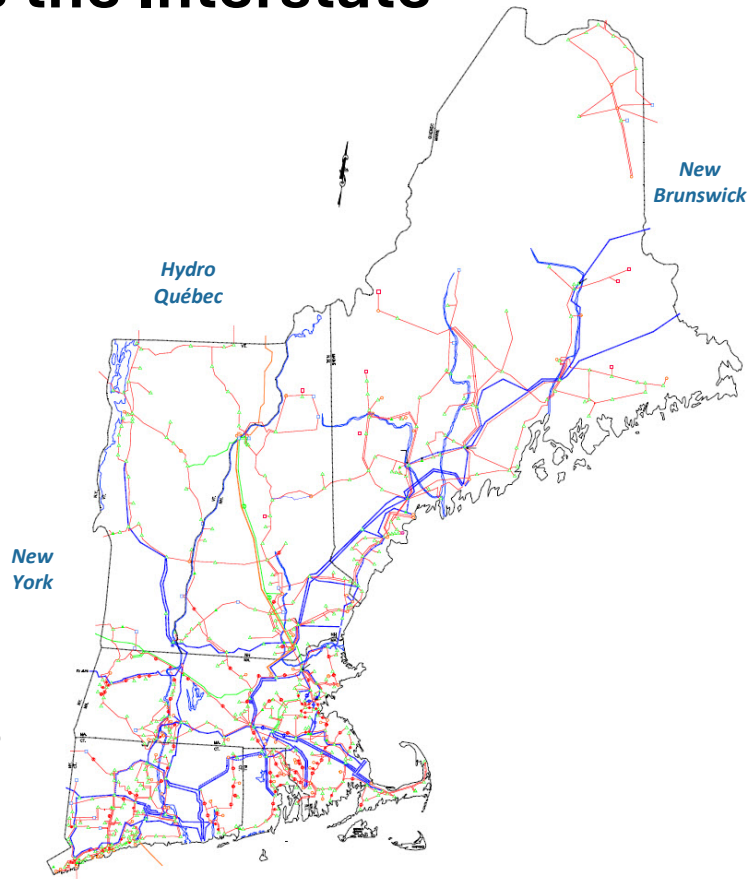
Through collaboration and innovation, ISO New England plans the transmission system, administers the region's wholesale markets, and operates the power system to ensure reliable and competitively priced wholesale electricity

Vision: *Where we're going*

To harness the power of competition and advanced technologies to reliably plan and operate the grid as the region transitions to clean energy

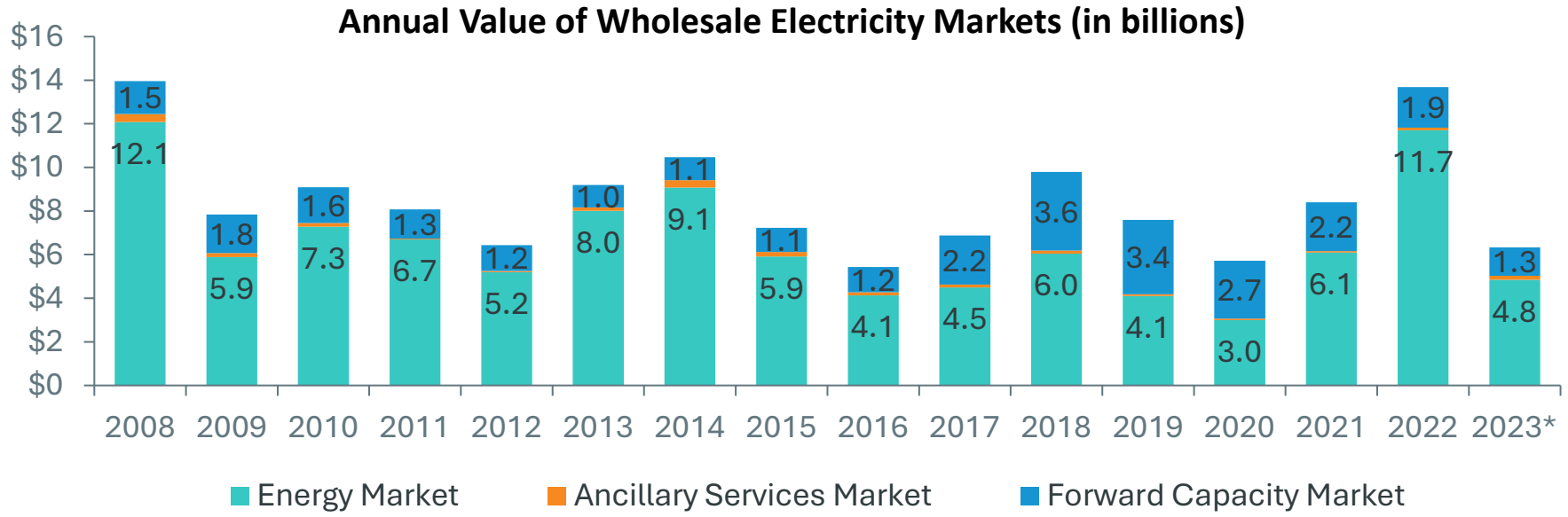
New England's Transmission Grid Is the Interstate Highway System for Electricity

- **9,000 miles** of high-voltage transmission lines (primarily 115 kV and 345 kV)
- **13 transmission interconnections** to power systems in New York and Eastern Canada
- **9%** of region's energy needs met by imports in 2024
- **$12 billion** invested to strengthen transmission system reliability since 2002; **$1.4 billion** planned
- Developers have proposed multiple transmission projects to access **non-carbon-emitting resources** inside and outside the region



Markets Select the Most Cost-Efficient Resources to Meet Current and Future Electricity Needs

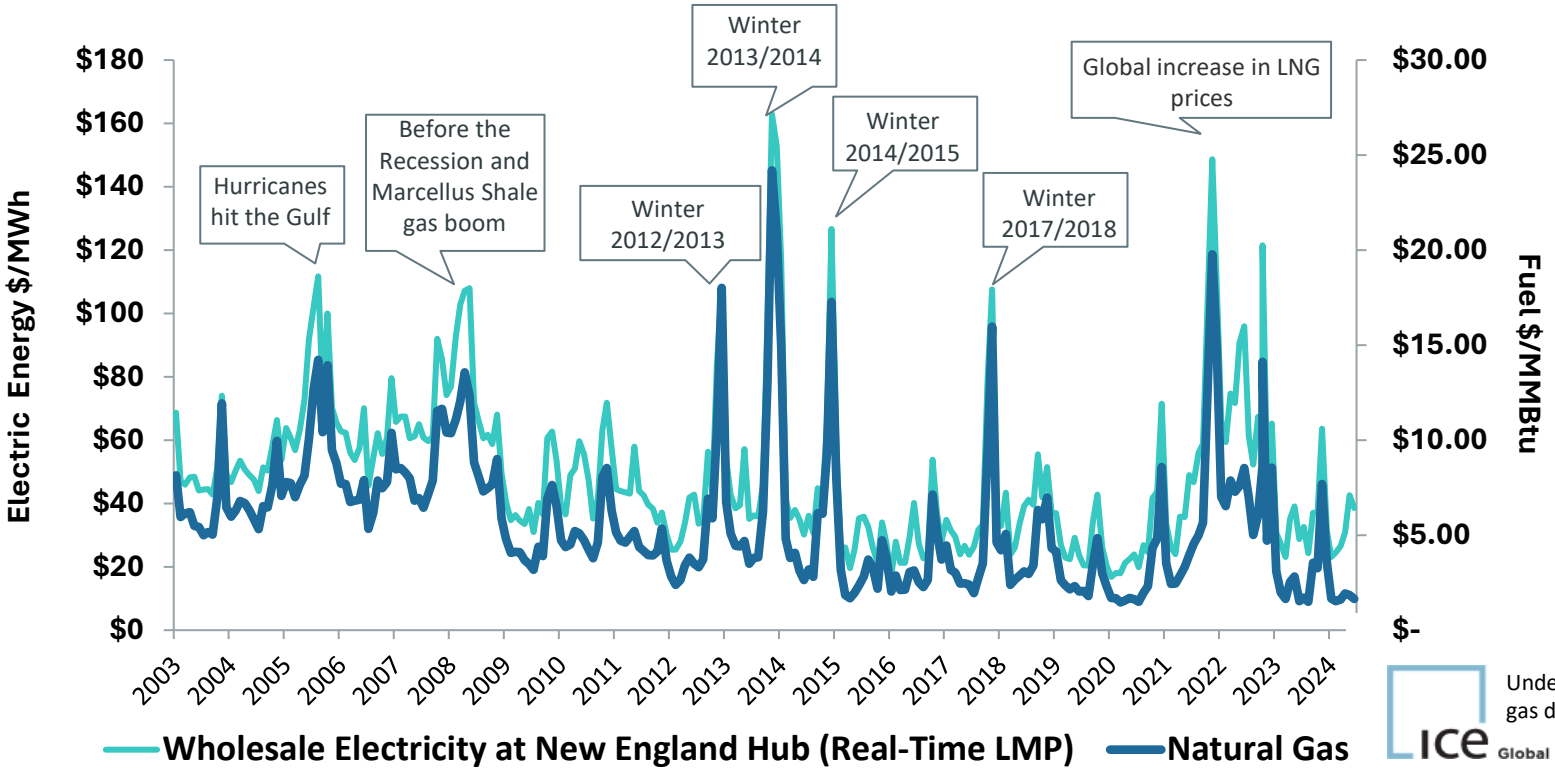
Energy market values vary with fuel prices, while capacity market values vary with changes in supply



Source: ISO-NE Markets and Settlements Data; (March 2024) *2023 data are subject to adjustment

Natural Gas and Wholesale Electricity Prices Are Linked

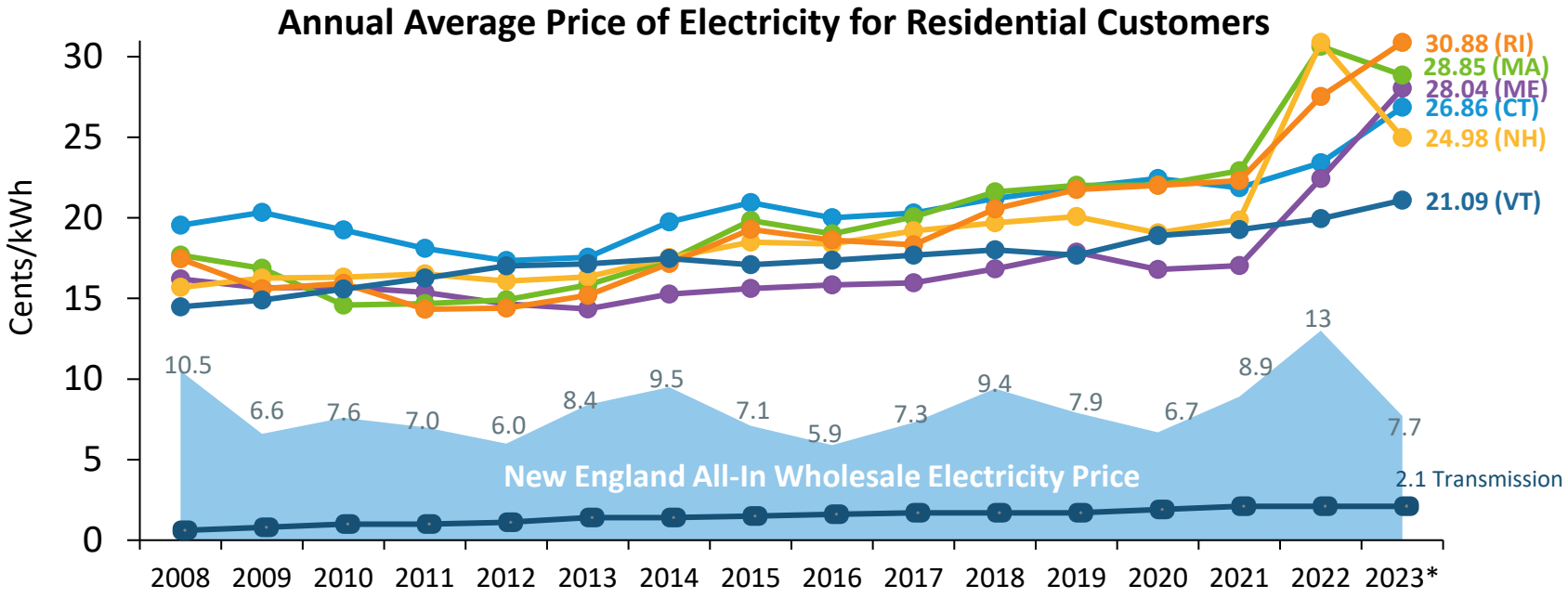
Monthly average natural gas and wholesale electricity prices at the New England hub



Underlying natural gas data furnished by:

ICE Global markets in clear view

Retail Electricity Prices Follow Wholesale Prices, But Are Also Influenced by Individual State Policies

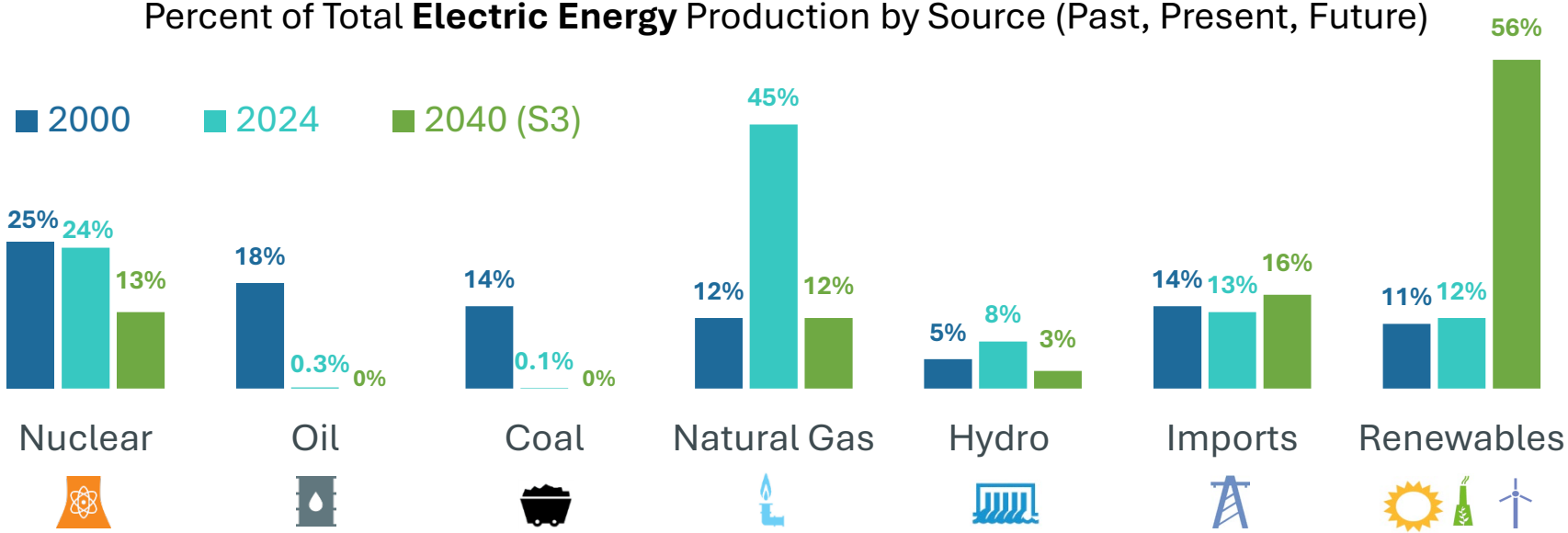


Source: U.S. Energy Information Administration, *Electric Power Monthly*, Table 5.6.B Average Price of Electricity to Ultimate Customers by End-Use Sector, by State (Through Dec. 2023); New England all-in wholesale electricity price is derived by dividing total wholesale electricity costs by real-time load obligation; ISO New England, *Report of the Consumer Liaison Group,* (Annual Reports for 2019–2023) Table 7-1 New England Wholesale Electricity Costs.

GRID TRANSFORMATION

Dramatic Changes in the Energy Mix

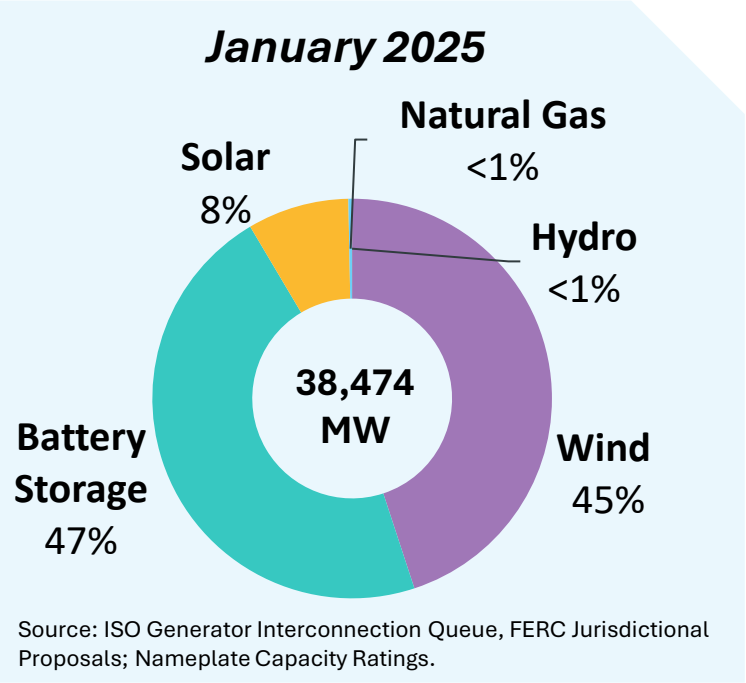
New England made a major shift from coal and oil to natural gas over the past two decades, and is shifting to renewable energy in the coming decades



Source: ISO New England Net Energy and Peak Load by Source; data for 2024 is preliminary and subject to resettlement; data for 2040 is based on Scenario 3 of the ISO New England 2021 Economic Study: Future Grid Reliability Study Phase 1. Renewables include landfill gas, biomass, other biomass gas, wind, grid-scale solar, behind-the-meter solar, municipal solid waste, and miscellaneous fuels.

ISO Generator Interconnection Queue Provides a Snapshot of Resource Proposals

State clean energy procurements drive project development

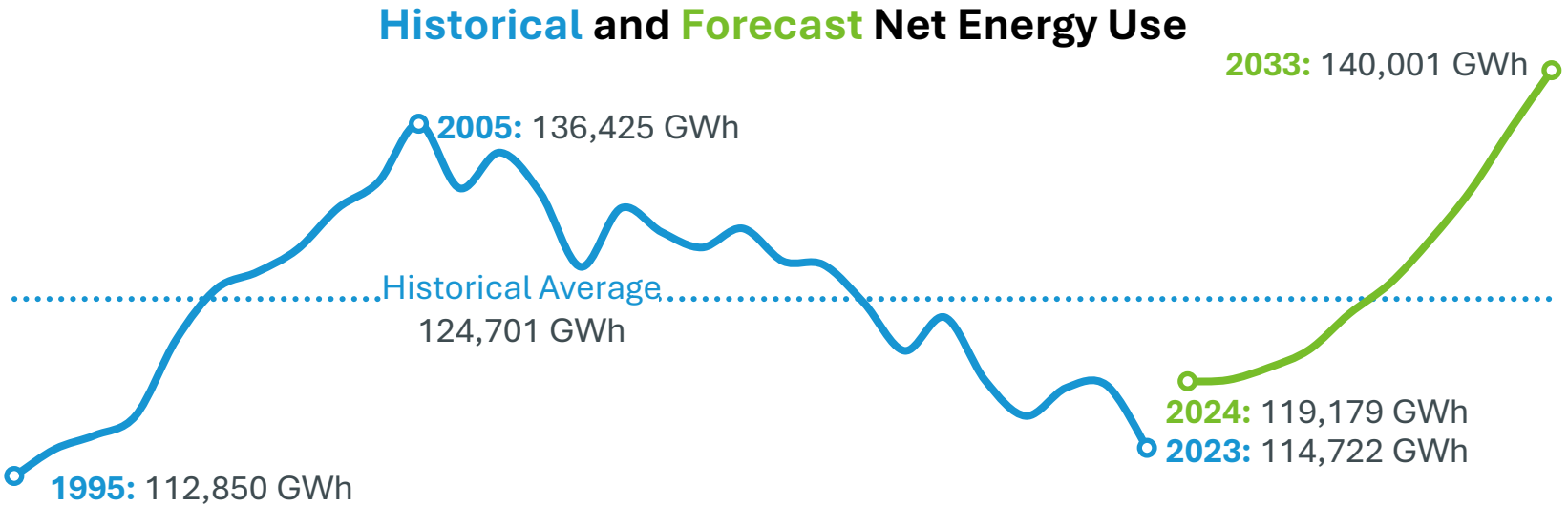


Source: ISO Generator Interconnection Queue, FERC Jurisdictional Proposals; Nameplate Capacity Ratings.

- CT, MA, ME, and RI collectively issued over **20 procurements** for clean energy resources since 2013, selecting more than **15 GW** of capacity including:
  - **7.5 GW** of offshore wind;
  - Roughly **1.5 GW** of land-based wind; and
  - More than **2 GW** of solar
- Nearly **7 GW** of selected resources never became commercially operational due to terminated contracts or withdrawn bids during negotiations
  - Only **3.5 GW of offshore wind** remain under contract following a series of terminations

Increased Electrification is Expected to Drive Steady Growth in Net Annual Energy Use

Following two decades of decreased net energy use as a result of state policies incentivizing solar PV and energy efficiency

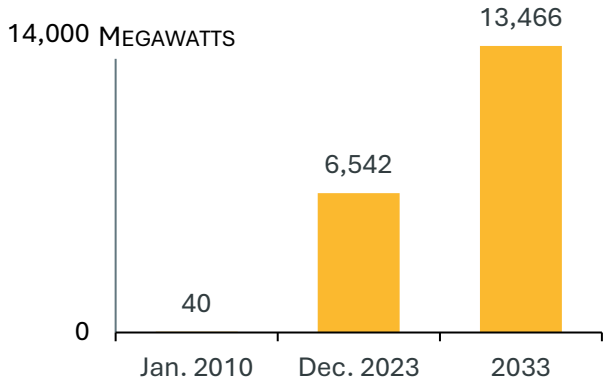


Source: ISO New England 2024-2033 Forecast Report of Capacity, Energy, Loads, and Transmission (2024 CELT Report) (May 2024)

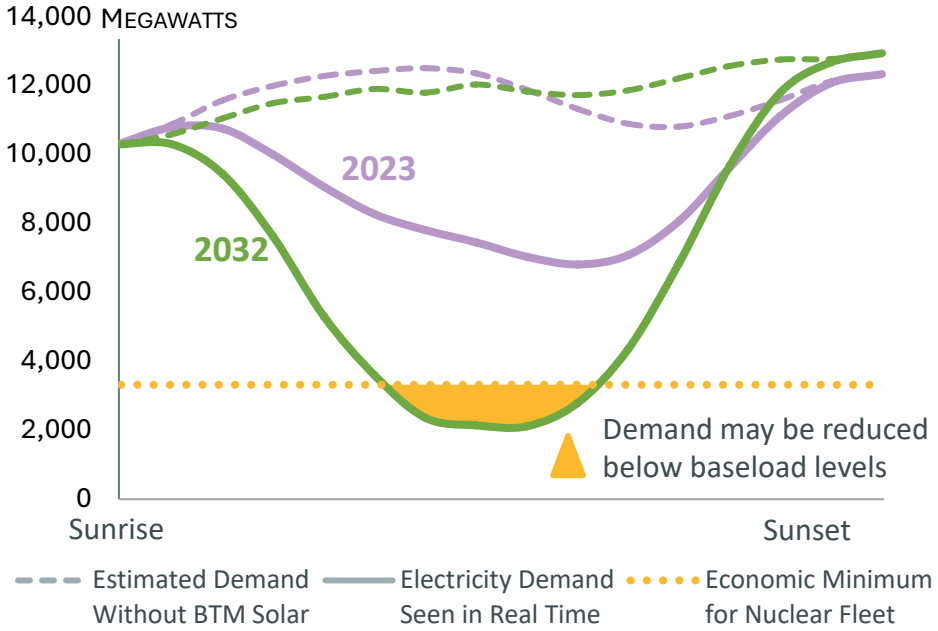
Growth in the Region's Distributed PV Produces Extreme 'Duck Curves' on Some Days

- Balancing, flexible resources will be crucial to ensure equilibrium as intermittent resources see swings in energy production

Cumulative Growth in Solar PV

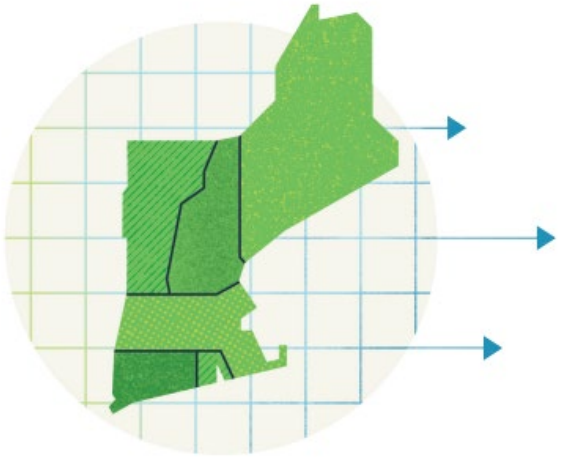


Impact of Behind-the-Meter Solar



Substantial Investment in New and Existing Infrastructure will be Critical to Enabling the Clean Energy Transition

- **$620 million** to **$1 billion** in transmission reliability investment will be needed **each year through 2050** to support the clean energy transition
- ISO's **long-term transmission studies** and **procurements** aim to support regional reliability and decarbonization goals in a coordinated manner



Source: Massachusetts Energy Pathways to Deep Decarbonization study and ISO New England 2050 Transmission Study

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

PILLAR ONE

Clean Energy

Significant amounts of clean energy to power the economy with a greener grid

PILLAR TWO

Balancing Resources

Resources that can supply electricity, reduce demand, or provide other services to maintain power system equilibrium

PILLAR THREE

Energy Adequacy

A dependable energy supply chain and/or a robust energy reserve to manage through extended periods of severe weather or energy supply constraints

PILLAR FOUR

Robust Transmission

To integrate renewable resources and move clean energy to consumers across New England

Key Takeaways

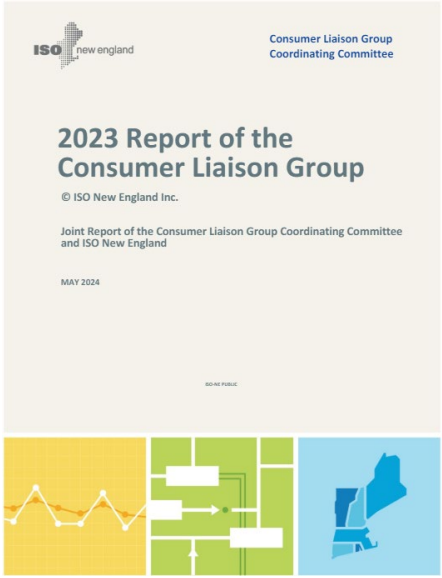
- New England's electric power system is changing rapidly
- Economic and Environmental factors are resulting in generator retirements, while state policies are driving investments in clean and renewable energy
- Retiring and emerging resources exhibit very different characteristics
- ISO-NE is focused on developing solutions to today's grid challenges

Consumer Liaison Group Provides a Forum for Consumers to Learn about Regional Electricity Issues

- A forum for sharing information between the ISO and electricity consumers in New England
- The CLG Coordinating Committee consists of 14 members who represent various stakeholder groups
- Quarterly meetings are free and open to the public, with in-person and virtual options to participate

Anticipated 2025 CLG Meeting Dates and Locations:

- Thursday, March 27 – Rhode Island
- Wednesday, June 4 – Massachusetts
- Wednesday, September *TBD* – New Hampshire
- Wednesday, December 3 – Boston, MA



2023 CLG Annual Report

More information on the CLG is available at: https://www.iso-ne.com/committees/industry-collaborations/consumer-liaison/

Questions 

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