Gas – Electric Coordination in New England

Energy Systems Integration Group (ESIG)
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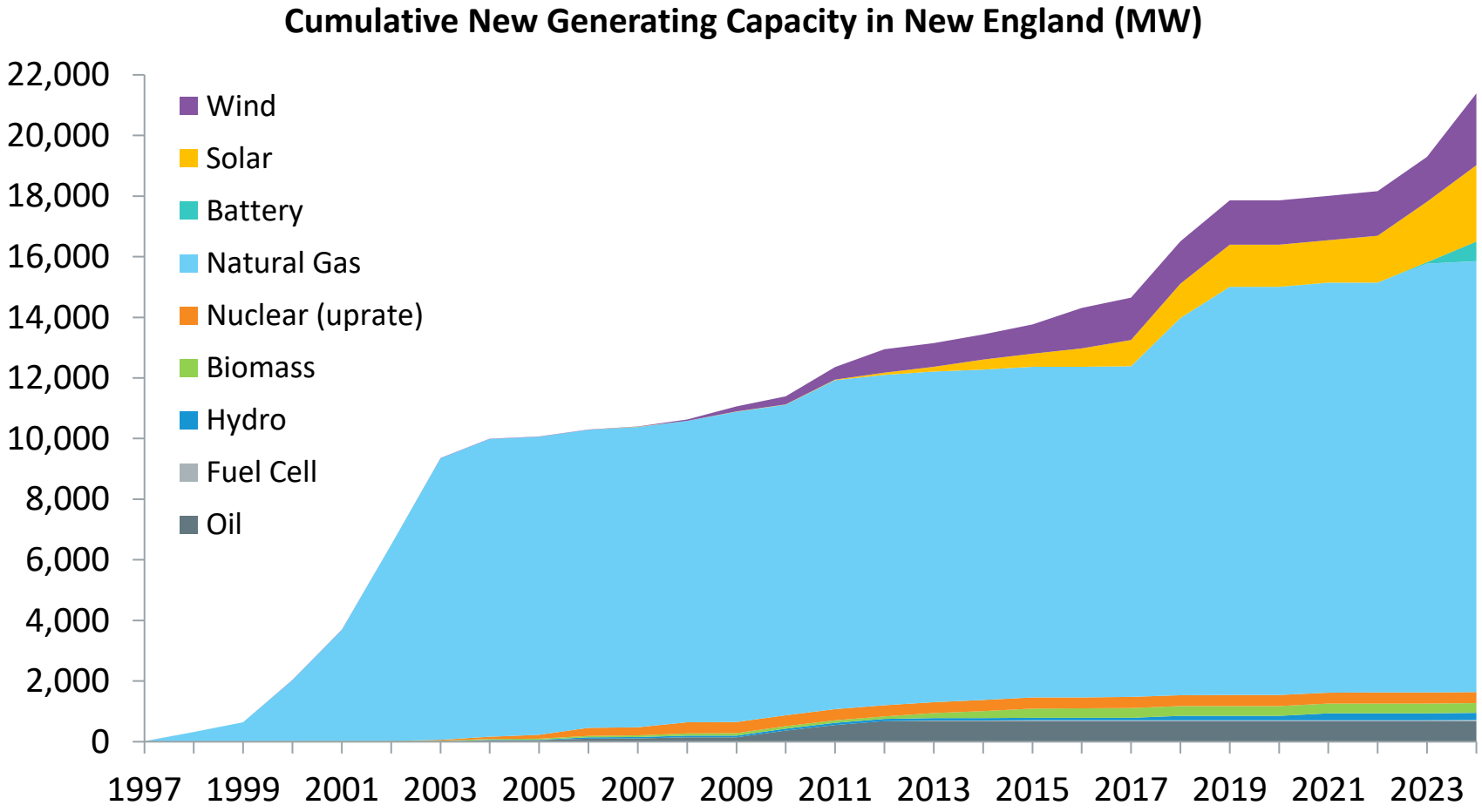
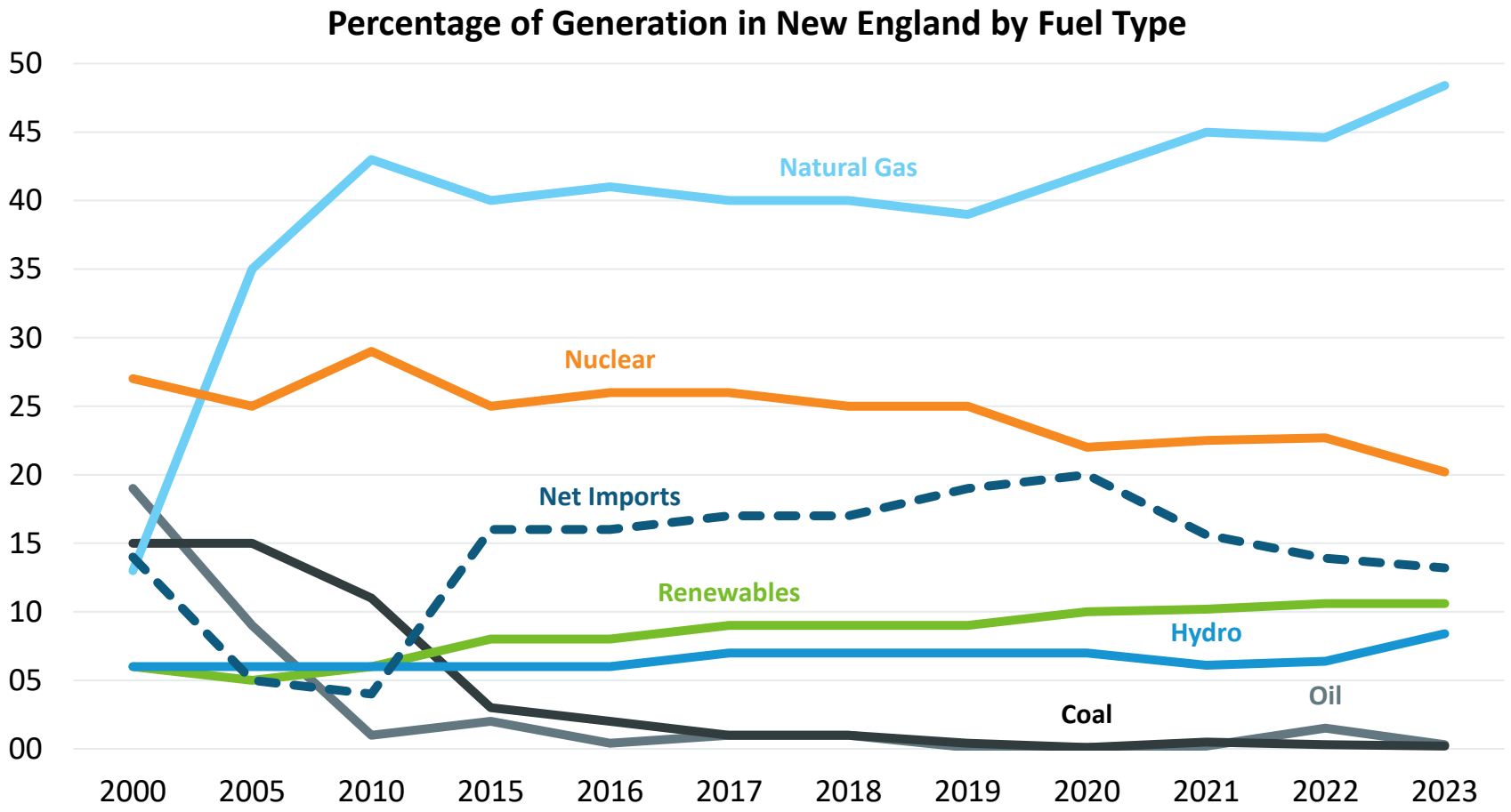
For the Past Two Decades, Natural Gas Has Been the Dominant Fuel Source for Generating Capacity Built in New England



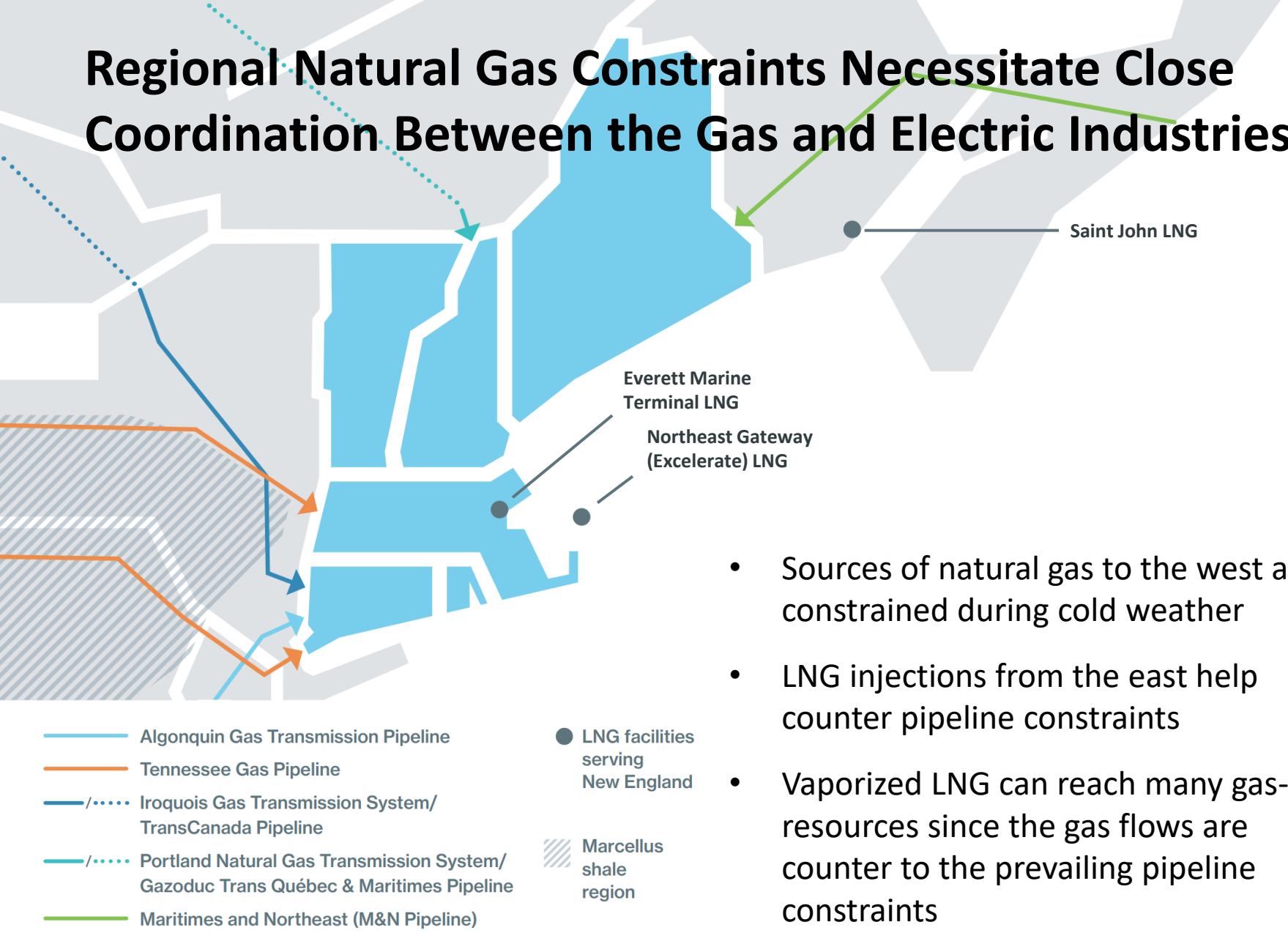
Note: New generating capacity for years 2021 – 2024 includes resources clearing in recent Forward Capacity Auctions.

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



***Source**: ISO-NE Net Energy and Peak Load by Source*
Electric generation within New England; excludes imports and behind-the-meter (BTM) resources, such as BTM solar.

Regional Natural Gas Constraints Necessitate Close Coordination Between the Gas and Electric Industries

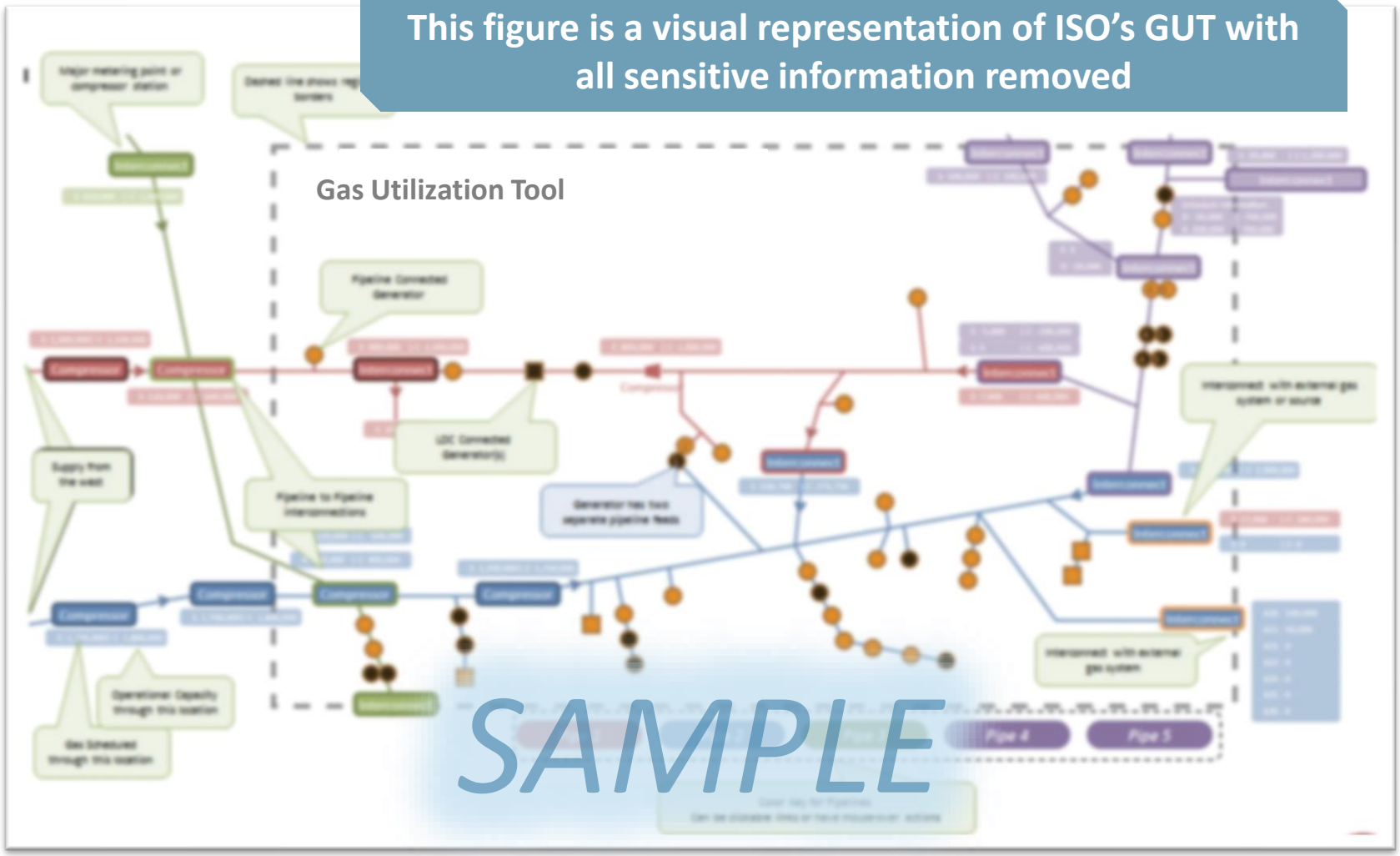


- Sources of natural gas to the west are constrained during cold weather
- LNG injections from the east help counter pipeline constraints
- Vaporized LNG can reach many gas-fired resources since the gas flows are counter to the prevailing pipeline constraints

ISO-NE's Industry-Leading Gas-Electric Coordination

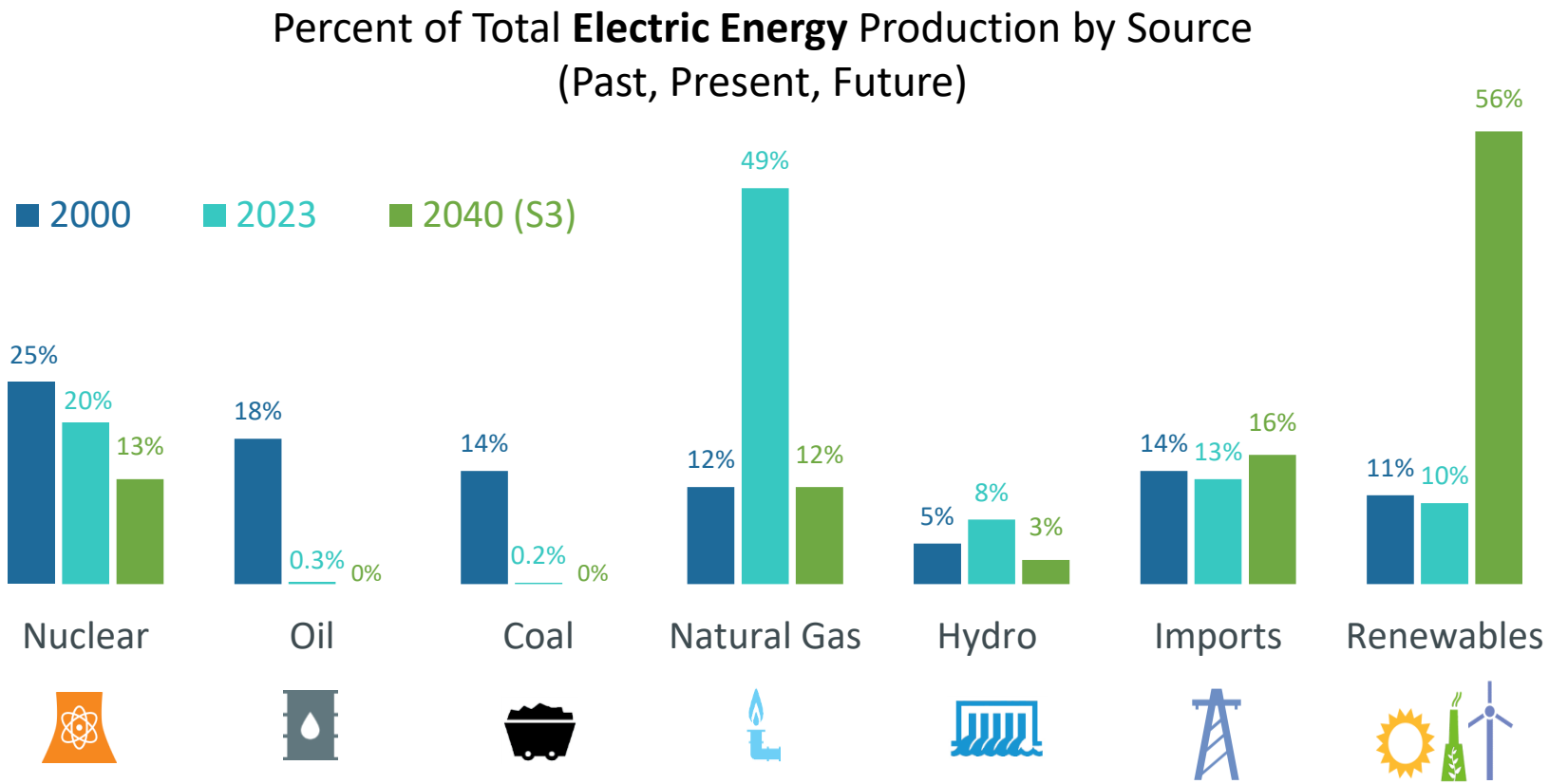
- New England has a long history of coordination between gas pipeline and electric system operators
  - Practices are in close alignment with the NERC Reliability Guideline: Gas and Electric Operational Coordination Considerations
  - Sharing of non-public information is allowed for by FERC Order No. 787
- ISO actively works to coordinate pipeline and generator outages on a real-time and forward looking basis (up to 6 months out)
- ISO gathers pipeline bulletin board data for situational awareness and to identify potential concerns
  - For example, ISO will contact natural gas-fired generators in cases where it appears that insufficient gas has been scheduled to support the expected dispatch of that generator
- Expectations for each generator's hourly gas burn are developed by ISO and then shared with each applicable gas pipeline operator thereby enhancing each pipeline's awareness of hourly gas demands on its system
- ISO staff has direct communication with the control room of each interstate natural gas pipeline and communications can take place between operators of each system, as needed

ISO's Innovative Gas Utilization Tool (GUT) Provides Real-Time Situational Awareness



Dramatic Changes in the Energy Mix Are Expected

New England is shifting to renewable energy in the coming decades

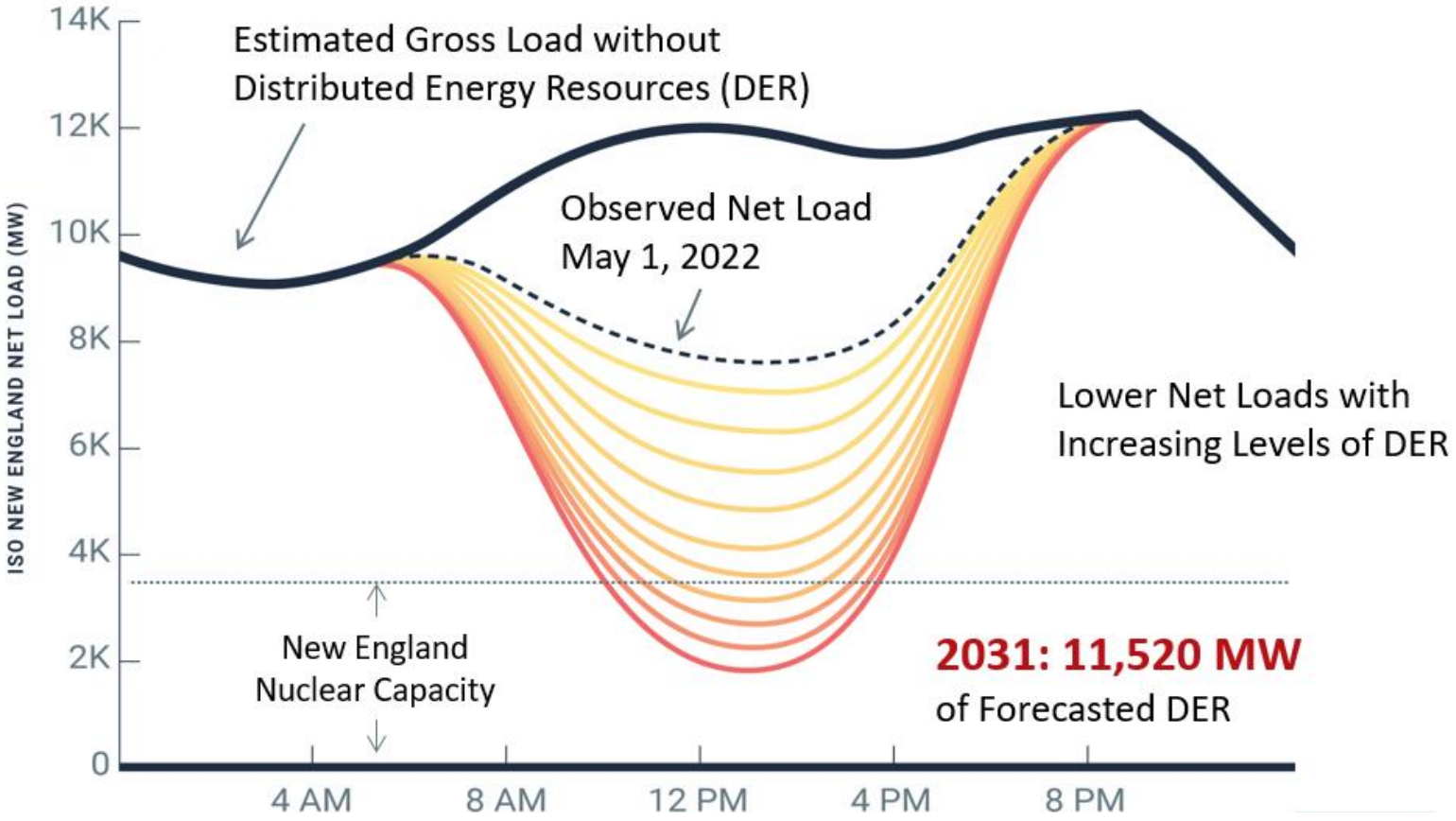


Source: ISO New England Net Energy and Peak Load by Source; data for 2023 is preliminary and subject to resettlement; data for 2040 is based on Scenario 3 of the ISO New England 2021 Economic Study: Future Grid Reliability Study Phase 1.

Renewables include landfill gas, biomass, other biomass gas, wind, grid-scale solar, behind-the-meter solar, municipal solid waste, and miscellaneous fuels.

Natural Gas Will Remain a Critical Fuel Source to Balancing Resources as the Resource Mix Evolves

Continued improvement of gas-electric coordination efforts will be needed while studies like the NPCC-sponsored New York/New England Gas Pipeline Study are also needed to evaluate the adequacy of the gas system to support the electric system as it evolves



Questions