

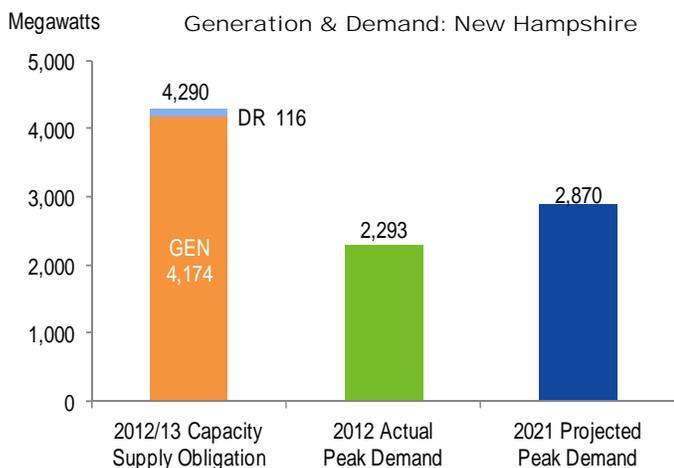
The New England electric grid is an 8,000-mile high-voltage transmission system that connects electric utilities, publicly-owned electric companies, power generators, suppliers, alternative resources, and end users in the six-state wholesale electricity marketplace. This is a brief profile of the electric grid and wholesale markets serving New Hampshire based on information from New England's regional system planning process and wholesale market reports.

Introduction

New Hampshire represents approximately 9% of the population in New England and 9% of the region's total electricity consumption. The state's demand for electricity is highly concentrated in the southern and seacoast areas. The state relies on both in-state resources and imports of power over the region's transmission system to serve electricity customers. Transmission, generation and demand resources are being added to ensure the reliability of the system. ●●●

Growth in Demand

In the 2012 Regional System Plan, ISO New England (ISO) forecasted the state's overall electricity demand to grow at a rate of 1.2% annually over the next decade, above the 0.9% rate projected for New England. The ISO forecasts the state's peak (summer) demand to grow 1.9% annually over the next decade, above the 1.5% rate projected for the region.



Energy Efficiency

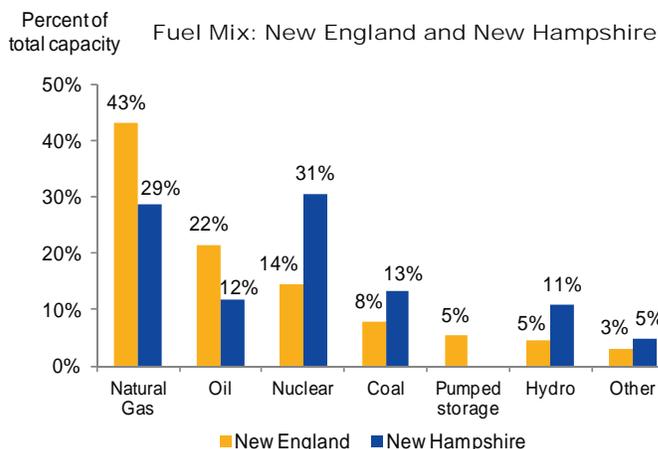
In 2012, the ISO completed its first energy-efficiency (EE) forecast to estimate the long-term effects of state-sponsored EE programs. Regionally, the EE forecast for 2015 to 2021 shows lower annual growth in *peak demand* (0.9%) than the traditional forecast (1.5%), and annual *energy use* is actually flat (0.0%) compared to a modest (0.9%) rate of growth under the traditional forecast. The results for New Hampshire show a slowing growth rate for peak demand with a total projected reduction in peak demand of 65 megawatts (MW) from 2015 to 2021. Under the EE forecast, the peak in 2021 will be about 4% lower than would be expected using the traditional forecast. For energy, the EE forecast shows a modest increase in energy use with total projected energy savings of nearly 400 million kilowatt hours by 2021. Under the EE forecast, the energy use in 2021 will be about 6% lower than would be expected using the traditional forecast. ●●●

Generating Resources

The total capacity of existing generating plants located in New Hampshire is approximately 4,100 MW. This is 13% of the total capacity in New England. About 4,200 MW in New Hampshire cleared in the Forward Capacity Market (FCM) with obligations to be available from June 1, 2012 to May 31, 2013. Generator availability has increased systemwide in New England since the start of competitive markets, from 81% in 1999 to 86% in 2011. At any given time, however, individual generators may not operate due to planned or unexpected outages, environmental restrictions, or other reasons. Some resources do not operate because their offers to sell electricity in the wholesale market are above the market-clearing price. In New Hampshire, generators are owned and operated by private generation companies and electric and municipal utilities. ●●●

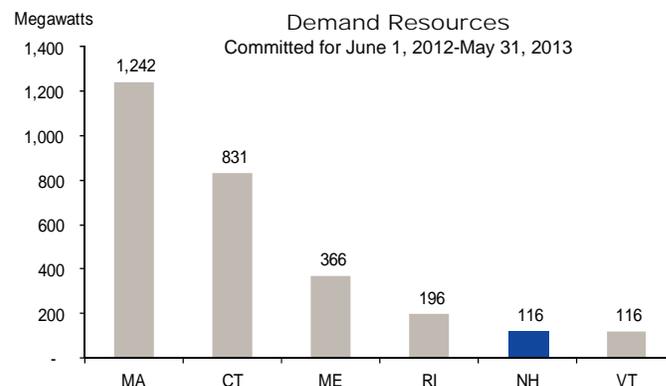
Fuel Mix

Natural gas is the primary fuel for more than 40% of the existing generating capacity in New England and about 30% in New Hampshire. Nuclear power also represents about 30% of the capacity in the state.



Demand Resources

New England has about 2,900 MW of customer-side Demand Resources (DR) that can reduce demand on the power grid through both active measures, such as shifting to on-site distributed resources, and passive measures, such as EE. New Hampshire has more than 100 MW of DR with obligations in the Forward Capacity Market, equivalent to 5% of the state's peak demand.



Proposals for New Resources

In order to connect to the grid, a proposed generator must be studied and approved under the ISO's Generator Interconnection Procedures to ensure the project will not adversely impact the reliability of the electric grid. This is known as the "queue" process.

At the start of 2013, approximately 260 MW of proposals in New Hampshire were active in the queue. This represents 5% of the proposals in New England. Historically, not all of the proposals in the queue have been developed, but proposals in the queue are an indication of the potential for new resources.

In New England, the FCM provides opportunities for existing and new generation, DR, and imports to compete to provide the capacity resources the region needs to meet future reliability requirements.

Resources must qualify, clear (i.e., be selected) in the auction, and then perform when called upon by the ISO to be eligible for capacity payments.

Through a series of annual auctions, ISO has procured resources to meet reliability needs for the seven-year period June 1, 2010 to May 31, 2017. In this period these auctions cleared:

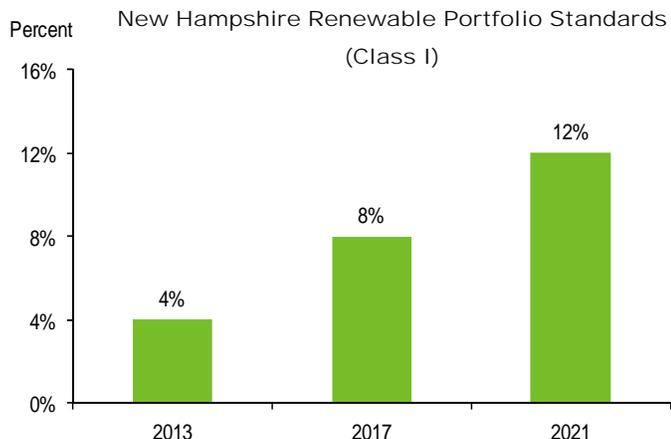
- More than 150 MW of *new* generation resources from New Hampshire, representing about 3% of the new generation cleared in New England, and
- About 150 MW of *new* DR from New Hampshire, representing 5% of the new DR cleared in New England.

The ISO conducted the seventh auction (FCA-7) in February 2013, for resources needed in the 2016–2017 timeframe. The next regional capacity auction, FCA-8, is scheduled for February 2014. ●●●

Renewable Resources

To meet New Hampshire's renewable portfolio standard (RPS), utilities and competitive suppliers must obtain specified percentages of the electricity they provide to customers from renewable sources, or make alternative compliance payments.

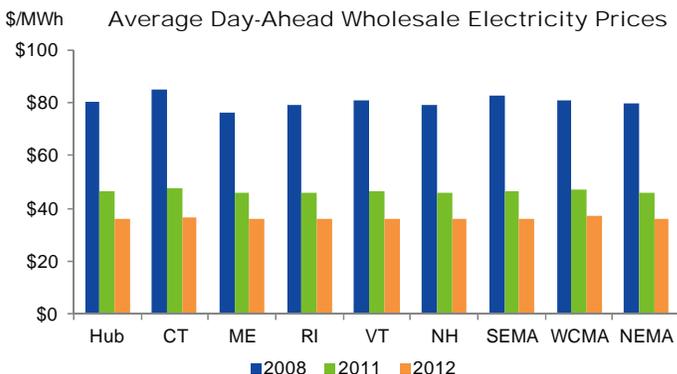
New Hampshire has established four classes of renewable resources. Class-I renewable resources include certain types of solar, wind, biomass, hydro, and landfill gas. The Class-I RPS increases to 12% in 2021 and to 16% in 2025.



As of January 2013, three large-scale wind farms with a capacity of almost 175 MW are commercially operating in the state. These wind farms are located in Grafton, Sullivan and Coos Counties. ●●●

Wholesale Market Prices

Locational pricing is a key feature of New England's wholesale electricity markets. The ISO administers Day-Ahead and Real-Time Energy Markets and calculates prices for eight zones in New England. Each state is one zone, except for Massachusetts, which has three zones: Southeastern (SEMA), Western/Central (WCMA), and Northeastern/Boston (NEMA). Average wholesale prices have dropped with lower demand and fuel prices. Prices remain below 2008 levels. In 2012, average wholesale electricity prices in New England fell to nearly 23% below prices in 2011, and 26% below prices in 2003, the year that competitive markets in their current form were introduced in the region.



Transmission

A recently-completed ISO study of the transmission system in New Hampshire has identified long term reliability needs throughout the state. Driven by population growth, significant infrastructure improvements are needed in the seacoast area. Transmission projects have been proposed to resolve the state's reliability needs, and these projects are expected to be complete over the next few years. Changes in the forecast for electricity demand or development of market-based responses to system needs can affect the need for transmission projects, and the ISO re-evaluates these needs as part of the planning process. Additionally, developers are proposing merchant transmission projects throughout the region and in New Hampshire. ●●●

Strategic Planning Initiative

The ISO and stakeholders are evaluating several key risks that will impact the region's power system and wholesale electricity markets. Near-term risks include resource performance and flexibility, and increased reliance on natural gas-fired capacity. Long-term risks include potential retirement of generators, integration of a greater level of variable resources (e.g., wind and solar), and alignment of markets with planning. ●●●

About ISO New England

ISO New England is the Independent System Operator responsible for ensuring the reliable operation of the New England electric grid, administration of the region's wholesale electricity markets, and administration of the regional Open Access Transmission Tariff, including regional system planning. The ISO is a not-for-profit corporation governed by an independent board of directors. The ISO does not own transmission or generation assets and has no financial interest in any companies participating in the region's wholesale electricity markets. ●●●

Sources and Additional Information

U.S. Census Bureau, *2012 Regional System Plan, 2011 Annual Markets Report*, FCA results, and other public ISO information.

ISO New England: www.iso-ne.com

NH Public Utilities Commission: www.puc.state.nh.us