New England

2013-14 Regional Profile

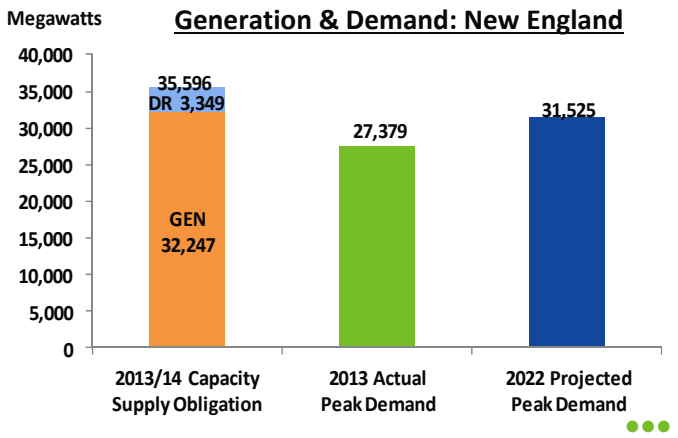
The New England electric grid is an 8,500-mile high-voltage transmission system that connects electric utilities, publicly-owned electric companies, power generators, suppliers, alternative resources, and end users in the six-state wholesale electricity marketplace. This is a brief profile of the electric grid and wholesale markets serving the region based on information from New England's regional system planning process and wholesale market reports.

Introduction

New England relies on both in-region resources and imports of power over the region's transmission system to serve electricity customers. Transmission, generation, and demand resources are used to ensure that the reliability of the system is maintained. The region has 13 transmission ties to neighboring power systems that allow electricity trade with New York, New Brunswick, and Québec. New England is a net importer of electricity and in 2013 the region imported over 14% of its electricity over these ties.

Growth in Demand

In the *2013 Regional System Plan*, ISO New England (ISO) forecasted the region's overall electricity demand to grow 1.1% annually and the region's peak demand to grow 1.4% annually over the next decade. The region's electricity demand peaks in the summer due to the use of air conditioning.



Energy Efficiency

In 2014, the ISO released its third annual energy-efficiency (EE) forecast to estimate the long-term effects of state-sponsored EE programs for the period from 2018 through 2023. Regionally, the EE forecast shows lower annual growth in *peak demand* and flat annual *energy use* compared to modest rates of growth under the traditional forecasts. The initial results of this annual forecast show that the six states will spend over $6 billion on EE measures over this period.

Regional Collaboration

In January 2014, the New England States Committee on Electricity (NESCOE), on behalf of the six New England Governors, requested ISO New England support for a proposal to: add firm natural gas pipeline capacity to increase supply into New England; and increase electric transmission infrastructure in the region to help support renewable energy development.

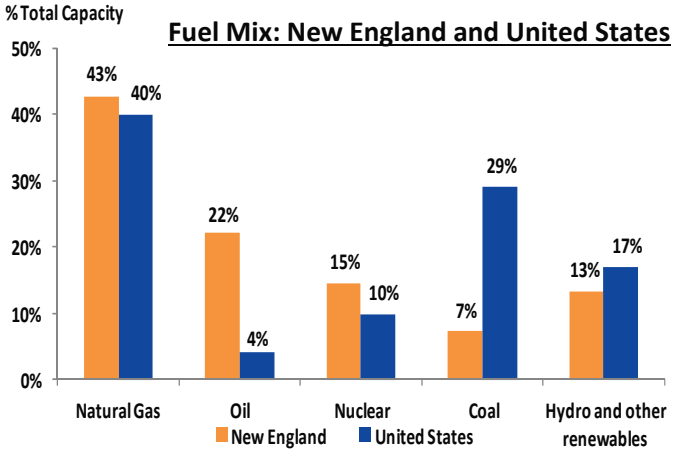
The ISO is committed to supporting this effort and discussions will occur through the region's stakeholder process in 2014.

Generating Resources

In New England, generation is owned and operated either by private generation companies or electric, municipal, or consumer-owned utilities. The total capacity of generating plants located in New England is about 32,000 megawatts (MW) based on summer capacity ratings. About 32,000 MW cleared in the Forward Capacity Market (FCM) with obligations to be available from June 1, 2013 to May 31, 2014. Generator availability has increased systemwide in New England since the start of competitive markets; however, resource performance during stressed system conditions is a growing problem. The ISO's pay-for-performance proposal is designed to reward good-performing resources and shift capacity payments away from poor-performing resources.

Fuel Mix

New England and U.S. electric generating capacity by fuel type:

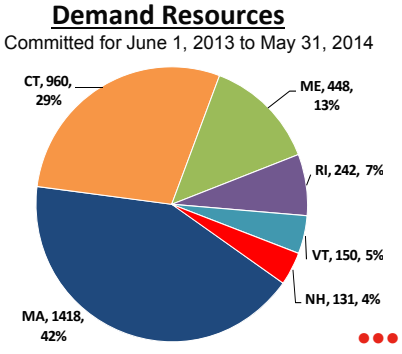


Regional electric generating capacity and energy production by fuel type:

New England Generators by Fuel Type	*% of Total Capacity 2013*	*% of Electric Energy 2013*
Natural gas	43%	46%
Oil	22%	<1%
Nuclear	15%	33%
Coal	7%	6%
Hydro	4%	6%
Pumped storage	5%	1%
Other renewables	3%	8%

Demand Resources

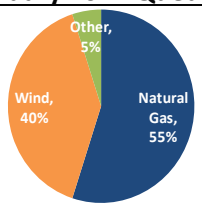
New England has about 3,350 MW of customer-side Demand Resources (DR) that can reduce demand on the power grid through both active measures, such as shifting to on-site distributed resources, and passive measures, such as EE.



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 2014, approximately 5,000 MW of proposals were active in the queue—primarily natural-gas and wind generation. 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.

Proposed Resources January 2014 Queue



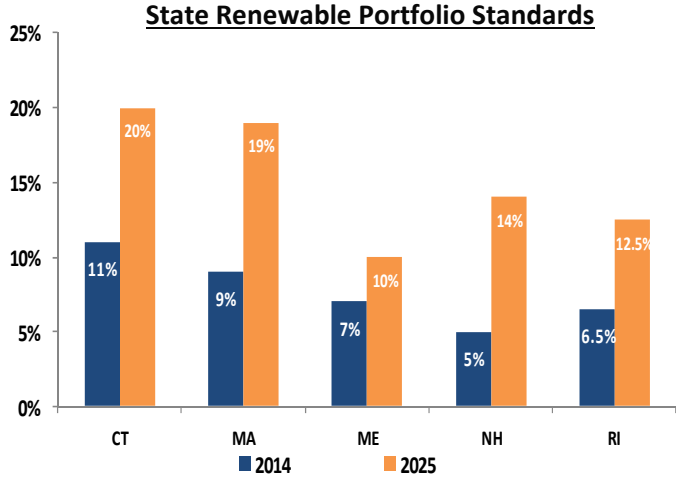
In New England, the FCM provides opportunities for existing and new generation, DR, and imports to compete to provide the capacity resources the region needs to meet future reliability requirements. Resources must qualify, clear (i.e., be selected) in the auction, and then perform when called upon by the ISO to be eligible for capacity payments.

Through a series of annual auctions, ISO has procured resources to meet reliability needs for the eight-year period June 1, 2010 to May 31, 2018. In this period these auctions cleared more than 4,550 MW of *new* generation resources, and more than 3,600 MW of *new* DR. The ISO conducted the eighth auction (FCA-8) in February 2014, for resources needed in the 2017–2018 timeframe. The next regional capacity auction is scheduled for February 2015. In addition to the wholesale markets, the states may provide incentives for the development of certain resources to achieve their policy goals. ●●●

Renewable Resources

To meet renewable portfolio standards (RPS) adopted by five of the six New England states, utilities and competitive suppliers must obtain specified percentages of the electricity they provide to customers from renewable sources, or make alternative compliance payments. Vermont has a separate program of incentives to promote renewable resources.

State Renewable Portfolio Standards



In addition to RPS, states are pursuing other initiatives to develop renewables, including solar. The ISO estimates the region has over 500 MW (nameplate) of solar installed and is forecasting that the states will have almost 2,600 MW (nameplate) of solar installed by 2023. ●●●

Transmission

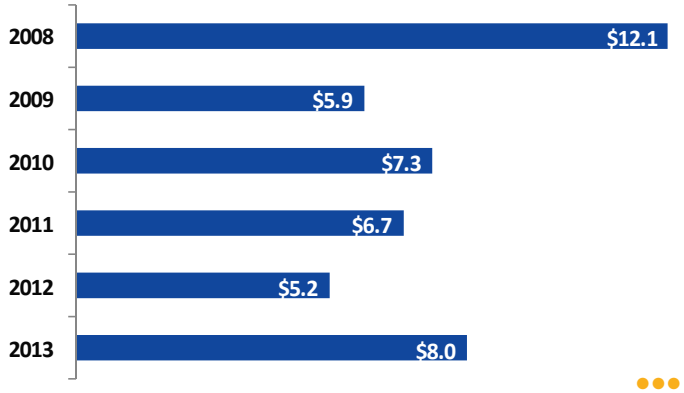
Major transmission projects developed through the ISO's regional system planning process have been placed in service throughout New England since 2002 and several more are under construction, in the siting process, or under study. These projects are needed to ensure the reliability of the bulk electric grid.

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. ●●●

Energy Market

The total size of the regional wholesale electricity markets has ranged from $6 billion to $14 billion annually over the last half-dozen years. The energy market is the largest component of these markets. In 2013, the energy market had a value of $8 billion. The value of the wholesale energy market varies with fuel costs.

Yearly Annual Wholesale Energy Market ($ Billion)



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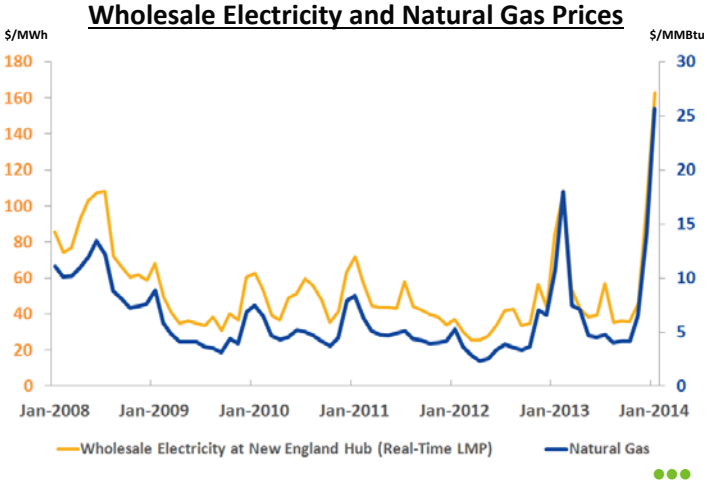
Natural Gas

Natural gas is the dominant fuel used to produce electricity in New England and wholesale electricity prices track natural gas prices in the region. At the beginning and end of 2013, high demand for natural gas drove up natural gas and wholesale electricity prices in the region.

Wholesale Electricity and Natural Gas Prices



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About ISO New England

ISO New England is the Regional Transmission Organization 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, *2013 Regional System Plan, 2012 Annual Markets Report*, FCA results, and other public ISO information. ISO New England: www.iso-ne.com; and www.isonewswire.com