



# New England

## 2012-13 Regional Profile

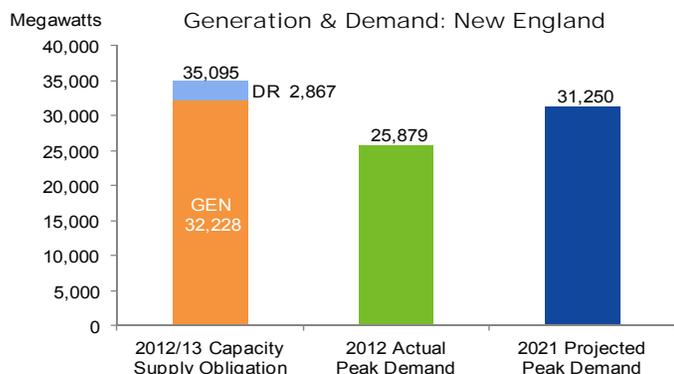
The New England electric grid is an 8,000-mile high-voltage transmission system that connects electric utilities, publicly-owned electric companies, power generators, suppliers, alternative resources, and end users in the six-state wholesale electricity marketplace. This is a brief profile of the electric grid and wholesale markets serving 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 being added to ensure that the reliability of the system is maintained. New England has 13 transmission ties to neighboring power systems that allow electricity trade with New York, New Brunswick, and Hydro Québec. New England is a net importer of electricity and in 2012 the region imported approximately 10% of its electricity over these ties. ●●●

### Growth in Demand

In the 2012 Regional System Plan, ISO New England (ISO) forecasted the region's overall electricity demand to grow at a rate of 0.9% annually over the next decade. The ISO forecasts the region's peak (summer) demand to grow 1.5% annually over the next decade. The region's electricity demand peaks in the summer due to the use of air conditioning.



### Energy Efficiency

In 2012, the ISO created the nation's first regional energy-efficiency (EE) forecast to help system planners estimate the long-term impact of state-sponsored EE programs on electricity consumption. The results of this forecast show that the six states will spend nearly \$5.7 billion on EE measures between 2015 and 2021. Over this period, the EE forecast 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. These measures are expected to result in about a 12% reduction in energy use (9.4 billion kilowatt hours), and a 9% reduction in system peak demand (1,444 megawatts) in 2021. ●●●

### Generating Resources

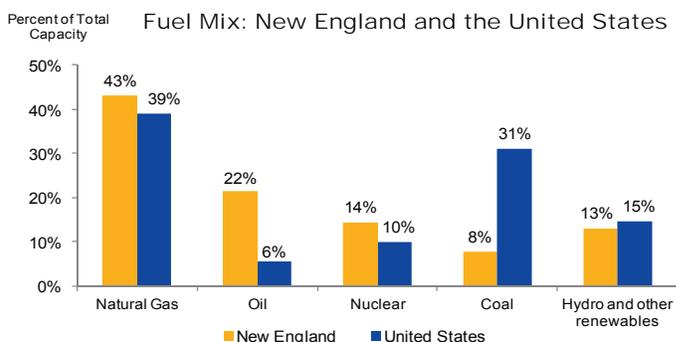
The total capacity of generating plants located in New England is about 32,000 megawatts (MW) based on summer capacity ratings. About 32,000 MW cleared in the Forward Capacity Market (FCM) with obligations to be available from June 1, 2012 to May 31, 2013.

Generator availability has increased in New England since the start of competitive markets, from 81% in 1999 to 86% in 2011.

At any given time 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 England, generators are owned and operated either by private generation companies or electric, municipal, or consumer-owned utilities. ●●●

### Fuel Mix

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

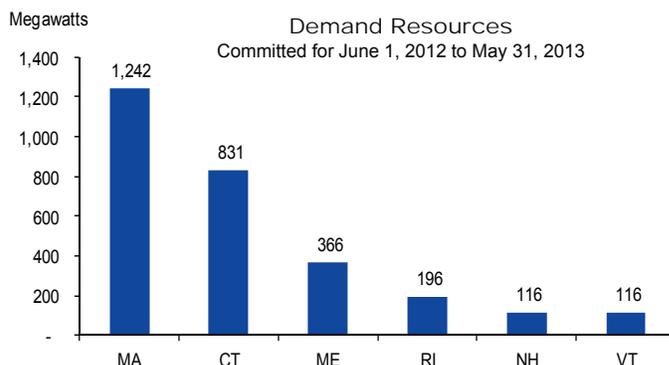


Electric generating capacity and energy production by fuel type:

| New England Generators by Fuel Type | % of Total Capacity 2012 | % of Electric Energy 2012 |
|-------------------------------------|--------------------------|---------------------------|
| Natural gas                         | 43%                      | 52%                       |
| Oil                                 | 22%                      | <1%                       |
| Nuclear                             | 14%                      | 31%                       |
| Coal                                | 8%                       | 3%                        |
| Hydro                               | 5%                       | 6%                        |
| Pumped storage                      | 5%                       | 1%                        |
| Other renewables                    | 3%                       | 7%                        |

### 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.



## 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 5,000 MW of proposals were active in the queue (primarily natural-gas-fired 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.

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 4,500 MW of *new* generation resources, and almost 3,300 MW of *new* DR.

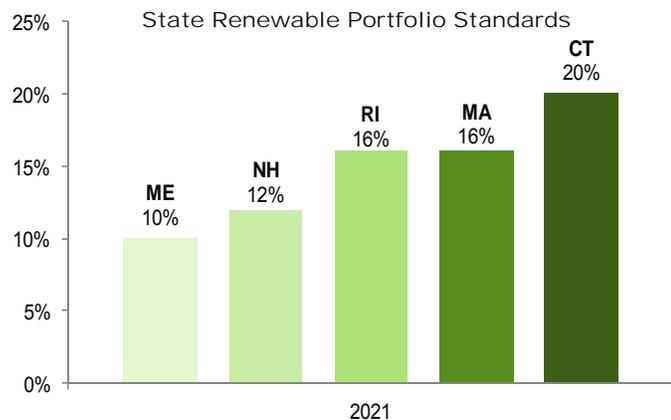
The ISO conducted the seventh auction (FCA-7) in February 2013, for resources needed in the 2016–2017 timeframe. The next regional capacity auction, FCA-8, is scheduled for February 2014.

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.

In addition to RPS, states are pursuing other initiatives to develop renewable and non-carbon-emitting resources.



At the direction of the region's governors, the New England States Committee on Electricity (NESCOE) developed a work plan to implement coordinated competitive renewable power procurement in the region. The work plan is designed to identify the lowest "all-in" cost resources available to meet state renewable energy objectives. ●●●

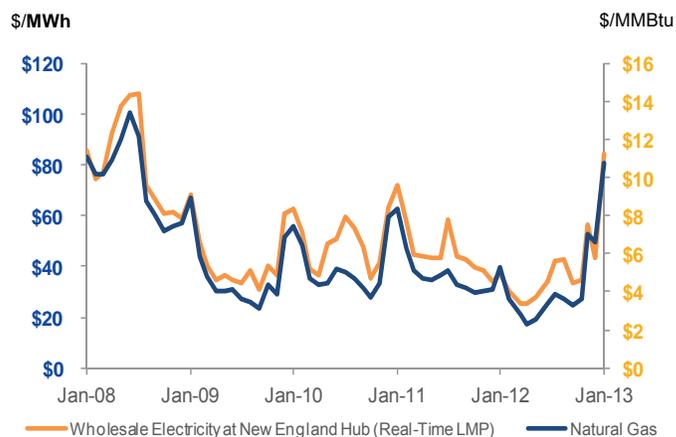
## Transmission

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. ●●●

## 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. The increase in supply of relatively low-priced natural gas from the nearby Marcellus Shale contributed to wholesale electricity prices in New England that were 23% lower in 2012 compared to 2011. However, in early 2013, high demand for natural gas, combined with pipeline constraints into the region from the west and the south and the use of globally-priced liquefied natural gas, drove up natural gas and wholesale electricity prices in the region.

Wholesale Electricity and Natural Gas Prices



## 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 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, *2012 Regional System Plan, 2011 Annual Markets Report*, FCA results, and other public ISO information.  
ISO New England: [www.iso-ne.com](http://www.iso-ne.com); or [www.isonewswire.com](http://www.isonewswire.com)