

# Where will New England's electricity come from in 5, 10 and 20 years?

## A major shift in the region's fuel mix

The amount of electricity produced from oil in New England has dropped from 15% in 2000 to less than 2% in 2009. Over the same period, the use of natural gas for power generation has doubled to more than 40% of the region's electricity supply. Natural gas is the fuel of choice for half of the new generation proposed in the region. Recently developed liquefied-natural-gas terminals in Massachusetts and New Brunswick, and the Marcellus Shale gas field that stretches from New York to West Virginia, have added to the supply of fuel available to New England's generation fleet, helping to reduce carbon emissions and the volatility of wholesale natural gas and electricity prices.

## Policymakers seek renewable and non-carbon-emitting resources

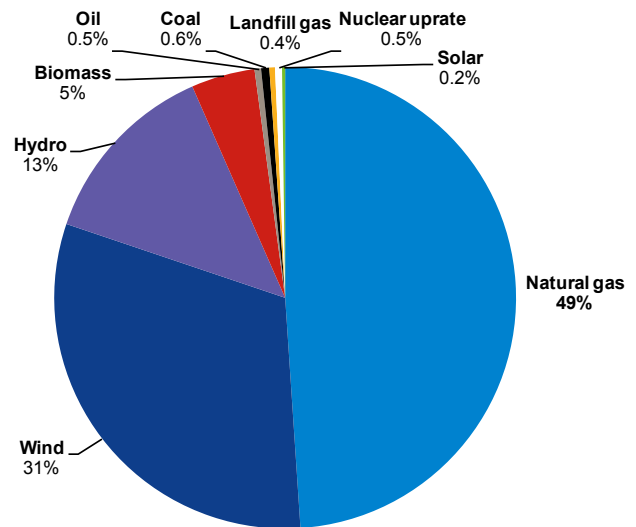
Renewable resources such as hydro, landfill gas and biomass contributed approximately 13% of New England's electric energy in 2009. That amount would need to reach 19% in 2020 to satisfy existing state policies promoting renewable energy. Using technical analysis from ISO New England, the New England Governors adopted a renewable-energy blueprint in 2009 that evaluated longer-term resource scenarios for the 2030 timeframe. The states found the region can meet its renewable energy goals by developing wind power in New England and expanding energy trade with Eastern Canada. The states also found the region can become an exporter of renewable energy by developing 12,000 megawatts (MW) of wind resources. The governors and the ISO are evaluating additional scenarios that could potentially increase investment in energy efficiency, replace the

## New Generation Proposed in New England

By Primary Fuel Type

As of summer 2010

Total = 9,200 MW



*Total existing system capacity is approximately 32,000 MW.*

region's older "carbon heavy" coal and oil generators with wind, solar, and biomass resources, and expand imports of hydro-electric power from Eastern Canada.

## Renewable resources are emerging

About 200 MW of wind facilities currently operate in New England, not including small behind-the-meter installations. Half of the proposed generating capacity in New England would produce electricity with renewable resources, primarily wind. More than 30 on- and off-shore wind projects totaling about 2,900 MW are proposing to connect to the region's electric grid over the next five years. Grid-scale solar projects are emerging as well as small-scale renewable resources that propose to connect behind the meter and do not show up in the ISO Generator Interconnection Queue. ■

## ISO's work supports the states' energy goals

ISO New England produces information and analysis to support the energy goals of policy-makers and regulators in the six-state region.

### *Planning for the future*

- Regional System Plan (RSP) highlights improvements needed in each state to ensure a reliable power system. RSP also identifies the level of resources that would be needed to meet state renewable portfolio standards
- 2009 study provided technical analysis in support of the New England Governors' Renewable Energy Blueprint
- 2010 study will provide baseline for the New England States to evaluate scenarios developed through the Eastern Interconnection Planning Collaborative
- Developing a framework for qualitative and quantitative analysis of major ISO market initiatives and alternatives to help states evaluate impacts
- Provide expert testimony in state siting proceedings to support transmission projects identified in the RSP
- Worked with states to create regional cost-sharing mechanism to support transmission needed for reliability
- Participate in regulatory proceedings upon request of state agencies
- Implemented the region's capacity market, including a first-in-the-nation approach to allow energy efficiency and demand response to compete with generation as capacity
- Facilitate participation of state energy efficiency programs in regional markets
- States provide input to the amount of capacity purchased in each Forward Capacity Auction

- ISO Generator Interconnection Queue updated monthly to show status of proposals in each New England state

### *Modeling environmental impacts*

- Coordinate with state and federal environmental regulators to incorporate emerging regulations into ISO planning
- Develop annual *Generation Air Emissions Report* to provide comprehensive analysis of air emissions data from New England generators for use by air regulators

### *Coordinating on federal policy*

- Dialogue with state regulators on regional responses to proposed federal policy (e.g., transmission planning and participation of demand resources in wholesale energy markets)

### *Expanding the smart grid*

- ISO's smart-grid project, which focuses on improvements to the backbone of the region's electric grid, will complement state initiatives to deploy smart-grid technologies and help integrate renewable resources

### *Reaching out to stakeholders*

- Senior management and board of directors meet regularly with states and other stakeholders to discuss priorities
- Facilitate the Consumer Liaison Group to establish greater dialogue and information sharing among the ISO, consumers, and consumer advocates
- Provide training opportunities for states and other stakeholders
- Provide real-time updates to state public utility commissions, emergency management agencies, and governors offices during power system emergencies ■

### **About ISO New England**

ISO New England is the *Independent System Operator* responsible for reliably operating New England's electric power system, overseeing and ensuring the fair administration of the region's wholesale electricity markets, and managing comprehensive regional electric system planning. The ISO is a not-for-profit corporation governed by an independent board of directors and regulated by the Federal Energy Regulatory Commission. The ISO does not own transmission or generation assets and has no financial interest in companies participating in the region's wholesale electricity markets.

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