

Energy Insights -- Fall 2015 Update Briefing on New England Energy Issues and Trends

Sufficient Winter Electricity Supplies Expected; Natural Gas Pipeline Constraints Continue to Pose Challenges

According to ISO New England, while electricity supplies should be sufficient to meet consumer demand for electricity this winter, constraints on the region's natural gas pipelines could pose a challenge to reliable operations during cold spells.

This is due to the fact that natural gas infrastructure in New England remains inadequate to meet the demand for gas for both heating and electricity generation. Currently, most natural gas pipeline capacity is committed for heating use. In fact, ISO has identified over 4,000 megawatts (MWs) of natural gas-fired generating capacity at risk of not getting sufficient fuel on any given day - or about 30% of the generating capacity that uses natural gas as a primary fuel.

To address this challenge, ISO will again employ a Winter Reliability Program to incentivize dual-fuel generators to use oil when natural gas supplies are tight and generators that can access liquefied natural gas (LNG) to procure sufficient supplies before winter begins.

Source: "Winter 2015/2016: Sufficient Power Supplies Expected to Be Available," ISO New England, December 1, 2015.

Regional Power System Plan Shows Continuing System Transformation

ISO New England recently released its 2015 *Regional System Plan (PSP15)* which highlights the region's retirement of oil, coal and nuclear power plants and increased reliance on natural gas generation, wind and solar resources -- providing both challenges and opportunities. Highlights of the plan which assesses the system for the next 10 years include:

- *Transmission Upgrades* - from 2002 through mid-2015, 634 transmission projects to address

Did You Know:

Texas is generating more wind power than needed, so many utility companies offer rate plans that charge higher rates during the day, but nothing between the hours of 9pm and 6am.

Texas is the largest generator of wind power in the U.S. with about 10% of its generation coming from wind. The state is unique in that it has its own electricity grid so any energy produced in the state has to be consumed there.

Encouraging consumers to use energy during off-peak hours results in lower wholesale electricity prices and avoids the need to build more power plants.

Source: "You Can Be Green and Make Green," Fortune.com, November 15, 2015.

reliability needs were brought into service, representing a \$7.2 billion investment. As of June 2015, another \$4.8 billion in transmission investment for reliability purposes is being planned.

- *Electricity Generation* - from 2010 to summer 2018, power plant retirements will total at least 4,050 MW. Older oil and coal-fired and nuclear generators are at risk of retirement because of economic and environmental pressures. These units are likely to be replaced by more natural gas-fired plants.
- *Renewables* - By the end of 2014, photovoltaic resources totaled about 908 MW. ISO predicts that over the next ten years, these resources will grow to 2,500 MW. Most New England wind projects have been built or have been proposed in remote areas of the region where wind conditions are good, but the electrical system is weak. The region currently has 850 MW of installed wind facilities, and another 4,000 MW have been proposed. ISO is conducting transmission system reliability assessments to identify the upgrades necessary to ensure continued power system reliability while integrating wind resources into these remote areas.
- *Electric Demand Growth* - With increasing levels of photovoltaic and energy efficiency resources, the ten-year forecast of electricity demand shows the region's summer electricity peak demand increasing at just 0.6% per year with no growth in total annual electricity consumption.

Source: "ISO New England Issues Annual Power System Plan for New England," November 5, 2015.

MA AG Study Finds Increased Natural Gas Capacity Not Needed to Meet State's Electric Reliability Needs; Contradicts Several Other Studies

Massachusetts Attorney General Maura Healey commissioned a study to determine: 1) whether the region will face electric reliability challenges through the year 2030; and 2) to identify the most cost-effective and clean solutions for addressing those challenges.

The study, conducted by the Analysis Group, found that through 2030, the region's power system reliability will be maintained during the coldest winter months.

While the study purportedly used extremely conservative assumptions, a worst case scenario was modelled causing the system to be more stressed than expected on very cold days. Under those conditions, the study determined that the region could need roughly 2,400 MW for a few hours across nine very cold days by 2029/2030, which is the equivalent to an additional 0.42 billion cubic feet per day of new natural gas capacity.

To solve this deficiency, the study evaluated several options and concluded that while all of the solutions would ensure the reliability of the electric system, investment in energy efficiency and demand response would provide the greatest customer savings and reduce greenhouse gas emissions.

The MA AG study runs counter to several other studies conducted over the past few years including one commissioned by outgoing Massachusetts Governor Deval Patrick that concluded the state would be hard pressed to meet its future energy needs without expanding natural gas pipeline capacity. That independent study, conducted by Synapse Energy Economics for the MA Department of Energy Resources, found that the state will be short about 600-800 million cubic feet of natural gas on a hypothetical cold winter day by 2020 and up to 900 million cubic feet short by 2030.

A more recent study conducted by La Capra Associates and the Economic Development Research Group in Boston for the New England Coalition for Affordable Energy found that in the absence of new energy infrastructure, including natural gas pipelines, transmission lines and more than 1,300 megawatts of wind energy, the region is looking at \$5.4 billion in higher energy costs, \$12.5 billion in lost personal income and the temporary or permanent loss of more than 165,000 jobs between 2016 and 2020.

Sources: "AG Study: Increased Gas Capacity Not Needed to Meet State's Electric Reliability Needs," Press Release, November 18, 2015;

"Massachusetts Needs More Natural Gas Pipeline Capacity to Meet Future Needs," Masslive.com, January 10, 2015;

"Study by New Coalition Shows Clear, Compelling and Immediate Economic Consequences from Failure to Build Energy Infrastructure in New England," press release, New England Coalition for Affordable Energy, August 27, 2015.

Massachusetts Continues to Rank First in Encouraging Energy Efficiency

For the fifth consecutive year, Massachusetts has earned the nation's top ranking in energy efficiency in encouraging energy efficiency in homes, businesses and transportation systems. Vermont, Rhode Island and Connecticut were also ranked among the top ten states.

According to the American Council for an Energy Efficient Economy (ACEEE), Massachusetts retains the top spot based on a strong commitment to energy efficiency under its Green Communities Act enacted in 2008 which laid the foundation for greater investment in energy efficiency programs.

Massachusetts Governor Charlie Baker recently stated, "Energy efficiency is the most cost effective, accessible way for Massachusetts to meet our clean energy goals and help ratepayers manage their energy costs. Being recognized for the fifth consecutive year by ACEEE as the nation's leader in energy efficiency underlies the commitment Massachusetts has made to pursue a diversified energy portfolio and my administration is seeking more, renewable energy sources like hydro power to continue this important effort."

Massachusetts, Rhode Island and Vermont led the nation in utility-sector energy efficiency programs and policies - the same three states that topped this category last year. According to ACEEE, with long records of success, all three states continue to raise the bar on cost-effective programs and policies.

As in past years, the ninth edition of the state scorecard ranks states on their policy and program efforts, not only assessing performance but also documenting best practices and recognizing leadership.

Source: The 2015 State Energy Efficiency Scorecard can be found at www.aceee.org

Northeastern States Share \$115 Million from Carbon Sale

The nine Northeastern and Mid-Atlantic states participating in the Regional Greenhouse Gas Initiative (RGGI), the nation's first market-based regulatory program to reduce greenhouse gas (GHG) emissions,

announced the results of their 30th auction of carbon dioxide (CO₂) which generated \$115 million.

RGGI limits how much carbon power plants can emit and requires them to buy allowances for the carbon they do emit. The funds are reinvested in strategic programs including energy efficiency, renewable energy and GHG abatement programs. Cumulative proceeds from all RGGI CO₂ allowance auctions exceed \$2.3 billion dollars. All six New England states participate in RGGI.

Source: "CO₂ Allowances Sold for \$7.50 in 30th RGGI Auction," December 4, 2015, RGGI, Inc.

Pilgrim Nuclear Power Plant Retirement -- Impact on Reliability Being Studied

In October, Entergy Nuclear Power Marketing submitted a formal request to retire its Pilgrim Nuclear Power Station by June 1, 2019. Pilgrim, a 680 MW electric generating plant is among the region's largest power plants and is one of three remaining nuclear stations in the region.

When a generating resource located within New England submits a retirement request, ISO New England conducts a study to see how the retirement will affect the overall reliability of the region's bulk power system. If ISO determines that power system reliability will be affected, it can ask the retiring resource to remain online. If the resource owners agree to do so, the generating resource would receive an out-of-market payment. ISO does not have the authority to prevent a resource from retiring.

Source: ISO New England's Response to Pilgrim Nuclear Power Plant Retirement Request," ISO New England, October 13, 2015.

About the New England Energy Alliance, Inc.

The New England Energy Alliance is a coalition of energy companies advocating to ensure the availability, reliability and affordability of future energy supplies which are vital to the region's economic growth and prosperity. Formed in 2005, the Alliance works to balance public debate about solutions to New England's energy infrastructure by providing information on the region's energy needs and the resources, technologies and policies needed to meet those needs.

Please visit www.newenglandenergyalliance.org for more information on the Alliance.

