

Energy Insights -- Winter Update

Briefing on New England Energy Issues and Trends

Massachusetts pivots to Maine project to meet renewable goals

Massachusetts utilities and regulators announced negotiations with Maine's New England Clean Energy Connect transmission project to deliver Canadian hydropower to the state, after Eversource's Northern Pass project failed to secure certification from a New Hampshire regulatory board.

The Maine project was named the runner-up of 46 proposals in the Massachusetts clean energy procurement, launched in response to the state's 2016 energy diversity legislation. Massachusetts called for 1,200 megawatts of renewables such as wind, solar, hydro to reduce the state's carbon emissions.

The New England Clean Energy Connect project proposed by Central Maine Power (CMP) (a subsidiary of Avangrid) jointly with Hydro-Quebec would import hydroelectricity from Quebec into New England via a transmission line through Maine rather than New Hampshire as proposed by the Northern Pass project.

The goal is to negotiate a contract with CMP by April 25 at which time it would go to Massachusetts regulators for approval. CMP expects to receive state approvals later this year and final federal permits in 2019.

Source: "Massachusetts hydro power will come through Maine, not White Mountains," State House News Service, March 28, 2018.

2017 wholesale electricity prices second lowest since 2003

According to ISO New England, the region's average wholesale electricity price in 2017 was the second lowest in 15 years. This follows 2016, which holds the record for the lowest price since New England's competitive wholesale market was established in 2003.

The average wholesale electricity price in New England in 2017 was \$33.95 per megawatt-hour (MWh). The lowest price was in 2016 at \$28.94 and the highest was \$80.56 per MWh in 2008.

The price of natural gas is typically the major driver of wholesale electricity prices because it is the main fuel used to generate electricity in the region. Low natural gas prices along with lower consumer demand for electricity

In This Issue:

MA pivots to ME project to meet renewable goals

2017 wholesale electricity prices second lowest since 2003

Maintaining winter electricity reliability will become more challenging

Emissions from electricity generation continue to decline

CT seeks to boost renewable goal to 40% by 2030

RI to issue RFP for 400MW of clean energy

Proposed wind power projects exceed proposed natural gas-fired generation

Wind to soon beat hydro as leading US renewable

Natural gas expected to remain most-consumed fuel in the U.S. industrial sector

Did you know:

U.S. natural gas fired electricity generation saw its biggest decline in 2017, with net generation dropping 7.7%. Coal generation

(decrease of 2.7%) and mild weather during most of 2017 all contributed to the low average wholesale price.

The exception to the lower prices was during the last week of December when extreme cold weather increased the price of natural gas, turning the region into the world's priciest market. This caused the price of wholesale electricity to spike to \$107.54 during early January. On January 5, in the midst of the cold spell, Marcellus shale natural gas was roughly 20 times more expensive in New England than at its source in Pennsylvania. As a result, oil-fired generation increased 35% in the region, while gas generation fell 18%

While wholesale electricity prices are impacted in real-time, retail electricity rates paid by consumers are set for longer intervals by state utility regulators and include other charges such as transmission, distribution and service benefit charges for renewables and energy efficiency and other costs. The time lag between wholesale prices and retail rates depend on each state's electricity procurement approaches.

Source: "New England's Wholesale Electricity Prices in 2017 were the Second Lowest Since 2003," media release, ISO New England, March 6, 2018.

Maintaining winter electricity reliability will become more challenging

In January, ISO New England issued its Operation Fuel Security Analysis which was conducted because the region's natural gas infrastructure capacity is not always adequate to deliver the quantity needed during winter for both heating and electricity generation.

The study examined twenty-three fuel-mix scenarios and concluded that electricity shortages due to inadequate fuel supplies would occur in nineteen of the scenarios by 2024/25, thereby requiring emergency actions such as voluntary energy conservation and involuntary load shedding. The scenarios that were studied included several variables such as:

- retirements of coal and oil-fired power plants
- availability of liquified natural gas (LNG)
- oil tank inventories at dual-fuel generators
- electricity imports from neighboring power systems
- addition of renewable resources

Because it is a challenge to build natural gas pipeline infrastructure in New England to supply more fuel, the study concluded that electricity system reliability will likely continue to be heavily dependent on LNG, electricity imports and more dual-fuel plant capability. More renewable resources will also help lessen the region's fuel security risk. But they are likely to drive coal and oil-fired generation retirements, requiring higher LNG imports to counteract the loss of stored fuels. Clearly, meeting the region's natural gas demand for the generation of electricity is challenging.

also declined - by 2.5% marking the first time in a decade that both resources faced declines in the U.S.

At the same time, electricity from utility-scale clean energy sources, excluding hydro, grew by 13.4%

Despite these shifts, natural gas remains the predominant fuel for electricity generation in the U.S.

Source: U.S. Energy Information Administration

ISO plans to discuss the results of the study with stakeholders, regulators and policymakers throughout 2018. ISO's concerns about fuel security go back to January 2004, when a prolonged cold spell challenged the reliable operation of the grid due to natural gas pipeline constraints. According to ISO, if fuel security is not addressed, the region "will face a setback to both future power system reliability and state efforts to transition to clean energy economy-wide as well as increased energy costs."

Source: "ISO New England Publishes Operational Fuel-Security Analysis," media release, ISO New England, January 17, 2018.

Emissions from electricity generation continue to decline

Due to a decrease in coal and oil-fired electricity generation in New England, regional emissions of sulfur dioxide (SO₂), nitrogen oxides (NO_x) and carbon dioxide (CO₂) declined between 2015 and 2016 - continuing a long-term trend that began in 2001.

Between 2001 and 2016, total emissions from electricity generation for SO₂ and NO_x declined by 98% and 73%, while CO₂ emissions decreased by 29%. Between 2015 and 2016, several factors contributed to decreased emissions including:

- coal generation decreased by 34% while oil generation decreased by 51%
- the region saw a 2% decline in the amount of electricity generated
- non-emitting nuclear generation increased by 2.7% over 2015, while solar and wind resources together increased 21%.

Source: Regional air emissions 2016: long-term reduction trends continue, ISO New England, January 31, 2018.

Connecticut seeks to boost renewables goal to 40% by 2030

The Connecticut Department of Energy and Environmental Protection (DEEP) has finalized the state's 2018 Comprehensive Energy Strategy (CES) and recommended doubling the Renewable Portfolio Standard (RPS) to 40% by 2030. State law currently sets the RPS at 20% and the draft CES released last year suggested a smaller increase to 30%

To help meet renewable goals, the state is seeking proposals for offshore wind, biogas and fuel cell plants - which must have capacities of at least 2 Megawatts (MW) and must be operational between 2019 and 2025. Proposals are due in April. Selected projects will be announced in June.

Source: "Connecticut wants to boost renewables goal to 40% by 2030", Utility Dive, February 9, 2018.

Rhode Island to issue RFP for 400 MW of clean energy

The Rhode Island Office of Energy Resources will collaborate with the state's utilities to design a request for proposal (RFP) to procure 400 megawatts (MW) of clean energy by the end of the summer.

The effort will help meet Governor Raimondo's goal to bring 1,000 MW of clean energy into the state's energy portfolio to make Rhode Island's electricity system 10 times cleaner. So far, the state has doubled the amount of renewable energy from 100 MW to 230MW. The details of the RFP will be released shortly.

Source: "Raimondo Touts Goal to Make Energy System 10 Times Cleaner," Press Release, February 5, 2018.

Proposed wind power projects exceed proposed natural gas-fired generation

For the first time, the amount of new wind power proposed for New England exceeds the amount of natural gas generation proposed. According to ISO New England, there are now 1,300 megawatts (MW) of wind generation operating in New England, up from 375 MW in 2011, due in large part to state and federal incentives.

In addition, a total of 8,600 MW of new wind power has been proposed, half of which would be offshore. The other half would be sited in remote areas of New England which would require a sizeable investment in transmission. As a result, several of the proposed projects may not be built.

Source: "Energy forecast: Wind rivaling gas," MetroWest Daily News, February 27, 2018.

Wind to soon beat hydro as leading US renewable resource

Historically, hydroelectric facilities have generated the largest share of the nation's renewable energy, but according to the Energy Information Administration, that could change this year as wind's growth catches up to hydro.

Nationally, hydro provided 7.4% of total utility-scale electricity generation last year but is slated to fall to 6.5% this year and 6.6% in 2019 due to lower forecasted precipitation. Wind, on the other hand, generated 6.3% of total utility-scale electricity generation last year, but is expected to increase to 6.9% by 2019 from new wind projects slated to come online.

Source: EIA: "Wind to beat hydro as leading US renewable resource in next 2 years," Utility Dive, January 25, 2018.

Natural gas expected to remain most-consumed fuel in the U.S. industrial sector

The Energy Information Administration expects a 40% increase in natural gas consumed in the U.S. industrial sector from 2017 to 2050. The industrial sector consumes more natural gas than any other sector, even surpassing the electric power sector in 2017.

Last year, about two-thirds of total industrial natural gas consumption was for heat or electricity generation

applications - either for industrial processes such as in furnaces, or for onsite electricity generation. Several industries including chemicals, food, glass, and metal-based durables used natural gas for 40% or more of their heat or power applications in 2017.

EIA expects that these industries will continue to use about the same proportion of natural gas for heat or electricity generation applications through 2050 because of the cost associated with fuel switching which typically involves changing manufacturing processes that require large capital investment in new equipment.

Source: "Natural gas expected to remain most-consumed fuel in the U.S. industrial sector," U.S. Energy information Administration, March 1, 2018.

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. Follow on twitter @NEEAlliance

New England Energy Alliance, Inc., 77 Franklin Street, Suite 507, Boston, MA 02110

[SafeUnsubscribe™ {recipient's email}](#)

[About our service provider](#)

Sent by vgeba@newenglandenergyalliance.org in collaboration with

Constant Contact 

Try it free today