

Energy Insights -- Spring Update

Briefing on New England Energy Issues and Trends

Adequate electricity supplies expected for summer

New England is expected to have sufficient resources to meet peak demand for electricity this summer under normal weather conditions, according to ISO New England, the operator of the region's bulk power system and wholesale electricity markets.

New England's demand for electricity is highest during the summer months because of air conditioning use. This summer's forecast peak demand of 25,323 MW is about 400 MW lower than last year's corresponding forecast. This continues a multi-year trend of declining summer forecast demand due to increased reductions associated with energy efficiency, load management, demand response, distributed generation and "behind the meter" solar photovoltaic installations.

More than 32,000 MW of capacity will be available to meet summer demand from a variety of supply resources despite the retirement of the 680 MW Pilgrim Nuclear Power Station which occurred on May 31st. New resources soon to come online include: three dual-fuel plants capable of using either natural gas or oil; five new grid-scale solar facilities; and new wind generation.

Last summer, demand for electricity peaked at 25,899 MW at the end of August - much lower than the all-time record for peak demand which was set in August 2006, when demand reached 28,130 MW after a prolonged heat wave.

Source: 'ISO New England Expects Sufficient Power Supplies This Summer, ISO New England Media Release, May 15, 2019.

MA, CT to procure additional off-shore wind capacity

Massachusetts electric utilities will be required to purchase an additional 1,600 MW of offshore wind capacity - in addition to the previously mandated amount of 1,600 MW - based on recommendations contained in a new report from the MA Department of Energy Resources (DOER).

Under a 2016 law, Massachusetts utilities were authorized to procure up to 1,600 MW of offshore wind capacity to help meet the state's goal to reduce climate emissions by 25% below 1990 levels by 2020 and 80% by 2050. The first contract for 800 MW was awarded to Vineyard Wind last year and another similar procurement is expected to be awarded by the end of this year.

In a report released last month, DOER found that an additional 1,600 MW of offshore wind capacity could save

In This Issue:

Adequate electricity supplies expected for summer

MA, CT to procure additional off-shore wind capacity

Pilgrim's closure could drive up emissions

ISO's forecast shows declining electricity demand over next decade

ME steps up clean energy policies

New England's wholesale electricity prices were up in 2018

EPA replaces Obama Administration's CPP

Commissioner LaFleur to leave FERC

Did you know:

Consumer electricity demand in New England was 11% less in 2018 than in 2005 -- after taking into account impacts from energy efficiency and solar photovoltaic installations - that drive down electricity use.

Nearly 3,000 MW of energy efficiency measures are available within the region to reduce electricity demand. MA, RI, CT and VT continue to rank among the top

Massachusetts consumers between \$670 million and \$1.27 billion over 20 years compared with buying the same amount of clean energy on the wholesale market.

At the same time, the report raised concerns about the state's growing reliance on long-term contracts for renewable energy which are necessary for projects to be financed and constructed due to their high capital costs. Long-term contracts run contrary to the region's competitive wholesale electricity market dynamic in which electricity generators compete on price. Long-term contracts shift economic risks to ratepayers since utilities are locked into contracts for 20 years.

Massachusetts' three utilities currently have 62 such long-term contracts with renewable energy suppliers (wind and other) for a total commitment of \$22 billion. With the additional offshore wind procurement cited above, 60% of the state's electricity load will be met through long-term contracts.

Connecticut is also joining Massachusetts in procuring offshore wind capacity. Governor Lamont recently signed legislation authorizing the Department of Energy and Environmental Protection (DEEP) to begin the RFP process to purchase up to 2,000 MW of offshore wind capacity estimated to power over 800,000 households.

Sources: "Mass. To Double Offshore Wind Procurements," Commonwealth Magazine, May 31, 2019.

"Connecticut Gov. Lamont Signs Legislation Authorizing the Development of Offshore Wind in Connecticut," media release, June 7, 2019; Offshore Wind Study, MA DOER with Support from Levitan & Associates, May 2019.

Pilgrim's closure could drive up emissions

While the retirement of the Pilgrim nuclear plant will not impact the reliability of the electric grid, the shutdown could result in a short-term increase in the region's CO₂ emissions. That's because Pilgrim, which generated carbon-free electricity, will be replaced primarily with new fossil fuel plants - at least initially.

The new fossil fuel plants will be dual-fuel - meaning they will rely primarily on natural gas to generate electricity, but will also be capable of burning oil. Last winter, natural gas pipeline constraints increased the price of natural gas to levels that led some dual-fuel plants in the region to shift to oil amid a two-week cold snap. Close to 2 million barrels of oil were burned, more than in the previous two years, according to ISO New England. This led to a rise in emissions.

When Vermont Yankee closed in 2014, New England's CO₂ emissions increased 2.5% immediately thereafter. Since then, the increase has been offset, as New England has added more renewables to the regional grid.

Even with closure of the Pilgrim and Vermont Yankee plants, nuclear power continues to contribute to the region's electricity generation mix. The Millstone plant in Connecticut and the Seabrook plant in New Hampshire supply about a quarter of the region's electricity. The region's nuclear generation has also helped maintain New

energy efficient states, according to the American Council for an Energy-Efficient Economy.

In addition, there are more than 150,000 solar installations in the region with a combined generating capability of nearly 2,900 MW.

Source: "2019 Regional Electricity Outlook," ISO New England, Inc.

England's long-term trend of declining power plant emissions. From 2001 to 2017, total emissions for SO₂ and NO_x declined by 98% and 74% respectively, while CO₂ emissions fell by 34% over that timeframe.

Source: "Pilgrim Closure Could Drive up Carbon Emissions," Christian Wade, Statehouse Reporter, May 22, 2019. "Entergy Corporation closes the Pilgrim Nuclear Power Station in Massachusetts," Energy Information Administration, June 13, 2019.

ISO's forecast shows declining electricity demand over next decade

ISO New England published its forecast of capacity, energy, loads and transmission (CELT) which is a primary source for system planning over the next decade. The report projects that electricity demand will decline slightly in New England over the 10-year period by 0.4% annually - after taking into consideration continued robust installation of energy efficiency measures and "behind the meter" solar photovoltaic installations throughout the region.

While electricity demand will trend downward over the next decade, over the longer-term, it may trend back upwards as state decarbonization efforts are expected to convert the transportation and heating sectors increasingly to electricity.

Source: "2019 Forecast of Capacity, Energy, Loads, and Transmission," ISO New England, May 2, 2019.

Maine steps up clean energy policies - increasing renewable portfolio standard to 80%

Maine's legislature recently passed four clean energy bills to: shift the role of the state's efficiency program to support electrification; direct regulators to approve a previously stalled offshore wind project; establish a climate council; and create programming for clean energy job training.

In addition, two more bills moving through the legislature would revise the state's renewable portfolio standard to 80% by 2030 and lift some of Maine's barriers to solar deployment.

Maine currently has an RPS of 40% split primarily between biomass and hydropower. The legislation would limit certain biomass generation and would aim to encourage broader solicitation of wind and solar resources.

Governor Mills also introduced a bill requiring a 45% reduction in greenhouse gas emissions below 1990 levels by 2030 and 80% by 2050.

Source: "Maine Steps Up Clean Energy Turnaround, Tees up 80% RPS, Pro-Solar Bills," Utility Dive, June 13, 2019.

New England's wholesale electricity prices were up in 2018

According to ISO New England, the region's preliminary average annual real-time price for wholesale power last year in New England was \$43.54 per MWh - a 28% increase over 2017.

Wholesale electricity prices rise and fall in real-time based

primarily on fuel prices, demand for electricity and transmission system conditions. According to the ISO, the higher prices in 2018 were largely due to spikes in natural gas prices during wintertime natural gas delivery constraints.

Retail rates paid by consumers are generally set for longer intervals by state utility regulators and include other charges in addition to the cost of wholesale power. The time lag between wholesale price changes and their effect on retail rates varies depending on each state's approach to procurement.

To date in 2019, the average retail price of electricity in New England is 18.11 cents per kWh - about 75% above the national average.

Sources: "New England's Wholesale Electricity Prices Up in 2018", ISO New England media release, March 12, 2019; Energy Information Administration (for retail price data).

EPA replaces Obama Administration's Clean Power Plan

The U.S. Environmental Protection Agency issued the final Affordable Clean Energy (ACE) rule which replaces the prior administration's Clean Power Plan, a set of policies introduced in 2015 which required states to meet targets for reducing greenhouse gas emissions from power plants and aimed to reduce electricity sector emissions 32% below 2005 by 2030.

The less stringent ACE rule would lower electricity sector carbon dioxide emissions by 11 million tons by 2030 (up to 1.5%). EPA noted that long-term industry trends are expected to still result in emissions reduction of 35% by 2030, largely independent of the rule.

Both the CPP and ACE are controversial and will most likely be settled by the courts. The CPP was challenged by a number of states, trade associations and others. Their argument was that the CPP exceeded EPA's authority under the Clean Air Act and violated state's rights to regulate electrical power which resulted in the Supreme Court issuance of a stay in 2016. President Trump's Executive Order 13873 ordered a review of the plan. With the announcement of the ACE, many environmental and other groups are gearing up to file challenges.

Source: "EPA Finalizes Affordable Clean Energy Rule, Ensuring Reliable, Diversified Energy Resources While Protecting Our Environment," US EPA media release, June 19, 2019.

Commissioner LaFleur to Leave FERC

FERC Commissioner Cheryl LaFleur will step down at the end of August after serving nine years. Since joining FERC in July 2010, LaFleur twice served as chairman, from November 2013 to April 2015, and again at the start of the Trump Administration from January 2017 to August 2017. She has been credited with keeping FERC running when FERC was left without a quorum. Her primary areas of focus have included reconciling competitive wholesale markets with state policies and grid reliability matters. No announcements on future plans have been made.

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