

# Mild Winter or Polar Vortex for New England?

## U.S. Power and Gas Weekly

**Morningstar Commodities Research**  
1 November 2018

Dan Grunwald  
Associate, Power and Gas  
+1 312 244-7135  
daniel.grunwald@morningstar.com

**Data Sources Used in This Publication**  
ISO New England  
NOAA  
Point Logic Energy

To discover more about the data sources used, [click here](#).

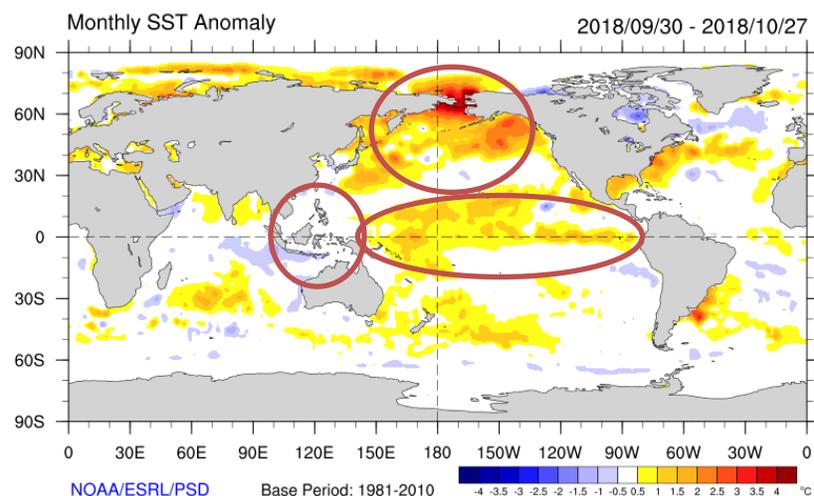
### Getting Ready

ISO New England's future must be viewed through two separate time horizons at the moment. Near term, the region is still in the midst of maintenance season, balancing multiple nuclear outages from refueling and gas pipeline maintenance in the runup to winter. In the longer term, debate about winter reliability and resilience continues. This note explores the ISO's short- and long-term preparations for this season and future winters.

### Winter Weather Trends

Consensus is growing for a weak to moderate El Niño this winter. When looking to the Pacific for hints that an El Niño pattern is in store, a more precise measure of where Pacific equatorial warmth is located is becoming equally important in determining whether the El Niño brings warm or cold winters to the East. A western Pacific warmth in Indonesia (versus easterly Pacific warmth) is the key determinant of a cold winter anomaly in the East. So far, Pacific surface temperature anomalies have been trending warmer in the East, indicating a more normal to warmer winter is in the cards in the East. However, warmth in the northern Pacific has also been seen, albeit to a lesser extent, which correlates with historical cold event anomalies in the eastern U.S. Both these observations help explain why weather models are currently moving back and forth trying to settle whether the East will be on the warmer side or see some cold this winter.

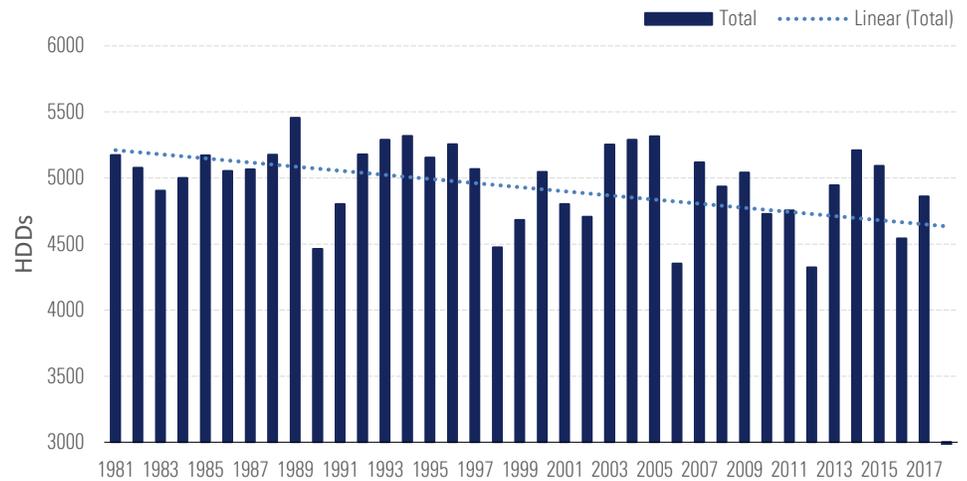
**Exhibit 1** Monthly Sea Surface Temperature Anomalies



Source: NOAA

The latest October NOAA forecasts show 4,974 heating-degree days for November through March, about 99 HDDs higher than last winter. While winters are trending warmer overall, as shown in Exhibit 2, the possibility of abnormal weather patterns such as a polar vortex or a bomb cyclone still loom if atmospheric abnormality develops in the Pacific this winter. However, even if events such as the 2013-14 polar vortex or the 2017-18 bomb cyclone happen this year, they won't compete with earlier historically cold winters because the forecast overall ambient warmth keeps total winter HDDs lower.

**Exhibit 2** New England Winter Heating-Degree Days Trend



Source: NOAA

### Gearing Up for Winter

October has so far experienced the height of maintenance season in New England. Generators are making the most of the shoulder between summer cooling and winter heating demand. Earlier this month, ISO NE reached over 10,000 megawatts of capacity outage, but that total has since started to come off as generators finish their maintenance and refueling. Included in these outages, all three nuclear plants went down in mid-October (Exhibit 3). Elevated wholesale power prices have become almost normal this year as a result of outages. Around-the-clock wholesale prices at Masshub so far this year have averaged \$42.50 per megawatt-hour in both day-ahead and real-time markets, which is a premium over the last couple of softer years, when they averaged closer to \$30/MWh.

**Exhibit 3** ISO New England Nuclear Generation MWh



Source: ISO New England

Beyond power outages, the Algonquin natural gas pipeline has endured limited capacity all summer due to maintenance and line updates (Exhibit 4). The early start to these disruptions at the beginning of April caused price spikes as winter demand lingered longer than normal. As line maintenance wrapped up this month, capacity should be back in time to meet greater winter season demand.

**Exhibit 4** Algonquin Pipeline Capacity and Pipeline Flow at Southeast Compressor



Source: Point Logic

Some cooler autumn weather has already brought additional natural gas demand, but with Algonquin pipeline capacity back in place, the Northeast should be able to source adequate supply. Additionally, the nuclear refueling and unit ramp-up, which is expected to finish this week, should yield subdued power prices in the ISO as the market awaits the first signs of winter demand. This demand lull may provide a fruitful opportunity to bring eastern gas storage levels back closer to average. While the eastern storage region has generally been able to reach over 900 billion cubic feet, it will likely fall short

of that mark this year, but at 825 bcf as of Oct. 19, supplies should still suffice, even for a demanding winter.

### **Mystical Problem**

Whether this winter ends up being extremely cold or nice and warm, the New England region is still expected to experience reliability concerns for years to come given its current capacity and infrastructure setup. A mismatch between natural gas demand and pipeline infrastructure development underlies this longer-term concern. Even though HDDs are trending lower in the region, winter still draws considerable heating demand for retail gas. And natural gas power demand over the last two decades has added a sizable requirement overlaying priority residential heating. The resulting growing reliance on gas is only exacerbated by the retirements of baseload coal and nuclear plants.

Because demand surpassed capacity last year, forcing generators to delve deep into oil reserves, the ISO petitioned the Federal Energy Regulatory Commission earlier this year to maintain Mystic Generators 8 and 9 for reliability concerns. This move is unprecedented for the ISO. Normally, such a request is due to local transmission reliability issues that can be promptly and specifically resolved. Yet the reliability argument in this case came from the cascade effect of the loss of non-pipeline fuel input capacity for power generation in the region. Since normal capacity payments and the winter reliability program that ended last year did not sufficiently bridge the gap to provide enough of an incentive to entice pipeline builds, the ISO is left with a limited arsenal of options. Therefore, they decided to widen the scope of their solution beyond the immediate power effects, to include the underlying cascade impact of infrastructure exits. In July, however, FERC rejected the initial proposal to maintain the Mystic plants and sent the ISO back to the drawing board.

ISO New England's response to FERC's initial rejection is to allow generators retained for fuel security to enter in \$0 bids and be price takers in upcoming capacity auctions to ensure they clear. This proposal has seen a robust discussion with responses coming from Nepoch, Vistra, and the ISO itself in filings to FERC. Generators are decrying the zero-dollar bid, as they feel it suppresses the auction clearing price by allowing megawatts to clear without a valid bid. Instead, generators proposed a price floor that the ISO looked at as a possibility but ultimately rejected. The back and forth has largely focused on whether or not the criteria used to prove the need is too conservative. While generators might like to see price spikes and higher clearing prices in the capacity auction, the mandate of the ISO to maintain reliability needs to be realistic in assessing its potential shortfalls. The current solution is neither elegant nor sophisticated but is likely to get the job done.

### **New England Marches On**

ISO New England's winter capacity tightrope walk hasn't gotten any easier, and out of necessity it continues to gamble every year without much of a safety net. The current stopgap is not the best solution, but it will get the job done. As the longer conversation continues inside and outside the region, they appear to have built enough natural gas storage inventory to get through this year's forecast mild winter even with a week or two of extreme cold weather. ■■■

### **About Morningstar® Commodities Research**

Morningstar Commodities Research provides independent, fundamental research differentiated by a consistent focus on the competitive dynamics in worldwide commodities markets. This joint effort between Morningstar's Research and Commodities & Energy groups leverages the expertise of Morningstar's 23 energy, utilities, basic materials, and commodities analysts as well as Morningstar's extensive data platform. Morningstar Commodities Research initially will focus on North American power and natural gas markets with plans to expand coverage of other markets worldwide.

Morningstar, Inc. is a leading provider of independent investment research in North America, Europe, Australia, and Asia. The company offers an extensive line of products and services for individuals, financial advisors, and institutions. Morningstar's Commodities & Energy group provides superior quality market data and analytical products for energy data management systems, financial and agricultural data management, historical analysis, trading, risk management, and forecasting.

For More Information

+1 800 546-9646 North America  
+44 20 3194 1455 Europe  
[commoditydata-sales@morningstar.com](mailto:commoditydata-sales@morningstar.com)



22 West Washington Street  
Chicago, IL 60602 USA

© Morningstar 2018. All Rights Reserved. The information, data, analyses and opinions presented herein do not constitute investment advice; are provided solely for informational purposes and therefore are not an offer to buy or sell a security; and are not warranted to be correct, complete or accurate. The opinions expressed are as of the date written and are subject to change without notice. Except as otherwise required by law, Morningstar shall not be responsible for any trading decisions, damages or other losses resulting from, or related to, the information, data, analyses or opinions or their use. The information contained herein is the proprietary property of Morningstar and may not be reproduced, in whole or in part, or used in any manner, without the prior written consent of Morningstar. To order reprints, call +1 312-696-6100. To license the research, call +1 312-696-6869.