

PJM Forecasts Getting Colder

U.S. Power and Gas Weekly

Morningstar Commodities Research
Dec. 5, 2019

Matthew Hong
Director of Research, Power and Gas
+1 312 244-7649
matthew.hong@morningstar.com

Data Sources Used in This Publication
National Oceanic and Atmospheric Administration
PointLogic Energy

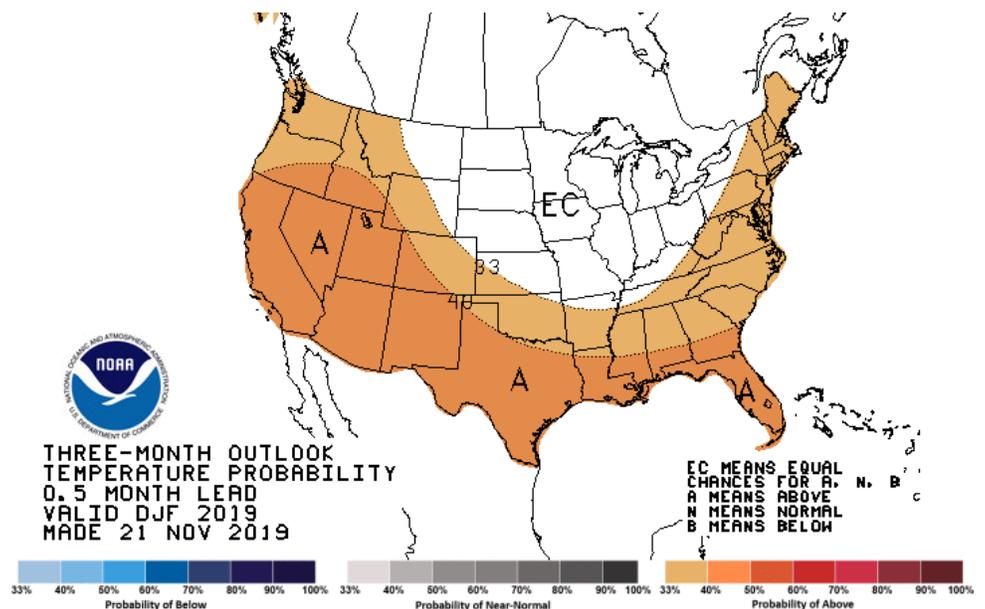
Winter Is Finally Here

In what seemed like perfect mistiming, the busiest travel day for Americans was met this year with hazardous weather systems that affected large swaths of the country. PJM saw its first test of the 2019-20 season as a mix of snow and rain hit large parts of the Northeast this week. While immediate temperatures have started to moderate, winter weather will come back. This piece takes a snapshot of PJM winter conditions.

Long-Term Forecast

The three-month National Oceanic Atmospheric Administration national outlook published Nov. 21 indicates the probability of warmer temperatures this winter is higher than the alternative (Exhibit 1). While PJM's footprint straddles the normal and above-normal forecast range, the fact that nowhere in the Lower 48 has a significantly below-average forecast speaks thematically to expectations for a milder winter. While short-term (6- to 10-day) forecasts show more normal conditions creeping into the northernmost parts of the country, all signs point to what would generally be considered a normal winter season.

Exhibit 1 NOAA Three-Month Outlook



Source: NOAA.

Colder-Trending Degree Days

In contrast to the milder national forecast, the number of heating degree days expected by NOAA in the PJM region has been trending higher (colder) over the past few months (Exhibit 2). The two regions with the greatest increase in degree days since the October run were the Mid-Atlantic and New England. In both regions, more than 20 heating degree days were added between forecast runs for December and January. While the longer-term heating degree day forecast has added days, three of the four regions that make up PJM still show normal to slightly below-normal heating degree day forecasts compared with their 30-year normal. The one region that shows colder-than-historical levels through March is East North Central, which encompasses much of the Midwest, where NOAA's forecast shows 12, 14, and 12 more heating degree days than the norm for January, February, and March, respectively.

Exhibit 2 Heating Degree Day Forecast Change by Region, Oct. 19-Nov. 19

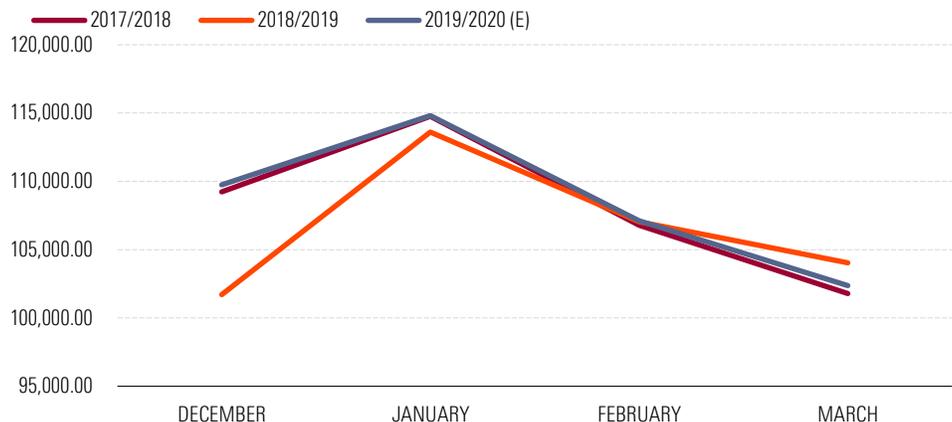
	East North Central	Mid-Atlantic	New England	South Atlantic
December	4	24	31	9
January	16	20	23	10
February	15	9	9	8
March	13	5	3	9

Source: NOAA.

Long-Term PJM Winter Outlook

When the current heating degree day forecast is put into Morningstar Commodities and Energy Research's long-term PJM load model, we see higher loads compared with last year. Exhibit 3 shows Morningstar's daily average peak load forecast by month. According to the model, current conditions indicate very similar load levels to the 2017-18 winter season.

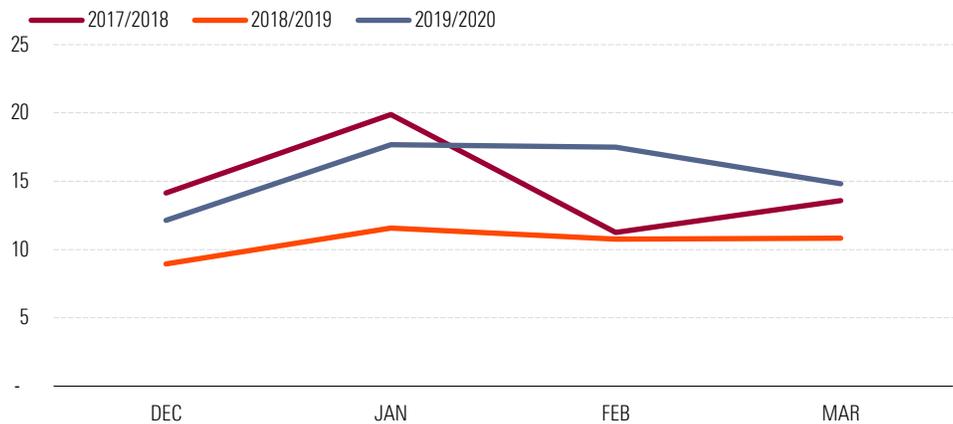
Exhibit 3 Average Daily Peak Load Forecast by Month (MW)



Source: Morningstar, PJM.

While PJM load appears to be lining up with the 2017-18 winter season, heat rates also look similar to those of two years ago (Exhibit 4). The 2017-18 season saw day-ahead peak prices at PJM's West Hub hit \$76.95/megawatt-hour in January, while the current January futures for the same contract are trading in the low to mid-\$40s. However, the price of natural gas in January 2018 was more than \$1.00/mmBtu higher than today. The four-month heat rate average today is 16 compared with 15 two years ago. Looking at heat rates for the other winter months, February appears to be slightly overvalued and may provide the best near-term trading opportunity if natural gas prices stay steady and load ends up mirroring the 2017-18 season.

Exhibit 4 Historical Winter Heat Rates (MWh/mmBtu)



Source: Morningstar, PJM, EIA.

Conclusion

While near-term winter forecasts for PJM have moved colder, large parts of their footprint should still experience a more normal winter according to long-term forecasts. However, some regional differences exist, with large parts of the Midwest expected to see a normal to colder winter, which should affect the far western parts of PJM. This additional heating demand appears to be priced into the forward curve, with some exceptions. Heat rates generally resemble the forward curve of two years ago except for February. Slight changes to natural gas prices or a colder forecast could push prices higher in short order. So, although the current picture doesn't show anything out of the ordinary, Northeast winters can and often do provide surprises.

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



22 West Washington Street
Chicago, IL 60602 USA

©2019 Morningstar. All Rights Reserved. Unless otherwise provided in a separate agreement, you may use this report only in the country in which its original distributor is based. 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. References to "Morningstar Credit Ratings" refer to ratings issued by Morningstar Credit Ratings, LLC, a credit rating agency registered with the Securities and Exchange Commission as a nationally recognized statistical rating organization ("NRSRO"). Under its NRSRO registration, Morningstar Credit Ratings issues credit ratings on financial institutions (e.g., banks), corporate issuers, and asset-backed securities. While Morningstar Credit Ratings issues credit ratings on insurance companies, those ratings are not issued under its NRSRO registration. All Morningstar credit ratings and related analysis are solely statements of opinion and not statements of fact or recommendations to purchase, hold, or sell any securities or make any other investment decisions. Morningstar credit ratings and related analysis should not be considered without an understanding and review of our methodologies, disclaimers, disclosures, and other important information found at <https://ratingagency.morningstar.com>. 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 license the research, call +1 312 696-6869.