

# Higher Prices in PJM?

## U.S. Power and Gas Weekly.

**Morningstar Commodities Research**  
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**Data Sources Used in This Publication**  
National Oceanic and Atmospheric  
Administration

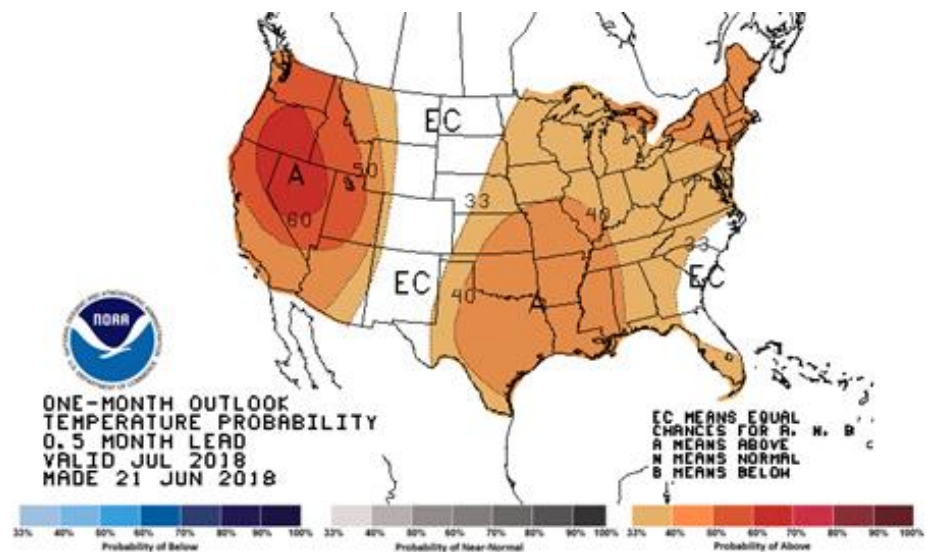
### In Light of Regulatory Challenges

While the market and politicians debate the long-term impacts of changes to the grid, the country has now officially moved into summer. Although the shoulder season showed significant weather volatility, NOAA has been adding cooling degree days to its forecast. Considering our expectation that natural gas prices will remain sub-\$3.10 through most of the summer, the question is whether power prices at PJM West-Hub are accurately priced.

### Weather Forecast

NOAA updated its long-term forecasts on June 21, and these runs show a warmer-than-normal summer season. NOAA's one-month forecast, valid for July 2018, shows higher probabilities for warmer temperatures in most of PJM (Exhibit 1). The warmer forecast also applies to the longer term three-month outlook. This view is consistent with other weather forecasts and is likely driving slightly higher July West-Hub On-Peak Day-Ahead prices.

**Exhibit 1** One-Month Outlook



Source: NOAA

Turning to the regional breakdown of cooling degree days, NOAA raised its forecast for the four census regions included in Morningstar's model (Exhibit 2). The largest increase in cooling degree days from the May 2018 run are expected in the Mid-Atlantic and New England regions, with July and August forecasts moving up by 4 CDDs in both regions for both months. In New England, the July and August

CDD forecast are higher than historical norms by 29 and 28 CDDs, respectively. For the Mid-Atlantic the July and August CDD forecast exceed historical norms by 22 and 25, respectively.

**Exhibit 2** Degree Day Forecast

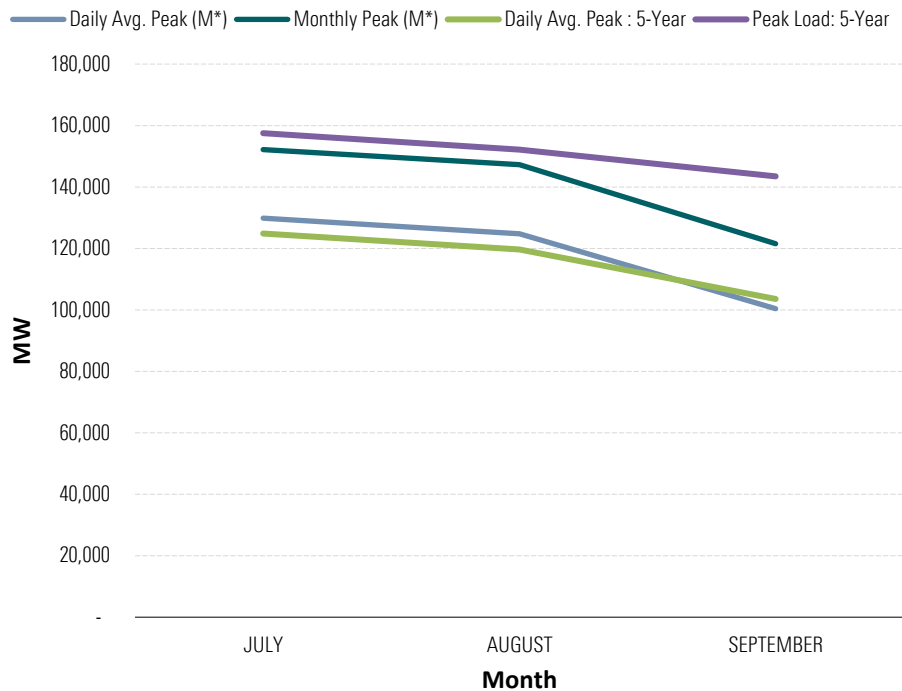
	May 2018 Forecast				June 2018 Forecast			
	ENC Cooling Degree Days	MA Cooling Degree Days	NE Cooling Degree Days	SA Cooling Degree Days	ENC Cooling Degree Days	MA Cooling Degree Days	NE Cooling Degree Days	SA Cooling Degree Days
July	246	255	205	442	247	259	209	444
August	209	219	172	418	212	223	175	419
September	66	62	29	269	67	62	29	269

Source: NOAA/Morningstar

**Summer Load**

When these updated degree day forecasts are factored into our model, PJM peak loads increase for the next three months. The monthly peak load is expected to be 152,000 MW, 147,000 MW, and 122,000 MW for July, August, and September respectively (Exhibit 3). Daily average peak load was also moved up with the recently published June numbers to 130,000 MW, 125,000 MW, and 100,000 MW for the same three months. Over the past five years, two saw a monthly peak load above 150,000 MW. Those two years were 2013 (158,000 MW) and 2016 (151,000 MW), where West-Hub Day-Ahead on-peak prices settled at \$63.88/MW and \$43.23/MW respectively.

**Exhibit 3** Morningstar 2018 PJM Load Forecast



Source: Morningstar

Considering the growth in PJM's combined cycle generation fleet, natural gas prices are a big driver for power prices. Looking at power prices at West Hub, expressed as a heat rate, we see current summer

values range between 5.1 Btu/MWh and 5.8 Btu/MWh, using Henry Hub gas prices (Exhibit 4). Substituting basis prices at TETCO-M3 brings, heat rates for the current summer up to between 14.9 Btu/MWh and 16.9 Btu/MWh, primarily due to Appalachian gas discounts, which also mean most of the combined cycle natural gas fleet clears the market at current summer power prices.

**Exhibit 4** Historic West-Hub Day-Ahead Heat Rates

		2013	2014	2015	2016	2017	2018E
Tetco - M3	July	17.0	13.9	31.0	29.2	23.6	16.9
	August	12.4	16.6	28.2	28.9	18.1	15.3
	September	13.2	19.7	29.6	55.0	41.2	14.9
Henry Hub	July	4.6	3.2	11.2	10.4	8.5	5.8
	August	3.6	4.4	9.8	9.7	6.1	5.2
	September	3.7	5.0	11.2	19.0	15.9	5.1

Source: EOXLive, PJM, Morningstar

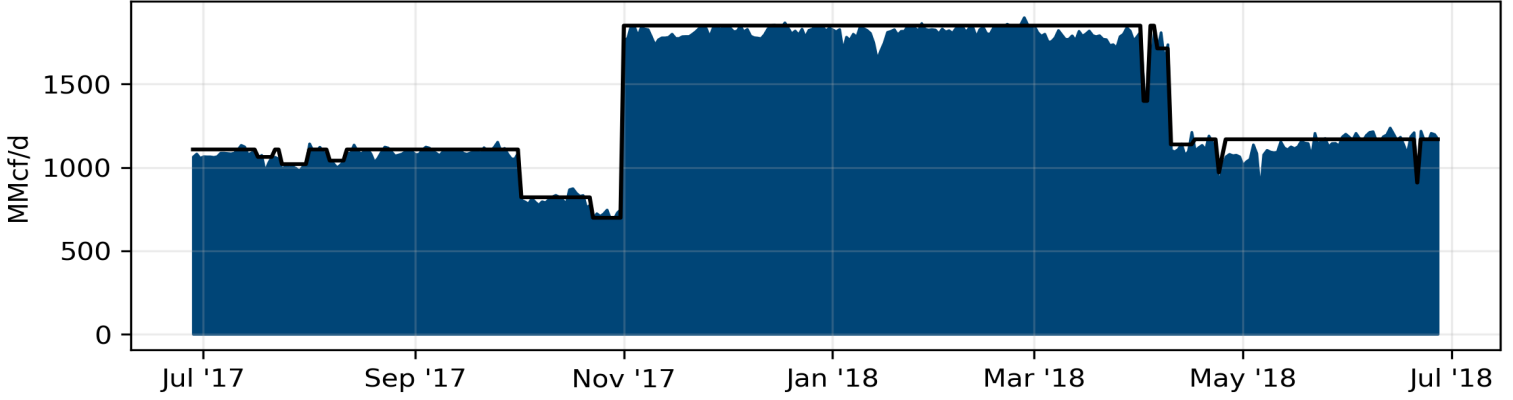
Using 2013 and 2016 as the benchmark, current natural gas prices at Henry Hub are more aligned with prices seen in 2016, and about \$1 below levels seen in 2013. However, basis spreads at Tetco-M3 in 2016 were significantly lower than in 2013 and are much lower than today. Basis markets for the next three months are trading roughly \$0.50 below Henry Hub, compared to the \$1.00-\$2.00 discounts seen in 2016. Relief of pipeline constraints, which were common in the Marcellus and Utica basins, from Rover and other projects have helped stabilize prices at Tetco-M3. The smaller discounts today are occurring at a time when dry production levels are roughly 6 bcf/d higher than in June 2016, providing another signal of a market trending toward balance.

### **Balance of Summer**

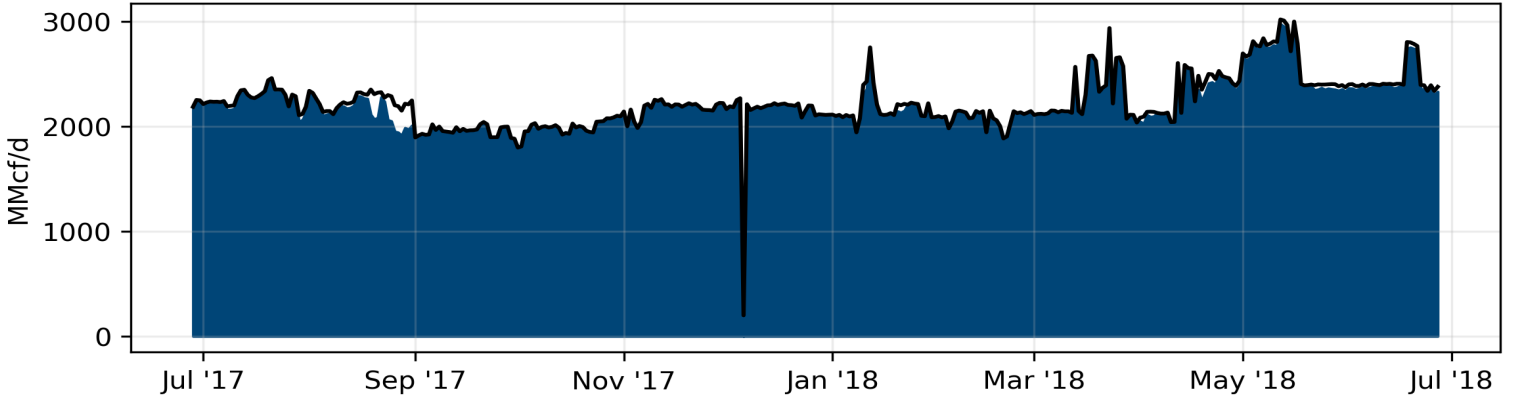
Morningstar's view for PJM West-Hub On peak prices is slightly bullish for the summer primarily because of higher than usual electricity demand, and higher natural gas prices at Tetco-M3 relative to 2016. In the circumstances, current power prices seem undervalued, compared with historical levels. July may add \$1/MWh–\$2/MWh, with August and September rising \$2/MWh–\$3/MWh above today's levels. Although hitting July 2013 levels is unlikely, it seems realistic to expect prices more in line with 2016. ■■

# Natural Gas Important Points

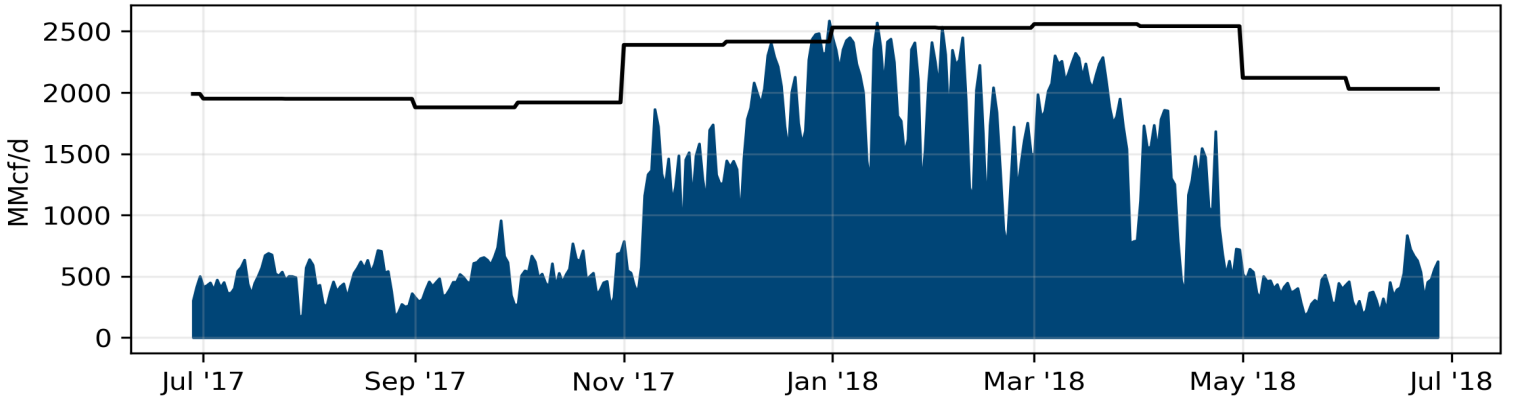
Algonquin: Stony point Compressor



Transcontinental: Leidy Line Station 505



Texas Eastern: Lambertville Compressor

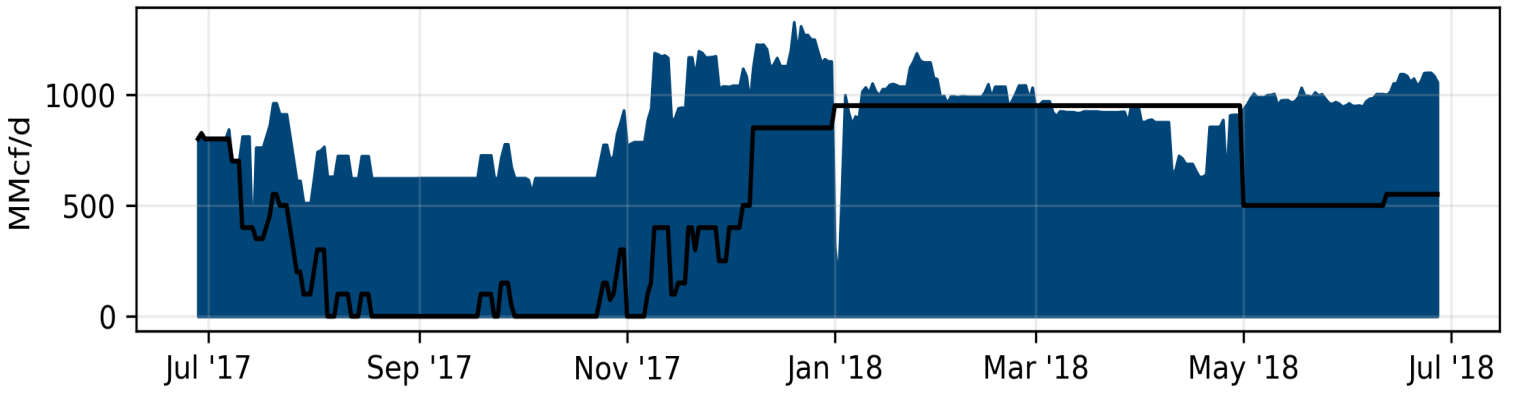


Millennium: Wagner West Compressor

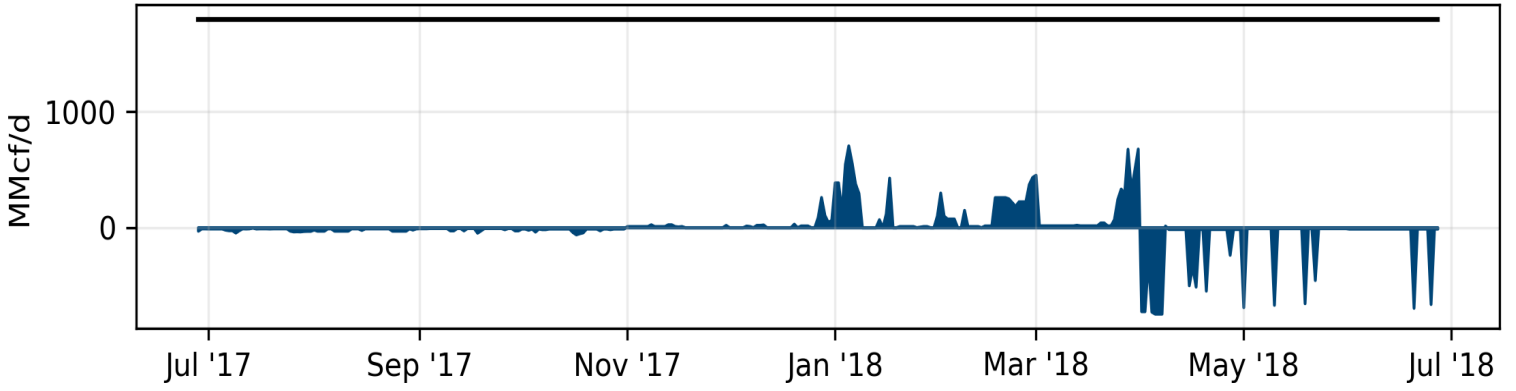


■ Volume    — Capacity

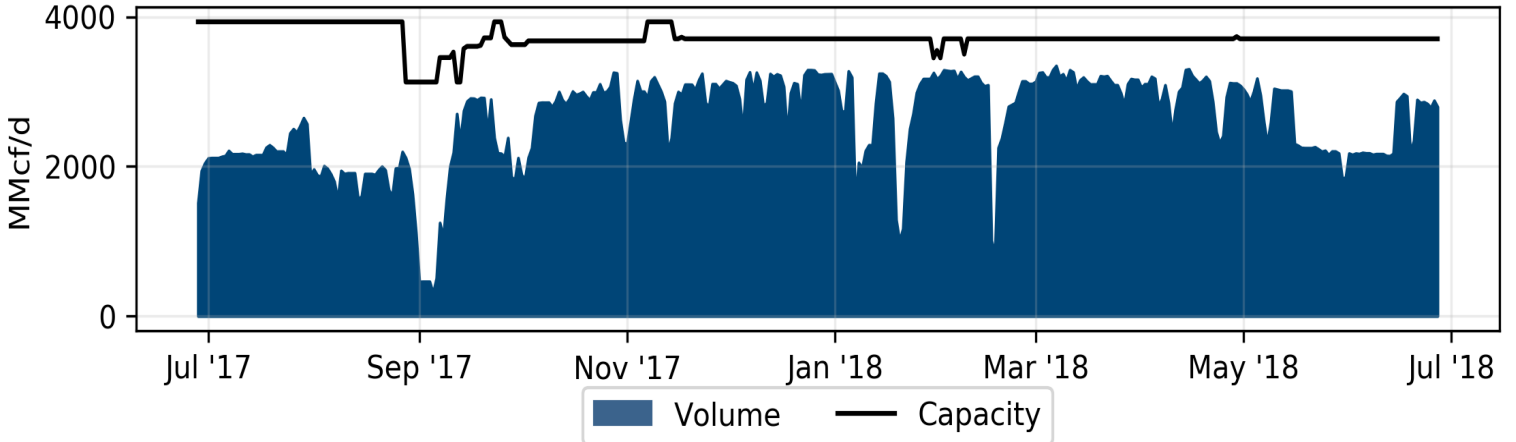
Columbia Gas Trans: Braxton-Stonewall



LNG: Cove Point



LNG: Sabine



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