

PJM, a New Coal/Gas Switching Regime?

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Data Sources Used in This Publication
PJM
CME
ICE

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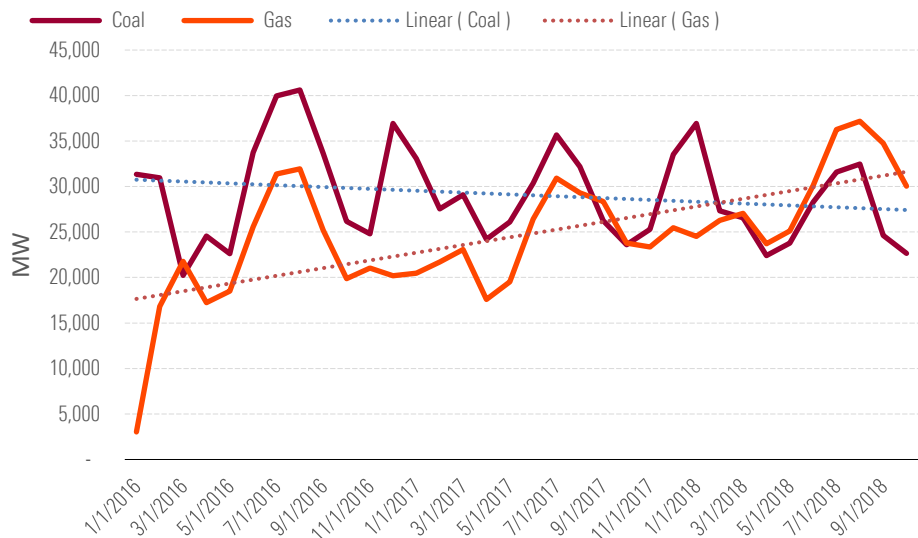
A Trend Continues

Over the last year, there has been considerable discussion over PJM's remaining coal base. The White House rhetoric has been pushing coal initiatives but only one Department of Energy action has been taken to save remaining U.S. coal plants. Meanwhile, retirements and even bankruptcies continue in the coal sector. For the last several years, the coal/gas power generation ratio has trended towards the reversal of coal's leadership, but it has found a way to stay on top in PJM. This note highlights a new trend in PJM's natural gas and coal generation ratio developing this year.

Gas Over Coal

Over the last few years, there has been anticipation for the moment gas would eventually overtake coal in PJM as the capacity markets have indicated. Considerable combined cycle natural gas plants have come online while older coal plants are retiring. Yet, normally as winter approaches, coal generation picks up to match or beat natural gas generation as the heating degree days, or HDD, start to climb (Exhibit 1). So far this year, coal has not stepped up as usual and natural gas has delivered the incremental megawatt. This reflects greater pipeline takeaway from the Marcellus region (see [Atlantic Sunrise Coming On Line](#)) supplying cheaper gas to the PJM market.

Exhibit 1 PJM Coal and Natural Gas Generation



Source: PJM, Morningstar

Supply Stack Shift

2018 has seen a major shift in PJM coal and natural gas generation capacity. Coal dropped from just over 60 GW in 2016 to just over 59 GW last year and is set to drop to 56 GW this year. Natural gas was just shy of 73 GW in 2016 increasing to a little under 75 GW last year but is set to exceed 87 GW by the end of 2018. Yet capacity alone is not the story here as PJM load currently falls well short of available generation supply. As winter drives greater heating demand and we shift further up the supply stack, more coal units typically come into play. Instead gas is still clearing as the marginal megawatt this fall.

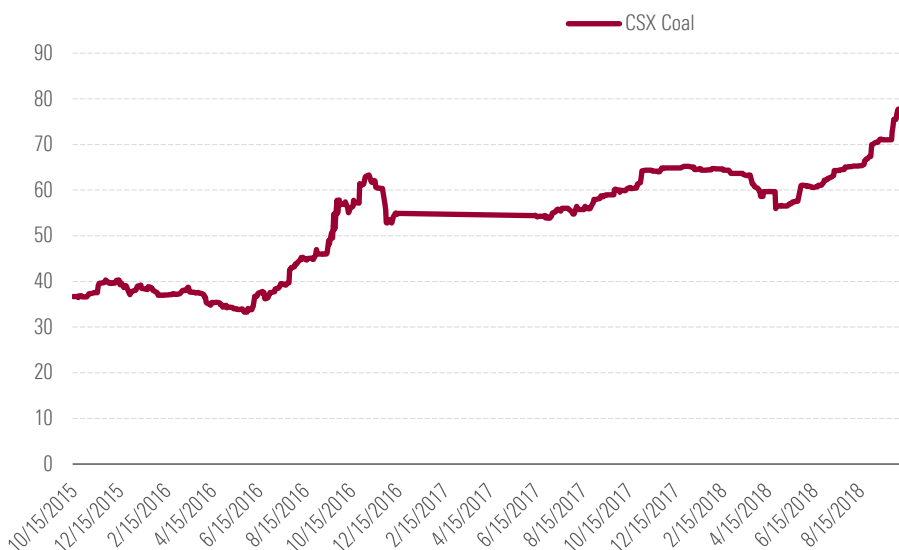
Increasing and Decreasing Supply

Surging natural gas supply is no secret, and until the recent rally, it has kept the lid on prices this year. This has made natural gas the marginal generation fuel meeting increased demand. The supply of coal to generating plants, on the other hand, is trending down as plants exit the stack. Coal production for the first two-quarters year-on-year was down 15,800 short tons. Westmoreland's recent bankruptcy announcement on the heels of American Electric Power's decision to shut down its 1,590 MW Conesville coal generation plant is another sign of coal's retreat.

Coal Price Premium

As Morningstar noted in September (see [Trump Declares That the War on Coal Is Over](#)) the Central Appalachian coal price (CSX 1%) is up over \$10 year-on-year. This is primarily due to added exports to Asia rather than domestic demand. The price premium in coal markets simply pushes remaining coal plants higher in the stack and adds to gas demand.

Exhibit 2 Central Appalachia CSX Spot Month Price

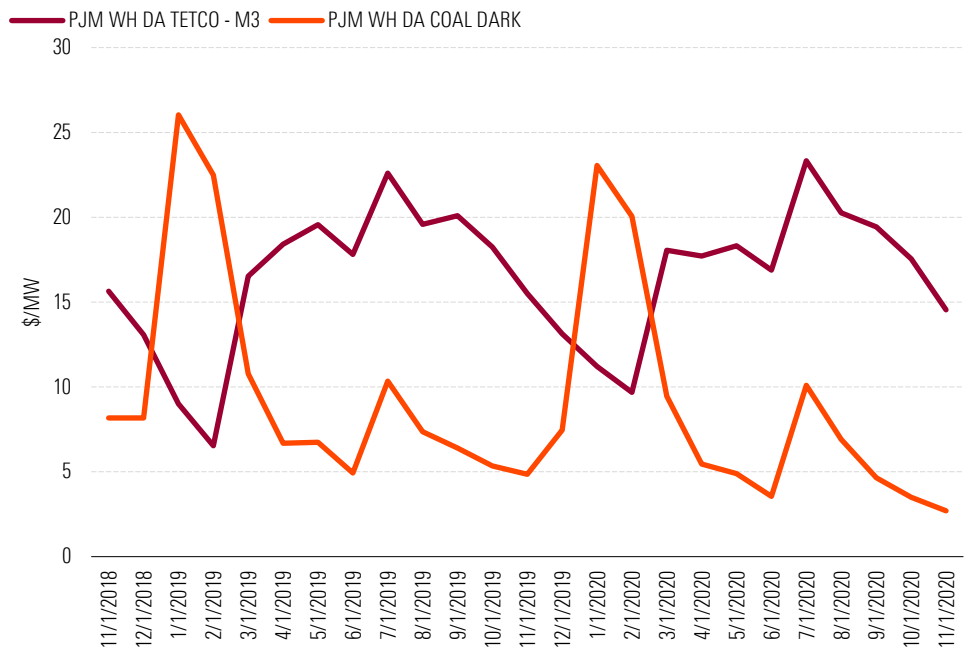


Source: CME, Morningstar

Relative Value

Current forward curves further indicate the relative dark and spark spreads favoring natural gas over the next two years (Exhibit 3). While coal still comes into play during the winter when natural gas prices jump seasonally, the overall trend shows widening spark spreads relative to PJM dark spreads.

Exhibit 3 PJM West Hub Spark and Dark Spread Relative Value



Source: CME, ICE, PJM, Morningstar

A New Normal?

The coming winter will provide an interesting test for forward coal and gas prices in terms of the PJM generation ratio. In case of a mild domestic winter, natural gas supply will be healthy, causing lower prices. At the same time, a mild winter overseas will discourage coal exports and put downward pressure on prices to undermine the trend to higher gas generation at home. Our view is that while coal may recover in the short term as the relative spark and dark spreads experience some convergence over the next year, this will only represent the trend levelling off rather than reversing. In the long haul, natural gas has taken the crown and is now officially king in PJM. ■■

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