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# PJM, the Times Are Changing

## U.S. Power and Gas Weekly

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### Morningstar Commodities Research

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### Data Sources Used in This Publication

PJM  
EIA  
FERC

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

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### FERC Extends MOPR

On Dec. 19, 2019, after a long-awaited delay, the Federal Energy Regulatory Commission extended the Minimum Offer Price Rule order concerning capacity auctions in PJM. The independent system operator now has until March 18, 2020, to present its expansion filing, which already has a lot of legal pushback and appeals in place, to counteract or amend the order. Yet, if the order stands, the next two base residual capacity auctions will see a significant number of resources priced out. As this debate unfolds, older and inefficient coal resources have seen a significant drop in usage so far in 2020 as a result of low gas prices. This note looks at the impact this decision has on PJM.

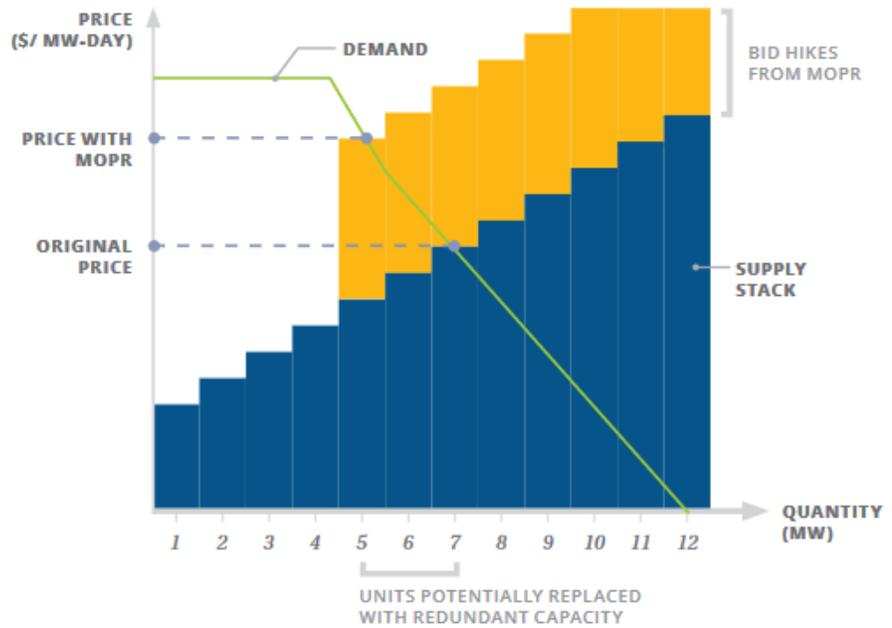
### MOPR Refresher

The current MOPR creates a price floor set by PJM that was initially introduced for natural gas units that receive out-of-market support, but under this extension, it applies to all units and provides a broad definition of what constitutes an out-of-market subsidy. The current MOPR is set at a percentage of the net cost of new entry, or net CONE. Most units that have already cleared are not subject to MOPR and are evaluated at the net avoidable cost rate, or net ACR. Many units have grandfathered exceptions as well, so new entrants have a sizable disadvantage in overcoming MOPR versus already cleared units. Given the sizable expansion of natural gas plants, its purpose was to reduce generation offers from artificially reducing capacity market prices and pushing generators without state backing out of the market.

Nuclear, coal, wind, solar, and other non-gas generation resources have until now been able to act as price takers offering in at \$0. The expanded MOPR rule subjects each generation type to its net CONE price floors if receiving support just as natural gas is now. The net effect will be to exclude some resources from obtaining a capacity payment by forced offering of a higher-than-cleared price as seen in Exhibit 1. The result should be additional procurement of resources in the PJM region, as units on the margin will clear the market and stay in, even as resources that may not clear end up participating in the energy market.

**Exhibit 1** Supply and Demand Curve With MOPR Applied

*Market Price Increase Due to MOPR*



Source: PJM, Morningstar

**Excluded Resources**

PJM's independent market monitor, Monitoring Analytics, studied the potential effects of a substantial amount of resources being subject to MOPR, centering around a scenario of 24,000 megawatts of capacity excluded. The most recent PJM capacity auction cleared around 163,000 MW, which constitutes 14.7% of all resources cleared. In this scenario, the exclusions will mainly be nuclear, solar, and wind but could see some coal resources on the wrong side of the clearing price compared with the proposed MOPR floor (see Exhibit 2). Estimates of additional exclusion costs have ranged from FERC commissioner Richard Glick's \$2.8 billion per year up to \$6.8 billion per year with 24,000 MW of capacity excluded.

**Exhibit 2** Proposed MOPR Price Floors

Resource Type	Default MOPR (new resources) (\$/megawatt-day)
Nuclear	\$1,451
Coal	\$1,023
Combined Cycle	\$438
Combustion Turbine	\$355
Hydro	\$1,066
Solar Photovoltaic	\$387
Onshore Wind	\$2,489
Offshore Wind	\$4,327

Source: PJM, Morningstar

**Potential Generation Impacts**

PJM renewable growth has lagged other regions, due in part to better solar and wind potential in the South and Midwest as well as the availability of more-lucrative subsidies and protections in states like California. Also, geographic proximity to the Marcellus basin has made natural gas a cheap alternative to renewables, somewhat capping their build-out. The region looks to be on the verge of considerable solar, wind, and potentially offshore wind development in the next couple of capacity auction cycles. The FERC MOPR order may prevent some projects with viability on the margin from advancing, but since renewables already need to offer in multiples of nameplate capacity, their capacity revenue is generally a small portion of the project. So, with state carve-outs, renewable portfolio standards, renewable energy certificates, and ever lower newbuild costs, the renewable build-out may not be slowed down much by the FERC MOPR order.

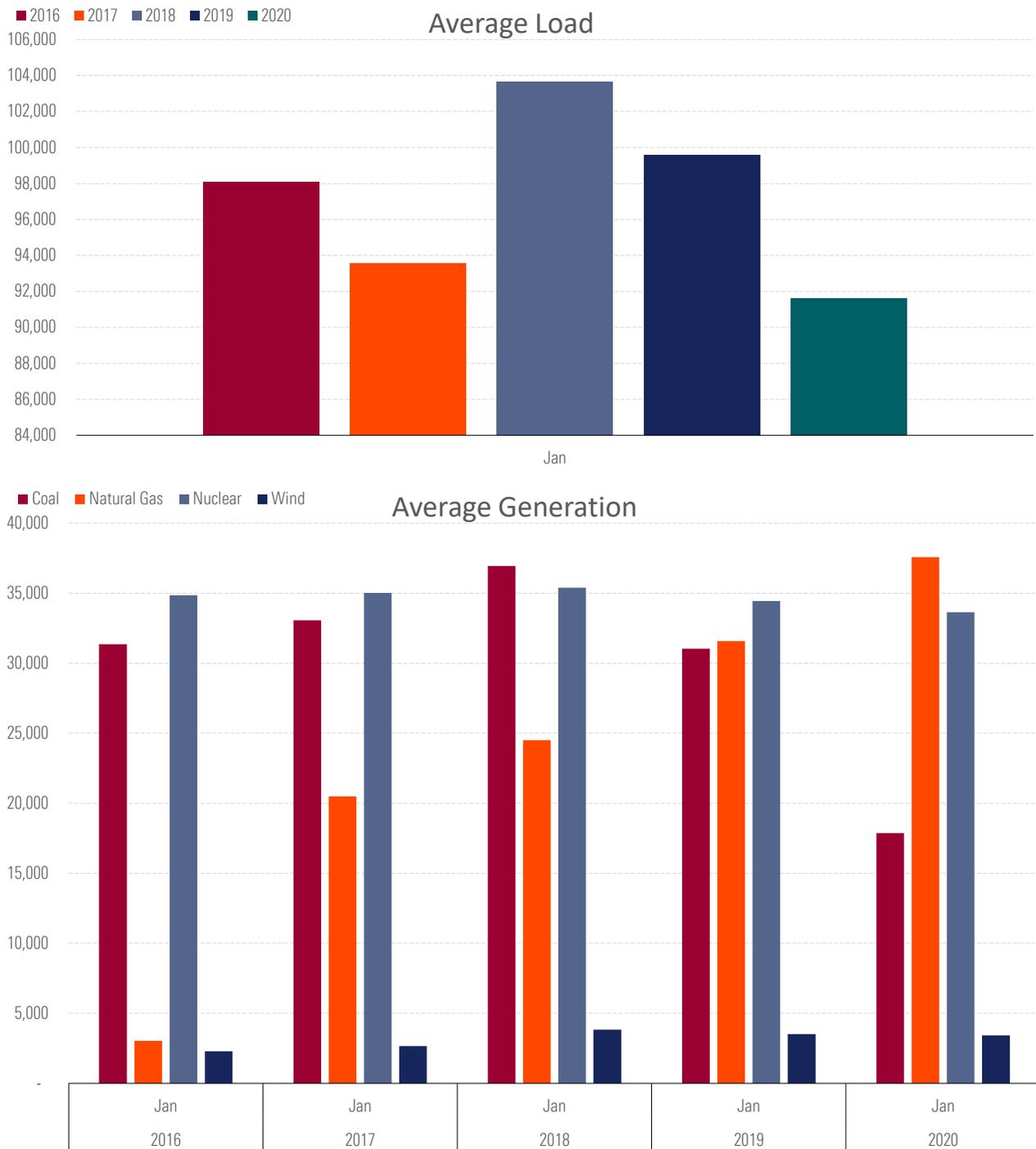
Natural gas additions have started to slow in the region with increased concern about stranded assets but also competition from falling renewable costs. No new coal is coming, either. The main outcome of the FERC decision is the delay of inefficient coal and natural gas retirements and a region flush with supply. Given the capacity factors for coal so far this year, inefficient plants may see a limited extension of life if energy market participation remains low. In that case, the MOPR extension will simply mask the generation needed and what ends up on line in the future as lower-cost units can offer into the energy market and undercut uncompetitive even if the latter cleared in the capacity market. This results in delayed market signals allowing older units to stay in the market past their time. Ultimately, lack of participation will push such units out anyway.

**Major Coal Generation Drop-Off Already Occurring**

Coal in January provided nearly half the PJM generation it did last year. Utilization fell from around 31,000 megawatt-hours on average in January 2019 to 17,000 MWh in January 2020. Nameplate coal capacity from the Energy Information Administration has only downshifted from 59,000 MW to 53,000 MW, or an 11% decrease. The mismatch between capacity and use moves coal from around a 52% capacity factor in the region to 34%. Coal capacity factor will likely drop further with the FERC MOPR

decision as it increasingly struggles to compete with cheap natural gas and renewables. Exhibit 3 illustrates how the lower load from this winter so far has entirely hit coal generation.

**Exhibit 3** PJM January Average Load and Generation

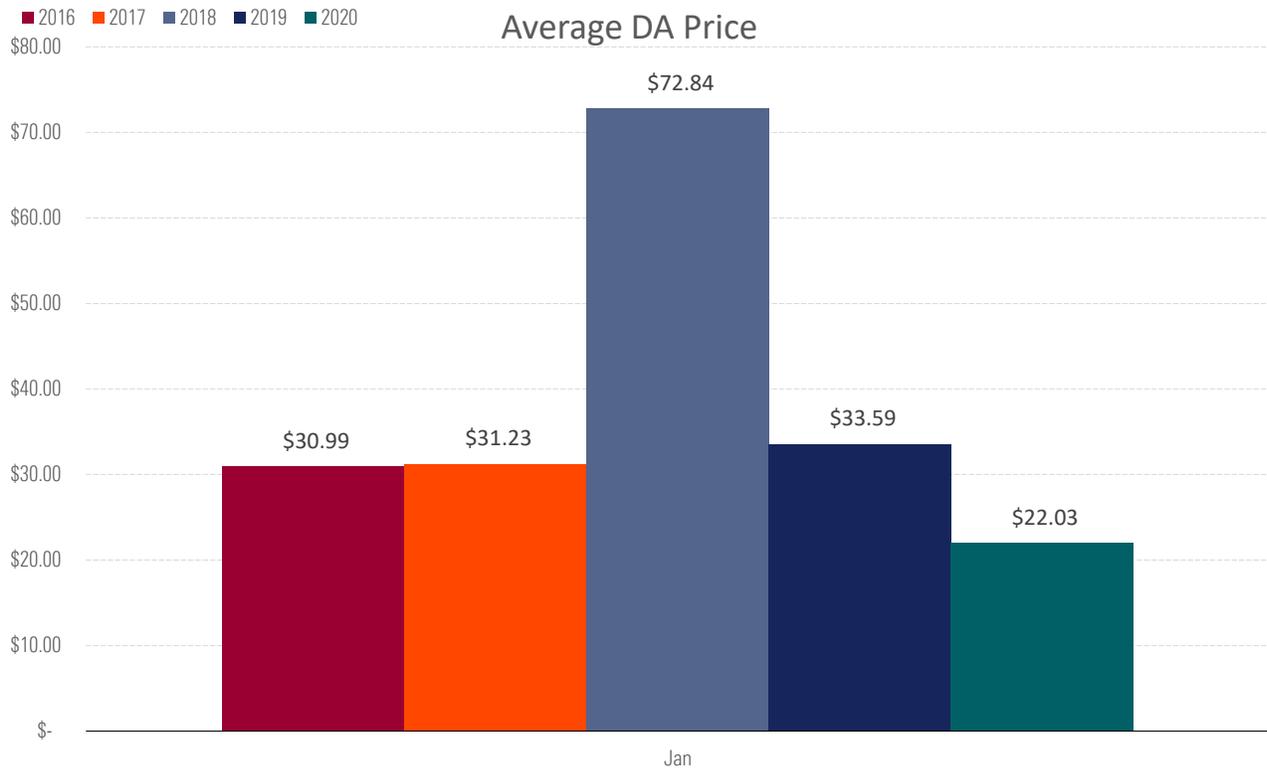


Source: PJM, Morningstar.

### Price Impact

The large-scale removal of coal and the switch to lower-cost resources are readily apparent in PJM so far this year. The warm winter has driven lower load, with the average looking like 2017 by comparison, while the generation profile shift has seen nearly \$10/MWh lower prices for January (Exhibit 4). Costly and uneconomic coal units will still see considerable retirement if coal cannot compete for load in the current environment. Regardless of easier access to capacity market revenue, that revenue is insufficient by itself to keep a generator on line in such an environment long term. The lack of any sizable cold snaps this winter, which typically push gas to coal switching may outweigh the FERC decision in terms of generation transition anyway.

**Exhibit 4** January Average DA Around-The-Clock Price



Source: PJM, Morningstar.

### Winners and Losers

Any asset owner hoping to add a couple of years of additional revenue for a plant on the edge of not being able to compete scored a win with this FERC ruling by gaining some protection and added capacity revenue to stay in the market. States with limited or no subsidies also took a small win from this order. States not already paying will gain generation asset protection from states moving to promote low-carbon production from nuclear or incentivize new renewable generation. However, delayed energy price reduction negates some if not all the benefit for those states' consumers.

Losers will be states and their customers that are currently subsidizing nuclear and renewables, such as Illinois, New Jersey, and Maryland. The impact on renewables may not be as large as assumed. Nuclear units may be penalized in the new pricing regime, as they have argued for a need for out-of-market subsidies to stay on line. The impact on offshore wind will likely be in between nuclear and other renewables, as they can achieve higher-capacity margins and garner more capacity revenue. With projects already up against regulatory hurdles, this is another challenge to the significant East Coast offshore megawatt projects announced, but strong state commitment should still see them go through. Overall, the subsidy and additional capacity payments create a double payment for the new generation and maintaining the old.

Capacity markets could also lose out from this order. With Illinois looking to pass the Clean Energy Jobs Act this year, one portion of the bill is the formation of a state capacity market and withdrawal from the PJM capacity market. If so, other states on the losing side of this decision could follow suit to eliminate the double payment of generation subsidies and additional capacity payments from the exclusion of subsidized units. While a long shot, the decision will add weight behind the argument to withdraw by any state that has had an issue with the current shape of PJM capacity auctions. If the capacity clears in the next auctions are even worse than current estimates, participants could see a market collapse or a rapid rethink on the order.

### **Fate May Be Inevitable**

Cheap natural gas and additional renewables will mean bearish prices continue in PJM. However, the march will slow or plateau as the capacity transition is slowed because of this order. While this decision may protect some entrenched units in the short term, continued low capacity factors in the energy market indicate continued near-term departures can still be expected. The future of nuclear and offshore wind is more uncertain with this order, but expect a continued falling trajectory for coal, continued but slower growth for natural gas, and continued rise of renewables. This order ultimately points to bearish energy prices in the midterm as it will slow but not forestall generation transition, but is bullish for capacity prices. ■■

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