

FERC's MOPR Dissected

Capacity Markets Once Again



By Robert McCullough



n December 19, 2019, FERC finally issued an order in the lengthy Minimum Offer Price Rule (MOPR) case. The debate concern was initiated by a filing by Calpine objecting to potentially low capacity bids in PJM's capacity market. December's order is unlikely to end the debate since FERC has already received over fifty rehearing requests.

In FERC's current order, FERC protects competition by placing a minimum bid requirement on resources receiving revenues under state sponsored Zero Emission Credit and Renewable Portfolio Standards programs. For example, a nuclear plant owner receiving state level energy subsidies would be prevented from offering low prices in the capacity market. Application of the new rule may well extend to a variety of other state sponsored programs as well.

The renowned American economist, Thorstein Veblen, once dryly remarked that theories often constrain the underlying facts. The proposed order plans to keep capacity prices high in the face of new technologies and climate change policies. The order is based on a fundamental theory that capacity prices are lower when energy revenues increase. The theory is so self-evident that it is not addressed in the order and is unsupported in either the economic literature or the facts of PJM's capacity markets.

As renewables displace more expensive vintage technologies, capacity is becoming more valuable, not less. The two leading renewable technologies are non-dispatchable intermittent resources. To make them viable choices requires investments in battery backup systems and simple cycle gas turbines. The unsubstantiated assumption that they will lower the value of capacity needs to be examined closely by experts.

The last point is worth repeating since the assumptions in the order stand in stark contrast to the actual data. In spite of the adoption of a variety of state level programs, capacity prices in PJM have been increasing – sharply – in recent capacity auctions. Prices in the most recent capacity auction increased by eighty-two percent in the 2021/2022 auction.

Thorstein Veblen also once remarked that invention was the mother of necessity. His bon mot fits the MOPR case well. In this case, as shown in Figure 1, the authoritative reliability estimates from the North American Electric Reliability Corporation indicate that PJM's are high – thirty percent in 2020 increasing significantly – sixty percent – in 2024. While invention is rife in PJM, necessity is not present.

See Figure 1.

The factual basis of the order is incorrect – dramatically so – since the state programs have not reduced the prices in the capacity auction and the reserve margin is the highest in the United States and Canada.

Commissioner Glick's dissent is well worth reading. His summary of the problem argues that the new order is designed to raise prices and delay the replacement of vintage generating units with more efficient technology:

"The order amounts to a multi-billion-dollar-per-year rate hike for PJM customers, which will grow with each passing

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year. It will increase both the capacity price in the Base Residual Auction as well as the already extensive quantity of redundant capacity in PJM. It is bailout, plain and simple.

The order will also ossify the current resource mix. It is carefully calibrated to give existing resources a leg up over new entrants and to force states to bear enormous costs for exercising the authority Congress reserved to the states when it enacted the Federal Power Act. States throughout the PJM region

are increasingly addressing the externalities of electricity generation, including the biggest externality of them all, anthropogenic climate change. We all know what is going on here: The costs imposed by this order and the ubiquitous preferences given to existing resources are a transparent attempt to handicap those state actions and slow – or maybe even stop – the transition to a clean energy future."

How has the PJM capacity market become so inefficient – combining rising prices with highly excessive reserve margins?

Church school in my youth included a question for the children: Can God make a stone too heavy for himself to lift? The proper answer was that God is omnipotent but follows his consistent design for the universe. Have FERC and PJM designed a capacity market that is so complex that few of the litigants in

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this proceeding understand it? This appears to be the case. It can also be true that FERC itself has little understanding and even less ability to effectively regulate it.

At the heart of the PJM capacity market is a secret and undocumented algorithm that purports to equate demand and supply. However, simulations conducted both by the PJM Independent Market Monitor and PJM itself show that the algorithm is a far cry from real world economics. Increasing the supply in the PJM market can lower prices and, surprisingly, can also raise prices. Decreasing supplies can increase prices or, alternatively, lower the prices.

After a diligent search it appears that FERC never reviewed or approved this unique algorithm.

However, while the pricing algorithm is doubtful, the real problem concerns whether the PJM market is competitive. Many years of review by the PJM Independent Market Monitor has indicated that it is not.

A careful review indicates that the many PJM submarkets have pivotal suppliers – a single supplier whose share of the market is so large that it can set the price at will. In PJM, transmission limits have been estimated for each of the many LDAs – Locational Delivery Areas.

If the transmission limits constrain the supply and demand calculation, the price of capacity in the LDA can be significantly higher than elsewhere in PJM. In the most recent auction, most of the LDAs received prices higher than the general PJM price. Four of the LDAs received prices twenty percent to forty-five percent higher than the prevailing PJM price.

FERC rules ignore the LDAs when requiring market participants to file their triennial market power submissions. If they did recognize the market realities, the firms dominating their LDAs would not pass and would face cost-based FERC regulation.

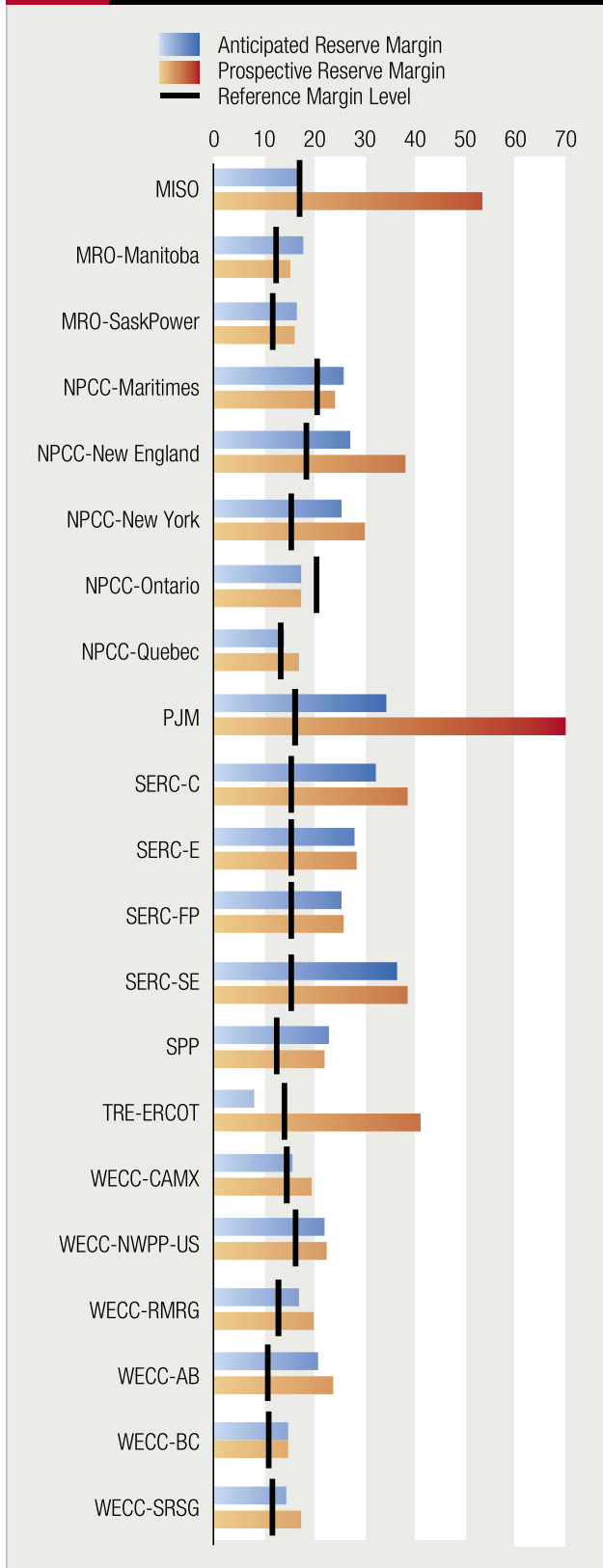
In the LDAs with pivotal suppliers, the bids of the non-pivotal suppliers are irrelevant and have no impact on the auction result.

Added to the basic problems of the algorithm and the lack of competition, the MOPR is just one of many different adjustments to the auction. The PJM capacity auction is a palimpsest – a canvas painted over repeatedly by different artists – until the original drawing is no longer visible.

There are solutions, however. The first step is for FERC to examine its own assumptions. Is it reasonable that Renewable Portfolio Standards reduce capacity prices? Almost all industry experts would argue the opposite – non-dispatchable intermittent resources make capacity more valuable, not less.

Is the algorithm making even minimal sense? Again, most of

Fig. 1 NERC LTRA 2019 - CAPACITY RESERVE MARGINS



us believe that increasing supplies lower prices, not raise them. Finally, should prices in LDAs with pivotal suppliers have a cap – not a floor? Yes, most certainly. [PDF](#)