# Prices in America's Largest Power Supply Auction Likely to Hinge on Fate of Ailing Nukes

## Lower Clearing Prices Would Aid PJM's Push to Reprice State-Backed Power Supplies

### Industry Insight

With four nuclear reactors potentially not clearing the PJM Interconnection's (PJM) annual **Base Residual Auction for the 2021/2022 delivery year, the clearing price may see a rebound after a sustained fall for two consecutive auctions.**

PJM's capacity auction is designed to obtain generation capacity or demand reduction commitments three years ahead to meet peak load projections and ensure adequate power supplies during extreme weather or system emergencies. The 2018 auction comes **amid policy disputes over how to forestall the retirement of financially struggling nuclear** plants while not distorting the wholesale power markets. In addition, **FERC is examining PJM's capacity performance construct for allegedly putting seasonal resources at a disadvantage.**

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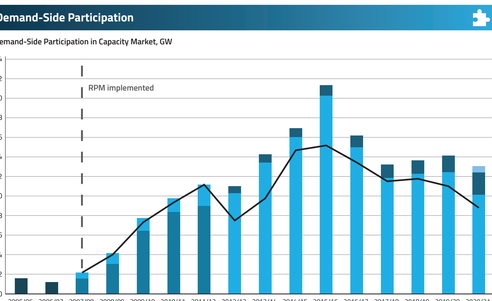
## Planning Parameters and Likely Impact on Prices

| | Previous auction | 2021/2022 auction | Likely impact on price | Commentary |
|---|---|---|---|---|
| Installed Reserve Margin | 16.6% | 15.8% | ▼ | The installed reserve margin expresses the required reserve level in terms of installed capacity MW as a percent of the forecast peak load. This is 0.8 percentage points lower than before which could depress prices. |
| Forecast Peak Load (MW) | 153,915 | 152,667 | ▼ | The forecast peak load is 0.8% lower than in the previous year. The lower demand forecast could put downward pressure on prices. |
| Reliability Requirement (unforced capacity MW) | 167,644 | 166,377 | ▼ | The forecast peak load for unforced capacity (UCAP) is 0.8% lower than in the previous year. The lower demand forecast could put downward pressure on prices. |
| Net Cost of New Entry UCAP terms ($/MW-day) | 292.95 | 321.57 | ▲ | Net cost of new entry (CONE) increased by 9.8 percent, ranging from 4.4 percent for the ComEd area to 37 percent for the BGE area. The increase is driven by a decrease in energy and ancillary services revenue. |
| Price Responsive Demand | 558 MW | 510 MW | ▲ | The total capacity of price responsive demand this year is expected to be 8.6% lower. The previous auction, which included price-responsive demand for the first time, yielded a 24% lower price. |
| Offer Cap Value | $214.81/ MW-day | $237.56/ MW-day | ▲ | The finalized cap is 11% higher than the cap in the previous auction. PJM used the same 78.5 percent balancing ratio used in the 2020/2021 auction. |

## Previous Auction Results

**Prices have fallen since the implementation of the capacity performance reforms in August 2015.** In 2015, PJM modified its capacity market rules to transition to a single annual product called capacity performance that imposes stringent penalties for non-performers, phasing out base capacity resources that operate seasonally. The **May 2017 auction, the first to apply the 100-percent capacity performance requirement, yielded a 24 percent lower price compared to the prior auction**. It was also the first to include the participation by Price-Responsive Demand resources and the first to be held under PJM's enhanced aggregation rules. The Federal Energy Regulatory Commission (FERC) is examining whether the year-round capacity performance construct which prefers annual resources puts **seasonal resources at a disadvantage**.



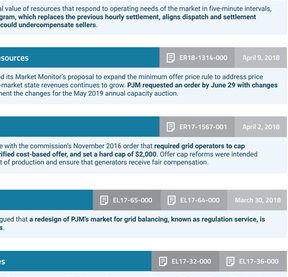

Source: PJM

## Main Downwards Pressures on Prices

Lower natural gas prices | New combined-cycle natural gas plants | Lower demand forecasts

## Nuclear Subsidies and Potential Failure to Clear

A **continued trend of lower prices in the upcoming auction could further intensify the debate over subsidies**. PJM has strongly pushed for its **proposal to reprice subsidized offers in the second stage of a two-stage auction to remove the effects of the subsidy and ensure competitive prices**. PJM's market monitor Monitoring Analytics LLC has reiterated the need to protect the market from subsidized, non-competitive offers by **expanding the coverage of the minimum offer price rule that currently addresses only subsidies for new entry**. Notably, FirstEnergy Solutions is seeking emergency relief from the U.S. Energy Department and legislative policy solutions as an alternative to the sale or closure of two nuclear power plants in Ohio and another in Pennsylvania as **none of these plants will likely clear the upcoming auction**. Given their share in overall capacity, their failure to clear will most likely push the price upwards.




## Demand-Side Participation

Source: PJM

## Market Reforms Approaching Tipping Point

PJM is at a turning point in terms of market reforms, ranging from the accommodation of subsidized resources and price formation to placing a market value for fuel security.

### Valuing fuel security risks — April 30, 2018

PJM has announced plans to analyze fuel security risks as the generation mix continues to evolve. PJM identifies fuel security as a type of resilience risk pertaining to the vulnerability of supply and delivery to generators and risks raised by growing dependence on a single fuel-delivery system. PJM said it **would establish fuel security criteria which can be incorporated in the current market**, allowing different resource types to compete to meet those criteria, with reforms in place for the next capacity auction if needed.

### Changes to Demand Curve — April 24, 2018

PJM is considering **potential changes to its demand curve**, as part of a review which occurs every four years, based on analysis by Brattle Group. PJM is also seeking to **update the use of combustion turbines as the reference technology** for estimating the cost of new entry.

### Energy Efficiency Market Restrictions — ER18-870-000 — April 17, 2018

FERC allowed PJM **to implement electric retail regulatory authorities' restrictions** on the sale of energy efficiency resources into the power market. PJM will create a verification process to ensure that participating resources comply with any restrictions imposed by retail regulators and grant relief for resources that already cleared the capacity auction but were later restricted from participation.

### Five-Minute Market Settlement — April 10, 2018

PJM implemented a five-minute settlement, which reflects the actual value of resources that respond to operating needs of the market in five-minute intervals, according to the grid operator's April 10 press release. **The new program, which replaces the previous hourly settlement, aligns dispatch and settlement intervals so as to eliminate imbalance of market price signals that could undercompensate sellers**.

### Proposals to Address Price Distortion from Subsidized Resources — ER18-1314-000 — April 9, 2018

PJM asked FERC to consider both its capacity repricing proposal and its Market Monitor's proposal to expand the minimum offer price rule to address price distortion in its markets as participation of sources receiving out-of-market state revenues continues to grow. **PJM requested an order by June 29 with changes to take effect in January 2019**, so that it has enough time to implement the changes for the May 2019 annual capacity auction.

### Revised Energy Offer Cap — ER17-1567-001 — April 2, 2018

FERC accepted PJM's revisions to its energy offer cap in compliance with the commission's November 2016 order that **required grid operators to cap incremental energy offers at the higher of $1,000 per MWh or a verified cost-based offer, and set a hard cap of $2,000**. Offer cap reforms were intended reduce the possibility of price suppressions below the marginal cost of production and ensure that generators receive fair compensation.

### Market Discrimination Against Batteries — EL17-65-000 — EL17-64-000 — March 30, 2018

FERC accepted complaints from electric storage companies that argued that **a redesign of PJM's market for grid balancing, known as regulation service, is discriminatory, and set a technical conference to explore the issues**.

### Market Access for Demand Response, Seasonal Resources — EL17-32-000 — EL17-36-000

FERC is examining whether PJM's **stringent performance rules excluding storage, renewables, demand response and energy efficiency from selling into its annual capacity auction unnecessarily raises customer bills**, and whether the addition of seasonal capacity markets could assure reliability at lower costs. The commission is responding to complaints from Advanced Energy Management Alliance, Old Dominion Electric Cooperative, Direct Energy, and American Municipal Power, alleging that the grid operator has **unfairly discriminated against intermittent generating capacity**.

### Need for Price Reforms — February 26, 2018

PJM signaled the need for reforms to its energy market after a recent arctic blast sent **so-called uplift charges to about $4.3 million per day from the average of $389,000 per day**. Uplift charges are the payments the grid makes to generators when market revenues don't cover the plant's cost of helping to serve demand on the system. Electric consumption on the mid-Atlantic system soared to over 137,000 MW in early January, reaching **the sixth highest overall winter peak demand**.

### Coordination of Pseudo-Tied Resources — ER17-2220-000 — ER17-2218-000 — December 29, 2017

FERC accepted revisions to the **operating agreement of the Midcontinent Independent System Operator and PJM** to improve coordination of resources that are pseudo-tied, a transaction involving real-time transfer of control from the balancing authority in which the resource is located to another in a different location.

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