



PJM developed its current capacity market model to ensure the future availability of power-generating capacity and other resources needed to help keep the bulk electric system operating reliably for consumers.

Capacity is Related to Reliability

PJM's capacity market secures enough power supplies three years down the road to ensure sufficient supply will be available to meet peak consumer demand.

Capacity resources include generators that produce electricity, and other resources, such as demand response programs, that can reduce consumer use and help operators keep the supply and demand for electricity in balance. Both types of capacity resources are traded in PJM's capacity market (also known as the Reliability Pricing Model).

Key Facts

- Designed to ensure future availability of energy resources
- Encourages investment in generation infrastructure
- Includes both generation and demand response capacity resources
- Introduced in 2007

Meeting the Demand, Plus Extra for Emergencies

To meet federally mandated reliability requirements, a utility that delivers electricity to end-use customers must have the resources available to meet customers' demand. Utilities must also provide readily available reserve power in case of emergencies. Utilities can meet these requirements three ways: with generating capacity they own, with capacity purchased directly from others or with capacity obtained through PJM's capacity market auctions.

The History of the PJM Capacity Market

Before 2007, PJM operated using a short-term capacity model. It was characterized by low prices and significant investor risk, which didn't encourage enough new investment in the right places to meet future energy supply needs. Areas of PJM were facing the prospect of not having enough resources to serve customers in the future.

Although PJM as a whole had enough generating capacity, the pace of generation development had slowed because though electricity demand was rising, revenues were low and there was not enough financial incentive and too much uncertainty to attract investors. Low prices had also forced needed generation in certain areas to retire, exacerbating the issue.

A Market-Based Solution

In 2007, the current design of the capacity market was implemented, using a market-based approach to obtain the resource capacity needed to ensure reliability, with incentives that stimulate investment and lessen investor risk.

The essential elements of the capacity market are:

- **Procurement of capacity three years before it is needed through a competitive auction.** Payments are made to the resources in the delivery year when the resources have agreed to be available.
- **Locational pricing.** Locational pricing helps to identify capacity needs throughout the region. Price differences reflect limitations on the transmission system's ability to deliver electricity into an area.



- **A variable resource requirement curve (VRR) to set the price for capacity.** The previous “vertical” demand curve valued capacity only up to the minimum reserve requirement. Anything above that was valued at zero. This price volatility created considerable financial risk and discouraged investors. The current downward-sloping demand curve pays for capacity above the minimum reserve requirement, reduces investor risk and helps to lower the price for all capacity acquired in the annual auction.

Three-Year Forward Auction

The three-year forward auction allows for competition between new resources and existing resources, and it draws resources from across the PJM footprint. The wide scope of the market provides for a competitive marketplace.

Under the design, demand response resources can compete with generation. Utilities can meet their requirements through generation, demand response or energy-efficiency programs. Demand response resources can submit offers to reduce demand in the capacity market auctions, and those offers are eligible to set the market-clearing price for capacity, similar to generation resources.

FERC’s Dec. 19 Capacity Order

On Dec. 19, 2019, FERC ruled that state-subsidized energy resources must bid into the PJM capacity market at unsubsidized rates using new minimum offer price values. This capacity market order seeks to eliminate the market effects of state-subsidized energy resources on PJM’s capacity market.

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