PJM's capacity market ensures that enough power is procured, in advance and at a reasonable cost, to maintain reliable grid operations in the future.

Capacity Market Supports Reliability

PJM's capacity market, also known as the Reliability Pricing Model (RPM), is designed to secure enough power supplies in a cost-effective manner to maintain resource adequacy three years into the future. Put simply, the market pays participants for the promise to produce electricity when called upon by PJM.

Capacity resources include generators that produce electricity and other resources, such as demand response, which incents consumers to reduce electricity use and help operators keep the supply and demand for electricity in balance.

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 secure reserves necessary for emergencies. PJM utilities meet these mandates with capacity they own, capacity purchased elsewhere or capacity procured from the capacity market.

PJM's capacity market:

- Is designed to assure future availability of energy resources
- Encourages investment in generation infrastructure
- Involves both generation and demand response capacity resources
- Includes resource accreditation and testing requirements to account for performance of resource classes

How the Auction Price Is Set

In a capacity market auction, PJM first accepts offers to provide power at the lowest cost. As the auction progresses, PJM accepts progressively higher-priced offers until enough capacity is assembled to meet the projected reserve requirement for the future delivery year. At that point, when the auction clears, all sellers receive the last or "marginal" offer price. This marginal price is also known as the auction clearing price.

The History of the PJM Capacity Market

Before 2007, PJM used a short-term capacity model that was characterized by low prices and significant investor risk. It neither encouraged enough investment in new generation in the needed locations nor procured enough supply to meet future energy demand. Areas of PJM faced the prospect of insufficient resources to serve customers in the future. As a whole, PJM had enough generating capacity. However, the pace of generation development had slowed because revenues were low. There was not enough financial incentive and too much uncertainty to attract necessary investment in new power resources. Low prices had also forced generation to retire in certain areas.

Three-Year-Forward Auction Fosters Competition

Since 2007, PJM's evolving capacity market has used the power of markets to commit enough resources to meet future reliability targets. The three-year-forward auction allows for competition between existing and new resources while attracting participation from across the PJM region. This design creates a wide scope for the market and provides transparent price signals to attract investment and induce less efficient resources to retire.

(866) 400-8980 | (610) 666-8980

Key Capacity Market Design Principles

Forward Auction

Capacity auctions procure enough power to meet resource adequacy targets three years ahead. Power resources receive payment during the delivery year they committed to be available.

Reserve Requirement

PJM calculates how much power will be needed for a particular delivery year. Elements of this market design reduce investor risk and help to lower the price for all capacity acquired in the auction.

Locational Pricing

PJM estimates future power requirements by local transmission zone and ensures that capacity resources can safely deliver power to specific areas inside of local transmission limits.

Accreditation

PJM estimates resource performance during periods of extreme weather conditions and high correlated outage events to determine how each capacity resource class can be relied upon to provide energy in every hour of the year across all potentially actionable scenarios. Resources are also tested for performance during summer and winter. In 2024, the Federal Energy Regulatory Commission accepted a new, more accurate method for PJM to value a resource's contribution to reliability. It is called Effective Load Carrying Capability, or ELCC.

Must-Offer Requirement

Most generation capacity resources must offer into the capacity auction, unless PJM approves an exception with input from its market monitor.

Market Seller Offer Cap

The Market Seller Offer Cap (MSOC) ensures that resources do not exercise seller-side market power to inflate clearing prices. Rules set the cap at a value that subtracts a resource's historic net energy and ancillary service market revenue from its Avoidable Cost Rate (ACR). The ACR reflects the cost incurred by the resource if it is not used for the delivery year and excludes all expenses included in cost-based energy offers. Resources may use a default ACR if one exists or request a resource-specific ACR. All resource-specific MSOC values are reviewed by PJM and its market monitor.

Jan. 29, 2025

(866) 400-8980 | (610) 666-8980