To ensure the future availability of the generating capacity and other resources that will be needed to keep the regional power grid operating reliably for consumers, PJM developed a new method of pricing capacity called the Reliability Pricing Model. The new capacity-market approach was implemented in 2007.

In order to maintain the reliability and stability of the electric transmission system, the organizations that manage the grid operate the system to keep power in balance – to match consumers’ demand for electricity with the resources to meet that demand on an instantaneous basis.

Operating the electric grid involves balancing three elements – generation, transmission and demand for electricity. Because electricity is a speed-of-light product that cannot be stored, PJM must respond instantly to changes in demand and operating conditions across the grid in its territory. The PJM grid serves 61 million people in 13 states and the District of Columbia in the Mid-Atlantic, Midwest and South.

Capacity represents the need to have adequate generating resources – “iron in the ground” – to ensure that the demand for electricity can be met at all times. In PJM’s case, that means that a utility or other electricity supplier is required to have the resources to meet its customers’ demand plus a reserve. Suppliers can meet that requirement with generating capacity they own, with capacity purchased from others under contract or with capacity obtained through PJM’s capacity-market auctions.

Generators (or other resources like demand response) must receive enough revenues to cover their costs, even if they operate infrequently. Payments for capacity provide a revenue stream to maintain and keep current resources operating and to develop new resources.

With its low capacity prices, the pre-2007 short-term capacity system was not producing sufficient new investment in the right locations to meet future needs. Although PJM as a whole had sufficient generating capacity, the pace of generation development had slowed because revenues weren’t sufficient to cover the cost of investing in new generating plants, while electricity demand was rising. In addition, the low prices had forced needed generation in certain areas to retire.

The Reliability Pricing Model system follows a market approach to obtaining the capacity needed to ensure reliability, with incentives that are designed to stimulate investment both in maintaining existing generation and in encouraging the development of new sources of capacity – resources that include not just generating plants, but demand response and energy-efficiency programs.

Investors need sufficient long-term price signals to encourage the maintenance and development of generation and other resources. The RPM plan, based on making capacity commitments three years ahead, creates long-term price signals to attract needed investments in reliability in the PJM region.

The RPM capacity market works in conjunction with PJM’s Regional Transmission Expansion Planning process to ensure the future reliability of the system.

The essential elements of the RPM capacity market are:

- Procurement of capacity three years before it is needed through a competitive auction;
• Locational pricing for capacity that varies to reflect limitations on the transmission system’s ability to deliver electricity into an area and to account for the differing need for capacity in various areas of PJM;
• A variable resource requirement to help set the price for capacity.

The RPM capacity market includes the continued use of self-supply and bilateral contracts to meet capacity obligations. The capacity auctions under the RPM obtain the remaining capacity that is needed after market participants have committed the resources they will supply themselves or provide through bilateral contracts.

The three-year forward auction allows for competition between new resources and existing resources.

Under the RPM, demand resources can compete with generation to provide resources needed to ensure reliability. Load-serving entities can supply their energy requirements through generation, demand response or energy-efficiency programs.

Demand resources can submit bids to reduce demand in the RPM capacity-market auctions, and those bids are eligible to set the market-clearing price for capacity. Energy-efficiency programs first participated in the 2009 auction.

Of the capacity that was cleared in the May 2014 auction for the 2017/2018 delivery year, about 6,267 MW represented new generating capacity, including 5,927 MW of new generating units and 340 MW of upgrades to existing generation.

The new generating capacity figure represents a record for new capacity resources in any single RPM auction, surpassing last year’s total of 5,463 MW.

Imported capacity from outside PJM totaled 4,526 MW, most of it from regions to the west of PJM.

Energy-efficiency resources increased to a record 1,339 MW. Demand resources totaled 10,975 MW, with 1,489 MW of that representing “annual” resources that are available throughout the year and 7,163 MW in the “extended summer” category.

The RPM auctions that began in 2007 have provided an estimated total of about 62,000 MW of capacity resources that wouldn’t have been available without the RPM.

The RPM capacity-pricing method is driven by the need to keep the grid operating in balance – satisfying the demand for electricity at every location in the region, now and in the future. By providing price signals to encourage capacity investment, the RPM helps ensure that the PJM region’s consumers continue to receive reliable supplies of electricity at a reasonable cost.

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