

Market Profile: PJM

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PJM is the regional transmission organization (RTO) for the Mid-Atlantic region and Chicago. With 61 million customers and a peak demand of 165 GW, it is the largest organized market in the world. It has over 800 members, including utilities, large customers, generation companies, and demand response companies.

PJM offers real-time and day-ahead markets for energy. The energy markets use locational marginal pricing (LMP) to reflect the value of energy at a specific location at the time of delivery. The LMP changes continuously, and can be viewed in real time online. For more information see the PJM Learning Center.

PJM's capacity market model is called the Reliability Pricing Model (RPM) and was implemented in 2007. The RPM uses a series of auctions to secure capacity commitments for one year, three years in advance. It is intended to

create long-term price signals and certainty to attract needed investments in reliability in the PJM region.

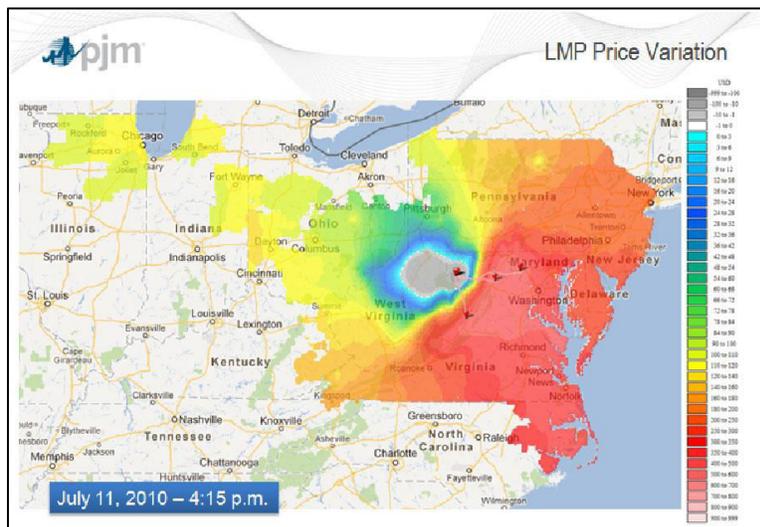
Most bids in the RPM are for \$0, by generators who are willing to take the market-clearing price, which ranges from \$100-200 per MW-day. While there are multiple auctions each year, most capacity is procured in the first auction, known as the Base Residual Auction, conducted in May of each year. PJM uses a Regional Transmission Expansion Planning (RTEP) process to ensure sufficient transmission capacity.

PJM facts

Runs a power market for 61 million customers in the Eastern US.

Known for its capacity market, where supply and demand side resources are paid to be available 3 years in advance.

Large amounts of demand-side resources.



Recent RPM auctions have shown large increases in gas-fired generation and demand response. Demand response and energy efficiency have been able to bid into the RPM since 2007.

PJM also offers markets for ancillary services, called regulation service and synchronized reserve. Power providers can meet their obligation to provide regulation service by using their own generation, by purchasing it from another party, or by buying it on the Regulation Service Market.

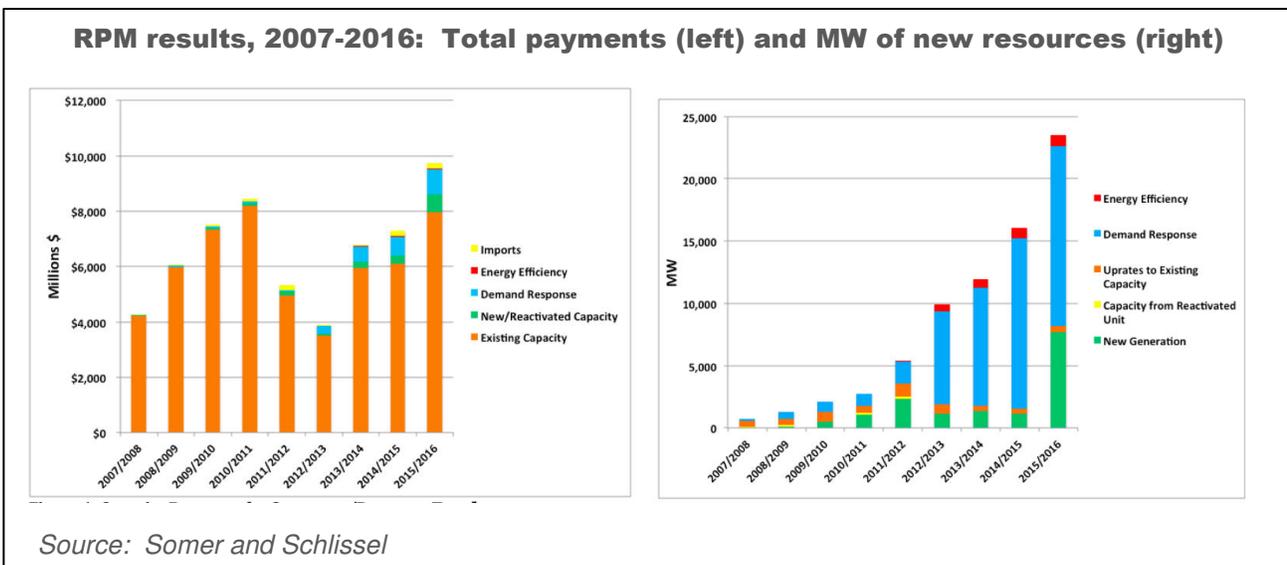
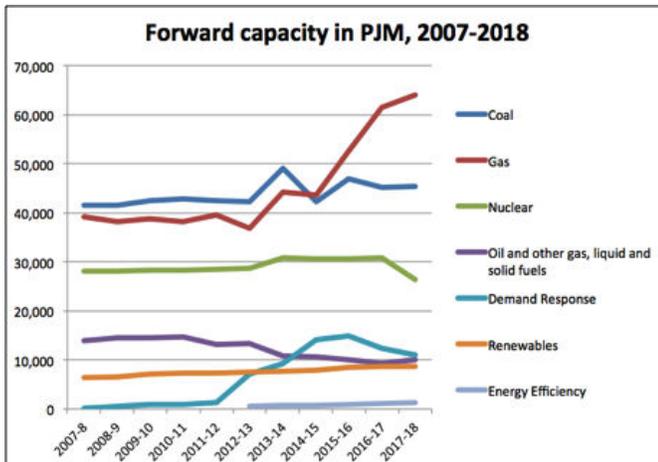
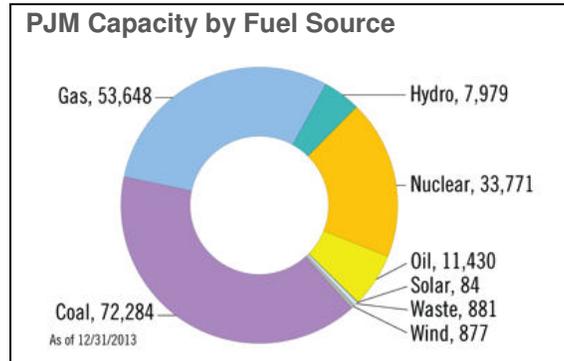
The Synchronized Reserve market supplies electricity on short notice. This service can come from both supply (spinning reserve) and demand resources (demand response).

Current generation capacity is dominated by coal, gas and nuclear. Renewables, including hydropower, supplied only 3.5 percent of electricity in 2013. But the mix is changing. At the end of 2013, there were 118 proposed natural gas projects under study for interconnection, compared with 73 for wind, 66 for solar, and six for coal.

PJM has been criticized for the high cost of the RPM. While the RPM is described by PJM as a

way to incentivize new resources and to retain existing resources, a [critique by Somer and Schissel](#) points out that in the first nine years of RPM auctions, \$54 billion in capacity payments was awarded to owners of existing generation capacity, while new resources received only \$4.2 billion. The majority of new entrants were demand response providers. (See the figures below for total and new entrant results.)

The authors conclude that the main success of the RPM “has been primarily in allowing demand response resources to participate in wholesale energy markets, but that participation has come at the cost of billions of dollars flowing to existing generators with no evidence that those payments result in new generation.”



Source: Somer and Schissel