Demand response – the ability of retail consumers to respond to wholesale electricity prices – is integrated into PJM Interconnection's wholesale electricity markets, providing equivalent treatment for generation and demand resources. Retail customers have the opportunity to participate in PJM's energy, capacity and other markets and receive payments for the demand reductions they make.

PJM is working to broaden the opportunities for electricity consumers to respond to wholesale prices and grid conditions.

Consumers have the opportunity to manage their electricity use in response to conditions in the wholesale market. They can reduce their electricity consumption when wholesale prices are high or the reliability of the grid is threatened, receiving payments for the reductions they make. Common examples of reductions are turning up the temperature on the thermostat to reduce air conditioning or slowing down or stopping production at an industrial facility temporarily.

Some industrial customers with backup generation might use their generators to meet a portion of their power needs during peak periods, enabling them to draw less from the system and reduce demand on the grid.

Even though wholesale electricity prices fluctuate hourly, retail consumers generally pay electricity rates that are based on average electricity costs. This means that they don't see the changes in wholesale prices and don't have the opportunity to react to them. Without clear price signals, consumers have no incentive to reduce their usage when wholesale prices are high.

Giving consumers the ability to "see" wholesale prices and react when prices are high can help minimize the impact of price spikes, reduce the need for expensive peaking generating capacity and help hold down energy prices overall.

The choice to participate in demand response is voluntary. But, participants must meet certain requirements in order to qualify for payments for reducing their demand for electricity. Demand response does not include reductions in electricity use that follow normal operating patterns or behavior.

The following summarizes how demand response works in PJM.

Qualified PJM market participants who act as agents, called Curtailment Service Providers, work with retail customers who wish to participate in demand response. CSPs aggregate the demand of retail customers, register that demand with PJM, submit the verification of demand reductions for payment by PJM and receive the payment from PJM. The allocation of the PJM payment between the CSP and the retail customer is a matter of private agreement between them.

A CSP can help a customer identify opportunities and determine the needed equipment and systems to benefit financially from demand response participation.

When locational marginal prices are high in PJM's Energy Market, economic demand response provides an opportunity to reduce electricity consumption and receive a payment. Participants have the choice of a day-ahead option or a real-time option.

In the day-ahead option, a CSP's customers can offer – in advance of real-time operations – to reduce the amount of electricity they will draw from the PJM system. If the offers are accepted, they will receive payments based on the day-ahead prices for the reductions. In the real-time option, a CSP helps customers reduce their usage voluntarily during times of high prices and receive payments based on real-time prices for those reductions.

Emergency load response compensates retail customers who reduce their usage during emergency conditions on the PJM system. The voluntary energy-only option compensates retail customers who choose to reduce their usage voluntarily during emergency conditions.

In PJM's Reliability Pricing Model capacity market, both demand-response resources and energy-efficiency resources have the opportunity to participate. They can receive payments for being ready to reduce their electricity demand or for implementing energy-efficiency measures.

The capacity market helps keep the lights on. It ensures that when electricity usage is high, there are enough resources available to meet the demand at all times. Those resources – generation as well as demand resources – enable electricity providers to have enough power to be drawn from when needed to meet the demand instantaneously.

Demand resources, through CSPs, can bid demand reductions into the market. Capacity is obtained three years in advance. For example, the capacity auction held in May 2013 obtained capacity for the 2016/2017 delivery year.

The ability to call on demand reductions gives system operators greater flexibility in managing the grid during summer heat waves and other challenging conditions. There are three separate opportunities for demand response in the RPM capacity market, with differing requirements.

In the limited product, customers commit to reducing their load at the direction of PJM during emergency conditions up to a maximum of 10 times during the summer months. In the extended product, the number of interruptions can be unlimited during six months (May through October) of the year. In the annual product, an unlimited number of interruptions can be called during a delivery year, which runs from June through the following May.

A total of 12,314 megawatts of demand response and energy-efficiency resources are committed as capacity resources for the 2017/2018 delivery year. The PJM region has more committed demand response resources than any other organized wholesale electricity market in the country.

PJM also enables demand resources to participate and submit bids for reductions in the Synchronized Reserve, Regulation and Day-Ahead Scheduling Reserves markets.

PJM's eLRS tool provides CSPs, as well as electric distribution companies and load-serving entities, with an online tool for processing the registration of demand resources and demand reduction activity and transactions in the PJM markets.

PJM's goal is to see demand response fully integrated into the retail market. That will happen when a large number of retail electric customers, including homes and small businesses, have access to demand-response options. PJM is working with state commissions and other stakeholders to support that goal.

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