

August 28, 2015

**CONTACT: John Shelk
(202) 628-8200**

PRIMER ON CAPACITY PROCUREMENT, ELECTRIC RELIABILITY AND PJM's NEW CAPACITY PERFORMANCE PRODUCT

The U.S. does not have a uniform national business and regulatory model for electricity; states pursue different mixes of traditional regulation and competition. However, every power delivery system – whether market-based or cost-of-service – must procure and compensate electric capacity. In this context, electric capacity is best thought of as the ability to produce electric energy in the future as needed. While advances are occurring, electricity cannot be stored in large quantities cost effectively. Thus, mandatory reliability standards require a sufficient amount of resources be “standing ready” to meet expected peak load, plus a safety cushion known as the “reserve margin” (generally around 15-20 percent of peak demand). The importance of procuring sufficient electric capacity is increasing, particularly with greater use of intermittent renewable resources (For more information, see *Capacity and Energy in the Integrated Grid*, Electric Power Research Institute, July 2015, available at www.epri.com.)

While all power delivery systems must acquire electric capacity to reliably serve customers, the mechanisms differ by business and regulatory models. Regions with cost-of-service regulation pay for capacity by guaranteeing the utility it can recover costs and simply pass them through to retail consumers. In these states, consumers pay for the life of all the utility's power plants whether ultimately needed and whether later technology or economic changes render the resource obsolete. This is the general approach in the Southeast, Upper Midwest, and West outside California.

Regions where states restructured to rely more on competitive market forces shifted most of the risk of developing and operating power plants to investors rather than consumers. Capacity procurement is more transparent and flexible in these regions, allowing for periodic adjustments that reflect shifting resource mixes, relative economics of options, and evolving technologies and demand levels. Consumers are not tethered to a single supplier or set of power plants, but gain the benefit of multiple potential suppliers regularly competing with each other to provide sufficient capacity including the reserve margin.

A key development in the past decade is the growth of independent grid operators, known as Independent System Operators (ISOs) and Regional Transmission Organizations (RTOs). The geographic and economic scope of ISOs/RTOs continues to expand and they now cover over two-thirds of the country. ISOs/RTOs each rely for electric capacity to greater or lesser degrees on region-specific choices among centralized capacity auctions, bilateral contracts and self-supply by load-serving entities. Regardless of the specific mechanism in each ISO/RTO, the goal is to procure the least-cost mix of capacity resources to reliably serve consumers.

ISO/RTO capacity procurement is governed by detailed tariff rules approved by the Federal Energy Regulatory Commission (FERC) after public comments are received and considered. FERC orders are subject to judicial review. Once in place, specific auctions for capacity are subject to ongoing detailed involvement of external and/or internal market monitors. This includes detailed review of capacity bids and extensive analysis of capacity auction results to be sure those ISOs/RTOs that use centralized capacity auctions do so in a manner that produces competitive outcomes.

PJM Interconnection and ISO-New England conduct capacity auctions three years in advance to provide adequate lead time for new resources and to give existing resources accurate price signals to guide investment decisions. Auctions are held each year to determine the level and type of resources available to serve consumers in the future. Capacity revenues help resources recover fixed costs not recovered through energy sales, which are largely based on variable costs (e.g., fuel). Thus, in ISOs/RTOs with centralized capacity markets, investment decisions relating to both existing and new power plants are primarily based on expected revenues from sales of electric energy *and* capacity. Inadequate revenues and distorted price signals for energy or capacity will result in insufficient reliability investment over the long run.

ISOs/RTOs regularly work with market participants, state regulators and others to update market rules as conditions change so that reliability is maintained. This is done under FERC oversight as FERC must approve all market rules. FERC held a technical conference on capacity procurement issues in the Eastern RTOs on September 25, 2013. The subsequent Polar Vortex of early 2014 also helped highlight areas where market rules could be improved. In a nutshell, as the resource mix changes due to public policies and as the economics of various forms of generation shift, grid operators have expressed serious concern that capacity resources need to invest more to be available during peak demand conditions which often occur when plant operating conditions are more difficult. In addition, actual and projected power plant retirements often require building new resources or running existing resources more often.

PJM's new Capacity Performance product being implemented starting with auctions in 2015 addresses many of these new challenges to ensure sufficient investment in capacity resources to make them more resilient and thus more reliable when the grid is stressed (e.g., extreme weather). FERC approved PJM's plan to address resiliency concerns on June 9, 2015, on a bipartisan 4-1 vote. PJM's plan is based on ISO New England's Pay for Performance plan which FERC unanimously approved on May 30, 2014. The PJM capacity reforms are being phased in over the next several auction cycles so that all PJM capacity resources will be required to assume more stringent performance obligations and face higher penalties for nonperformance by 2020. (Attached is PJM's *Capacity Performance at a Glance* summary.) Examples of how power plants will be investing significant sums to improve reliability are better weatherizing to prevent extreme temperatures from interfering with equipment, dual fuel capability so plants have more fuel choices, firm natural gas transportation arrangements, and maintenance to prevent forced outages. The new product will also better value long-term fuel supplies at coal and nuclear power plants.

Critics mistakenly claim that PJM tariff rules inhibit their practical ability to self-supply their own electricity. Some erroneously blame PJM's Minimum Offer Price Rule (MOPR), which was unanimously adopted by FERC in 2013 to protect the market from investment-distorting outcomes caused by the exercise of buyer-side market power. The need to protect against buyer-side market power in wholesale electricity markets is widely acknowledged by independent market monitors and design experts to be as important as mitigation of seller-side market power. Under PJM's MOPR, an entity (such as a public power utility) that wishes to self-supply can do so subject to a unit-by-unit review, just as seller-side bids are subject to detailed market monitor review. Despite the misplaced and ill-founded criticism of the MOPR rule, based on the actual auction results since the MOPR was put in place, not a single megawatt of self-supply has been blocked; all self-supply waiver requests were granted and the affected self-supply resources cleared the PJM auction. Interestingly, there were no self-supply requests in the latest PJM auction (August 2015 for 2018-19 delivery).

EPSA is the leading national trade association representing leading competitive power suppliers, including generators and marketers. Competitive suppliers collectively account for 40 percent of the installed generating capacity in the United States, providing reliable and competitively priced electricity from environmentally responsible facilities. EPSA seeks to bring the benefits of competition to all power customers. www.epsa.org.

What is Capacity Performance?

- Capacity Performance is a requirement that generators must meet their commitments to deliver electricity whenever PJM determines they are needed to meet power system emergencies.
- As a “pay-for-performance” requirement, generators may receive higher capacity payments and are expected in return to invest in modernizing equipment, firming up fuel supplies and adapting to use different fuels. (Natural gas plants will improve fuel security, placing them on a par with traditional resources having firmer fuel supplies.)
- Generators that exceed performance commitments will be entitled to funds collected from generators that underperform.
- Generators assume virtually all financial risks if they do not meet their power supply obligations.

How does better generator performance help electricity customers?

- Capacity Performance works like an insurance policy; for a relatively small cost, consumers have greater protection from power interruptions and price spikes – especially when extreme weather challenges the grid.
- The better that generators perform during system emergencies, the less that customers have to pay because of greater efficiency and lower energy prices.

What are the costs/benefits?

- Generator investments in improvements will have a modest impact on electricity prices.
- Retail electricity prices vary widely, but the net cost at the wholesale level is expected to be equivalent to an increase of about \$2 to \$3 per month on a typical home electricity bill when Capacity Performance is fully implemented in 2018.
- PJM expects Capacity Performance to significantly reduce the energy portion of electricity bills; during extreme temperatures, lower energy costs are expected to offset the higher capacity costs and produce overall savings.

Why is Capacity Performance necessary?

- Reliability is paramount to our economy and quality of life.
- The rapid and unprecedented shift from coal to natural gas-fired generation has driven electricity prices sharply lower and inhibited needed investments in plant upgrades and modernization.
- The polar vortex in the winter of 2014 revealed that stronger incentives are needed to encourage investment for better generation performance.
- Although generator performance improved in the winter of 2015 compared to the year before, incentives will ensure that the improvements are sustained over time.

When will Capacity Performance go into effect?

- In the 2015 Base Residual Auction, 80 percent of resources for the June 1, 2018, to May 31, 2019, delivery year must meet Capacity Performance requirements.
- Over a two-year transition, the amount of Capacity Performance will increase until, by 2020, it is expected to be the only capacity product in PJM.
- PJM transition auctions will provide a “glide path” for capacity resources committing to the higher performance requirements for the 2016/2017 and 2017/2018 delivery years.