Capacity Co-Located Load

Detailed instructions and process steps are available in M34, Section 6

Problem / Opportunity Statement

PJM's current capacity market rules do not accommodate capacity offers for the full output of generating units that are contracted to physically serve co-located loads that have fast-response curtailment times. More generally, PJM's current market rules are silent about whether the daily energy market must-offer obligation for a committed capacity resource with a co-located, interruptible load could be fulfilled by a two-part energy market offer, a portion of which reflects the opportunity cost of serving the co-located load at the contracted energy quantity.

A large number of large commercial customers with fast response curtailment capability (<10 min) are currently seeking innovative supply options for physical supply from generation resources with specific characteristics. Such customers wish to site new commercial loads that are "co-located" with, and directly interconnected to, generation resources with specific technological characteristics, such as zero-emission output or firm supply configurations. Co-location and direct interconnection of loads to generation, at least in part behind the generation meter, assures that the primary electricity supply source for the customer load can be served physically by a resource with the customer's desired characteristics. Further, the "behind the meter" configuration has the potential to lower interconnection outlays and decrease transmission and distribution costs during the life of the project. In addition, these fast-response, interruptible customers have the potential to lower their capacity costs. In aggregate, these opportunities provide new market solutions and economic development for the region.

Currently, PJM markets do not offer options for fast-response, interruptible customers to select physical supply from their choice of technologies, whose attributes are consistent with customers' environmental goals or reliability needs.

Customers and generation suppliers are developing multiple potential configurations to satisfy customer interests. The configurations provide varying levels of service flexibility, consistent with the power supply technology and business structure offered by generation suppliers.

These configurations offer the opportunity for new customers to obtain physical power supply with desired output characteristics while providing PJM the flexibility to call on the energy supply serving such interruptible customers to meet PJM system capacity and energy needs (with concurrent, fast-response curtailment of the co-located customers).

On November 11, PJM issued a briefing paper describing the application of status quo rules to configurations in which load is co-located behind a generator meter. As PJM describes, current rules require the generator to "de-list" (essentially, to retire from capacity status) the portion of the generation facility serving the co-located load. Current market rules are a barrier to more innovative options in which the generator can offer the full capacity output of the unit to the PJM grid, facilitated by the fast-response, curtailable load. This problem can be solved through modifications to PJM's market rules.

Facilitation of such co-location configurations, in addition to the market solutions and economic development already highlighted, may also provide new reliability benefits to PJM. Placement of a fast-response, curtailable load behind the meter of a resource with limited dispatch flexibility, could provide the opportunity for additional ancillary services to be offered by such resources. Such opportunities can be explored in addition to overcoming the unnecessary commercial barriers that the status quo rules pose.

Deliberations to solve the problems identified above and to grasp the concurrent opportunities are likely to include consideration of both specific technical issues and broader policy issues. Such deliberations will require education about (among other things) potential interconnection configurations of co-located loads, impacts to generator interconnection agreements, and the current and prospective capacity obligations of resources serving such loads, and the calculation of offer levels for such resources. Other matters may require examination as well.

Absent timely consideration of means to overcome the challenges posed by the status quo, customer market solutions will be limited, economic development will be limited, new loads may face unnecessarily high supply and interconnection costs, PJM may lose valuable existing capacity , and PJM may lose the potential flexibility that such innovative supply/load configurations may offer via additional ancillary services. This examination will also support PJM's strategic objective to facilitate the reliable and cost-effective decarbonization transition.