Ohio Regulatory Staff Remarks

PJM's Variable Resource Requirement (VRR): Forward Procurement Auction with a Downward Sloping Demand Curve

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General Remarks

The Ohio Staff would like to commend the FERC for accepting the traditional resource requirement approach (the fixed resource requirement option) as a legitimate alternative to RPM. The Ohio Staff would like to request that, in developing the rules for the two alternatives, the FERC needs to ensure that a resource supplier is treated equitably in terms of the IRM requirement, the penalties for violating an IRM requirement, and the appropriate length of a resource commitment, regardless of what alternative the supplier chooses.

PJM's Variable Resource Requirement (VRR): Asking the Right Questions

In its Initial Order of April 20, 2006, the FERC found that the use of a downward-sloping demand curve, in a forward procurement auction, as proposed by PJM, would be a just and reasonable option for acquiring capacity. The FERC also found the use of downward-sloping demand curves as just and reasonable in the NYISO and ISO-NE capacity markets. In the FERC's opinion, a downward-sloping demand curve would reduce capacity price volatility and increase the stability of the capacity revenue stream over time. The FERC's conclusion is that as capacity supplies vary over time, capacity prices would change gradually with a sloped demand curve, rather than vary substantially

and dramatically between the PJM capacity market deficiency (penalty) charge and zero, as is the case with the ICAP capacity construct today.[1]

The Ohio Staff, in concept, agrees with the FERC that a downward-sloping demand function is a better alternative to the original ICAP demand function (the vertical demand function) in terms of reducing price volatility and reducing investor risk.[2] The Ohio Staff further agrees in concept with FERC that there should be a locational element to each of the future-identified Locational Deliverability Areas (LDAs).[3] We have, however, a list of general concerns related to the questions posed by the FERC staff. In our opinion, the questions posed by the FERC staff are too limited in scope. The underlying assumptions behind all of the questions posed by the FERC staff are as follows:

- A piecewise downward sloping **linear** demand curve is almost optimal for the design of the capacity market.
- A **generation** solution is the solution of choice for maintaining an adequate reserve margin for a particular LDA.
- The generation solution of choice is basically a **gas peaking** unit.
- Construction of base load and combined cycle units will continue to grow at the same rate of growth as the weather-normalized peak load demand.

In our opinion, these assumptions, as shared by PJM, weaken the proposed RPM construct filed with the FERC. For that reason, the Ohio Staff understands why the

[1] FERC, *Initial Order* at ¶104.
[2] Id.
[3] Id. at ¶6.

FERC is unable to conclude at this time that the proposed RPM construct is just and reasonable.[4]

Proposed discussion topics for the upcoming stakeholder process

Rather than asking what the height and slope(s) should be for a piecewise linear demand curve, the discussion should focus on what family of demand curves would lead to a "quasi optimal" representation of investment behavior and consumer welfare in the electric utility industry. Additionally, rather than discussing what the cost of a new generation entry should be, the discussion should focus on the exploration of cost of entry using differing strategies; namely a transmission upgrade solution, a demand response solution, or a generation solution.

In its *Initial Order*, for example, the FERC notes that, according to PJM, the current capacity market construct and a lack of applying a locational value on capacity has impeded the ability of transmission and demand response solutions to participate in capacity markets.[5] In that regard, the FERC is encouraged by PJM's proposal to consider generation, transmission and demand response, claiming that only when these three interrelated components of the market place are working together will PJM be able to meet established reliability criteria, keep markets robust and competitive, and ensure stable operations.[6] The Ohio Staff agrees with the FERC and would add a further caveat that a generation solution should not be limited to the evaluation of entry into the capacity market by a gas peaking unit only.

[4] Id.
[5] Id. at ¶75
[6] Id. at ¶84.

The Ohio Staff further agrees with the FERC that PJM should be instructed to adjust its RPM process to explicitly include the assessment of transmission and demand response solutions as viable alternatives to be considered in the auctions. A possible solution to this problem could be for PJM to provide a detailed demonstration in the paper hearing process set by the FERC or via the stakeholder process discussions as to how it intends to tie RTEP, RPM, and demand response solutions all together in a consistent and coherent manner.

Professor Hobbs' Simulation Results

In evaluating the five demand curves, Professor Hobbs was given the limited task by PJM of evaluating a group of linear downward sloping demand curves in terms of their impact on resource adequacy and consumer cost.[7] Professor Hobbs was not hired by PJM to determine the characteristics of a successful capacity market for consumers and resource suppliers in the PJM footprint, neither was he hired to explore from a large set of feasible curves a demand curve that could possibly lead to a more optimal solution for both consumers and resource suppliers. And finally, he was not asked by PJM to consider transmission and demand resource solutions as competing alternatives to a peaking generation solution. In other words, Professor Hobbs' simulation results, limited in scope at the outset by PJM, are in our opinion also too limited in scope and usefulness for PJM to conclude that the both consumers and resource investors are better off with an RPM construct.

[7] PJM Interconnection, L.L.C., *Proposal for a Reliability Pricing Model (RPM)* (August 31, 2005) Tab B, Affidavit by Benjamin Hobbs, Ph.D (hereinafter Hobbs' Affidavit) at 3.

High degree of uncertainty in the simulation results

While we agree with Professor Hobbs that the simulation results suggest that consumer cost may be lower under the VRR than under the existing ICAP construct, the simulation model developed was, in his words,

> *…useful for the purpose of understanding qualitative dynamic effects such as whether a long-term capacity market is less likely to induce boom-bust cycles than a short-term capacity market, and whether the relative ranking of different alternatives is robust under a wide range of assumptions. The model is not accurate enough to make precise quantitative predictions, but its intent is to illuminate several qualitative decisions that must be made at the outset of RPM.*[8]

In our view, the inaccuracy of the simulation model in making precise predictions is due, first, to PJM's decision to oversimplify the market that is being represented, and second, to the high degree of uncertainty associated with future economic and weather-related conditions and investor behavior. As an example, in Table 1 of Professor Hobbs' Affidavit, the 4th demand curve (titled Alternative Curve with New Entry Net Cost at IRM+1) leads to an average consumer payment for scarcity and ICAP (column 8 in the table) of $71/peak KW/year and a standard deviation of $48/peak KW/year.[9] With an estimated PJM peak load of 133,500 MW for this summer and an IRM requirement of 15%, the worst case future scenario could lead to an unanticipated additional cost to consumers of almost $1 billion (15%*133,500MW*$48/KW*1000KW/MW).

It is for this reason that we strongly urge the FERC not to use the simulation results in making decisions or assessments in regard to the impact of implementing RPM on the cost to consumers. Rather, these results, as Professor Hobbs points out, are to be

[8] Id. at 16.
[9] Id. at 36.

used as a demonstration that consumers may be better off with a downward-sloping demand curve than with a vertical demand curve.