

Energy Price Formation IMM Package

MRC

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Energy Price Formation

- **Prices should reflect supply and demand fundamentals.**
- **Prices are not too low.**
- **Reserve markets should provide incentives for resources to provide reserves and respond to reserve events.**
- **Scarcity pricing is intended for periods when the market is tight, not all the time.**
- **The reserve markets are not in place to provide revenues for uneconomic capacity.**

IMM Proposal

- **Synchronized reserve T1/T2 consolidation**
 - **Must offer details as proposed by PJM and IMM**
 - **Offer margin = 0 as proposed by IMM**
 - **Penalty structure as proposed by IMM**
- **Operating Reserve Demand Curves**
 - **Shape of curves**
 - IMM proposed ORDC conservatively targets operator actions and stressed market conditions
 - **Extend method to 30 minute reserves and day ahead**
 - The same issues require development for PJM or IMM package

Synchronized Reserve Offer Margin

- **Synchronized reserve prices, including opportunity costs, fall well below \$7.50 per MWh most of the time.**
- **There are no explicit costs of providing synchronized reserves, only energy opportunity cost.**
- **The margin is intended to reflect a margin consistent with a competitive market. The margin should be zero.**
- **PJM proposes tying the margin to performance penalties, imposing a higher price for a lower quality product.**
- **PJM approach to penalties will increase margin.**

Reserve Must Offer Requirement

- **PJM will calculate the capability for online generating units capable of following the dispatch signal.**
- **All resources should have a defined and enforceable obligation to provide accurate ramp rates for all relevant points on the offer curve.**
- **Hourly ramp rates**
- **Resource types that can provide synchronized reserves, but cannot follow the dispatch signal, must submit their true physical capability to PJM.**
- **PJM and IMM packages have the same structure of offers and method for clearing reserves.**

Smaller Reserve Subzones

- **RTO wide reserves support loss of a generator that is not behind a constraint.**
- **MAD Subzone, or other large area subzones, support loss of a generator that is constrained by a wide area IROL.**
- **Smaller constrained areas in PJM also require provision of reserves inside that area**
 - **BGE/PEPCO, Delmarva South**
 - **PSEG, ATSI**
- **PJM proposes only one subzone.**

PJM's ORDC Proposal

- **PJM proposes high prices for reserves beyond the reserve requirement**
- **Based on PJM's calculations of high probability of shortage under normal levels of forecast error and forced outages.**
- **Historic data does not support PJM's probability of shortage calculations.**
- **The PJM market has seen 21 five minute intervals, less than 2 hours, of shortage since five minute shortage pricing began in 2017.**
 - **Only 10 minutes of synchronized reserve shortage.**

IMM ORDC Proposal

- **Goal: construct a demand curve that provides an appropriate price signal for additional reserves when needed.**
- **The IMM proposes an ORDC based on analysis of actual operator demand for additional reserves.**
- **The resulting ORDC provides sufficient, but not excessive, prices for market procurement of additional reserves when needed.**

EPFSTF Goals

- **Board proposed changes (April letter)**
 - **Synch reserve market implementation**
 - **30 minute reserve product**
 - **Dynamic reserve requirements to reflect operator actions**
 - **Enhance ORDCs**
 - **“These enhancements would result in more transparent energy and reserve price signals that better reflect operator actions.”**
- **PJM’s ORDC proposal is not targeted to addressing operator actions.**

EPFSTF Issues Per 12.05.18 Letter

- **Impacts**
 - **With fast start; maintenance costs; fuel security**
- **Same reserve price for all reserve products**
- **Day-ahead/real-time interactions**
- **New uplift payments without offsets**
- **Allocation of reserve costs**
- **Matching of price impacts and demand conditions**
- **Details of interaction among synchronized reserves, primary reserves, 30 minute reserves and multiple locational reserve requirements**

EPFSTF Issues Per 12.05.18 Letter

- **Incentives for flexibility; inflexibility**
- **Congestion impact on:**
 - **price dynamics;**
 - **balancing congestion;**
 - **role of virtuals;**
 - **FTRs**
- **Impact on cleared RPM auctions**

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