FERC Order 1000: Significant Regional and Interregional Issues

Demand Response and Energy Efficiency: Maximizing Their Use in PJM’s Planning and Markets

Public Interest/Environmental Organizations Presentation to the PJM Board of Managers
May 14, 2013
NGOS Involved in PJM

- Chesapeake Climate Action Network
- Earthjustice
- Energy Conservation Council of Pennsylvania
- Environmental Defense Fund
- Environmental Law & Policy Center
- National Audubon Society
- National Wildlife Federation
- Natural Resources Defense Council
- Pace Climate and Energy Center
- Piedmont Environmental Council
- Sierra Club
- Southern Environmental Law Center
- Sustainable FERC Project
- Union of Concerned Scientists
Our Interests

• Improve environmental quality
• Expand customer choice and consumer savings
• Integrate clean energy resources
• Strengthen grid reliability, flexibility and resiliency
• Shift some investment from inflexible resources to dynamic technologies
1. Order 1000

Regional Planning Requirements

- Consideration of transmission needs driven by public policies *(Identification + Evaluation)*
- Comparable consideration of NTAs
- Removal of the ROFR for regional projects
- Pre-determined cost allocation
FERC’s PJM Order 1000 Decision

- ROFR removal is the main event
- FERC appears to have backed off from its public policy requirements in some cases
- “Comparable consideration” is not an affirmative obligation
- Decision split 3-2
Our Concerns with O-1000 Regional Planning

1. The Commission is not requiring true regional public policy planning. Are markets, sensitivities and interconnection queues enough?
   — Based on FERC’s decision, PJM may withdraw from PPR consideration even more.

2. Jurisdictional gap and lack of cost allocation and recovery opportunities for NTAs prohibits the choice of the most cost-effective solutions.

2. Markets don’t capture all available EE.
Public Policies – Are Scenario Analyses Incorporated into PJM’s Final Plan?

Purpose = Reliability + Economic Congestion Relief
Public Policies – Need the Multi-Driver Approach

MISO Multi-Value Approach Predicted Cost Savings (MISO analysis January 2012)
NTA Jurisdictional Gap

FERC

- Energy efficiency
- Distributed generation
- AMIs and other SG techs

States

- Wind turbines
- Nuclear power plant
PPRs: Non-Transmission Alternative Example

- First Energy Retirements = 2,675 MW coal
- Required PJM Upgrades = $900 million
Interregional Coordination Requirements

- Data Exchange
- Joint identification and evaluation
- Pre-set cost allocation
Our Concerns with O-1000 Interregional Coordination

1. Sequencing of regional and interregional decision-making remains unclear.

2. No reconciliation of project drivers among regions (especially for PPR-driven projects).

3. Lack of clear procedures for harmonization of data and modeling differences among regions.

4. Failure to embrace results of interconnection-wide planning activities.
2. Demand Response
DR’s Record is Very Good

- DR resources exceeded 100% response in 2012 emergency events.
- Longer term test and actual performance have been very good:

<table>
<thead>
<tr>
<th>Year</th>
<th>Event Performance</th>
<th>Test Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>No Events</td>
<td>118%</td>
</tr>
<tr>
<td>2010</td>
<td>100%</td>
<td>111%</td>
</tr>
<tr>
<td>2011</td>
<td>91%</td>
<td>107%</td>
</tr>
<tr>
<td>2012</td>
<td>104%</td>
<td>116%</td>
</tr>
</tbody>
</table>

2012 Event penalty charges – low (0.7%)
Test failure charges – low (0.6%)

DR is Growing in the Ancillary Services Markets

2012 Demand Side Response
Regulation Participation

<table>
<thead>
<tr>
<th>Months</th>
<th>Jan-12</th>
<th>Feb-12</th>
<th>Mar-12</th>
<th>Apr-12</th>
<th>May-12</th>
<th>Jun-12</th>
<th>Jul-12</th>
<th>Aug-12</th>
<th>Sep-12</th>
<th>Oct-12</th>
<th>Nov-12</th>
<th>Dec-12</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>MWh</td>
<td>15.8</td>
<td>13.8</td>
<td>17.9</td>
<td>12.6</td>
<td>15.0</td>
<td>19.9</td>
<td>126</td>
<td>735</td>
<td>681</td>
<td>639</td>
<td>504</td>
<td>605</td>
<td>3,774</td>
</tr>
<tr>
<td>Payments</td>
<td>$100.81</td>
<td>$150.34</td>
<td>$240.50</td>
<td>$187.22</td>
<td>$322.87</td>
<td>$283.86</td>
<td>$2,256</td>
<td>$12,802</td>
<td>$8,274</td>
<td>$21,866</td>
<td>$33,587</td>
<td>$10,316</td>
<td>$90,202</td>
</tr>
</tbody>
</table>

MWh = sum of the settled MW
(Example: 1 MW load available for 12 hours = 12 MWh)
Positive Recent PJM Actions

• Early and effective implementation of Order 745 (full LMP compensation for cost-effective DR).

• Additional CSP registration information (more info on backup generators).

• Increasing DR cap in synchronized reserve market from 25% to 33%.

• Three different DR products can now bid into the RPM auction – emergency DR, extended summer DR, and annual DR (available year round).

   However, the two new DR products should be considered in planning, and DR resources should be considered in all reliability tests, including the load deliverability test, at least as a sensitivity.
Rumors of DR’s “Saturation” are Exaggerated

• There is not yet a real indication of a DR saturation problem – DR has performed very well when called and when tested.

• PJM should continue to monitor DR performance and develop the data needed to inform stakeholders on the impacts of increased DR penetration.

• Recognize increasing value of price-responsive demand, Annual DR Product, and other solutions.
Demand Response – Our Recommendations

1. Continue to evaluate DR performance.

1. Except when justifiable reliability concerns merit changes, oppose barriers that unnecessarily restrict DR in markets and planning.

2. Analyze effects of emergency DR and new DR products in all planning tests (not just the load deliverability test).
3. Energy Efficiency
Energy Efficiency Problem – Comparatively Little EE Offers into and Clears the RPM
EE in the RPM – 0.56% of Capacity in the Last BRA

Source: PJM, 2015/2016 RPM Base Residual Auction Results, at p. 12.
269 MW of EE offered into and 265 MW of EE cleared the 2015/16 BRA.

A recent study by ACEEE and the Ohio Manufacturers Association found that an additional 508 MW of EE was eligible for that auction.

The additional EE would have reduced clearing prices and saved Ohio consumers $500 million from lower market prices:

<table>
<thead>
<tr>
<th>Zone</th>
<th>Additional Available EE Resources (MW)</th>
<th>Capacity Price with Additional Resources ($/MWd)</th>
<th>Annual Capacity Cost (M$)</th>
<th>Cost Mitigation with Additional EE (M$)</th>
<th>Cost Mitigation with Additional EE (M2012$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATSI</td>
<td>277</td>
<td>$225</td>
<td>$883</td>
<td>$484</td>
<td>$452</td>
</tr>
<tr>
<td>All Others</td>
<td>231</td>
<td>$126</td>
<td>$666</td>
<td>$51</td>
<td>$47</td>
</tr>
<tr>
<td>Ohio Total</td>
<td>508</td>
<td>$1,549</td>
<td>$535</td>
<td>$499</td>
<td></td>
</tr>
</tbody>
</table>

Source: Synapse Energy Economics
Potential Reasons and Solutions

Some Reasons

1. Only 4 years of savings in RPM
2. Complex RPM rules
3. Lack of LSE motivation to bid resources

Some Solutions

• Review and simplify rules to encourage or require bidding of EE resources into RPM auction.
• Account for other EE not bidding or clearing in the RPM.