Market Power Monitoring & Mitigation in New England

Harvard Electricity Policy Group
Twenty-Third Plenary Session

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A Snap Shot of New England’s Market Place

- ISO-New England administers five real-time markets
  - Energy
  - Operating reserves (3) and AGC
- Structurally, there has been a relatively high degree of divestiture, however:
  - While there are new names, the fleet sizes have not changed much
  - Concerns with ownership in load pockets
- Operating reserve margins have decreased unexpectedly
  - Higher than expected loads
  - Higher than average outage rates
  - Decrease in generator flexibility
Relevant Market Design Features

- The relevant market design features for this discussion include:
  - ISO-New England performs centralized, day ahead unit commitment
  - Energy market is single settlement market based on single, region-wide, real-time clearing price for all of New England
  - Transmission congestion costs are socialized as an uplift cost to transmission customers
A Look at Some of the Latest Headlines...

FERC approves price cap on New England's energy market under certain conditions

FERC suspends New England's Installed Capacity Market

FERC approves elimination of operable capability market in New England

FERC approves price cap on New England's operating reserve markets

DOJ announces investigation into New England Markets
Some Hard Facts

Unmitigated Transmission Congestion Costs For Northeastern Massachusetts and Boston
May 1999 – July 2000

Data from ISO-NE Website

Barker, Dunn & Rossi
Some More Hard Facts

Energy Uplift Costs
(excluding transmission congestion costs)
May 1999 - June 2000

Data from ISO-NE Website

Barker, Dunn & Rossi
Market Power Monitoring and Mitigation Procedure - Today

- Market Rule and Procedure 17 is FERC filed procedure that governs market power monitoring and mitigation in New England
- "...the ISO will concentrate its monitoring and mitigation resources on firms with the following characteristics:
  - Sellers whose pattern of behavior is consistent with an intentional or systematic effort to raise the market clearing price; and
  - Whose pattern of behavior, without mitigation, would actually cause a material increase in the Market Clearing Price." – NEPOOL Market Rule and Procedure 17

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Focal Points of Market Power Monitoring

- Unconstrained system conditions
  - Is any party intentionally withholding capacity – physically or economically - from the market?
  - Is any party in a position to increase the clearing price by raising the bid prices of its resources at the margin and profit from this strategy?

- Transmission constrained system conditions
  - Does an entity have local market power?
  - Is it exercising this market power? Does it pass the market power screens?

- External energy purchases
Mitigation Options – Unconstrained Operations

- Negotiate voluntary mitigation arrangement
- ISO may impose following mitigation measures:
  - Reduce bidding flexibility of resource
  - Increase participant’s reserve obligation
  - Replace the resource’s bid with a Reference Price, which is calculated based on the historic bidding pattern for the resource
  - Use the resource’s actual marginal cost as its bid
  - Make the resource ineligible to set the ECP

Barker, Dunn & Rossi
Mitigation Options – Constrained Operations

- MRP 17 recognizes difference between resources that regularly run in-merit from those that seldom run
- Two market power screens are applied to determine if resource should be mitigated
  - Structural screen – checks if ISO-NE had at least 3 separately owned resources to choose from in solving the constraint
  - Price screens – checks the resource's current bid price against its recent bidding pattern
- If resource does not pass market power screens, its bid price is mitigated according to price screen tables
### Price Screen Table for Resources Normally in Merit Order

<table>
<thead>
<tr>
<th>Consecutive hours in this run out of economic merit order</th>
<th>90-day cumulative hours out of economic merit order</th>
<th>Current hour bid as percentage of Reference Price to resources used out of economic merit order during transmission constraints</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤12</td>
<td>≤45</td>
<td>150%</td>
</tr>
<tr>
<td>&gt;12-24</td>
<td>&gt;45-90</td>
<td>125%</td>
</tr>
<tr>
<td>&gt;24</td>
<td>&gt;90-135</td>
<td>120%</td>
</tr>
<tr>
<td></td>
<td>&gt;135-180</td>
<td>115%</td>
</tr>
<tr>
<td></td>
<td>&gt;180-225</td>
<td>110%</td>
</tr>
<tr>
<td></td>
<td>&gt;225</td>
<td>105%</td>
</tr>
</tbody>
</table>

*Table 1 from NEPOOL MRP 17 Appendix B

Barker, Dunn & Rossi
### Price Screen Table for Resources Seldom Run in Merit Order

<table>
<thead>
<tr>
<th>Consecutive hours in this run out of economic merit order</th>
<th>90-day cumulative hours out of economic merit order</th>
<th>Current hour bid as percentage of the higher of the current hour CP or Comparable Hours CP</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤12</td>
<td>≤45</td>
<td>500%</td>
</tr>
<tr>
<td>&gt;12-24</td>
<td>&gt;45-90</td>
<td>300%</td>
</tr>
<tr>
<td>&gt;24</td>
<td>&gt;90-135</td>
<td>150%</td>
</tr>
<tr>
<td></td>
<td>&gt;135-180</td>
<td>125%</td>
</tr>
<tr>
<td></td>
<td>&gt;180-225</td>
<td>115%</td>
</tr>
<tr>
<td></td>
<td>&gt; 225</td>
<td>105%</td>
</tr>
</tbody>
</table>

*Table 2 from NEPOOL MRP 17 Appendix B

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Market Power Reporting

- ISO required to report regularly to industry
  - Monthly reports
  - Quarterly reports to regulators
  - Annual reviews
- Reports identify level of mitigation activity but no specifics
- NEPOOL Information Policy bars ISO from publishing any information deemed commercially sensitive
Some observations and comments

- The major concerns and complaints seem to fall into several broad areas
  - Lack of transparency in markets
  - Lack of publicly available information in a timely manner
  - Tools and resources available to ISO to adequately detect exercise of market power
  - Generators think there is too much intervention, loads think there is not enough

- Lessons from other markets
  - Release specific bid data (this is already being done in England, Australia and Alberta, for example)
  - Ring-fence market monitoring unit and have it monitor the ISO/RTO (DSTAR, RTO West)
  - Transparency of real-time market operations
  - Locational pricing
Proposed Changes to Market Power Monitoring and Mitigation Procedure

- Market Advisor role proposed to provide independent guidance to ISO Board on market power monitoring activities

- More specific trigger mechanisms for detecting market power during unconstrained operations have been added
  - Triggers are based on experiences gained from first 18 months of operations
  - Triggers intended to identify strategic behavior that has a material impact on the market

- Specific remedies modified to reflect changes to trigger mechanisms

- Debate over information disclosure

Barker, Dunn & Rossi