Transmission Planning for the Next Generation

Some Implications For Generators in the New England Region of FERC Order 1000
The Transmission and Generation Planning Nexus

- What if Connecticut units *retire* rather than *repower*?
  - Potential need for more transmission to tap external supply

- What if Non-Transmission Alternatives (NTAs) are cheaper?
  - Generation could replace a transmission solution

- What if renewable generation mandates exceed supply?
  - May prompt need for new transmission
### Aging Steam Oil / Gas and Coal Units In CT

<table>
<thead>
<tr>
<th>Unit Name</th>
<th>Fuel</th>
<th>Capacity (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Montville 5</td>
<td>Oil/Gas</td>
<td>81</td>
</tr>
<tr>
<td>Middletown 3</td>
<td>Oil/Gas</td>
<td>236</td>
</tr>
<tr>
<td>Middletown 2</td>
<td>Oil/Gas</td>
<td>117</td>
</tr>
<tr>
<td>Norwalk Harbor 1</td>
<td>Oil</td>
<td>168</td>
</tr>
<tr>
<td>Norwalk Harbor 2</td>
<td>Oil</td>
<td>162</td>
</tr>
<tr>
<td>Montville 6</td>
<td>Oil</td>
<td>407</td>
</tr>
<tr>
<td>Middletown 4</td>
<td>Oil</td>
<td>400</td>
</tr>
<tr>
<td>Bridgeport Harbor 2</td>
<td>Oil</td>
<td>130</td>
</tr>
<tr>
<td>New Haven Harbor</td>
<td>Oil/Potential Gas</td>
<td>461</td>
</tr>
<tr>
<td>Bridgeport Harbor 3</td>
<td>Coal</td>
<td>372</td>
</tr>
<tr>
<td>AES Thames</td>
<td>Coal</td>
<td>181</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>2,715</strong></td>
</tr>
</tbody>
</table>
Non-Transmission Alternatives

Next MRA Study: the Greater Hartford and Central Connecticut Area

The Greater Hartford and Central Connecticut (GHCC) area is comprised of the following four sub-areas:

1. Greater Hartford
2. Northwest Connecticut
3. Middletown
4. Manchester / Barbour Hill

Source: ISO-NE December 14, 2011 PAC Presentation
**Renewable Portfolio Standards are Rising**

![Graph showing the rise in renewable portfolio standards for different states over the years from 2006 to 2020.](image)

- **GWh** (Gigawatt-hours)
- **2012 Requirements**
- States represented: RI (Rhode Island), NH (New Hampshire), MA (Massachusetts), ME (Maine), CT (Connecticut)

**La Capra Associates**

*Powering New England in the New Environment*  
Connecticut Power and Energy Society
Wind Resource Potential in New England

Legend
Class 7: >8.8 (m/s)  
Class 6: 8-8.8 (m/s)  
Class 5: 7.5-8 (m/s)  
Class 4: 7-7.5 (m/s)  
Class 3: 6.4-7 (m/s)  

40 Miles
230 kV
345 kV

NE Total Wind Resource Potential: 9,433 MW

1 meter per second roughly 2.2 mph
ISO-NE Estimates for Added Transmission for Wind

Transmission for 5,500 MW of Wind

- Potential transmission to connect 4,000 MW of offshore and 1,500 MW of near-shore onshore wind
- New transmission paths
  - New 345 kV line from Maine to Connecticut
  - New HVDC underwater cable from Maine to Boston
- Local loops to collect wind in Maine
- Preliminary cost estimate: $6 billion
Sweeping Changes in Transmission Planning

- New rules for regional and interregional transmission planning
- New rules for cost allocation
- State and federal “public policy” incorporated into the new transmission planning process
- NTA analysis part of the planning process
Timeline

- Compliance
  - FERC issues Order No. 1000 July 2011
  - Regional filing due October 2012
  - Interregional filing due April 2013
  - New planning / cost allocation commences after FERC approval 2013 or beyond
  - Stakeholder processes to revise tariffs underway at ISO-NE
How Does FERC Order 1000 Alter Transmission Planning?

- New “Public Policy” category of transmission projects
- NTAs analysis
- Regional planning and interregional coordination
Resource Implications

- Will existing generation be more or less likely to retire?
- Will renewable generation see the transmission obstacle removed?
- Will Distributed Generation or Combined Heat and Power now be able to show additional quantifiable benefits and enhance deployment in New England?
- Will Energy Efficiency also be able to quantify more benefits?
- How about Demand Response?
Defining “Public Policy”

- State and federal laws and regulations
  - Energy and environmental laws and regulations
  - For example, RPS requirements

- Unclear whether state energy policies from commission orders would qualify

- Unclear whether a state Integrated Resource Plan would qualify

- Much depends on how these issues are defined by stakeholders in the compliance process
Cost Allocation Implications

- Transmission costs allocation “roughly commensurate with benefits”

- If the costs for desired transmission are socialized, will that prompt additional renewable resources in New England?

- Order No. 1000 did not require cost allocation for NTAs

- The question “Who pays and for what?” will change the answer to the resource solution question
End of Presentation

Thanks!

Contact Information:

Dan Peaco
La Capra Associates
One Washington Mall, 9th Floor
Boston, MA 02108
Tel: 617-778-5515
dpeaco@lacapra.com