2017 New England Energy Conference & Exposition

Session II B: Pursuing Environmental Goals Against the Wind
A Utility’s Perspective

Alan Trotta
United Illuminating
Value of the Electric Grid

- The Grid is, and will remain, highly valuable to customers and other users
- Integration of load with supply for New England
- Enables functioning markets over a broad geographic area
- Allows for optimal development of both centralized and distributed resources
- Can be the backbone for reducing carbon dioxide emissions from the transportation sector
Modernization of the Grid and Regulation

• The Grid is changing as users’ needs change
  • Expansion of distributed generation and adoption of new technologies
  • Adoption of EVs
  • Is the distribution ISO coming?
• Regulation of the Grid needs to keep pace
  • Decoupling revenue from sales is a great start
  • New rate structure for new product and service offerings
  • Send appropriate economic signals to all grid users
Renewable Cost Trends for Connecticut

Cost of Clean Energy Programs

*Average cost for RSIP was levelized over 20 years for Purchased Residential PV systems and not leased systems.

Graph from Connecticut Department of Energy and Environmental Protection
Investing in De-Carbonization

• For maximum cost-effectiveness, go big
  • Actual results demonstrate that economies of scale are very real

• Investment in the clean energy resources is only part of the investment needed
  • The Grid will need modernization and expansion to meet carbon dioxide reduction goals
  • Conventional generation will provide balancing and reliability for the foreseeable future, and needs appropriate compensation through market mechanisms
Distributed Generation

- Distributed clean generation is a key part of the long-term goal of reducing carbon dioxide emissions
- However, economic signals should be accurate and avoid hidden subsidies
  - Net metering shifts costs from participating customers to all other customers
  - Excessive premiums harm non-participating customers
  - Cost responsibility needs to be aligned with users’ actual power and energy requirements
Expansion of Distributed Generation at UI

DG Application Summary By Year

<table>
<thead>
<tr>
<th>Year</th>
<th>Complete Applications Received</th>
<th>Approved Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>59</td>
<td>73</td>
</tr>
<tr>
<td>2012</td>
<td>145</td>
<td>89</td>
</tr>
<tr>
<td>2013</td>
<td>308</td>
<td>234</td>
</tr>
<tr>
<td>2014</td>
<td>915</td>
<td>388</td>
</tr>
<tr>
<td>2015</td>
<td>2,529</td>
<td>1,193</td>
</tr>
<tr>
<td>2016</td>
<td>3,046</td>
<td>2,298</td>
</tr>
<tr>
<td>2017 (Mar)</td>
<td>691</td>
<td>481</td>
</tr>
</tbody>
</table>