Northeast Biomass Thermal Vision: Accomplishments and Strategies

2nd Annual Heating the Midwest

April 25th, 2013

Carlton, Minnesota

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Biomass Energy Resource Center at VEIC
Biomass Energy Resource Center (BERC)
Advancing Community-scale Biomass Energy in North America

Technical Consulting
- Project feasibility studies
- Fuel supply assessments and procurement
- Third-party expert review
- Develop and review of standards
- Whitepapers

Program Design & Implementation
- Expansion potential assessments
- Roadmaps
- Program management
- Training, and advisory support services

Advocacy
- Showcasing “best practices” and case studies of successful projects
- Maintaining database

BERC is a program of the Vermont Energy Investment Corporation
A mission-driven non-for-profit whose mission is to reduce the economic and environmental impacts of energy production and consumption
Northeast Biomass Thermal Working Group (NEBTWG)

- Its purpose is to identify and implement strategies to accelerate growth and adoption of biomass heating in the northeastern U.S.
- All volunteer steering committee; small admin support contract with TTC (BTEC)
- NEBTWG is not a membership organization; regional cooperator with BTEC
- 5th Annual Heat the Northeast Conference
# Heating Oil Use in the Northeastern US

<table>
<thead>
<tr>
<th>State</th>
<th>Annual Gallons of Heating Oil(^1)</th>
<th>Population(^2)</th>
<th>Gallons Oil/ Capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connecticut</td>
<td>562,944,000</td>
<td>3,500,000</td>
<td>160</td>
</tr>
<tr>
<td>Maine</td>
<td>358,142,000</td>
<td>1,300,000</td>
<td>275</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>612,397,000</td>
<td>6,646,000</td>
<td>92</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>278,342,000</td>
<td>1,320,000</td>
<td>210</td>
</tr>
<tr>
<td>New York</td>
<td>1,612,532,000</td>
<td>19,570,000</td>
<td>82</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>651,820,000</td>
<td>12,763,000</td>
<td>51</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>161,455,000</td>
<td>1,050,000</td>
<td>153</td>
</tr>
<tr>
<td>Vermont</td>
<td>186,640,000</td>
<td>626,000</td>
<td>298</td>
</tr>
<tr>
<td><strong>Total/Average</strong></td>
<td><strong>4,424,272,000</strong></td>
<td><strong>46,775,000</strong></td>
<td><strong>165</strong></td>
</tr>
</tbody>
</table>

\(^1\) Source: US EIA 2011  
\(^2\) Source: 2010 US Census Bureau

= 86% of US heating oil demand!
The Vision

- An American Revolution in thermal renewable energy, to start in the Northeast
- 25% of all thermal energy in Northeast from renewable energy by 2025
- 75% of renewable thermal energy from sustainably-sourced forest and agricultural biomass by 2025 (balance from solar thermal and geothermal)
The Vision

2010
Biomass = 4.16% of thermal energy

2025
Biomass = 18.50% of thermal energy
Programmatic Strategies

1. **Recognition Programs**
   Recognize and promote “best practices” and “best in class” projects

2. **Subsidy Programs**
   Subsidize biomass thermal with rebates & tax incentives on capital costs and on-going payments through thermal RECs

3. **Investment Programs**
   Programs that make new forms of financing available to cover the fist-costs of biomass systems

4. **Requirement Programs**
   Regulatory and voluntary industry standards for fuel quality, heat meters, boiler efficiency and safety, building codes.
# Biomass Thermal Policy Update for Northeast

<table>
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<tr>
<th>State</th>
<th>Policy Activities</th>
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</thead>
<tbody>
<tr>
<td>Connecticut</td>
<td>Thermal RPS legislation introduced recently; including biomass</td>
</tr>
<tr>
<td>Maine</td>
<td>$11Milion ARRA for 22 demonstration projects, possible thermal addition to the Maine RPS</td>
</tr>
<tr>
<td>Maryland</td>
<td>Wood appliance rebate program</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>Just released $3 million for aggressive rebate for residential pellet boilers, DOER studying adding thermal to APS</td>
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<tr>
<td>New Hampshire</td>
<td>Aggressive pellet boiler rebate, boiler regulations allow non-ASME, thermal addition to RPS in 2013, passed legislation making thermal utilities exempt from PUC oversight</td>
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<tr>
<td>New York</td>
<td>NYSERDA Biomass Thermal Road Map, RGGI funds for demonstration projects</td>
</tr>
<tr>
<td>Vermont</td>
<td>Fuels for Schools, Efficiency Vermont $1,000 pellet boiler rebate, regulations allowing non-ASME biomass boilers, push toward comprehensive energy standards, new state buildings heated with biomass</td>
</tr>
</tbody>
</table>

*Slide Credit: Charlie Niebling*
Other Indicators of Progress is Being Made in the Northeast

- More projects
- Increased woodchip availability – commodity production of “bole” chips
- Development of regional woodchip fuel quality specifications
- Increased availability of pellets in bulk
- Advancements in bulk pellet delivery, storage, and automated feeding
- Advancements in combustion technology
- More sophisticated approach to proper boiler sizing
- Advancements in boiler integration with thermal storage, solar hot water, etc.
- Advancements in PM emissions control technologies
- Progress toward broad spread biomass district energy
- More packaged solutions (equipment lease/financing, heat sales, etc.)
Parting Comments

- Need unified voice as an industry regionally and nationally
- Work to develop pro biomass thermal policies and develop clear and consistent standards at state and national level
- Get involved with HTMW and join BTEC
- Many similarities between Northeast and Midwest
- Help transition biomass thermal to achieve “new normal” recognition – not a “primitive” technology and not a “fringe” concept
Contact Information

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And NEBTWG
http://www.nebioheat.org/
New Pneumatic Bulk Pellet Delivery

Newton Pellets

Vermont Renewable Fuels

Maine Energy Systems

Sandri Energy