Advancing Modern Wood Heating Across the Northeast:
A Retrospective on a Decade of Progress

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Escanaba MI
Heating the Northeast with Renewable Biomass: A Bold Vision for 2025

- 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)

www.nebioheat.org/vision
Flow Diagram of Sustainable Biomass for New England and New York
(in green tons)
Analysis by FutureMetrics

Potential Annual Sustainable Forest Harvest
55,400,000 Green Tons

Potential Annual Dedicated Energy Crops Harvest
23,304,000 Green Tons

Sawlogs
8,391,000 Tons

Pulpwood
14,935,000 Tons

half of remaining potential removed to keep estimate conservative
7,440,000 Tons

Potential Forest Biomass for Energy: 7,440,000 Tons

half of potential energy crops removed to keep estimate conservative
11,652,000 Tons

Potential Crop Biomass for Energy: 11,652,000 Tons

Total Potential Annual Biomass for Energy Applications
19,092,000 Green Tons

Not Available for Harvest
16,939,000 Tons
Conversion to biomass thermal will **displace over 1.14 billion gallons of oil annually by 2025**. This represents over 20% of all heating oil consumed in the Northeast, **making our region more secure**.

Conversion of **1.39 million homes and businesses** will enable the **retention of more than $1.6 billion in annual income in our economy** instead of exporting to other economies.

By 2025, the Northeast would have more than **$4.5 billion new dollars per year injected into the regional economy**.

This retention of wealth and expansion of the biomass thermal industry will result in a total of **140,200 permanent jobs** (new and retention of existing).
2010
Biomass = 4.16% of thermal energy

2025
Biomass = 18.50% of thermal energy
A Challenging Scale-Up!

250,000+/- household equivalent growth in modern wood heating through 2016!
Ten Years of Steady Growth in Domestic U.S. Heating Pellet Industry

• Up Years
  ➢ 2005-2006 – Hurricanes Katrina and Rita
  ➢ 2007-2008 – Dramatic spike in oil/natural gas prices
  ➢ 2012-2015 – Cold winters and steady increase in heating oil and propane
Ten Years of Steady Growth in Domestic U.S. Heating Pellet Industry

• **Down Years**
  - 2006-2007 – Warm winter
  - 2009-2010 – Recession, rapid drop in fossil heating fuel prices
  - 2015-2016 – Record warm winter, sustained dramatic drop in fossil heating fuel prices
Percent Job Losses in Post WWII Recessions, aligned at maximum job losses


Current Employment Recession

Dotted line ex-Census Hiring

http://www.calculatedriskblog.com/
In the Face of Adversity, Much Progress and Accomplishment!

• Private, Public Investment in Capacity and Market Development
• Recognition
• Policy
• Regulatory Reforms
• Organization
Private, Public Investment in Capacity, Market Development

• Millions in new investment in fuel manufacturing – 160% increase in pellet capacity 2006-2016 (105K to 834K TPY)

• Millions in state, federal grants to support building capacity

• Millions in investment in bulk delivery, trained installers

• Private philanthropic/foundation capital: BERC, NFC and other nonprofits, USEFC
# New England/New York Mill Capacity

<table>
<thead>
<tr>
<th>Mill</th>
<th>2006 Capacity</th>
<th>2013 Capacity</th>
<th>2016 Capacity</th>
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<td><strong>TOTAL</strong></td>
<td><strong>105,000</strong></td>
<td><strong>599,000</strong></td>
<td><strong>834,000</strong></td>
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</tbody>
</table>
Pellet Supply/Distribution 2006

- **Yellow Circle**: Bulk Pellet Delivery Trucks
- **Blue Circle**: Pellet Mills
Pellet Supply/Distribution 2016

- Bulk Pellet Delivery Trucks
- Pellet Mills
- Grant Proposed
- Grant Received

Active in Bulk Fuel Markets:

2016 Pellet Mill And Truck Locations

7 X Tractor and Trailer
18 X <15 tons

Source: TARM USA, updated by INRS
Small Print: This is unofficial
Recognition

- State Energy/Climate Plans – MA, NH, VT
- State Renewable Thermal Strategies – MA, NY/RI coming
- EIA tracks and reports biomass heating!!
- Federal Executive Orders
- Community energy initiatives, e.g. NH LECs,
- Recognition by financing institutions, insurance industry, realtors, building code enforcers
Policy

• State Incentive Programs – NH, ME, MA, NY, VT
• Thermal in state Renewable Energy Standard programs – NH, MA, VT and soon possibly NY and RI
• Renewable thermal as RGGI offset
• Thermal now in federal definition of renewable energy (pending energy bill)
• BTU Act has fighting chance during lame duck
Regulatory Reforms

• An NSPS we can live with
• **Standards** – fuel, boilers, bulk storage and delivery, recognition of EN standards (NH, VT)
• **Certification and licensing** – Maine Fuels Board waives solid fuel licensing requirement
• **HUD recognition** of automated pellet boilers
• **NYSERDA/EPA endorsement** of boilers built to EN standards
Organization!


- Promote a Vision: Heating the Northeast with Renewable Biomass – A Bold Vision for 2025


- Support state organizational efforts: ME, NY, PA, VT, NH Work together with other organizations and agencies: PFI, AFGH, USDA, USFS
Modern Wood Heat: Prescription for Progress in Challenging Times

• Policy matters: have to be recognized to exist
• Organizations matter – state, regional, national
• Projects – show people this stuff works!
• Messaging – focus on all benefits, not just economic
• Go on offense in face of critics: facts, data and science
What keeps you up at night?

What gives you hope for the future?