Joint Congressional Briefing
Biomass Thermal Energy Policy
November 6, 2009

Hosted by the Biomass Thermal Energy Council, the Pellet Fuels Institute, and the Alliance for Green Heat
# Biomass Thermal Energy Policy

**November 6 Agenda**

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<th>Topic</th>
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<td><strong>Jon Strimling</strong></td>
<td>Welcome and Introductory Remarks&lt;br&gt;Environmental and economic benefits of heating with biomass fuels.</td>
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<td>Chair, BTEC Government Affairs Committee&lt;br&gt;President &amp; CEO, WoodPellets.com</td>
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<td><strong>Bruce Lisle</strong></td>
<td>Overview of current public policy initiatives for biomass heating in House, Senate and federal agencies; and commercial and industrial applications for biomass thermal.</td>
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<td>Chair, PFI Government Affairs Committee&lt;br&gt;President, Biofuel Technologies&lt;br&gt;Founder, Energex Pellet Fuel, Inc. Former President of PFI</td>
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<td><strong>John Ackerly</strong></td>
<td>The green solution for everyman: Why wood is America’s favorite renewable and why biomass heating is good for the environment, good for the average homeowner, and good for our economy.</td>
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<td>President, Alliance for Green Heat</td>
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<td><strong>Jon Strimling</strong></td>
<td>A Snapshot of the European Example&lt;br&gt;Closing Remarks</td>
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<td><strong>Discussion</strong></td>
<td>How can we more closely coordinate these efforts moving forward to meet our environmental and economic objectives?</td>
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*BioPellets.com, Pellet Fuels Institute, Alliance for Green Heat*
Environmental and Economic Benefits to Heating with Pellet Fuel
November 6, 2009

A Presentation by Jon Strimling, Chair, BTEC Government Affairs Committee
President and CEO of WoodPellets.com
Biomass Pellet Fuel Basics

Lumber residuals and agricultural bi-products

Biomass heating products from sustainable resources

Carbon neutral biomass heating systems
America’s Energy Usage Has Three Major Slices

- Transportation: 29%
- Heating: 31%
- Electricity: 40%
Biomass Is Used Across Sectors

Unlike wind or solar, biomass is being used in electrical generation, as a feedstock for transportation fuels and as a heating fuel, along with for other non-energy uses for the same materials.

• Incentives in one sector (generation, transportation, heat) impact the pricing of raw materials for all other uses of those materials.

• Heating has historically been overlooked as policy measures focused on either the transportation sector or the electrical generation sector.
Public Policy in the US Favors Transportation Subsidy Per Displaced million BTUs of Fossil Fuels

Billions of Dollars Being Spent on Biomass For Transportation

Source: Database of State Incentives for Renewable Energy (www.dsireusa.org)
Public Policy Should Reward Efficiency

We support an energy policies focused on these desired outcomes:

- **Promotes highest efficiency** utilization of all energy resources
- **Maximizes job creation** in the biomass energy sector
- **Reduces greenhouse gases** that contribute to climate change
- **Improves air quality** through the support of clean, efficient combustion technologies
- **Maximizes the reduction of America’s reliance on foreign fossil energy** and increases America’s energy independence
- **Promotes sustainable use** of finite natural resources

We seek a *level playing field*, where biomass thermal can compete on its merits with biomass electrical generation and liquid transportation fuels.
Some Quick Facts and Statistics

Biomass is the most broadly used form of renewable energy in our country
- Biomass represents 53% of our nation’s renewable energy portfolio
- Biomass displaces 10X more fossil energy than wind, solar or geothermal
- Over two million homeowners use biomass as their primary heating source

Heating with biomass fuels is effective. Doing so:
- Eliminates 75% of the carbon emissions associated with fossil fuel heating
- Displaces twice as much imported oil as ethanol (per unit of biomass)

Heating with biomass fuels is practical. Biomass heating solutions:
- Are affordable, with millions of homeowners utilizing wood and pellet stoves today
- Have no technical barriers, with equipment readily available on the market
- Have been demonstrated to benefit from supportive public policy initiatives, as has been seen in Germany, Sweden and throughout Europe
### Heating is the Most Efficient Use of Biomass

#### Energy Potential for U.S. Biomass

The examples in this chart are based on 1 million tons of green biomass.

<table>
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<tr>
<th>Energy Type</th>
<th>Yield</th>
<th>Jobs Created</th>
<th>Foreign Import Reduction</th>
<th>Foreign Crude</th>
<th>GHG Reduction</th>
<th>US Taxpayer Spending</th>
<th>Technology</th>
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<tbody>
<tr>
<td><strong>Thermal Energy</strong></td>
<td>87,000</td>
<td>200</td>
<td>1,310,000 bbl.</td>
<td>1,310,000 bbl.</td>
<td>520,000 metric tons</td>
<td>None</td>
<td>Advanced technology in place</td>
</tr>
<tr>
<td><strong>Electricity Feedstock</strong></td>
<td>73,000</td>
<td>25</td>
<td>0</td>
<td>0</td>
<td>700,000 metric tons</td>
<td>Production Tax Credit: $8M</td>
<td>May require technology upgrade</td>
</tr>
<tr>
<td><strong>Transportation Fuel</strong></td>
<td>29,000</td>
<td>30</td>
<td>860,000 bbl.</td>
<td>860,000 bbl.</td>
<td>230,000 metric tons</td>
<td>Production Tax Credit: $40M</td>
<td>Unproven cellulosic technology required</td>
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Biomass Heating Offers Practical Carbon Reductions Today

Key Points on Carbon:

- The globe requires carbon reduction efforts to start immediately.
- We have finite agricultural and forest resources as biomass feedstocks.
- Utilizing biomass for corn ethanol does not significantly reduce net carbon emissions (given emissions from transport and processing.)
- Utilizing biomass for heating provides a net 75% reduction.

Biomass For Heating Provides Energy Independence

Using biomass for heating displaces more than twice the oil of using the same feed-stocks for ethanol.

Oil displaced per unit of biomass converted to ethanol

Oil displaced per unit of biomass by solid biomass heating

The technology to save money with biomass heating exists today; but the technology for cost effective cellulosic ethanol is still being developed.

Biomass Heating Spurs Job Creation

Biomass has enormous potential for job creation

• Multiple ‘green-collar’ jobs, from forests to transport/processing to equipment manufacturer, installation and service
• Usage for heating creates more jobs (per ton of biomass) than other sectors
• Unlike solar or wind, the fuel needs to be harvested and brought to the consumer year after year, resulting in substantial long-term job creation

German leads in green job creation (biomass leads among renewables):

• Jobs in solar industries: 75,000
• Jobs in wind industry: 84,000
• Jobs in biomass industry: 96,000
(German policies focus on the use of biomass for heat and cogeneration)
Europe Has Proven Supportive Public Policy Can Speed Adoption
America’s Energy Usage Has Three Major Slices

Transportation: 29%

Heating: 31%

Electricity: 40%
Conclusions of European Studies

• Biomass feed-stocks are limited and should be used in the most efficient way.

• Utilizing biomass for heating has **three times** the impact of utilizing biomass to generate transportation fuels.

• Policy instruments in one sector can lead to a decrease of bioenergy usage in another sector.***

• ***America’s subsidy of ethanol and biomass electric generation drive up the cost of biomass feed-stocks, actually reducing adoption in more cost effective heating applications.

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### Green House Gas Reduction

**Biomass For Heat has Three Times the Impact of Ethanol**

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<th>Fuel Type</th>
<th>Green House Gas Reduction (kg CO₂eq/Wh Biomass – Primary energy)</th>
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<tr>
<td>Pellet Heating</td>
<td>150</td>
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<tr>
<td>Cellulosic Ethanol</td>
<td>52</td>
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</tbody>
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**Source:** Kranzl, "The efficient use of woody biomass", International Conference on Pellets, Stuttgart, Germany, 2008.
Sweden demonstrated significant carbon reductions

Source: http://www.svebio.se/?p=726

35% increase since 1995

15% decrease since 1995

Source: http://www.svebio.se/?p=726
Sweden Executed National Transition in 15 Years

Source: Swedish Energy Agency
http://www.swentec.se/upload/Kalifornien/CA%20workshop%202007-01-11n.pdf
Renewable Heating has Displaced Oil in Upper Austria

The end of the oil-era?

New Installations

- oil-heating
  - 1999: 36%
  - 2006: < 1%
- renewable energy technologies
  - 1999: 32%
  - 2006: 76%

Germany Started Later, But Growth is Rapid

All Boiler Installations in Germany (2005)

- pellets 2%
- oil 25%
- gas 64%
- other 9%

Total number: 795,000

Growth in Pellet Installations

Source: WSED, European Pellets Conference, 3/2007, Ortner (Okofen)

Source: Joachim Fischer, German American Chamber of Commerce, Renewable Energy Conference Proceedings, 2007
All Required Technology Is Already Proven in Europe…

- Indoor flexible bag silo stores 1-10 tons...
- German truck making home delivery...
- ...equipped with onboard scale and pneumatic hosing
- ...and already feed seamlessly to automated boilers
Discussion: Public Policies Should Reward Efficiency

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Discussion
Practical, Green, Affordable