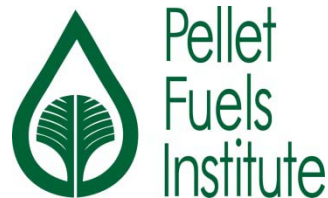


Joint Congressional Briefing Biomass Thermal Energy Policy

November 6, 2009

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



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Biomass Thermal Energy Policy

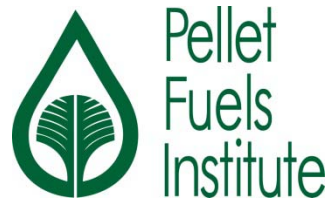
November 6 Agenda

Speaker	Topic
Jon Strimling Chair, BTEC Government Affairs Committee President & CEO, WoodPellets.com	Welcome and Introductory Remarks Environmental and economic benefits of heating with biomass fuels.
Bruce Lisle Chair, PFI Government Affairs Committee President, Biofuel Technologies Founder, Energex Pellet Fuel, Inc. Former President of PFI	Overview of current public policy initiatives for biomass heating in House, Senate and federal agencies; and commercial and industrial applications for biomass thermal.
John Ackerly President, Alliance for Green Heat	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.
Jon Strimling	A Snapshot of the European Example Closing Remarks
Discussion	How can we more closely coordinate these efforts moving forward to meet our environmental and economic objectives?

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



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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%



Electricity
40%



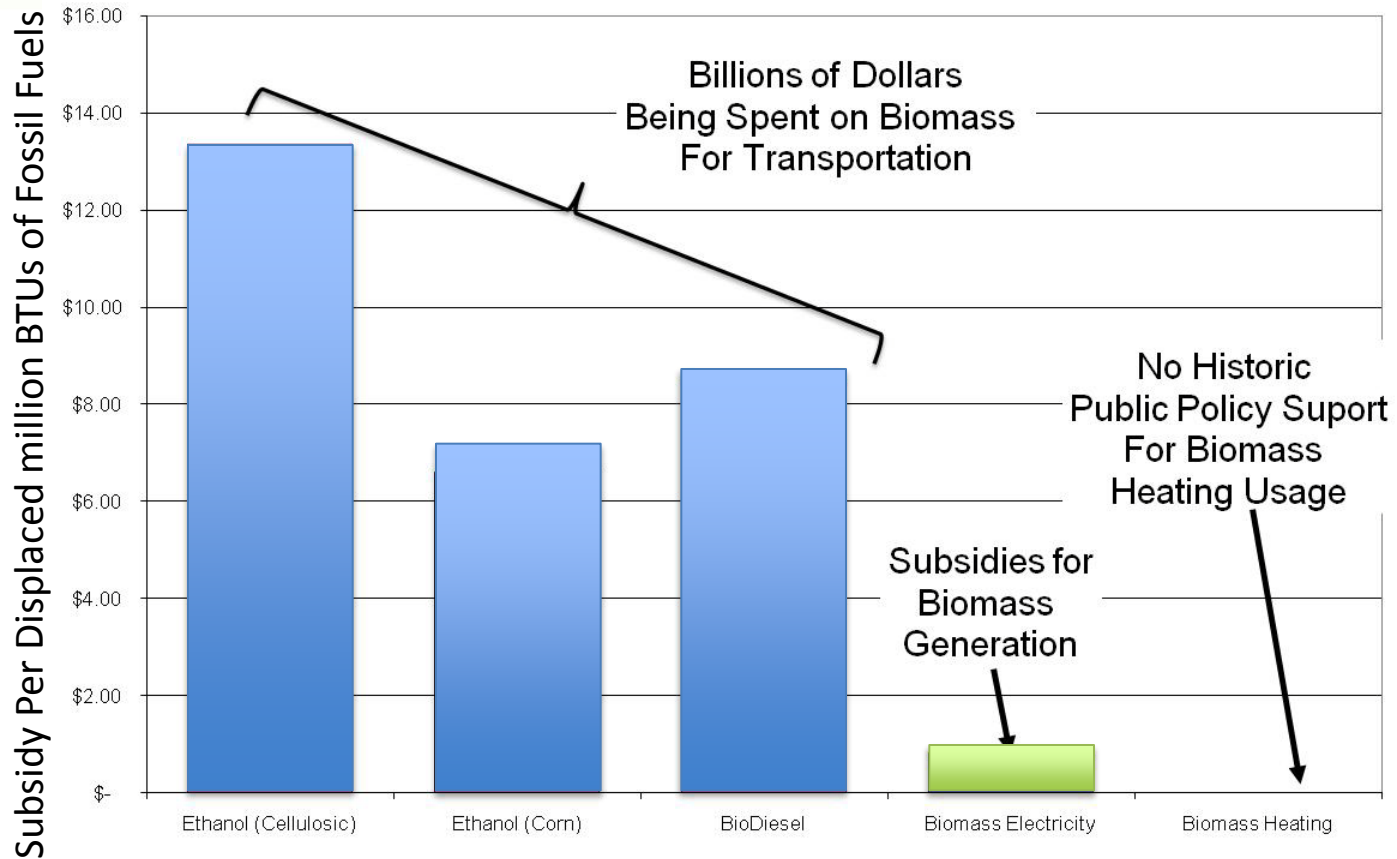
Heating
31%

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



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.


Thermal Energy
78 – 85% Efficient




Yield
 x 87,000 households

Jobs Created
 x 200


Foreign Import Reduction
 x 1,310,000 bbl.
Foreign crude


GHG Reduction
 x 520,000 metric tons


US Taxpayer Spending
 x None


Technology
Advanced technology in place


Electricity Feedstock
30 – 40% Efficient




Yield
 x 73,000 households

Jobs Created
 x 25


Foreign Import Reduction
 x 0


GHG Reduction
 x 700,000 metric tons


US Taxpayer Spending
 x Production Tax Credit:
\$8M


Technology
May require technology upgrade


Transportation Fuel
10 – 15% Efficient




Yield
 x 29,000 households

Jobs Created
 x 30

Foreign Import Reduction
 x 860,000 bbl.
Foreign crude

GHG Reduction
 x 230,000 metric tons

US Taxpayer Spending
 x Production Tax Credit:
\$40M

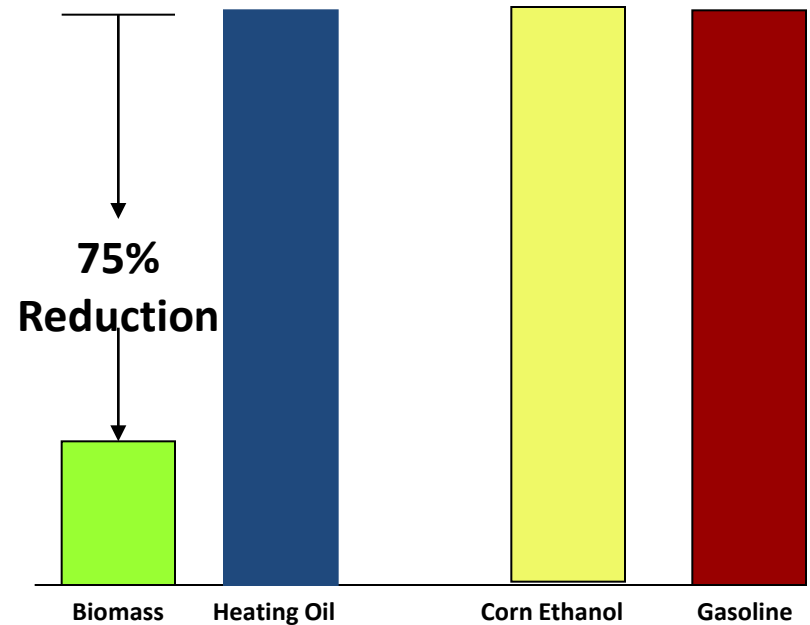
Technology:
Unproven cellulosic technology required

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 feed-stocks.
- 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.

Comparison of Carbon Emissions Fossil Fuels and Green Alternatives



Source: J. Pendray, MIT, 2007, "Prospects for Increased Low-Grade Bio-Fuels Use in Home and Commercial Heating Applications."

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.

Source: J. Pendray, MIT, 2007, "Prospects for Increased Low-Grade Bio-Fuels Use in Home and Commercial Heating Applications."

Biomass Heating Spurs Job Creation

Biomass has enormous potential for job creation

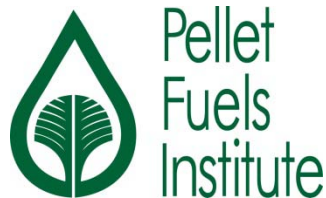
- Multiple 'green-collar' jobs, from forests to transport/processing to equipment manufacturer, installation and service
- Usage for heating creates more jobs (per ton of biomass) than other sectors
- Unlike solar or wind, the fuel needs to be harvested and brought to the consumer year after year, resulting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



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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.***

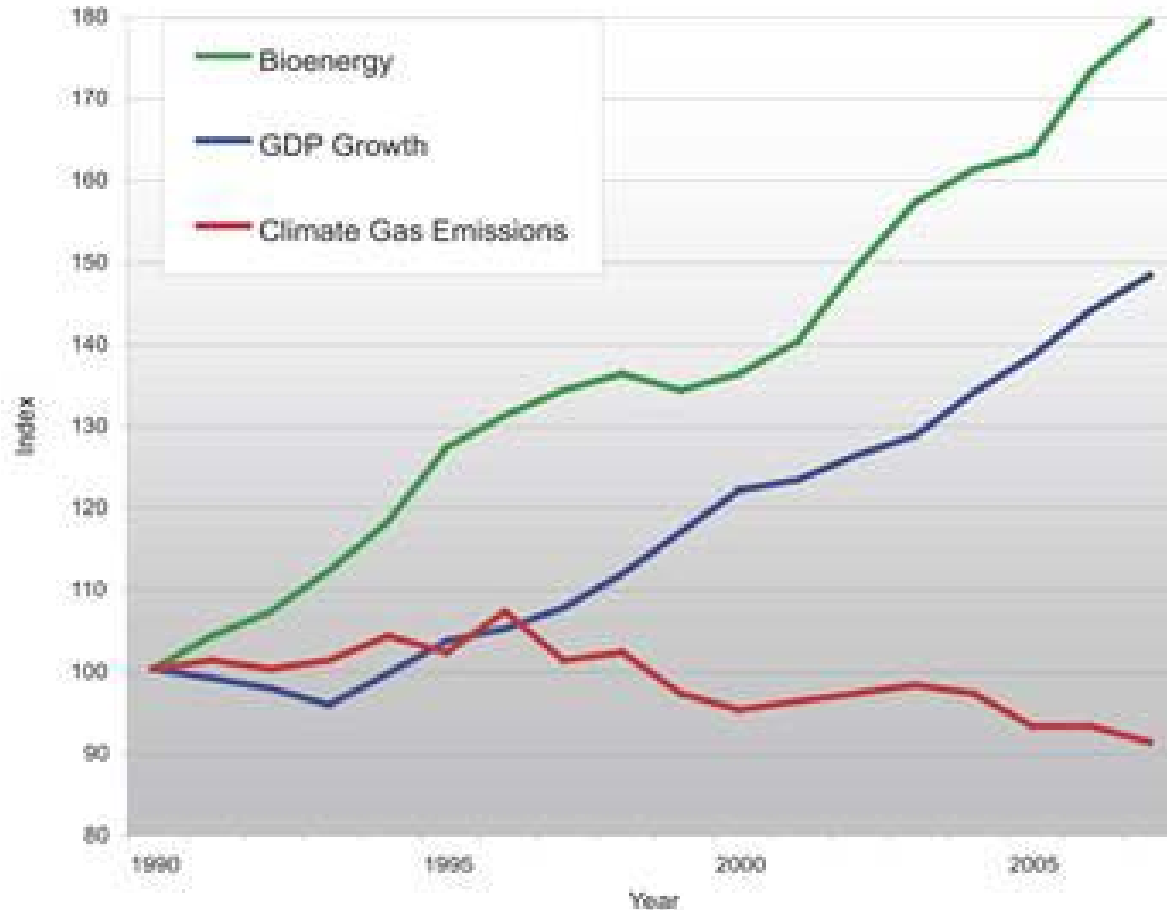
•****America's subsidy of ethanol and biomass electric generation drive up the cost of biomass feed-stocks, actually reducing adoption in more cost effective heating applications.*

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



Source: Kranzl, "The efficient use of woody biomass", International Conference on Pellets, Stuttgart, Germany, 2008.

Sweden demonstrated significant carbon reductions

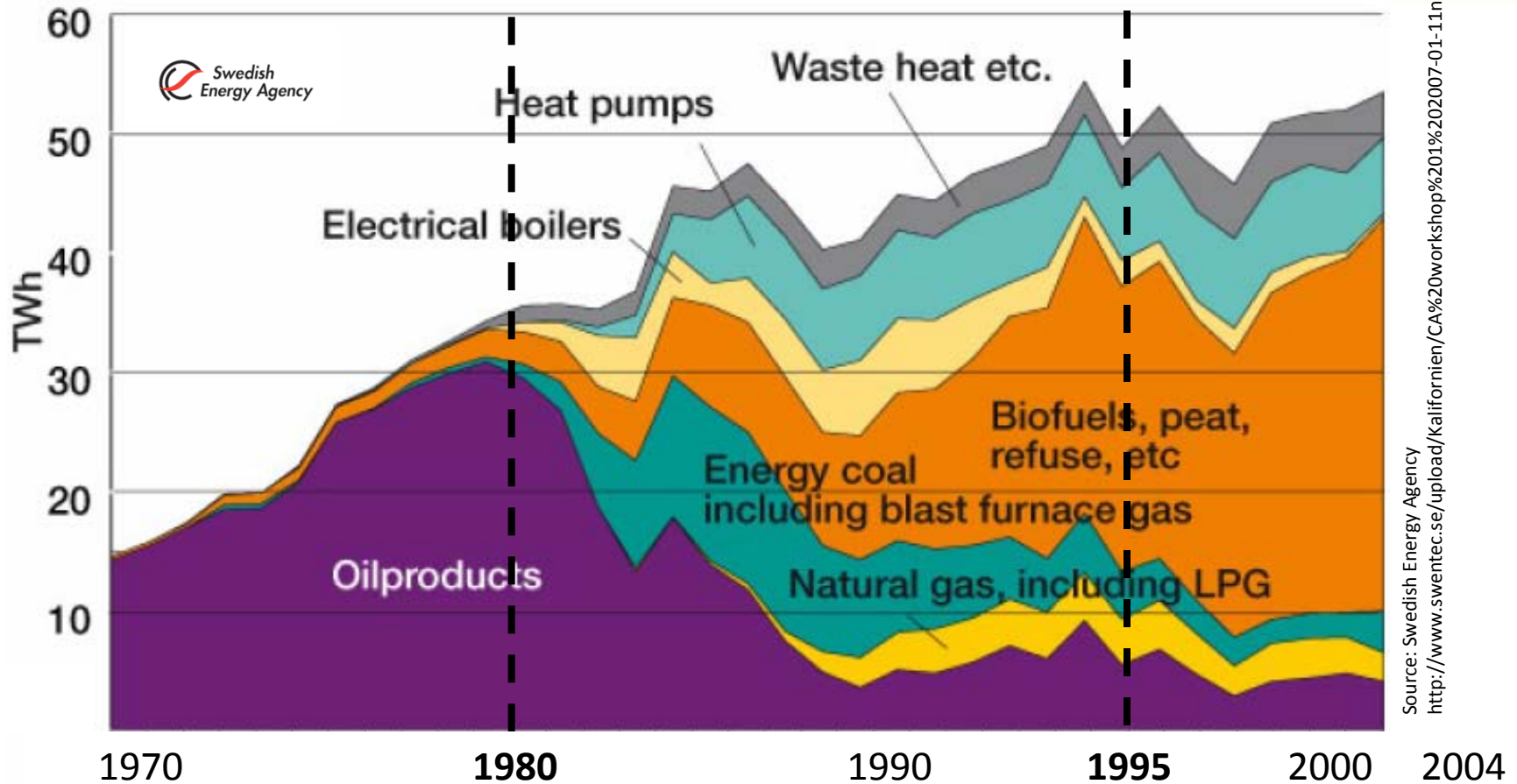


35% increase since 1995

15% decrease since 1995

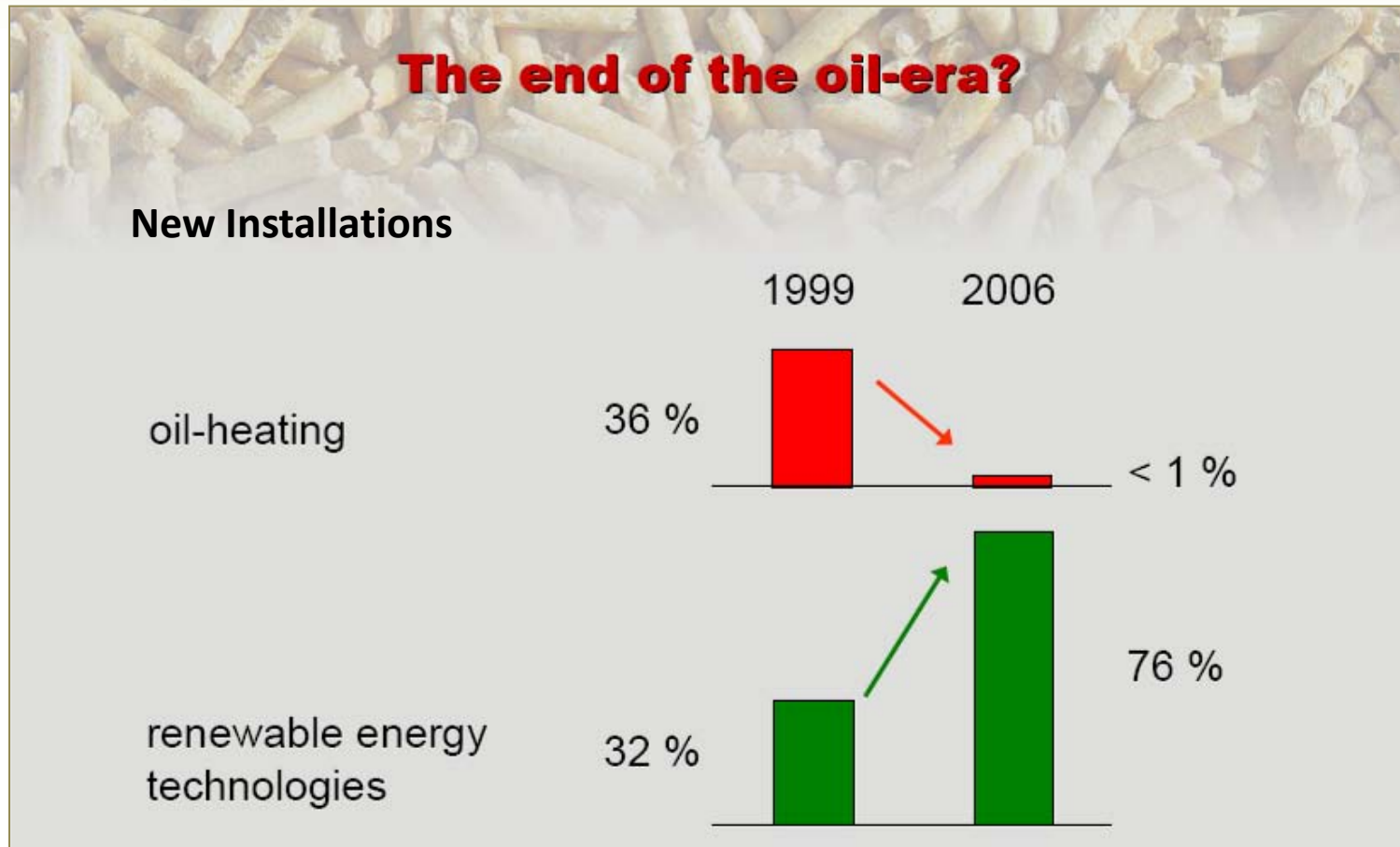
Source: <http://www.svebio.se/?p=726>

Sweden Executed National Transition in 15 Years



Source: Swedish Energy Agency
<http://www.swentec.se/upload/Kalifornien/CA%20workshop%201%202007-01-11n.pdf>

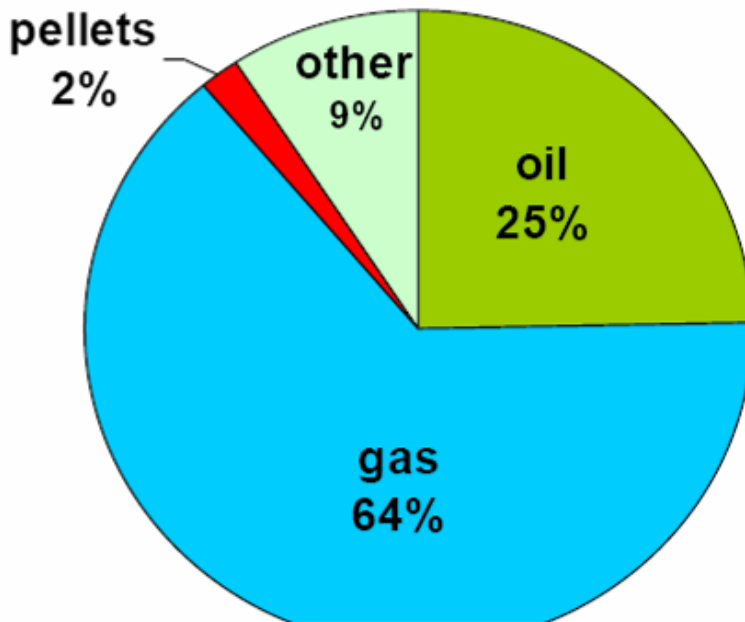
Renewable Heating has Displaced Oil in Upper Austria



Source: C. Egger, O.O. Energiesparverband, Austria, "Challenges and Opportunities in a Rapidly Growing Market" March, 2007.

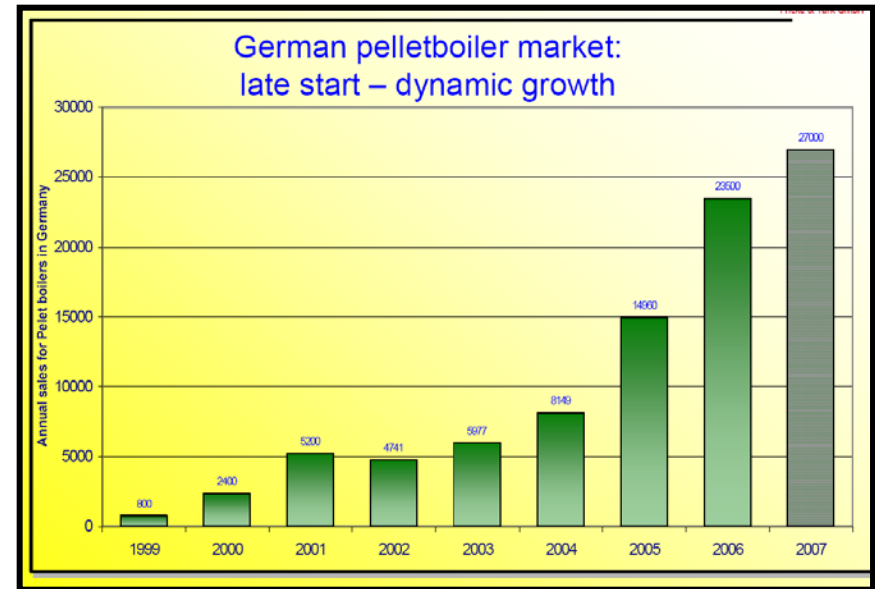
Germany Started Later, But Growth is Rapid

All Boiler Installations in Germany (2005)



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...



German truck making home delivery...



... equipped with onboard scale and pneumatic hosing



Indoor flexible bag silo stores 1- 10 tons...



...and already feed seamlessly to automated boilers

Discussion: Public Policies Should Reward Efficiency

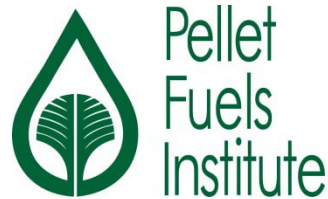
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Discussion

Practical, Green, Affordable



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