

How Europe Promotes Wood Heat and Challenges For America

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President, Tarm USA, Inc.



1960

Nichols Hardware,
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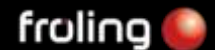
Coal
(Bulk Delivered)



Bulk Delivered Wood Pellets

Nichols Hardware, Inc.

2006



Renewable Biomass Policy

E.U. vs U.S.	Power	Transportation	Heat
Energy Share	1/3	1/3	1/3
United States	✓	✓	NO
European Union	✓	✓	✓

E.U.-Accomplishing Goals Through Directives

1. Grow agricultural business
2. Enhance regional and economic development
3. Increase employment and income opportunities that come with growth
4. Increase the share of renewable energy use for security and other reasons
5. Increase energy efficiency, and to reduce carbon emissions-a more recent cause.

Austria's 3 Legged Stool

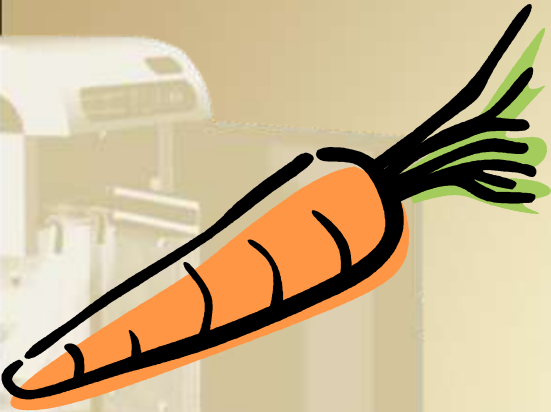


Carrot = Incentives

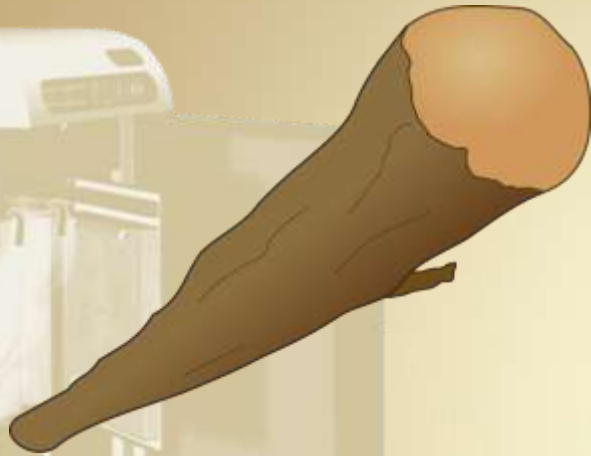
Stick = Regulatory Measures

Tambourines = Information Activities

All three legs are necessary for proper support!



- Eco-labels award investment in research and development of more efficient appliances
- Special financing is made available for projects integrating renewable energy technology, ***biomass thermal always included.***
- Regional research and development and pilot projects
- Financial and logistical support for Energy Service Companies...a third party carrot.



Examples:

- **Stream-lining of administrative rules, enhanced cooperation between agencies, and simplified certification and licensing. Procedures for smaller, decentralized projects must be simplified.**
- **Equipment tech specs must be clearly defined in order to reduce trade barriers.**
- **Local and regional governments must consider renewable energy when planning and designing infrastructure.**
- **Building codes must include some minimum use of renewable energy.**
- **Fuel standards are strict (wood pellet and chip quality must be high)**

- Energy Advice (audits and seminars)

- Training programs (EU members must have certifications for equipment installers available by 2012) A publicly available list of these installers is recommended

- Public campaigns and competitions, market surveys

- Guidelines for architects and engineers required by 2012

- Local energy action plans

- Sustainable energy economic development offices- public/private



Chimneys from
chip boiler



Getting Results:

- 34% total primary energy demand supplied by renewable energy, 15% biomass
- 46% total heating demand supplied by biomass

- \$1.3 Billion in fossil fuel imports offset annually
- 10% growth in renewable energy since 2005
- 4,500 people employed in biomass heating industry
- 40% of municipalities use primarily biomass for heating
- 1999-2009 reduced oil use in new homes from 36% to <.01%

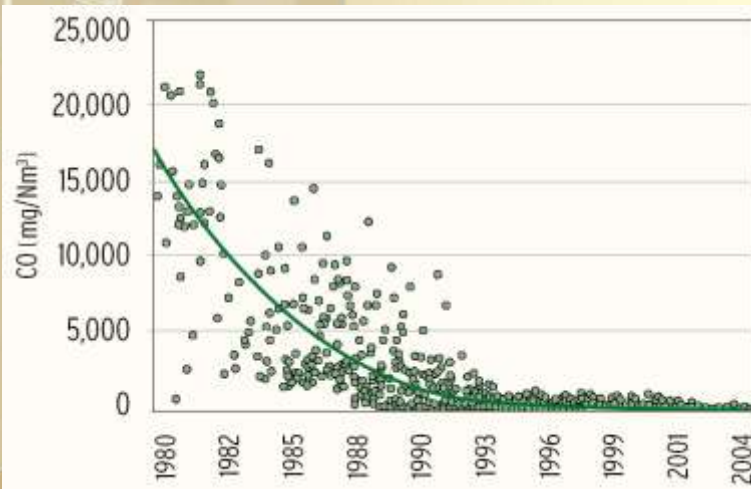
Biomass Equipment Example:



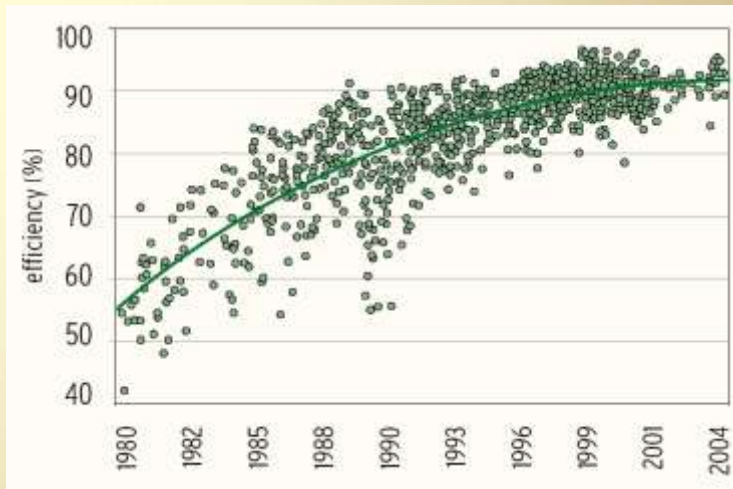
- 86% efficient at HHV
- Self operating
- Premium or super premium pellets only
- Menu based English language control and diagnostic display
- Integrates seamlessly with solar thermal due to integrated solar differential control
- Multiple automatic pellet feeding options from bulk storage
- Emphasis on jacket insulation
- Lambda combustion control (not all pellets are the same!)

Results of 3 Legged Stool, Continued:

- Massive sales growth for biomass boilers after fully automatic pellet boilers were introduced in 1996, now numbering 40,000 installed!
- Increasing growth of forest stock.
- Dramatic efficiency gains and emissions improvements.



Carbon Monoxide Emissions 1980-2004



Efficiency 1980-2004

Biomass Heating Challenges In the United States, 10 Steps to Success:

1. Recognize benefits of decentralized thermal energy
2. Emphasize a regional or state level approach over a federal approach to biomass thermal policy.
3. Flow funding to shovel ready biomass technologies rather than placing an emphasis on experimental energy technology (DOD/DOE approach).
4. Recognize land owners as biomass energy producers. Get land owners involved with refining and utilization of biomass fuels.
5. Incent only the most efficient technologies.
6. Don't forget the carrot and tambourine!

10 Steps to U.S. Biomass Energy Success Continued:

- 7. Enhance land conservation by making forest and agricultural land a more highly valued energy resource.**
- 8. Remember that petroleum use offset by biomass thermal energy allows for that petroleum to be used for transportation.**
- 9. Base support of renewable energy on immediate job creation and energy cost savings.**
- 10. Local, regional, and federal governments should lead by example through the use of renewable energy sources.**

Resources:

- www.biomassthermal.org -Official Biomass Thermal Energy Council website.
- www.oec-en.at -Report, “Biomass Heating in Upper Austria, Green Energy, Green Jobs”
- www.nyserda.org/publications/10_19_staged_combustion_biomass_boilers_acc.pdf -“Staged Combustion Biomass Boilers: Linking High-Efficiency Combustion Technology to Regulatory Test Methods

Thank you

