



Heating with Biomass

Win-Win for Local Economic Development and Energy Security


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www.pelletheat.org



www.biomassthermal.org




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Benefits of Biomass

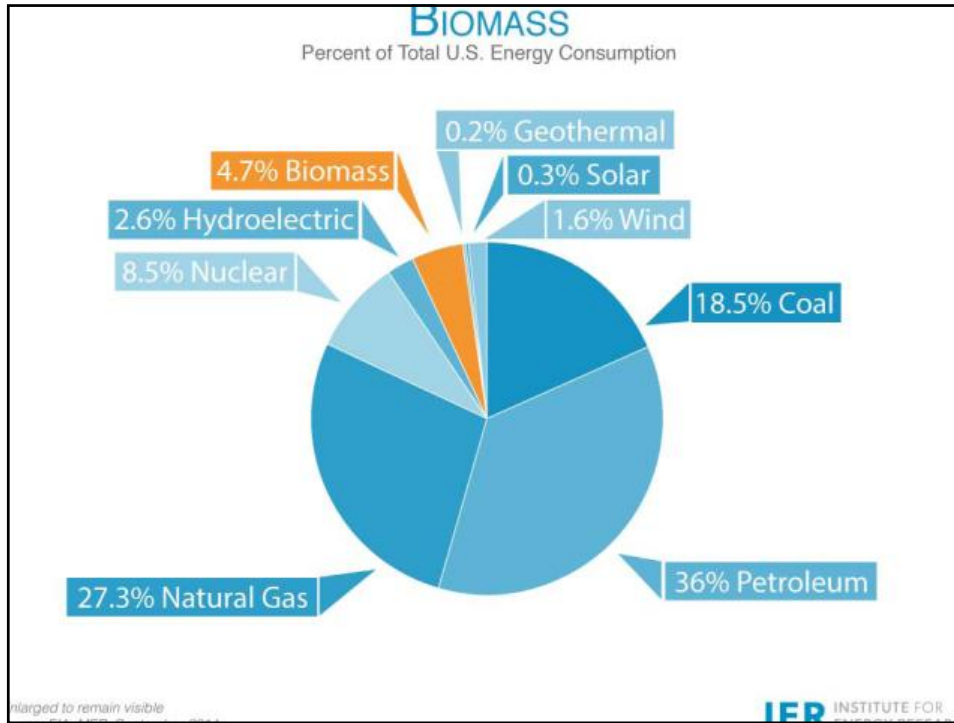
- **Improved National Energy Security**
- **Increased Economic Growth**
- **Broad-based Environmental Benefits**



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Heating with Biomass

Wood #1 Growing Fuel

Rise of Residential Wood Heat per Capita in U.S.

Source: U.S. Census Data (2000, 2010)

Color	Percentage Increase
Light Green	0 - 20%
Medium Green	20 - 40%
Dark Green	40 - 60%
Light Yellow	60 - 80%
Yellow	80 - 140%

Key Points

- 65% Growth in PA, NY, OH, & MI
- 12MM Wood Energy Appliances & Stoves in 2005
- Most Affordable Renewable Energy Option for Most Americans
- New EPA Certified Stoves & Fuels

Courtesy of
ALLIANCE FOR GREEN HEAT
 clean, renewable & local



Heating with Biomass Residential Appliances



Heating with Biomass Institutional Opportunities



Mount Wachusett Community College, Gardner, MA

Campus Woodchip Heating System
Heating Capacity: 2.35 MW (8MMBtu/hr)
Annual Wood Fuel Use: 1,200-1,400 tons
Annual (Year) Savings: \$2MM (2010)
Cost (Year) Installed: \$4.3MM (2002)
Thermal Output: Hot water



Harney County District Hospital, Burns, OR

Wood Pellet Heating System
Heating Capacity: 149 kW (0.5MMBtu/hr)
Annual Wood Pellet Use: 45 tons
Emissions Equipment: Flue gas recirculation
Year Installed: 2007
Thermal Output: Hot water

Heating with Biomass Commercial Applications – Poultry CAFO



Value & Dependability - The Eco-Choice Advantage

Hestilator Eco-Choice biomass furnace systems combine dependability and value from a brand you know and trust. Featuring quality technology that's easy to operate and maintain, the BIO-500F is the cleanest and most efficient choice for growers. The simple heating system will provide energy savings, improved animal health and a better environment for years to come.

Increase integrator profit

- Improved growth rate and feed conversion
- Improved paw quality

Save the growers money

- 30-40% reduction in gas and electricity costs
- Dry heat for a dryer litter; average of \$300 savings per house annually
- Payback for growers in just under 4 years
- Easy to use and maintain with standard **auto-ignition** convenience and optional **auto ash cleaning**

Improve animal health

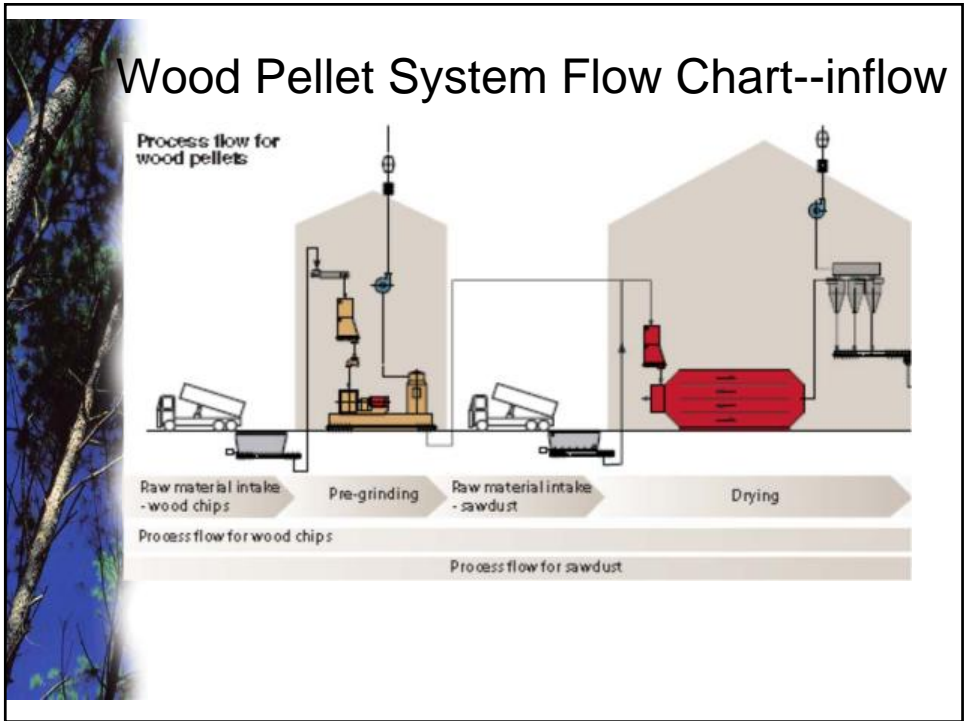
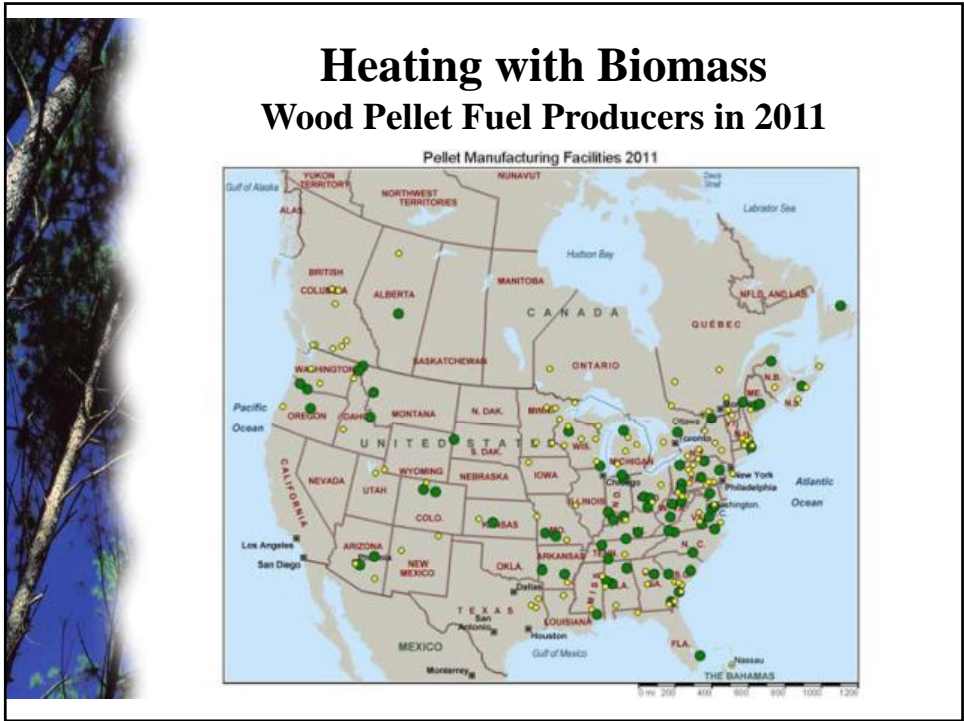
- Improved animal health, improved livability
- Improved growth rate
- Dryer air results in lower ammonia levels, up to 50%

Protect the environment

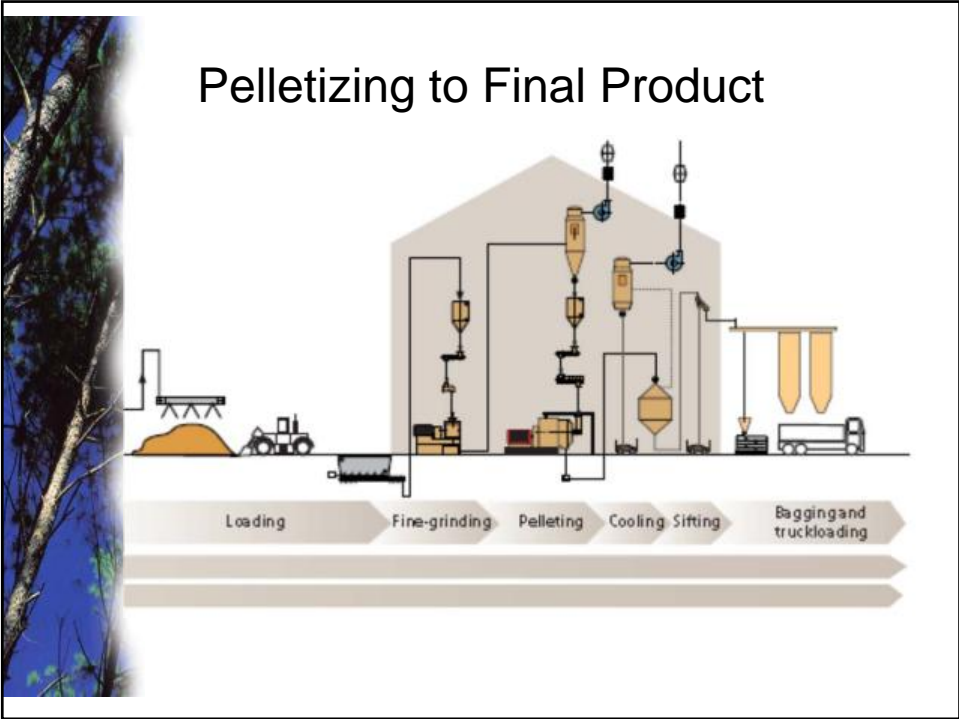
- Reduced ammonia levels improve the working environment
- Reduced overall green house gas emissions
- Biomass is green, stable & sustainable
- Saves an estimated **100 barrels of foreign oil per year**

Heating with Biomass

Wood Pellet Fuel Producers in 2011



Pelletizing to Final Product



Sawdust Trailer Unloading




Rotary Dryer




Pellet Mills






Raw Material for Pellets Sustainable?

- Kiln dried byproduct from wood operations...cabinets, flooring
- Green sawdust from primary sawmills
- Sawmill “paper chips” from sawmills
- Whole tree/microchips directly from the forest



Our Plants



Marysville, California

Clarks, Nebraska

Pella, Iowa

Schofield, Wisconsin

Circleville, Ohio

Jessup & Columbia, Maryland

Marion, Virginia

Lebanon, Kentucky

Marshall, Texas

Jamestown, California

American Wood Fibers = 4
Generations of Experience

