



## **Heating with Biomass**

### **Win-Win for Local Economic Development and Energy Security**


Mark E. Faehner – Vice President  
Raw Material  
American Wood Fibers  
Columbia, Maryland



**Pellet Fuels Institute**  
[www.pelletheat.org](http://www.pelletheat.org)



**BTEC**  
Biomass Thermal Energy Council  
[www.biomassthermal.org](http://www.biomassthermal.org)




## **Heating with Biomass**


### **Win-Win for Local Economic Development and Energy Security**

**Benefits of Biomass**

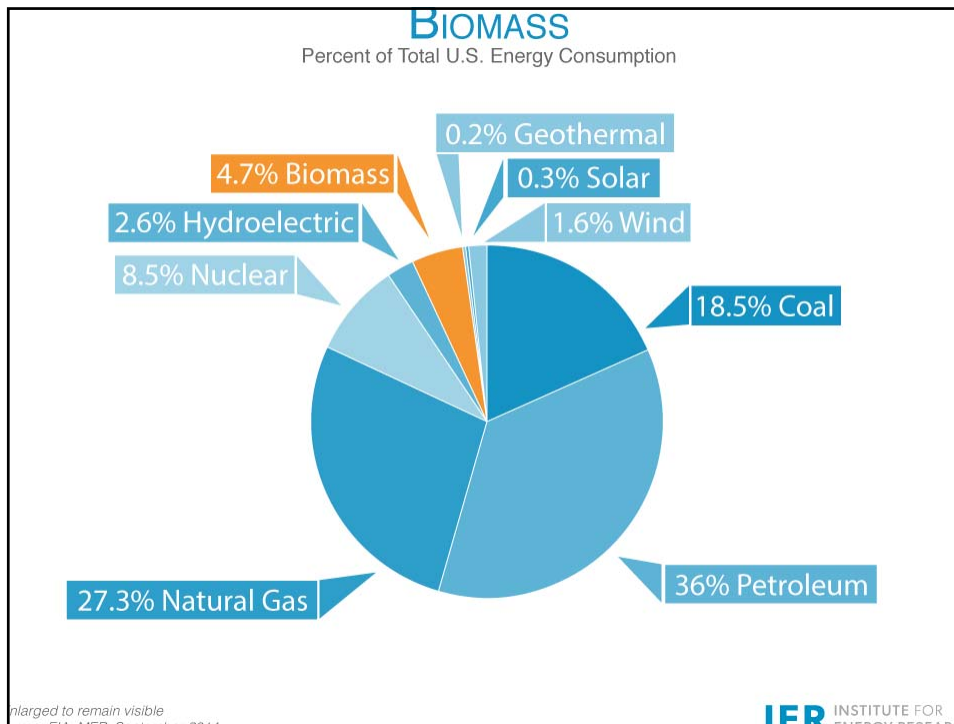
- **Improved National Energy Security**
- **Increased Economic Growth**
- **Broad-based Environmental Benefits**



**Pellet Fuels Institute**  
[www.pelletheat.org](http://www.pelletheat.org)



**BTEC**  
Biomass Thermal Energy Council  
[www.biomassthermal.org](http://www.biomassthermal.org)



## Heating with Biomass

### Wood #1 Growing Fuel

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

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

**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

Heatilator 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

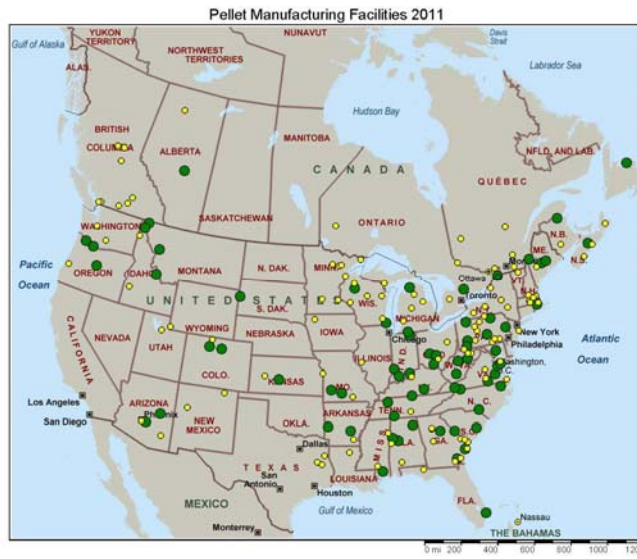
- Improved animal health, improved livability
- Improved growth rate
- Dryer air results in lower ammonia levels, up to 50%

### Protect the environment

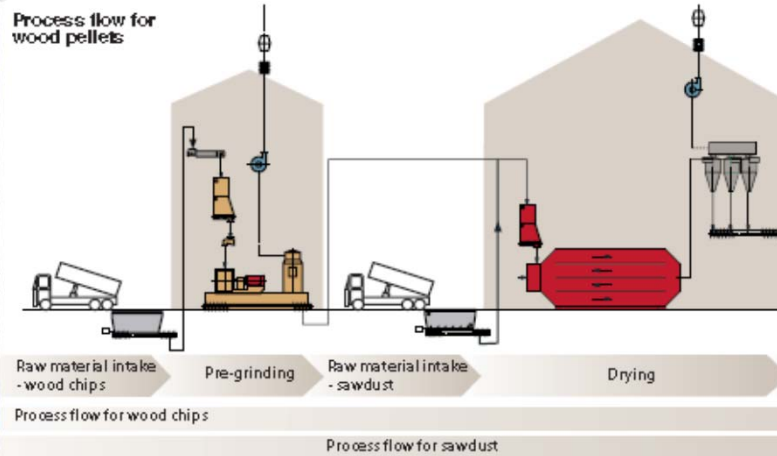
- Reduced ammonia levels improve the working environment
- Reduced overall green house gas emissions
- Biomass is green, stable & sustainable
- Saves an estimated **100 barrels of foreign oil** per year 

# Heating with Biomass

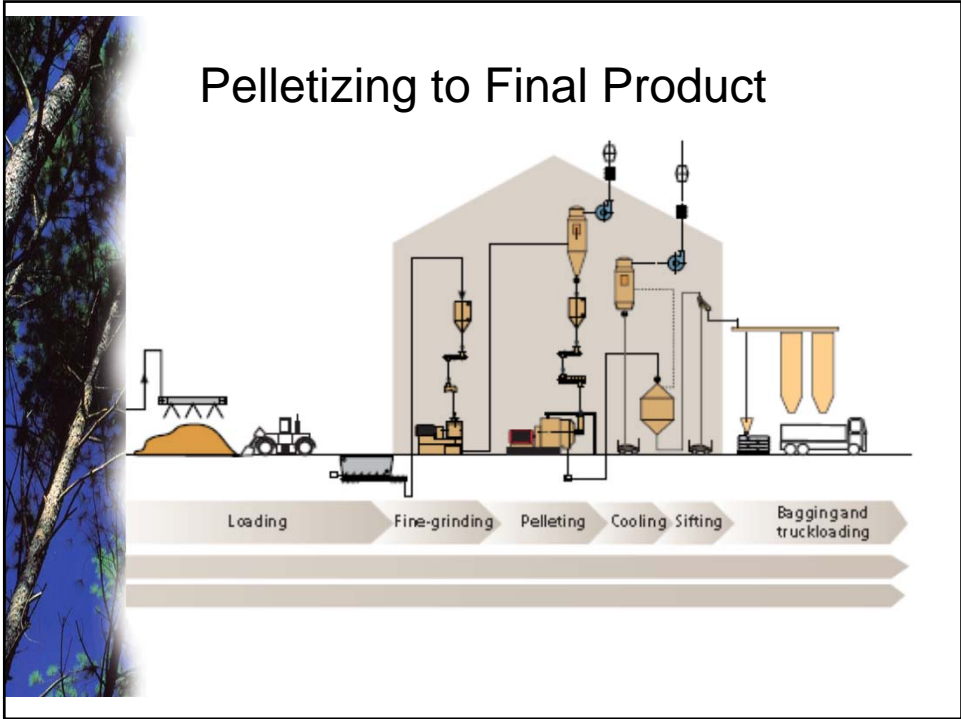
## Wood Pellet Fuel Producers in 2011



## Wood Pellet System Flow Chart--inflow



# Pelletizing to Final Product



# Sawdust Trailer Unloading




## Rotary Dryer




## Pellet Mills



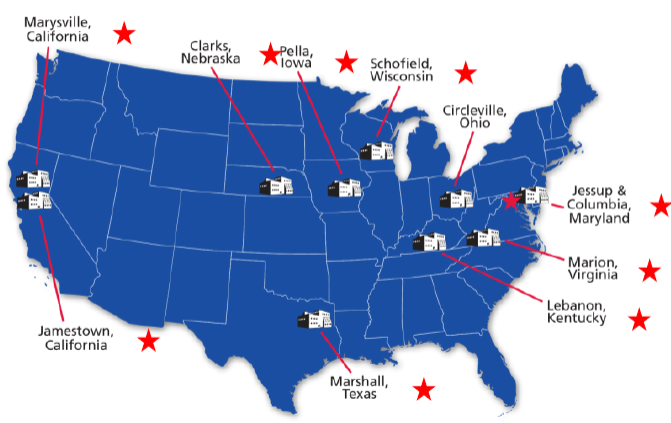


## Raw Material for Pellets Sustainable?

- 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

