

# Woody Biomass

USDA Forest Service  
Northeastern Area  
State and Private Forestry



## *An Abundant Resource for Energy and Other Uses*

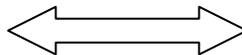
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**Description:** “Woody biomass” refers to the woody parts of trees and other plants, including limbs, tops, needles, and leaves. Sources of biomass include forests, rangelands, and urban tree waste. Biomass is usually a byproduct of managing or restoring forests, treating hazardous fuels to reduce the threat of wildfires, and caring for urban trees.

Developing and expanding the use of woody biomass supports forest ecosystem health by improving the economic viability of both forest management and wood products manufacturing. Using more woody biomass is also a valuable tool for mitigating climate change by reducing consumption of fossil fuels. The U.S. Forest Service national *Woody Biomass Utilization Strategy* commits the agency to four goals and three working principles (<http://www.fs.fed.us/woodybiomass/>):

### Principles

1. Pursue sustainability
2. Empower entrepreneurial action
3. Use science-based information and new technology



### Goals

1. Supply
2. Partnerships
3. Science and Technology
4. Marketing

The Northeastern Area State and Private Forestry (NASPF) Woody Biomass Business Plan, which tiers to the national strategy, works across several State and Private Forestry program areas. NASPF provides technical and financial assistance to partners interested in the sustainable use of woody biomass.

### Key Issues:

- **Sustainability** – Consider the ecological, social, and economic impacts of using woody biomass; ensure that forest systems are maintained or enhanced; and focus on the most efficient uses of woody biomass.
- **Maintain working forest lands** – Provide sufficient rewards to landowners and communities that lead them to maintaining or expanding their forest land.
- **Renewable energy and greenhouse gas reductions** – Diversify the region’s energy portfolio, improve air quality, improve energy security, and stabilize energy prices.
- **New economic opportunities** – Enhance local economies by developing new markets for energy, carbon sequestration and offsets, liquid fuels, building materials, and wood-derived chemicals, bringing new business activity and reducing reliance on imported energy.

### Accomplishments:

- Integrated woody biomass into the NASPF Strategic Plan 2008-2012 and the Northeastern Area Association of State Foresters (NAASF) Strategic Plan 2008-2012, and launched a multiprogram initiative
- Utilizing expertise at the Wood Education and Resource Center (WERC) to provide technical assistance through the NASPF Biomass Coordinator and financial assistance through the WERC Grant Program. Efforts span the 20 States served by Northeastern Area State and Private Forestry and the 35-state hardwood region. Tables 1 and 2 summarize that assistance.
- In Fiscal Year 2009, there were active projects in 19 States and the District of Columbia

<b>NASPF Woody Biomass Program<sup>1</sup></b>				
<b>Financial Support</b>				
<i>(\$ Thousands)</i>				
	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>	<b>FY 2009<sup>2</sup></b>
U.S. Forest Service	\$459	\$1,958	\$271	\$18,770
Partners	1,436	3,327	414	1,250
<b>Totals</b>	<b>\$1,895</b>	<b>\$5,285</b>	<b>\$685</b>	<b>\$20,020</b>

<b>WERC-supported Technical Assistance</b>		
<b>Wood Energy/Woody Biomass Utilization</b>		
<i>Fiscal Year 2009</i>		
<b>Project Type</b>	<b>Active Projects</b>	<b>States Involved</b>
Wood Energy Feasibility Studies	40	12
Woody Biomass Utilization Support	11	5

<sup>1</sup> States involved: FY06 (6), FY07 (13), FY08 (6), FY09 (11)

<sup>2</sup> FY09 includes \$17 million in ARRA funds: \$11 million to ME, \$6 million to MO

**Project Highlights:** *Establishing Long-Term Fuel Supply Agreements for Wood Energy Facilities (07-DG-105)* is a WERC-funded study conducted by the Empire State Forest Products Association in Albany, NY, to determine if there is a business model that can allow woody biomass-based energy developers to purchase wood fuel with security of price and supply. Details about the study and its findings are reported in *Establishing Long-Term Supply Agreements for Wood Energy Facilities*, which is available online at <http://spfnic.fs.fed.us/werc/finalrpts/07-DG-105.pdf>.

The WERC Wood Energy technical team completed the *Harvard Forest District Energy Project*, helping Harvard University design a district heating system for the Harvard Forest campus that will use wood chips from its research forest and solar thermal panels. The proposed system includes a 1.0-mm BTU wood chip-fired boiler and 2,000 feet of insulated hot water distribution lines. The new system's 75 percent efficiency rate is a 34 percent improvement over the current system. It will potentially eliminate the use of approximately 7,000 gallons of fuel oil and 1,100 gallons of propane annually. This project was designed in less than 14 days to meet a "shovel-ready" project deadline.

**Future Direction:** The Forest Service is part of a coordinated Departmental effort to expand the use of woody biomass to improve forest health, reduce wildfire risk, and diversify the Nation's energy portfolio. Northeastern Area State and Private Forestry is working with the Northeastern Area Association of State Foresters, Northern Research Station, Eastern Region of the National Forest System, and the Forest Products Laboratory to encourage the sustainable use of woody biomass to accomplish these same goals across the Northeast and Midwest. Northeastern Area State and Private Forestry expects to:

- Expand technical assistance capabilities in the use of woody biomass for energy
- Support the development of regional biomass harvesting guidelines
- Develop a regional GIS database that can provide information on woody biomass use and availability across the 20-state region
- Encourage the most efficient use of the region's woody biomass resources

**Kathryn Maloney**, Director  
11 Campus Blvd., Suite 200  
Newtown Square, PA 19073  
(610) 557-4103 (4177-FAX)  
[kmaloney@fs.fed.us](mailto:kmaloney@fs.fed.us)

**Jerry Boughton**, Assistant Director  
11 Campus Blvd., Suite 200  
Newtown Square, PA 19073  
(610) 557-4180 (4136-FAX)  
[jboughton@fs.fed.us](mailto:jboughton@fs.fed.us)

**Steve Milauskas**, WERC Director  
301 Hardwood Lane  
Princeton, WV 24740  
(304) 487-1510 (6661-FAX)  
[smilauskas@fs.fed.us](mailto:smilauskas@fs.fed.us)



<http://www.na.fs.fed.us>

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