



Woody Biomass

An abundant resource for energy and other uses

Description: “Woody biomass” refers to the woody parts of trees and other plants, including limbs, tops, needles, and leaves. Sources include forests, rangelands, and urban tree waste. Biomass is usually a by-product of forest management or restoration, hazardous fuels treatments to reduce the threat of wildfires, and urban tree care.

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. It 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:

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’s (NA) Woody Biomass Business Plan, which tiers to the National Strategy, works across several State and Private Forestry program areas. NA 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 biomass; ensure forest systems are maintained or enhanced; focus on the most efficient uses of 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 NA Strategic Plan (2013–2018) and the Northeastern Area Association of State Foresters (NAASF) Strategic Plan (2013–2018); continued a multiprogram initiative.
- Utilizing expertise at the Wood Education and Resource Center (WERC) to provide technical assistance through the NA Biomass Coordinator and financial assistance through the WERC grant program. Efforts span the 20 Northeastern Area states and the 35-state hardwood region. Tables 1 and 2 summarize that assistance.
- In FY2015, there were active projects in 10 States and the District of Columbia.



NA Woody Biomass Program Financial Support¹ <i>(dollars in thousands)</i>				
	FY2012	FY2013	FY2014	FY2015
U.S. Forest Service	\$416	\$1,150	\$1,200	\$950
Partners	501	1,250	1,250	1,500
Totals	\$916	\$2,400	\$2,450	\$2,450

¹ Since 2006 the NA Woody Biomass Program has conducted projects in 20 of the 35 States served by WERC.

WERC-supported Technical Assistance Wood Energy/Woody Biomass Utilization <i>Fiscal Year 2015</i>		
Project Type	Active Projects	States Involved
Wood Energy Feasibility Studies	10	10
Woody Biomass Utilization Support	3	3

Project Highlights:

In Vermont, the WERC Wood Energy Technical Assistance Team is working with the Vermont State Wood Energy Team and the Vermont Public Service Department to plan and install high-efficiency wood energy systems in schools, commercial facilities, and multifamily housing units throughout Vermont. The team is also working with these partners to improve the performance of existing wood energy systems.

State Wood Energy Teams have been established in nine Northeastern Area States (MA, MI, MN, NH, NY, PA, VT, WI, and WV). These teams are a collaborative effort between the Northeastern Area and multiple State partners to expand knowledge about using wood for energy and encourage the expanded use of wood for energy in each State.



Aerial view of the Holderness School in Plymouth, NH.

Holderness School is a private, coeducational residential high school in Plymouth, NH. The WERC Technical Assistance Team provided a feasibility study to evaluate the use of renewable biomass energy to offset the fuel oil and propane used for space heating and domestic hot water at this facility. Based on this study, school leaders decided to build the project. The school installed a wood chip-fired hot water district heating system that serves 25 campus buildings. As a result of the project, Northeast Energy Efficiency Partnerships named Holderness School as one of 14 regional organizations for outstanding efforts to advance energy efficiency. WERC team and school staff members are now working on a project to make campus energy use data available on the Internet for secondary and post-secondary classroom use.

Future Direction:

The Forest Service is part of a coordinated USDA effort to expand the use of woody biomass to improve forest health, reduce wildfire risk, and diversify the Nation's energy portfolio. The Northeastern Area is working with the NAASF, Northern Research Station, National Forest System (R9), and the Forest Products Laboratory to encourage the sustainable use of woody biomass to accomplish these same goals across the Northeast and Midwest.

The Northeastern Area expects to:

- Maintain technical assistance capabilities in the use of woody biomass for energy
- Encourage the most efficient use of the region's woody biomass resources
- Demonstrate technologies that improve efficiency and reduce emissions from wood energy systems
- Develop value-added opportunities for the use of woody biomass

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