Steve Marshall, Assistant Director, Cooperative Forestry
USDA Forest Service Headquarters
Washington, DC

Faye Krueger, Regional Forester
Northern Region, USDA Forest Service
Missoula, MT

Montana Public Service Commission
August 27, 2013

- Last April, Secretary of Agriculture Tom Vilsack met with representatives of Investor Owned Utilities and Public Utility Commissions throughout the western United States. Montana was the only western state with no representatives present at this Los Angeles, CA meeting.

- The Regional Forester and National Assistant Director for Cooperative Forestry have requested time with Montana PSC members, to provide the information shared by Secretary Vilsack last April, and explore approaches to addressing wildfire risk to utility structures and system reliability.

- Wildfires in the west are becoming larger and more severe, and fire season is over two months longer than it was 20 years ago. Drought and forest insect and disease problems are exacerbating fire risk.

- Nearly a thousand miles of transmission and distribution lines travel through Montana's National Forests.

- The Northern Region is committed to managing fire risk amid numerous challenges, including a high rate of appeals and litigation, and steeply declining budgets. We are actively exploring new approaches to getting our work done more efficiently.

- The Transmission Agency of Northern California, the Western Area Power Administration, and Tri-State Generation and Transmission Association, Inc. have partnered with the agency to facilitate hazardous fuels reduction work around utility lines in other Forest Service Regions.

STATEWIDE PARTNERS

Montana has a woody biomass working group. The Forest Service is working actively on restoration and wood utilization issues with many partners in the public and private sector, including:

Bureau of Land Management

Confederated Salish and Kootenai Tribal Forestry

Missoula Area Economic Development Corporation

Montana Community Development Corporation

Montana Department of Commerce

Montana Department of Environmental Quality

Montana Department of Natural Resources and Conservation

Montana Logging Association

Montana State Extension Forestry

Montana Wood Products Association

The Wilderness Society, Northern Rockies Regional Office

University of Montana. Bureau of Business and Economic Research

University of Montana, College of Forestry and Conservation

University of Montana, Environmental Studies

OTHER CONTACTS

Forest Service Regional Forester
Faye Krueger
406-329-3317
fkrueger@fs.fed.us

Forest Service Regional Biomass Coordinator
Angela Farr
406 329 3521
afarr@fs.fed.us

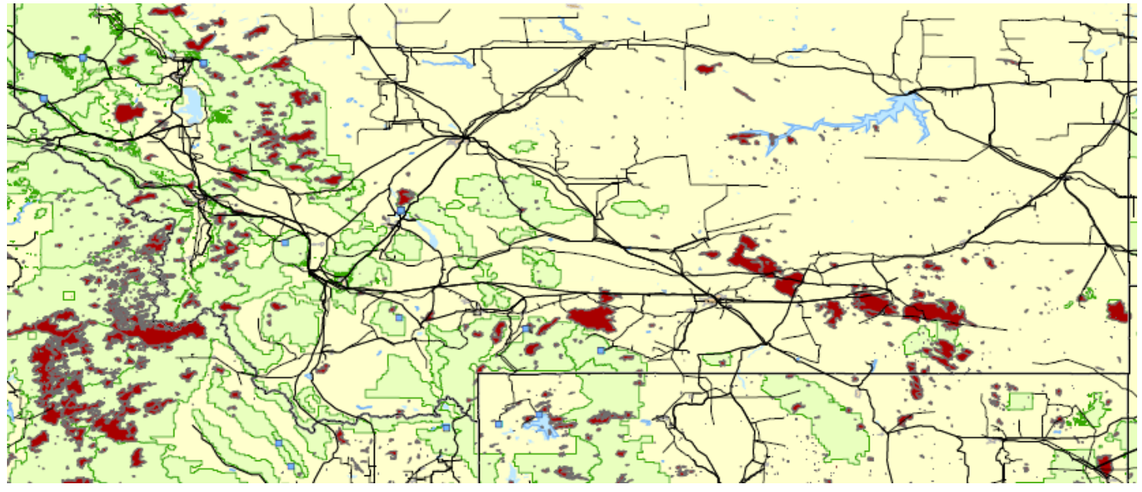
Forest Service Regional Director of Renewable Resources
Eugene DeGayner
406-329-3604
edegayner@fs.fed.us

Montana State Forester
Bob Harrington
406-542-4300
rharrington@mt.gov

Forest Service Regional Director of Lands
George Bain
406-329-3584
gbain@fs.fed.us

Rural Development Montana Energy Coordinator
Bill Barr
406-585–2545
bill.barr@mt.usda.gov

WESTERN UTILITIES AND FOREST HEALTH



MONTANA
AUGUST 27, 2013

- 977 miles of transmission lines at risk on National Forests in Montana
- 664 miles of transmission lines at moderate to very high risk on National Forests in Montana

USDA

Transmission Lines Voltage Class

- Transmission lines < 200kv
- Transmission lines > 200kv

- Administrative Forest Boundary
- 2000-2012 Fire Perimeters
- Operating Power Plants

MILES OF TRANSMISSION LINE AT RISK

National Forest	Miles At Risk
Beaverhead-Deerlodge National Forest	**140**
Bonneville Power Administration	48
Idaho Power Co	1
NorthWestern Corp	89
PacifiCorp	2
Bitterroot National Forest	**1**
NorthWestern Corp	1
Custer National Forest	**46**
MDU Resources Group Inc	4
NorthWestern Corp	19
PacifiCorp	10
Tongue River Electric Coop Inc	13
Flathead National Forest	**45**
Bonneville Power Administration	21
NorthWestern Corp	6
PPL Electric Utilities Corp	11
Undetermined Company	6
Gallatin National Forest	**95**
Bonneville Power Administration	8
NorthWestern Corp	87
Helena National Forest	**56**
NorthWestern Corp	56
Kootenai National Forest	**248**
Avista Corp	30
Bonneville Power Administration	114
Montana Light & Power	12
PacifiCorp	8
Pioneer Power & Light Co	9
Undetermined Company	75
Lewis and Clark National Forest	**46**
NorthWestern Corp	46
Lolo National Forest	**299**
Avista Corp	4
Bonneville Power Administration	146
NorthWestern Corp	128
Undetermined Company	22
TOTAL	**977**

WOOD ENERGY FACILITIES

Location	Name	Type	Status
Anaconda	DNRC Anaconda Unit Office	Thermal	Active
Columbia Falls	F. H. Stoltze Land and Lumber Company	Thermal-led CHP	Under construction
Darby	Darby Public Schools	Thermal	Active
Deer Lodge	Deer Lodge Central Park Center	Thermal	Active
Deer Lodge	Montana State Prison	Thermal	Active
Deer Lodge	Deer Lodge Elementary Central Park Center	Thermal	Active
Dillon	University of Montana-Western Campus	Thermal	Active
Eureka	Eureka Pellet Mills Inc.	Thermal	Active
Eureka	Eureka Public Schools	Thermal	Active
Fortine	Murphy Lake Ranger District, Kootenai National Forest	Thermal	Active
Hall	Big Sky Shavings	Thermal	Active
Kalispell	Glacier High School	Thermal	Active
Libby	Kootenai Business Park Ind. District	Thermal	Active
Philipsburg	Philipsburg Elementary	Thermal	Active
Plains	Clark Fork Valley Hospital	Thermal	Active
Superior	Eureka Pellet Mills Inc.	Thermal	Active
Superior	Mineral Community Hospital	Thermal	Active
Thompson Falls	Thompson Falls Elementary School	Thermal	Active
Townsend	Townsend Elementary School	Thermal	Active
Troy	Troy Public Schools	Thermal	Active
Victor	Victor Public Schools	Thermal	Active

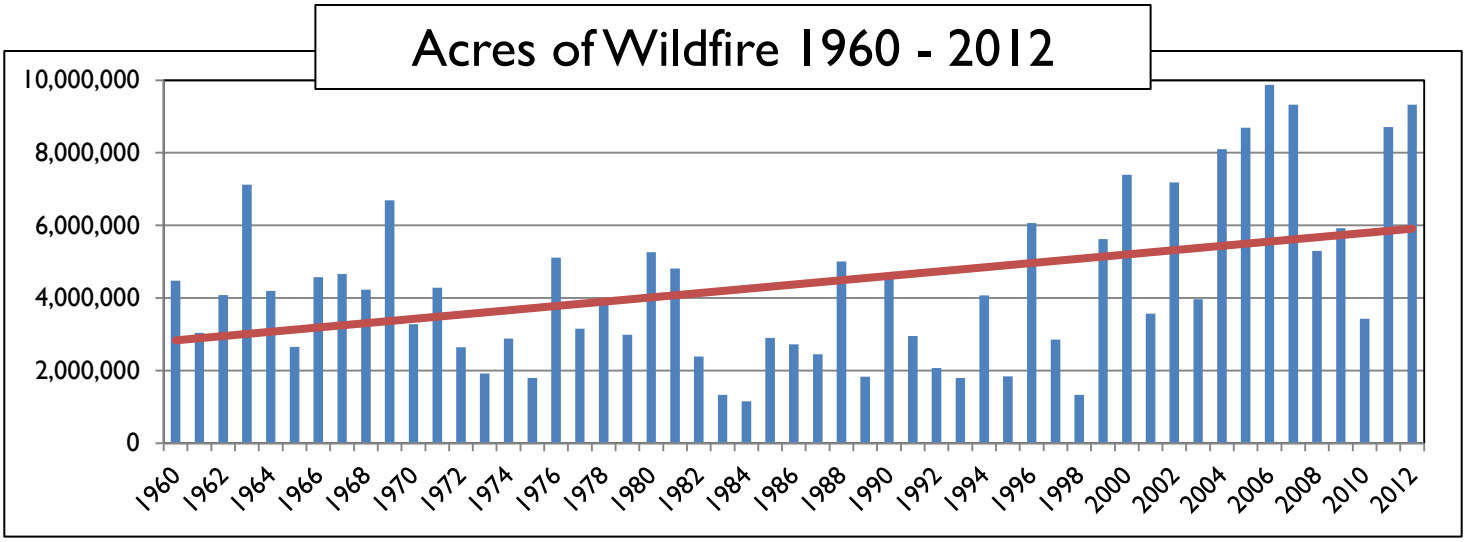
FOREST HEALTH AND WESTERN UTILITIES

AUGUST 27, 2013

WESTERN UTILITIES SUMMIT

The occurrence of large, severe forest fires place electric utility structures at risk and impact electrical system reliability. Fire severity is increasing due to increasing drought and insect epidemics. Forests can be managed to reduce fire risk, but the current pace of treatment is not adequate. Working collaboratively through partnerships at the landscape scale can help reduce the cost of management and increase effectiveness. This collaborative work includes planning and design of projects, as well as legislative and administrative policy changes that enhance forest restoration and renewable energy. These collaborative efforts will address financial, social, and technical barriers to improved forest management and will improve system reliability.

RELIABILITY AND RISKS



Changing Fire Trends
Fires are becoming larger and more severe. Since 2000, ten western states have had record fire seasons. The length of the fire season is increasing, and is currently about 78 days longer than 20 years ago. Millions of acres of bark beetle epidemic are exacerbating the problem. Last year's record drought and extreme heat underscore the changing climate trends that indicate the amount of wildfire and the associated damage will increase beyond our recent experiences.

Value of the Entire Forest Ecosystem is At Risk
Drought, forest insect and disease problems, and wildfires are putting the entire forest ecosystem at risk:

- Clean water, clean air, habitat, and recreation
- Communities and their infrastructure – 72,400 are at risk nation wide; less than a quarter have protection plans
- Homes and businesses – 3,500 homes were lost to wildfires last year
- Power lines, pipelines, roads, and canals
- Municipal and hydroelectric reservoirs – over 250 hydroelectric reservoirs on National Forests provide over 18,000MW of electricity

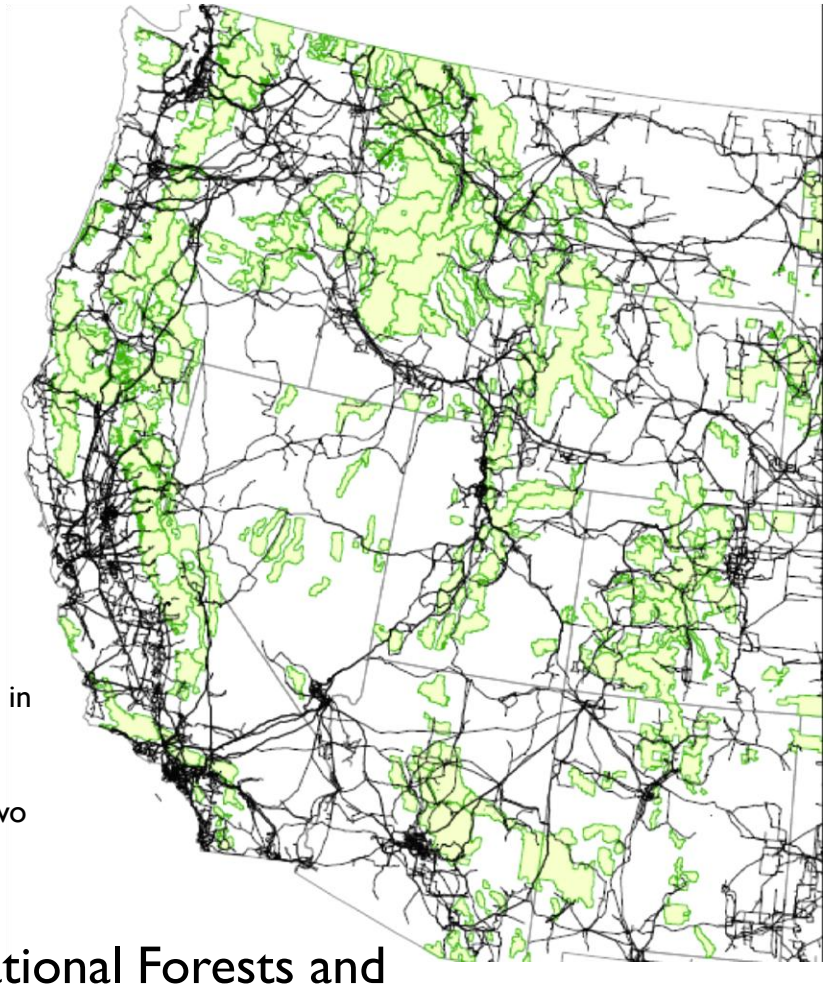
Implications for Reliability
Western transmission corridors that cross through forests are subject to interruption from wildland fire. There is value in reducing this risk and enhancing electrical reliability for FERC, state Public Utilities Commissions, and individual electric utility companies. In addition, reducing long term fire risk can play an important role in state and regional transmission planning. Small scale distributed wood energy systems can add to system reliability and help achieve forest restoration.

Increasing Efficiencies through Partnerships
Amid this increased risk, budgets are declining. By itself, the Forest Service does not have the budget to conduct forest management work that reduces risk on all of the affected acres, particularly when costs to put out fires have been increasing. However when limited funds are spent in partnership and at landscape scales, greater efficiencies can be attained. The Forest Service has formed many partnerships to leverage the effectiveness of its budget, including extensive partnerships with corporations, water utilities, municipalities, and a host of others.

RELIABILITY AND RISKS

9,635 Miles of Transmission Lines at Risk on National Forests in the West

6,955 Miles at Moderate to Very High Fire Risk on National Forests in the West



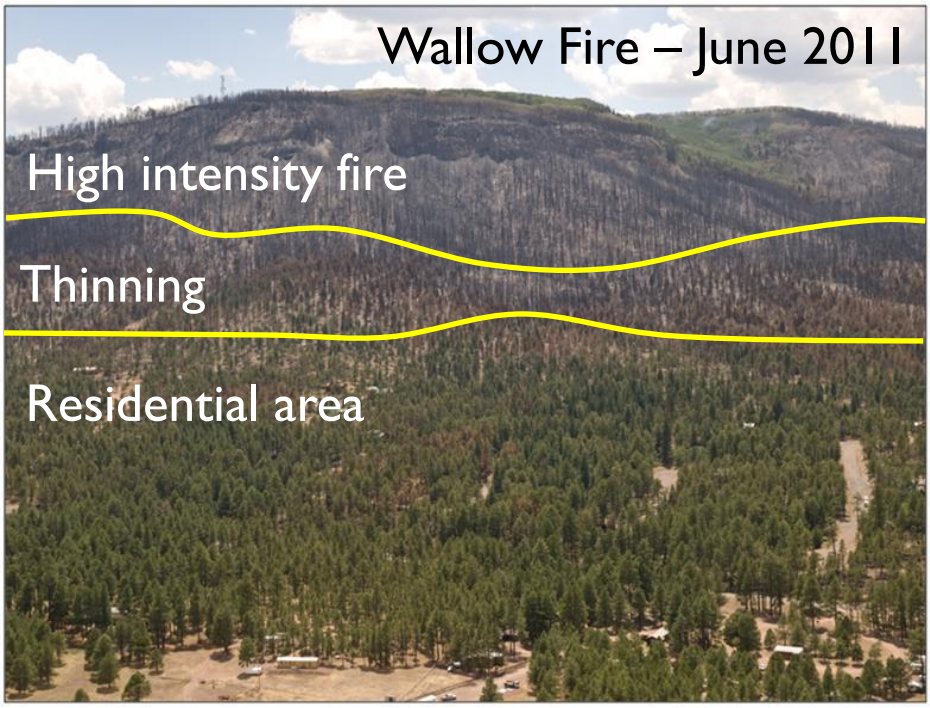
National Forests and Transmission Lines

Liability for Utilities

- Since 2006, utilities have been billed for $220 million in fire suppression costs for 84 fires started by transmission and distribution infrastructure.
- Civil claims related to three 2007 fires sparked by two utilities were recently settled for $1billion.

FOREST MANAGEMENT

To reduce wildfire risk and protect transmission lines, forests need to be managed. Decades of fire suppression have resulted in dense forests and increasing fire risk. Some restoration is accomplished through prescribed fire. Other forest restoration must be accomplished through mechanical treatments. These treatments involve thinning the trees and either burning the material in the forest or removing it to create wood products, including wood energy, which can decrease the cost of restoration.



Successful treatments on National Forests reduced wildfire intensity near homes in Alpine, Arizona, protecting the community. Much of the material from these treatments was used for energy.

The Wallow Fire also threatened two transmission lines, each of which deliver about 1100 MW, about half the energy Tucson Electric needed to serve forecasted peak power demand. This could be considered a near miss.

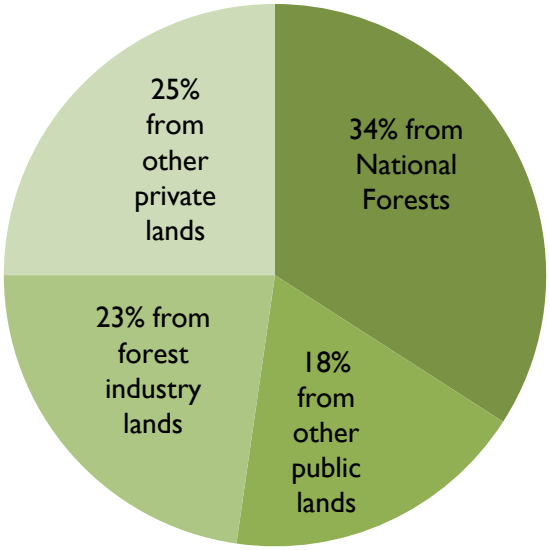
Unthinned Stand

Thinned Stand

National Forest lands thinned in partnership with the Transmission Agency of Northern California

THE SCALE OF THE PROBLEM

Millions of acres of forests in the west are at risk of severe wildfire and require restoration. Current resources allow us to mechanically treat about 200,000 acres on National Forests each year, requiring us to prioritize treatments. There are about 200 million acres of non-wilderness forested land across all ownerships in the west. About 45 million of these acres are available for mechanical treatments. About 15 million of these acres are on National Forests in the west.



45 million acres of forested land are available for treatment in the west

The 45 million acres would have the capacity to generate about 3,700 MW per year. The 15 million acres of National Forest lands would have the capacity to generate about 1,250 MW per year. Assuming a 20 year timeframe for completion and an estimated 600 acres per megawatt.

Treatments around Transmission Lines

Thinning at a landscape scale reduces fire risk and brings the fire to the ground, making it safer for infrastructure.

Existing Forest Service partners that facilitate this work include the Transmission Agency of Northern California (TANC), Western Area Power Administration, and Tri-State Generation and Transmission Association, Inc.

OVERCOMING BARRIERS

Barriers and Opportunities

Barriers exist to increasing forest restoration treatments. Additional partnerships, changes to policy, and programs can help overcome the barriers, decrease treatment costs, and reduce risks.

Financial barriers and opportunities

- Declining budgets are reducing the Forest Service's capacity to do more treatments. Therefore the Forest Service is working on economies of scale by planning for whole landscapes to meet multiple purposes; developing an array of partners with interests in particular parts of the landscape.
- Many state and federal policies do not currently incentivize wood energy the way they do solar, wind, and other renewables.
- The low price of electricity, particularly due to the low cost of natural gas, hinders wood energy's ability to complete on a cost-per-kilowatt basis. When other benefits, such as the value of reliable baseload generation, risk reduction for utility infrastructure, reduced fire suppression costs, and post-fire costs reduction are included, wood energy can be competitive.
- Many wood energy opportunities are at too small a scale to interest investors. Clustering several projects together is one way to make investing in wood energy more attractive.
- USDA's Wood to Energy Initiative has overcome some of these financial barriers, leveraging technical and financial assistance programs, resulting in over $1 billion in public and private investment in wood energy projects in FY2012. USDA's grants for design and feasibility studies, low interest loans, and loan guarantees support a diversity of projects, from schools to utility scale facilities.

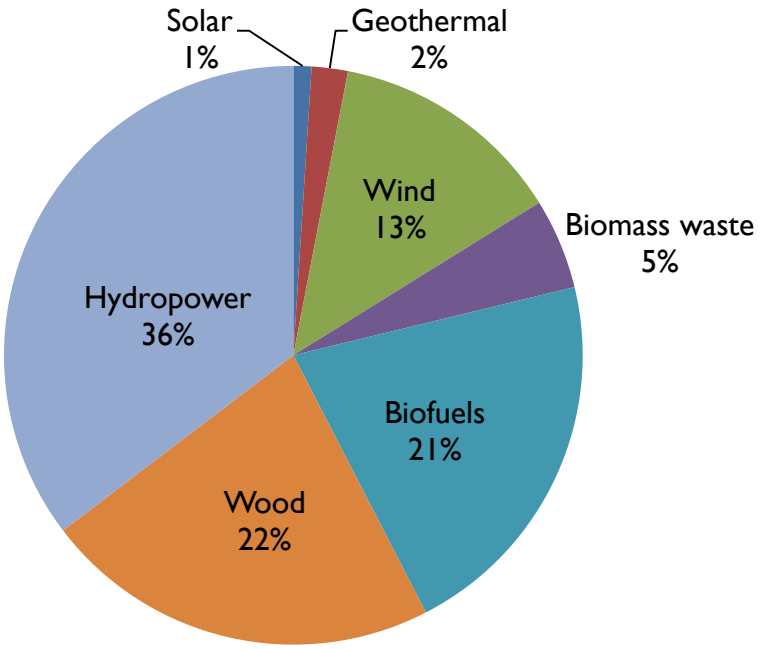
Social barriers and opportunities

- Social acceptance of forest restoration work is not universal. Litigation can be a barrier to removing wood from federal lands.
- Collaborative efforts which engage stakeholders such as, community members, environmental organizations and the wood products industry have been effective in increasing acceptance of forest management.
- Some people perceive wood energy as a contributor to greenhouse gas emissions. This doesn't consider the carbon sequestered in forest regrowth, the greenhouse gas emissions created by wildfire, or the greenhouse gas emissions created by burning thinned trees in the forest.
- Statewide wood energy teams, supported by the USDA Wood to Energy Initiative, are active in a few states. These teams bring together stakeholders with financial, technical, and community expertise.

Production and distribution barriers and opportunities

- In many areas the wood products industry has declined, increasing the cost of removing material. Wood energy is most feasible when it is part of an integrated wood products industry.
- Trained workers and appropriate equipment to transport materials produced by forest treatments are still needed in some areas.

THE ROLE OF WOOD ENERGY



Renewables make up 9% of our total energy consumption. 22% comes from wood.

Lumber, paper and energy markets are essential to cost effective forest management. The wood energy market can use the smaller and defective trees, which cannot be used for other products, decreasing the cost of forest restoration. Wood can provide baseload energy that is renewable and helps meet carbon goals.

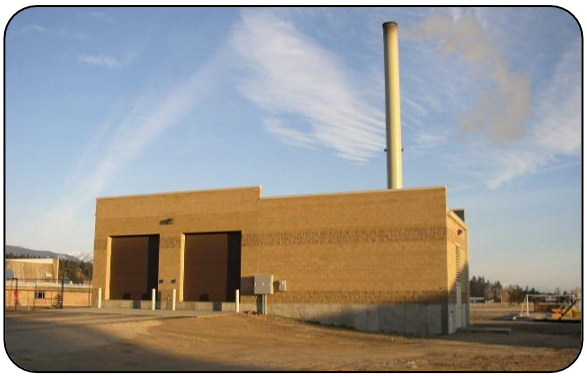
Using existing, commercially available technology, wood energy produces more energy than wind, solar, and geothermal combined. It is an established component of renewable energy consumption in the US. Much of this production occurs in industrial combined heat and power systems. About 3,000MW of wood electricity enters the grid each year, with many thousands of additional megawatts used on site at industrial facilities. In addition, hundreds of systems at a variety of scales use wood for heating and cooling. What is needed is both an expansion of this use of wood energy and a concerted effort to connect fuel supplies from forest restoration to this expansion.

The scale of the opportunity is large. Investments in wood energy can have a significant impact on renewable portfolios and distributed baseload energy generation, while having the important co-benefit of reducing the cost of forest treatments and wildfire risk.

WOOD ENERGY FACILITIES

Eagle Valley Clean Energy - Gypsum, Colorado

11.5 MW wood energy facility under construction
Power purchase agreement with Holy Cross Rural Electric Coop
$40 million loan guarantee from USDA Rural Utilities Service
Some feedstock comes from National Forests



Darby Schools - Darby, Montana

Operational since 2003
Replaced fuel oil with woodchips
Cost $650,000 and has saved over $1.3 million
16 other systems in Montana

Stoltze Land and Lumber - Columbia Falls, Montana

Generates heat for mill operations and 2.5MW of power
Power is sold to Flathead Electric Cooperative
Replaced 100 year old wood boiler

Gunderson Lutheran Hospital – La Crosse, Wisconsin

Thermally-led combined heat, power, and cooling
Will produce 400 kW of power and 24mBTU/hour of heat
Marginal cost of the power is $0.05 cents/kWH
Under construction