

Statement of  
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Forests and Forest Health  
Committee on Resources  
United States House of Representatives  
Concerning “Developing Economic Uses for Forest Fuels”  
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MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE:

Thank you for the opportunity to be here today. I am Tom Hamilton, Director of the Forest Products Lab. With me today is Ann Bartuska, the Director of Forest Management, and Denny Truesdale, Deputy National Fire Plan Implementation Coordinator.

Tremendous opportunities exist to improve wood utilization, bringing more value to forest material and reducing our dependence on other non-renewable energy resources. The Forest Service is actively involved in these opportunities. I would like to discuss our actions to improve the utilization of small diameter and under-utilized wood resources.

There is a national need for: 1) recognizing the significance of wood resources for community based value-added businesses and energy production; 2) intensifying efforts to increase the use of wood for energy; 3) applying our existing authorities to develop wood-based industries and; 4) expanding markets for the energy and products that we can produce through improving utilization of wood resources.

Using wood for products and energy generates additional benefits, including creating and sustaining jobs; diversifying and strengthening small business and rural economies; and reducing the threat of catastrophic wildfires.

As you know, the massive wildfires of 2000 have focused attention on the buildup of wood on Federal lands. The Forest Service estimates there are 400 to 500 million tons of small diameter woody biomass on national forest lands that are classified at high or moderate fire risk. Efficiently capturing and utilizing only a part of this material would help offset the public cost of hazardous fuels reduction and forest ecosystem vegetation while contributing to rural communities sustainable growth and development.

We have a long history of developing forest management systems and utilization technologies at the Forest Products Lab (FPL), Research Stations, State and Private Forestry programs on private woodlands, as well as, on the National Forests. We will continue to search for better ways to harvest, recover, and process this low value, small-diameter material in an economically and environmentally sound manner.

### What Are Under-utilized Wood Resources?

Under-utilized, wood resources are low value, small diameter trees, generally growing beneath the forest canopy. These trees are usually too small to make lumber or paneling, and of too little value to be economically harvested and transported. In many forests, their presence is a result of earlier management practices, such as fire suppression, and now creates a high risk of wildfire. Discovering new uses and expanding current uses and new product development could help reduce the cost of removing hazardous fuels and make this material into economical and renewable wood-based alternatives to large trees, plastics and other oil-based or more resource-costly products.

### Value Added Products

In many parts of the West, particularly where fire risks are great, there is no industrial infrastructure capable of processing thinnings from hazardous fuels treatments. Yet, there are significant possibilities for adding value to the wood resource at the small scale, local community level. These include traditional commodity wood products made from small logs and non-traditional species, new secondary products such as structural strand lumber (made from chips), laminated timbers, oriented strand board, round products, and a vast array of specialty products. Obstacles to the use of small diameter and underutilized species on federal lands for products include remoteness, high costs of harvest and transport, low timber prices, lack of industry, and administrative procedures designed for larger scales of timber harvesting.

## Renewable Energy

Geothermal, solar, wind, and biological sources (including wood), provides about 4 percent of the total energy need of America. Approximately three-quarters of the renewable energy today come from wood. Some analysts have estimated that the use of all alternative energy sources could potentially meet 20 percent or more of America's present energy needs. Wood could contribute a major portion of that amount.

Wood energy is thermal, electrical, or chemical energy produced from wood, including forest residue, unmerchantable material, and specialty-grown woody crops. In its simplest form, wood energy is using a fireplace, stove, furnace or boiler to produce heat. The scale of operation ranges from individual homes, to buildings and facilities such as schools, offices and hospitals, to heating districts in urban areas where the heat is distributed as hot water through a network of underground utility pipes.

Most of the current wood energy activity is associated with industrial wood processing facilities, such as sawmills and pulp and paper manufacturers. Wood by-products, such as bark, sawdust and pulp liquors, are burned or converted to gas to create heat or electricity for the facilities, the excess of which is often sold to local power grids. Electricity is also generated through the process of co-fired generation or co-generation, which is burning wood energy sources along with fossil fuel sources.

Challenges, however, exist in the use of wood energy. Wood from our nation's private forests plays a significant role in producing wood energy, especially in the Eastern United States. These forests are

actively managed to produce a variety of products and outputs including wood energy. Federal lands in both the eastern and western US contain significant sources of small-diameter and underutilized wood that can be used to develop and support strong wood products and energy economies.

The Biomass Research and Development Act of 2000 (Public Law No. 106-224) promotes the technology and research and development of industries that use trees, crops, and agricultural and forestry waste to make fuels, electricity, chemicals, and other industrial products. The law also provides that the feedstock sources on federal lands should be fully integrated into this use. The Department of Agriculture and the Department of Energy have the joint Federal leadership in implementing P.L. 106-0224. The Forest Service, working through USDA, is a partner with other agencies to implement this law through a joint Biobased Products and Bioenergy Program.

The Forest Service is also a contributing agency to the President's National Energy Policy Group, now developing a national strategy that includes the use of renewable energy sources such as wood and agricultural crops and residues.

#### Forest Service Actions

The Secretaries of Agriculture and Interior presented the National Fire Plan (NFP) in September 2000, which emphasizes hazardous fuels reduction and community assistance. Funding for the NFP in Fiscal Year 2001 included \$205 million for hazardous fuels treatments on National Forests, \$120 million of which is targeted for Wildland-Urban Interface, and \$20 million in discretionary grants for Economic Action Programs and pilot projects to develop wood utilization in communities close to the resource. In addition, the Forest Products Lab appropriation contains \$750,000 for wood utilization research.

The Forest Service is developing appropriate management systems, harvest and delivery systems, processing and conversion systems to improve the economic feasibility of using small diameter and under-utilized wood that will help local communities build wood products and wood energy related industries.

Under the Biobased Products and Bioenergy Program, FS Research and Development is developing the science, technology and management systems for wood energy and wood products production on public and private lands, and improving the economic feasibility of using small diameter materials and solid wood and paper wastes. FS R&D is also developing low-impact operations and delivery systems. The FY 2001 appropriation is over \$12 million. The National Forest Products Laboratory in Madison, Wisconsin, is conducting research on product development, economics, and marketing of new and traditional products from small diameter and under-utilized trees. Through a partnership with State and Private Forestry, they are transferring new and existing technologies to those interested in commercial undertakings.

There is a strong need for market expansion in the use of small diameter and underutilized material. The following examples illustrate the range of projects that are underway:

- Economics and engineering using small-scale combustion technology for the community hospital and the Lewis and Clark Center in Salmon Idaho (contract for services with provider).
- Timber bridge construction using FPL lamination technology over an arroyo in Santa Fe, New Mexico (contract for services with provider).
- Potential uses of machine stress rated lumber for the Joseph Sawmill in Oregon (grant with university).
- Grading logs from fire killed timbers – Rocky Mountain Log Homes and University of Idaho.

The National Forest System in conjunction with the FPL and State and Private Forestry has created a full time position, located in Ft. Collins, Colorado, with responsibility for small diameter and under-utilized timber. This position promotes project planning, biomass applications, community cooperation and small diameter harvest techniques. Accomplishments so far include establishing a website, Tools for Forest Vegetation Management, to gather ideas and share information; working with universities, states, counties and community groups treating and utilizing small diameter material in southwestern Colorado; exploring cogeneration opportunities through a cooperative agreement with Colorado State University; exploring new and existing contracting authorities; and promoting the use of small diameter wood harvesters in central Oregon.

State and Private Forestry provides assistance to the 70% of the nation's forests not in Federal ownership. America's capacity to produce wood energy and products from renewable resources depends on these lands. Economic Action Programs (EAP), are providing opportunities to rural communities to diversify and expand their economies by providing support for innovative entrepreneurial businesses to remove, transport, and use wood. The EAP operates under broad existing authority, well-established networks and partnerships, and a proven record of local community-based implementation. The EAP serves as a catalyst, rather than the primary sources of funds to assist the communities to respond to needs they identify locally.

The National Fire Plan is expected to help create and expand markets by using wood that will be removed to reduce fire hazards. Thinning and other treatment of woody materials to protect local communities and watersheds are major emphases of the NFP.

These activities can provide a supply of wood to communities with facilities in place to process the material -- provided that environmental and economic constraints can be met. Implementation of NFP may create as many as 8,000 new jobs in rural communities and provide economic opportunities for rural forest dependent communities through partnerships for natural resource work.

#### What More Is Needed To Encourage Utilization?

We are addressing the following challenges:

- Federal land management agencies have not been able to provide a reliable and consistent supply.
- High costs.
- Lack of value-added uses that could offset the higher forest operation costs.

National Forest Systems is addressing the first challenge by making sure our administrative and legal obligations are fully met prior to offering or contracting for the removal of material. We are also using our existing authorities more creatively. Illustrative of the latter approach is our recent development of a hybrid service contract with an embedded timber sale contract. In addition, continuing the hazard fuels reduction funding at this year's level would provide some assurance to companies that small diameter products would continue to be available in the future.

The second challenge can only be overcome through a coordinated effort within and across land management and other relevant agencies to; 1) recognize that utilization can be a cost-reduction opportunity; 2) assist communities and businesses in establishing hauling, sorting and processing facilities as well as in marketing products;



3) coordinate the sharing among interested parties in the cost of harvest and hauling, and 4) develop and implement integrated management and production systems, technologies, and information for harvesting, merchandizing, processing, marketing and distributing products and energy from small diameter and under-utilized material. Other agencies may also be able to support the implementation of these goals. For example, USDA's Rural Development provides business and industry loans that would help establish new plants.

The third problem can be overcome by new product processing and market development, pilot testing and demonstration, development and dissemination of information needed for market acceptance, participation in standards development, and entrepreneurial training and business assistance.

### Conclusion

Wood-based products and energy can eventually become significant contributors to a national energy policy. Supported by critical research and development, management systems development, active management on federal lands, and targeted incentives, wood energy can become economically viable. The results of widespread use of wood products and energy greatly benefit the US through decreased pollution, enhanced energy security, improved management and fire safety of public lands, and increased economic opportunities in the rural economy. A coordinated approach is necessary to develop both products and suitable outlets for by-products and residues (energy). Both are needed for success. In short, the solution is community and technology based and can be achieved by addressing the larger problem one small community at a time.

This concludes my prepared testimony and I would be pleased to answer any questions you may have.