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Committee on Natural Resources
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Oversight Hearing on Renewable Energy Opportunities and Issues on Federal Lands
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Testimony of:
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Thank you for the opportunity to address these important subjects today. I work in a small, public land community in the middle of the Shasta-Trinity National Forest. In 1994 our forest changed from timber management to management for biodiversity, clean water, clean air, and other ecosystem services. The icon of that change was the Northern Spotted Owl. We have worked diligently since the early 1990s to find pathways to restoring the forest, protecting the owls and the coho, and restoring our local economic vitality. During that period I have worked with others on the National Fire Plan, (I currently serve on the Western Governors' Forest Health Advisory Group), stewardship contracting, collaborative stewardship, Community Wildfire Planning, and the nexus of forest management and community health. Through the Rural Voices for Conservation Coalition, a group of over 60 western community groups working with public land issues, I have developed a unique perspective on biomass and renewable energy, which I hope to share with you today.

My comments will deal with the role of public lands and the role of federal investments in developing biomass energy facilities with supply from public lands. The Community Forestry groups believe biomass utilization is a land management issue, not a renewable energy issue. We see renewable energy as part of an integrated strategy to

1. Improve the resilience and health of the forest.
2. Reduce the cost of fire suppression
3. Improve the social and economic condition of public land communities

I believe our collective jobs are to use the federal investment and federal lands to maximum advantage in terms of forest health, energy efficiency, and local economic returns. Luckily, we have some examples of how that can work and what it takes to make it work. My comments are based upon actual experiences on the ground and in your public land communities.

Renewable Energy production is possible in an integrated-use program. It cannot stand alone.

Rural businesses and communities are working with Forest Service and BLM partners to develop "integrated-use biomass facilities". These facilities usually include a clean chip product (for sale to a regional paper plant), a dirty chip product (for use in a co-located pellet plant or wood-fired boiler for steam/electricity), a post and pole processor, and a

small log processor. The key is the ability to sort and merchandize for highest and best use, therefore creating maximum value for the raw materials and maximum market flexibity.

These integrated-use program oftentimes include a composter, dry-kiln, animal bedding, or landscape bark plant, moulding plants, and wood-plastic facilities. The key is that they are developed at the local level as appropriate. Instructive examples come from the Collaborative Forestry Restoration Program in New Mexico, the White Mountain Stewardship Contract on the Apache-Sitgraves National Forest, and the Boardman Chip Plant. Other communities around the west are in some phase of similar development.

The White Mountain Stewardship Contract on the Apache-Sitgraves National Forest is the most mature example. It included: 1) A collaborative process which included a very powerful environmental activist community. 2.) Federal Investment of $1.5million in four businesses through the Economic Action program of the Forest Service, Forest Products Lab woody-biomass grants, and the Four Corners/Sustainable Forests Partnership. 3.)A ten-year stewardship contract on 150,000 acres which brought a consortium of local businesses to the table. 4.) An integrated use approach including clean chips/dirty chips/roundwood/and sawlogs.

So far, the results have been: per acre costs of treatments fell from over $600/acre to under $400 (that alone is a $20 million savings to the federal treasury); 9,000 acres treated; 24,000 acres under contract; 70,000 acres NEPA ready; businesses involved grew from five to thirteen with expansion into molding/flooring/ and oriented strand board in the planning stages; job count, 449 f.t.e.; and, $12 million per year in local purchasing of goods and services. The payroll and business taxes alone have proven this to have been a smart investment for the federal government.

If that supply had been dedicated to a single-use stand alone biomass to electricity plant, the employment would have been 15-24 jobs at the plant, and the supply would have been monopolized by that plant for 10 years. Single use is an inefficient model for public land supply and limits innovation and adaptability.

Lessons from the field:

A. A Collaborative forest restoration program appears to be a pre-requisite for public land supply: It provides a politically durable agreement to maximize forest health and provide raw material for utilization through stewardship contracts and appropriated dollars. Collaborative forest restoration projects require an up-front federal investment in the collaborative process. Where restoration frameworks have been worked out through a multi-stakeholder process projects have social support and appeals are reduced. Examples abound throughout the west and appear to be essential in making biomass available from public lands. Collaboration is not in current agency performance measures or targets and therefore, often does not get dedicated resources.

B. Using woody bio-mass for solid pelletized fuel which maximizes the energy efficiency in wood.

A standard wood-fired electrical generation plant recovers about 20% of the energy in the wood it burns. Converting wood to ethanol gives you about a 50% net efficiency. Converting wood residues into solid pelletized fuel gives you about a net 80% efficiency.

The cost of a standard wood-fired bio-mass to energy electrical plant is about $2.5 million per megawatt. That would be about $25 million for a 10 megawatt plant. A ten megawatt plant requires 167,500 green tons of wood residue per year. A ten megawatt plant requires a 7.5cents/kilowatt hour in order to work economically and today the biomass to electricity industry needs a subsidy to reach that 7.5cents. If you assume thinning 25 tons/acre you would have to thin 6,700 acres per year to feed the plant. That's roughly the equivalent of 33.5 million board feet.

A wood pellet facility for 60,000 green tons (about 35% of what a 10 megawatt plant would require) can be built for $2.5 million (about 10% of what a 10 megawatt plant would require.) That 60,000 green tons is roughly equivalent to 12 million board feet but delivers roughly 1.5 times the renewable energy of the 10 megawatt biomass to electricity plant.

If the federal policy is to subsidize the market for bio-mass generated electricity, then perhaps it needs to incentivise markets for solid pelletized fuel as well…which can directly heat schools, hospitals, public buildings and homes, as well as co-fire coal plants and help them burn more cleanly.

C. Build Integrated –Use facilities: to maximize local economic returns.

Integrated-use facilities simply mean a single campus making more than one product out of forest biomass. Currently the historic example is a sawmill or veneer plant with a wood-fired boiler for both steam and electricity. These are the plants you see being proposed and built in Oregon, where they still have private land forestry and the public land supply is becoming more predictable because it comes from thinnings. These plants work economically because the wood products plant uses the heat and some of the electricity for its own processing. That is the traditional "sawlog" version.

The woody bio-mass version is a small scale facility that can produce a clean chip for the paper industry, hogged-fuel for a biomass plant or pellet plant, a small pole, and a small log processing facility. Oftentimes a composter is added, or a dry kiln, or a landscape bark facility. The concept is, you go for the highest and best use. That allows you to be flexible over time as markets change. It also allows you to have multiple locally owned businesses participating. These integrated use facilities work for local economies because of appropriate scale, and appropriate ownership structure. They also add the greatest value, eventually making the raw material more valuable, thus reducing treatment costs on public land.

1. Ownership structure: While many reports have noted the potential for rural development around biomass utilization, most fail to address how a community might participate in the benefits. The examples of bio-energy that has been most studied recently are ethanol plants owned by farmers or co-ops of farmers. Ownership of ethanol refineries by local farmers and community members is seen as the key aspect to sustainable rural development. **Local ownership, as opposed to absentee-ownership, assures that the facility is based to some extent on local resources and needs, and that much of the money generated remains in the local economy**. While "economies of scale" traditionally pointed to larger plants, today "economies of scale" point to the added benefits of smaller, locally owned plants, where typically the spending of dividends by community investors has been found to contribute significantly more to the local economy. An initial plant corn-ethanol would create about 40 full-time jobs and an increase in annual direct spending in the community of around $56 million. When community investors re-invest dividends in their community we see an additional 821 jobs, an increase in $37 million in household income, and over $60 million more in Gross State Product—than what a community gains through local siting of an absentee-owned plant. (studies by John Urbanchuk, "Economic Impacts on the Farm Community of Cooperative Ownership" (2002-2006) www.ncga.com)

2. Federal Role: If the Federal Government wants to invest in biomass utilization through transportation subsidies, technical assistance, and grants, it would do well to incentivise these integrated-use facilities now emerging. For example: SBS Wood Shavings in New Mexico is now SBS Wood Shavings and Sawmill and Dry Kiln; Dodge Logging in Oregon is now the Boardman Chip Plant and Pellet Mill and small log mill, Fremont Lumber is working with DG Energy on a mixed-use facility in Lakeview, Oregon as is the Warm Springs Tribe in Central Oregon.

D. Scale is an issue.

It's a supply issue:

In the earlier discussion of a 10 megawatt power plant (considered small scale by many in the biomass industry) the supply required is equivalent to 33.5 million board feet. Consider, if you will, the drastically reduced allowable sales quantities on most of your National Forests. For instance, the entire ASQ for the Trinity Forest, where I live is 28 million, and they rarely put out more than 8 million (the ASQ in 1989 was around 200 million board feet). On the neighboring Klamath Forest (which produced 440 million board feet in 1989)the ASQ is 44 million board feet and they average about 15 million board feet per year.

Large scale facilities can no longer be supported on the public land supply alone. Even where there is an inadequate mix of public/private land, they are struggling to survive.

Small scale isn't just the best alternative for public lands. It is often the only alternative in areas where public ownership is over 50% of the land and volumes of material are so small compared to an industrial scale.

Its an environmental issue: Restoration forestry is a fairly new science. Our monitoring for learning (as opposed to compliance or accountability) is likewise fairly new and while most of the conservation community supports landscape level treatments there are those who don't and who will surely oppose large scale approaches. Collaboration helps. There are several strategies for "scaling up". We believe you are seeing "small scale on a large scale" emerging throughout the west and should support it. The industry that builds renewable energy opportunities from public land supply has to remain responsive to maintaining forest health in a dynamic system. Diversity in the industry maintains adaptability and stops boom/bust cycles.

It's a sustainability issue: Clean chips, dirty chips, roundwood, and sawtimber allow the businesses to change as the needs of the forest change overtime. At biomass conferences I'm often challenged by activists to defend the "sustainability" of biomass energy plants. My response is simple: "I hope this isn't sustainable. I hope, that in 20 years we are no longer facing 130 million acres of overstocked stands, catastrophic wildfire, and forest conversion to brushfield. I hope we will move on to a more resilient forest, a larger diameter size class and a new global standard for sustaining our public lands for ecosystem services, including biodiversity, clean water, clean air, carbon, and forest products." I do not expect the public lands to be managed for quick rotation fuel for renewable energy plants.

It's a community development issue. The west is replete with infrastructure in the form of abandoned mill sites, commonly referred to as "brownfields". They usually are 50 or so miles apart. They are located on major transportation routes, close to transmission lines (because most used 3 megawatts of power for their processing) and close to water sources. These old mill sites are perfect for small scale, integrated-use facilities are fairly low capital, reduce the energy loss and the high costs of transportation, and are appropriate to the landscape and the community.

Recommendations:
The Federal Investments should be in priority areas where fire suppression costs are escalating, over 50% of the forest is in Fire Risk Condition Class 3, and the likelihood of a catastrophic fire is over 10 on the current assessment scale. The Forest Service has this data available by Region. Investments should go to areas within the highest risk quartile in each region.

The Federal Investments should be in creating the supply: stewardship contracts, increased planning resources, and increased resources for collaborative processes. Focused up-front investment in collaboration paid off for the Apache-Sitgraves, the Lakeview Stewardship Unit, the Colorado Front Range, and many other areas.

The Federal Investments should be in developing the harvesting and processing capacity:
Continue to fund The Forest Products Lab Woody-biomass Grants and Technical Assistance; fund Section 210 of the Energy Bill and perhaps add some pilots for these integrated-use facilities; fund the Forest Service Economic Action Program, this program

has the flexibility to provide grants to communities for collaborative planning, technical and market assistance, and demonstration projects. The Farm Bill's Rural Development Title could provide substantial funding to assist rural business start-ups and provide public land communities and businesses with access to capital. Most Rural Development programs are aimed at private landowners. Public land communities do not own the land and will probably need a specific program. The Farm Bill's energy title and the Energy Policy Act could put greater emphasis on appropriate, community-scale development. It may be appropriate to authorize and fund some pilot/demonstration integrated-use facilities.

The Federal Investments should be in incentivising markets: subsidize the burners and boilers needed to use pellets for heat, equalize the renewable energy tax credit to the same standards as wind and solar for wood-fired electrical generation when it is part of a combined heat and power, integrated-use facility.

Do not subsidize transportation. That seems counter-intuitive if we are trying to save energy. Instead, fund forest health treatments and require the utilization of the material when appropriate. (This is an aside: Agency targets often inadvertently double count acres when one line item is used to pay a crew to cut and pile biomass (say at $600/acre) and a force account crew is paid to burn the piles (say at $400/acre). By reporting twice and counting twice, the average per acre treatment is $500. If a biomass facility wants to cut and extract the same material at a cost of $700, it cannot compete merely because of the accounting system, not the outcomes. To incentivize utilization, perhaps acres treated through extraction and therefore not requiring pile burning should also be double counted. Considering the return to the federal coffers through payroll and business taxes, perhaps they should be triple counted.)

Take a business plan approach. Award these incentives to projects where the business plan shows the reduction in cost of acres treated over time and the reduction in the likelihood of a Type 3 fire incident overtime as a result of these investments. Award these incentives to integrated-use facilities in public land communities with low income and expressed need for economic development (hub-zone designation comes to mind). Award these incentives to communities in counties where the federal government owns over 50% of the land (for example) and where the fire risk condition class is very high and the risk of catastrophic wildfire is ranked above 10 on the current scale.

The public lands are in need of restoration. Your public land communities and businesses are taking the lead in finding solutions to these complex challenges of developing social agreement, learning appropriate land treatments, finding economic uses for by-products of forest restoration/ fuels reduction and creating a fire-adapted society. Renewable energy is an important piece of this system, but forest health and community vitality must remain the drivers.