



Western Forestry Leadership Coalition

Delivering Resources, Partnerships, and Solutions for Western Forestry Challenges

Western Forest Biomass Utilization Issue Brief

April 8, 2010

The Western Forestry Leadership Coalition (WFLC) is a unique state-federal partnership working with the people and resources in the west. The WFLC membership consists of the western State Forestry Agencies and the western USDA Forest Service: Regional Foresters, Research Station Directors, and the Forest Products Lab Director.

The mission of the WFLC is to promote science-based forest management that serves the values of society and ensures the health and sustainability of western forests. For more information please visit www.wflcweb.org

Introduction

There is a critical need for coordinated and focused efforts in the Western United States in the area of biomass utilization. This document presents the need for action, provides background information, identifies the major issues and discusses the progress accomplished. Information here will provide the basis for future actions of the WFLC.

Compelling Need

The management of western forests is at a critical junction. Our forests are at risk due to predicted warming and drying throughout most of the Western U.S. Already we are seeing effects of increased drought, wildfire, insect and disease outbreaks, plant and animal relocation, and water shortages resulting from reduced snowpack and spring runoff. Sea level rise could also impact coastal and island forests.

The future health and sustainability of western forests is integrally tied to mitigating and adapting to the effects of climate change. Furthermore, achieving the WFLC mission requires our state and federal member organizations to take immediate and sustained action consistent with the changing social, economic and environmental reality that our nation's forests are a strategic asset at the intersection of climate, energy and economic policy.

The WFLC anticipates the need for active forest management to maintain resilient and healthy forests. Even as the demand for active forest management increases, its practice on western forests is decreasing. This is partially due to the severe decline of the traditional forest industries that at one time provided economically-viable tools for achieving forest management. This problem is especially noticeable in relation to the small diameter and low value biomass that must be addressed in order to achieve restoration and fuels reduction goals. Development of new bioenergy businesses depends upon integration with forest management and forest products entities. Biomass removal and utilization are important tools in helping forests adapt to and mitigate climate change. At the state, regional, and national levels, new policies and incentives are creating significant interest in forest biomass conversion to renewable energy. Stand-alone bioenergy production from forest residues adds further value when integrated with higher-value products.

Background and Progress

Since the year 2004, there has been an evolution of community and state initiatives that demonstrate viable opportunities for the use of woody biomass from western forests. Coalitions of interested parties have achieved success in many local areas.

Examples include:

- The White Mountain Stewardship Project combined business development grants with long-term stewardship contracts to implement Community Wildfire Protection Plans across the landscape in northern Arizona.
- The Warm Springs Tribe of central Oregon collaborated with local U.S. Forest Service (USFS) and Department of the Interior Bureau of Land Management (BLM) to expand bioenergy production and diversify products from their mill.
- Landscape-scale hazardous fuels reduction and bark beetle mitigation are the focus of collaborative efforts in Colorado.
- The state of Washington has identified bioenergy from forest biomass to be a strategic component for achieving the state's energy and climate change goals, and is investing in projects across the state that will demonstrate new technologies.
- The *Fuels for Schools and Beyond* initiative, initially implemented in Montana and Idaho, has resulted in biomass heating and power replacing fossil fuels in over 17 facilities in 5 states, saving \$2,000,000 or more in energy costs per year.
- College and University campuses in Idaho and Nebraska have been using energy from woody biomass for campus heating (University of Idaho-for the last 23 years) and both campus heating and cooling (Chadron State College- for the past 17 years).

The Western Governors consider biomass a strategically important energy source and under the leadership of the Western Governors' Association (WGA), evaluated the potential to sustainably produce renewable power and biofuels from woody biomass across the western states. WGA also identified how bioenergy can contribute to expanding the western power grid and incorporate all types of renewable energy.

The Western Climate Initiative, a collaboration of independent jurisdictions working together to identify, evaluate, and implement policies to tackle climate change at a regional level, is creating a regional market for carbon, including potential forestry offsets. Fourteen of the seventeen western states have adopted or have in progress Renewable Portfolio Standards with goals of achieving expanded renewable energy over the next 10 years. California has the most aggressive climate change goals of any state and is forging policy and protocols for incorporating forest management, forest products, and bioenergy into state climate policy. Alaskan communities are exploring options for locally-produced bioenergy to replace high cost, barged-in diesel fuel currently used to produce electricity and heat.

Federal climate change and energy policy and incentives have also expanded significantly since the 2005 Energy Policy Act that set the initial goals for producing biofuels and reducing our dependence on foreign oil. Since then, a full suite of new policies including the Energy Independence and Security Act of 2007, the Food Conservation and Energy Act of 2008, and current Climate Change and Energy Policy bills being debated in Congress all point to a future where the cost of emitting carbon dioxide and other greenhouse gases will make woody biomass and other renewable energy sources economically competitive with fossil fuels. Energy security goals will further contribute to expanded economic incentives, driving development and implementation of new technologies.

Forest policy has emphasized the role of woody biomass utilization in the reduction of hazardous fuels on federal, state, and private land around communities at risk of wildfire. Title II of the Healthy Forest Restoration Act of 2003 specifically identifies the importance of woody biomass utilization in achieving fuels reduction goals and improving forest health, and provided a context for expanded efforts by the USFS to fund Woody Biomass Utilization Grants and build business capacity in areas that had lost industry infrastructure. The National Fire Plan, with WGA's leadership, was developed in 2000 and reaffirmed in 2007 as an important collaborative effort between federal, state, and local governments focusing on firefighting, rehabilitation, hazardous fuels reduction, community assistance, and accountability.

Looking Forward

The stage is set to address the three major issues that face our nation: 1) development of renewable energy, 2) economic recovery and 3) adapting to and mitigating the effects of climate change.

These issues are recognized as strategically important in state policy through State Climate Action Plans and/or State Energy Strategies. A Forest Health Advisory Committee has been established by the Western Governors' Association to help guide the cross agency work to address forest conditions, health and threats from climate change. Also, state level Forest Advisory Committees have become an important forum for discussion among stakeholders that include business interests, non-government organizations, utilities, and local governments. Many of the western states have chartered Biomass Working Groups or Committees to give more focused consideration to the potential for synergistic win-win-win strategies for addressing forest health, community wildfire protection, renewable energy, and jobs. State Forestry agencies and federal technical staff provide critical technical and institutional capacity to turn these ideas into successful locally-implemented projects.

Additional partners at the state level include Governors' energy offices, environmental quality divisions, water and power utilities, and economic development departments. Along with many states, Tribes have identified renewable energy and forestry as strategic opportunities, and have special authorities to work with adjacent federal land managers through the Tribal Forest Protection Act of 2004. All of the western states are in the process of developing a State Forest Resource Assessment and Strategy as required by the 2008 Farm Bill. We anticipate the issue of woody biomass utilization opportunities as a means to achieve multiple objectives will be a common theme among western states' strategies.

The National Association of State Foresters' report entitled: *Maintaining and Diversifying Markets that Allow the Practice of Sustainable Forestry* recognizes the importance of diverse, robust markets that provide financial rewards to forest landowners – incentives for keeping working forests forested. Markets can facilitate forest management by offsetting the cost of management activities. This is important in the Western United States as many communities are economically dependent on their surrounding forests.

Beginning in 2011, the Collaborative Forest Landscape Restoration Fund and Priority Watersheds and Job Stabilization will target investments and identify locations and approximate quantities of biomass the National Forest System will make available over the next 10 years. This information can be combined with priority areas identified in State Forest Resource Strategies to identify opportunity zones where woody biomass utilization infrastructure is needed. As the Forest Service updates Land and Resource Management Plans they will provide the context for addressing opportunities and threats across a wide spectrum of issues and provide guidance for future forest management activities. Achieving forest restoration, wildlife habitat, watershed protection, and recreation are all goals that can tap into woody biomass utilization as a management tool. Clearly the ability to economically achieve federal forest management goals will always be limited by available funds, and having integrated biomass and higher value product markets to offset the costs of forest management is a critical need.

Examples where biomass utilization can help achieve forest management goals include:

- Providing for public safety by reducing hazards. USFS campgrounds, trails, and roads in the areas of Colorado experiencing high bark beetle mortality have generated massive amounts of woody biomass and low value logs in areas that are far from any existing wood processing industry. This dead wood is a public safety hazard.
- Reducing the need to burn logging residues. Many areas of the West are listed as nonattainment areas under the Clean Air Act and the opportunity to burn logging residues in the woods is being limited because of local air quality and burning restrictions.
- Reducing the cost of treatments to where they are economically-viable. Areas that have lost the ability for higher value products to help cover the cost of biomass removal, the cost of fuels treatments per acre can range from \$1500-\$4000 per acre. Where local integrated markets value this material, treatment cost is \$0- \$500 per acre.

There are significant opportunities to leverage resources from many sources (Figure 1). Other agencies within the Department of Agriculture (USDA), Department of Energy (DOE), Department of Interior (DOI), and the Environmental Protection Agency (EPA) also have interests in utilizing woody biomass from western forests. For example, DOE has provided grants and loans to private companies to pilot commercial scale processing of woody biomass feedstocks into biofuels. USDA Rural Development provides zero interest loans and loan guarantees for renewable energy projects in smaller communities. USDA and DOE have worked together to provide estimates of sustainable biomass from forestry, urban, and agricultural sources across the US, including western landscapes. Improvements in biomass harvesting, transport, and processing are being addressed in research and development programs across USDA and DOE along with their university collaborators. EPA will have a major role in regulating greenhouse gases if and when federal climate change policy is adopted. They currently have a critically important role in regulating air and water quality and solid waste; both benefit from the appropriate application of woody biomass utilization projects that protect watersheds, reduce smoke emissions and extend landfill capacity.

Conclusion

Considering all the issues along with the activities and groups involved in western biomass utilization, it is clear that there is a critical need for a coordinated and focused effort in the Western United States. This effort will help to sustain and build public and private enterprises at the scale and at locations necessary to achieve forest restoration and sustainable forestry goals across ownerships. In recognition of this compelling need, the future actions of the WFLC will help to achieve this vision.

The WFLC has identified woody biomass as a priority objective in the *WFLC 2010 Business Plan*. The utilization of woody biomass will be promoted in the west via traditional and non-traditional venues. A few ways the WFLC will promote biomass usage in the west will be through existing partnerships and the establishment of new ones, promoting the use of new and existing federal authorities to develop incentives for investment, and helping to sharpen the message of woody biomass utilization.

Figure 1. Multiple opportunities exist for leveraging resources and programs to achieve common goals

