

Notes
Illinois Valley Community Biomass Forum
Cave Junction, Oregon
October 18th, 2006

Marcus Kauffman, Resource Innovations

Marcus Kauffman welcomed the participants and explained the goals of the event and the ground rules. The goals were to share information about biomass and provide an opportunity to answer questions. He requested that everyone be respectful of the speakers and of each other. The participants agreed that they could live with the ground rules.

Cal Mukumoto, Warm Springs Forest Products

Mr. Mukumoto talked about the current and planned biomass plants on the Warm Springs Reservation. One of the tribe's goals is to help make restoration more affordable.

There are many other considerations:

- Supply
- Market
- Financing
- Transmission
- Permits

Warm Springs Forest Products got into biomass because there were increasing volumes of small wood, an abnormal risk of fire, and high levels of disease.

Their fire concerns are:

- 100 years of fire suppression means a high accumulation of small diameter trees, and;
- There are more acres requiring treatment than appropriations to treat them.

Their goals are to thin stands ecologically and reintroduce fire. Warm Springs Forest Products works to balance economics, social needs and environmental factors. On the Warm Spring Reservation, conifer fuels treatments have resulted in 8-13 bone dry tons per acre. Conifer commercial sawlog harvest has resulted in 2-4 bone dry tons per acre, and western juniper range improvement has resulted in 6-8 bone dry tons per acre. There are 12.5 bone dry tons per truckload.

A study by National Renewable Energy Laboratory showed that 4.9 jobs are created per megawatt (MW) of biomass energy production. The plant currently uses 130 bone dry tons per year and produces 3 MW per hour.

They believe in collaboration because it helps develop trust between interest groups and a greater understanding of the project in the community while building agency support.

There are no net carbon dioxide emissions – biomass qualifies for green benefits under all state renewable portfolio standards (RPS) that currently exist. There is no RPS in Oregon as of yet, though there is talk of instating one in 2007.

Jennifer Phillipi, Rough and Ready Lumber Company

Jennifer is a 4th generation Illinois Valley resident, and her grandparents started sawing lumber in 1922. She talked about her connection to the land and community, and she wants to hear the concerns of the community and open a dialogue with the community.

Rough and Ready plans to build a cogeneration (cogen)/ biomass plant with which they will dry lumber, produce electricity, and help to restore forests. Cogeneration will be created by using extra steam the plant produces to dry lumber.

Link Phillipi, Rough and Ready Lumber Company

Why a Cogeneration/ Biomass Addition and Size

There is a small project relative to most other biomass plants. They are building a cogen plant because the current boiler has been a bottleneck for a long time, and they found a way to offset the high costs. They are investing now because they see momentum and an opportunity for solving problems in the forest. Catastrophic fire and rising energy prices play a role, and incentives to support biomass and clean energy projects do too.

Plant will produce 1.2 net MW. It is a very small plant sized to meet the mill's drying needs; the primary reason is not to generate power. Other plants being developed in California are between 6-49 MW.

Fuel Needs

1.5 tons per hour used in the existing facility, and the new one would use about double, which would mean 30,000 tons per year. Half of this tonnage would be provided by mill waste products. The Rough and Ready cogen/ biomass plant could consume up to 2,000 acres per year of small fuels at high capacity.

Traffic

Would result in 2 truckloads per day more than the current amount.

Air Quality

Twice as much fuel would be used but 85% less particulates would be emitted because of the new system that will be installed to collect particulates. Mr. Phillipi noted that air quality gains will actually be greater because the waste wood would not be burned in the woods. Rough and Ready is in the process of doing air quality modeling for the new permit now.

Noise

There will be no new impact on noise, as the turbine will be installed in an insulated building. Rough and Ready reported that the forest biomass material will be chipped and ground in the forest and will not be processed on site.

Water

It is essentially a closed system and use about 3-4 gallons per minute for cooling.

Local Employment

Plant will create 2 mill jobs and 7-10 jobs in the woods and help maintain the current 80 jobs by helping keep the mill competitive.

Public Involvement

Rough and Ready wants to work with federal agencies and the Josephine County Stewardship Group, and they want the support of the local community.

Question was raised about the likelihood of future expansion because it sounds benign now. Rough and Ready may expand it later if the mill expands, but it would still be a small cogen/ biomass plant. The mill has no current plans to expand.

Anna Kemmerer, Department of Environmental Quality (DEQ)

Permitting and Public Notice Process

DEQ has not received a permit application from Rough and Ready yet. Rough and Ready currently has a general permit from DEQ. All sawmills of a certain size are given these general permits, and they allow mills to emit certain amounts of pollutants – for their size 24 tons of particulates, 39 tons of nitrous oxide, 99 tons of carbon dioxide, etc. These are limits set by the Environmental Protection Agency as per the Clean Air Act.

With the addition of the new cogen/ biomass plant, Rough and Ready will not qualify for a general permit anymore. As part of the new permitting process, Rough and Ready is conducting air quality modeling assess whether or not the proposed cogen/ biomass plant will have an impact on class 1 and 2 air areas. If impacts are shown, additional modeling would be done. If there are any issues with emissions and modeling shows impacts, Rough and Ready will have to find some offsets. If no impact is shown, the application permit will be submitted.

DEQ will then send out a public notice, and public comments will be accepted for 35 days. If 10 people request a hearing, a public meeting will be held. Anyone may comment, including federal agencies. A comment period for the Rough and Ready cogen/ biomass is expected this spring.

Questions were raised about compliance with the air quality standards. DEQ does not test for emissions. However, to get a permit, a facility must hire a third party tester, and they

do this once every 3-5 years. Rough and Ready submits annual reports on production numbers. If Rough and Ready were over the threshold on pollution emissions, DEQ would hold them accountable. EPA and the DEQ can come in anytime to look at documentation, and with the new permit DEQ would now review documentation every 2-3 years instead of every 5 years as before. There are civil penalties of up to \$10,000/ day if Rough and Ready is not in compliance.

The Rough and Ready cogen/ biomass would double steam production. While some pollution would increase, there would be a reduction in particulates emitted because of the new system that would be installed (a \$600,000 electrostatic precipitator). DEQ's greatest concern is nitrous oxides.

Rick Brown, Defenders of Wildlife

Use of Biomass in Southeast Oregon

Rick talked about the dramatic changes in eastside Ponderosa pine forests where he has spent much of his time. The changes there are extensive but not ubiquitous. Some stands do not need to be managed, and land managers need to be strategic about where to go. They should go to stands that have changed the most and are at the highest risk.

Mr. Brown had initial skepticism about using thinning as a restoration treatment. He was also a skeptical of collaboration. He has now spent eight years collaborating in Lakeview, Oregon. Their goals in eastern Oregon are to make forests more resilient to fire and other disturbances, and to try to provide benefits to the local community. Their strategy includes the removal of commercial-sized trees, and this pays for additional restoration work that removes material that ecologically ought to come out of forests. The agency currently has very little ability to pay for this type of ecologically important, expensive restoration work.

The Lakeview group added biomass to its mix of tools to help pay for restoration work. The local collaborative made sure the biomass project was scaled to the needs of forest restoration, not to the needs of the developer. The developer was initially interested in a 30MW plant, and now they are comfortable with a 10 MW plant. Starting up a new project like this, no one knows what is really needed on the land and by the plant. People shouldn't rely on the Forest Service system, but should build upon local knowledge and incorporate diverse perspectives.

Restoration has become an increasingly unfortunate term as it implies a going back. We're not going back. We need to deal with realities of climate change. We should predict as best we can the changes that are coming. Recent reports predict increasing numbers and size of wildfires. We need to continue to place a high priority on conservation of biological diversity. We need our forests to be resilient. We need our forests to contribute to mitigation of climate change. Our forests should be carbon sinks, not sources of carbon dioxide because of fire and other changes. We need to come to grips with a changing world.

A question was raised about the “elephant in the room” of old growth logging that is still happening, and Rough and Ready is doing it. If old growth logging were out of the way, there would be more support for forest management? Mr. Brown reported that in eastern Oregon, it has really helped that no old growth logging is taking place.

A question about how much old growth is left. Mr. Brown estimates that 80% of old growth is gone from the region, and stated that a high priority should be placed on protecting remaining old growth trees. In eastern Oregon, they don't have the means to do enough to protect the remaining old growth forests, and the problem grows every day. There is a need to focus on the right portions of landscape.

A question was raised about removing fuels by chipping them and leaving them on the forest floor. Mr. Brown said the ecosystems he works in used to burn every 20 years or less; the ecosystems adapted without much material on the forest floor. Small limbs and needles are where the nutrients are. Wood can be removed and branches and needles left on site. Some material needs to be left to allow the area to burn in a small way. Biomass in Lakeview is not aiming to clean the forest.

Evan Frost, Wildwood Consulting

Mr. Frost has been an ecologist in southern Oregon for 10 years.

Fire has been an important agent of disturbance in the Klamath-Siskiyou for at least the last 10,000 years. Fire periods ebbed and flowed. Fire is a “keystone” process meaning that it regulates many ecological processes, plants and animals. Some species require fire, and all in the area are adapted to it, including local flora. For examples the wildflowers after the Biscuit fire were abundant.

Fires differ in severity, frequency and scale. Klamath-Siskiyou has a mixed or moderate fire regime meaning that fire predominately burned under the canopy in the understory. However, when conditions were more favorable (weather, slope, fuel load) the fire would burn into the canopy. A mosaic pattern was created.

Fire suppression became effective after WWII, and timber production altered vegetation and fuel patterns. Older forests were converted to younger stands that had less resilience because small trees are not as resistant to heat as larger ones. Climate change is also having impacts on fire behavior.

The changes are not uniform across landscape. In some places it is very dramatic; in some places there has been little to no change at all. Generally, higher elevations have seen less intensive management and are more in alignment with natural patterns of fire.

Different tools exist to treat lands that are far from their natural pattern – mechanical treatment including thinning or biomass removal, prescribed fire, and wildland fire. Mechanical treatments can be appropriate and ecologically sound, but there are potential

impacts to soils, remaining trees, and streams from sediment, and native plants from weeds.

Principles of Good Restoration

- Wood fiber/ biomass is a byproduct, not the primary objective of management.
- Strategic priorities are established on a landscape scale and activities occur in the high-priority areas.
- Portion of the landscape in need of treatment is considered.
- Where and how to minimize impacts is considered.
- Levels and types of byproducts are considered.
- Work is in concert with fire rather than against it.
- Work is in areas where one can maximize benefits and minimize risks.
- Variability is recognized, and work doesn't homogenize.
- Soils and water are protected.
- Large old trees are left.
- Down wood, shrubs, untreated patches, and general complexity remain.
- Projects start small and the scale is altered over time. Projects are monitored and evaluated to inform future projects.
- Attitude of humility is present.

A question was raised about having healthy forests long-term and economics taking the backseat. If that were the case what forest policies would Mr. Frost enact? He would take various acts to help make the forest more resilient. He would make fire its friend again. He would reduce fuels carefully. A question raised about how much science influences current timber sales. Mr. Frost reported that lots of science is making its way to the agencies.

Dick Booth and Don Bellville, Rogue River-Siskiyou National Forest

Forest Service has been harvesting timber for 40-50 years, and there are lots of plantations that are now a priority for treatments. The Forest thins to reduce fuel loads, modify fire behavior, and improve the growth and vigor of residual trees. They favor fire resistant trees. The large slash piles that now get burned in the woods would instead be taken to the cogen/ biomass plant.

Forest now gets an average of 35,000 board feet per acre from a commercial sale. Before the sale the average tree diameter is 10-12 inches and after it is 16-18 inches because they are thinning from below, or removing the small trees. In natural stands, they thin primarily from below and get 16 tons biomass and 9 thousand board feet with a thin. Biomass that would be utilized is a byproduct of management, not a driving factor. The Forest annually burns 16,000 – 25,000 tons of biomass in slash piles every year.

Fuel treatment objectives include reducing fireline intensity; reducing potential for crown fire, improving fire suppression capability, and improving the ability of forest stands to survive wildlife. A question was raised about who pays the cost of getting the excess biomass wood out the forest. The Forest Service replied that using stewardship

contracting they could create less smoke and waste and may help in working out those issues. Rough and Ready will pay for the fuel, and there are still contractors around who do this work.

A question was raised about the understory sprouting after a thin and how to really get to a fire-friendly forest. Forest Service officials replied that the way to address this is by having a few fires go through the forest.

Mike Cloughesy, Oregon Forest Resources Institute (OFRI)

OFRI completed a study in June of 2006 that looked at three challenges Oregon faces in the light of biomass:

- Restoring forest health, fire resiliency, and wildlife habitat,
- Finding renewable energy alternatives, and
- Revitalizing rural communities.

First they reviewed existing research and conducted interviews with Oregon biomass stakeholders. Then they assessed the potential for production of electricity and biofuels from wood biomass in Oregon. They summarized efforts underway, constraints and challenges. Then they developed recommendations for how Oregon can overcome the obstacles. Mr. Cloughesy described the environmental benefits, which have already been discussed in the above presentations.

The study found that about 4.25 million acres, or 15% of Oregon's forests, have the potential to provide biomass from fuels reductions projects. Areas considered were at moderate to high fire risk on public and private land. Wilderness areas and roadless areas were not considered. Federal land makes up 71% of the potential acres. A mix of thinning prescriptions was applied and Southwestern Oregon ranked high in biomass potential.

Treatment of the area described above would result in one million bone dry tons of biomass annually, and this could produce 150 MW of electricity at an average of 8.1 cents per kilowatt-hour or 63 million gallons of ethanol.

Challenges include: long-term access to biomass supply, public policies supporting biomass public energy acceptance, energy markets, Forest Service and BLM capabilities, and research and development needs. Collaboration is necessary if biomass is to work.

Outstanding Issues Raised and Questions

What are the ecological impacts of the proposed Rough and Ready biomass plant and the larger biomass plants that are being built in other areas?

Will we be sorry about this 40 years from now when we find taking out all the biomass that was feeding the forest is gone?

There is a lack of trust of Rough and Ready because of their clear-cuts and old growth logging. Rough and Ready stands by their work and is proud of it.

Is this really about reducing fuels or is it about more logging?

How do we return value to the land? One idea is cut to length systems that strip branches and leave them on the ground. This leaves the nutrients for the land and also cushions logging equipment to reduce soil impacts.

(Notes are for informational purposes only and do not constitute an endorsement by Resource Innovations of any particular project.)