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Burning wood as renewable power draws scrutiny in Oregon and nationwide

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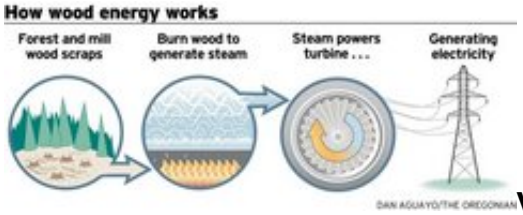
View full size Torsten Kjellstrand, The OregonianSubsidies for wood energy power plants could help drive more forest thinning projects like this one on Starker Forests land in Oregon's Coast Range. Starker officials are studying using thinned material for energy, but say they need to first determine how much needs to stay on the land to boost soil quality.

EUGENE -- By the end of this year, **Seneca Sustainable Energy** plans to fire up a power plant that will convert about 700 tons a day of logging leftovers and waste from its nearby sawmill into enough electricity to power 13,000 homes.

The plant features West Coast-leading pollution controls endorsed by the Environmental Protection Agency. It's projected to release far less pollution than the usual practice of burning slash piles in the woods.

But it will also release more carbon dioxide and lung-damaging particulates than a comparable coal-fired power plant, according to a report for the **Eugene Water & Electric Board**, which is buying the power.



View full size It will release more carbon, sulfur dioxide and smog-causing nitrogen oxides than a similar-sized natural gas plant. And it's expected to receive millions in Oregon tax credits and qualify to meet the state's renewable power goals, just like non-polluting solar and wind.

Burning wood, or in 2010 terms "wood biomass," is civilization's oldest form of generating energy.

In its modern incarnation, which includes multi-million-dollar pollution controls, it's seen as one of Oregon's best sources for generating reliable, home-grown electricity that doesn't come from fossil fuels.

Supporters, including state and federal leaders, say wood energy is effectively carbon neutral because the carbon emitted in burning it will be balanced by new trees that pull carbon from the atmosphere.

It will help boost the economic benefit from thinning fire-prone forests, they say, creating badly needed rural jobs and cutting the risks of out-of-control forest fires, insect infestations and disease.

But community and environmental activists are raising questions about the wisdom of treating wood energy as green power.

Burning wood is a high pollution way to generate electricity, they say. And encouraging it could cause a spike in greenhouse gas emissions that won't be fully absorbed for decades.

Opponents have emerged in 18 states, including Oregon.

The biggest battle to date is in Massachusetts. Concerns prompted the state to suspend classifying biomass plants as green power pending an environmental study. Activists also qualified an anti-biomass measure for the November ballot.

The **Massachusetts Medical Society**, publisher of the New England Journal of Medicine, is among the opponents. It says wood energy plants "pose an unacceptable risk to the public's health."

William Sammons, a **Massachusetts activist**, is lobbying Congress to end federal tax credits and incentives for biomass plants. He figures federal biomass subsidies will hit $20 billion a year if they aren't curtailed, and biomass plants will expand to account for more than 10 percent of U.S. carbon emissions by 2020.

Under current rules that categorize biomass as carbon neutral, he said, none of the carbon emissions from those plants would be included as carbon emissions in the U.S. tally.

Ten years from now, Sammons said, "we'll measure carbon in the air and find out we haven't had a reduction at all."

Despite the concerns, wood energy is gaining momentum.

In Salem, the Legislature recently passed a bill allowing older wood energy plants to qualify as renewable power along with new plants. Dozens of wood energy plants have qualified for Oregon's Business Energy Tax Credit, including Seneca, which is on track for a maximum $10 million subsidy over eight years.

The **Oregon Department of Energy** is developing another credit that would give a $10 a ton credit for supplying forest fuel to biomass plants. **ADAGE**, a consortium of North Carolina power company **Duke Energy** and French conglomerate **Areva**, is trying to site plants throughout the Northwest, and just teamed with equipment maker **John Deere** to announce a new plant in Washington.

This week, Sen. Ron Wyden, D-Ore., touted the benefits of biomass in a hearing on his compromise bill for eastern Oregon forests, which directs the U.S. Forest Service to encourage the use of forest thinnings for biomass energy.

"It's going to be good for the forest," Wyden said, "it's going to be good for the economy."

Wood energy, like corn ethanol before it, appeals on environmental and business grounds, making for a powerful political combination.

Two unlikely allies on the Seneca plant: Ted Kulongoski, Oregon's Democratic governor, and Seneca founder and owner Aaron Jones, a big contributor to property rights measures and other conservative causes.

In total, about 6.3 million tons of woody biomass were used in Oregon in 2007 to fuel about 40 biomass plants. Most of that came from the residue from saw, paper and veneer mills.

Thinning public and private forests in Oregon and Northern California over 10 years could yield 6 to 12 million tons of wood for energy production, the Forest Service says.

That's enough to produce between about 500 to 1000 megawatts of power -- an amount comparable to Portland General Electric's Boardman coal-fired plant at the bottom end and Bonneville Dam's turbines at the top end.

Slash piles, a mix of tree tops and small limbs, are typically burned on logging sites without pollution control, biomass supporters note. And forest fires in overgrown forests send tens of thousands of tons of carbon into the air.

"It's not working against the health of the forests, it's working for it," said Norm Johnson, a professor and old growth forest expert at Oregon State University. Thinning would improve the health of most of the state's dry forests, he said.

But others question the benefits. The subsidies could spur more logging and thinning than pure ecological concerns merit, some environmental groups warn. And building roads and using heavy equipment for thinning can damage soil and foul streams.

Mark Harmon, an OSU forestry professor, said some key assumptions behind forest biomass are too simple.

The massive amount of thinning required to prevent fires would pull far more carbon out of the forest than

the fires would release, he said, though unnaturally overgrown eastern Oregon forests could be an exception.

And carbon released by burning wood for energy takes decades to replenish through plant growth.

Calling wood energy carbon neutral "is sort of true, but very misleading," Harmon said. "Forests eventually gain the carbon back, but it takes them a very long time to do it."

The biomass debate played out in Eugene last year, and Seneca won.

Critics said that the Seneca plant, close to poor neighborhoods with high asthma rates, would be one of Lane County's largest industrial polluters.

Lisa Arkin, executive director of the **Oregon Toxics Alliance** in Eugene, unsuccessfully pushed for tighter pollution controls. She and other activists favor more energy conservation, subsidies for non-polluting renewable power and selective logging that can reduce logging waste and the need for open burning.

"Let's protect the public," Arkin said. "Let's look at how we're logging, let's make sure we're not investing tax credits where it's not environmentally sound."

Dale Riddle, Seneca's general counsel, said the company was taken aback by the opposition.

Seneca doubled the amount it was required by law to spend on pollution controls, he said, from $5.5 million of the roughly $50 million project to $11 million, mostly to cut back on particulate pollution.

Once other sources, including cars, residential fires and road dust, are included, the plant will account for less than 1 percent of particulates released in Lane County, and a similarly small fraction of other pollutants, consultants said.

A small portion of the steam generated at the plant will fuel lumber kilns heated by natural gas now, Riddle said, and the plant will emit far less pollution than burning slash piles at logging sites on Seneca's 166,000 acres of private timberland.

Oregon forest laws allow burning the piles to cut future fire hazards.

"After we build this plant," Riddle said, "the air in Lane County will be cleaner than what it is now."

-- **Scott Learn** and **Matthew Preusch**