

Wood Biomass: A Massive New Threat to Our Forests

by Bonnie Phillips

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I'd begun getting very concerned about what I see as the next major problem for the health of our forests—and for human health as well: intense pressure for a huge expansion of wood biomass plants for energy production.

The entire issue of biomass is very complicated. Board member Toby Thaler and I have joined a national anti-biomass listserv and have learned a great deal. Most of the experience with biomass plants—and opposition to them—has been east of the Mississippi. For those of us in the West, these problems have surfaced only this year as state Land Commissioner Peter Goldmark has begun pushing woody biomass as a means of energy production—and of enhancing the Department of Natural Resources' ability to sell more trees.

Organization and individuals around the world are looking for ways to decrease greenhouse gases while providing new jobs. The U.S. joins in that effort, while also trying to become "energy independent." Clean energy and energy independence are not identical, although there is of course overlap. Congress and the current administration seem eager to jump on any bandwagon that purports to provide green energy and new jobs, often without looking at the science behind the claims. Hefty subsidies for biomass were provided in the Stimulus Package, and the U.S. Department of Agriculture recently announced more significant subsidies, so we can expect pressure on our national forests for additional logging to fulfill that promise.

Unfortunately, many environmental organizations in the West are supporting setting aside acreage for biomass in order to get legislation that would protect older trees. Don't look to large forest protection organizations to be on the leading edge of any anti-biomass movement.

With the caveat that differences (in size and operating methods) between plants can be significant, here are some of the major concerns with biomass energy production:

Not Carbon Neutral

The government and the industry tout biomass as carbon neutral. Unfortunately, this is not the case, as the Environmental Protection Agency has readily acknowledged (stirring up the vocal wrath of biomass proponents). The concept behind carbon neutrality is that carbon released during burning will be recaptured in replanted trees. The problem here is that it will take 40–60 years to recapture (and sequester) the amount of carbon burned and climate scientists say we must reduce greenhouse gases now. The second problem with the "carbon neutral" label is that the energy used to gather wood from the forest and transport it to the plant definitely adds more greenhouse gases to the atmosphere.

Wood Source for Biomass Not Sustainable. Proponents of biomass claim that their source is sustainable—small diameter trees from thinning, branches, and other parts of trees that are not part of a normal commercial logging operation. Questions about whether this "slash" should be left on the forest floor to benefit soils and resident critters are not asked, much less answered. Proponents also claim—often with no scientific backing—that removing this material helps prevent forest fires.

Environmentalists may join them, sometimes to gain something in return. But, to be fair, many just don't understand the issue. The perception that renewable power sources are by definition "clean and green" is well entrenched. Actually, "renewable" just can mean capable of being exploited on an ongoing basis.

As more biomass plants are developed, the sources become less sustainable, and the push is on to log whole trees. That's how it's gone in the eastern part of the U.S.; we can expect the same in our region.

Burning Wood Biomass Creates Major Health Problems. This one is the most scary and is getting the least attention. Here's a shock: Wood biomass is dirtier than coal.

The American Lung Association has come out against biomass burning because of studies showing respiratory problems. There are other problems as well, some relating to dioxin-like components produced in biomass burning. Four scientific studies in the U.K. have looked at health effects. One showed an increased risk of lethal congenital anomaly, such as spina bifida and heart defects, in infants born to women living near incinerators. Two others showed a significant increase in the risk of sarcoma. Another study found that exposure to high levels of dioxin was correlated to significantly lower boy-to-girl birth ratios.

A study in Italy showed increased mortality among women living in the vicinity of the incinerators compared with those living far away, for all causes: colon and breast cancer, diabetes, and cardiovascular diseases.

Already a well-organized group of citizens in Shelton is working to stop the proposed Adage biomass plant. In May I co-presented at The Evergreen State College on problems with biomass. The students, and some residents of Shelton, had a lively discussion and the talk turned to what the college was planning. More students and faculty are now getting involved in the discussion. In June a forum in Olympia discussed similar issues.

Many communities in the East are rethinking their support of biomass burning based on strong citizen resistance, along with opposition from scientists and the medical community. You will be hearing more about this issue as it heats up (forgive the pun) in our state. And OFCO will be active on this issue; many board members share my concerns.

Biomass Burning: the Basics

by Nikolai Starzak, OFCO Intern

The Obama Administration, the U.S. Congress, Washington state's Department of Natural Resources and many private timber owners have jumped on the bandwagon for biomass energy from logging residue. This year, Adage—a Corporation with East Coast and European roots—proposes to break ground for a biomass plant near Shelton, financed in part by federal stimulus dollars.

Well, what is biomass? How can it be utilized as a renewable energy resource?

Biomass, technically speaking, is material extracted from living or recently dead plant organisms, used as an energy source. Biomass can be anything from yard waste to sawdust; in this case, biomass refers specifically to logging residue, also known as slash. Notably, however, biomass does not include fossil fuels like coal or petroleum, which were decaying plant and animal remains millions of years ago.

Energy from biomass, at first glance, sounds like an attractive alternative to rapidly depleting reserves of coal and oil. When trees are felled, most timber extractors remove the tops and branches, leaving a dense carpet of fallen tree waste, almost like yard clippings. Typically, this logging debris is left on site or burned; biomass energy proponents say this dead matter could provide a "green" source of renewable energy.

But the technology has serious drawbacks. Biomass burning is one of the largest contributors of black carbon, a major cause of global warming and a major health concern. The American Lung Association has even taken a stance against biomass incineration, stating, "Burning biomass could lead to significant increases in emissions of nitrogen oxides, particulate matter and sulfur dioxide and have severe impacts on the health of children, older adults, and people with lung diseases."

Environmental groups like Incinerator Free Mason County and No Biomass Burn believe the ecological damage from burning biomass would be significant. The proposed Shelton Plant would consume 604,000 tons of biomass a year, and if available timber residue fell short of this requirement, there would be an incentive for new logging to make up the shortfall. This would not solve the problems of deforestation and carbon neutrality, but rather exacerbate them.

Timber debris itself, moreover, serves quite an important purpose in clearcut ecology. The carbon- and nutrient-rich slash decomposes and refertilizes the soil, effectively fostering new plant growth and restarting the forest life cycle.

Unfortunately, misinformation and misunderstanding about biomass burning have been widespread and have influenced federal energy policy. Biomass plants actually may receive 30 percent of costs in stimulus funds from the federal government for their "renewable energy" status and would be exempt from air quality legislation.

The proposed Adage plant would require 360 truck trips and 100,000 gallons of water a day and expel 20,000 tons of solid ash a year. While it is true that Mason County suffers a high unemployment rate, these proposed incinerator jobs could go towards solar power or another environmentally friendly alternative, rather than a venture that risks undermining the health of our state's forests—as well as its people.

FURTHER READING:

[Biomass Energy Centre](#)

[Claverton Energy Research Group](#)

[The Olympian article](#)

[No Biomass Burn](#)