



Woody Biomass

By Barbara Coyner

Are mountain pine beetles working faster than ever to devour western forests because of climate change? Is woody biomass energy carbon neutral? Does logging ultimately benefit or harm the forests in the face of extensive beetle outbreaks?

These questions keep plenty of scientists — and activists — busy these days, with opinions and studies varying wildly. How can we find the truth, especially if some people seem determined to limit woody biomass as an option for renewable energy?

Suspicious

In an October 30, 2011 article in the Salt Lake Tribune, Kirk Robinson, executive director of the Western Wildlife Conservancy, was questioned on forest health and utilization of woody biomass. The article, entitled “Amid beetle plague, turning trees to wood chips could be western forests’ salvation,” focused on logging western forests to revitalize them, while at the same time using the woody residues for energy production.

Robinson’s reply is not unusual among environmentalists: “What I really hate to see is people finding excuses to exploit nature. I am very suspicious of biomass projects for that reason.” He bases his conclusions on a 2010 report by the Oregon-based National Center for Conservation Science and Policy that questions accelerated logging as a means of truly benefitting forests hit by bug kill. Citing findings from a group of Colorado conservation biologists that bug infestation is being driven by climate change, Robinson concludes that logging does little to challenge the problem.

Investment

Meanwhile, in the same time frame, USDA Secretary Tom Vilsak was out west recently, handing out \$80 million in research funds to Washington State University and University of Washington for woody biomass research. And according to various industry publications, millions of dollars are being budgeted for new woody biomass plants across the nation, with the world’s largest biomass gasification plant already being built in Finland.

According to Biomass Power and Thermal Magazine, the global demand for wood pellets, currently estimated at 10 million metric tons, could increase six-fold by 2020. Much of that growth comes from the European Union, where the carbon issue seems to be more settled, with many coal-to-biomass conversions currently in the works.

Some pellet manufacturers in the United States are anticipating the lion’s share of their business will be abroad. Where will they get the woody biomass for the pellets and new power plants? North American forests perhaps? Canada has already unapologetically moved ahead with logging many of its bug-killed forests, deciding that pairing forest health with woody biomass power is a no-brainer.

Confusion

Clearly uncertainty lingers in the U.S., and people like Kirk Robinson are not alone in their opinions when it comes to using woody biomass as green energy. The Manomet Center for Conservation Sciences out of Massachusetts, for example, drew an avalanche of pro and con comments when it released its 2010 study.



One controversial aspect was how the study evaluated forest life cycles. The findings concluded that utilization of woody biomass isn't carbon neutral, prompting some to argue that the uniqueness of forest life cycles makes it hard to compare woody biomass to fossil fuels. The study raised the subject of sustainability, as well, noting that overharvest of forests could be a downside to woody biomass energy.

Increased Emissions... or Not

Enter scientists from Oregon State University who went public with their evaluation around Halloween. In a four-year study OSU describes as the largest and most comprehensive to date, researchers say managing the forests for biofuel production will increase carbon dioxide emissions from the forests by at least 14 percent.

"Most people assume that wood bioenergy will be carbon-neutral, because the forest regrows, and there's also the chance of protecting forests from carbon emissions due to wildfire," researcher Tara Hudiburg said in an OSU news release. But the study shows removing forest debris for bioenergy use will release more carbon dioxide to the atmosphere than current practices of burning it or leaving it in place, she said. The study, published in the journal *Nature Climate Change*, involved 80 types of forests in 19 regions of Oregon, Washington, and California, ranging from wet coastal forests to semi-arid woodlands.

David Tenny, president of the National Alliance of Forest Owners, was quick with a rebuttal, saying the study's findings are based on wild assumptions. "One of the common threads of studies like this one is that the outcome all depends on these up-front assumptions," he said online. "In this case, they look at the potential of treating five percent of the forests in the region, for a 20-year rotation of treatments, adding that on top of what they call 'business as usual' forest management practices."

Tenny continued, noting, "You have to think about whether that even makes sense as an assumption. Looking at it another way, five percent of all of the 200 million acres of forestland in the Northwest area is 10 million acres more than what we're already doing out there. Comparatively, the U.S. Forest Service with its 155 million acres of national forest system lands, and the U.S. Department of Interior land, which is a couple hundred million acres, in their best year combined were able to treat 1.4 million acres of forestland."

Tenny and others additionally note that there isn't infrastructure to process such huge volumes, and the industry doesn't consider such drastic activities on the land as prudent anyway. In other words, forest professionals are not out to clear cut the woods for woody biomass power.

Clearly the disconnect in considering woody biomass as a viable green energy continues. Given the wide discrepancies in opinions and findings, science is anything but settled in the matter, making the term "exact science" something of an oxymoron.