



Federal Bill Largely Ignores Importance of Wood Biomass

Federal Bill Ignores Wood Biomass: Congress considers clean energy legislation; it could spell trouble or opportunity for the forest products industry, depending on the final version.

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Although we're still far from a paper-free society, the economic recession has hastened the decline of demand for paper. Increasingly, publishers are going digital only at a time when businesses are reducing paper clutter and print communications. Emails and intranets have replaced inner-office memos and newsletters.

Abitibi-Bowater filed for bankruptcy protection recently, as did packaging maker Smurfit-Stone Container in January. According to the American Forest & Paper Association (AF&PA), 18 U.S. paper mills closed permanently in 2008 and several more were idled indefinitely.

Pulp and paper mills have always been important for hardwood lumber producers. They not only serve as outlet for chips and other by-products, but help keep loggers in business by providing an outlet for pulpwood. Total fiber consumption at U.S. paper and paperboard mills fell 3.8% to 89.4 million tons in 2008, according to AF&PA. While AF&PA predicts increased fiber consumption between 2009-2011, a larger percentage of it will be recycled. Recovered fiber use increased from 26.6% of total fiber in 1990 to 36.5% in 2008. Production of paper is growing in overseas markets, but shipping costs and locally available resources have reduced exporting of pulpwood or by-products.

Large declines in sawmill production over the past two years have kept chip markets from collapsing, and at times even created tightness in markets. However, new markets for biomass energy have begun to take over as major outlets for by-products and promise to replace, if not exceed, demand from slowing paper activities. The question vital to hardwood sawmills and wood product manufacturers is what will happen to demand for pulpwood? Will biomass energy systems become viable soon enough to keep loggers working?

Electricity from Wood is Growing

There has been a shift in the social consciousness and wood is now considered a potential solution to environmental problems, rather than the cause. With the current focus on green technology, the time to create new industries that help improve the profitability of forest products

companies is now.

European shifts toward energy production with wood pellets and the growth of pellet stoves for home heating in the U.S. and Canada have created new demand for clean chips and sawdust. According to the U.S. Department of Energy (DOE), there were 346 generators running on wood and wood derived fuels in the United States in 2007 with the combined capacity to produce 7,510 megawatts annually. The DOE says that biomass is now the leading producer of renewable energy in the United States, having recently passed hydroelectric power.

Hardwood industry companies have taken advantage of wood-fired boilers for years, but now that “green” has become a marketing concept, companies from other industries are seeking recognition for their environmental stewardship and are also recognizing the potential for cost savings from burning wood. An example is the new biomass plant at Lockheed Martin’s Owego, N.Y., location, which has supposedly reduced the facility’s carbon footprint by 25%. The biomass plant is generating steam from wood chips to heat, cool and generate supplemental electricity for the company’s production facility and offices.

The energy sector is also getting onboard. In 2008-2009, six new wood-fired power generation stations were scheduled to come on line. At least eight more will be ready to begin generation by 2012. One example is Peregrine Energy Corporation’s plans to construct a 50-megawatt generation facility in Hartsville, SC. Many other new co-generation plants and even conversions of coal-fired plants are being discussed. Passage of looming cap-and-trade carbon emissions legislation would only further push companies to develop more “carbon-neutral” energy.

Growth of Small Chip Mills

Connecticut based Hull Forest Products started looking at biomass as an alternative to selling chips to paper companies back in the 1980s. The paper industry was moving away from New England and freight costs deeply eroded profitability from selling to northern pulp mills. The company converted its own operations to a wood-fired boiler. About ten years ago, when some area schools began converting to biomass, Hull started selling to that market, which has continued to grow. “We’re getting several calls a week from people wanting to talk about plans to build,” said Sam Hull. “Right now, with the lumber industry struggling, chips and biomass are the light at the end of the tunnel.”

Hull Forest Products initially sold chips from its sawmill, but demand eventually surpassed supply. The company began supplementing production by running pulpwood through a debarker and chipper. The debarker was necessary because most operations need clean, bark-free chips which burn cleaner and produce less ash.

Used debarkers and chippers start at \$20,000 to \$50,000 dollars each. That's an unlikely cash outlay for many loggers these days, yet, there appears to be interest. "If you talk to the loggers, they are all out there looking at buying a chipper," said Hull. Not all loggers will need to secure that kind of capital to benefit from growing biomass demand. Many sawmill companies now have excess equipment that they may be able to reconfigure into a chip mill. Some may consider giving up the lumber side of the business altogether, but Hull suggests that model may be difficult financially. "It would be very hard for us to do this without the sawmill."

Whether more sawmills build small chip mills or loggers invest in them, wood-fired energy plants promise to bring more financial stability to loggers. At existing price levels of up to \$60/ton for clean chips, wood fired energy is cheaper than most alternatives.

Impact of Government

Legislators and government policy makers have to make decisions on a number of biomass related issues which will have a significant impact on how large biomass markets become. A narrow federal definition of "sustainable" woody-biomass has been used in past legislation and is included in several new bills. The current Renewable Electricity Standard's (RES) definition of biomass restricts the definition of biomass so that it cannot be harvested from "old growth" or "mature" forests (without defining them), plantations planted after the act is passed, or any federal land unless it is near a campground or structure. That definition was widely criticized at a recent hearing before the U.S. House Subcommittee on Energy and Environment.

"If cellulosic forms of biomass are important, current definitions of renewable biomass in major energy policy legislation take a large portion of the land base out of consideration for use in renewable fuels," testified Mary Wagner, a regional forester with the U.S. Forest Service. "We need to ensure that restrictive definitions of 'biomass' don't restrict our ability to remove these materials from our forests," said Tom Partin, president of American Forest Resource Council. (See article on page 28 covering biomass restrictions in current clean energy legislation.)

Still, former Vice President Al Gore testified in front of the U.S. House Energy and Commerce Committee recently that biomass from federal forests should remain off-limits because he is concerned that using it will encourage clear-cutting. While this debate won't stop energy production from woody biomass, it will significantly limit wood availability from federal lands and may push energy companies toward other fuel stocks such as switchgrass.

Part of the RES could also push more use of woody biomass. The bill would require all power plants to generate 25% of their energy by 2025 from renewable energy sources. "If we see that bill enacted, which we think we'll see something, that could be very positive—not necessarily

today—but clearly a positive for large owners of wood fiber,” said Rick Holley, president and CEO of Plum Creek Timber.

Many coal-fired power plants could meet that standard by mixing woody biomass with coal. Co-firing power plants reduces sulphur and carbon emissions and, according to the DOE, mixing biomass with coal may require only minor plant modifications. Some energy generators may not stop at co-firing. Ontario Power Generation is considering transitioning all four of its coal-fired plants to biomass in 2014.

The Future Looks Promising

Swift declines in the paper industry are likely to reduce overall demand for chips and pulpwood during the next couple of years, but then biomass energy generation will begin pushing demand upward again. Numerous government agencies, colleges and manufacturers are building or considering installing woody biomass plants.

Given the current political and social climate, the rate of growth in woody biomass-generated electricity should continue to accelerate for several years. Healthy markets for pulpwood and by-products will go a long way toward keeping loggers in business and maintaining a steady flow of logs for sawmills.

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