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Forests as a Source of Biomass Fuel for Electric Generation: Important Questions

In the trauma associated with the closing of the Missoula paper mill, business and political leaders have been frantically searching for a way to put that industrial mill site back into production, replacing at least some of the lost jobs. One possibility that many have suggested is to use the site for a large wood-fired electric generating facility. The idea is to use the same wood fiber that the mill had been converting into paper as biomass fuel to generate electricity. This would keep loggers busy in the woods and some of the same skilled blue-collar workers busy at the mill site firing and tending high-pressure boilers and associated machinery.

This is not at all far fetched. The paper mill has been generating electricity for a long time, providing for its own electric needs, providing heat needed in the papermaking process, as well as selling a lot of electricity into the grid. The total electric production has been relatively modest, 17.5 megawatts, only about one percent of NorthWestern Energy's peak demand. Those enthusiastic about this possibility envision a much larger electric generating operation that would burn a lot more wood.

NorthWestern Energy has indicated an interest in exploring that possibility but has pointed out that the U.S. Forest Service would have to allow a lot more logging in federal forests to fuel such expanded electric generation. That does not worry advocates since they see the beetle-killed trees in many of Montana's forests as an obvious source of supply. In fact, before the closure of the Missoula paper mill, there was already a buzz within the forest products industry about using forest biomass, that

is, trees, to fuel electric generation. That idea is actually built into Senator Tester's proposed Forest Jobs and Recreation Act and also has been promoted by Governor Schweitzer.

Before getting too enthusiastic about putting a large wood-fired electric generator in the Missoula Valley, there are a lot of problems to puzzle through.

First, wood-fired generation tends to produce considerable air pollution because the wood has less heat value than coal and the conversion of the intrinsic heat value of the wood to electricity is less efficient than when using coal. The complex mix of organic compounds in the wood produces a complex mix of pollutants. Missoula has been struggling to clean up its air for a long time. Assumedly we want be careful not to slide backwards in that.

Second, wood-fired generation is expensive because of the large volume of low-energy wood that has to be hauled considerable distances to the electric generation site. The further it is hauled, the more costly that fuel becomes and the more it embodies diesel fuel rather than biomass. Such electric generation is often economic at lumber and paper mills because waste wood that had already been hauled to the mill or waste materials such as the black liquor produced by paper mills can be used as the fuel. In addition, the waste heat from the electric generation can be used to dry the lumber and paper. Large stand-alone wood-fired electric generators often are very high cost sources of electricity that are used only when no cheaper source is available. Avista Utilities' Kettle Falls wood-fired generator in eastern Washington is a good example. Wood-fired generation often is not economic. That is especially true if there are no government subsidies available.

Third, for a half-century or more to come, the impact of burning trees to generate electricity means *increasing* the release of carbon into the atmosphere. While it is true that ***if*** new forests grow up to replace the burned trees, carbon will slowly be removed from the atmosphere, in Montana's slow growing forests, that will take many, many decades. Meanwhile we will be making the greenhouse gas problem worse, not better.

Fourth, as NorthWestern Energy has pointed out, this could require a substantial increase in logging on public lands. Logging and the roads required to support it have significant impacts on water quality, soil erosion, and wildlife. This fundamental fact has been recently obscured by the increasingly shrill claims that our forests are in desperate *need* a lot more logging to make them "healthy," to fight bark beetle infestations, and to reduce wildfire danger that threatens our homes and our towns.

These scary stories of what will happen if we do not log our forests are largely based on "rural myth," supported by timber interests, and built around the fantasy of natural forests as a open, park-like areas, full of very large, towering trees. In comparison, our contemporary forests are degenerative dense thickets of relatively thin trees that, we are told, are the result of some combination of the failure to log and thin the forests or misguided fire suppression. For most of our forests, this simply is not true.

It is far cheaper to protect our homes and communities by managing the vegetation within a few dozen feet of our homes and by maintaining our homes so as to reduce the likelihood of fire ignition. That is much less costly and much more likely to work than trying to fireproof millions of acres of forestland.

As important, all of those trees out there, whether healthy, dying, or dead, are not, in and of themselves, dangerous fuels. Recall all the pictures you have seen of

forests that have burned. Those lands are characterized by the standing trunks of the trees. In addition, all of the trees do not burn. Wildfires create a mosaic of heavily burned, lightly burned, and unburned lands that lay the basis for natural regeneration of our forests. Fires and insects may kill a lot of trees, but they do not kill forests. If they did, we would not have the forests that surround us now.

We need to look carefully and critically at any proposal to turn our forests into wood mines for electric generation and our river valleys into sewers into which to dump large quantities of air pollution. Maybe the problems can be worked out, maybe not. Whatever we do, we should not simply assume that wood-fired generation is “green.” That would be the worst sort of “green-washing.”