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A red flag on green energy plan

By Mary Stuart Booth | May 25, 2009

SUPPOSE you learned that, in the name of green energy, Massachusetts was going to sanction cutting down trees - a lot more trees - and burning them. Crazy, you'd say? Right. But those are the facts.

It's widely acknowledged that forest burning in developing countries is a major source of greenhouse gases. Yet because of an accounting convention, the northeastern Regional Greenhouse Gas Initiative, which seeks to cap carbon dioxide generated by the energy sector, treats carbon released into the atmosphere by burning wood as if it is immediately "resequestered" by new growth, and is thus "carbon neutral." Although it takes a minute to burn a tree and 70 years to grow it back, there is no acknowledgement that regrowth is not immediate. The climate bill before Congress buys into this notion, too.

To meet the 2018 cap set by the Regional Greenhouse Gas Initiative, Massachusetts is increasing renewable energy generation, and treating wind, solar, and biomass as equally carbon-neutral approaches. Hence, the state is fast-tracking three large biomass plants to generate 135 megawatts of power in Western Massachusetts. In total, 165 to 200 megawatts of biomass generation are being planned.

Estimates of fuel for these plants rely on the state's "biomass availability study," but this report is misleadingly optimistic. The study assumes that biomass is available not only in Western Massachusetts but also in surrounding counties and other states. However, since other states are building their own biomass plants, it's likely this fuel won't be available. Estimates of available biomass include sawmill waste, which the report admits is mostly committed to existing markets. Most troubling, a full one-third is "urban forestry residues" and construction and demolition debris, which releases arsenic, mercury, and other contaminants when burned. Removing these fuels from the total, the resulting wood from Western Massachusetts is sufficient for one 17-megawatt plant; including the buffer counties, there would be enough for two 55-megawatt plants, if other states didn't use that wood themselves.

Acknowledging the scarcity of biomass supplies, the state report describes how new forest cutting is needed to provide biomass fuel. The report calls for cutting 25 dry tons of wood an acre from forests, or about 45 "green" tons an acre. At this rate, 14,300 acres would have to be cut a year, or 39 acres a day, to supply 650,000 tons of fuel for a single 50-megawatt plant.

Where will that wood come from? The state's public lands are in the crosshairs. Removing conservation reserves and steep and wet areas from consideration, and recognizing that landowner attitudes about timber extraction limit use of private lands, the state report estimates that approximately 845,000 acres are available for biomass fuel, of which 465,000 are public. If these lands were required to supply fuel to the 165 to 200 megawatts of biomass generation now planned, the entire 845,000 acres would be

logged in 15 to 18 years.

Besides the threat to state and private lands, harvesting trees for biomass will increase greenhouse gas emissions. Biomass energy is argued to be carbon neutral when it uses the tops and branches of trees that are otherwise not collected in forestry operations, since these forestry residues would eventually decompose, releasing the greenhouse gas carbon dioxide. However, decomposition occurs over decades; biomass burning releases a pulse of carbon dioxide instantaneously.

The carbon neutrality argument really stumbles when new trees with a future of carbon sequestration ahead of them are harvested. The trees left after thinning can't make up in growth for the biomass that's been lost; further, those trees are typically soon harvested for timber. It takes decades before a harvested forest sequesters the carbon that an undisturbed forest does. The 845,000 acres of medium-aged forests targeted for energy extraction by the state lock up almost 6 million tons of carbon dioxide a year, equivalent to 23 percent of the state's 2006 carbon dioxide emissions from electricity generation. In contrast, the trees burned to generate the proposed 165 to 200 megawatts of biomass power would increase energy-sector carbon dioxide emissions by 8 to 10 percent, while supplementing the state's power supply by about 1 percent.

Does this make any sense to you?

Mary Stuart Booth is co-founder of the Mass. Environmental Energy Alliance. ■