

Fuzzy logic on wood-burning

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Burning wood is carbon neutral. But wait. According to a Web site published by the Energy Information Agency, the statistics and data providing arm of the U.S. Department of Energy, hardwoods produce around 195 pounds of CO₂ per one million British thermal units (mmBtu's). Coal ranges from soft, 205 pounds/mmBtu, increasing up to anthracite at 227 pounds/ mmBtu. Natural gas is 115 pounds/mmBtu and most motor and aviation fuels are in the 150-pound/mmBtu range. That puts wood right up there with coal.

Why then do we consider wood "carbon neutral"? I cite the Intergovernmental Panel on Climate Change (IPCC) (from the Kyoto meetings). In a discussion of CO₂ emissions they include a footnote on CO₂ emissions from plant materials, including wood, in the following way:

These biofuels contain "biogenic" carbon. Under international greenhouse gas accounting methods developed by the Intergovernmental Panel on Climate Change, biogenic carbon is part of the natural carbon balance and it will not add to atmospheric concentrations of carbon dioxide.

- Notice the phrase "accounting methods" above. OK, now I understand, it's like war. War doesn't cost anything because it's off the balance sheet.

The Patrick administration is pushing every manner of alternative energy including the construction and implementation of three biomass plants in Massachusetts that will burn almost exclusively wood. Based on the EIA's numbers it's essentially the same thing as building three coal-fired plants.

To assess the impact these wood-burning biomass plants will have on our carbon footprint and their impact on global warming, we should revisit our *raison d'être*. Here are a couple quotes from Al Gore:

Many scientists are now warning that we are moving closer to several "tipping points" that could — within as little as 10 years — make it impossible for us to avoid irretrievable damage to the planet's habitability for human civilization.

And this quote:

first of all, we should start by immediately freezing CO2 emissions and then beginning sharp reductions. Merely engaging in high-minded debates about theoretical future reductions while continuing to steadily increase emissions represents a self-delusional and reckless approach. In some ways, that approach is worse than doing nothing at all, because it lulls the gullible into thinking that something is actually being done when in fact it is not.

In light of the urgency we've all readily accepted from Al Gore's Oscar- and Nobel Prize-winning work, this notion, that we can go out and burn burn burn, as long as it's wood, borders on bizarre. No question, wood can be re-grown and will re-sequester the carbon that is put in the atmosphere so on that, we all agree. But there's one little word that's never discussed, except by Al Gore to alarm us, and that word is time.

- Any 5th grade science student learns that time is one of the most critical factors in chemical reactions. React hydrocarbons quickly with oxygen, we get explosions. Slow reaction times, we get decay. It's a matter of common sense to know that if we burn a 50-year-old tree those carbon emissions will exist in our atmosphere at earlier and higher concentrations until a new tree has grown to replace it taking, well, 50 years to achieve complete carbon neutrality. If we allow the tree to decay naturally, a new tree will grow at close to the same rate, striking a balanced approach to carbon neutrality over the entire decay/ growth cycle.

In Russell, Massachusetts a 50-megawatt biomass plant is making its way toward operating despite a myriad of environmentally damaging issues, which have been pointed out, fought over and roundly ignored by Governor Patrick. A 50MW plant, by the way, equates to 170 million Btu's per hour. Using the EIA numbers above, Russell Biomass, operating at full capacity, will contribute 33,000 pounds of CO2 per hour to the atmosphere. Russell is just one of three like it in Massachusetts and five in New England that are in the works.

According to Al Gore there's not lot of time to monkey around with CO2 emissions so, I checked out some approximate weights of various aged trees. It would take over 100,000 one-year old trees to equal the weight of one 50-year old tree of similar species. Five-year old trees take around 30,000. So you see for every tree we cut down and burn we'd have to plant 100,000 to re-sequester that much carbon in one year, 30,000 in five years. We'd also have to find the space to plant them. That's just one tree. If we assume a mature tree contains about 300 pounds of burnable wood, a 50MW plant like Russell would consume around 80 each hour. We'd best get to plant'n.

- The politicians I understand, but the silence of the majority of the scientific community baffles me. Gore whips up near hysteria over global warming's urgency while a privileged few are allowed to charge headlong into burning wood, a CO2 emitter on par with coal, because of an accounting interpretation from a committee in Kyoto which decided that wood can grow as fast as it can be burned. Where are the outrages, the outcries, the accusations of collusion and corruption? Anyone questioning the logic of

such a ridiculous scheme is accused of being a NIMBY while those who have the policy makers' ear, choose instead, to flow with political winds against scientific principals.

Make room Al, I'm going to produce a movie too. Mine will be titled "The Science of the Lambs."

David Baumann is an occasional Eagle contributor.