

Lessons learned in Massachusetts and shared with Vermont regarding biomass and the “Biomass Working Group” draft 2011 interim report

I send these comments from Massachusetts to Vermont in the hopes of sharing lessons learned from our experiences with biomass here, and also because of our shared atmosphere, air quality and woodshed.

I. Regarding the Biomass Energy Working Group Itself:

a. The Biomass Energy Working group appears to be putting the cart before the horse. Rather than examining the ecological, economic and public health impacts of increased wood burning and determining whether or not it is a wise decision to increase wood burning in Vermont, the Biomass Energy Working Group is leaping before looking by working on the unexamined and forgone conclusion that wood burning should dramatically increase in Vermont.

b. The working group is unbalanced and heavily stacked in favor of increased logging and wood burning. Of the 11 non-politicians in the group, at least 9 of them have a vested interest in increased logging and wood burning and/or are on record in support of increased wood burning.

The working group makeup includes: 1 representative from Biomass Energy Resource Center, 2 representatives from the forest products industry, 2 representatives from industry that produces electricity or heat from biomass, 1 representative from Vermont woodlands, 1 representative of the consulting foresters association, 1 representative of a university with a focus on biomass, 1 representative of the forest guild and 2 representatives of natural resources or environmental organizations.

Even the “environmentalist” is a representative from Vermont Natural Resources Council who are already on record supporting increased wood burning.

In order to have a credible balance in determining a response to the question of increased wood burning, the working group should include a public health official, objective environmentalists, a forest ecologist, conservation and wildlife biologists, a climate scientist, and a soil scientist, etc. to examine the forest, air and water quality, public health, carbon and wildlife impacts.

c. Large biomass incinerators at Pownal and Fairhaven are quickly moving forward despite, or in spite, of the biomass working group. What good are developing any recommendations from the group if there is not a moratorium on new facilities during this process?

II. Regarding the Biomass Energy Working Group draft 2011 Interim Report and Recommendations

As mentioned above, the biomass working group is essentially determining how to increase wood burning but not looking at the impacts of increased wood burning. The working group needs to update its focus to address the following problems.

There is no study of the carbon, pollution, biodiversity, soil, or public health impacts.

There is no consideration of biomass incinerators from other states taking wood from Vermont.

There is no consideration of increased risk of transferring the Asian Longhorned Beetle, the Emerald Ash Borer and other pests and pathogens to Vermont's forests from increased transportation of wood for biomass burning.

The working group calls for an accelerated permitting process for wood burning energy projects, which further puts at risk the carbon, pollution, biodiversity, soil, or public health impacts not addressed by the working group.

There is no consideration if the benefits of increased wood burning outweigh the costs.

The working group promotes "voluntary" forest guidelines for logging to provide wood for biomass energy projects. This is a laughable proposition. Even existing forestry laws and "best management practices" are often ignored, so voluntary guidelines are meaningless.

Even the voluntary forest guidelines call for leaving only "*5 live decaying trees*" per acre. In other words, for all practical purposes, the guidelines endorse **clearcutting** forests for biomass.

The working group does not even call for any efficiency standards of the wood burning burners.

The working group calls for building another large scale electric biomass facility to provide a year round low-grade wood market for the timber industry in southern Vermont. However, the McNeil facility already sources wood from up to 300 miles to source its wood, including Massachusetts, so a market already exists for this wood in southern Vermont, though there is no ecological need for one.

Finally, the format of the working group public hearing seems to be the one where they break the public into smaller groups. This is a way to dilute the public's message and prevent having one's opinions heard in front of the general audience.

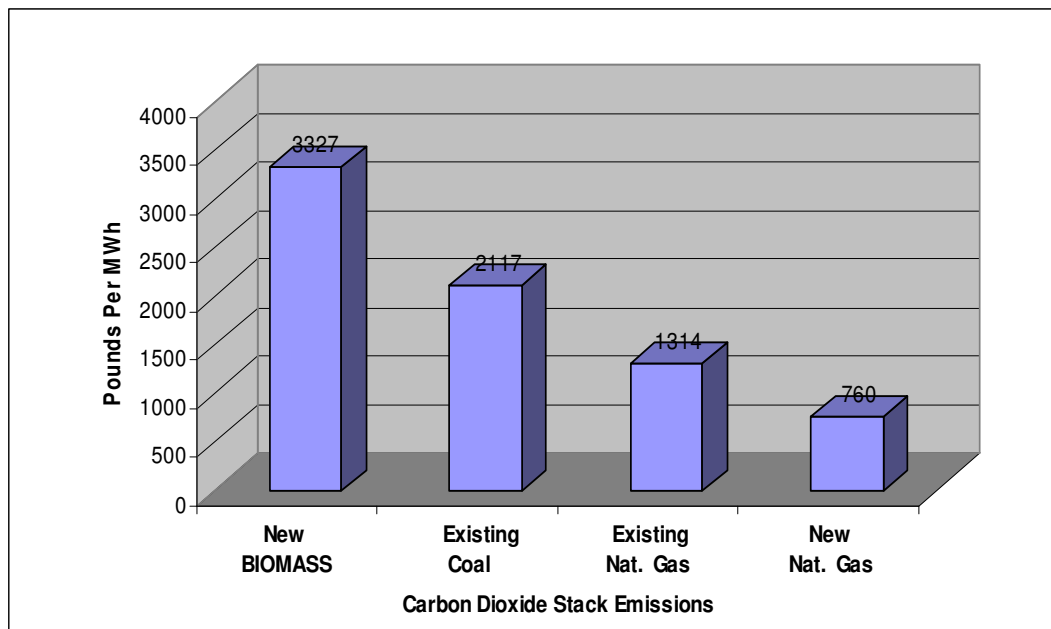
III. General Comments Regarding Biomass, and claims of “Clean and Green energy.”

While the word “biomass” may conjure up pleasant images, the promotion of this old caveman incinerator technology as “clean and green” can be more accurately described as just the latest “greenwashing” campaign by the timber, trash and energy industries opportunistically attempting to cash in on lucrative public “clean” energy subsidies.

One can become quite cynical to learn that our “green” energy subsidies are being directed to cutting forests and burning them in dirty biomass incinerators instead of promoting genuinely clean energy solutions such as solar, geothermal, appropriately scaled and located wind and hydro, and most importantly conservation and efficiency.

Here is a biomass reality check:

Contrary to industry claims, biomass energy does not reduce carbon dioxide emissions, it increases them. Wood burning biomass power production emits 50% more CO2 per unit of energy than coal. That is not a typo, and is based on numbers from the proponents own reports. Since burning wood is so inefficient, burning living trees is actually worse than burning coal. Brand new electric biomass power plants emit about 3,300 lbs/MWh of carbon dioxide, while existing coal plants emit 2,100 lbs/MWh, existing natural gas plants about 1,300 lbs/MWh and new natural gas plants about 760 lbs/MWh. See: <http://www.maforests.org/MFWCarb.pdf>



Biomass reality check (continued):

Even “small” combined heat and power (CHP) biomass burners emit more CO₂ than fossil fuels. Brand new CHP wood burning biomass burners emit about 287 lbs/MMBtu of carbon dioxide, while oil burners emit 232 lbs/MMBtu and natural gas burners about 146 lbs/MMBtu. See page 22 :
www.manomet.org/sites/manomet.org/files/Manomet_Biomass_Report_Full_LoRez.pdf

Importantly, even in the long run, the re-growing forest does not automatically earn back the carbon debt from biomass burning unless the forest carbon sequestration rate *increases*, through *increased* forest cutting, a highly dubious proposition. If the forests continue to sequester carbon at the same rate as they do today, (or carbon sequestration rates decrease, which is quite possible, even likely, with increased logging) this represents the “business as usual” (or worse) situation and the carbon debt would never be paid back and instead would compound each year. For more on this matter, see:
www.catf.us/resources/whitepapers/files/201007-Review_of_the_Manomet_Biomass_Sustainability_and_Carbon_Policy_Study.pdf

Even when using irrational modeling assumptions in an attempt to *increase* carbon sequestration rates through *increased* logging as done in the “Manomet” study, biomass power is still worse than coal for carbon dioxide emissions in the long term. See:
www.wbur.org/2010/06/11/wood-power-plants

A recent letter from 90 eminent scientists asks congress not to “cook the books” when accounting for CO₂ from bio-energy stating *“clearing or cutting forests for energy, either to burn trees directly in power plants or to replace forests with bio-energy crops, has the net effect of releasing otherwise sequestered carbon into the atmosphere, just like the extraction and burning of fossil fuels. That creates a carbon debt, may reduce ongoing carbon uptake by the forest, and as a result may increase net greenhouse gas emissions for an extended time period and thereby undercut greenhouse gas reductions needed over the next several decades”* See:
<http://intelligentenergyportal.com/article/90-scientists-urge-congress-not-cook-books-co2-accounting-biofuels>

Wood burning is not “clean”:

Not only is wood burning biomass energy worse than fossil fuels for CO₂ emissions, but it also usually emits higher rates of conventional pollutants such as particulates, CO, NO_x, and VOC’s than fossil fuels. The McNeil biomass plant near Burlington, and touted by biomass proponents, is the number one air-pollution source in the entire state of Vermont and emits 79 pollutants. See:
www.planethazard.com/phmapenv.aspx?mode=topten&area=state&state=VT

MASSACHUSETTS  FOREST WATCH

www.maforests.org/VBWGCom.pdf

The following are the pollution rates for modern institutional or commercial-scale wood-burning technologies, particularly school-sized woodchip boilers compared to fossil fuels (lbs/MMBtu). p 14: www.mass.gov/Eoca/docs/doer/pub_info/doer_pellet_guidebook.pdf

| | Wood | Oil | Natural Gas | Propane |
|-----------------|------|------|-------------|---------|
| Particulates | .100 | .014 | .007 | .004 |
| Carbon Monoxide | .730 | .350 | .080 | .021 |
| Nitrogen Oxides | .165 | .143 | .090 | .154 |
| Sulphur Dioxide | .008 | .500 | .001 | .016 |

If the argument is made that more advanced control technology could reduce wood pollution numbers, it must be remembered that the same is true for fossil fuel models. A comparison of “apples to apples” should always be made, which would maintain this poor relative showing by wood burning. Often smaller biomass burners do not use the more advanced control technologies.

Please note that the particulate emissions from wood burning are 7 times worse than oil, 14 times worse than natural gas and 25 times worse than propane.

In large part due to the particulate pollution from biomass burning, the Massachusetts Medical Society has come out against the biomass proposals in Massachusetts (www.maforests.org/MassMed.pdf) as has the Hampshire District Medical Society (www.maforests.org/HDMS.pdf) and the Physicians For Social Responsibility (www.maforests.org/PSR.pdf)

The Greenfield Board of Health has “Grave Concerns” about biomass (www.maforests.org/GrRec420.pdf) as do Dr. William Sammons (www.maforests.org/Sammons.pdf) and Dr. Tom Termotto (<http://www.americanchronicle.com/articles/view/167068>)

The Environmental Protection Agency says, “*Particle pollution especially fine particles—contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems.*” (www.epa.gov/particles/health.html)

Asthma in New England is already the worst in the country, and is aggravated by particulates (www.boston.com/news/health/articles/2010/04/26/scourge_of_asthma_is_acute_in_ne/)

The American Heart Association: says “*Short-term exposure to particulate matter (PM) air pollution contributes to acute cardiovascular morbidity and mortality and exposure to elevated PM levels over the long term can reduce life expectancy by a few years. Because the evidence reviewed supports that there is no safe threshold [for PM2.5], it appears that public health benefits would accrue from lowering PM 2.5 concentrations even below present-day annual National Air Quality Standards*” (<http://circ.ahajournals.org/cgi/content/full/121/21/2331>)

Biomass reality check (continued):

Children's Hospital in Boston says, "A *national epidemiologic study found a strong, consistent correlation between **adult diabetes and particulate air pollution** that persists after adjustment for other risk factors like obesity and ethnicity. **The relationship was seen even at exposure levels below the current Environmental Protection Agency (EPA) safety limit.**" <http://healthfreedom.org/2010/11/07/national-study-finds-strong-link-between-diabetes-and-air-pollution/>*

Considering the increase in particulate pollution that biomass burners can bring, installing them in hospitals and schools does not seem a logical idea considering the at-risk populations they serve.

Since when did cutting and burning forests become "green"? How can we ask poor third world countries to protect *their* forests if we won't protect ours?

Wood burning power production is extremely inefficient, a typical power plant burns at about 25% efficiency, so 75% of the trees cut go up in smoke and without producing any energy. This means enormous amounts of forest need to be cut to provide tiny amounts of power. This large fuel demand will lead to increased clearcutting of forests which even biomass consultants have admitted.

It is very important to realize that the vast majority of the fuel for the biomass energy would come from living trees, not "waste" wood as pitched to the public. The industry includes trees that they call "junk" or "low grade" in their definition of "waste" simply because they are a species, or have characteristics, that do not provide high commercial market value. However, to the rest of us, and to nature, these are still valuable trees that filter the air and water, sequester carbon, maintain the soil, attract tourists, and provide fish and wildlife habitat.

The most recent 2008 Forest Inventory Data from the US Forest Service shows the forests in Vermont are already under stress with the number of dead trees increasing 296% statewide in Vermont from 1997-2006. See: <http://fhm.fs.fed.us/em/funded/10/NE-EM-B-10-01.pdf>

When considering the margin of error of the sampling data, Vermont may already be close to cutting as much forest as net growth. According to FIA, Vermont forest net growth (growth minus mortality) is 180,000,000 ft³ with a 9 % margin of error and removals are about 121,000,000 ft³ with a 30% margin of error. See: www.nrs.fs.fed.us/pubs/rn/rn_nrs55.pdf While the exact numbers are unknown, at the limits of the margin of error, current removals already almost equal net growth.

The precautionary principle would argue in favor of not further stressing forests, nor risk losing the net forest positive carbon sequestration benefits that we currently (may) have, by cutting forests more intensively.

Is increased wood burning in Vermont really worth the pollution, global warming, wildlife, biodiversity and forest impacts?

Even the Vermont Biomass Energy Working Group, admits that at best, increased wood burning could produce only 1-2 % of Vermont's energy by burning 1,000,000 green tons of wood. Page 28: www.leg.state.vt.us/workgroups/biomass/BioE_draft_interim_2011_report_for_public_review.pdf But the working group also claims that there is probably only about 600,000 to 700,000 green tons available, see page 10, so this means about a 50% increase in logging over current levels in Vermont would be required to provide about 1% of Vermont's energy use, and would also increase air pollution, global warming and wildlife impacts.

Instead, achievable and more economical conservation and efficiency measures could reduce our energy use by 30%. "Phantom" loads alone, for example when our TV is plugged in but not on, account for 5% of our electric use, and could easily be avoided by using power strips. While making better use of the energy we already have would have the least impacts, the damage is already done with Hydro Quebec, so utilizing this available energy source would have minimal new impacts in comparison to increased cutting and burning of our important forests.

The reason these biomass incinerators are popping up like mushrooms on a rainy Seattle day is because of the enormous public subsidies being directed their way. A typical large incinerator like the ones proposed in Pownal and Fairhaven are eligible for a \$50-80 million dollar federal cash grant if they can break ground by Dec 31, 2010, and about \$20 million dollars in annual public subsidies. Imagine all the genuinely clean jobs and energy that could instead be created with that money by installing solar panels and insulating homes. Rather than 25-50 or so destructive jobs cutting and burning forests, the \$20 million dollar annual subsidy alone could instead be used to support 400 clean and green jobs at \$50,000 per year.

In addition, tourists and recreationists come from around the world to visit our "Golden Goose" forests, which supports a large tourist industry in New England. They will not come to see forests cut, chipped, burned and belched into the atmosphere in industrial burners.

IV. In Summary

At this time of polluted air, global warming, already stressed forests and bankrupt governments, there is no reasonable argument for forcing taxpayers to subsidize the construction of new dirty, carbon belching, forest degrading biomass incinerators, for minimal amounts of power that we don't need, often just to further enrich already wealthy out of state investors.

These policies will lead to increased clearcutting, air and water pollution, and greenhouse gas emissions while simultaneously draining our public coffers, the exact opposite of what we need to do right now.

“Green” tax-payer subsidies and other incentives should only be directed toward genuinely green technologies that produce clean, non-carbon emitting energy, and local jobs.

In short, “clean” energy does not come out of a smokestack.

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Massachusetts Forest Watch, is an all volunteer citizen watchdog group formed to protect public forests and promote genuinely “clean” and “green” energy solutions.

For more information about biomass and clearcutting of public forests, see:
www.maforests.org/hcc.pdf (large file with many photos, 50 MB) For other forest and biomass links, see: www.maforests.org/Links.pdf

These comments with live internet links can be found at: www.maforests.org/VBWGCom.pdf