

Testimony

House Bill 791

An Act Relative to Biomass Combustion Facilities

Commonwealth of Massachusetts

Joint Committee On Environment, Natural

Resources and Agriculture

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My name is Ellen Moyer. I am a registered professional engineer with an M.S. in Environmental Engineering and a Ph.D. in Civil Engineering, both from UMass/Amherst. I have over 20 years of professional engineering experience. I am an independent consultant in western Massachusetts. Over the years I have advised numerous clients on environmental matters. Among my clients, Ridgewood Power Management, a biomass plant owner and renewable energy developer, has retained me to evaluate information regarding the consequences of burning construction and demolition (C&D) wood. A portion of my testimony is based upon my work for them.

In my opinion, the proposed House Bill No. 791 is excellent, badly needed, and should go even farther in banning the combustion of C&D wood in biomass power facilities. My review of existing information regarding burning C&D wood in the Northeast leads to the inescapable conclusion that such activity has not been demonstrated to be safe for human health and the environment. Presently, the burning of C&D wood is banned in Connecticut (except for two grandfathered exceptions), Rhode Island, and New Hampshire. Massachusetts should follow suit because there are a host of concerns, of which I will focus today on just four.

1. C&D Wood Fuel is Inherently Contaminated. C&D wood contains many unwanted chemicals, including dioxin and heavy metals such as arsenic, lead, and mercury. In Maine, the only Northeast state where C&D wood is currently being burned, the C&D wood portion of the fuel is allowed to contain 1% plastic, 1% asbestos, 1% metal, and 1.5% copper-chromium-arsenic (CCA) treated wood as well as up to 20% small pieces of material (“fines”). CCA-treated wood contains hundreds of times as much copper, chromium, and arsenic as untreated wood. There is nothing clean about C&D “wood”!

2. Toxic Air Emissions are Higher When C&D Wood is Burned. From Maine Department of Environmental Protection data, a comparison of estimated emissions from twin biomass facilities is revealing. The two facilities have much in common (same owner/operator, same size, same age, same equipment), except for the fuel; one burns 45% C&D wood/55% forest biomass and the other burns 100% forest biomass. Maine DEP data indicate that the C&D wood burning facility emitted more of the 21 air toxics for which there were data for 2005 and 4 times the total mass of air toxics as the forest biomass plant. Attached are graphs which indicate the relative levels of toxic air emissions of these facilities. Again, there is nothing clean about C&D “wood”!

3. C&D Wood Burning Facilities Emit Significant Quantities of Top Priority Air Toxics. Maine DEP has developed a list of 29 top priority air toxics. Emissions of these air toxics are deemed to be too high and Maine is striving to reduce them. Two C&D wood burning facilities in Maine are among the top emitters of many of these priority chemicals. Attached is a listing of some of those chemicals for which these two C&D wood-fired biomass facilities are among the leading emitters.

4. Comprehensive Risk Assessment Has Not Been Conducted. To my knowledge, there has not yet been a comprehensive multi-pathway evaluation of whether air emissions are safe for human health and the environment. Maine evaluates whether inhalation of air emissions by humans is safe, but has not considered the exposure pathway created by deposition of air toxics onto soil, lakes, and streams, and subsequent uptake and bioaccumulation in the food chain.

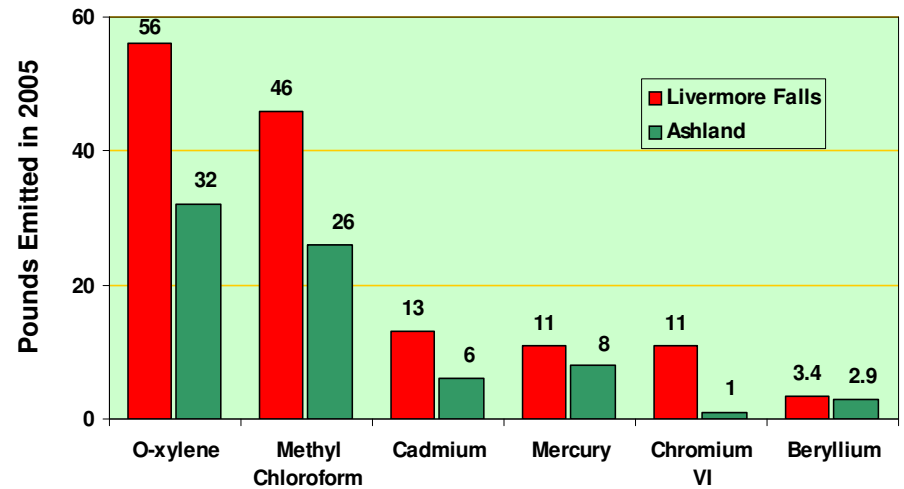
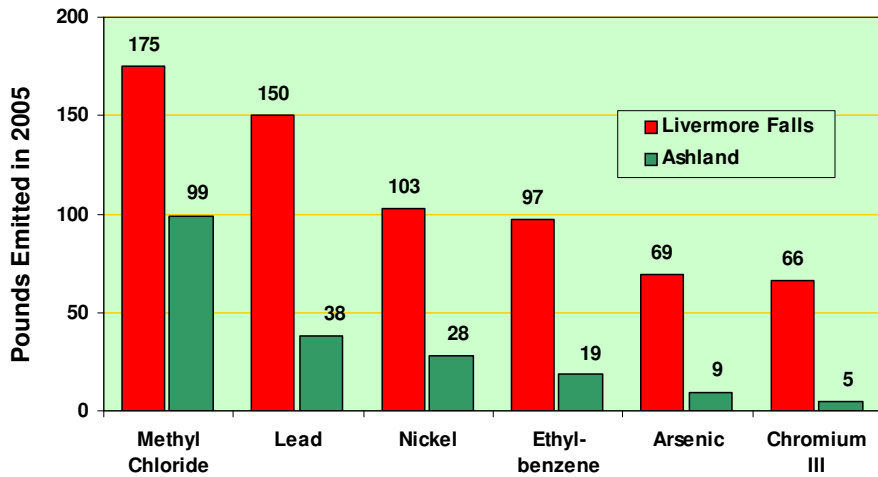
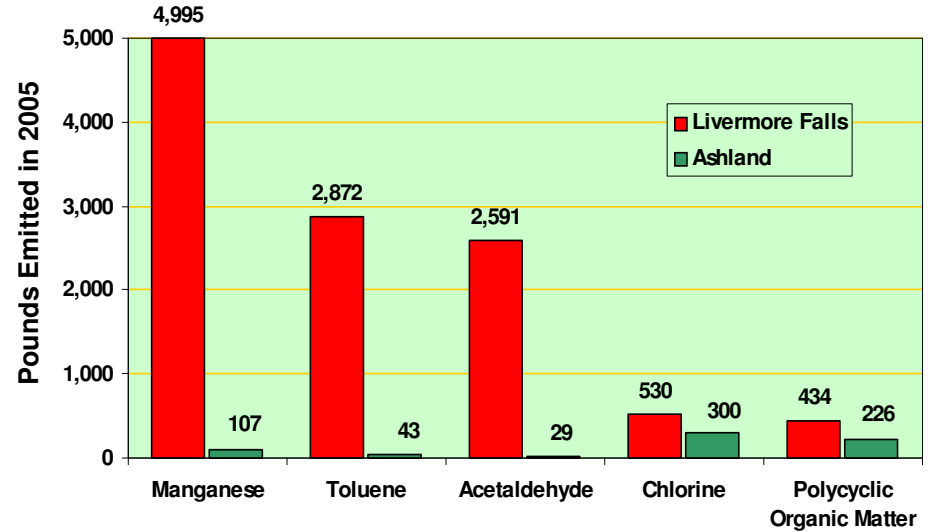
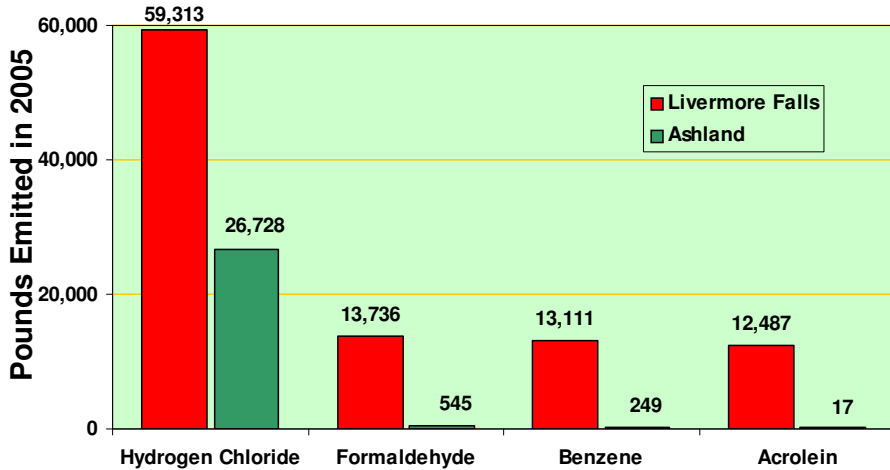
Recommendation: I fully support HB 791 and suggest that it be broadened to say that absolutely **NO** post-consumer wood should be combusted in the Commonwealth at biomass power facilities. Demolition wood should be specifically included in the language. In terms of wood, only 100% unadulterated biomass should be considered for burning. This would eliminate fuels such as pallets and boxes that may appear innocuous but actually are sometimes treated. For example, federal regulations require that pallets and boxes imported from China be first treated to kill insects, to avoid their importation. Wood preservatives may include arsenic (a carcinogen), copper sulfate (a biocide), and creosote, (a complex mixture of chemicals, some mixtures being colorless). Since we import significant amounts of goods from China, this is not a trivial issue.

I would further broaden the bill to strike the last phrase. I do not want to see post-consumer wood burned in any type of biomass facility, under any circumstances, regardless of whether it sells the electricity or uses it on site and regardless of the cooling method. With these changes, the bill could then read:

“The department shall not permit the transport to or combustion of any post-consumer wood, including but not limited to construction and demolition debris, pallets, boxes, or wood treated with compounds containing arsenic, lead, cadmium, asbestos or any other man-made substance, in biomass-fueled facilities.”

Thank you for your time. This concludes my written testimony.

Comparison of Air Emissions



Red: 45% C&D wood/55% forest biomass. Green: 100% forest biomass.

Estimated Emissions of Selected Priority Air Toxics from Stratton and Livermore Falls C&D Wood Burning Facilities*

Chemical	Priority¹	Stratton Rank²	Livermore Falls Rank²
Acrolein	1	Largest point emitter	Third largest point emitter
Polycyclic organic matter	2	3 rd	4 th
Manganese	3	1 st	2 nd
Benzene	10	1 st	3 rd
Lead	11	2 nd	5 th
Dioxin	13	tied with another for 3 rd	tied with another for 3 rd
Arsenic	15	1 st	3 rd
Mercury	17	4 th	5 th
Chlorine	27	3 rd	4 th
Hydrochloric acid	28	3 rd	5 th

1 Maine Department of Environmental Protection. 2006. "Final Maine Air Toxics Priority List," www.maine.gov/dep/air/toxics/mati.htm, accessed November 3.

2 Maine Department of Environmental Protection. 2005. "Maine Air Toxics Initiative 2005 Inventory," September 14.