

Testimony

Senate Bill 1951

**Resolve to Investigate the Burning of C&D Waste
as it Relates to the RPS Program**

Commonwealth of Massachusetts

Joint Committee on Telecommunications, Utilities, and Energy

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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 and 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 environmental consequences of burning construction and demolition (C&D) wood. My testimony is based upon my work for them.

In my opinion, the proposed Senate Bill No. 1951 is excellent and badly needed. 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. The sparse data that do exist are disturbing. Presently, the burning of C&D wood is banned in Connecticut (except for two grandfathered exceptions), Rhode Island, and New Hampshire 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. C&D “wood” is not clean!

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, C&D “wood” is not clean!

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.

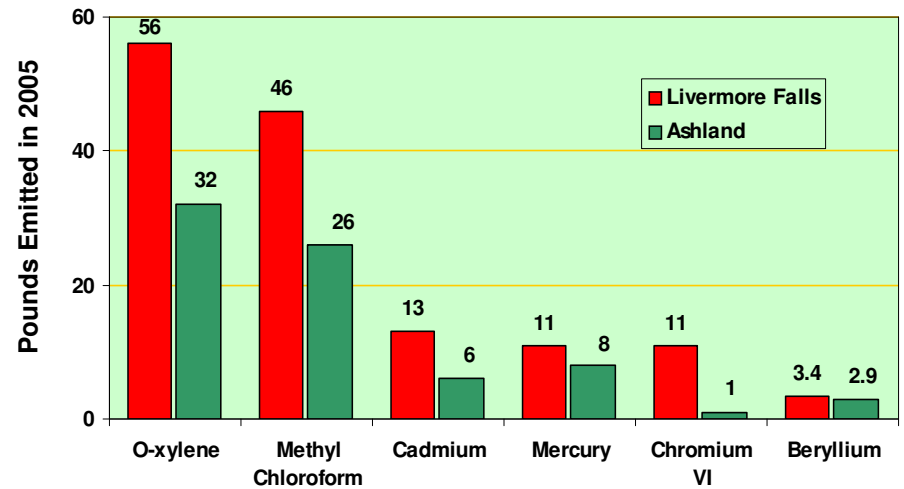
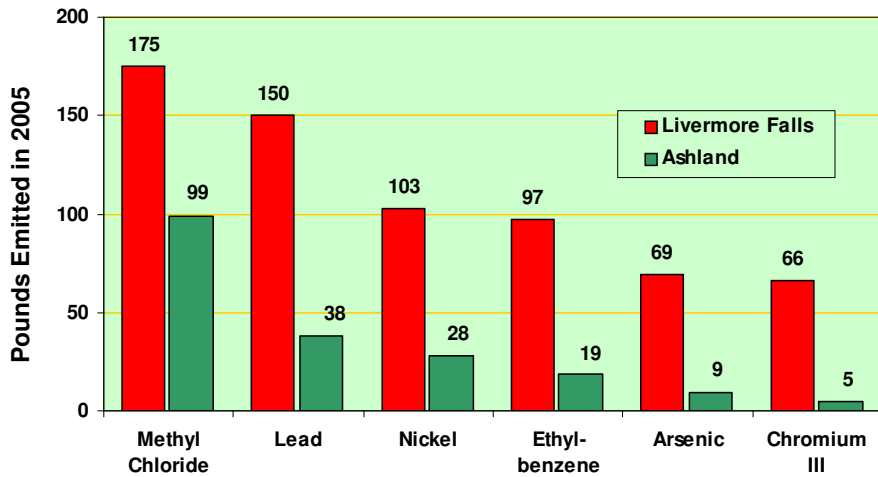
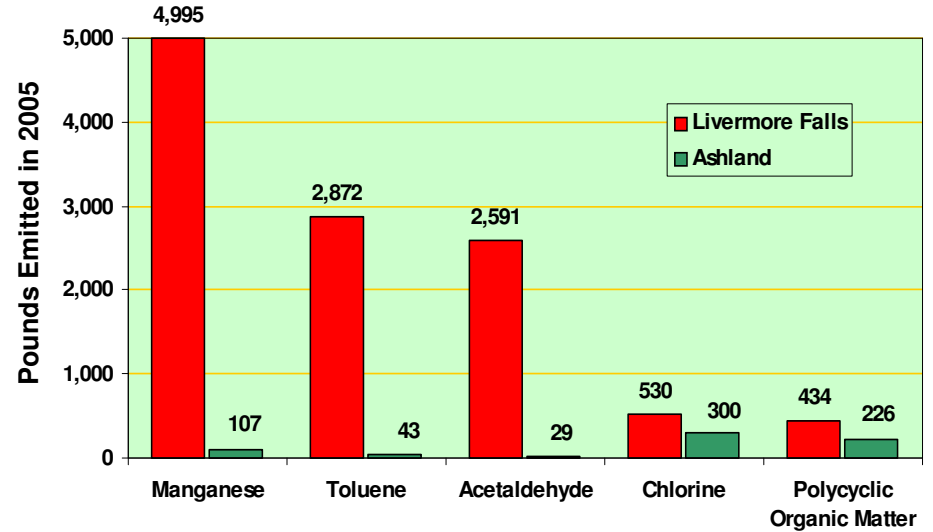
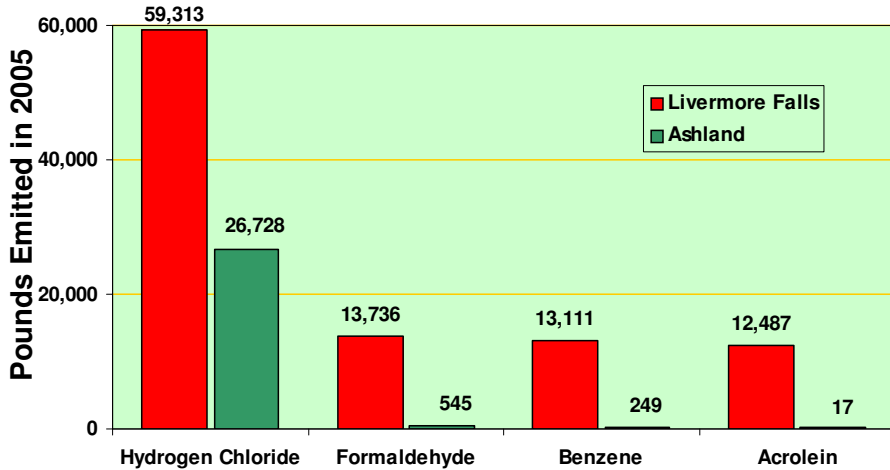
4. Comprehensive Risk Assessment Has Not Been Conducted. To my knowledge, a comprehensive multi-pathway evaluation of whether air emissions are safe for human health and the environment has not been carried out. Maine evaluates whether inhalation of air emissions by humans is safe, but has not considered the exposure pathway created by deposition of air toxics onto soil, lakes, and streams, and subsequent uptake and bioaccumulation in the food chain. Recent guidance from the U.S. Environmental Protection Agency¹ for metals risk assessment states that “deposition processes represent an important route of exposure for plants, animals, and humans.”

Recommendation: I fully support SB 1951. The combustion of any C&D wood in biomass power facilities should be banned in Massachusetts, and biomass power facilities burning any C&D wood in other states should be ineligible for Massachusetts Renewable Portfolio Standard (RPS) credits, until such time that such activity has been demonstrated to be safe for human health and the environment with a high degree of certainty. Until then, only 100% unadulterated forest biomass should be considered for burning or for RPS credits.

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

¹ USEPA. Framework for Metals Risk Assessment. EPA 120/R-07/001, March 2007.

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.