

CHESAPEAKE PSR

PHYSICIANS FOR SOCIAL RESPONSIBILITY



HB 179 – Maryland Recycling Act – Recyclable Materials and Resource Recovery Facilities – Alterations

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SUPPORT

Dr. Gwen L. DuBois MD, MPH
President, Board of Chesapeake Physicians for Social Responsibility

Chesapeake Physicians for Social Responsibility (CPSR), a statewide organization of over 700 e-activist physicians and other health professions who support sound evidenced based public health policy, supports HB 0179. Chesapeake PSR supports HB 0179 because it: 1) prevents incineration from counting as recyclable material and 2) strips the 5% waste diversion credit for municipal waste. Incinerator ash is highly toxic to humans as I will describe so we should not be giving incentives for toxic incinerator ash nor subsidizing a form of pollution that we have evidence is making Marylanders sick. We are paying once for subsidies and again for medical bills and lastly for economic losses that accompany illness.

Incinerating municipal waste doesn't get rid of the health problem of disposing of waste. It creates new problems. Incineration puts pollutants into the air, the soil, the water. Air pollution controls are a good thing so that we don't breathe in everything we burn. But what isn't released into the air is concentrated in the material that is left behind in the ash: 30% of the original weight and 40-50% of the original volume which then has to be disposed of safely and unfortunately is not. Bottom ash consists of large pieces of metal glass and ceramics, dioxin and incompletely burned material that is collected from the bottom of the incinerator. Fine ash, collected from the pollution control devices consists of highly toxic fine particulate matter laced with heavy metals, dioxin, fine acids, and other pollutants. While in Europe bottom ash may be used for road fill, the fly

ash is considered so toxic that it is not even tested but never used. In the United States, to get around a Supreme Court Ruling, fly ash is mixed and diluted with the less toxic bottom ash, getting around the requirement to treat the fly ash as hazardous.¹

The process of incineration **creates**, let me repeat, **creates** one of the most notorious families of substances of all, dioxins,² which are a family of compounds the most toxic of which is 2,3,7,8- tetrachlorodibenzo para dioxin (TCDD). TCDD has been designated by the World Health Organization as a known human carcinogen: a substance capable of causing cancer

Dioxins are considered one of the “dirty dozen” persistent organic pollutants because of its long half-life. It accumulates in the environment including where animals graze, it gets concentrated up the food chain where we are on top. It is concentrated in our body fat as we eat: meat, fish and dairy products. In addition to being a carcinogen, it is linked to diseases of the immune system, endocrine system, nervous system and reproductive system. The developing fetus is particularly sensitive to its effects.³. Dioxins are mostly found in the fly ash and to a lesser extend in the bottom ash.⁴

Incinerators create another dangerous health problem, when heavy metals like lead, mercury, cadmium, chromium and arsenic are burned and transformed into gases, and particles.

1

<https://rvamag.com/news/community/tons-of-toxic-incinerator-ash-are-dumped-in-richmond-each-year.html>

2

<https://phys.org/news/2014-09-unforeseen-dioxin-formation-incineration.html>

3

<https://www.who.int/news-room/fact-sheets/detail/dioxins-and-their-effects-on-human-health>

4

<https://www.environment.gov.au/system/files/resources/fec3b9ff-4a26-4b17-9bcb-1ba3c066ca8b/files/incineration-review.pdf>

Cadmium largely found in fly ash has been designated a carcinogen by the WHO for its link to lung cancer. It is also associated with kidney damage and damage to bones as well.

Lead is another heavy metal that depending on the temperature may end up in the fly ash or bottom ash. Lead is toxic to children's brains, and even low-level lead exposure can result in persistent impairment of learning and other complex cognitive tasks.⁵ Lead can cause loss of Q, increased distractibility, impulsivity, short attention span, increased antisocial behavior and these changes are believed to be irreversible. Lead can also cause anemia, high blood pressure and kidney damage.⁶ Prenatal exposure can lead to lower birth weight.⁷

Particulate matter with aerodynamic diameters <2.5 micrometers (pm2.5) is found in fly ash. It is an aerosol that is so small, 1/30th the diameter of a human air, that it is easily inhaled. Combined with heavy metals or other pollutants, it acts like a very small delivery system that, when inhaled evades the body's defenses. PM2.5 allows pollutants to be delivered deep into human lungs, pass into the blood stream and deposited in different body organs. Animal evidence suggests that pm2.5 can travel from the nasal mucosa, and olfactory nerve into the frontal lobe of the brain. PM2.5 is deadly. It is associated with an increase all-cause mortality, an increase as well in asthma, ischemic heart disease (heart attacks), and low income, Medicaid and black urban patients are particularly at risk.⁸

Incinerator workers exposed to bottom ash and fly ash are likely to be exposed to all of the above and more toxic pollutants and there is also a

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<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC111081/>

6

<https://www.who.int/news-room/fact-sheets/detail/lead-poisoning-and-health>

7

<http://pediatrics.aappublications.org/content/138/1/e20161493>

8

<https://www.nejm.org/doi/full/10.1056/NEJMMe1706865>

concern that ash being hauled away to landfill will expose residents in the neighborhoods through which these trucks carry their waste⁹

I have highlighted some of the health effects. Pollutants acting together are likely even more toxic than when exposures are to just one toxic chemical. As mentioned above, some populations are more sensitive to the health effects than others. There is an environmental injustice component to where we locate facilities where incineration and ash dumps are located.

For all of these reasons Chesapeake Physicians for Social Responsibility strongly suggest passage of HB 0179.

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