

To: Oregon Senate Committee on Environment and Natural Resources

Subject: Comments on Senate Bill 451

Date: 3/11/19

Good Afternoon Chair Dembrow and Committee Members:

I am commenting today because of my great concerns that Senate Bill 451 will permit the contamination of the environment and will result in numerous adverse health impacts on members of the local and regional communities working in and/or living in the region of municipal solid waste (MSW) incinerators. As an environmental health scientist with over 40 years of experience, I think about the unforeseen long-term health and environmental consequences of previous bad decisions, such as putting lead in paint and bisphenol A in the lining of cans. I am reminded daily of the disregard for simple prevention as a means to reduce adverse health and environmental effects of our actions.

It is folly to allow incinerators to qualify for renewable energy credit. This would only encourage the use of this dirty and out-of-date technology, at the expense of other more sustainable and clean methods of managing and reducing wastes. Therefore, I urgently request that Senate Bill 451 be rejected and not be considered further.

Incinerators emit toxic and hazardous substances to the air, water, and soils as a condition of the process of burning mixed wastes. The health impacts of exposure to the numerous toxic and hazardous materials that are and will be released are well known. Briefly, "MSW incinerators are typically fed a mixed waste stream and the combustion of such waste leads to hazardous substances originally present within the waste being mobilised into releases from the incineration plant."¹ Toxics are created at various stages of thermal technologies such as incineration. There are no safe ways to avoid their production or to destroy them. At best they can be partially trapped at extreme cost in sophisticated filters or in the ash. Release into the environment is unavoidable, and if trapped in ash or filters, these become hazardous wastes themselves.²

The exact nature of the substances released during incineration depends on the composition of the waste that is incinerated. Heavy metals are not destroyed by incineration but are simply concentrated in the remaining wastes. Incineration of chlorinated organic

compounds, such as PVCs, will cause the formation of hydrogen chloride (HCl) and this contributes to the formation of dioxins.^{1,2} “...whatever control technology is applied, all types of incineration result in releases of toxic substances in ashes and in the form of gases/particulate matter to air”¹ and in some cases, to water. These substances include toxic metals: *cadmium, lead, mercury, chromium, arsenic, beryllium*; numerous organic compounds, such as *dioxins and furans, PCBs, and polycyclic aromatic hydrocarbons*; and gases, such as nitrogen oxides, sulphur oxides, hydrogen chloride, hydrogen fluoride, and carbon dioxide.^{3,2} The major impacts on health include a higher incidence of cancer and respiratory symptoms; other potential effects are congenital abnormalities, hormonal defects, and increase in sex ratio.⁴

Dioxins are called persistent organic pollutants (POPs). POPs take a long time to break down once they are in the environment. Dioxins are highly toxic and can cause cancer, reproductive and developmental problems, damage to the immune system, and can interfere with hormones.⁵ Recall, if you will, Agent Orange, a defoliant contaminated with dioxins that permanently wreaked havoc on the country and people of Vietnam, and on many U.S. service members and their families. Dioxins are the most lethal Persistent Organic Pollutants (POPs) which have irreparable environmental health consequences.² The affected population includes those living, working, and going to school near incinerators as well as those living in the broader region.

Incineration of MSW also releases particulates,¹ including small particulates. As you may know, particulate matter is hazardous to a number of body systems and is implicated in heart, lung, vascular, reproductive, nervous system and other disorders.⁶

Promoting the use of incinerators to manage wastes, with their unintended negative consequences for the health of our communities, takes us backwards. Let us go forward with more effective, healthy, and sustainable ways to manage and reduce our waste. Please reject this bill in all its forms, and vote no on SB 451.

Thank you for your attention to my concerns.

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References:

- ¹ Allsopp, M, Costner, P, Johnston, P. Incineration and Human Health. State of knowledge of the impacts of waste incinerators on human health. [Environ Sci Pollut Res Int](#). 2001;8(2):141-5.
- ² Salman Zafar. (Sept. 2008) NEGATIVE IMPACTS OF INCINERATION-BASED WASTE-TO-ENERGY TECHNOLOGY. <http://www.alternative-energy-news.info/negative-impacts-waste-to-energy/>
- ³ National Research Council. 2000. Waste Incineration and Public Health. Washington, DC: The National Academies Press. <https://doi.org/10.17226/5803>.
- ⁴ R Sharma et al. (2013) Impact of incinerators on human health and environment. [Rev Environ Health](#). 2013;28(1):67-72. doi: 10.1515/reveh-2012-0035.
- ⁵ USEPA. <https://www.epa.gov/international-cooperation/persistent-organic-pollutants-global-issue-global-response>
- ⁶ Oregon Physicians for Social Responsibility. (2015) Airborne Particulate Matter and Public Health. Fact Sheet. https://d3n8a8pro7vhmx.cloudfront.net/oregonpsrorg/pages/29/attachments/original/1491857988/Airborne_Part particulate_Matter_and_Public_Health_Factsheet_%28FINAL__updated_10-5-15%29.pdf?1491857988