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From: Sent: To: Subject: Phil Carver <philiphcarver@gmail.com> Monday, March 11, 2019 9:13 PM SENR Exhibits Testimony of Phil Carver for March 12

Testimony of Philip H. Carver of Salem, Oregon

In opposition to SB 451 (as introduced)

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March 12, 2019

Chair Dembrow and members of the committee. For the record I am Phil Carver. I have a Ph.D. in Natural Resource Economics. From 1980 to 2017 I worked for the Oregon Dept. of Energy and the Public Utility Commission (PUC)

My testimony focuses on three trends that all favor landfills over trash burners in a comparison of greenhouse gas (GHG) emissions. Both disposal methods generate electricity and emit GHGs.

First, over the past forty years environmental regulations have substantially reduced methane emissions from landfills. Further declines are likely, especially if more food waste can be diverted from the trash.

Second, the plastics portion of the trash has grown in the past two years. This is because a smaller fraction of plastics can be recycled due to import restrictions by China. The problems with recycling paper, the biogenic portion of trash as fuel, have been much less. This means the fossil fuel fraction for trash burners, and the corresponding anthropogenic carbon emissions are bigger. Landfills are unaffected by this trend because the carbon in plastic is not burned but is sequestered for hundreds of years.

Finally, the offset from displacing utility fossil fuel generation is declining rapidly as more renewables come onto the grid and more coal comes off. This credit only exists if the anthropogenic emissions from trash-related generation are less than utility emissions. The decline in this benefit will tend to favor landfills because their carbon emissions are almost entirely biogenic with very low anthropogenic GHG emissions. Landfills will retain this offset but trash burners will soon lose it completely. In conclusion, any GHG comparison needs to take these three trends into account. It is emissions over the rest of this century that will determine the level of damage from climate change.

Thank you for the opportunity to testify.