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I thank the chair for the opportunity to testify. Black carbon, commonly referred to as soot, is the third largest global warming driver (IPCC 5th Assessment Report; Myhre et al., 2013), and clearly harmful to public health as a component of particulate air pollution. Black carbon and co-emitted substances form a significant fraction of ambient fine particulate matter ($PM_{2.5}$), which is the most important global and US environmental health risk and now estimated to kill around 200,000-300,000 Americans annually (Burnett et al., 2018; Vohra et al., 2021). When carried downwind and deposited onto mountain snowpacks, black carbon causes further global warming and local melting of the snowpack (Myhre et al., 2013). Given these well understood harms, the idea that it's a good thing to reduce the amount of soot spewing into the air is not particularly controversial.

As recognition has grown of the simultaneous benefits in improved public health and reduced climate change that BC reductions could deliver (e.g. Shindell et al., 2012), there has been a widespread increase in efforts to monitor BC, as HB 2479 proposes. This makes sense, since after all, it's difficult to make progress getting rid of a pollutant if you don't know how much is there to start with. The the European Monitoring and Evaluation Programme/European Environment Agency (EMEP/EEA) added BC to their Emissions Inventory Guidebook in 2013.

Though there are uncertainties in creating BC emissions inventories, it is problematic if important, though uncertain, information is ignored in public debate and policy-making. There are uncertainties in the severity of climate change due to greenhouse gas emissions as well, but being unsure if the consequences of a continued rapid rise in emissions will be catastrophic or merely devastating is not a good reason to delay action. Similarly, there are large uncertainties in emissions of greenhouse gases that are already routinely included in inventories, especially methane and nitrous oxide. Recent studies suggest methane emissions from parts of the US may be underreported by a factor of two (e.g. Zhang et al., 2020).

Many jurisdictions now report their black carbon emissions. In the US, the EPA's national emissions inventory includes emissions of elemental carbon (similar to BC) by source at the state level. Oregon could use this as an excellent starting point for their own state inventory. Among the 51 countries that are part of the Convention on Long-Range Transport of Air Pollution (including the US), 41 included black carbon in their reporting as of 2018. Similarly, all 8 of the Arctic Council nations report their BC emissions as do 10 of the 13 observer countries within that body. The Climate and Clean Air Coalition, founded in 2012 to support reducing emissions that simultaneous cause climate change and air pollution and now with more than 60 member nations, has helped many developing countries create their first BC emissions

inventories too. It is clear then that much has already been done. One result of this work is that trends are now clearly visible in places with a history of monitoring (and trends typically have reduced uncertainty relative to absolute numbers as many biases are systematic). For example, emissions from Europe as a whole have dropped by about half since 2000 but have actually risen during this time in several Eastern European countries. This helps policy makers see where to focus future efforts to benefit their citizens the most.

I therefore support HB 2479 under which Oregon would join a large group of jurisdictions that put BC emissions data in the hands of policy makers to support informed decision-making.

See also the following for further details:
A briefing on Black Carbon Emissions Inventories produced by the Science Advisory Panel to the Climate and Clean Air Coalition
https://www.ccacoalition.org/sites/default/files/resources/2018_Science-Update-Black-Carbon-Briefing_CCAC.pdf

A Review of Reporting Systems for National Black Carbon Emissions Inventories produced for the EU
https://unece.org/fileadmin/DAM/env/documents/2019/AIR/EMEP_WGE_Joint_Session/TechReport_BC_Inventory_Reporting_EMEP_SB_RS_Commentskm.pdf

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