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To: [SENR Exhibits](#)
Subject: LC19 will not reduce CO2 emissions
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To the Oregon Senate
Feb. 1, 2020

LC19, the Oregon Legislature's proposed carbon tax, will do nothing to reduce any CO2 emission source. In particular, it will not reduce the primary and predominant emission source.

CO2 emissions from forest fires in Oregon surpass all other emission sources in the state combined. Since 2002 an estimated 50 to 75 teragrams (Tg) of CO2 have been emitted annually by forest fires in Oregon.

Note that one Tg is 10^{12} grams or one million metric tonnes (tons).

Forest fires do not volatilize all the above-ground biomass. The combustion factor can range from 10 to 50 percent. The release of CO2 from post-fire decay over the next 25 to 50 years can be as much as 2 to 9 times the immediate incineration amount. The annual post-fire release has been increasing since 2002 and now may be as much as 100 to 300 Tg per year — in addition to the 50 to 75 Tg emitted annually via direct volatilization.

The Oregon Department of Environmental Quality (DEQ) reports statewide greenhouse gas emissions in two ways: sector based and consumption based. Both these methods estimate the same thing: total anthropogenic emissions. The DEQ estimates that quantity to be 60 to 80 million metric tons (or Tg) per year.

Thus forest fire and post-fire annual emissions exceed the DEQ reported anthropogenic amounts (which do not include forest fire emissions) by a factor of 2 to 5 times.

In Oregon more than 65% of our forests are government owned. Our forest fires are predictable and preventable — they stem from excruciatingly bad management by government agencies whose policies are No Touch, Let It Burn, Watch it Rot.

In Oregon our forests have significantly more above-ground biomass than the U.S. average, and range from 100 to 700 metric tonnes/hectare (Mg/ha). A reasonable, conservative estimate of the carbon content of average above-ground biomass for Oregon forested environments is 200 Mg/ha.

When catastrophically burned almost all that carbon is emitted by direct volatilization or post-

fire decay. New plants will occupy the burns, but over the next 25 to 50 years very little carbon is re-sequestered by the shrubs and herbaceous post-fire invaders. They are too small.

With proper forest management (aka restoration forestry) as much as half the existing carbon may be removed by thinning and prescribed burning, but ample large forest trees are retained. The retained trees fix carbon at a high rate relative to post-fire invaders. Thus emissions would be minimized and re-sequestration maximized.

Proper forest management could reduce net fire-caused emissions by half or more. This reduction would more than equal (offset) all other statewide anthropogenic emissions combined – not to mention all the other myriad benefits to Oregon's economy and forest resources (vegetation, wildlife, water quality, air quality, soils, scenery, recreation, etc.).

The proposed legislation does nothing to reduce the predominant greenhouse gas emission source. Indeed, it will not reduce greenhouse gas emissions from any source. LC19 is wrongheaded and will fail to achieve the ostensible goals -- at enormous cost to our state.

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