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Comments for Oregon Joint Interim Committee on Carbon Reduction

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Prepared for the Oregon Joint Interim Committee on
Carbon Reduction

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I am pleased to offer comments to the Oregon Joint Interim Committee on Carbon Reduction. As background, I am an economist and the Darius Gaskins Senior Fellow at Resources for the Future (RFF) in Washington DC. RFF is an independent, nonprofit research institution and does not take positions on specific legislative proposals, although individual researchers are encouraged to offer their expertise to inform policy decisions. All RFF research is available online, for free.

Oregon has committed to reduce its greenhouse gas emissions by at least 80 percent below 1990 levels by 2050, placing the state in alignment with the international community in pledging to help address the most challenging environmental issue of this generation. The widely prevailing view among economists is that this goal can be achieved at the least cost, and realize the most benefits for the state, through the introduction of a price on carbon. The most prominent approach to carbon pricing is cap and trade, which in comparison to a carbon tax, has the benefit of achieving a specific emissions outcome.

For a small state like Oregon, cap and trade offers substantial opportunities for cost effectiveness. Cap and trade enables linking with the Western Climate Initiative (WCI) involving California, Quebec and Ontario, which would provide Oregon access to an existing program with fully developed administrative details that are simpler to implement than would be the new development of a carbon tax. Oregon is also positioned to benefit from economic development on natural and working lands under cap and trade. Figure 1 shows that more than 65 jurisdictions covering over 25 percent of the world's emissions have introduced some form of carbon pricing, predominantly through cap and trade.¹

Allowance trading is simple. To comply with the regulation, firms surrender an allowance for each ton of emissions. Firms can buy or sell emissions allowances, transfer them among facilities or bank them for future use, enabling firms to profit from innovations that reduce emissions. Emissions trading was born as part of the regulatory reform of the 1980s that sought to reduce government's direct role and look instead to the use of incentives to drive economic efficiency, and it has been widely effective.

Experience has shown that well-designed emissions trading programs can achieve emissions reductions at low cost, and importantly, advance economic development and business opportunities. Emissions trading works by leaving firms in the decision-making role and providing them an incentive to profit by finding the least-cost way to reduce emissions.

The design of emissions trading programs involves a small number of major elements including the initial distribution of allowances, the use of proceeds from sale of allowances, measures to contain cost, and measures to protect business from unfair competition. The early programs, including the US sulfur

¹ https://www.i4ce.org/wp-core/wp-content/uploads/2017/10/Global-Panorama-Carbon-prices-2017_FINAL_5p-2.pdf

dioxide and nitrogen oxides trading markets, allocated allowances for free to firms based on their emissions history (grandfathering). Over time programs evolved to auctioning all or most allowances. One reason for this shift was that some firms captured windfall profits by charging customers for the value of allowances even though they received them for free. You would be wise to avoid doing that in Oregon. Meanwhile, distributing allowances through auction is an extremely efficient mechanism for finding a market-clearing price and directing allowances to their highest valued use. The auction price is visible, making the program more transparent overall. An auction can be implemented even when some allowances are given away for free, under a consignment auction where firms auction their free allowances, receive the auction revenue, and buy back whatever allowances they need for compliance.

A valuable feature is a minimum price in the auction, which is the lowest price at which allowances can be purchased. This feature is common, for example on eBay, where a seller can specify a minimum acceptable bid. It is a feature of the auctions in the WCI and in the Regional Greenhouse Gas Initiative (RGGI) in nine northeastern states. A minimum price is widely considered a good feature of auction design because it creates certainty for investors and helps protect both buyers and sellers from unintended outcomes.

Trading programs are always expected to have prices rise over time. An understandable and common concern is that prices might rise too fast or reach an unacceptable level that will harm business. Several features mitigate this concern. First, allowance trading gives firms the flexibility to decide where emissions reductions occur, and allowance banking gives firms additional flexibility to save allowances for future use. Second, an economy-wide program enables cost savings by providing a greater number of opportunities for emissions reductions in multiple sectors. Third, linking with other trading programs as part of the WCI provides an even larger market with broader opportunities for emissions reductions and provides resilience to potential price fluctuations that might arise due to factors such as local weather events. Yet another important feature that constrains costs is the use of offsets, which are emissions reductions achieved outside the program that can be used in place of allowances to cover emissions at a regulated facility. Offsets from natural and working lands may provide a special opportunity for economic development in the rural parts of the state. Finally, WCI and RGGI set aside a reserve quantity of allowances that become available if the auction price rises above a specified threshold. In summary, a trading program has many features to contain costs.

Another important way that costs are contained is through the investment of auction proceeds. In the North American programs and in the European Union Emissions Trading System involving 31 countries, a majority of auction proceeds are invested toward climate and energy projects that help reduce emissions and the demand for allowances, thereby reducing the allowance price. For example, economic analysis of RGGI from 2015-2017 found that it led to \$1.4 billion of net positive economic activity in the region, left energy consumers with net gains due to lowered energy bills, and increased revenues for low- and zero-carbon power generators.² Economic analysis of California's emissions trading program in two rural regions, the San Joaquin Valley and the Inland Empire, found net positive economic impacts, through increased economic activity, net generation of jobs, and increases in state and local tax revenue.^{3,4} Importantly, investments from auction proceeds can contribute to the energy

²http://www.analysisgroup.com/uploadedfiles/content/insights/publishing/analysis_group_rggi_report_april_2018.pdf

³ <https://www.law.berkeley.edu/wp-content/uploads/2017/01/econ-impacts-climate-programs-san-joaquin-valley.pdf>

⁴ <http://next10.org/sites/default/files/inland-empire-final.pdf>

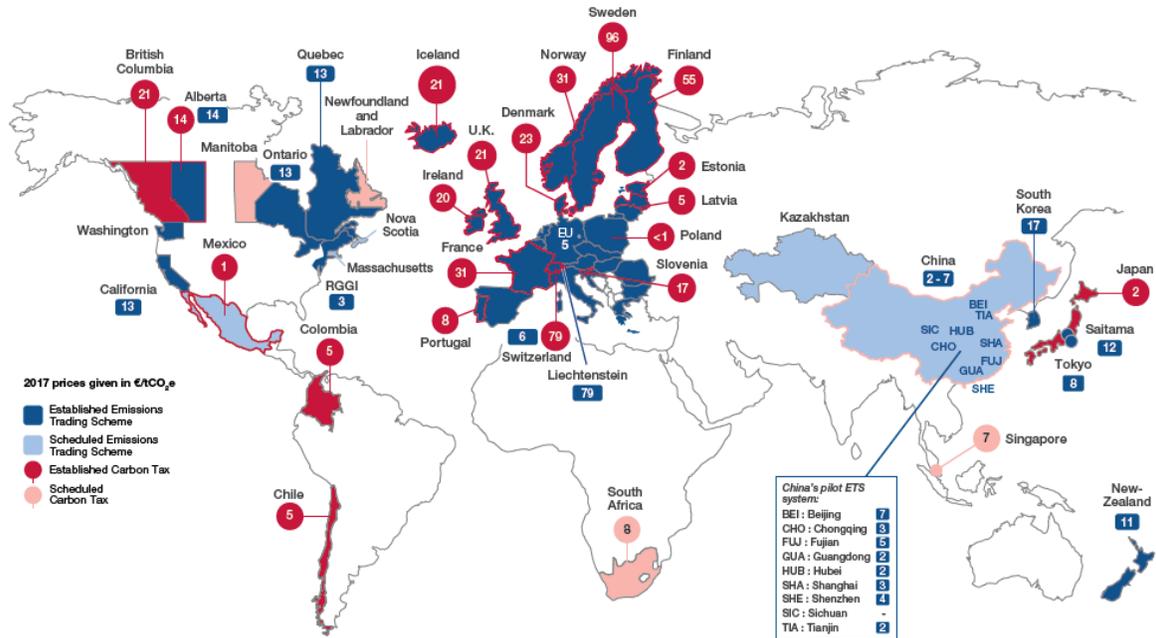
transformation that is necessary to achieve emissions reductions, and which is in fact already happening around the world.

Proceeds might also be used in other ways to address related objectives. For example, some programs have used proceeds to fund rebates to consumers. Another important objective is to protect businesses in Oregon that are large energy users and also vulnerable to competition from other states or countries that do not price carbon. If both conditions hold, such firms may be at risk of losing commerce to out-of-state competition, a phenomenon called emissions leakage. Allowance proceeds can be used to protect vulnerable firms by providing an incentive to maintain business activity in Oregon. This is achieved by freely allocating allowances to vulnerable firms on the basis of ongoing production activity, so-called output-based allocation, which is distinct from freely allocating on the basis of historic activity as under grandfathering. Under output-based allocation, a firm receives free allowances as long as it maintains production in the state. The amount of allocation can be benchmarked to reflect best practices in an industry, and firms still have the incentive to reduce emissions as much as possible. Output-based allocation can offer important protection for emissions-intensive firms. Typically, protecting these industries requires only a small portion of the program allowances, and these allowances can be auctioned through a consignment auction. However, the state should be cautious about over-allocation for this purpose, because free allowances reduce the proceeds available for other purposes.

While the initial concern in all programs has been that prices might rise to unacceptable levels, in practice the major challenge in trading programs has been the opposite – prices falling below anticipated levels. As illustrated in Figure 2, with the exception of short run and fleeting events, the uniform experience around the world in trading programs for a variety of pollutants has been a long-term trend of declining prices below anticipated levels. There are several reasons prices tend to be low. One is the contribution of companion policies such as technology support programs that help reduce emissions. Another is the investment of auction proceeds that also helps reduce emissions. A third might just be that these programs work as they are intended by providing firms with incentives to innovate, which drives down costs. In general, low prices should be a good thing; however, this outcome can be of concern because it erodes the enduring signal for business to innovate to significantly reduce emissions, especially over the long-term. If prices fall to a very low level, then the program might become irrelevant, undermining the investments that firms and the state have already made. The minimum price in the auction, and a related feature called the emissions containment reserve, are important to mitigate this outcome. It should be noted, the cost of inaction on climate change has tremendous economic risk, particularly to companies that have international supply chains. This is why coupling emissions-trading with other sectoral policies that promote market transformation is also important.

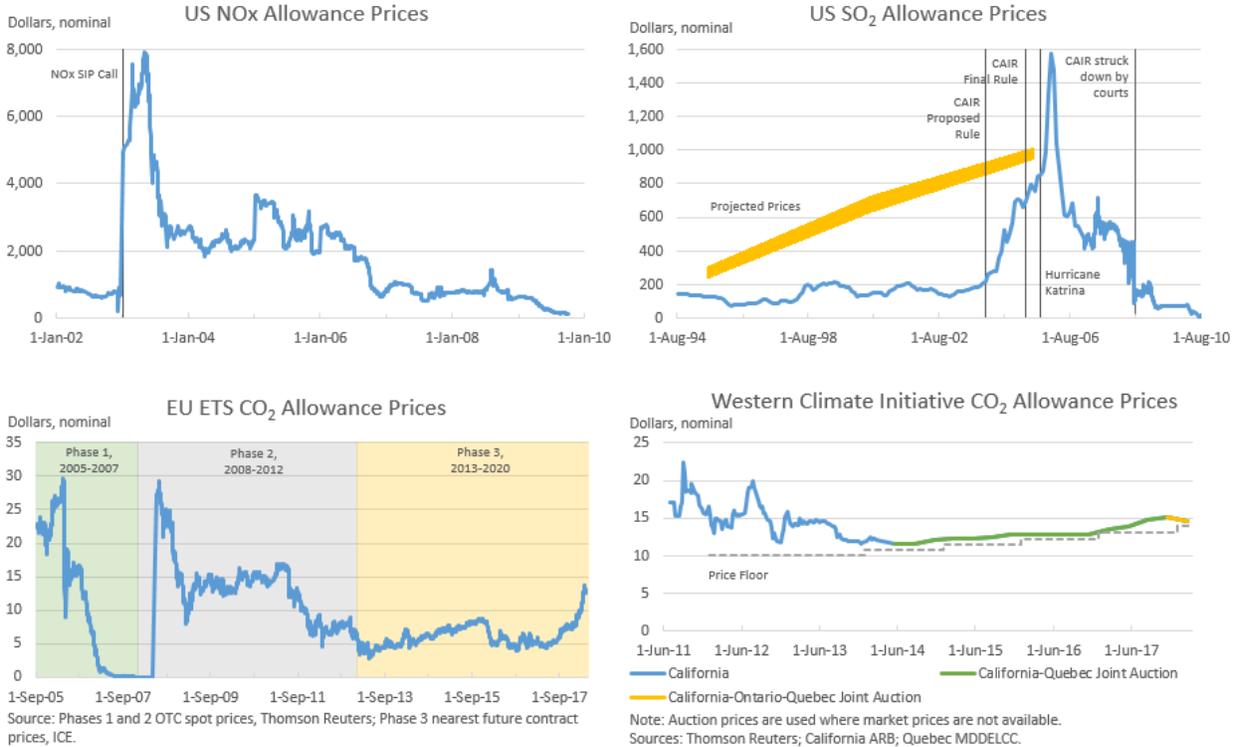
Emissions trading is tested and working around the world, providing an approach that can achieve emissions outcomes cost-effectively and with certainty. By linking with an existing program, Oregon can reduce costs and expand opportunities. But emissions trading really makes sense as part of a larger vision. Oregon is especially well suited to benefit from the energy transformation that is occurring due to its plentiful clean resources. Emissions trading can support this transformation through the investment of proceeds to develop a low-carbon infrastructure, while protecting vulnerable existing businesses and communities. Around the country and world, consumer preferences are driving business to choose to locate and invest in jurisdictions that have a commitment to a healthy environment. These trends all point favorably in Oregon's direction.

Figure 1: Carbon prices around the world in 2017.



Source: I4CE – Institute for Climate Economics with data from ICAP, IETA, World Bank and public information. September 2017.

Figure 2: Emissions allowance markets have had low prices below expected levels in the long term.



Source: Burtraw, Dallas and Amelia Keyes. 2018. Recognizing Gravity as the Strong Force in Atmosphere Emissions Markets. Washington, DC: RFF WP 18-16; *Agricultural and Resource Economics Review*, forthcoming.