



February 28, 2019

Joint Interim Committee on Carbon Reduction  
Oregon State Legislature

Attention HB 2020:

We are pleased to share the accompanying comment to the Joint Interim Committee on Carbon Reduction on HB 2020. We are both economists working at Resources for the Future, an independent, nonprofit research institution.

The accompanying comments address the allocation of emissions allowances in the proposed cap-and-trade program for carbon dioxide. We describe the distinction between the provision of exemptions and of direct (free) allocation, and explain why, when comparing the two options, direct allocation is more effective in incentivizing emissions reductions. We present support, based on economic theory and empirical evidence, for auctioning the majority of allowances in the program but also for the provision of direct allocation to electricity and natural gas utilities and energy-intensive, trade-exposed businesses. We explain the hazards of expanding direct allocation to other sectors and recommend that the allocation of allowances remain as currently written in HB 2020.

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Sincerely,

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# Allowance Allocation in Oregon's Proposed Cap-and-Trade Program

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Oregon is considering legislation to introduce an economy-wide cap-and-trade program for carbon dioxide. A foundation of cap-and-trade program design is the initial allocation of emissions allowances. Under the current proposed legislation, Oregon would auction most of its emissions allowances, but it would also directly (freely) allocate allowances to the electric and natural gas utilities and to energy-intensive, trade-exposed (EITE) industries. Auctioning allowances in a cap-and-trade program has emerged as best practice in various programs around the globe and has various efficiency and distributional advantages. However, in Oregon, direct allocation to the designated industries also is reasonable, recognizing that it does involve tradeoffs, including foregone auction proceeds and the potential for inefficient over-allocation. Expanding the direct allocation of allowances to other industries beyond those already listed in the proposed legislation would introduce windfall profits without improving program outcomes.

A central criticism of direct allocation of allowances under cap and trade is that it generates windfall profits; that is, increases in firm revenues that are greater than their costs of complying with the program. However, windfall profits occur only if the prices of final goods or services change due to the cap-and-trade program. Because prices for Oregon's electric and natural gas utilities are regulated, the utility regulators can ensure that utilities will not earn windfall profits when they receive free allowances. In EITE industries, businesses that face competition from unregulated firms outside the state typically have little or no ability to adjust the prices of their final goods. Moreover, utilities and EITE businesses retain an incentive to reduce emissions even if they receive allowances for free. Windfall profits are a greater risk when prices are determined entirely by competitive market forces in the state, which is true for most other sectors of the economy. In those cases, the prices of goods with embodied carbon will increase whether or not businesses are given free allowances.

## Exemptions vs. direct allocation

Observers sometimes equate direct allocation under the cap-and-trade program with an exemption from the program. These two provisions are distinct, and they lead to very different outcomes. Putting a cap on carbon emissions creates scarcity and thereby gives carbon an economic value. Carbon emission allowances can be bought and sold, and the market determines a price based on the marginal cost of reducing carbon emissions. For firms covered under the cap, emitting carbon has an opportunity cost because those firms could reduce their emissions and sell unneeded allowances at the market price. This creates a financial incentive to reduce emissions, which exists whether firms receive their emission allowances for free or purchase them through auctions (Hahn and Stavins 2011). On the other hand, firms that are exempt from the program have no obligation to comply and thus their emissions continue to have no measured value.

## Direct allocation to regulated utilities

Directly allocating allowances to utilities has a legacy in cap-and-trade programs, and its efficacy is largely dependent on the regulatory structure of the utilities in question. This is because the impacts of direct allocation hinge on the whether markets are competitive or regulated.

Prices in competitive markets can change freely to reflect the costs of inputs. In competitive markets, companies fold the cost of emissions allowances into the price of goods just as they would fold in other production costs. Companies do this even if they receive the allowances for free, because allowances have



opportunity costs: using an allowance for compliance means foregoing the opportunity to sell it in the allowance market. Consequently, free allocation in competitive markets can be toxic. If firms receive allowances for free, but raise prices anyway, they can earn windfall profits (Burtraw and Palmer 2008). Windfall profits occur when the increase in revenues to a firm due to an increase in prices surpasses the firm's cost of compliance. This phenomenon is well-documented in the economics literature, and can be avoided by auctioning allowances (Wråke et al. 2010, Goeree et al. 2011, Woerdman et al 2009).

In contrast, prices in regulated markets cannot change freely. Regulators can ensure firms do not charge customers higher prices for allowances that the firms received for free. Free allocation can play a useful role because it allows regulators to prevent electricity price increases, but firms retain the incentive to reduce emissions. This is because emissions allowances, no matter how they are received, have an economic value and can be sold to other firms if they are not used for compliance. Another approach for regulators could be to allow utility rates to increase but to rebate consumers at a fixed level, so that consumers are not left worse off but still retain the incentive to adjust demand.

Historically, many cap-and-trade programs—such as the US Acid Rain Program, which restricted sulfur dioxide (SO<sub>2</sub>) emissions from electricity generators—distributed emissions allowances for free. At the outset of the SO<sub>2</sub> program, the electricity industry was regulated, ensuring that companies would not earn windfall profits. The regulation set prices to guarantee the recovery of costs for fuel, capital, and labor. It prevented electricity price increases while incentivizing utilities to find ways to reduce SO<sub>2</sub> emissions.

Since the 1990s, in many parts of the United States and Europe, the electricity industry has moved away from regulation, and electricity prices have become determined by the market. This has ushered in a trend towards expanded auctioning of allowances. In the early phases of EU's CO<sub>2</sub> Emissions Trading System virtually all the allowances in the program were directly allocated, but many EU member states had deregulated their electricity systems. Academic researchers and formal investigations identified significant pass-through of carbon emission costs into electricity prices and billions of euros in windfall profits that resulted as a consequence (Sijm et al 2006, Möst et al 2016). The emergence of windfall profits in Europe spawned widespread public concern that rattled the program, not dissimilar to today's yellow-vest movement in France. As a result, the first carbon market in North America—the Regional Greenhouse Gas Initiative (RGGI)—decided to auction a majority of its allowances. The electricity industry in the RGGI states was also largely deregulated. Soon thereafter Europe followed course; today, they auction nearly 100 percent of allowances for the electricity sector.

Unlike those in the RGGI states and most of the EU, Oregon's electricity and natural gas utilities are still regulated. Consequently, much like in the SO<sub>2</sub> trading program, regulators can ensure that customers see the original cost of allowances in their utility bills, which is zero under free allocation, ensuring that firms will not receive windfall profits.

Regulating prices does not avoid all the drawbacks of free allocation. By not auctioning those allowances, Oregon will forego the chance to use auction proceeds for investments to reinforce program goals. Oregon will rely on separate legislation requiring electricity utilities to phase out coal-fired power and commitments from utilities to expand their use of renewables for this purpose.

From a higher viewpoint, it is also important that the allocation be transparent, so that the distributional impacts of the programs can be easily assessed. We and others have argued that consignment of the free allowances to an auction with the proceeds flowing back to the utilities would help achieve transparency, as well as help to achieve other desirable outcomes (Burtraw 2018, Busch et al 2018, Burtraw and McCormack



2017). In the absence of that program feature, Oregon must rely on effective regulation of the utilities to accomplish much of the same.

## **Direct allocation to energy-intensive, trade-exposed industries**

Outside of regulated industries, direct allocation rarely makes sense. An important exception is when energy-intensive, trade-exposed businesses are exposed to competition from jurisdictions that do not price carbon. This may lead to emissions leakage, in which economic activity leaves the state and emissions increase in other jurisdictions. In this situation, free allocation can be a strategic instrument to provide an incentive for business to remain in Oregon. Implemented effectively, the free allocation of allowances would not be tied to a firm's emissions; instead, the allocation would be tied to the firm's productive activity (Linn and Burtraw 2017). This gives industries an incentive to grow their business in Oregon while maintaining an incentive to reduce their emissions.

Free allocation to protect against unfair competition requires careful planning. Empirical evidence suggests that, in practice, free allocation has effectively protected trade-exposed industry but has likely been more generous than necessary to prevent the loss of business activity (Martin et al 2014, Carbon Market Watch 2016). Oregon should carefully calibrate the amount of free allocation dedicated to protect business from unfair competition, not only to guard against windfall profits, but also because free allocation comes at the cost of using allowance auction proceeds to achieve other program goals, such as investments in infrastructure or distributional fairness. So far, Oregon is taking the right steps along this dimension.

## **Direct allocation in other competitive markets**

Direct allocation to firms in nonregulated, non-EITE sectors would be likely to create windfall profits without preventing price increases. As observed in the EU Emissions Trading System, this outcome can undermine program goals and its political support. The alternative method of auctioning allowances, which is included in HB 2020, avoids windfall profits. Auctioning also has a number of other benefits, including increasing the transparency of allowance value, helping firms minimize costs by making the value of emissions reductions transparent, and generating revenues that can be used for specific purposes (Burtraw et al 2019). Oregon should aim to maximize the number of firms that receive allowances through auctions because robust auctioning benefits the transparency, efficiency, and perceived fairness of carbon markets (Burtraw and McCormack 2019).



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