

Background Material – Clean Energy Jobs Work Groups

What is a Cap-and-Invest Program?

Source: “Considerations for Designing a Cap-and-Trade Program in Oregon,” Oregon Department of Environmental Quality, February 14, 2017, pages 1 – 4

How does a cap-and-trade program work?

A cap-and-trade program establishes an overall limit (the *cap*) on GHG emissions from certain sources of pollution, such as electricity providers, industrial facilities, and fossil fuel suppliers. Permits or “allowances” are issued by the state to regulated entities. Each allowance permits a business to emit or supply fuel that emits one ton of emissions. For example, if a program has a cap of 50 million tons of pollution in a given year, the state would issue 50 million allowances in that year. These allowances can be bought and sold on the market (the *trade*). Companies covered by the program must acquire allowances to match their emissions. As the cap declines over time, the entities covered by the program must make collective cuts in emissions. However, because of the formation of a marketplace for allowances, emission reductions won’t be uniform across the covered entities but instead will occur where reductions are cheapest. Entities that can most cheaply reduce their emissions will do so, while others will pay to acquire sufficient allowances. This should reduce emissions where it is cheapest to do so, while spurring innovation to develop new methods for greater reductions. As described below, there are different methods for the state to issue allowances.

How does this differ from “cap-and-dividend” or “cap-and-invest”?

It doesn’t. These terms describe distinct ways a cap-and-trade program can be designed to use revenue generated by the state’s sale of allowances. *Cap-and-dividend* uses program revenue to provide rebates to households or businesses to offset the higher energy costs created by the program. *Cap-and-invest* directs program revenue to fund specific programs; usually those that further reduce GHG emissions to expand the environmental benefit of the program or to lower costs to regulated entities. It’s important to note that these different uses of revenue could be combined. For example, some revenue could be provided to natural gas and electric utilities to reimburse their customers for higher energy costs, while other revenue could be invested in programs that reduce GHG emissions or directly benefit households in disadvantaged communities.

How does cap-and-trade differ from a carbon tax?

Both cap-and-trade and a carbon tax establish a price on GHG emissions. Cap-and-trade specifies a certain amount of emissions reduction and allows the price to pollute to adjust based on market demand, while a carbon tax does not prescribe an amount of emissions to be reduced but specifies a price to emit GHGs. Cap-and-trade sets a firm limit on emissions, providing certainty that pollution will be reduced to the level of the cap. This program does not establish a specific price on GHG pollution, letting the marketplace determine this based on the supply of allowances and the demand from regulated entities to pollute. In contrast, a carbon tax does not require specific emission reductions, but does set the price to emit GHGs. The flexibility offered by cap-and-trade provides some benefits compared to a carbon tax. In addition to providing certainty on emission reductions, cap-and-trade offers the state tools to better directly mitigate impacts to specific businesses and should produce emission reductions at a lower overall cost.

Who would be regulated by an Oregon cap-and-trade program?

This would vary depending on the design of the cap-and-trade program. Based on existing conditions, DEQ estimates approximately 100 facilities and businesses would be regulated if the program covered fossil fuel and natural gas suppliers, electricity providers, and industrial emitters responsible for at least 25,000 tons of GHGs per year, which is the emission threshold for being

regulated in the existing programs in California and Quebec. See Appendix 1 for a list of these entities.

How much GHG pollution would be reduced?

This would also depend on the design of the cap-and-trade program, including the breadth of emission sources covered and the level of the cap. One of the most important features cap-and-trade offers is the ability for the state to directly set a limit on emissions and the rate that emissions must decline. The amount of pollution reduced is the result of how many sources of emissions are covered by the program and the declining cap on emissions. A program covering the sources listed under the previous question with a cap set at those sources' proportionate share of the cuts for the state's GHG reduction goals would assure the state achieves those goals, so long as sufficient emission reductions are also being achieved by sources not covered by the program.

How would "allowances" to emit GHGs be distributed?

There are two primary methods for the state to distribute allowances: sell them through an auction or provide them to regulated entities for free. Auctioning allowances provides a transparent and fair approach that alleviates the need for the state to determine who receives allowances and in what quantities. It also generates revenue which can be put to furthering state, local, or industry initiatives to cut GHG emissions or mitigating the impact of the program on specific groups, such as utility ratepayers or disadvantaged communities. Freely providing allowances to regulated entities can reduce their costs, but in some situations can profit companies without passing that benefit down to consumers.

A combination of these techniques may offer the advantages of each where they are needed most. Free allocation to certain businesses exposed to trade pressure from competitors outside of the state may be an important tool to avoid pressure on businesses to shift operations and associated jobs outside of the state. This would also simply shift emissions associated with economic activity to another state, and make it so the program fails to reduce global GHG emissions. Providing allowances to natural gas and electric utilities could offset increased costs for their ratepayers. Alternatively, auction revenue could be directed to these utilities and overseen by the Public Utility Commission, or the elected boards of smaller utilities, to assure it benefits utility ratepayers. Auctioning the remainder of allowances is important to clearly establish a market price on GHG emissions and, as noted below, to generate revenue that can benefit disadvantaged and rural communities.

How would revenue be used?

Revenue generated from the sale of allowances to cover emissions from sources other than transportation fuels could be used for a wide variety of purposes, including to offset costs to utility ratepayers, mitigate effects to disadvantaged and rural communities, and further reduce GHG emissions. Oregon's Constitution restricts the use of revenue generated from fees or taxes on transportation fuels. The sale of allowances to cover compliance obligations of transportation fuel suppliers may be subject to this restriction. If that is the case, then revenue from transportation fuels – likely a majority of the revenue generated by the program – would need to be used for the construction, maintenance, and operation of the state's roads and bridges.

What are the economic implications?

Effects on statewide economic output would likely be very small. Modeling conducted for this study suggests that the overall effect on Oregon's economy from a cap-and-trade program could be slightly positive or slightly negative, but either effect would be very small relative to the size of the state

economy. However, this modeling did not take into account the health benefits to Oregonians from the reduction of pollutants with local health impacts that comes from reducing GHGs. Thus, the modeling likely understates the economic benefits from a cap-and-trade program in Oregon. While statewide economic effects are likely small, effects in certain industries are stronger. Sectors more reliant on fossil fuels such as mining and transportation are more negatively impacted, while the transfer of money from emission sources to other parts of the state's economy tends to benefit sectors that would receive the additional spending such as construction, retail, and media. See Appendix 3 for a full description of the economic modeling conducted for this study.

How can impacts to specific industries be mitigated?

Certain industries, such as food processing and pulp and paper mills, that compete with firms outside Oregon may not be able to pass the cost of purchasing allowances down to their consumers. This could pressure these local businesses to close or move out of state. This would directly impact jobs in Oregon and may merely shift GHG emissions to another location, undermining the goal of the program. Minimizing this outcome is a critical consideration for designing a cap-and-trade program. Fortunately, cap-and-trade provides the state with a tool for mitigating this potential effect: free provision of allowances to certain business exposed to competition from businesses in other jurisdictions. Freely allocating some allowances to industries regulated by the program that are exposed to competition in other jurisdictions should defray additional costs created by cap-and-trade while still creating an economic incentive for these businesses to reduce their emissions.

How would disadvantaged or rural communities be affected?

A cap-and-trade program increases the cost of fossil fuels. This could place a larger burden on low-income households because they generally spend a higher proportion of their income on energy. These households are also less able to make investments to adapt to higher energy prices, such as buying more efficient vehicles and appliances. Rural parts of Oregon tend to be less economically diverse than urban areas, meaning impacts on industries in rural communities could be felt more acutely. For these reasons, a cap-and-trade program could disproportionately impact disadvantaged households and rural areas unless it includes measures designed to neutralize negative effects on these communities.

Targeted revenue spending is the primary mechanism for addressing impacts to these communities from a cap-and-trade program. This could include energy bill assistance or rebates for households in certain income brackets, and targeting investments in projects located in and directly benefiting disadvantaged or rural communities. Additionally, revenue generated by a program could be used for worker training, helping to empower communities to transition to jobs in a low-carbon economy.

How would this program work with Oregon's existing climate policies?

A cap-and-trade program could be designed to complement Oregon's existing climate policies, including the Renewable Portfolio Standard and the Clean Fuels Program. These policies' requirements to transition the electricity and transportation fuel sectors to low-carbon energy helps prepare Oregon's economy to achieve the long-term reductions required by a cap-and-trade program aligned with the state's GHG goals. Similarly, a cap-and-trade program reinforces these sectoral policies by making clean sources of electricity and transportation fuels more cost-competitive with fossil fuels. The cap-and-trade program also provides a back-stop that responds to the performance of these sectoral policies. If the sectoral policies achieve greater reductions, there would be less work for the cap-and-trade program to do. Should these sectoral policies achieve fewer reductions than expected, the cap-and-trade program would compensate by doing more.