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CALIFORNIA'S CAP AND TRADE SYSTEM FOR REDUCING GREENHOUSE GASES

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Before describing California's cap and trade system, I want to start with a general overview of where the 50 states fit within the broader United States system of federalism. Although federal law is supreme under the Supremacy Clause of the U.S. Constitution, states retain residual power over areas not expressly granted to the federal government. Generally speaking, in most substantive areas if the U.S. hasn't preempted states from legislating on a subject matter the states retain power to do so.

In environmental law, for many areas of pollution control, such as water and air pollution, the federal government has enacted strong and comprehensive statutes to regulate the pollution but has continued to give states a large role in implementing the regulations. It's important to understand this background to understand the role California has played in regulating greenhouse gas emissions, including in establishing its cap-and-trade program.

The Clean Air Act, a federal statute, is the most important piece of legislation related to California's efforts. The Clean Air Act regulates pollutants from cars and trucks. It also prohibits all states from regulating such pollutants except for the state of California. There is a long history here that stems from how bad air pollution was in Los Angeles in the 1950s and 1960s. The state was the first to start regulating pollution from cars and when the U.S. government passed legislation to begin to do so it let California keep its regulations in place even when it prohibited other states from adding new ones. The federal legislation also let states choose whether to follow U.S. regulations for automobiles or California regulations, which are generally stricter.

So how does this relate to California and its regulation of greenhouse gases? Before the state passed comprehensive legislation to cut its greenhouse gas emissions (GHGs), the state first passed a bill to cut GHGs from cars. It did so under the power it has under the Clean Air Act to regulate vehicle emissions. The car bill was passed in 2002. A third of U.S. states agreed to follow the California regulations, which were the subject of many lawsuits and obstruction by the federal Environmental Protection Agency under President George W. Bush. After lengthy delays and the election of President Barak Obama, California issued regulations in 2009 requiring a 17% reduction in GHG emissions from light-duty vehicles by 2020, and a 25% reduction by 2030. In 2010, the federal government followed California's lead in regulating GHG emissions from cars, enacting essentially the same emissions standards for model year 2012-2016 light-duty vehicles. California was thus the first

state to enact meaningful GHG reduction requirements and the model for one of the first major federal greenhouse gas reduction initiatives. Since that time, California and the federal government have issued new, even stricter standards for model year cars for 2017-2025.

The car bill is important in the history of California's efforts to regulate GHGs because its success led the state to then pass, in 2006, much more comprehensive legislation known as the Global Warming Solutions Act or AB 32. This bill, championed by then-Governor Arnold Schwarzenegger, committed California to cutting its greenhouse gases to 1990 levels by 2020. The bill also gave power to the state's Air Resources Board (which we call CARB), to figure out how to meet the 2020 goals. CARB then designed the state's cap-and-trade program. Here's how it works.

The cap-and-trade program began in 2013 and initially applied only to electricity utilities (both those that generate electricity inside of California and those that import electricity into the state from neighboring states), and to large industrial facilities like cement plants. This year, the program expanded to fuel distributors. The program now covers 85% of emissions in California, making it the most comprehensive cap-and-trade market in the world.

The program operates like many other cap-and-trade schemes: A total amount of allowable pollution is set (the cap). Those subject to the cap are allocated allowances (in sum equal to the cap) that allow them to pollute (one ton of carbon dioxide or CO2 equivalent per allowance, with the total number of allocated allowances equal to the cap). And emitters may meet their allocated amount in one of three ways. They may use all of their allowances. They may cut their pollution to levels below the amount they've been allocated and trade/sell the excess allowances to those who need them. Or they may pollute in excess of the amount of allowances allocated and make up the difference by purchasing allowances from those emitters who don't need all of theirs.

The California program also provides for offset credits. These credits allow entities to meet up to a set percentage of their emissions reductions through projects outside of the cap-and-trade system. So far, the California system accepts offsets from four specific types of projects: forestry, urban forestry, manure digesters, and destruction of ozone-depleting substances. The offsets so far are limited to projects in the United States.

Several other features of the program are worth noting. The cap-and-trade program allows emitters to bank allowances for use in future years and has a three year compliance period in order to allow for year over year changes in production and output. In addition to the substantive provisions of its cap-and-trade program, the state has adopted a sophisticated suite of measures to maximize the liquidity and transparency of its cap-and-trade market. These include emissions registries requiring annual reporting of emissions, the reporting of spot market prices, quarterly auctions, a requirement that investor-owned utilities sell their allowances and receive the proceeds, and the establishment of an allowance reserve that will make a certain

number of allowances available at a pre-established price in the event that prices spike in order to reduce volatility.

The idea of cap-and-trade is, of course, to let polluters make decisions about the cheapest and most effective way to reduce greenhouse gases rather than having the government decide how to do so. If a polluter can reduce more pollutants than required, it can make money by selling its extra allowances on the market.

California distributes its allowances through a mix of public auctions and free allocations. The proceeds generated by the auction of allowances fund other projects designed to reduce greenhouse gas emissions. This year, the state will raise $2.2 billion from auctioning permits. Permits are selling for about $13 dollars for a ton of carbon dioxide or its equivalent. The money the state earns through selling allowances must be used for programs that reduce greenhouse gases. So far the money is funding programs like solar panels for low income households, a high speed train to link Los Angeles and San Francisco, affordable housing near public transportation, and public transit projects. And 25% of the revenue must be spent in disadvantaged communities around the state.

The California system is now linked to a cap-and-trade program in the Canadian province of Quebec. Polluters may use Quebec allowances to meet their California compliance burdens and vice versa. Before the 2008 recession, a number of western U.S. states were interested in adopting their own cap-and-trade programs and linking to California's but lost interest when the economy slowed down. But they may show new interest in linking to California in response to new federal regulations, which I'll return to in a moment.

So how is the cap and trade system working? Overall I'd say very well. There have been no reports of fraud or market manipulation. Prices have held fairly steady, hovering between $12 and $13 per ton. The move to link the system with Quebec is a positive one. I do have one critique of the program that in my view undermines its potential to spur technological innovation by artificially keeping allowance prices lower than they might otherwise be. First, though, I have to describe two other programs California has adopted to cut greenhouse gases because those programs work in tandem with the cap-and-trade system and apply to the largest emitters covered by the system. One program requires the state's Investor-Owned Utilities to meet a standard that requires them to purchase or generate 33% of their electricity from renewable sources by 2020. Just last month, the state Legislature increased this goal so that by 2030 they must get 50% of their electricity from renewable sources. That means that they are likely to meet their cap-and-trade responsibilities to cut GHGs largely through purchasing or generating clean energy.

The second program establishes a Low Carbon Fuel Standard (LCFS). By 2020, the state's fuel suppliers must cut the fuel intensity of fuels used in-state by 10 percent. The fuel intensity is measured through a life-cycle analysis that takes into account the GHGs emitted in refining the fuel and in transporting it to California. The LCFS is also a market-based program that issues allowances and works something like the cap-and-trade program.

The reason I tell you about these programs is because they do and will affect the overall price of allowances in the cap-and-trade program. They designate in advance how at least some of the state's largest emitters must reduce their emissions. The problem with that approach, in my view, is that the state is interfering somewhat with the benefits of a cap-and-trade program – allowing emitters to choose the best way to reduce emissions. And when they do so, they actually depress allowance prices by making fewer emissions reductions subject to cap and trade. If allowance prices were to increase, the price increases might eventually get high enough to incentivize emitters to innovate in finding ways to reduce emissions. I am a fan of market-based regulatory mechanisms and I'd like to see the market work in as unfettered a way as possible. California's renewable energy requirements and the Low Carbon Fuel Standard interfere with the market incentives by specifiying how a number of reductions must be made. Putting that criticism aside, however, overall California's program to date has been very effective.

Let me conclude with one final observation about how California's cap-and-trade system fits into regulations that were just issued by the Obama administration to require all existing electric power plants to cut their greenhouse gas emissions. This program, called the Clean Power Plan, is the centerpiece of the U.S. Climate Action Plan submitted in advance of the United Nations Framework Convention on Climate Change Paris talks coming up in December. The Clean Power Plan is very complex and, again, if people are interested I can talk more about it in our question and answer period. But here is a basic description. The President issued regulations under the Clean Air Act, which, again, is the major federal statute that regulates air pollution. He could not get legislation passed by the U.S. Congress so he is using old authority under the Clean Air Act to get power plants to cut their emissions. The Clean Power Plan sets GHG targets for each state to meet and then allows states to figure out how they will meet those targets. These targets are based on what the federal government thinks a state can accomplish by 1) making power plants more efficient; 2) switching from coal to natural gas; and 3) increasing renewable energy. The states don't need to take these steps but can make their own choices about how to meet their targets. One possibility to meet its target is for a state to enter a regional cap-and-trade system or to link with other states that have cap-and-trade programs. The Obama Administration is encouraging states to participate in regional cap-and-trade systems as the most cost-effective way to meet the targets of the Clean Power Plan. Implementing the plan will take several years but we may relatively soon see other states adopting cap-and-trade programs modeled on California's and linking to California's.

In the United States, we view our states as "laboratories of democracy." The idea is that states can experiment with policies and then, if the experiments work, other states or the federal government can follow suit. That's exactly how the California car standards for greenhouse gases work. With the adoption of the Clean Power Plan, we just might see California's leadership on cap-and-trade spread to other states too.

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