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How Carbon Pricing Could Span the United States and North America

By Gwynne Taraska and Howard Marano November 3, 2016

Carbon pricing is flourishing in North America. Canada, for example, has announced a national price to take effect in 2018, while Mexico has announced a 12-month cap-and-trade pilot that will evolve into a national program. These developments join a network of established pricing instruments, including a carbon tax in Mexico and subnational systems in California, the northeast United States, and several Canadian provinces.

Once unlikely, it now seems probable that carbon pricing will proliferate not only across Canada and Mexico but also in the United States. Carbon taxes and cap-and-trade programs have found a diverse set of U.S. proponents, including from the private sector and from across the political spectrum, who view carbon pricing instruments as effective and efficient methods of curbing greenhouse gas emissions and the disruptive effects of climate change.

About carbon pricing

Carbon pollution imposes costs on society through the damage caused by climate change. Systems that price carbon, such as emissions trading systems and carbon taxes, help transfer these costs to polluters. Cap-and-trade systems set an upper limit on emissions and auction or allocate tradable emissions permits. Carbon taxes, by contrast, levy a fee on greenhouse gas emissions or the amount of carbon contained in fossil fuels. That is, cap-and-trade programs set a pollution level and allow the price of carbon to fluctuate, whereas carbon taxes set a price and allow the pollution level to fluctuate.

An expansion of carbon pricing in the United States would move the continent toward full geographic coverage—an important step in correcting the fact that carbon polluters have not borne the associated costs. This issue brief discusses the status and trajectory of North American carbon pricing instruments and the interactions among them.

Carbon pricing developments in Canada and Mexico

New carbon pricing initiatives—which build upon an existing ecosystem of pricing systems—are taking hold across Canada and Mexico.

In October 2016, Prime Minister Justin Trudeau announced a pan-Canadian minimum carbon price of 10 Canadian dollars per ton in 2018, which increases to 50 Canadian dollars per ton in 2022. The provinces and territories can choose to implement either a carbon tax or an emissions trading system to fulfill the federal policy. No revenue goes to the federal government.[1]

Before this announcement, several Canadian provinces were already taking steps to price carbon:

- British Columbia implemented a carbon tax in 2008, currently set at 30 Canadian dollars per ton of greenhouse gas emissions and covering approximately 70 percent of emissions in the province.[2] Revenues are used to reduce other taxes.
- Quebec implemented a cap-and-trade system in 2013, currently covering approximately 85 percent of its emissions and with an auction price of 16.45 Canadian dollars per ton of greenhouse gas emissions.[3] Auction revenues benefit climate initiatives through the Quebec Green Fund.
- Alberta is scheduled to implement a 20 Canadian dollar-per-ton carbon tax in 2017 that increases to 30 Canadian dollars in 2018. Coupled with an emissions performance standard for large industrial greenhouse gas polluters, the carbon price will cover up to 90 percent of emissions in the province.[4] Revenues will support climate projects and rebates for middle- and low-income households.[5]
- Ontario has established a cap-and-trade system to begin in 2017, covering facilities emitting 25,000 tons of greenhouse gas pollution per year.[6]

Together, the four provinces account for approximately 80 percent of Canadian emissions and 85 percent of the Canadian economy.[7]

Mexico, for its part, unveiled a 12-month cap-and-trade pilot program to begin in November 2016 that will precede a national system slated for 2018.[8] MEXICO2, a platform for environmental markets launched by the Mexican stock exchange in 2013, will manage the trade of permits.[9]

Mexico also has a modest national tax on fossil fuels—implemented in 2014—that covers 48 percent of its emissions.[10] Natural gas, however, is exempt. The country set the initial price at $3.5 per ton of carbon dioxide equivalent and anticipates revenue of approximately $1 billion per year.[11]

Also notable is the pledge from Mexico, Canada, and the United States to use similar assessments of the damage that carbon pollution causes to society—the so-called social cost of carbon—when evaluating potential regulations that would affect emissions.[12] The United States has already estimated the social cost of carbon, and the executive branch has considered it in regulatory impact analyses since 2010.[13] Expanded consideration of the social cost of carbon to guide government decision-making could help pave the way toward pricing instruments that reflect the true costs of carbon pollution.

Moving toward carbon pricing across the United States

With emissions trading systems and carbon taxes taking hold across Canada and Mexico, increased participation in carbon pricing in the United States would be a step toward full geographic coverage in North America. Such an outcome is increasingly plausible.

The United States already has two subnational trading systems that cover approximately 30 percent of the U.S. economy: the California cap-and-trade program and the Regional Greenhouse Gas Initiative, or RGGI, which spans nine states in the Northeast and Mid-Atlantic.[14] The California cap covers 85 percent of state emissions, with revenues supporting the Greenhouse Gas Reduction Fund.[15] The permit price was $12.73 per ton of CO2 equivalent in August 2016.[16] The RGGI cap covers 20 percent of the emissions of member states, with revenues returned to the states.[17] The RGGI price was $4.54 per ton of CO2 equivalent in September 2016.[18]

Moreover, interest in carbon pricing is growing in the country, including at the state level, in the private sector, and among conservative policy experts.

State momentum

There has been a wave of interest in pricing policies at the state level. A number of states—including Massachusetts, New York, Rhode Island, and Vermont—have considered carbon tax proposals during their 2016 legislative sessions.[19] In Washington state, a carbon tax ballot initiative is up for consideration in November 2016.[20] The tax would be $15 per ton in 2017, increasing to $25 per ton in 2018 and by 3.5 percent each year thereafter.[21] The state would apply the tax revenue to reduce sales and manufacturing tax rates and to fund a rebate for low-income households.

In addition, dozens of states are considering carbon pricing as a potential tool to comply with the Clean Power Plan, the U.S. Environmental Protection Agency's policy to reduce carbon pollution from the electricity sector.[22] Although the U.S. Supreme Court stayed the Clean Power Plan while it is under judicial review, many states are nonetheless preparing to meet their emission reduction targets.[23] If the plan is upheld, there is strong potential for an expansion of carbon pricing policies across the country.

Private-sector support

Companies are increasingly assuming a leadership role in adopting and promoting a price on carbon. As of 2015, more than 400 companies from a variety of sectors reported pricing carbon internally—including U.S.-based Dow Chemical, Duke Energy, Microsoft, Wells Fargo, and many others. This practice can take several forms. Some companies assess an internal fee or manage an emissions trading system among divisions in order to limit overall carbon pollution.[24] Others assume a price on carbon when making investment or project decisions in order to ensure their continued profitability in an increasingly carbon-constrained world.[25]

Companies are also encouraging governments to adopt pricing systems in order to create more certainty for long-term investments. More than 100 businesses, including many with operations in the United States, have now joined the Carbon Pricing Leadership Coalition, a partnership committed to the expansion of carbon taxes and emissions trading programs.[26] Dozens of other U.S.-based companies—including Coca-Cola, DuPont, and Johnson Controls—are signatories to the Caring for Climate initiative, which supports external prices on carbon.[27]

Institutional investors in the United States—such as banks, insurance companies, pension funds, hedge funds, and mutual funds—are promoting carbon pricing as well.[28] Motivated by the risks that climate change poses to their investments, more than 400 institutional investors representing trillions of dollars in assets have recommended that governments adopt "stable, reliable and economically meaningful" pricing policies.[29]

Compatibility with conservative values

Carbon pricing has long found support among progressives as a tool to mitigate greenhouse gas pollution—the 2009 Waxman-Markey cap-and-trade bill is a well-known case in point—but it is increasingly finding support across the political spectrum.[30] Several think tanks, including free-market-oriented organizations such as the Niskanen Center and R Street Institute, have determined that a carbon tax would be consistent with free-market principles and an effective policy that elected Republican officials could adopt.[31]

Individual conservative policy experts have also promoted a price on carbon. Prominent examples include George Shultz, the former secretary of state under President Ronald Reagan; former Rep. Bob Inglis (R-SC); and N. Gregory Mankiw, former chair of the Council of Economic Advisers under President George W. Bush and an advisor to the Romney presidential campaign.[32]

Concern about the economically and socially destructive effects of climate change—and prescience that climate denial is politically unviable over the long term—motivate the position among conservatives that there is a legitimate role for government to correct for the externality of carbon pollution.[33] Market-based policies, such as carbon taxes and emissions trading systems, are viewed as economically efficient and effective corrective measures.[34]

Linkages and interactions

As carbon pricing instruments emerge across the continent, so will relationships among them.

Some interconnections among North American pricing systems already exist. Foremost among these is the 2014 linkage of the California and Quebec programs.[35] There are also a number of smaller-scale interconnections, including the participation of several Canadian provinces as observers to RGGI and the memorandum of understanding between California and the Mexican state of Chiapas to collaborate on forestry offsets.[36]

There is political appetite for further international coordination. In June 2016, for example, President Barack Obama, Prime Minister Trudeau, and Mexican President Enrique Peña Nieto pledged to collaborate on carbon markets in the context of the Paris Agreement as part of the climate partnership that emerged from the North American Leaders' Summit.[37] Cooperation on carbon pricing could help Mexico, Canada, and the United States meet their national and collective climate targets, such as the goal of reaching 50 percent clean energy generation continentwide by 2025.[38]

In addition, it is possible that a cap-and-trade program that spans California, Quebec, Ontario, and Mexico will develop over the coming years.[39] Such integration could have benefits that include increased price stability and cost effectiveness. Mexico, which already has a climate pact with California that includes cooperation on carbon markets, signed an agreement with Ontario and Quebec in August 2016 to share expertise and support carbon pricing throughout the continent.[40] Ontario, for its part, pledged in 2015 to join the California-Quebec system.[41]

But emissions trading systems are not the only pricing instruments in North America. This raises the question of how the variety of carbon taxes and trading systems could be integrated.

The perennial debate about whether a carbon tax or an emissions trading system is the superior pricing instrument gives the impression that the options are mutually exclusive. The two systems, however, can be complementary, as they are when a carbon tax and an emissions trading system target different sectors. Sweden, for example, has a national carbon tax and also participates in the European Union Emissions Trading System.

The tax covers heating and transportation fuels, while fuels used in the production of electricity are exempt.[42] Since the launch of the European system in 2005, however, the tax has become increasingly targeted to fossil fuel uses that fall outside the scope of the trading system.[43]

It is also possible to design a pricing instrument that is a hybrid of a cap-and-trade program and a carbon tax, such as a cap-and-trade program that guards against price volatility and therefore reduces uncertainty in long-term investment decisions.[44] For example, a cap-and-trade program could set a price ceiling—also known as a safety valve—by allowing polluters to pay a penalty instead of participating in the program or by guaranteeing that the government will sell permits at an upper price limit.[45]

A cap-and-trade program could alternatively—or additionally—set a price floor by establishing a reserve price or by guaranteeing that the government will purchase permits at a lower price limit. Both RGGI and the California program have reserve prices—$2.10 and $12.73, respectively. A cap-and-trade program could also set a price floor by applying a tax on greenhouse gas pollution on top of requiring permits to cover greenhouse gas pollution under the trading program.[46] In this case, it should be noted that the tax would function as a lower price limit rather than as a driver of additional emissions reductions, given that the cap would govern the pollution level.

Given the growing bipartisan interest in carbon taxes in the United States, the topic of how a national fixed carbon price would interact with pre-existing regional cap-and-trade programs calls for further study. There are any number of ways to integrate the systems. In the Canadian case, which sets a national price of at least 10 Canadian dollars per ton in 2018 that increases to 50 dollars per ton in 2022, provinces that choose to comply with the federal policy through a cap-and-trade program must reduce emissions to a level that meets or exceeds the emissions reductions that would be achieved through the fixed-price method. All revenue stays with the provinces.

The bill that Rhode Island considered in 2016 suggests another model of integration. It envisioned the state participating in two pricing systems—a statewide tax and RGGI.[47] In the bill, the state would implement an economywide tax on fossil fuels of $15 per ton of carbon dioxide equivalent. Large emitters in the power sector, which already participate in RGGI, would pay the carbon tax minus the RGGI price.

A Rhode Island-like model of integrating a national tax and a pre-existing regional cap-and-trade program might direct polluters to comply with the regional program and to additionally pay the tax minus the cap-and-trade price if and only if the former outstrips the latter.[48] It should be noted that the national tax would drive down demand for permits—and therefore permit prices—when it is higher than the cap-and-trade price.[49] In fact, the tax would eliminate demand if the difference between the tax and the cap-and-trade price is higher than the cap-and-trade price itself. Regional programs could avert this situation—and the subsequent revenue loss—through price floors set by reserve prices.

Conclusion

Carbon pricing is not a panacea for climate change. The majority of prices set by North American taxes and trading systems are well below the actual social cost of carbon pollution, which is conservatively estimated at $36 per ton for 2015.[50] A continentwide carbon price would be a hollow victory if it remained too low to motivate emissions reductions or had insufficient emissions coverage.

Full geographic coverage in North America, however, would be a significant step toward the ultimate goal of ensuring that polluters bear the cost of carbon pollution. And given the leadership role on climate action that North American countries have adopted on the international stage, it would also provide momentum to the growing movement to price carbon globally.[51]

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