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The University of Calgary is home to scholars in 16 faculties (offering more than 80 academic programs) and 36 Research Institutes and Centres including The School of Policy Studies. Supported by more than 100 academics and researchers, the work of The School of Policy Studies and its students contributes to a more meaningful and informed public debate on fiscal, social, energy, environmental and international issues to improve Canada's and Alberta's economic and social performance.

The Case for International Emissions Trade

Jared C. Carbone

There is growing recognition in North America that action to combat the threat of global warming can no longer be postponed. With the Canadian and US economies so intimately linked by trade and facing sizable new economic challenges in the wake of the financial crisis, developing a coordinated response to climate policy is more important than ever. Both President Obama and Prime Minister Harper have expressed a willingness to work together on this issue. What form this effort takes and whether or not it succeeds remains to be seen.

Serious consideration is being given to the idea of establishing some form of cap-and-trade system for greenhouse gas (GHG) emissions. This is good news — experience shows that such a system could lower substantially the cost of achieving environmental goals. Estimates suggest that cap-and-trade cut the cost of controlling US sulphur dioxide emissions roughly in half relative to traditional “command-and-control” regulations.

While Canada and the United States have a long history of successful cooperation, the history of international negotiations on climate change policy is littered with failed attempts. One main stumbling block has been the difficulty of establishing a global consensus on a set of emissions reduction targets, which was the guiding principle behind the Kyoto Protocol. In the absence of such a consensus, countries have failed to live up to their commitments or refused to set meaningful targets in the first place.

That consensus has proven elusive is not particularly surprising. At least in the near future, reducing emissions will come at the cost of reduced economic activity, principally in the form of reduced competitiveness in

international markets. A country that unilaterally adopts a relatively aggressive emissions reduction target at home risks sending business to competitors abroad. From this perspective, each country has a strong incentive to be the one that retains the competitive advantage after emission reductions take place. Given this underlying dynamic, negotiation is daunting even when just two countries are involved, never mind when hundreds of parties are at the table.

To succeed, Canada and the United States need to avoid the pitfalls that have plagued the Kyoto process. Can the consensus problem be structured so as to make getting to “yes” easier? Recent research suggests that one possible way forward is to establish international trade in emissions permits, which could produce global emissions reductions even in the absence of a global consensus on a set of emissions targets.¹ Trade in permits would reduce the cost of achieving emissions targets and help to circumvent the competitiveness issue by creating a new market — the market for permits — in which countries could compete. Furthermore, partnerships that involve only a few key members could result in a substantial reduction in global emissions. For Canada and the United States, two of the closest trading partners in the world, establishing trade in emissions permits would represent only a relatively small change in their existing relations and deliver potentially large economic and environmental gains to both.

How would such a scheme work? Each country’s federal government could establish its own cap-and-trade system. The caps, which would establish the total emissions reduction for which each country would be responsible, would be set according to each country’s own best interests. The trade element of the agreement would mirror the permit exchanges that take place between domestic polluters in a domestic cap-and-trade system — in effect, the domestic system would be open to polluters on both sides of the border. In principle, trade in permits could be treated the same as trade in goods covered under the North American Free Trade Agreement.

Why would such a system work? First, trade in permits is desirable from a cost perspective. Just as domestic trade in permits under existing cap-and-trade systems ensures that polluters undertake emissions reductions at the lowest cost, international trade in permits would ensure that Canada and the United States meet their respective targets using the lowest-cost options available in North America. To the extent that international trade in permits lowered cost, it would be possible to set more ambitious reduction targets. Since the effects of GHG emissions are independent of where they occur, it makes no difference whether reductions take place in Canada or in the United States as long as the total level of emissions is reduced.

Trade in permits is also desirable from the perspective of inducing broader support for reducing GHG emissions because, under this approach, permits would become a valuable commodity, and polluters would be motivated to reduce emissions in order to improve their bottom line. Moreover, trade in permits would help to mitigate the competitiveness concerns that accompany the choice of steep reduction targets by substituting for trade in other goods.

Finally, the gains from trade in permits, to a large extent, would be independent of the ability of countries to negotiate abatement targets. Countries with a strong interest in curbing climate change have a natural incentive to reduce emissions, but trade in permits would also give countries that lack interest in climate change policy a reason to cut back. Permit-exporting countries would have to keep their emissions targets low or risk flooding the market with permits, which would drive down the price and decrease the value of their permit exports.

¹ Jared C. Carbone, Carsten Helm, and Thomas F. Rutherford, “The Case for International Emission Trade in the Absence of Cooperative Climate Policy,” *Journal of Environmental Economics and Management* (forthcoming).

Along the same lines, many worry that Canada could not or would not choose an aggressive enough emissions reduction target because of Alberta's valuable and emissions-intensive oil sands industry. In fact, limiting emissions could work in the industry's favour by tending to raise the price of petroleum products exported to the United States, resulting in higher revenues. For its part, the United States would have an incentive to keep emissions down in order to depress the price of imported energy.

All of these mechanisms would work in favour of stronger emissions reductions and none would make one partner beholden to the objectives of the other. Taken in this light, devoting so much diplomatic energy to negotiating target levels seems misplaced; it is in the interest of everyone's bottom line to start trading now — the environmental gains would follow.

This last feature of international trade in permits points to benefits that extend beyond a Canada-United States partnership: an even larger market for permit trade exists between developed and developing countries because of the many opportunities for low-cost reductions in emissions in the developing world.² Yet another benefit of trade in permits between Canada and the United States is the model it would serve for future partnerships with developing countries such as China and India. Permit trade with such countries is not only desirable from the perspective of reducing costs; it would also produce meaningful reductions in the global level of GHGs. One main objection to the structure of the Kyoto Protocol was that it lacked binding emissions targets for rapidly developing countries. The fear was (and remains) that, if nothing held them in check, the growth in emissions from such countries would offset any climate benefits from costly efforts to control emissions in the developed world.

It would be in the self-interest of countries such as China and India to participate in international trade in permits even if improving the environment is not currently a national priority. Chinese and Indian companies that held permits would stand to make a considerable amount of money by selling permit rights to companies in the developed world and by finding ways to reduce their own emissions. As well, the Chinese and Indian governments could further the interests of domestic permit holders by setting aggressive reduction targets to maintain high prices for their exported permits.

International trade in permits between large developed and developing world partners could roughly double the size of emissions reductions these countries could afford to make. Moreover, such partnerships would encourage them to engage in permit trade not from the point of view of sacrifice for the greater good but because it would serve their national interests, resulting in partnerships that represent credible commitments, rather than goodwill gestures.

The devil is, as always, in the details. Experience shows that specific design features can make a big difference in how cap-and-trade systems perform, with legitimate concerns regarding issues such as industry coverage and exemptions, whether initial allocations of permits should be grandfathered or auctioned off (or both), and how baseline emissions trajectories should be established for the treatment of carbon offsets.

The European Union Emission Trading System (EU ETS), established in 2005, is the world's first experience with large-scale trade in GHG emissions permits, and offers important lessons on how an international system of trade in permits might work. Among its more remarkable features is its embrace of a decentralized structure in which EU member states have a large degree of autonomy in their choice of reduction targets. It is still too early to tell how EU ETS will perform over the longer term, but one can draw a number of important conclusions

² Abatement costs are thought to be lower in developing countries for a number of reasons, a major one being that these countries have old, inefficient power plants that could be upgraded to newer facilities with substantially smaller carbon footprints. Far fewer of these low-hanging fruit exist in developed countries, where upgrading has already taken place.

from its initial period of operation.

The program's main source of criticism so far draws on the significant price volatility that the market experienced early on and the poor estimates of baseline emissions levels, which resulted in an overallocation of permits. Both problems, however, proved to be confined to the program's "teething phase" rather than representative of systemic issues. More notable, given the short time frame in which the trial period was organized, is the fact that EU ETS has succeeded in establishing a credible market, with large volumes of trade and an informative price signal. Furthermore, it achieved this important objective without endless negotiations over emissions targets. The EU Commission had the final say on each country's targets but, for the most part, the targets member countries submitted were accepted with minor revisions or no revisions at all.³

Remarks by both President Obama and Prime Minister Harper suggest that a cap-and-trade approach to controlling GHG emissions is now on the negotiating table. This is good news. The next step is to open discussions to implement trade in emissions permits between Canada and the United States and to explore similar relationships across the globe.

³ See A. Denny Ellerman and Paul L. Joskow, "The European Union's Emissions Trading System in Perspective" (Arlington, VA: Pew Center on Global Climate Change, 2008).

About the Author

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