

Consider a revenue neutral tax on carbon emissions

Many stakeholders agree that reducing Green House Gases (GHG) is an important priority and that carbon emissions are a leading contributor to GHG emissions. But it is clear that government policies to date have done little to achieve reductions and to move toward achieving previous targets for reducing emissions and the Kyoto target for Canada will not be achieved (*Exhibit A*).

Over the past two decades, public policy has focused on providing information and subsidies to effect reductions in emissions. Economic theory and our experience here in Canada indicate that such approaches will not work. Unless producers and consumers of carbon-based fuels face the direct economic effects of their use of these fuels, their behaviour will not change.^A

Some of the subsidies offered by the Federal Government are nowhere near being cost-effective solutions to reducing greenhouse gases. The most egregious example is probably the Public Transit Tax Credit established by the Federal Government in its 2006 budget. Public transit riders receive a tax credit worth about \$150 annually. The bulk of recipients of this tax credit are already transit riders, and it is unlikely to attract significantly many car drivers to public transit. Economists Marc Jaccard and Nic Rivers estimate that the annual cost in lost tax revenue exceeds \$100 million and that the net reductions in GHG emissions are 145,000 tonnes annually. Thus they conclude that the reduction in GHG emissions, through the tax credit, costs more than \$1,000 per megatonne.^B

Their analysis of the Federal Government's strategy for reducing GHGs indicates that it will not likely achieve the reduction targets it has set out. As the National Round Table on the Environment and the Economy has concluded from its research, "a strong economy-wide price signal is required – regardless of the pathway – to get at the substantial Green House Gas (GHG) Emissions contemplated for 2050."^C But there is not a solid consensus on the best way to achieve this. The two leading alternatives for a market-based mechanism are a cap-and-trade system and a carbon tax.

A cap-and-trade system is a conceptually sound approach to reducing GHG emissions

This system begins with the establishment of the emission levels we desire. For example, Canada's Kyoto commitment is to reach an annual emission level of 558 megatonnes (Mt) by 2012. Starting with the 2006 level of 727 Mt, the Government of Canada could set a schedule of annual permissible emissions to achieve this result. It would then implement a system in which existing emitters are issued permits for specific amounts of emissions. These permits could then be traded throughout the economy. Those who were unable to reduce their emissions could purchase permits from others. This would provide economic incentives to polluters to reduce this activity; those emitters who could not or would not meet their permit level would pay higher costs.

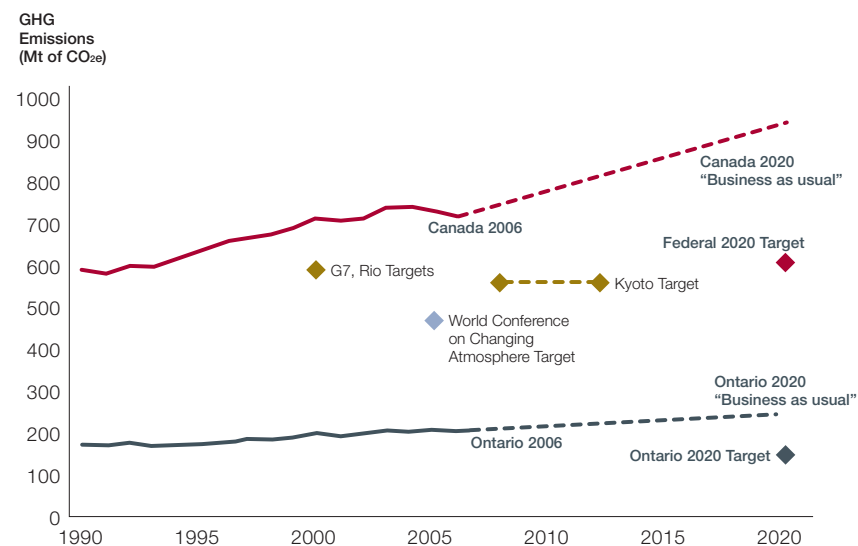
Proponents of this system point to the success of a similar approach in the United States to reducing sulphur emissions that were causing acid rain in the 1970s. However, there are some

significant differences. The sulphur permit program focused on a single sector – coal-fired utilities and plants – which originally numbered only 110, growing eventually to 445. A carbon-based cap-and-trade system would need to cover many more establishments – and potentially all households – to be effective. Sulphur producers had many ways to reduce their emissions, such as installing scrubbers, using low-sulphur coal, and switching to natural gas. Carbon emitters face fewer substitution options.

An important feature of a cap-and-trade system is that it allows society to set target quantities of emissions, which is, after all, the important consideration in this issue. However, permit prices per tonne cannot be determined in advance and can vary considerably over time. The sulphur cap-and-trade experience showed great price volatility, ranging from US\$66 per ton in 1997 to \$860 in 2006. Annual price changes were as high as 43 percent.^D

Another challenge to cap-and-trade is the practical problem of establishing initial allowances and tracking changes

Exhibit A Meeting Green House Gas emission targets has been a challenge



Source: Institute of Competitiveness & Prosperity analysis based on data from Government of Canada (2008), "Turning the Corner: Detailed Emissions and Economic Modelling," Ottawa: Environment Canada, available online: http://www.ec.gc.ca/doc/virage-corner/2008-03/571/tm_toc_eng.htm; Government of Ontario (2007), "Ontario Greenhouse Gas Emissions Targets: A Technical Brief," Toronto: Ministry of Environment, available online: <http://www.ene.gov.on.ca/publications/6793e.pdf>; Mark Jaccard and Nic Rivers (2007), "Estimating the Effect of the Canadian Government's 2006-2007 Greenhouse Gas Policies," C.D. Howe Institute.

^A Mark Jaccard and Nic Rivers, "Estimating the Effect of the Canadian Government's 2006-2007 Greenhouse Gas Policies," C.D. Howe Institute Working Paper, June 2007.

^B *Ibid.*, pp 11-12.

^C National Round Table on the Environment and the Economy, *Getting to 2050: Canada Transition to a Low-Emission Future*, 2007, p.16.

^D Greene, Hayward, and Hassett, "Climate change: Caps vs Taxes," p.2.

over time. Each industry sector will have arguments for why they require special treatment. The forest products industry will be able to argue that it should receive credits for the carbon reducing benefit of the trees it plants. Manufacturers will want credits for their product innovations that allow reduce carbon emissions.^E There will be arguments based on regional considerations as well.

Finally, a cap-and-trade system would require a totally new system for allocating permits and for setting trading prices. This could be a very costly venture, especially if public sentiment were to turn against a cap-and-trade system, and it needed to be dismantled.

The current approach by the Federal Government is to apply a cap-and-trade system among large emitters.^F Ontario has signed an agreement in principle with Quebec to pursue a cap-and-trade system, although few details have been announced.

A cap-and-trade system can be part of the solution to GHGs. It is a market-based approach that will drive behaviours to reduce GHG emissions. And through auctioning of permits, it can raise revenue for governments, which can offset other taxes.^G But much more work is required to develop a practical system that is not overly complex and ripe for granting special favours to specific industries and regions.

A carbon tax is a simpler approach to reducing GHG emissions

Most political observers believe that the latest federal election has ended the possibility of a system of taxing carbon emissions in Canada. That is a shame, because such a system has the potential of reducing carbon emissions and improving the efficiency of our tax system. Many observers would consider this a double dividend.^H

A carbon tax is simple

A tax on carbon emissions could be levied on all fuels, including oil, natural gas, and coal depending on how much carbon each fuel emits in use. The tax would be passed on to fuel consumers like other operating costs.

A carbon tax eliminates the need to determine how the initial allocation of permits is determined or to set myriad trading and accounting rules. Unlike the cap-and-trade approach, a carbon tax can be easily reversed if circumstances change.

Most important, a carbon tax delivers exactly the right incentives to reduce GHG emissions. Users of GHGs will pay for every unit they emit to the atmosphere, whether they are automobile drivers, residents heating their houses, or factories using energy.^I All will have incentives to reduce their carbon usage. Scientists, engineers, and entrepreneurs will look for new ways to develop alternatives that reduce carbon usage.

The carbon tax has two disadvantages. First, while it creates certainty on the price of emissions, it does not allow us to know the level of GHGs we will achieve at various tax rates. Governments may need to vary the tax rate, depending on its real-world impact on emissions. Second, it could be very expensive to consumers. In the Green Shift program, the Liberal Party proposed a tax rate of \$40/tonne phased in over four years. This reflected the value of the current federal gasoline tax; so the Green Shift would have had no impact on gasoline prices. Consistent with calculations done by Jack Mintz and Nancy Olewiler for the think tank, Sustainable Prosperity,^J the new revenue raised by the carbon tax would reach about \$15 billion annually. Further increases beyond Year 4 would reflect the true social costs of pollution.

By 2045, according to the National Round Table on the Environment and the Economy, rates per tonne would need to be as high as \$160 to \$300, depending on how quickly and how deeply we want to cut emissions.^K Closer

in, by 2020 if we want to achieve Kyoto emissions of 558 MT, its calculations indicate that we will need a \$150/tonne carbon tax. This equates roughly to 36 cents/litre of gasoline, or 26 cents more than the current excise tax.

A carbon tax has potential to increase tax system efficiency

At \$150/tonne, the carbon tax would generate \$83 billion in new revenue to governments, about 17 percent of current federal and provincial revenues.^L This is more than Canadian governments raise through corporate income taxes or payroll taxes.

In Ontario, target reductions are not as severe as national reductions. Consequently, a provincial carbon tax would not be as high as what has been considered at the federal level. More Ontario-specific economic and financial analysis is required.

A carbon tax can and should be revenue neutral. Because of the government revenue it raises, a carbon tax provides the opportunity to lower taxes on business investment and on personal income. Given the distorting impact of these existing taxes, a carbon tax may actually improve the efficiency of our tax system, the second part of the “double dividend.” But this has not yet been shown to be the case. Work done by M.K. Jarrard and Associates and EnviroEconomics for the David Suzuki Foundation indicates that implementing a carbon tax of \$150/tonne nationally and reducing other taxes could actually reduce GDP by 0.8 to 1.2 percent.^M

Clearly, there is much more analysis required to determine the best market-based solutions to reducing GHGs. But the carbon tax and a cap-and-trade system, show the most promise for achieving reductions effectively and efficiently. Despite the results of the latest federal election, we urge policy makers not to abandon initiatives to tax carbon emissions.

^E *Ibid.*, p.3.

^F Government of Canada, “Turning the Corner: Regulatory Framework for Industrial Greenhouse Gas Emissions.” Ottawa: Environment Canada, available online: http://www.ec.gc.ca/doc/virage-corner/2008-03/pdf/COM-541_Framework.pdf

^G See for example Pew Center on Global Climate Change, “Cap and Trade,” Climate Change 101: Understanding and Responding to Global Climate Change, Arlington, Va., available online: www.pewclimate.org

^H Kenneth P. Greene, Steven F. Hayward, and Kevin A. Hassett, “Climate Change: Caps vs. Taxes,” Environmental Policy Outlook, No. 2, June 2007, American Enterprise Institute for Public Policy Research, p.10.

^I Although the Quebec Government is insisting that its carbon royalty on fuel would not be passed on to consumers.

^J Jack Mintz and Nancy Olewiler, *Bettering the Environment and the Economy: Restructuring the Federal Fuel Excise Tax*, Sustainable Prosperity, 2008.

^K National Round Table on the Environment and the Economy, *Getting to 2050*, p. 17.

^L M. K. Jaccard and Associates and EnviroEconomics, *Pricing Carbon: Saving Green*, David Suzuki Foundation, 2008, pp. 28

^M *Ibid.*, p.23. This range excludes an estimate of 2.0 percent in an extreme case.