Updated KAIROS Fact sheet on

Putting a Price on Carbon

(revised June 29, 2015)

Why Put a Price on Carbon Emissions?

The purpose of putting a price on carbon emissions is to discourage the use of fossil fuels – coal, oil and natural gas – whose combustion causes climate change. Pricing carbon makes fossil fuels more expensive and encourages energy conservation, investment in low-carbon technologies and the use of renewable forms of energy that do not emit greenhouse gases (GHGs).

How Does Carbon Pricing Work?

There are two principal ways a price can be put on carbon emissions. One option involves putting a tax or fee on fossil fuel producers or users. The other option is a cap-and-trade system where governments set limits or caps on the amount of permissible emissions. Those who emit less than their allotted cap can sell credits on carbon markets to others who exceed their allotted caps. The price for any excess emissions is set by supply and demand.

How High Do Carbon Prices have to be to Prevent Dangerous Climate Change?

An effective carbon pricing plan requires prices sufficiently high to change consumer and investment decisions. In 2009 M.K. Jaccard and Associates investigated different scenarios for pricing carbon in Canada. To meet a target of reducing GHG emissions to 25% below their 1990 levels by 2020, consistent with the international goal of keeping temperature increases below two degrees Celsius above pre-industrial levels, a price that started at $50 per tonne of carbon dioxide equivalent in 2010 and rose over ten years to $200 per tonne would be needed.[1]

Similarly, a report by the Intergovernmental Panel on Climate Change estimates that a global carbon price increasing to around US$200 per tonne by mid-century would be needed to have a high likelihood of avoiding dangerous climate change.[2]

How Have Carbon Taxes Worked in Canada and What are their Limitations?

British Columbia's carbon tax started at $10 per tonne of carbon dioxide in 2008 and rose to $30 a tonne by 2012. Since its implementation per capita GHG emissions have fallen by 9% and fossil fuel use has declined by 16% in B.C. compared to a 3% increase in the rest of Canada.[3] While it applies broadly, B.C.'s tax does not apply to the shale gas and liquefied natural gas (LNG) sectors whose emissions could imperil the province's legislated targets for GHG reduction.[4]

How Have Cap-and-Trade Systems Worked and What are their Limitations?

The experience of the European Union's Emissions Trading System (ETS), the world's largest cap-and-trade system, illustrates many of the problems associated with carbon trading. Carbon prices fell to very low levels as too many permits were allocated. Some utilities that received free permits reaped windfall profits worth billions of dollars. Emission reductions have been modest at only 2% to 4% of total capped emissions.[5] Between one-third and two-thirds of credits brought into the ETS through the purchase of offsets from abroad did not represent real emission reductions. Many offset projects in developing countries have been tainted by fraud and human rights abuses, as for example when peasant farmers were pushed off their lands after they were taken over for carbon sequestration projects.[6]

California's cap-and-trade system, which Quebec joined in 2014 and Ontario intends to join shortly, has also been characterized by low prices that reached just US$13 per tonne in January 2015. The price is expected to rise slowly as industrial emitters' allowances are cut by up to 2% a year. While it is too early to assess the program's impact on climate change, it is expected to reduce emissions by around 2% a year.[7]

What is the Alberta Model and What are its Limitations?
Alberta's Specified Gas Emitters Regulation requires large industrial facilities to reduce the intensity of their emissions per unit of output. When originally established by the Progressive Conservative government, industrial emitters paid a $15 per tonne levy on that portion of their emissions that exceeds intensity reduction targets. According to the Pembina Institute, when total emissions are taken into account a $15 fee actually costs companies on average only $1.80 per tonne of all their emissions, not enough to change corporate behaviour significantly.[8]

In June of 2015 the newly elected New Democratic Party government announced that, as an interim measure, it will raise the fee to $20 per tonne of emissions over a facility's reduction target in 2016 and to $30 per tonne in 2017. Whereas under the old rules companies were required to cut their emissions by 12% from a baseline established for each producer, under the new rules producers will be required to cut emission intensity by 15% in 2016 and 20% in 2017. These higher fees and stricter intensity reduction targets are expected to raise the actual cost per tonne of total emissions to just $6 per tonne by 2017. By that time the province intends to have established a new GHG reduction regime.[9]

How Can Revenues be Used?
The B.C. tax is "revenue neutral" as all the money raised is offset by cuts to business and personal income taxes and used to provide transfers to low-income households who would otherwise be disadvantaged. Critics agree the tax should be increased each year. Some propose returning 100% of revenues to households to help citizens manage higher costs and build political support.[10] Others suggest investing some revenues in district energy systems, public transit, inter-city rail lines, building retrofits and renewable energy supply.[11]

The revenues from Alberta's system are invested in some efficiency and renewable energy demonstration projects but also in lower-emission fossil fuel technologies and carbon capture and storage projects that may prolong the use of fossil fuels.[12]

Does Carbon Pricing Kill Jobs?
The allegation that carbon taxes are "job killers" is not supported by the evidence. The UK's Climate Change Levy, a tax on industrial fuel use, has reduced the energy intensity of manufacturing by 18% with no measurable effect on employment. Similarly, "overall employment in [British Columbia] increased as a result of the carbon tax."[13]

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[1] M.K. Jaccard and Associates. *Final Report: Exploration of two Canadian greenhouse gas emission targets*. Vancouver: M.K. Jaccard and Associates. October, 2009. Page 2.
[2] Cited in Nicholas Rivers. *The Case for a Carbon Tax in Canada*. Canada 2000. November 2014. Page 19.
[3] Ross Beaty, Richard Lipsey and Stewart Elgie. "The shocking truth about B.C.'s carbon tax." *The Globe and Mail*. July 9, 2014. A9.
[4] A document prepared for B.C.'s Environment Minister warns that the pursuit of a liquefied natural gas (LNG) industry could double the province's greenhouse gas emissions. Cited in Justine Hunter. "LNG threatens greenhouse-gas goals." *The Globe and Mail*. November 13, 2013. A3.
[5] Tim Lang et al. *Assessing the effectiveness of the EU Emissions Trading System*. Centre for Climate Change Economics and Policy. Working Paper No. 126. January 2013. Page 25.
[6] John Dillon. "People's Climate March Outshines UN Summit" *KAIROS Briefing Paper No. 40*. October 2014. Page 4.
[7] Alejandro Lazo. "How Cap-and-Trade Is Working in California." *Wall Street Journal*. September 28, 2014.
[8] Chris Severson-Baker. *Four ways Alberta could turn its climate record around*. Pembina Institute. December 12, 2014.
[9] Justin Giovannetti. "Alberta to double carbon tax by 2017, strengthen emission reduction targets." *The Globe and Mail*, June 25, 2015.
[10] Citizens Climate Lobby. Carbon Fee and Dividend. Accessed Feb. 18, 2015 at http://citizensclimatelobby.ca/content/laser-talk-2-carbon-fee-and-dividend
[11] Marc Lee. *Use the Carbon Tax for Green Public Infrastructure Projects*. Vancouver: Canadian Centre for Policy Alternatives – BC Office. 2014.
[12] Alberta Climate Change and Emissions Management Corporation. Data for March 2015 accessed June 29, 2015 at http://ccemc.ca/projects/
[13] Nicholas Rivers. op cit. Page 17.