



Current Analysis

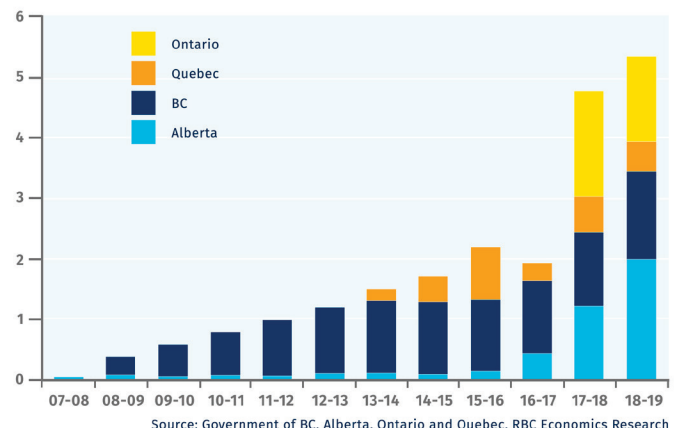
RBC ECONOMICS RESEARCH

Carbon levies poised to become big money for provinces

This fiscal year marks a major inflection point for carbon levies in Canada. Combined revenues from those levies are set to more than double to \$4.8 billion in 2017-18, as the number of provinces putting a price on carbon rises to four. Ontario is on track to earn \$1.8 billion after starting to issue emission allowances this fiscal year and Alberta expects \$1.0 billion from the broadly based carbon tax it introduced in January (in addition to \$196 million in compliance payments from major emitters). Meanwhile, Quebec expects to collect \$545 million from its emission allowances, and British Columbia \$1.2 billion from its carbon tax.

Carbon-related revenues will increase rapidly over the coming years. Provinces that don't currently put a price on carbon emissions will begin to do so in 2018 under the pan-Canadian framework on clean growth and climate change. This broadening of carbon levy coverage across Canada will bump revenues up significantly next year. By how much? It's hard to know exactly because most of these provinces haven't finalized—or in the case of Saskatchewan, even agreed to develop—their carbon pricing plans. But a tax of \$10 per tonne (the minimum set for 2018 under the pan-Canadian framework) applied to 70% of 2015 emissions could generate a total of \$1 billion from the provinces not yet pricing carbon emissions. That would be on top of the \$5.3 billion generated in BC, Alberta, Ontario and Quebec in 2018-19 (a \$550-million increase from 2017-18).

Carbon Levy revenues
\$ Billion



Over time, billions more are bound to be collected. The pan-Canadian framework calls for the minimum carbon price to rise five-fold between 2018 and 2022, from \$10 per tonne per year to \$50. We don't have all the pieces yet to put reliable figures on the revenues this sharp increase will generate—in part because it will depend on emission-reduction progress—but odds are we're talking about multiples of the current intakes. For emission-intensive provinces such as Alberta and Saskatchewan, carbon levies potentially could become a major source of revenues by 2022. It wouldn't be far fetched to think that, by then, carbon levies might rival oil and gas royalties as a source of revenues in these two provinces.

There's no opting out of carbon pricing. Requiring every province to put a price on carbon emissions starting next year is a key element of the federal government's strategy to cut greenhouse gas emissions by 30% by 2030 (Canada's Paris Agreement commitment). The point is also to ensure a level playing field for businesses across Canada. All provinces signed onto the pan-Canadian framework in December 2016 except Saskatchewan and Manitoba (although Manitoba is considering its own carbon pricing plan). The federal government will 'backstop' non-complying provinces by imposing a carbon tax on their behalf (and allocating the proceeds to them). To date, four provinces representing more than 85% of Canada's population and GDP—British Columbia, Alberta, Ontario and Quebec—are complying with the initial phase of the framework.

Carbon emission revenues provide governments with a further lever to influence change. While the main point of carbon pricing is to alter behaviour and decisions to discourage carbon-intensive economic activities, carbon levies can be and are used to fund programs and initiatives to reduce carbon emissions. These include such things as monetary incentives to adopt and develop low-carbon alternatives, energy efficiency programs and spending on public transit infrastructure. Recycling carbon levies is a common practice already. Of the four provinces collecting carbon levies this year, three will spend, in fact, more on green investments than they will get in carbon emission revenues. British Columbia is the only province investing less on green initiatives than it collects from its carbon tax. That's because up until the provincial budget 2017 update in September, British Columbia's approach was about making its carbon levy 'tax neutral' to households and businesses. This meant that carbon tax increases had to be matched by equal-sized tax cuts elsewhere. British Columbia's new NDP government ended that policy and signaled that it will more explicitly 'recycle' carbon tax revenues into green investment going forward.

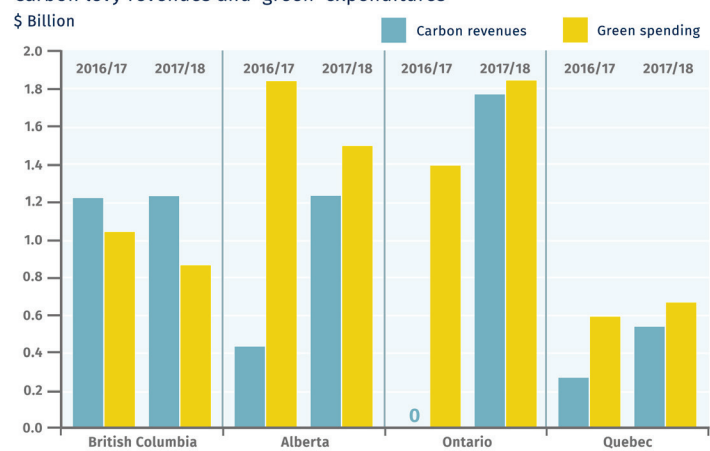
Provinces differ in what they do with carbon tax proceeds.

In **Alberta**, the provincial government's Climate Leadership Plan will invest \$5.4 billion over five years on a mix of tax rebates to lower and middle-income families and increased green spending. The five-year provincial plan includes \$1.5 billion for carbon tax rebates, \$1.3 billion for green infrastructure like public transit, \$998 million for large scale renewable energy projects and \$566 million for energy efficiency programs. In **Ontario**, the provincial government will allocate the expected \$1.8 billion cap-and-trade revenues this year to seven priority spending areas. The bulk of the money will support the adoption of low-carbon technologies by households and businesses (\$800 million), the transition toward low-carbon modes of transportation such as regional express rail (\$420 million) and implementing green investment fund initiatives such as energy saving programs (\$410 million). Other priority areas include promoting electric vehicles (\$90 million), and engaging regions and municipalities to implement climate change plans (\$55 million). **Quebec's** approach involves more steps. Money collected from carbon emission allowances is deposited into the province's Green Fund before being deployed to fight climate change as directed by the province's 2013-2020 Climate Change Action Plan (CCAP). The CCAP has a total budget of \$3.7 billion over the 2013-2020 period to invest in 150 'actions' to reduce GHG emissions and adapt to climate change. \$1.5 billion of that budget focuses on public transit, \$240 million on other forms of transportation and \$377 million on improving energy efficiency of businesses and buildings. The rest is sprinkled across a host of other 'priorities', including fostering technological development, supporting municipal initiatives, building resiliency against the effects of climate change and raising public awareness. The Green Fund is allocating \$664 million this fiscal year to CCAP actions.

Rapid growth in carbon emission revenues will fuel a surge in 'green' expenditures across Canada in the coming years.

Clearly, all provinces are eager to put this new source of revenue to work. Each has an ambitious green agenda to fulfill, and therefore a pressing need to spend every carbon dollar collected. There's more than political will at play here. Legislation binds—or soon will bind—provinces to put carbon levies to work toward advancing green initiatives. Carbon levies aren't like other taxes inasmuch as the revenues they generate, by law, have 'green strings' attached. Provincial governments are required to keep separate tabs on the flow of carbon money such that they are held accountable and transparent. In Quebec, for example, the provincial government publishes annual reports on Green Fund finances and Climate Change Action Plan progress. In British Columbia, the previous government reported on the revenue neutrality of the carbon tax in the provincial budget.

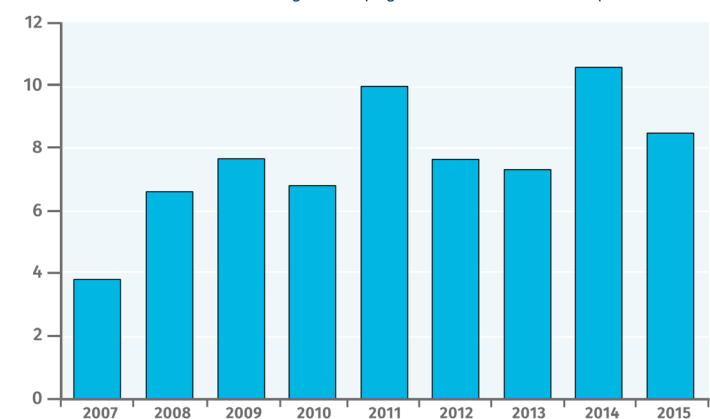
Carbon levy revenues and 'green' expenditures



Source: Government of BC, Alberta, Ontario and Quebec, RBC Economics Research

Alberta's Industrial Emissions Management GHG emission cuts

Annual reductions in GHG emissions arising from the program in million tonnes of CO2 equivalent



Source: Alberta Government, RBC Economics Research

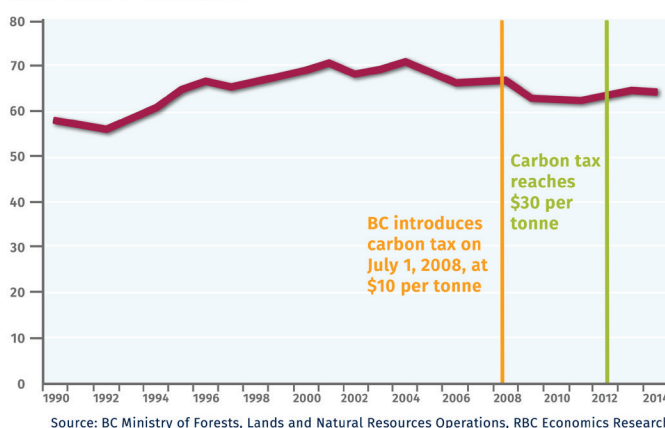
Will provinces put the money strictly toward GHG emission-reducing initiatives? Not all of it. The four provinces currently collecting carbon levies have kept their green spending options fairly open. In each case, the legislation framework allows for some of the funds to flow to initiatives that don't directly target GHG emission reductions. For instance, Alberta will allocate more than one-quarter of its carbon tax revenues to provide rebates to lower- and middle-income families. In Quebec, CCAP earmarks \$74 million over seven years to help households and businesses adjust to the effects of climate change.

Have we seen any evidence that carbon pricing leads to lower GHG emissions in Canada? This is a difficult question to answer definitively because 1) Canada's experience with carbon pricing is limited and relatively new, and 2) isolating the effects of various factors affecting emissions is complex. Nonetheless, the limited evidence that we have would suggest that carbon pricing—and the various measures funded by carbon pricing—are effective at generating some reductions in GHG emissions. In Alberta, the provincial government estimates that its Industrial Emissions Management program introduced in 2007 (and which targets large industrial emitters only) cut GHG emissions by almost 8 million tonnes per year on average between 2007 and 2015. It's important to note, though, that this didn't stop overall emissions from rising in Alberta. The program focused on cutting emissions at existing industrial operations. And rapid expansion in the province's oil sands production capacity, in particular, caused total emissions to rise substantially during that interval. In British Columbia, total emissions fell by 2.8% in the seven years that followed the introduction of the province's carbon tax in 2008. This works out to a drop of slightly less than 2 million tonnes annually. BC emissions have been quite flat since 2009, however, despite the fact that the provincial carbon tax tripled to \$30 per tonne by 2012. In Quebec, the latest monitoring report on the province's 2013-2020 Climate Change Action Plan showed that the plan led a reduction of 0.7 million tonnes in 2015-2016. This was up from 0.2 million tonnes in 2013-2014.

Will carbon pricing succeed at reducing GHG emissions? It depends on how we define success. Environment and Climate Change Canada estimates that measures announced in the pan-Canadian framework (which include the broadening of carbon pricing to all provinces, as well as other measures such as the phasing out of coal in electricity generation) will generate reductions of 86 million tonnes by 2030. This would be slightly less than 40% of the total reductions necessary to achieve Canada's 2030 target of 523 million tonnes. So, yes, carbon pricing is likely to help to cut GHG emissions but it won't be enough to get us where we want to go. Additional measures will be needed in the future.

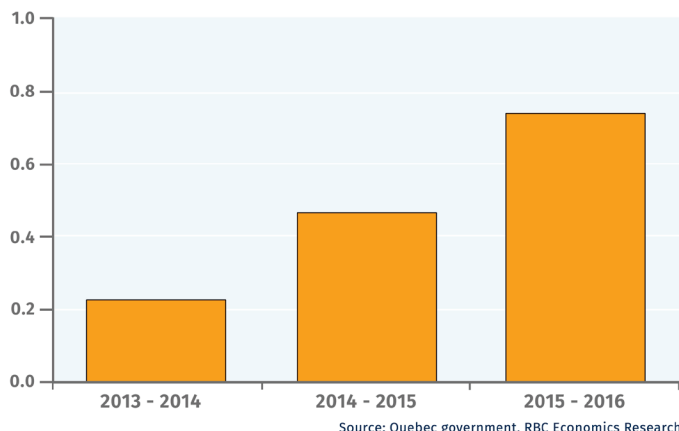
BC greenhouse gas emissions

Million tonnes of CO₂ equivalent



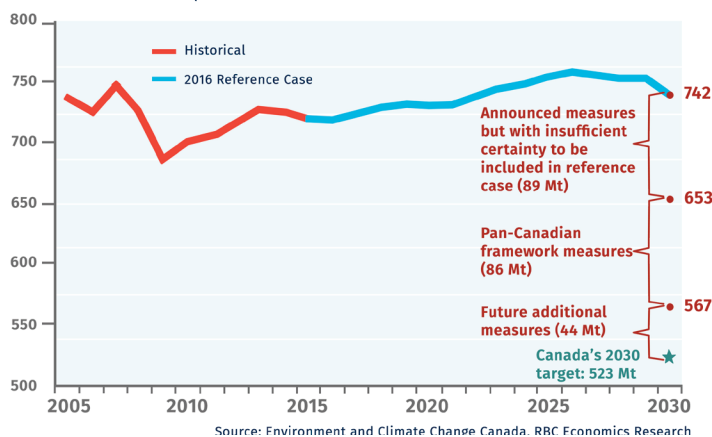
GHG emissions reductions arising from Quebec's CCAP

Annual reductions in GHG emissions arising from the plan, in million tonnes of CO₂ equivalent



Canada's domestic GHG emissions projections

Million tonnes of CO₂ equivalent



The material contained in this report is the property of Royal Bank of Canada and may not be reproduced in any way, in whole or in part, without express authorization of the copyright holder in writing. The statements and statistics contained herein have been prepared by RBC Economics Research based on information from sources considered to be reliable. We make no representation or warranty, express or implied, as to its accuracy or completeness. This publication is for the information of investors and business persons and does not constitute an offer to sell or a solicitation to buy securities.