

Getting the Price Right
Carbon Pricing
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Introduction

Implementing climate change adaptation and mitigation and reversing biodiversity loss requires strong government leadership, applied academic research, regenerative sustainability decision-making, and individual behavioural change. Yet, governments have few instruments that influence change at the micro behavioural level, other than through carbon pricing. Carbon pricing can be a powerful change agent, but getting the price right is challenging and there is little political agreement in Canada about which instruments are the most effective—carbon taxes, emissions trading systems, cap and trade, carbon budgets, and carbon offsets among others.

This paper will examine two instruments: carbon taxes and carbon budgets. These two are chosen because they are administratively straight-forward to implement. Given the urgency of the combined crises of climate change and biodiversity loss, governments need to move as quickly as possible to influence behavioural changes. We will focus on the feasibility and effectiveness of both compared to alternatives.

Methodology

This research is based first on the first author's extensive experience in the Federal Government and from her research lead in British Columbia, www.mc-3.ca, on climate change adaptation and mitigation and multi-level governance. The second author is a leading scholar in biodiversity conservation and social ecological systems as well as governance. A literature review also informed this discussion although much of it is based on this prior research and praxis. Research has been conducted using a document analysis and interviews with a purposive sample of Canadian experts.

Background

Using taxes as an instrument is highly controversial, facing opposition from certain ideological perspectives and media narratives that influence the public to believe that they are an unnecessary evil. Yet, the current economic system does not price in environmental externalities, such as the air, water, soil, the cost of waste, pollution, and toxicity to name only a few. The present tax system, therefore, does not convey the 'right' information, that is, allowing the public to make more sustainable decisions. Hawken proposes a simple reform, tax the bads and leave the goods. What do we want to encourage and what do we want to discourage? He argues that the present system taxes what we want to encourage—jobs, creativity, payrolls, and real income—and ignores what we should be discouraging—degradation, pollution, and depletion (Hawken, 1993).

The Economist has long advocated a carbon tax as the most effective and efficient way to address climate change, as have a majority of the world's economists (The Economist, 2018). Carbon taxes are a subspecies of Pigovian tax; taxes that are designed primarily to change behaviour rather than to raise revenue. The idea is to try and manipulate the price of a good or a service, which Hawken refers to as the 'bads', in order to capture all the negative externalities it imposes. Since, the majority of externalities are not captured by the current market system, carbon taxes are an efficient way of capturing them. Does the government have a responsibility to ensure that the private cost of producing goods is equal to the social cost? Given that augmenting productivity has largely come at the cost of declining ecosystem services [insert], and that the market is performing imperfectly, for example with respect to pollution and climate change mitigation, governments do have a role and the capacity to act quickly on climate change, if appropriately priced.

Carbon Taxes

What makes carbon taxes so effective? As previously mentioned, carbon taxes capture the externalities and true costs of human impacts on the environment. They can also reduce the monetary costs of being taxed simply for working or operating a business. By exploring and implementing innovative policy instruments, they send an economy-wide signal that Canadians are committed to what's important for society and the environment. In addition, they help correct the fundamental market failure to provide information about the real costs of environmental degradation.

BC's Carbon Tax

In 2008, the province implemented North America's first broad-based carbon tax. The carbon tax applies to the purchase and use of fossil fuels and covers approximately 70% of provincial greenhouse gas emissions. In line with the economic theory of tax incentives, the tax was intended to be raised annually. From 2008 through 2012, the tax rose as planned from \$10 to \$30 and on April 1, 2023, B.C.'s carbon tax rates increased by \$15 per tonne of carbon dioxide equivalent emissions (CO₂e) annually until reaching \$170 per tonne of CO₂e in 2030.

It is generally agreed that the BC Carbon tax is a model of its kind, but it has faced many political obstacles. In its first 10 years of operation, BC achieved a significant drop in GHG emissions at no loss to the economy despite dire warnings to the contrary (Dale et al., 2013). To avoid regressive taxation the Carbon Tax policy included reductions in income tax and rebates to vulnerable populations. In spite of its success, BC's carbon tax has faced strong political opposition and public misunderstanding (Harrison, 2019).

The Canadian Context

On the stage of Vancouver's Globe conference in March 2015, to great applause, the premiers and Prime Minister Trudeau announced their intention to create a Canada wide carbon tax.

In December 2016, the Government of Canada, along with most province and territories, agreed to the *Pan-Canadian Framework on Clean Growth and Climate Change*. Under the framework, carbon pricing became the central mechanism to reduce greenhouse gas (GHG) emissions (Environment and Climate Change Canada, 2017). On October 23, 2018, the Federal Government announced details of a carbon pricing system for Canada, including where and when it would apply, based on the *Greenhouse Gas Pollution Pricing Act*, adopted on June 21, 2018. The system applied only in provinces that did not have adequate climate pricing plans of their own that met federal standards—Ontario, New Brunswick, Manitoba and Saskatchewan. It had two elements: a carbon levy and an output-based pricing system. The Government committed to returning all direct proceeds from this system to the jurisdiction of origin. Those governments that opted for the federal pricing system would receive all the proceeds back to decide how to reinvest them (Office of the Parliamentary Budget Officer, 2019).

With respect to a carbon tax, since 2019, every jurisdiction in Canada has had a price on carbon pollution. Canada's approach is flexible: any province or territory can design its own pricing system tailored to local needs or can choose the federal pricing system. The federal government sets minimum national stringency standards that all systems must meet to ensure they are comparable and contribute their fair share to reducing greenhouse gas emissions. If a province decides not to price pollution or proposes a system that does not meet these standards, the federal system is put in place. This ensures consistency and fairness for all Canadians. Ninety percent of the taxes collected under the fuel charge are returned to every province and territory, except B.C. which has a fully independent model. The remaining 10 per cent is currently held by the federal government while they work to decide what sector that goes into, leaning towards Indigenous groups, farmers and target industries.

The federal government published strengthened standards in August 2021 for the 2023 to 2030 period (Government of Canada, accessed December 17, 2022, <https://www.canada.ca/en/environment-climate-change/services/climate-change/pricing-pollution-how-it-will-work/putting-price-on-carbon-pollution.html>) .

Quebec and British Columbia were the only two provinces to introduce a carbon tax prior to the federal legislation, which involved a consumer tax imposed on all businesses and individuals who purchased or use fossil fuels or burn combustibles for energy and heat. In British Columbia, sales of fossil fuels have dropped by over 15% since the carbon tax's inception in 2008--without adversely affecting the province's economy as measured by GDP. In addition, the B.C. carbon tax was designed to be 'revenue neutral' (no net tax increase), which ultimately resulted in a net benefit to taxpayers, both individuals and businesses, through personal and corporate tax reductions. Regardless of the scientific evidence from a major B.C. 7-year research project (Dale et al. date), and the consensus from economists, Ontario decided to introduce a cap-and-trade system, which was subsequently ended in 2018. The Environment Minister at the time, Rod Phillips, stated "[cap and trade] was costly, it was ineffective, it was killing jobs(CBC, 2018).

A historical anecdote from British Columbia. Before the carbon tax was introduced, many academics argued that all revenues should be allocated centrally to be invested in more

sustainable energy options. The province ignored this advice and directed that revenues would be returned to individuals and businesses. When the government changed in 2012, however, the incoming regime was more hostile to climate change mitigation and adaptation yet was unable to remove the tax, although they did not meet the recommendations in place for progressive increases in the tax.

An IMP report revealed that taxes raise approximately twice as much revenue as cap-and-trade schemes and are roughly 50% better at cutting emissions (Parry et al. (date). The Economist estimated that a levy of \$70 on each tonne of CO₂ by 2030 would typically raise between 1% and 2.5% of GDP in the G20 club of big economies (The Economist, 2018). Most critically, it would have facilitated most nationally determined plans to come close to, and perhaps even exceed, their pledges under the 2015 Paris climate agreement. The Potsdam and Mercator Institute researchers found that if developing countries were to replace fuel subsidies with carbon taxes consistent with the Paris target, the revenues would cover much of what they must spend on infrastructure and public services to meet the UN's sustainable development goals (The Economist, 2018). Despite this evidence, the Federal Government had to implement legislation to enforce the implementation of a carbon tax equitably in all provinces.

Carbon Budgets

On November 2, 2022, the City of Edmonton released the first municipal carbon budget report in Canada, although sadly announcing the city would fall short of its target to achieve net-zero emissions by 2050. But for the first time, local residents had access to current data on municipal decisions that they could use to hold the City accountable. "The power of this carbon budget is it's showing explicitly to council the type of decisions they're going to have to make if they want to actually hit their GHG targets and satisfy all the other demands that they have to address," said Yuill Herbert, director of Sustainability Solutions Group (Darryl Dyck, 2019). Carbon budgets are under development in Halifax, Montreal, Durham Region, Ottawa, Toronto, and West Vancouver.

Carbon budgets set a cap on how much greenhouse gas a community can emit. Edmonton, importantly, has integrated its community carbon budget into its City Plan. Starting this year, the City intends to report annually on the expected emissions resulting from its policy and infrastructure decisions annually. Ideally, the carbon budget will be used to align its investments and development decisions with its GHG targets. [reference Oslo]

This transparency and ability to hold local governments accountable for their climate actions, or lack of, is clearly needed in Canada. A recent article analyzing the individual and collective decarbonization pathways of 26 Canadian cities revealed that although many have declared a climate emergency and plans are at various stages of implementation, development path change is mostly incremental. The data reveal that there are very different starting points for Canadian cities, and considerable asymmetries between municipalities, as well as the collective impact of their plans on national targets. The latency of local governments for on-the-ground implementation of their plans means that ongoing assessments are critical for determining the

impact of efforts by cities to achieve their targets and for informing federal government policy directions (Herbert et al., 2022).

Evidence shows that one of the most effective ways to accelerate adoption of innovation is through establishing targets and measuring progress against those targets (Takahashi et al. 2020; Tomar, 2022). Benchmarking is also essential as it allows practitioners to 'see' what their peers are doing and what progress can be made despite asymmetries of scale and different starting points. For example, previous work with the National Energy Efficiency Committee of the Association of Community Colleges in Canada (ACCC), led by Deanna Douglas of Langara College, conclusively proved the importance of benchmarking for accelerating the adoption of energy efficiency across the college sector (ACCC, 1999).

Municipal carbon budget reporting could then be rolled up and allow the federal government to start publishing a national inventory of progress in reducing GHG emissions across the country and to further provincial benchmarking comparisons.

Lessons Learned

Carbon pricing, especially a carbon tax, have been proven to be both effective and efficient in their implementation. The BC case shows how important it is to institutionally embed climate action to avoid the inevitable reversal in policies as new administrations come to power (Dale et al., forthcoming). If the tax had not been returned to individuals, the incoming political administration could have eliminated it easily, although they did stop the recommended stepwise increases. Coupled with carbon budgets, both instruments could accelerate the adoption of behavioural change, especially in the transportation sector. The implementation of the carbon tax in BC, however, indicates that the excellence of an instrument does not guarantee political acceptability, especially when it activates long and deeply held biases about the role of government. Communication and educational campaigns, and one could argue innovative marketing, are as important as getting the price right.

Carbon pricing is a necessary first and critical step, but other measures are also needed to fully address climate change and biodiversity loss. The urgency of acting now demands an innovative suite of legislations, policies and incentives (Dale, 2015) to decrease Canada's GHG emissions which until this year had not decreased in spite of the implementation of a variety of instruments (Newman & et. al, forthcoming).

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