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Carbon Pricing Policy in Canada

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CARBON PRICING POLICY IN CANADA

1 INTRODUCTION

Policies that put a price on greenhouse gas (GHG) emissions are in place in a number of jurisdictions. Commonly referred to as “carbon pricing systems,” they are meant to help reduce the GHG emissions that are contributing to climate change.

In Canada, carbon pricing policy is in development. On 15 January 2018, the federal government published for public comment a document on draft legislation aimed at codifying its proposed national carbon pricing system.¹ The Greenhouse Gas Pollution Pricing Act is expected to be introduced in the House of Commons during the 1st Session of the 42nd Parliament.

The proposed legislation would require provinces and territories to implement carbon pricing systems by 1 January 2019, or adopt a federally administered carbon pricing system that the federal government calls the “backstop.” Jurisdictions where no carbon pricing system is adopted, or where the pricing system fails to meet federal standards, will have the backstop imposed on them, in whole or in part, on the same date.

Several Canadian provinces have already implemented some form of carbon pricing, and other provinces and territories have either announced pricing systems or are studying the question. The federal government has asked provinces and territories to detail their carbon pricing approach by 1 September 2018.² After a discussion of what carbon pricing is and how it works, this document presents the federal, provincial and territorial pricing systems.

2 CARBON PRICING SYSTEMS

According to the Intergovernmental Panel on Climate Change, it is extremely likely that human-generated GHG emissions are the dominant cause of the observed warming that has occurred since the mid-20th century.³ These emissions are a negative by-product of most economic activities and originate primarily from the combustion of fossil fuels.⁴ When products and services are produced and consumed in an economy that does not have a price on GHG emissions, supply and demand choices often do not reflect the reported negative environmental, social and economic costs of GHGs.⁵ As a result, more GHGs are emitted than would be the case if the negative effects of GHGs had an explicit cost.

Simply put, carbon pricing charges those who emit GHGs for their emissions. In theory, carbon pricing is an effective tool for mitigating GHG emissions, because it changes consumer behaviour by changing the prices of products and services based on their GHG content. This creates an economy where things that are more GHG-intensive are relatively more expensive, while things that are less GHG-intensive are relatively less expensive.⁶

There are two main types of carbon pricing systems:

- a direct pricing system, where the price of a unit of GHG emissions is fixed, but the quantity of emission reductions is uncertain; and
- a cap-and-trade system, where the quantity of emissions is fixed, but the price is determined by the market.⁷

2.1 DIRECT PRICING SYSTEMS

Direct pricing systems apply a transparent, explicit price on emissions, usually by charging a tax or levy on fossil fuels that varies by fuel based on the GHG content of each. For example, a broad-based carbon tax of \$10 per tonne of carbon dioxide equivalent (CO₂e)⁸ would result in a charge of \$0.0221 per litre on gasoline, \$0.0155 per litre on propane and \$0.0196 per cubic metre on natural gas.⁹

Typically, carbon tax rates increase over time, thereby increasing the incentive for producers and consumers to choose lower GHG alternatives.

2.1.1 OUTPUT-BASED PRICING SYSTEM

The output-based pricing system (OBPS), a type of direct pricing, is designed to create an incentive for GHG emitters to reduce their emissions, while protecting them from the costs of a straight tax by exempting them from paying a carbon price on their fossil fuel consumption. It establishes emission intensity performance standards for regulated industries, and using those standards, calculates GHG emission limits for facilities based on their annual economic production. Facilities are issued compliance credits up to their annual GHG emission limits at no charge.

Facilities that exceed their annual limit under an OBPS must pay for additional compliance credits by buying them from facilities with surplus credits, acquiring verified offset credits from elsewhere (e.g., verified GHG mitigation projects in other jurisdictions or non-regulated sectors), or by purchasing compliance credits from the government. Over time, stringency can be increased by adjusting emission intensity performance standards to allow for fewer GHG emissions per unit of production, and by increasing the price of compliance credits purchased from the government.

OBPSs are typically applied to large GHG emitters in competitive industries that are open to international competition – firms in such trade-exposed industries may be unable to pass their increased carbon costs on to their customers.

2.2 CAP-AND-TRADE SYSTEM

A cap-and-trade system sets a limit on the quantity of GHGs that may be emitted in an economy (or a sector of the economy) over a period of time. In such a system, the government issues a pool of emission allowance credits that corresponds with the GHG cap for that period. Governments may distribute a certain number of emission allowance credits to emitters at no charge, depending on government objectives, with the balance of credits typically sold through an auction process. Each period, registered emitters must ensure that they own sufficient emission allowance credits – whether

obtained from government for free, purchased at auction, purchased from other registered emitters, or acquired as verified emission offsets – to cover their emissions for that period.

Over time, stringency is increased by lowering the GHG emission cap, which typically causes the price of emission allowance credits to rise. Some cap-and-trade systems also set price caps and floors for emission allowance credits to support the price of the credits, maintain the incentive the carbon price is meant to create, and safeguard the cap-and-trade system from wide fluctuations in the price or supply of emission allowance credits.¹⁰

3 CARBON PRICING IN CANADA

Four provinces – British Columbia, Alberta, Ontario and Quebec – have carbon pricing, and momentum has been building for more widespread adoption of carbon pricing in Canada since the adoption of the *Paris Agreement*¹¹ at the Paris Climate Change Conference in December 2015.¹² Following the conference, on 3 March 2016, Canada's first ministers convened in Vancouver and at the conclusion of their meetings, released the *Vancouver Declaration on Clean Growth and Climate Change* (Vancouver Declaration).¹³ In it, the ministers agreed to increase the likelihood that actions based on provincial, territorial and federal government climate change policies would meet or exceed Canada's 2030 target of a 30% reduction below 2005 levels of GHG emissions. To do this, they agreed to a range of measures, such as carbon pricing, adapted to the specific circumstances of each province and territory.

To support this agenda, the first ministers established intergovernmental working groups to deliver reports in priority areas that they identified.¹⁴ One of them, the Working Group on Carbon Pricing Mechanisms, was mandated to provide options on the role of carbon pricing mechanisms in meeting Canada's emission reduction targets, as well as different design options that would take into consideration existing and planned provincial and territorial systems. The working group's final report identified principles for a pan-Canadian approach to carbon pricing and concluded that

on the whole, carbon pricing is one of the more efficient tools available to governments to incent a transition to a low carbon economy, allowing for an increase in the level of ambition in reducing GHGs, promoting clean economic growth, and the possibility for enhanced cooperation among jurisdictions.¹⁵

First ministers committed to implementing carbon pricing once more on 12 December 2016 when, with the exception of Manitoba and Saskatchewan, they adopted the *Pan-Canadian Framework on Clean Growth and Climate Change*, which made carbon pricing a central pillar of provincial, territorial and federal government actions to lower domestic GHG emissions (Manitoba eventually adopted the Framework on 23 February 2018).¹⁶ In the Framework, the federal government outlined a benchmark for carbon pricing that reflected the principles proposed by the Vancouver Declaration and the Working Group on Carbon Pricing Mechanisms. The benchmark does the following:

- sets a timeline for establishing carbon pricing (“by 2018”);
- sets a common scope for carbon pricing coverage;

- commits that revenues collected will remain in the jurisdiction of origin;
- describes the federal backstop;
- commits to a five-year review in 2022; and
- discusses the reporting requirements of jurisdictions.

The benchmark also explains that jurisdictions can either implement a direct pricing system (a carbon tax or a carbon levy and OBPS) or a cap-and-trade system. More specifically, the benchmark states that jurisdictions with a direct pricing system should set a carbon price that starts at a minimum of \$10 per tonne of CO₂e in 2018 and rises by \$10 per year, up to \$50 per tonne of CO₂e in 2022. Jurisdictions that adopt a cap-and-trade system are required to establish a 2030 emission reduction target equal to or greater than Canada's 30% reduction target, as well as declining annual caps until at least 2022 that correspond, at a minimum, to the equivalent projected emission reductions resulting from the benchmarked direct pricing systems.

3.1 FEDERAL GREENHOUSE GAS POLLUTION PRICING ACT

As proposed, the federal Greenhouse Gas Pollution Pricing Act would apply to provinces and territories that are listed under the Act. These would be jurisdictions where the federal backstop applies because they have either opted for the backstop in whole or in part, or are deemed by the federal government not to meet the federal benchmark.

The proposed Act has two main elements:

- an explicit fuel charge applied to a broad range of GHG emitting fuels, at prices specified in a schedule of rates for calendar years 2018 to 2022; and
- an OBPS for registered industrial facilities, which would be exempt from paying a carbon tax on fuel purchases but would be required to pay for the portion of their emissions that exceed their annual facility emission limit. In jurisdictions where the backstop applies, the following industrial facilities would be required to abide by it:
 - those that emit 50 kilotonnes (kt) CO₂e or more per year and for which an emission intensity performance standard is specified, and
 - those that emit between 10 kt CO₂e and 50 kt CO₂e per year and whose application for voluntary participation is approved.

Regarding the fuel charge, prices would be based on the GHG emission content of each fuel and would correspond with the carbon prices specified in the federal benchmark. The fuel charge would be applied to registered fuel distributors, importers, emitters, users, specified air carriers, specified marine carriers, specified rail carriers and specified road carriers.

Under the OBPS, a facility's annual emission limit would be calculated by multiplying the facility's total annual production by the applicable emission intensity performance standards for its activities. Each facility would pay for any GHG emissions that exceed its limit at a rate of \$10 per tonne of CO₂e in 2018, rising by \$10 per year, up to \$50 per tonne of CO₂e in 2022.

The OBPS regulatory framework explains that the system would cover GHG emissions from fuel combustion, industrial processes, flaring, and some venting and fugitive sources, while excluding methane venting and methane fugitive emissions from oil and gas facilities.¹⁷ Initially, emission intensity performance standards would be developed for the following industrial sectors: oil and gas, pulp and paper, chemicals, nitrogen fertilizers, lime, cement, base metal smelting and refining, potash, iron ore pelletizing, mining, iron and steel, and food processing.

3.2 PROVINCES THAT HAVE IMPLEMENTED A CARBON PRICING SYSTEM

British Columbia, Alberta, Ontario and Quebec have already implemented carbon pricing systems that appear to meet the proposed federal benchmark standards.

3.2.1 BRITISH COLUMBIA

British Columbia introduced a carbon tax on a broad range of fossil fuels in 2008.¹⁸ The tax rate has been at \$30 per tonne of CO₂e since 2012. The B.C. government's budget update, published in September 2017, announced that the provincial carbon tax rate will be raised by \$5 per tonne of CO₂e each year for four years beginning on 1 April 2018.¹⁹ The agricultural sector is exempt from the carbon tax.

In 2016, the province also introduced an OBPS mechanism for specified industries,²⁰ which currently applies to the liquefied natural gas (LNG) sector only, although other sectors may be added in the future. LNG facilities with GHG emissions that exceed a prescribed emission intensity performance standard must comply by:

- acquiring verified emission offsets;
- applying emission performance credits earned and banked in previous years (awarded for annual GHG emissions that are lower than the facility emission limit); or
- paying \$25 per tonne of CO₂e for the portion of emissions exceeding the limit.²¹

3.2.2 ALBERTA

Alberta introduced a carbon levy on a broad range of fossil fuels in 2017.²² The levy, which was set at \$20 per tonne of CO₂e when it was introduced, was increased to \$30 per tonne of CO₂e on 1 January 2018.

On 1 January 2018, the province introduced an OBPS mechanism for industrial emitters with annual emissions over 100 kt per year of CO₂e.²³ Emission intensity performance standards have been developed for facilities that produce ammonia, ammonium nitrates, coal, cement, electricity, hardwood and softwood pulp, hydrogen, industrial heat, oil sands in-situ bitumen, oil sands mined bitumen and petroleum refining. Facilities that exceed their annual emission limit must comply by:

- acquiring verified emission offsets;
- applying emission performance credits earned and banked in previous years; or
- paying \$30 per tonne of CO₂e for the portion of emissions exceeding the limit.²⁴

3.2.3 ONTARIO AND QUEBEC

Ontario and Quebec operate provincial cap-and-trade systems that are harmonized and integrated in a common market with California's cap-and-trade system.²⁵

The three jurisdictions held their first joint auction of emission allocation credits on 21 February 2018.²⁶ Quebec's system has operated since 2013,²⁷ while Ontario's system has operated since 2017.²⁸ Both provincial systems apply to facilities emitting more than 25 kt per year of CO₂e and extend to fuel suppliers.

3.3 PROVINCES THAT HAVE ANNOUNCED CARBON PRICING SYSTEMS

Saskatchewan, Manitoba, New Brunswick and Nova Scotia have announced their intentions for carbon pricing, but some plans lack specificity, and it is not clear whether they will meet the federal benchmark. The federal government has requested that provinces and territories indicate by 30 March 2018 if they will be adopting the federal backstop in whole or in part.²⁹ If they do not plan to do so, they must outline their provincial or territorial carbon pricing system by 1 September 2018, at which point the federal government will assess if the proposed systems meet the benchmark.

3.3.1 SASKATCHEWAN

Saskatchewan published the province's climate change strategy in December 2017. It proposes to introduce an OBPS mechanism on 1 January 2019 under which sector-specific emission intensity performance standards would be applied to industrial facilities emitting over 25 kt of CO₂e annually.³⁰ The OBPS mechanism will function as it does in other jurisdictions, but the rate that will be charged for excess emissions is not specified. The upstream oil and gas and electricity sectors will be exempted from the OBPS. The province did not announce a carbon tax on fossil fuels.

3.3.2 MANITOBA

In November 2017, Manitoba published the province's climate change plan, in which it proposed a carbon tax of \$25 per tonne of CO₂e on a broad range of fossil fuels beginning in 2018, with an OBPS for industry beginning in 2019.³¹ There is no planned increase to Manitoba's carbon tax rate over the period 2018–2022. The OBPS mechanism will function as it does in other jurisdictions and will be applied to facilities emitting over 50 kt of CO₂e annually; the rate charged for excess emissions is not specified. The agricultural sector will be exempt from both the carbon tax on fossil fuels and the OBPS.

3.3.3 NEW BRUNSWICK

New Brunswick introduced legislation in December 2017 containing provisions for the adoption of the OBPS portion of the federal backstop and reallocation of existing revenues collected under the provincial gas tax into a fund meant for climate change-related expenditures.³²

3.3.4 NOVA SCOTIA

Nova Scotia passed amendments to the province's *Environment Act* in October 2017, providing authority to establish a cap-and-trade system for the province through regulation.³³ The province published a discussion document³⁴ and a document providing responses to frequently asked questions,³⁵ which explain that the system would apply to facilities emitting 100 kt and more per year of CO₂e and extend to the electricity sector and fossil fuel suppliers; that there is no plan to link the cap-and-trade system with other jurisdictions' systems; and that "most of the GHG allowance" under the cap will be distributed to companies at no charge. Facilities that exceed their emission cap will be required to comply by submitting emission allowance credits, acquiring verified emission offsets, or paying into a fund at rates that are not specified.

3.4 PROVINCES AND TERRITORIES THAT HAVE NOT INDICATED THEIR APPROACH

The remaining provinces and the territories have not indicated what their approach to carbon pricing will be, although each has engaged in public consultations to inform program design.

3.4.1 PRINCE EDWARD ISLAND

Prince Edward Island has not yet indicated its approach to carbon pricing.³⁶

3.4.2 NEWFOUNDLAND AND LABRADOR

Newfoundland and Labrador introduced legislation in June 2016 that authorizes the Lieutenant-Governor in Council to establish absolute GHG emission limits for industrial facilities emitting more than 25 kt of CO₂e per year; it also requires firms to measure and report annual GHG emissions.³⁷ When this paper was being written, the reporting requirements were in force, but there were no regulations that set GHG emission limits on firms or that indicated what price will be charged for compliance credits. The provincial government has not indicated when such rules will be introduced.

3.4.3 YUKON

Yukon has been jointly studying the impacts of carbon pricing on the territory with the federal government. It has indicated that it would likely opt for the federal backstop.³⁸

3.4.4 NORTHWEST TERRITORIES

In July 2017, Northwest Territories (N.W.T.) published a discussion document on implementing carbon pricing, in which it stated that it favoured a carbon tax over a cap-and-trade system.³⁹ In its November 2017 draft climate change strategy, N.W.T. said that carbon pricing "will contribute to the goal of transitioning to a lower-carbon economy" in the territory, but that the details of implementation still need to be clarified.⁴⁰

3.4.5 NUNAVUT

Nunavut has been jointly studying the impacts of carbon pricing on the territory with the federal government.⁴¹

NOTES

1. Department of Finance Canada, [Legislative and Regulatory Proposals Relating to the Greenhouse Gas Pollution Pricing Act and Explanatory Notes](#), January 2018.
2. Government of Canada, [Ministers' letter to provinces and territories on next steps in pricing carbon pollution](#).
3. Lisa V. Alexander et al., "[Summary for Policymakers](#)," in *Climate Change 2013: The Physical Science Basis – Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, ed. T. F. Stocker et al., Cambridge University Press, Cambridge, 2013.
4. Philippe Ciais et al., "[Carbon and Other Biogeochemical Cycles](#)," Chapter 6 in *Climate Change 2013: The Physical Science Basis – Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, ed. T. F. Stocker et al., Cambridge University Press, Cambridge, 2013, p. 474.
5. Christopher B. Field et al., "[Summary for Policymakers](#)," in *Climate Change 2014: Impacts, Adaptation, and Vulnerability – Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, ed. C. B. Field et al., Cambridge University Press, Cambridge, 2014.
6. Organisation for Economic Cooperation and Development [OECD], [Climate and Carbon: Aligning Prices and Policies](#), OECD Environment Policy Paper No. 1, OECD Publishing, Paris, October 2013.
7. Christina Hood, [Summing Up the Parts: Combining Policy Instruments for Least-Cost Climate Mitigation Strategies](#), Information Paper, International Energy Agency, Paris, September 2011.
8. Government of Canada, [Global warming potentials](#).
9. The cited fossil fuel carbon prices are listed in Schedule 2 of the proposed Greenhouse Gas Pollution Pricing Act. See [Legislative Proposals Relating to the Greenhouse Gas Pollution Pricing Act](#).
10. Hood (2011).
11. United Nations Climate Change, [The Paris Agreement](#).
12. United Nations Climate Change, [Paris Climate Change Conference – November 2015](#).
13. Canadian Intergovernmental Conference Secretariat, [Vancouver Declaration on clean growth and climate change](#).
14. Government of Canada, [Clean growth and climate change working group reports](#).
15. Working Group on Carbon Pricing Mechanisms, [Final Report](#), p. 50.
16. Government of Canada, [Pan-Canadian Framework on Clean Growth and Climate Change](#).
17. Government of Canada, [Carbon pricing: regulatory framework for the output-based pricing system](#).
18. British Columbia, [Carbon Tax Act](#), S.B.C. 2008, c. 40.

19. British Columbia Ministry of Finance, [Budget 2017: September Update](#), 11 September 2017.
20. British Columbia, [Greenhouse Gas Industrial Reporting and Control Act](#), S.B.C. 2014, c. 29.
21. British Columbia, [Greenhouse Gas Emission Control Regulation](#), B.C. Reg. 250/2015, [s. 28](#).
22. Alberta, [Climate Leadership Act](#), S.A. 2016, c. C-16.9.
23. Alberta, [Carbon Competitiveness Incentive Regulation](#), Alberta Regulation 255/2017.
24. Office of the Minister of Alberta Environment and Parks, [Climate Change and Emissions Management Fund Credit Amount Order](#), Ministerial Order 58/2017.
25. Quebec, Ontario and California, [Agreement on the Harmonization and Integration of Cap-and-Trade Programs for Reducing Greenhouse Gas Emissions](#), 22 September 2017.
26. Quebec, Ontario and California, [California Cap-and-Trade Program, Ontario Cap-and-Trade Program, and Québec Cap-and-Trade System: February 2018 Joint Auction #14 – Summary Results Report](#).
27. Quebec, [Regulation respecting a cap-and-trade system for greenhouse gas emission allowances](#), c. Q-2, r. 46.1.
28. Ontario, [The Cap and Trade Program](#), O. Reg. 144/16.
29. Government of Canada, [Ministers' letter to provinces and territories on next steps in pricing carbon pollution](#).
30. Government of Saskatchewan, [Prairie Resilience: A Made-in-Saskatchewan Climate Change Strategy](#), n.d.
31. Manitoba Sustainable Development, [A Made-in-Manitoba Climate and Green Plan: Hearing from Manitobans](#), 2017.
32. New Brunswick, [Bill 39, Climate Change Act](#), 4th Session, 58th Legislature (first reading version, 14 December 2017).
33. Nova Scotia, [Environment Act \(amended\)](#), S.N.S. 2017, c. 10.
34. Nova Scotia, [Nova Scotia Cap and Trade Program Design Options](#), n.d.
35. Nova Scotia, [Cap and Trade Program Frequently Asked Questions](#).
36. [Pan-Canadian Framework on Clean Growth and Climate Change: First Annual Synthesis Report on the Status of Implementation](#), December 2017.
37. Newfoundland and Labrador, [An Act to Regulate Greenhouse Gas Emissions from Industrial Facilities in the Province](#), S.N.L. 2016, c. M-1.001.
38. Government of Yukon, [Public Engagement on the Carbon Rebate: – What We Heard: A Summary of Comments](#), November 2017.
39. Government of Northwest Territories, [Implementing Pan-Canadian Carbon Pricing in the Northwest Territories](#), Discussion Paper, July 2017.
40. Government of Northwest Territories, [Northwest Territories Climate Change Strategic Framework 2018–2030: Draft for Public Comment](#), November 2017, p. 13.
41. [Pan-Canadian Framework on Clean Growth and Climate Change](#) (2017).