



THE STATE OF CARBON PRICING IN CANADA

KEY FINDINGS AND RECOMMENDATIONS

2020 Expert Assessment finds carbon pricing can pave the way to Canada's emission reduction targets—with some fine-tuning.

Many design elements that governments have chosen to implement diminish the short- and longer-term effectiveness of carbon pricing to deliver emission reductions.

Canada's long road to achieving carbon emissions reductions has resulted in a remarkably diverse set of policy instruments implemented at the federal, provincial, and territorial levels. The policy patchwork includes a mix of performance regulations, carbon pricing, financial incentives, and innovation programs that collectively target most sources of Canada's carbon emissions.

Carbon pricing is now a key component of pan-Canadian efforts to achieve deep emissions reductions. Prior to 2016, carbon pricing covered about 38 per cent of Canada's national emissions, while by 2020, 78 per cent of Canada's emissions had a carbon price.

But carbon pricing only works if systems are designed well.

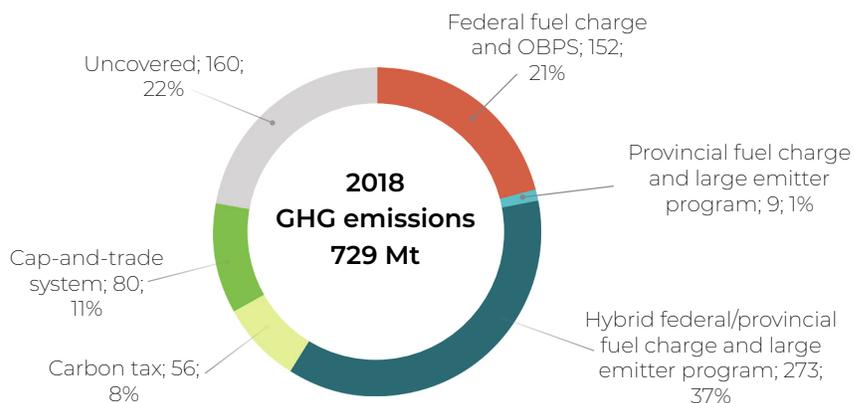
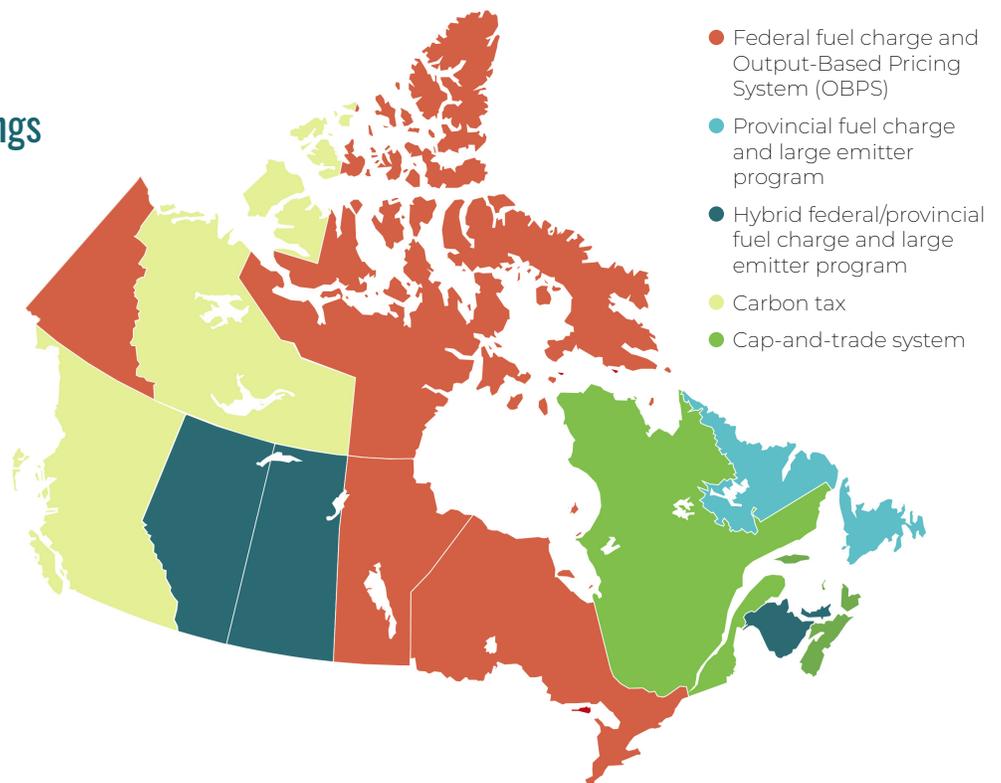
Starting in the fall of 2020, the Canadian Institute for Climate Choices conducted an independent assessment of the effectiveness of federal, provincial, and territorial carbon pricing systems. This assessment was undertaken at the request of Environment and Climate Change Canada and builds on a commitment in the Pan-Canadian Framework for Clean Growth and Climate Change. The federal government consulted with provinces, territories, and national Indigenous representatives to guide its framing.

Our independent assessment took an in-depth look at federal, provincial, and territorial carbon pricing systems as implemented in 2020. These systems include carbon taxes or charges, cap-and-trade systems, credit trading systems for large emitters, and various hybrids of these three. The assessment provides insight on how design choices across jurisdictional programs impact the ability of carbon pricing to reduce emissions while minimizing impacts on people and businesses. We developed a common framework to assess and compare the design choices made across the various programs, highlighting similarities and differences.

Our independent technical assessment report is available at: <http://publications.gc.ca/site/eng/9.900084/publication.html>

Carbon Pricing Groupings Operating in 2020

Five groupings of carbon pricing programs exist, covering 78 per cent of 2018 national emissions.



THE ASSESSMENT FOCUSED ON FIVE AREAS:

EMISSIONS REDUCTIONS. Does the system provide certainty that emissions will be reduced? The effectiveness of a carbon price in shifting production and consumption towards less carbon-intensive goods depends on the breadth of the emissions that are covered and the strength of the price signal.

A LONG-TERM AND TRANSPARENT PRICE SIGNAL. Does the system provide a transparent price signal that effectively and efficiently incents reductions? To the extent that exemptions and rebates exist, other emission sources must pick up the slack and deliver emission reductions, increasing overall costs. Delivering cost-effective reductions becomes critical as Canada's emissions reductions ambition rises to 2030 and beyond and carbon costs grow.

COMPETITIVENESS OUTCOMES AND EMISSIONS LEAKAGE. Does the system mitigate impacts on competitiveness between jurisdictions and sectors? Does it reduce the risk of carbon leakage (as carbon costs push production and emissions away from Canada)? Just as in international markets, misaligned domestic carbon costs among federal, provincial, and territorial programs lead to risk of investment and emissions shifts between Canadian jurisdictions.

VULNERABLE BUSINESSES AND HOUSEHOLDS. Do carbon pricing systems address distributional outcomes to businesses of all sizes and households? How carbon revenue is to be spent and who is granted exemptions or rebates are clearly political choice related to policy outcomes including competitiveness, emission reductions, and income impacts. With wide disparities in impacts on households and businesses across Canadian jurisdictions, inequities will reduce the acceptability of deeper emission reductions.

INDIGENOUS PEOPLES. How does the system account for impacts on Indigenous Peoples, communities, and nations? Differences in how federal, provincial, and territorial carbon pricing systems affect Indigenous Peoples pose challenges for fairness and reconciliation.

Our analysis focused on the design choices of each system and not on the expected outcomes of the policy choices. Given the lack of historical data on the performance of carbon pricing and the newness of many systems, we did not assess the performance of individual systems. Likewise, we did not use regionally differentiated economic, energy, and emissions modelling to project the relative effectiveness and impacts of various carbon pricing systems. Moving forward, these additional evaluation approaches can and should contribute to ongoing improvements in federal, provincial, and territorial carbon pricing systems.

Moreover, the independent review scope provided to the Canadian Institute for Climate Choices did not address several important broader considerations, including Indigenous perspectives on carbon pricing as a mitigation strategy; the treatment of Indigenous Peoples, communities, and nations; or the development of carbon pricing policies and corresponding impacts on Indigenous rights. The review also did not explore the governance choices of different jurisdictions or the policy interactions between the layering of carbon pricing and other instruments such as vehicle efficiency standards. The independent review also does not make future design recommendations for how carbon pricing programs could be adjusted to harmonize and strengthen the carbon policy signal and avoid regional carbon leakage and competitiveness issues. However, these issues are important to ensuring carbon pricing works and need to be addressed in future carbon policy reviews.

This document is a companion to the detailed technical analysis we provided in fulfilling our assessment mandate. It summarizes our main insights from that assessment and provides additional insights that are outside the scope of the expert assessment, including recommendations. In short, this document identifies:

- ▶ Five challenges for carbon pricing in Canada
- ▶ Five recommendations to improve carbon pricing in the country moving forward.

FIVE CHALLENGES FOR CARBON PRICING SYSTEMS IN CANADA

Several trends across Canada's patchwork of systems are undermining the performance of Canadian carbon pricing as implemented:

- 1. Not all policies apply to the same emissions.** To ensure cost-effectiveness, carbon pricing must broadly apply a marginal cost incentive across emission sources. When carbon prices are applied to fewer emissions, they drive fewer emissions reductions and increase the overall costs of reducing emissions.

We found multiple emissions sources that are covered in some, but not all, carbon pricing programs. Major differences stem from an uneven application of exemptions from the carbon price based on the design choices of the various jurisdictions. The uneven coverage of industrial process emissions is a good example.

Exemptions may have legitimate rationales, but they also entail costs. Some exemptions are designed to reduce the cost burden on vulnerable businesses or households or exclude hard-to-reduce emissions. Excluding aviation fuels in the North, for example, could make sense given that carbon cost increases could have a disproportionate impact on incomes in remote communities that are already vulnerable. But the trade-off is lower effectiveness. Alternative approaches to addressing income impacts are available that do not dilute the marginal cost incentives. These approaches include direct rebates to households or income tax reductions.

- 2. Not all policies have the same price.** Higher marginal carbon prices drive deeper emissions reductions. Yet marginal carbon incentives are not uniform across the country. Design choices that deliberately dilute the carbon price signal work against the overall effectiveness of carbon pricing policy.

We found that some jurisdictions are offsetting carbon prices through lowering provincial fuel taxes, while others are rebating the carbon tax at the point of sale. When rebates are directly tied to fuel consumption,

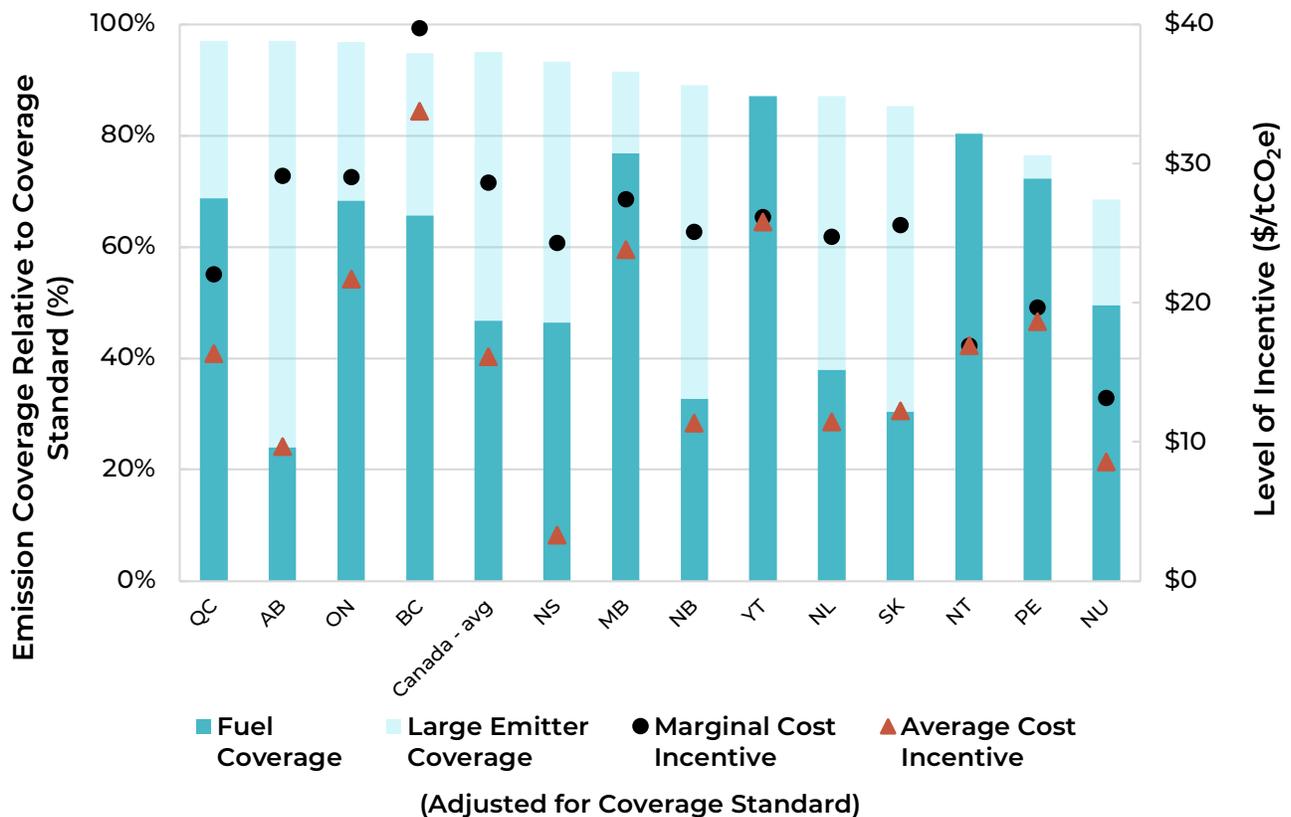
the incentive to adopt lower-emissions technologies, processes, or fuels is reduced and, in some cases within the country, totally offset. Across Canada, we estimate the marginal cost incentive (the value of reducing emissions by one tonne) ranges from a low of \$16 to a high of \$41. This uneven price signal occurs despite the presence of the federal backstop carbon price.

3. Not all policies impose the same costs on industry.

The costs of carbon pricing policies are not the same as carbon prices, given that large emitter carbon pricing programs across the country grant large quantities of emissions for free. Differences in costs have implications for both international and domestic competitiveness risks between jurisdictions and across sectors and also for the effectiveness of policies in the longer term.

Price Incentives and Covered Emissions

Covered fuels and large emitter programs





Average costs drive long-term capital decisions related to the cost of ownership and incent major facility retrofits, such as installing carbon capture, utilization, and storage (CCUS) technology. Large emitter carbon pricing programs are *designed* to lower average costs (while maintaining the marginal cost incentive) to address concerns around competitiveness and leakage risks.

Our assessment indicates that across the large emitter programs, sectors are receiving vastly different cost treatment. We were surprised at the large variation in average cost applied to large emitters both across and within jurisdictions, ranging between \$1.80 and \$26 per tonne with an average of \$4.96 per tonne in 2020. This average cost signal is exceptionally low, equating to a cost of 0.6 cents per dollar of GDP, or just 0.06 per cent of the economic value created by these sectors.

For those facilities that are not covered by large emitter programs and do not enjoy preferential treatment to lower their average cost, carbon costs are often more than six times higher than those for the large emitters. This disparity is exacerbated as the carbon price increases to 2030. Typically, these smaller emitters are not afforded policy options such as rebating carbon proceeds to address competitiveness concerns. Yet in some cases, these facilities compete in international and domestic markets just like large emitters and are often highly mobile and thus vulnerable to leakage risk.

4. Almost all policies lack transparency about key design choices and outcomes. A lack of transparency about key design choices is a common theme across most carbon pricing systems. Notably, the opaqueness of large emitter programs, including those in cap-and-trade systems, means that the true marginal cost incentive cannot always be easily determined. Several factors suggest that true marginal cost incentives for large emitters might be lower

than we have identified in this assessment. Generous allocation of free emissions, for example, might mean that the supply of credits in large-emitter systems exceeds demand, diminishing incentives for firms to outperform their emission reduction obligation. Typically, compliance information and trading market foresight is not available to assess possible risks to policy effectiveness.

How revenue is recycled back to emitters or used to support government spending is similarly opaque, which is a risk since carbon revenue recycling back to emitters can influence effectiveness and overall stringency (either positively or negatively). We observe significant differences in approaches to revenue recycling, rebating, and exemptions, resulting in a diverse mix of impacts across households and businesses of all sizes. Across Canada, the different rebating formulas for carbon pricing proceeds are designed to create incentives for emission reductions, minimize adverse income impacts, or some combination of the two.

5. Long-term and transparent price signals are typically absent from programs. Expectations of future carbon prices also increase effectiveness. When emitters expect higher future carbon prices (with greater certainty), they are more inclined to invest in projects that reduce emissions over the long term. Despite the presence of the federal backstop carbon price, a few jurisdictions have chosen not to communicate publicly a commitment to a price schedule increase to 2022. We also observe that the carbon price schedules in all jurisdictions except Quebec are not consistent with incenting continuous improvement beyond 2022. In most cases, the price schedule is not indexed to inflation and is therefore sending a price signal that is eroded by inflation.

FIVE RECOMMENDATIONS FOR BETTER CARBON PRICING POLICY

The findings of our assessment indicate risks to achieving broad-based and cost-effective emissions reductions. This needs to change.

Specific weaknesses include insufficient levels of covered emissions; exemptions and rebates that dilute the carbon pricing signal; and weak long-term signals that do not sufficiently incent process and technological change. Simply put, many design elements that governments have chosen to implement diminish the short- and longer-term effectiveness of carbon pricing to deliver emission reductions.

To begin addressing these challenges, we suggest five ways to strengthen carbon pricing policy. Provinces and territories should implement these design changes to improve the performance of their carbon pricing policies. The federal government should likewise consider these improvements when updating the federal backstop policy and when defining minimum standards for provincial and territorial policies.

- 1. Develop a common standard of coverage for all jurisdictions.** To support effectiveness and address competitiveness and fairness issues, federal, provincial, and territorial governments should work towards developing a common standard of emissions coverage for carbon pricing. Such a standard would set a minimum level of coverage for emission sources, factoring in best practices for emission coverage currently applied within Canadian jurisdictions. At a minimum, such a standard would remove existing exemptions and ensure that energy, process, and fugitive emissions in the industrial sectors receive common treatment. Our report provides a detailed list of the exemptions that could be removed.
- 2. Remove point-of-sale rebates that are tied to fuel consumption.** To support effectiveness and address competitiveness and fairness issues, point-of-sale rebates should be removed and replaced with an alternative method to address concerns regarding consumers' income. As a rule, any rebating



scheme that is directly tied to fuel purchases or the level of emissions should be replaced with another approach such as direct rebates, income tax reductions, or abatement technology subsidies.

3. Define a “glide path” to better align and increase average costs of large emitters.

Large emitter programs have been successful at addressing competitiveness concerns, reducing the average cost—and therefore the income impact—of the policy. But they have been implemented on an ad hoc basis across jurisdictions. As a result, three priorities emerge for the large emitter programs:

- ▶ First, make more transparent the approaches to setting benchmarks that determine the limit on emissions sources, and align the benchmarks across jurisdictions and sectors. Minimizing domestic competitiveness risks requires better insight on how these costs may vary and how leakage risks may manifest within the country. This is likely a multi-year challenge given the constant evolution of pricing systems, the considerable information needs required to better understand average cost misalignment, and the need for regulatory amendments to occur in multiple jurisdictions.
- ▶ Second, update the formulas used to grant free emissions to include factors that reduce the quantity of freely granted emissions. As more countries impose carbon policy and carbon costs become better aligned among trading partners, there will be a need to scale back the level of free emissions granted. From an effectiveness perspective, low average costs erode the long-term price signal that creates incentives for structural change through lumpy capital investments in lower-emitting facilities or major retrofits. Oversupply of credits might also undermine carbon prices. From a cost-effectiveness perspective, there is a risk that the granting of free emissions will overcompensate some firms, especially with many countries (including the United States) now implementing carbon policies. Finally, international trading partners will be looking towards the relative stringency of policies to determine whether

border measures will be needed to protect their own industries. The presence of free emissions could factor into comparisons of relative stringency and therefore trigger border measures.

- ▶ Third, move to enable credit and emissions trading across jurisdictions. The limited ability to trade emissions reductions among jurisdictions, especially in large emitter programs, hinders long-term cost-effectiveness. As average costs for domestic emitters increase, a move towards better trading links between domestic jurisdictions would help reduce costs.

4. Engage Indigenous Peoples in carbon pricing governance and policy.

Carbon pricing systems across the country do not treat Indigenous Peoples in a uniform way. Some communities in some jurisdictions receive exemptions that allow them to avoid carbon costs, whereas other communities face the full carbon cost. Since Indigenous communities in Canada are heterogeneous, standardizing the treatment of Indigenous communities in terms of exemptions across jurisdictions poses its own challenges: equality of treatment is not necessarily equitable. Further engagement should inform potential changes to policy (whether changes in coverage and exemptions or changes in revenue recycling) that could address these concerns. Additionally, explicit consideration of the treatment of non-status and self-governing First Nations, Inuit, and Métis communities, as well as Indigenous Peoples who reside in non-Indigenous communities, is necessary.

5. Ensure continuous improvement through more transparency, more measurement, and more stocktaking.

A common risk across federal, provincial, and territorial carbon pricing programs is a lack of information to assess policy outcomes. Specific recommendations to ensure continuous improvement include:

- ▶ Improve transparency by collecting and periodically publishing a common set of federal, provincial, and territorial compliance data and emission-trading market data.
- ▶ Develop a common methodology to compare average costs imposed on large emitters across jurisdictions, and publish the findings.
- ▶ Collect empirical data on the performance of carbon pricing systems, including prices in secondary credit markets.
- ▶ Make independent reviews of the carbon pricing systems routine to help take stock of outcomes but also provide insight on effectiveness, fairness, and competitiveness risks across jurisdictional

programs. Ideally the timing of these reviews would align with jurisdictional reporting and policy review cycles. Embedding independent reviews into ongoing policy stocktaking, including setting five-year reduction targets, can improve policy effectiveness and is an essential element of climate accountability frameworks.¹

Most carbon pricing programs within the country were implemented rapidly, and we observe design choices that reflect a trade-off between expediency and effectiveness. It is not a surprise that many design elements that were implemented in short order would not necessarily support long-term carbon pricing effectiveness. But as these systems mature, and against the backdrop of a fast-changing global move to decarbonize, there is a need to improve the integrity of Canada's carbon pricing systems.

Canada's carbon pricing patchwork is not necessarily a risk to cost-effective and fair emissions reductions. Deepening of federal, provincial, and territorial cooperation that has emerged under the Pan-Canadian Framework should be central to these improvements. Regional variations can and should be accommodated, but only if they do not undermine the effectiveness of carbon pricing.



¹Beugin, D., J. Dion, A. Kanduth, C. Lee, D. Sawyer, and J. Arnold. 2020. *Marking the Way: How legislating climate milestones clarifies pathways to long-term goals*. Canadian Institute for Climate Choices. <https://climatechoices.ca/wp-content/uploads/2020/06/CICC-climate-accountability-framework-FINAL.pdf>. Accessed April 06, 2021.

ACKNOWLEDGEMENTS

LIST OF EXPERTS CONSULTED

In addition to the feedback received from the federal government, provinces, territories, and national Indigenous organizations, we also consulted with climate policy experts from academia, independent research institutes, and non-governmental organizations across Canada. Thirty-minute interviews were carried out with the experts listed below, who subsequently reviewed the draft document.

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