

# Pan-Canadian Carbon Pricing

Rethinking Decarbonisation Incentives – Policy Case Studies

**CATAPULT**  
Energy Systems

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Prepared by



# Pan-Canadian Carbon Pricing

This case study has been developed for the UK's Energy Systems Catapult under the *Rethinking Decarbonisation Incentives* project, aiming to draw lessons from international experience of policies to improve the framework of economic drivers for decarbonisation in the UK.

The Canadian federal government is seeking to establish a consistent set of carbon pricing systems across Canada through the Pan-Canadian Framework on Clean Growth and Climate Change (PCF). Its experience with development and implementation of the PCF highlights the political and technical challenges faced in developing consistent approaches to carbon pricing across diverse provinces and territories, particularly when jurisdictional governments have diverse political leanings.

The case study reviews the federal carbon pricing “backstop” approach proposed under the PCF for those jurisdictions which elect to adopt it or whose proposed approaches fail to meet the minimum stringency standards. In addition, the steps taken to mitigate risks to business competitiveness under the PCF are also highlighted.

## Key findings

- Canada's federal government has shown substantial political will in trying to create a national carbon price signal and coordinate jurisdictional approaches to carbon pricing. The enduring economic benefits of improved effectiveness and cost-effectiveness of climate policies and in providing a level playing field for business within the country are seen to outweigh the one-time costs of federal-provincial negotiation.
- A key principle underlying the PCF is to ensure that the carbon pricing approaches adopted in jurisdictions are of equivalent breath and stringency. Criteria for accessing equivalence include timing, scope, type of mechanism, minimum price level, use of revenues, review and reporting. However, equivalence regarding minimum price levels can only be measured ex-post in 2022. Until that time there is a risk that the pricing systems will not meet the minimum stringency criteria.
- Where criteria are not met, a federal *backstop* including a *carbon levy* on fossil fuels and an *output based pricing system* for large industrial facilities will be applied. The output based pricing system for large industrial facilities is designed to address competitiveness concerns by reducing total compliance costs, but preserves the carbon price signal at the margin at the same level as the carbon levy.
- The federal government has adopted a carrot and stick approach to encouraging provincial cooperation on the PCF. Those that cooperate can gain technical support, additional funding and have some autonomy in designing their carbon pricing regimes. Those that do not cooperate risk loss of funding and being subject to federally enforced carbon pricing approach. However, a number of serious political risks remain as not all provinces and territories have welcomed the PCF.
- Finally, many consider the federal government's action on carbon pricing is undermined by its policies on the fossil fuel industry, since no constraints on the sector's growth are imposed, and fugitive emissions are not covered under the PCF. However, others see compromises as necessary to secure support for the PCF from powerful provinces such as Alberta.



“The enduring economic and environmental benefits of coordination outweigh the one-time costs of federal-provincial negotiations.”

Canadas's Ecofiscal Commission, *The Benefits of Coordinating Canadian Carbon Pricing Strategies*.



## Abbreviations

<b>EITE</b>	Emissions Intensive and Trade Exposed
<b>HFC</b>	Hydrofluorocarbon
<b>GDP</b>	Gross Domestic Product
<b>GHG</b>	Greenhouse gas
<b>PCF</b>	Pan-Canadian Framework on Clean Growth and Climate Change

## Nomenclature

<b>tCO<sub>2</sub>e</b>	Tonnes of carbon dioxide equivalent
<b>MtCO<sub>2</sub>e</b>	Megatonnes of carbon dioxide equivalent
<b>kt</b>	1,000 tonnes

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## Policy overview

### Policy narrative

The federal Government developed the Pan-Canadian Framework on Clean Growth and Climate Change (PCF) founded on the Vancouver Declaration of March 2016. This provincial, territorial and federal collaboration to tackle climate change allowed provinces and territories (jurisdictions) to apply their own policies to reduce climate change.<sup>1</sup> Jurisdictions had to ratify the PCF by February 2018, after which it will be legislated. The PCF harmonises carbon pricing approaches across jurisdictions, as well as imposing federal regulations on Hydrofluorocarbons (HFC) and methane emissions, a clean fuel standard and a plan to phase out coal-fired electricity. Figure 1 provides an overview of the PCF implementation timeline, including the specification that a carbon pricing system should be in place in all provinces and territories by 2018, otherwise a federal “backstop” will be implemented as an alternative.

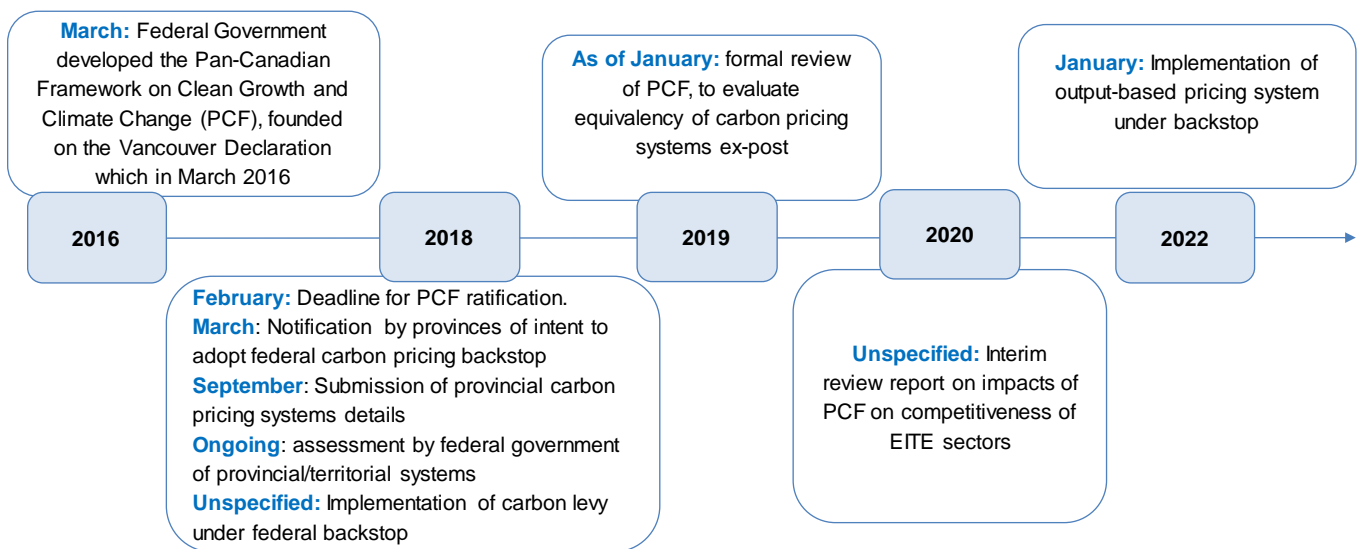


Figure 1 Timeline of the implementation of PCF and carbon pricing implementation

### Coverage, obligated entities and eligibility

Figure 2 shows the total emissions in Canada in 2014 (note that net land-use change and forestry emissions are excluded). The federal carbon pricing backstop will only be implemented in those provinces and territories that fail to introduce a carbon pricing system, or if the system is of insufficient stringency or breadth. Although the draft legislation is still in a consultation phase, as a minimum the backstop will apply to all energy emissions in Canada (77% of total) and to synthetically produced GHGs from any industrial facilities emitting over 50kt.

<sup>1</sup> Environment and Climate Change Canada, Pan Canadian Framework on Clean Growth and Climate Change, 2016

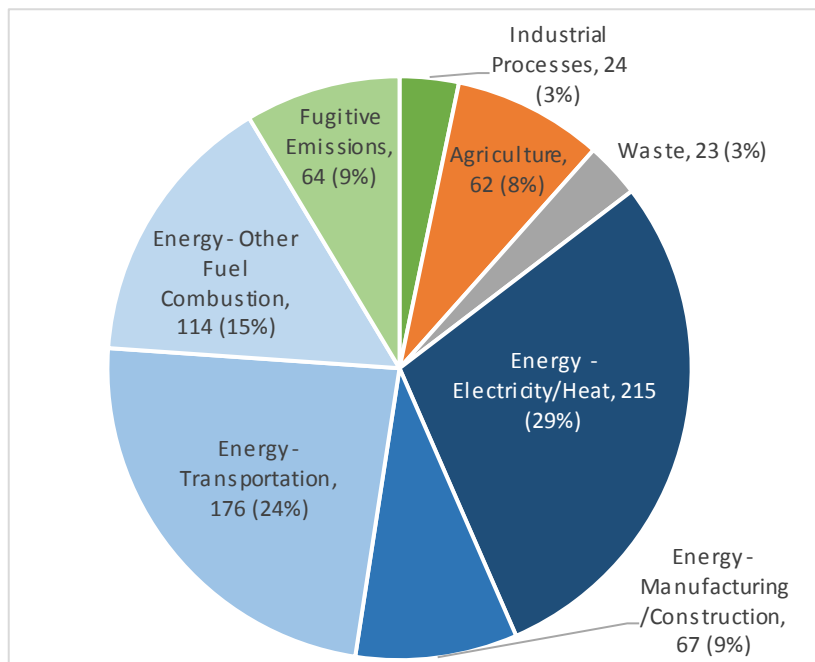


Figure 2 Total GHG emissions in Canada 2014 (MtCO<sub>2</sub>e)<sup>2</sup>

### Mechanism and economic incentive

The PCF includes a benchmark that establishes criteria to ensure that carbon pricing adopted in territories/provinces is sufficiently broad and stringent. Where a jurisdiction does not meet the benchmark and the federal **backstop** is applied, the jurisdiction will lose the autonomy to create its own carbon pricing system and, potentially, lose control of how the revenues are spent within their province or territory. The **backstop** is made up of a **carbon levy** and an **output based pricing system**. The levy will be applied upstream on the supplier of any liquid and solid fuels combusted in the jurisdiction. The output based pricing system will apply to those facilities that emit over 50ktCO<sub>2</sub>. In this system, a carbon price will only be applied to emissions that exceed an industry performance benchmark. Those that emit less than the standard are provided with credits, which can be banked for future compliance purposes or sold to other facilities.

### Compliance

For the output pricing system facilities will be required to submit annual compliance reports by bodies accredited with ISO 14065 to Environmental and Climate Change Canada.<sup>3</sup> At a provincial level it is not clear what rules or procedures that will be applied to determine non-compliance with the benchmark and therefore the application of the backstop. It is likely that this compliance will be determined by economic modelling work undertaken by the federal government.<sup>4</sup>

### Institutional set-up

The Department of Environment and Climate Change Canada will administer the backstop system.

### Effectiveness and cost effectiveness

The Federal government has modelled the impact of carbon pricing across Canada, including the application of the PCF in provinces and territories currently without carbon pricing. The analysis finds that carbon pricing could reduce carbon emissions by 80-90 million tonnes by 2022 and that there will be no significant impact

<sup>2</sup> Based on data from CAIT Climate Data Explorer. 2017. Washington, DC: World Resources Institute. Available online at: <http://cait.wri.org>

<sup>3</sup> Environment and Climate Change Canada, Carbon pricing: regulatory framework for the output-based pricing system, 2018

<sup>4</sup> Beugin, D., Dale Beugin Executive Director, Canada's Ecofiscal Commission, interview in March 2018

on national economic growth. The pricing system may spur innovation and investments creating long term growth opportunities. Modelling these benefits was outside the scope of the analysis.<sup>5</sup>

## Carbon pricing in the PCF

Up to the present point carbon pricing has been led by provincial and territorial governments in Canada, resulting in patchwork of approaches. British Columbia established the first carbon tax in North America in 2008, Ontario and Quebec have implemented cap and trade, and Alberta has adopted a hybrid system, as shown in Figure 3.<sup>6</sup> Commentators have suggested that these jurisdictions may have been motivated by federal inaction during years of conservative government, or the desire to preserve their autonomy in designing their carbon policies.<sup>7</sup>

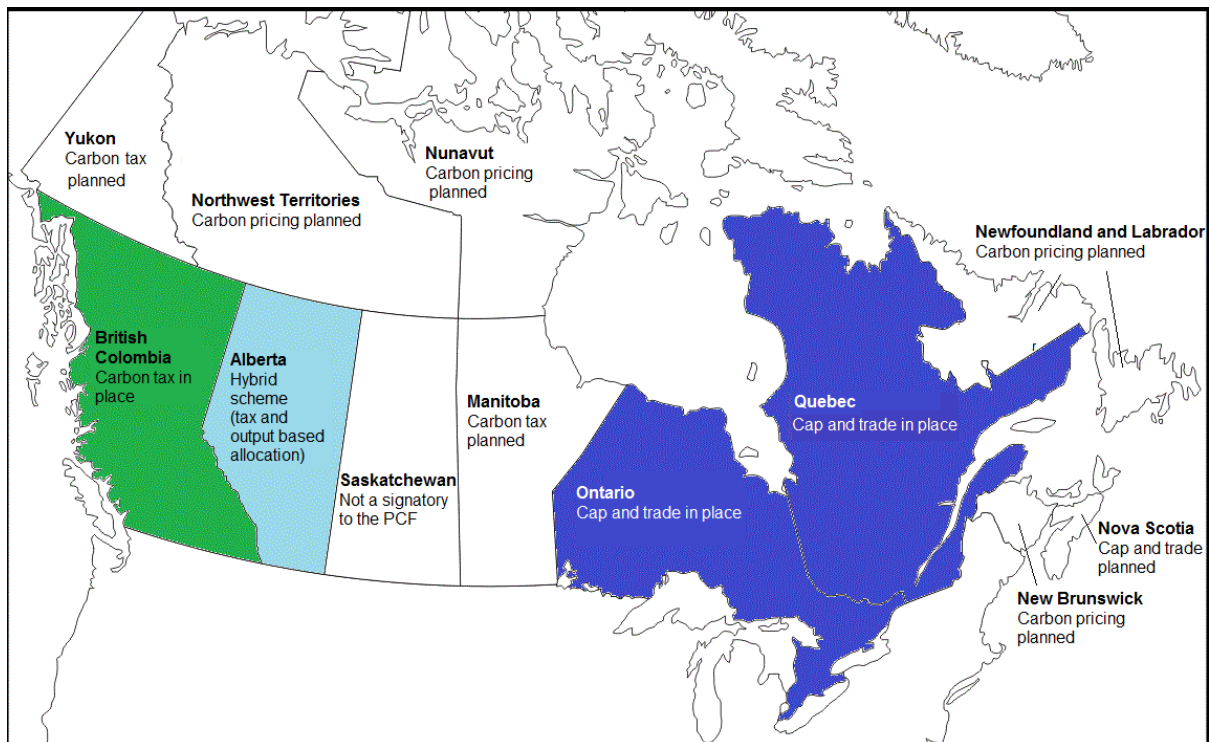


Figure 3 – Map of status of carbon pricing in Canadian provinces, March 2018<sup>8</sup>

However, this has led to different approaches to carbon pricing across Canada, and the Canadian Government recognises there are strong reasons to coordinate these approaches. Firstly, a coordinated approach may lead to greater *effectiveness* in reducing carbon emissions, as the current patchwork is likely insufficiently stringent, and more aggressive policies are required to meet national emission reduction targets. In addition, current inconsistencies may limit the policy cost-effectiveness if inexpensive abatement options remain unpriced in certain jurisdictions. Finally, a common carbon price will level the playing field for business, and prevent inter-jurisdictional carbon leakage. Canada's Ecofiscal Commission states that the enduring economic and environmental benefits of coordination outweigh the one-time costs of federal-provincial negotiations.<sup>9</sup>

This last point is politically important as it ensures that some jurisdictions are not losing business due to leakage, especially since jurisdictions do not have autonomy over trade policy in Canada and would

<sup>5</sup> Government of Canada, Estimated impacts of the Federal Carbon Pollution Pricing System, 2018

<sup>6</sup> Environment and Climate Change Canada, Pan-Canadian Approach to Pricing Carbon Pollution, 2016

<sup>7</sup> Anonymous (low carbon policy and law advisor), interview March 2018.

<sup>8</sup> Ricardo Energy & Environment, as of March 2018

<sup>9</sup> Canada's Ecofiscal Commission, The Benefits of Coordinating Canadian Carbon Pricing Strategies, 2016

be unable to mitigate leakage through the adoption of border carbon adjustments. However, it is important to note that while the federal government is looking to ensure that minimum stringency requirements are met, the risk of leakage cannot be eliminated as there will still be price discrepancies between jurisdictions. It is in the jurisdictional governments' interests to prevent this from happening when designing their policies.

Therefore, one of the key principles underlying the PCF is to ensure that the carbon pricing approaches adopted in jurisdictions are **equivalent**, of sufficient breadth and stringency. To determine equivalence, the PCF sets out that approaches will be tested against criteria in the Federal Carbon Pricing Benchmark.<sup>10,11</sup>

### Federal carbon pricing benchmark

The benchmark sets out the criteria for carbon pricing adopted by territories and provinces in Canada.<sup>12</sup> It maintains the flexibility for provinces and territories to impose a carbon pricing system that reflects each jurisdiction's circumstances,<sup>13</sup> and was explicitly designed to accommodate existing approaches.<sup>14</sup> As such, carbon taxes, cap and trade markets or hybrid systems can each be applied.<sup>15</sup>

### Pan-Canadian Approach to Pricing Carbon Pollution – Pan Canadian Benchmark<sup>16</sup>

- 1. Timely introduction.** All jurisdictions will have carbon pricing by 2018.
- 2. Common scope.** Pricing will be based on GHG emissions and applied to a common and broad set of sources to ensure effectiveness and minimise interprovincial competitiveness impacts. At a minimum, carbon pricing should apply to substantively the same sources as British Columbia's carbon tax.
- 3. Two systems.** Jurisdictions can implement: (i) an explicit price-based system (a carbon tax like British Columbia's or a carbon levy and performance-based emissions system like in Alberta), or (ii) a cap-and-trade system (e.g. Ontario and Quebec).
- 4. Legislated increases in stringency, based on modelling, to contribute to our national target and provide market certainty.**
  - For jurisdictions with an explicit price-based system, the carbon price should start at a minimum of \$10 per tonne in 2018, and rise by \$10 per year to \$50 per tonne in 2022.
  - Provinces with cap-and-trade need: (i) a 2030 emissions reduction target equal to or greater than Canada's 30 percent reduction target; (ii) declining (more stringent) annual caps to at least 2022 that correspond, at a minimum, to the projected emissions reductions resulting from the carbon price that year in price-based systems.
- 5. Revenues remain in the jurisdiction of origin.** Each jurisdiction can use carbon pricing revenues according to their needs, including to address impacts on vulnerable populations and sectors and to support climate change and clean growth goals.
- 6. Federal backstop.** The federal government will introduce an explicit price-based carbon pricing system that will apply in jurisdictions that do not meet the benchmark. The federal system will be consistent with the principles and will return revenues to the jurisdiction of origin.

<sup>10</sup> Environment and Climate Change Canada, Pan-Canadian Framework on Clean Growth and Climate Change, 2016

<sup>11</sup> Environment and Climate Change Canada, Technical paper: federal carbon pricing backstop, 2017

<sup>12</sup> Environment and Climate Change Canada, Technical paper: federal carbon pricing backstop, 2017

<sup>13</sup> Environment and Climate Change Canada, Guidance on the pan-Canadian carbon pollution pricing benchmark, 2018.

<sup>14</sup> Beugin, D., Dale Beugin Executive Director, Canada's Ecofiscal Commission, interview in March 2018

<sup>15</sup> Environment and Climate Change Canada, Technical paper: federal carbon pricing backstop, 2017

<sup>16</sup> Environment and Climate Change Canada, Pan-Canadian Approach to Pricing Carbon Pollution, 2016

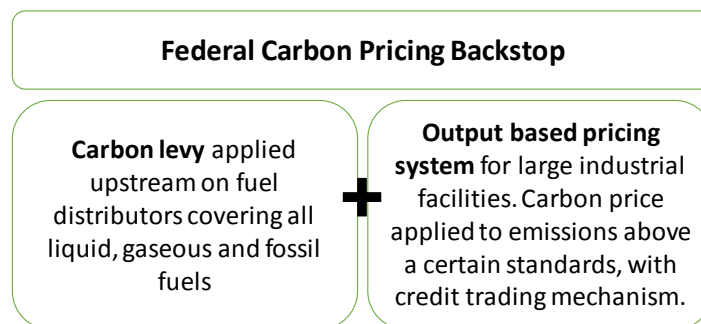
**7. Five-year review.** The overall approach will be reviewed by early 2022 to confirm the path forward, including continued increases in stringency. The review will account for progress and for the actions of other countries in response to carbon pricing, as well as recognition of permits or credits imported from other countries.

**8. Reporting.** Jurisdictions should provide regular, transparent and verifiable reports on the outcomes and impacts of carbon pricing policies.

**Federal carbon pricing backstop**

Under the PCF, any jurisdiction without a carbon pricing system of sufficient scope or stringency as defined by the benchmark will be subject to the implementation of the federal carbon pricing backstop.<sup>17</sup> Some jurisdictions may choose to adopt the federal backstop instead of designing their own system, and the timelines for such a decision are provided in Figure 1.<sup>18</sup> Commentators have said that Northern territories will likely choose the federal backstop, which may indicate it is perceived to be less burdensome given the more limited resources of Northern governments.<sup>19</sup> The drawback of this approach is that while revenues generated from the backstop will be returned to the jurisdiction of origin, they may lose their autonomy in how these revenues are distributed. The federal government has reserved the right to return revenues directly to individuals instead of the provincial government.<sup>20,21</sup>

The federal carbon pricing backstop system is similar to the hybrid system adopted in Alberta.<sup>22</sup> Alberta has successfully applied a dual system of a carbon price levy and an output based allocation system. The federal backstop has two very similar components:



**Figure 4 Components of the federal carbon pricing backstop**

**The carbon levy for fossil fuels**

Liquid, gaseous and solid fuels are all covered by the levy. Rates for the levy are set between 2018 and 2022. Rates of the levy start at \$10/tonne carbon dioxide equivalent (CO<sub>2</sub>e) in 2018 rising at \$10 a year to reach \$50/tCO<sub>2</sub>e in 2022.<sup>23</sup> British Columbia introduced its carbon tax at \$10/tCO<sub>2</sub>e in 2008 and increased it at \$5 a year to reach \$30/tCO<sub>2</sub>e in 2012<sup>24</sup>. The tax will rise to \$35/tCO<sub>2</sub>e in April 2019 and \$50/tonne in April 2021<sup>25</sup>. The PCF is therefore in line with the experience and expectations of the carbon tax in British Columbia.

<sup>17</sup> Environment and Climate Change Canada, Technical paper: federal carbon pricing backstop, 2017

<sup>18</sup> Environment and Climate Change Canada, Carbon pricing: regulatory framework for the output-based pricing system, 2018

<sup>19</sup> Anonymous (low carbon policy and law advisor), interview March 2018.

<sup>20</sup> Environment and Climate Change Canada, Technical paper: federal carbon pricing backstop, 2017

<sup>21</sup> The Canadian Press, Ottawa could offer carbon rebates directly to residents in holdout provinces, 2018

<sup>22</sup> EY, Canada releases federal carbon tax pricing proposals, 2018.

<sup>23</sup> Environment and Climate Change Canada, Technical paper: federal carbon pricing backstop, 2017

<sup>24</sup> Government of British Columbia, British Columbia's Revenue-Neutral Carbon Tax, n.d.

<sup>25</sup> PWC Canada, 2017 British Columbia NDP budget: Tax highlights, 2017.



The point of regulation for the levy is upstream, meaning it will be paid by the fuel producer or distributor. For the purposes of the levy there are four actors in the fuel supply chain: Registered Fuel Distributors, Registered Fuel Importers, Registered Fuel Users, and other non-registered persons. The levy is paid when a Registered Fuel Distributor uses fuel in a backstop jurisdiction or distributes it to someone that is not a registered distributor. Registered Fuel Importers will pay the levy if they deliver fuel to a non-registered user. Registered Fuel Users that are covered by output pricing may be able to acquire fuel without the levy being paid.<sup>26</sup>

The following users are provided relief from the levy<sup>27</sup>:

- Those facilities covered by output based pricing (see below)
- Registered farmers pursuing certain activities
- Exported fuel
- Fuel used in international ships (including aviation) stores)
- Where raw material does not produce heat or energy
- Visiting military forces and diplomatic representatives
- One litre containers of fuel
- The biofuel portion of fuels

### **Output based pricing system for industrial facilities**

Output pricing only applies the carbon levy rate above to a facility's emissions if they are greater than the national emissions-intensity standard for the particular activity pursued. The standard will be a nationally determined "best in class" output based standard for that particular activity.<sup>28</sup> The standard addresses leakage concerns within Canada as it is based on a national standard which is consistent between jurisdiction, and does not provide incentives to move production. It is based on the relative emission intensity of final outputs so does not provide an incentive to reduce production levels.

Where emissions are less than the standard, the facility will receive equivalent credits which can be banked or traded with other facilities, and those exceeding the standard will either submit credits or pay the carbon price. All facilities that emit over 50ktCO<sub>2</sub> will be subject to the output based pricing system, however, buildings and waste and wastewater facilities are exempt.<sup>29</sup> While the explicit rationale for excluding waste is not mentioned in the policy documents, it is usually difficult to cover on account of the very numerous and distributed emission sources in the sector and limited low cost abatement options.

While the pricing obligation covers only part of a facility's emissions (lowering the average cost of compliance for participants) the carbon price signal will still apply to all emissions, since installations have an incentive to reduce emissions below the benchmark and earn surplus credits.<sup>30</sup> Since the average cost of compliance with the output pricing system will be cheaper than a levy, facilities that emit less than the eligibility threshold can opt into the output based pricing system if they wish.

As an additional flexibility option, facilities will be able to submit carbon offsets in order to meet compliance obligations. The exact rules are still under development to be informed by the pan-Canadian offsets framework being developed by the Canadian Council of Ministers of the Environment. However, at present the possibility of using international offsets compliant with the Paris Agreement is left open. As a minimum, the technical paper on the backstop states that "*credits can be generated from voluntary activities, namely*

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<sup>26</sup> Environment and Climate Change Canada, Technical paper: federal carbon pricing backstop, 2017

<sup>27</sup> Environment and Climate Change Canada, Technical paper: federal carbon pricing backstop, 2017

<sup>28</sup> Environment and Climate Change Canada, Technical paper: federal carbon pricing backstop, 2017

<sup>29</sup> Environment and Climate Change Canada, Technical paper: federal carbon pricing backstop, 2017

<sup>30</sup> Environment and Climate Change Canada, Technical paper: federal carbon pricing backstop, 2017

*those that are not subject to GHG emission reduction regulations, that are not required by law, that have not been supported by government financing, and that go beyond “business as usual” practices”.*<sup>31</sup>

## Policy harmonisation

As mentioned, the key principles underlying the PCF is to ensure that the carbon pricing approaches adopted in jurisdictions are equivalent, of sufficient breadth and stringency. The PCF benchmark sets out a number of criteria in order to harmonise carbon pricing approaches, specifying the timing, scope, type of mechanism, minimum price level, use of revenues, review and reporting processes. Equivalence is important to ensure effort sharing amongst jurisdictions and prevent inter-jurisdictional leakage, but also to ensure sufficient stringency at a national level for Canada to meet its climate change targets.

In order to determine equivalence of the systems, the scope and stringency (with regards to minimum price level) must be compared. While the former is perhaps easier, determining the equivalence of each pricing system is not a straightforward task. Canada’s Ecofiscal Commission developed five metrics to assess the stringency of carbon pricing instruments.<sup>32</sup> However, it is important to note that only an ex-post assessment of the stringency will be possible. The Pan-Canadian Framework incorporates a formal review in 2022 at which time equivalency will be assessed and the effects of new and existing carbon pricing regimes in other countries will be considered.

Until that time, there is a risk that the pricing systems will not meet the minimum stringency criteria. In addition, there may be provinces with persistently higher or lower prices. This could increase the risk of leakage between provinces and hence Canada’s ability to meet national emission goals.

### Metrics for comparing stringency of pricing systems

1. **Quantity of emissions reduced** – Emissions reduced by the policy. This metric focuses on the policy objective. However it does not reflect abatement costs and delays can be experienced in accessing data.
2. **Marginal cost of carbon** – The carbon price associated with each tonne of emission. This is easy to measure, but doesn’t account for differences in system coverage or the international trade of emissions.
3. **Average cost of carbon** – Average policy costs across all emissions (including free allowances) but this is a difficult metric to measure.
4. **Coverage weighted carbon price** – Carbon price adjusted for coverage of carbon pricing system.
5. **Trade adjusted carbon price** – Takes into account imported emission reductions

The Ecofiscal Commission used these metrics to assess the carbon pricing systems in place in Canada (prior to introduction of the PCF). The results of this analysis are presented in Table 2.

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<sup>31</sup> Environment and Climate Change Canada, Technical paper: federal carbon pricing backstop, 2017

<sup>32</sup> Canada’s Ecofiscal Commission, Comparing Stringency of Carbon Pricing Policies, 2016.

Table 1 Canada's Ecofiscal Commission's analysis of the stringency of different carbon pricing systems<sup>33</sup>

	British Columbia	Alberta	Ontario	Quebec
<b>Quantity of emissions reduced</b>	2020: 5-15%	2020: 7%	2020: 11%	2020: 15%
<b>Marginal cost of carbon</b>	2016: \$30	2016: \$20	2016: n/a	2016: \$16
	2020: \$30	2020: \$30	2020: \$19	2020: \$19
<b>Average cost of carbon</b>	2020: \$29	2020: \$13	2020: \$14	2020: \$14
<b>Coverage-weighted carbon price</b>	2016: \$21	2016: \$10	2016: n/a	2016: \$14
	2022: \$21	2022: \$23	2020: \$16	2020: \$16
<b>Trade-adjusted carbon price</b>	2016: \$21	2016: \$10	2016: n/a	2016: \$14
	2022: \$21	2022: \$23	2020: \$18	2020: \$18

It is still unclear what relative weight will be given to these metrics, however, they provide a more comprehensive analysis than a single indicator.

## Addressing competitiveness concerns

Regarding the federal backstop, a number of elements were designed to address competitiveness issues of Emissions Intensive Trade Exposed (EITE) industries, both within Canada and internationally:

- **Lower compliance costs:** The output based pricing system was designed to address competitiveness concerns faced by large facilities, and costs of compliance are expected to be significantly lower than for the levy. This is because costs apply only to emissions above the national "best in class" standard. However, the prices signal at the margin is preserved at the same level as the carbon levy, since there is an incentive to earn credits for emission reductions below the standard based target level.
- **Increased flexibility:** the output based pricing system will allow for the use of offsets, which may lower compliance costs further.
- **Levelling the playing field for business:** a key underlying rationale for a coordinated carbon price in Canada was to prevent carbon leakage – the relocation of business from high to low carbon cost provinces/ territories. As such, the federal has the challenging of ensuring the equivalence jurisdictional policies, at least regarding minimum stringency, although it is likely that price discrepancies will remain. In addition, the use of a national standards for the output based pricing system means installations in all provinces are compared to the same national standard.
- **Revenue recycling:** revenues raised will be returned to the jurisdiction of origin, although federal government has reserved the right to return revenues directly to individuals instead of the provincial government.
- **Exclusions of some sectors:** Agricultural emissions are not covered by the backstop, and although the rationale has not been elaborated, British Columbia's experience may be instructive. Their carbon tax was applied in 2008 to farming inputs (fuels, fertilizers) but subsequently removed in 2012, with the government citing negative impacts on competitiveness and risk of carbon leakage (as well as the lack of mitigation options). Equally, international aviation is excluded from the backstop.

<sup>33</sup> Canada's Ecofiscal Commission, Comparing Stringency of Carbon Pricing Policies, 2016.

Nonetheless, the Canadian government remains naturally concerned about the impact of the policy on EITE and has undertaken impact assessments to understand potential impacts, shown below. In addition, as a key part of the policy review process the government is planning the elaboration of an interim report in 2020 which will focus more heavily on competitiveness of EITE sectors.

Regarding expected competitiveness pressures, the red bars in Figure 5 show the share of gross domestic product (GDP) in each province coming from sectors with a carbon cost greater than 5% of GDP and trade exposure greater than 15%. Some provinces have a greater proportion of EITE sectors than others, and consequently greater trade exposure, particularly Alberta and Saskatchewan. Both regions have seen resistance to carbon pricing, with Saskatchewan opposing all forms of carbon pricing although Alberta has already adopted a carbon pricing system.



Figure 5 The Scale of Competitiveness pressures for Canadian provinces, 2015<sup>34</sup>

Nonetheless, analysis shows that in 2017 the best performing provinces in terms of real GDP growth were those that had some form of carbon pricing system in place. Although no causal relationship can be inferred and a counterfactual has not been constructed, it suggests that carbon pricing has not damaged the prospects of those provinces that have taken the lead on carbon pricing<sup>35</sup>. Therefore, experience in Canada does not support the assumption adopted in many provinces and territories that carbon pricing hurts either sub national or international competitiveness. Work by Canada’s Ecofiscal Commission has shown that there is expected to be little macro impact on the Canadian economy even when a carbon price reaches a high level.<sup>36</sup>

In addition, federal government modelling of the impact of carbon pricing across Canada, including the application of the PCF in provinces and territories without carbon pricing, predicts that carbon pricing has no significant impact on national economic growth.<sup>37</sup>

<sup>34</sup> Canada’s Ecofiscal Commission and Navius Study, Provincial Carbon Pricing and Competitiveness Pressures, 2015

<sup>35</sup> Kniewasser, M., Becker, J., Four provinces outperformed the rest, all while pricing carbon pollution, 2018

<sup>36</sup> Canada’s Ecofiscal Commission, Choose Wisely: Options and Trade-offs in Recycling Carbon Pricing Revenues, 2016

<sup>37</sup> Government of Canada, Estimated impacts of the Federal Carbon Pollution Pricing System, 2018

## Progress with the PCF and remaining challenges

The federal government began work on implementing the PCF in 2017 and has also been providing technical support to those jurisdictions without carbon pricing in place, for example through studies to develop carbon pricing solutions for the unique circumstances they face. In addition, the government is studying the best approach to carbon pricing in EITE industries. The outputs of this study are not yet available.<sup>38</sup>

Canadian provinces and territories are at different levels of implementation of a carbon pricing system. These differences reflect the changing politics and institutional capacities across the country. The status of carbon pricing in Canada is presented in Table 2.

**Table 2 Status of carbon pricing in Canada's provinces and territories**

Province/ Territory	Instrument	Details <sup>39</sup>	% of Canada's Emissions in 2015 <sup>40</sup>
British Columbia	Carbon tax in place	Currently set at \$30/tonne, but will increase at \$5/tonne per year starting in 2018. Plans to increase scope of tax.	8.4%
Alberta	Hybrid scheme in place. Tax covers transport and heating fuels, OBA covers EITEs in electricity, heat production, oil and gas, chemicals.	Carbon tax will be set at \$30/tonne in 2018. An Output Based Allocation Framework will also be introduced, regulating emissions but protecting EITEs	38.0%
Manitoba	Carbon tax planned	Plans to introduce carbon pricing but potentially at a lower level than federal backstop <sup>41</sup>	2.9%
Ontario	Cap and trade in place. Covering large industrials, electricity generators and importers; transportation and natural gas distributors	Cap and trade launched in 2017	23.0%
Quebec	Cap and trade in place. Covers industry, electricity, import and distribution of transport and building fuels.	Cap and trade launched in 2013	11.1%
Nova Scotia	Cap and trade planned	Launch of cap and trade in 2018	2.2%
New Brunswick	Carbon pricing planned	Commitment to launch carbon pricing in current legislative session	1.9%
Prince Edward Island	Carbon pricing planned	Carbon pricing in some form planned for 2018	0.2%

<sup>38</sup> Environment and Climate Change Canada, Pan Canadian Framework on Clean Growth and Climate Change First Annual Synthesis Report on the Status of Implementation – December 2017, 2017

<sup>39</sup> Environment and Climate Change Canada, Pan Canadian Framework on Clean Growth and Climate Change First Annual Synthesis Report on the Status of Implementation – December 2017, 2017

<sup>40</sup> Government of Canada, Greenhouse gas sources and sinks: executive summary, 2017

<sup>41</sup> Kavanagh, S., Manitoba signs federal climate-change plan, 2018

Province/ Territory	Instrument	Details <sup>39</sup>	% of Canada's Emissions in 2015 <sup>40</sup>
Newfoundland and Labrador	Carbon pricing planned	Carbon pricing plan presented in Spring 2018. <sup>42</sup>	1.4%
Yukon	Carbon tax planned	Exploring introduction of carbon pricing	0.0%
Northwest Territories	Carbon pricing planned	Currently consulting on carbon pricing	0.2%
Nunavut	Carbon pricing planned	Currently consulting on carbon pricing	0.1%
Saskatchewan	Not a signatory to PCF	No plans	7.8%

**Political challenges.** Not all provinces and territories have welcomed the PCF, and a number of political challenges remain. Jurisdictions had to ratify the PCF by February 2018, after which it will be legislated. Not having yet been enshrined in legislation it remains to be seen how much of the ambition contained in the PCF and backstop will survive the consultation process or how strictly the benchmark will be applied.

**Failures to ratify.** The Saskatchewan government failed to ratify the PCF and has threatened to take legal action against federal government, although the government has responded that it has the authority to enact the plan.<sup>43</sup> Saskatchewan is opposed to carbon pricing in any form, as it is a province dominated by industry and policy makers estimate it would cost approximately \$4 billion over 5 years. Without designing their own carbon pricing system and not signing the PCF, the federal backstop will be implemented in Saskatchewan, and by virtue of Section 164 of the federal bill the province may lose the right to determine how backstop revenues are spent.<sup>44</sup> Saskatchewan also lost \$62 million of funding for Clean Growth and Climate Change, which was part of the \$1.4 billion of federal funding set aside for provinces that signed the PCF to tackle climate change.<sup>45</sup> Manitoba explored the potential to bring the federal government to court but determined that any case would fail and therefore signed the PCF.

**Upcoming elections and political uncertainty.** Opposition parties in Alberta also said they would get rid of the existing carbon pricing scheme if elected.<sup>46</sup> Such opposition to carbon pricing exposes the PCF to considerable political risk. With many opposition parties opposing carbon pricing, the outcomes of upcoming provincial and federal elections could define the implementation of PCF. It is not clear to what extent the legislative underpinnings of the PCF, benchmark and backstop could be undone. However, constitutional law scholars tend to agree that the federal government has jurisdiction to impose a carbon price at the federal level, so that would still be an option even if provincial support declines.<sup>47</sup>

**Testing against the benchmark.** In addition, the plans of provinces and territories are yet to be tested formally against the benchmark:

<sup>42</sup> The Telegram, Newfoundland and Labrador's carbon pricing plan to be unveiled next spring: Ball, 2017

<sup>43</sup> Lunn, S. and McDiarmid, M., Liberals provide details of plan for national carbon tax, 2017

<sup>44</sup> Cowan, M. What Saskatchewan stands to lose — and gain — by not signing the federal climate change plan, 2018

<sup>45</sup> Cowan, M. What Saskatchewan stands to lose — and gain — by not signing the federal climate change plan, 2018

<sup>46</sup> Cowan, M. What Saskatchewan stands to lose — and gain — by not signing the federal climate change plan, 2018

<sup>47</sup> Anonymous (low carbon policy and law advisor), interview March 2018.

- Manitoba plans to introduce a carbon tax at a lower level than that contained in the benchmark. All guidance to date suggests that in this case the federal backstop would apply but Manitoba believe that their carbon tax at \$25/tonne would meet their emissions reduction goals and therefore the backstop would not apply.<sup>48</sup>
- Nova Scotia has proposed a carbon pricing system which includes emissions reductions from existing policies. New Brunswick has proposed a system which reclassifies an existing tax on fuel as a carbon tax. Both of these systems are unlikely to pass the benchmark because they do not provide additional emissions reductions from carbon pricing.<sup>49</sup>

**Challenges within the fossil fuel industry.** Many consider the federal government's action on carbon pricing is undermined by its policies on the fossil fuel industry. There are no constraints within the PCF on the expansion of the oil and gas sector in Canada, despite a commitment to eliminate subsidies by 2025. The oil and gas industries are the only industries whose emissions are allowed to increase in the PCF.<sup>50,51,52</sup> While additional regulation is proposed under the PCF to regulate methane emissions, the carbon pricing backstop does not cover involuntary leaks of methane from oil and gas facilities. Indeed, analysis in a 2017 study by the Green Economy Network<sup>53</sup> claims that the four major fossil fuel infrastructure projects (which include Pacific NorthWest Liquefied Natural Gas (LNG), Trans Mountain Expansion, Line 3 Replacement, and Keystone XL) approved at federal level will lead to upstream emissions<sup>54</sup> that exceed the emission reductions achieved through the PCF as a whole.

However, others have argued that federal government's approach is understandable in light of political factors. For example, the province of Alberta holds a lot of weight politically as one of the biggest economies, and probably would oppose PCF if the federal government took a hard line, anti-pipeline approach to negotiations.<sup>55</sup> In addition, the argument has also been made that blocking development of the fossil fuel infrastructure is a not a cost-effective way of reducing emissions and only encourages leakage.<sup>56</sup>

## Key findings

Canada provides an example of an approach to coordinating carbon pricing within a country of devolved jurisdictional autonomy, including approaches to ensuring equivalence of pricing systems, dealing with political challenges, and designing a backstop approach which meets minimum stringency requirements.

**Canada's federal government has shown that substantial political will is necessary when trying to create a national carbon price signal and coordinate jurisdictional approaches to carbon pricing.** Canada currently has a patchwork of different policy approaches in some provinces, while other jurisdictions have none. Apart from coordinating carbon pricing approaches, the federal Government's PCF also imposes federal regulations on HFC and methane emissions, a clean fuel standard and a plan to phase out coal-fired electricity.

**The government's rationale is that a coordinated approach to carbon pricing will bring enduring economic benefits which outweigh one-time costs of federal-provincial coordination.** Firstly, a coordinated approach may lead to greater *effectiveness* in reducing carbon emissions, as the current

<sup>48</sup> Kavanaugh, S., Manitoba signs federal climate-change plan, 2018

<sup>49</sup> Beugin, D., Dale Beugin Executive Director, Canada's Ecofiscal Commission, interview in March 2018

<sup>50</sup> Marshall, D., The Pan-Canadian Climate Framework: Historic and Insufficient, 2016.

<sup>51</sup> Lee, M., A critical guide to the Pan-Canadian Framework on Clean Growth and Climate Change, 2016.

<sup>52</sup> OECD, OECD Environmental Performance Reviews: Canada 2017, 2017

<sup>53</sup> Green Economy Network, Assessing the Federal Government's Actions on Climate Change, 2017

<sup>54</sup> Associated with exploration, field development and production operations.

<sup>55</sup> Anonymous (low carbon policy and law advisor), interview March 2018.

<sup>56</sup> Cochrane, B. Opinion: Blocking a B.C. LNG plant could actually worsen climate change, Vancouver Sun. 2018.

patchwork of policies are likely to be insufficiently stringent to meet national emission reduction targets. In addition, current inconsistencies may limit *cost-effectiveness* if inexpensive abatement options remain unpriced in certain jurisdictions. Finally, a common carbon price will *level the playing field* for business, and prevent inter-jurisdictional carbon leakage. Canada's Ecofiscal Commission states that the enduring economic and environmental benefits of coordination outweigh the one-time costs of federal-provincial negotiations.

**A key principle underlying the PCF is to ensure that the carbon pricing approaches adopted in jurisdictions are of equivalent breath and stringency.** The PCF benchmark sets out a number of criteria in order to harmonise carbon pricing approaches, specifying the timing, scope, type of mechanism, minimum price level, use of revenues, review and reporting processes. Equivalence is important to ensure effort sharing amongst jurisdictions and prevent inter-jurisdictional leakage, but also, to ensure sufficient stringency at a national level for Canada to meet climate targets.

**However, it is important to note that equivalence can only be measured ex-post and the price discrepancies between jurisdictions are expected to endure.** In order to determine equivalence of the systems, the scope and stringency (with regards to minimum price level) must be compared. While the former is perhaps easier, determining the equivalence of each pricing system is not a straight forward task. Only an ex-post assessment of the stringency will be possible, and the PCF incorporates a formal review in 2022 at which time equivalency will be assessed and the effects of new and existing carbon pricing regimes in other countries will be considered. Until that time, there is a risk that the pricing systems will not meet the minimum stringency criteria. In addition, there may be provinces with persistently higher or lower prices. This could increase the risk of leakage between provinces, and Canada's ability to meet national emission goals

**Where criteria are not met, a federal backstop including a carbon levy on fossil fuels and an output based pricing system for large industrial facilities will be applied.** The levy will be applied upstream on the fuel supplier to any liquid and solid fuels combusted in the jurisdiction. The output based pricing system will apply to those facilities that emit over 50kt. In this system, a carbon price will only be applied to emissions that exceed an industry performance benchmark. Those that emit less than the standard are provided with credits, which can be banked for future compliance purposes or sold to other facilities.

**The output based pricing system for large industrial facilities is designed to address competitiveness concerns by reducing total compliance costs, but preserves the carbon price signal at the margin at the same level as the carbon levy.** Output pricing system only applies the carbon levy rate to a facility's emissions above a national emissions-intensity standard. However, the carbon price signal will still apply to all emission since installations have an incentive to reduce emissions below the benchmark so surplus credits can be earned. Smaller installations are allowed to opt into this system if they wish.

**Both carrot and stick approaches were necessary in negotiations with districts to encouraging cooperation.** Those provinces that cooperate can gain technical support, additional funding and have some autonomy in designing their carbon pricing regimes. Those that do not cooperate risk loss of funding and being subject to federally enforced carbon pricing approach. Provided political support for the PCF remains, the federal government has the authority to enact the plan constitutionally.

**A number of serious political challenges remain as not all jurisdictions have welcomed the PCF.** The Saskatchewan government failed to ratify the PCF and has threatened to take legal action against federal government, as it is a province dominated by industry. Manitoba explored the potential to bring the federal government to court but determined that any case would fail. In addition, upcoming federal



and provincial elections may tip the balance out of favour with the PCF, with opposition parties in Alberta also said they would get rid of the tax if elected. Finally, the plans of provinces and territories are yet to be tested formally against the benchmark. Not having yet been enshrined in legislation it remains to be seen how much of the ambition contained in the PCF and backstop will survive the consultation process or how strictly the benchmark will be applied.

**Finally, many consider the federal government's action on carbon pricing is undermined by its policies on the fossil fuel industry, although others see compromises as the consequence of political realities.** There are no constraints within the PCF on the expansion of the oil and gas sector in Canada, despite a commitment to eliminate subsidies by 2025. The oil and gas industries are the only industries whose emissions are allowed to increase in the PCF. However, province such as Alberta hold a lot of political weight as one of the biggest economies, and probably would oppose PCF if the federal government took a hard line, anti-pipeline approach to negotiations

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Ricardo  
Energy & Environment

The Gemini Building  
Fermi Avenue  
Harwell  
Didcot  
Oxfordshire  
OX11 0QR  
United Kingdom  
t: +44 (0)1235 753000  
e: [enquiry@ricardo.com](mailto:enquiry@ricardo.com)

[ee.ricardo.com](http://ee.ricardo.com)