CANADA'S **ECOFISCAL** COMMISSION
Practical solutions for growing prosperity

10 MYTHS ABOUT CARBON PRICING IN CANADA

March 2019

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EXECUTIVE SUMMARY

Canadians can see and feel the effects of climate change—from forest fires to floods that threaten our homes, to pollution that threatens our kids' health. They want a serious plan to take action on climate change. And they deserve an honest discussion about our options. Starting in 2019, that will include a price on carbon in all jurisdictions in Canada.

Myths and misleading statements, however, continue to damage the debate over carbon pricing. A debate based on poor information does a disservice to Canadians.

The Ecofiscal Commission hopes that this new report will improve the quality of the debate by drawing on the best available evidence to debunk ten common myths. The report aims to serve as a resource for Canadians who want to learn what the evidence says about carbon pricing and its impacts on emissions, the economy, affordability, and jobs.

In weighing the evidence, we find that many common arguments against carbon pricing just don't hold up. Overall, Canada's carbon pricing systems are well designed, and they are working to reduce emissions without any significant economic impacts. Economists agree: carbon pricing should be a key part of Canada's fight against climate change.

Over the last 10 years, Canada has made tremendous strides on carbon pricing. But continued progress is not guaranteed. Governments and advocates must continue to undertake additional efforts to explain the true costs and benefits of carbon pricing to Canadians.

Likewise, opponents of carbon pricing should debate carbon pricing based on the evidence. Canadians should have a thorough and honest discussion. Relying on myths or poor information is harmful not only to the debate over carbon pricing, but also to our broader public discourse. We can do better.

Canadians are ready to tackle climate change and debate solutions in good faith. The facts are out there.

The 10 Myths

MYTH

PUTTING A PRICE ON POLLUTION IS A NEW, UNTESTED IDEA

FACT

Pollution pricing and carbon pricing are proven ideas that have worked for decades.

- The U.S. reduced pollution that causes acid rain by 34% in 14 years by putting a price on it.
- Carbon pricing has worked in Alberta since 2007 and B.C. since 2008.
- The new federal carbon price will rise to $50 per tonne by 2022.

MYTH

ONLY VERY HIGH CARBON PRICES ARE EFFECTIVE

FACT

People and businesses respond to price changes—even low ones.

- B.C.'s carbon tax, which grew from $10 to $35 per tonne over 10 years, has lowered both per-capita gasoline and natural gas use by at least 7%.
- B.C.'s emissions would be up to 15% higher without its carbon tax.

MYTH

CARBON PRICING WILL COST CANADIAN FAMILIES

FACT

The carbon price is only half the story. Governments are returning revenue to families to ensure carbon pricing is affordable.

- The federal rebate will cover the direct carbon costs for 80% of households (and total costs for 70%).
- 60% of households receive carbon pricing rebates under the Alberta system.
- Provinces such as Quebec and Alberta also fund infrastructure and public transit, making it easier to avoid the carbon price.

MYTH

CARBON PRICING HURTS JOBS

FACT

Carbon pricing will change the kinds of work we do, not the number of jobs we have.

- The B.C. carbon tax shifted jobs to cleaner sectors such as health care. Evidence suggests it did not significantly affect the overall number of jobs one way or the other.
- Governments are helping train people to work in this cleaner economy, as Alberta has done with coal communities.

MYTH

BIG POLLUTERS ARE GETTING A BREAK

FACT

Industry pays a carbon price, like households. They also get support, like households.

- Every province is taking a similar approach to carbon pricing for big polluters, though they go by different names: performance standards, output-based allocations, industrial incentives.
- This approach protects jobs and investment, while maintaining incentives to shrink emissions.

MYTH

CARBON PRICING IS A CASH GRAB

FACT

The federal government is returning all carbon pricing revenues to the provinces.

- The federal government is returning 90% of the money to households. They receive the revenues as a credit when they file their income taxes.
- The remaining 10% will fund efficiency projects for small businesses, schools, and hospitals in each province.
- All revenue stays in the province in which it is generated.

MYTH

PEOPLE CANNOT CHANGE THEIR BEHAVIOURS IN RESPONSE TO CARBON PRICING

FACT

Many Canadians have more options than they realize. Over time, carbon pricing drives innovation, making cleaner options more affordable.

- In B.C., carbon pricing affected vehicle choices: the carbon tax improved fuel economy by 4%.
- The European Union's carbon price increased patents for clean technologies by 1% and overall innovation by 10%.

MYTH

THERE IS NO POINT TO CARBON PRICING IF GOVERNMENTS REBATE THE REVENUES

FACT

Rebates help with affordability, but they don't change the incentive the price provides to pollute less.

- Reducing pollution means saving money. The more you cut your emissions, the less carbon price you pay. You get the same rebate no matter what.
- The federal rebate will cover the direct carbon costs for 80% of households (and total costs for 70%).

MYTH

WE CAN USE OTHER, BETTER POLICIES TO REDUCE EMISSIONS

FACT

Carbon pricing is the fairest and cheapest way to fight climate change. It should be a key part of any meaningful plan.

- Regulations and subsidies usually cost more to reduce emissions. For example, Quebec's electric vehicle subsidies are very expensive—about $395 per tonne of carbon pollution reduced.

MYTH

THERE IS NO NEED TO REDUCE CANADA'S EMISSIONS

FACT

The world is feeling the effects of climate change. Canada produces a lot of pollution. Our example matters.

- Canada is one of the world's top 10 emitters. The average Canadian emits three times the global average.
- The rest of the world is moving: 46 jurisdictions now have a price on carbon, including China.
- Our example can help spur the collective action required to effectively tackle climate change.

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1. Introduction

Canadians are having a serious policy debate about climate change.

Major economic and scientific reports continue to highlight the scale of the challenge. New threats to our health and extreme weather in our own backyards are creating a new sense of urgency. The costs of delaying meaningful action are increasingly evident, and the window for action to avoid the worst of those impacts is closing. Now is the time to act.

Canadians want to do their part to tackle global climate change. But the national discussion about the best policies to do so remains polarized.

In 2019, this debate over climate change and climate policy will continue. Carbon pricing in particular may even become an election issue. Myths and misleading statements, however, continue to damage the debate over carbon pricing. A debate based on poor information does a disservice to Canadians.

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Carbon pricing has many advantages. It is a practical and meaningful way to shrink our greenhouse gas (GHG) emissions. Evidence continues to pour in from around the world that carbon pricing can reduce emissions, and it can do so without a significant impact on jobs or economic prosperity. Carbon pricing is also fair. It makes polluters take responsibility for the pollution they create.

As a result, we argue it should be a key piece of any serious plan to address climate change.

Still, the public discussion over this issue can be overwhelming. What does carbon pricing mean for Canadian families? How will carbon pricing affect Canadian jobs and the economy? Will carbon pricing help Canada achieve its emissions targets? Is it really our best option? Canadians who are genuinely curious about carbon pricing may be having a hard time finding the answers to these legitimate questions.

It can be difficult to separate fact from fiction. This report will cut through the noise and weigh 10 common claims about carbon pricing against the evidence.

Myth #1: Carbon pricing is a new, untested idea

Canada's national conversation is still in its early stages, but the idea of putting a price on pollution is not new. The U.S. used pollution pricing in the 1990s to solve the problem of acid rain. European nations have used carbon pricing since the early 1990s, and new carbon pricing systems are popping up in Asia, South America, and Africa. In fact, carbon pricing is not even a new idea in Canada. Provinces have used it for over a decade.

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We have evidence that carbon pricing works here in Canada

Real-world evidence and experience with carbon pricing—both in Canada and dozens of other jurisdictions around the world—provide insights about how it works in practice, protects our health, maintains economic growth, and keeps life affordable for households. We will draw on that evidence through the rest of this report.

Canadian carbon pricing got its start in Alberta and British Columbia

The provinces have driven climate policy in Canada. Over 85% of Canadians lived in a province with carbon pricing before a national policy was even on the table. Alberta introduced North America's first carbon price in 2007, putting a price on GHG emissions from large industrial emitters (Read, 2014). British Columbia followed in 2008 and then Quebec in 2013. Ontario adopted carbon pricing in 2015 before repealing it in 2018.

In 2016, federal, provincial, and territorial governments decided to take a coordinated approach to help Canada reach its emissions targets. This process produced the *Pan-Canadian Framework on Clean Growth and Climate Change,* a roadmap for a coordinated approach to climate change across the country. One key piece of that plan is a price on carbon (Government of Canada, 2019a).

Canada's approach to climate policy relies on the provinces to lead

The *Pan-Canadian Framework* encouraged provinces to lead and design their own climate policies and carbon pricing systems, just as British Columbia, Alberta, Ontario, and Quebec had done. This would allow provinces to design these policies according to their unique circumstances and priorities.

The federal government ensures that these policies meet a minimum standard, including a minimum price on carbon. It does so by applying a standardized carbon price for any province that hasn't designed its own system. This federal carbon price is called the *federal backstop.* It will apply in four Canadian provinces and two territories: Saskatchewan, Manitoba, Ontario, New Brunswick, Yukon, and Nunavut (Government of Canada, 2018a).

Importantly, whether a province or territory prices carbon through its own policy or the federal backstop, all the revenues from carbon pricing will stay in that province or territory.

Myth #2: Only very high carbon prices are effective

Meeting Canada's 2030 climate targets will require stronger policies over time. If we are to rely on carbon pricing to do more of the heavy lifting, that means increasing carbon prices over time. But effective carbon pricing isn't a yes or no question: even though carbon prices in Canada are relatively low, they are still helping to reduce our GHG emissions. Slowing the growth of our emissions won't ultimately be enough, but it is an essential first step.

Even low carbon prices work to shrink emissions

Carbon pricing works because *prices change behaviour.* Putting a price on carbon creates an incentive for people and businesses to use carbon more efficiently, use less of it, or substitute it for other products where possible (Kameyama & Kawamoto, 2016). Decades of real-world experience show that carbon pricing works—even at low levels.

We have *seen* how households and businesses respond to carbon prices—including here in Canada. Some of the strongest evidence comes from British Columbia, which introduced a carbon tax in 2008. Economic analysis shows the province's modest carbon tax slowed the growth of its GHG emissions (Murray & Rivers, 2015). Several studies have identified the specific impacts of British Columbia's carbon tax, including:

- Lowering per-capita gasoline use by at least 7% (Lawley & Thivierge, 2016)
- Improving average vehicle fuel efficiency by at least 4% (Antweiler & Gulati, 2016)
- Lowering residential per-capita natural gas use by at least 7% (Xiang & Lawley, 2018)
- Lowering diesel use by 3.3% (Bernard & Kichian, 2018)

Other jurisdictions that use carbon pricing have also seen their emissions curves bend downward, including Sweden, Finland, Denmark, the Netherlands, several American states, the United Kingdom, and the European Union. Carbon pricing is working to reduce emissions in many parts of their economies, including power generation, heating, and the use of lower-carbon fuels (Bohlin, 1998; Lin & Li, 2011; Martin et al., 2014; Martin et al., 2015; Schmalensee & Stavins, 2015; Zhou, 2017; Fell & Maniloff, 2018; Hibbard et al., 2018).

Also, evidence from Alberta suggests that carbon pricing is shrinking emissions in its electricity sector. In 2016, Alberta emitted 5% less per unit of electricity produced than it did in 2015 (Government of Alberta, 2019a). New evidence suggests the effects will increase over time. From 2017 to 2018, coal-fired electricity production fell by 22% while gas production increased by 35% (AESO, 2019). This doesn't mean that the carbon price is solely responsible for these shifts. However, Alberta's declining emissions are consistent with the impacts of carbon pricing on electricity in other countries, such as the United Kingdom (Hirst, 2018).

Slowing the growth of our emissions is the first step toward shrinking them

Isolating the impacts of carbon pricing— economic growth, oil prices, other policies— from other factors can be challenging and counterintuitive. For example, from 2009 to 2016, British Columbia's economy grew by 20%, second among Canadian provinces. At the same time, its GHG emissions grew by only 7% (StatsCan, 2019a, 2019b). The carbon tax slowed the growth of British Columbia's emissions (Murray & Rivers, 2015). Bending our emissions curve downward is an essential first step to reducing overall emissions. The higher carbon prices are, the more we bend the curve.

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We respond more to carbon prices than we do to other price changes

There is also evidence that citizens and businesses respond differently to carbon prices than they do to other price changes. That isn't surprising. Carbon prices are more visible, more predictable, and more permanent than other price changes.

- British Columbian drivers were four times more responsive to changes in gas prices caused by the carbon tax than to price changes caused by other market forces (Rivers & Schaufele, 2015; Lawley & Thivierge, 2016)
- British Columbians were seven times more responsive to changes in natural gas prices caused by the carbon tax than to price changes caused by other market forces (Xiang & Lawley, 2018)

Although higher carbon prices are more effective, evidence shows that many of us *will* even change our behaviour in response to low carbon prices. In Canada, they are already helping to accelerate innovation and the adoption of new, cleaner technologies.

Carbon pricing works even better over the long term

Carbon pricing will produce greater results over time. In the short term, improvements will be mostly incremental. As carbon prices rise, we will demand more low-carbon solutions, and businesses will have additional incentives to innovate and meet that demand.

Carbon pricing is more effective over the long term because carbon pricing also drives innovation (Popp, 2016; Dechezleprêtre & Sato, 2017). These innovations will allow us to reduce more emissions at lower costs. As far as the benefits of carbon pricing go, we are just beginning to pick up speed.

Innovation often consists of incremental small changes, not of massive breakthroughs. However, these small changes can build on themselves quite quickly. Recent technological advancements suggest that even smaller carbon prices might have a much bigger impact than we could imagine.

- **Fuel economy in the 20th century:** For most of the 20th century, the average American car became *less* fuel efficient. When the oil crisis hit in 1973 and the price of a barrel of oil quadrupled in just six months, a rapid shift occurred. Governments put fuel efficiency mandates in place, consumers shifted to smaller cars, and fuel economy improved dramatically—by 42% in just 18 years (Sivak & Tsimhoni, 2009). Households and businesses *demanded* more efficient cars, and policy helped to provide an additional push. There is also evidence that the auto industry responds to carbon pricing by innovating, developing more patents for cleaner engines and processes (Aghion et al., 2016).
- **Patents for clean technologies:** There is a lot of evidence to suggest that stronger environmental policies *can* improve innovation and competitiveness (Dechezleprêtre & Sato, 2017). For example, research suggests that carbon pricing in Europe led to an increase in low-carbon patents. One study found that the EU's carbon price led to a 10% increase in innovation and a 1% increase in the number of low-carbon patents (Calel and Dechezleprêtre, 2016). This innovation also occurred when carbon prices in Europe were less than half of current prices.
- **Cost of renewable power:** Clean innovation driven by other types of policy can also offer lessons for carbon pricing. Renewable power, for example, has seen an unprecedented decline in costs over the last several years. Since 2010, the average cost of building a large-scale solar farm declined by 72%; an onshore wind farm, 25%; an offshore wind farm, 18%. Policy support and innovations in supply chains, materials, and operations have brought costs down dramatically (IRENA, 2018). Renewables are now cost competitive with fossil fuels in many parts of the world, including here in Canada. In Alberta, for example, companies are bidding for the right to build and sell wind and solar power at lower costs than many natural gas projects (Shaffer, 2017; Ryan, 2019). To be clear, carbon pricing was not the main driver of these specific innovations. But the rapid improvement in technologies highlights the power that innovation can have over time. They suggest that the transition to a cleaner economy under a carbon price would be faster—and cheaper—than we might expect.

Myth #3: Carbon pricing will cost Canadian families

Understandably, Canadians worry carbon pricing will increase costs for their household. Carbon pricing *does* increase the cost of fossil fuels for households and businesses, which creates an incentive to produce fewer GHG emissions. It *also,* however, generates revenues that can be used to offset those costs. In assessing overall impacts, we must consider both the carbon price itself and how its revenue is returned to the economy.

Under the federal backstop, carbon rebates will exceed carbon costs for 70% of households

Canada's federal carbon price provides a useful example. This policy will return 90% of the revenues directly to households when they file their taxes. Under this system, approximately 70% of households will receive more in tax rebates than they pay in carbon costs. The top 20% of income earners will pay more in carbon taxes than they receive in rebates. Importantly, this calculation includes direct costs—the price of gas, for example—as well as indirect costs, including any new costs that companies may pass on to consumers.

The federal government has committed to returning revenues generated by the federal backstop to the province they were originally collected from. Since some provinces produce more emissions than others, the size of the rebates will vary by province.

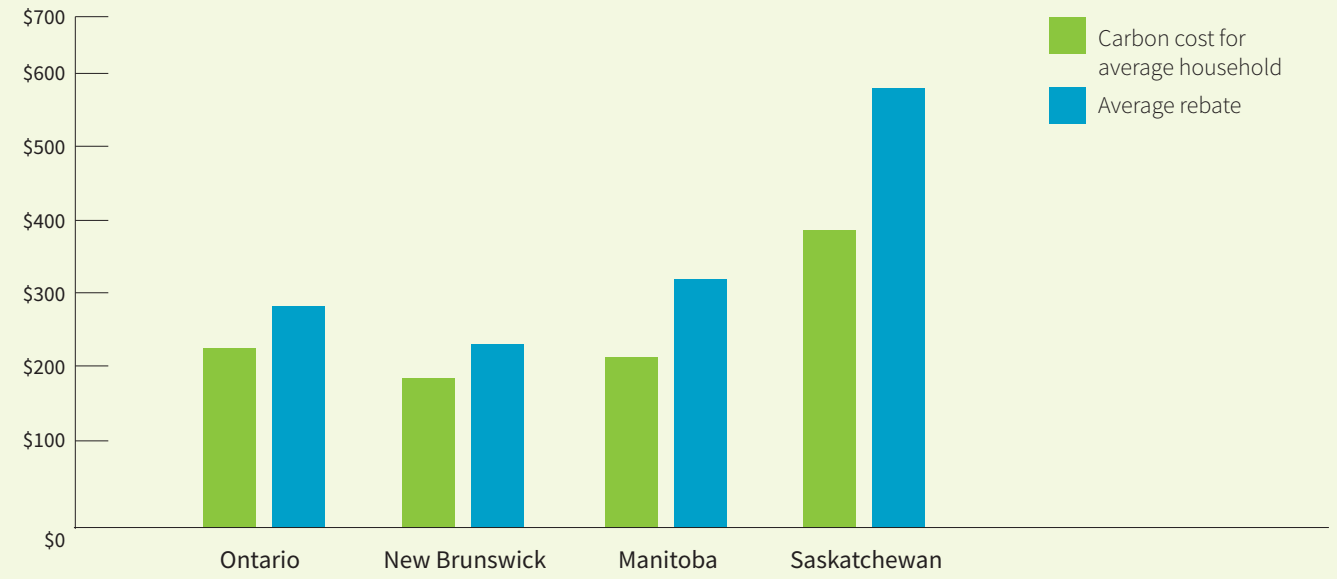
In short: When designed well, carbon pricing does not reduce household purchasing power.

In short: When designed well, carbon pricing does not reduce household purchasing power (Rausch et al., 2011). Carbon prices in Canada are not high, so the costs will be moderate, and the use of the revenues for tax rebates will ensure carbon pricing is fair for low-income households.

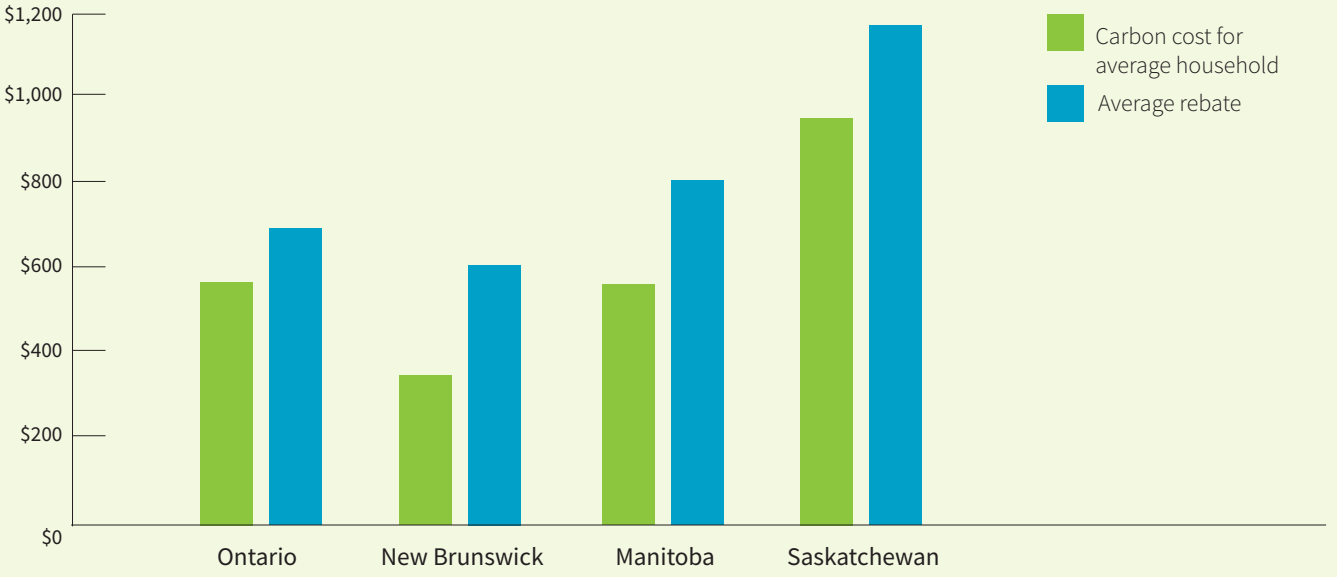
The federal backstop has additional safeguards for households in different circumstances. Larger families, families with one parent, and rural households will receive slightly larger rebates to ensure they are not disproportionately affected by carbon pricing (Government of Canada, 2018a).

Figure 1: Average carbon costs and rebates under the federal backstop

At $20/tonne in 2019



At $50/tonne in 2022



The figure shows Finance Canada estimates of impacts of the federal backstop on carbon pricing policy in terms of 1) average carbon costs faced by households, including both direct costs (i.e., the increase cost of fossil fuels) and the indirect costs (i.e., higher costs of goods based on the carbon produced in manufacturing those goods) and 2) the average benefits to households from rebates, given that 90% of revenue generated is returned to households.

Carbon pricing can—and should—be designed with fairness in mind

Questions about fairness for low-income families are legitimate but can also be addressed through smart policy design and smart use of the revenues (Beck et al., 2015; Dissou & Siddiqui, 2014; Goulder et al., 2018). Canadian governments, both provincial and federal, have designed their carbon pricing systems very carefully, and they have rightfully made fairness a priority.

Again, the backstop policy for federal carbon pricing is illustrative. Low- and middle-income households tend to spend a larger portion of their income on fossil fuels than high-income households, while high-income households spend more on fossil fuels overall (Canada's Ecofiscal Commission, 2016; Klenert & Mattauch, 2016; Wang et al., 2016). In provinces with the backstop, low- and middle-income families will receive the same rebate as a high-income family. But since most low- or middle-income families spend less on carbon overall, the rebate will more than cover their additional costs.

Provinces with their own carbon pricing systems have taken similar steps to ensure that they are fair. Since 2008, British Columbia has more than offset all the revenues it collects from its carbon tax by cutting income, corporate, and sales taxes, creating new tax credits, and reducing health premiums (Government of British Columbia, 2018a).

Ecofiscal's own analysis finds that using around 13% of carbon pricing revenues to fund targeted rebates can offset costs for the 40% of households that earn the lowest incomes (Beugin et al., 2016). So far, provinces in Canada are dedicating more carbon revenues to ensure fairness for lower-income households. Alberta uses approximately 30% of its carbon-tax revenues to help offset costs for the bottom 60% of households (Winter and Dobson, 2016).

Myth #4: Carbon pricing hurts jobs

Quality jobs and meaningful work are important for Canadian families. The evidence suggests that carbon pricing will have both positive *and* negative effects on jobs—which mostly cancel each other out. Still, impacts on individuals must be taken seriously, and thankfully, a number of policies can help smooth the transition over time for affected workers.

Carbon pricing changes the kinds of jobs we do, not the total number of jobs

Carbon pricing will reduce demand for carbon intensive goods and services and increase demand for low-carbon goods and services, such as energy efficient appliances, for example. This will affect what we buy from and sell to one another, which will have a small effect on the types of industries that Canadians work in and the types of work that Canadians do.

The net impacts, however, will be modest.

Analysis of British Columbia's carbon tax suggests it led to a 2% increase in the total number of jobs in the province between 2007 and 2013—an average of 5,000 jobs per year. In other words, jobs were not lost, but instead shifted from emissions-intensive sectors to clean service-based jobs such as health care (Yamazaki, 2017).

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Subsequent research found that British Columbia's carbon tax had no effect on overall employment (Azevedo et al., 2018). One study found that British Columbia's carbon tax disproportionately affected jobs of less-educated workers (Yip, 2018). As we will see shortly, provinces can implement many policies to help these workers transition.

Studies from other developed nations produced similar findings to those in British Columbia. Estimates show that the impact of a gradually rising carbon tax on employment in the United States would be a fraction of a per cent, or possibly too small to detect, even in the short term (Taylor, 2015; Hafstead et al., 2018; Hafstead & Williams, 2018). Analysis from the United Kingdom found that its carbon tax did not lead to a significant shift in jobs over the period of study (Martin et al., 2014).

There are options to help vulnerable industries and workers adjust to carbon pricing

Carbon pricing will affect some jobs, but policy solutions are available to address this challenge.

Provincial carbon pricing systems and the federal backstop are carefully designed to protect sectors that produce a lot of emissions and compete in international markets, such as oil and gas, cement, and steel (Canada's Ecofiscal Commission 2015; Government of Canada, 2018c). Each jurisdiction uses a slightly different approach to support these sectors and protect business competitiveness and jobs, but they are all designed to create incentives for businesses to respond to pricing by improving their performance, not by shifting jobs, production, investment, and emissions to jurisdictions with weaker policy.

Myth #5: Big polluters are getting a break

Concern over job losses connects to the concern that carbon pricing will hurt Canadian businesses. To address this concern, Canada and several provinces have carefully designed their carbon pricing systems to protect the competitiveness of firms that would experience significant pressures from carbon pricing. But this support *isn't* an exemption—business still pay the same price per tonne as households. Instead, this system creates incentives for companies to reduce emissions *and* continue to produce and invest in Canadian provinces.

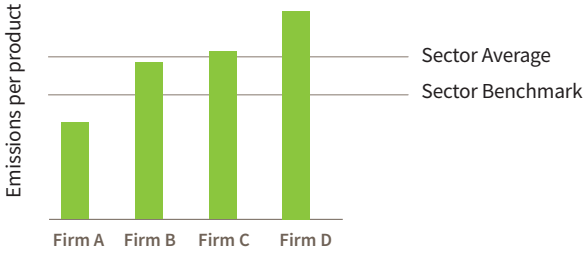
Big polluters are not exempt from the carbon tax

Canada's federal backstop has two separate carbon prices. The first is the economy-wide carbon tax that covers households and most businesses; the second is a *performance standard* that puts a price on carbon by creating a pollution market for large firms that are vulnerable to international competition (Government of Canada, 2019b). This system is specifically designed to do two things.

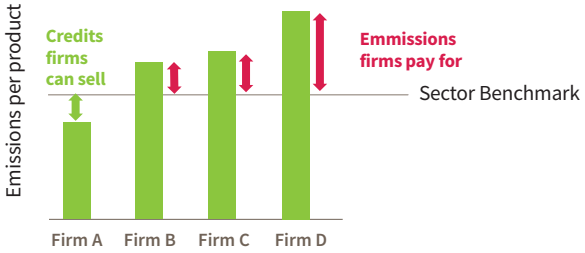
1) Create incentives for large firms to lower their emissions wherever they can
2) Protect the competitiveness of those firms

In short, the system (sometimes known as "output-based carbon pricing") creates incentives for firms to reduce emissions by improving their performance, *not* by reducing output, relocating, cutting jobs, or investing elsewhere. This approach to policy design is a feature, not a bug, and it will ensure that carbon pricing is not a barrier to strong economic growth in Canada (Canada's Ecofiscal Commission, 2015; Leach, 2018).

A. The government establishes a benchmark for the sector.



B. Top performing firms under the benchmark are rewarded.



We can design carbon pricing to ensure that companies reduce emissions and stay internationally competitive. In the figure above, four firms all make the same product, but they produce different amounts of emissions. The line labelled "sector average" shows the sector's average emissions for the product. In A, the government establishes a benchmark for the sector. In B, firms pay the full carbon price for emissions that exceed the benchmark. This protects business competitiveness. Top performing firms under the benchmark are rewarded; they can sell their credits to firms above the benchmark. This creates a market where all businesses (above and below the benchmark) have a continuous incentive to reduce their emissions.

Everyone agrees we should use a different approach for big polluters

Different specific policy approaches can create dual incentives for emissions reductions *and* continued production, and those approaches go by many different names. Based on current practices across Canadian provinces, there appears to be consensus across the political spectrum that they are a sound policy approach to reducing emissions and protecting competitiveness for big polluters. They are a key piece of climate policies across Canada.

- British Columbia's Industrial Incentive and Clean Industry Fund
- Alberta's Carbon Competitiveness Incentive Regulation
- Saskatchewan's Output-Based Performance Standards
- Ontario's Industry Performance Standards
- Free output-based allocations for large emitters in Quebec's cap-and-trade-system
- Free output-based allocations for large emitters in Nova Scotia's cap-and-trade-system

Based on current practices across Canadian provinces, there appears to be consensus across the political spectrum that they are a sound policy approach to reducing emissions and protecting competitiveness for big polluters.

All these approaches work in similar ways. They create an incentive to reduce emissions by putting a price on them, an incentive that will get stronger over time. They allow permit trading, ensuring flexibility and making all emission reductions valuable. They financially reward the best performers in every sector. And they protect business competitiveness by encouraging production and investment within the province (Government of Alberta, 2017; Government of British Columbia, 2018b; Government of Nova Scotia, 2018; Government of Saskatchewan, 2018; Government of Ontario, 2018; Government of Quebec, 2019).

Businesses won't just pass on 100% of their carbon costs; they will respond to the price too

Some companies have no choice but to pass on the small additional costs of carbon pricing to consumers and other businesses. However, this will be a short-term problem in most cases. Businesses are always looking for ways to make their products less expensive. Carbon pricing is no different. With carbon pricing, businesses that can find new ways to avoid producing emissions will lower their carbon costs and gain an advantage over their competitors. Businesses will pay the same carbon price per tonne as households, so they have a strong incentive to reduce emissions and save wherever they can.

Myth #6: Carbon pricing is a cash grab

Yes, carbon pricing *could* generate substantial revenues. But carbon pricing is fundamentally about *better, smarter* government, not bigger government. There are plenty of options for how we recycle the revenues back into the economy. And as the federal backstop illustrates, governments don't *have* to spend the revenue; they can also return it to citizens.

The federal backstop is not a cash grab because the government is not keeping the revenues

Any government can choose to return 100% of the revenues from carbon pricing. The federal government, for example, will return 100% of carbon-tax revenues to the province it was collected from. Households will receive 90% of that revenue directly. The remaining 10% will provide support for small businesses, municipalities, universities, schools, and hospitals.[1]

Provinces can decide how to use the revenues if they want to

There is nothing stopping any province without its own carbon price from opting into the federal plan and doing what they wish with the revenues, rather than the rebates and program support currently planned.

When it comes to recycling the revenues from carbon pricing, governments have options. Different provinces have taken different approaches, including rebates, tax credits, tax cuts, support for vulnerable communities, and funding for public transit, health care, and infrastructure (Canada's Ecofiscal Commission, 2016).

Different provinces have taken different approaches, including rebates, tax credits, tax cuts, support for vulnerable communities, and funding for public transit, health care, and infrastructure.

[1] The federal backstop applies the carbon price to fuels before GST. Therefore, GST is charged on top of the carbon price. Overall, this will increase the size of federal revenues by less than 0.1% (PBO, 2017; Finance Canada, 2018).

Below are examples of the types of policies that some provinces could pursue with the revenues from carbon taxes. We are not recommending that governments adopt any of these specific initiatives; these examples simply illustrate some of the options available to provincial governments.

- **Saskatchewan could eliminate its corporate income tax with a carbon tax of $30/tonne**
  The Government of Saskatchewan forecasts $621 million in corporate tax revenues for the 2018/19 fiscal year (Government of Saskatchewan, 2018). If Saskatchewan applied a $30/tonne carbon tax to the same fossil fuels as the federal backstop, it would generate $663 million in revenues—enough to set its corporate income tax rate at 0% with $42 million left over (ECCC, 2018a; Dobson et al., 2018).
- **With a carbon tax of $30/tonne, Manitoba could ensure anyone earning $31,000 or less pays no provincial income tax**
  If Manitoba applied a $30/tonne carbon tax at the same level of coverage as the federal backstop, it would generate $307 million in revenues (ECCC, 2018a; Dobson et al., 2018). Statistics Canada's Social Policy Simulation Database and Model (SPSD/M) shows that Manitobans earning between $9,383 and $31,843 paid $208 million in provincial income taxes in 2018. A tax credit that rebates all income tax paid to workers earning less than $31,843 would still leave $99 million for other priorities—for example, cutting Manitoba's corporate tax rate from 15% to 12.5%, (Government of Manitoba, 2018).
- **With a $50/tonne carbon tax, Ontario could cut its lowest income tax bracket by almost 2 percentage points**
  If Ontario applied a $50/tonne carbon tax with the same level of coverage as the federal backstop, it would generate $4.9 billion in revenues. SPSD/M shows that this would be enough to cut the tax rate in its $10,355 to $42,960 tax bracket from 5.05% to 3.3%. This would provide an extra $308 a year in take-home pay for a full-time minimum wage worker (ECCC, 2018a; Dobson et al., 2018; Government of Ontario, 2018a; Government of Ontario, 2018b).

Myth #7: People cannot change their behaviours in response to carbon pricing

Some Canadians may feel their options are limited in terms of how they respond to carbon pricing. Low-carbon options aren't always accessible to everyone, especially in the short term. Some Canadians may not be aware of all the behavioural changes that can actually make a meaningful difference. In fact, the *purpose* of carbon pricing is to harness market forces to help us figure out our lowest-cost options.

Not everyone will be able to respond to carbon pricing right away

Some people *will* respond to carbon prices right away. Short-term responses might be as simple as adding extra weather-stripping or carpooling.

However, some Canadians *will not* be able to respond to these incentives right away. For some individuals, taking action might be more expensive than paying the carbon price. And that's OK. After all, the whole point is to let individuals or businesses make their own choices, according to their own unique contexts. It gives emitters control over how and when they change their energy habits.

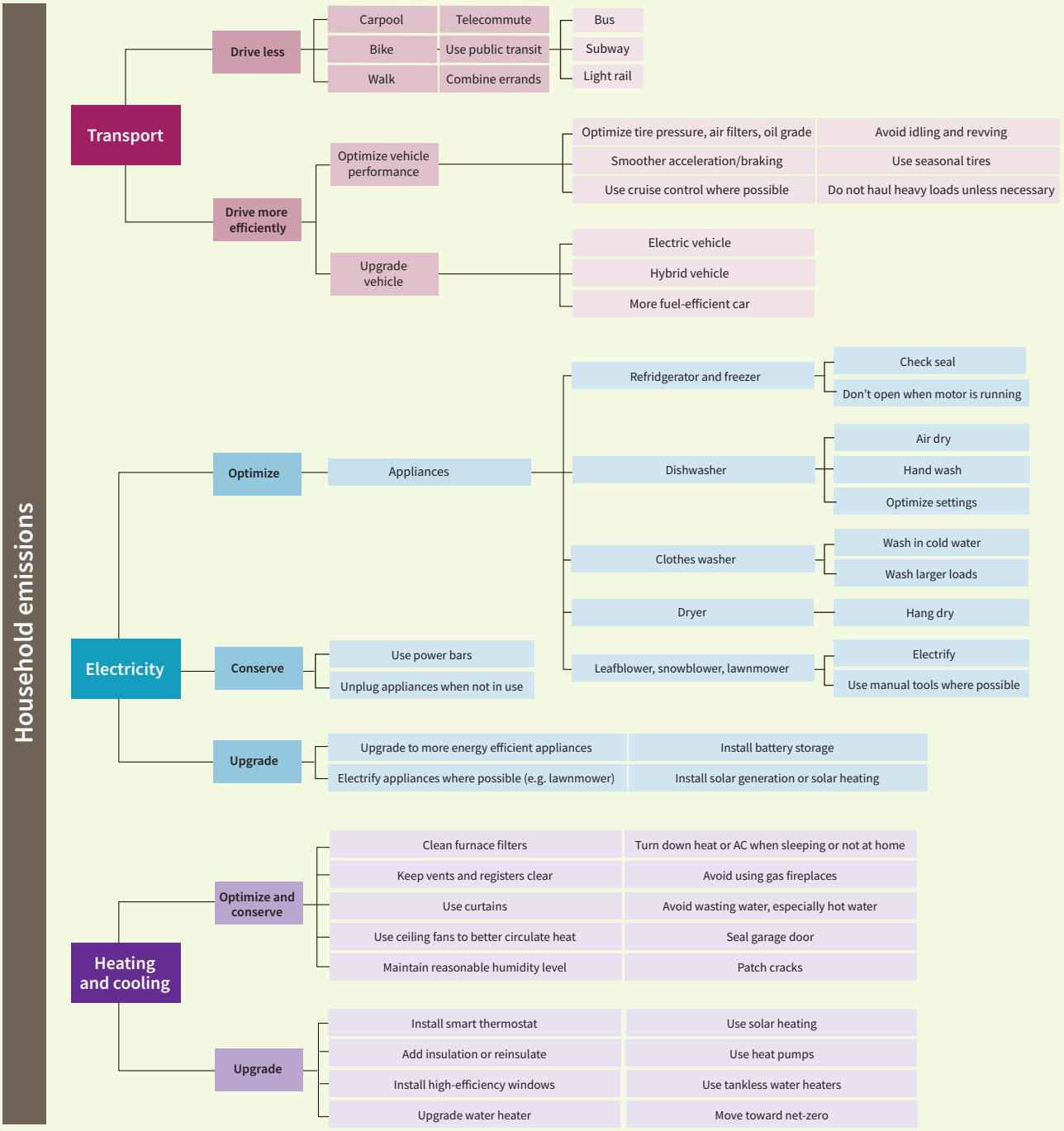
But even those who cannot respond to the price right away are not necessarily worse off. Rebates can help ensure that the carbon tax does not undermine households' purchasing power if they can't adjust right away. We'll return to this crucial point shortly.

When it comes to avoiding the carbon price, we have more options than we think

Carbon pricing aligns what is good for the climate with what is good for your wallet. The objective is to encourage people and businesses to find creative ways to *avoid* paying the carbon price. Paying less means fewer GHG emissions.

Understanding exactly *how many* emissions we produce and where they come from can be challenging. Some people may feel that they do not have enough options to make a meaningful difference or that they cannot adjust their behaviour for financial reasons. But Canadians have more options than they might think. Figure 3 illustrates just some of the many options that might be available to reduce emissions and save money.

Figure 2: Some options for avoiding emissions (and carbon costs)



This figure illustrates a sample of the options Canadians might have to avoid paying the carbon price. Not all options will make sense for all Canadians; they can choose where it makes sense to reduce emissions to avoid paying the carbon price and where it does not, based on their own context.

Low-carbon innovation will create even more options over time

As we discussed earlier, carbon pricing also drives clean innovation, which—over time—will lead to more options for reducing emissions. This is because businesses generally have even more opportunities to reduce their emissions than households and more opportunities to innovate. Over time, new low-emissions technologies and processes will become less expensive and more accessible, and we will use more of them (Li & Just, 2018).

We have seen how these short- and medium-term responses worked in British Columbia. In the short term, the carbon tax lowered per-capita gasoline and diesel use. Over the medium term, the carbon tax improved the fuel economy of the average car (Antweiler & Gulati, 2016; Bernard & Kichian, 2018). In the long-term, we will see even greater changes.

Over time, new low-emissions technologies and processes will become less expensive and more accessible, and we will use more of them.

Over time, more options for reducing emissions become available. Under a carbon price, it could make sense for a business to choose a more efficient piece of equipment or to switch from diesel to electricity when it comes time to replace an old model. The same is true for a family replacing its car or furnace. Maybe additional insulation on a new renovation makes sense under a carbon price. Over time, these investments will save Canadians money and shrink our emissions.

Myth #8: There is no point to carbon pricing if governments rebate the revenues

Will returning 90% of carbon-tax revenues directly to households as carbon rebates change incentives? Does giving the money back undermine the carbon price? In a word: no.

Canadians can avoid the carbon price and collect the rebate

Since the size of the federal rebate is fixed based on where you live and the size of your family, no Canadian household has control over the size of the rebate they receive.

But households do have some control over how much they pay in carbon prices.

Under carbon pricing, reducing your carbon footprint means saving money. Even if a household cuts its emissions to *zero,* it will still receive the full rebate.

Under carbon pricing, reducing your carbon footprint means saving money. Even if a household cuts its emissions to zero, it will still receive the full rebate. As carbon prices rise, the rebates will become bigger and the incentive to reduce emissions will become stronger. And as we've seen, there are many different ways for Canadians to lower their emissions.

With the use of rebates, carbon pricing can change Canadians' incentives without affecting affordability

The objective of carbon pricing is to make Canada cleaner, not poorer. Carbon prices change behaviour, and carbon rebates help restore households' purchasing power. Even though some households will receive more in rebates than they pay in carbon costs, this type of lump-sum rebate generally does not undermine the incentive to lower emissions (Fellows et al., 2018).[2] Together, this two-part policy creates an incentive to lower emissions without negatively affecting the finances of the average Canadian household.

Even households that have fewer options to change their behaviour still receive the rebate. Those that *do* reduce their emissions will get the carbon rebate *and* save money by changing their behaviours to avoid the carbon price. Households can actually increase their purchasing power by making these switches. As we have shown, more and more households will have more options over time.

[2] For example, evidence from Alberta shows the impacts of combined effects of higher energy prices and lump-sum rebates on household spending. In 2006, the Government of Alberta provided a one-time cash transfer, famously known as "Ralph Bucks," to all its citizens. Because natural gas was more expensive in 2005 and 2006 than it had been in 2004, people used less natural gas and mostly spent their Ralph Bucks on other things.

Myth #9: We can use other, better policies to shrink our emissions

Canadians care about climate change, but some may be skeptical that carbon pricing is the way forward. Regulations and programs that subsidize products (like smart thermostats or electric vehicles) are the main alternatives to carbon pricing. Even though the costs of these alternative policies are less obvious to households, those costs are both real and greater than the costs of carbon pricing.

Subsidies are generally an expensive way to lower emissions

Subsidies are funds paid by governments to help businesses or individuals with specific purchases or costs. They generally require governments to pick winners and make decisions about what technologies or activities to support. But in many cases, subsidies reward households or businesses that would have acted with a much smaller subsidy or even no subsidy at all. This undermines effectiveness and increases costs. Moreover, to fund subsidies, governments must also generate additional revenue through higher taxes, lower spending, or larger deficits.

> **Our analysis showed that Quebec's electric vehicle subsidies reduce emissions at a very high economic cost—about $395 per tonne of greenhouse gases.**

Governments in Canada sometimes use subsidies. For instance, several provinces offer electric vehicle subsidies, including British Columbia, Quebec, and, until recently, Ontario. Our analysis showed that Quebec's electric vehicle subsidies reduce emissions at a very high economic cost—about $395 per tonne of greenhouse gases. But a $30 carbon price drives all actions that reduce emissions that cost less than $30 per tonne (Canada's Ecofiscal Commission, 2017).

Regulations are more expensive than carbon pricing

Carbon pricing puts decisions about where and when to reduce emissions in the hands of households and business. With a carbon price, households and businesses will make changes only when they make financial sense.

On the other hand, regulations that substitute for carbon pricing tend to put decisions about where and when to reduce emissions in the hands of governments. Governments do not have the same information that households and businesses have about the costs of reducing emissions across the entire economy, so they have to make some assumptions. As a result, some regulations may require emissions reductions in specific parts of the economy in ways that cost more than carbon pricing.

For example, the federal and provincial governments have supported the biofuels sector with a mix of regulations to encourage their use and direct subsidies for biofuel crops. Ecofiscal's analysis shows that this assortment of regulations and subsidies lowered emissions at a high cost—an average of $128 and $185 per tonne of GHGs (Canada's Ecofiscal Commission, 2016).

Many of these costs come down to the design of regulations. The *more flexible* regulations are, the *less expensive* they tend to be. For example, a low-carbon fuel standard (LCFS) requires fuel distributors to blend a growing percentage of low-carbon fuels in their total portfolio of sales. It doesn't matter what fuels are blended, as long as the fuel mix gets cleaner over time. This type of regulation can reduce emissions significantly or very little, depending on the production process for low-carbon fuels (Vass & Jaccard, 2017). However, even an LCFS is less flexible than carbon pricing. One analysis shows that reducing transportation emissions by 10% with a fuel standard would cost over three times as much as carbon pricing (Rivers & Wigle, 2018) on a per-tonne basis.

Some circumstances do call for regulations, but we should avoid using them as a substitute for higher carbon prices when possible—no matter how flexible they are.

The right regulations can complement carbon pricing

That doesn't mean that carbon pricing can do it all. Carbon pricing is not the only solution, but it is an important and necessary part of the solution.

Regulations make sense when they do something carbon pricing can't do. For example, carbon pricing cannot cover all sources of emissions in the economy. Instead, we target some of those emissions with smart, well-designed regulations.

> **Regulations make sense when they do something carbon pricing can't do.**

One example is the federal rules for methane emissions in the oil and gas sector. Methane leaks from pipes and valves during production. Unlike gasoline or diesel, these "fugitive" methane emissions are difficult to price. Federal regulations will require producers to cut their fugitive emissions by a certain amount (Government of Canada, 2018d). Meeting this target will be

inexpensive—about $13 per tonne of greenhouse gas (Canada's Ecofiscal Commission, 2017). This is because methane is a powerful greenhouse gas, and fugitive methane that doesn't leak out can be sold as natural gas.

Canadians still pay for high-cost policies, even if they cannot see them

Carbon pricing is the lowest-cost climate policy, but its costs are also the most visible. This visibility makes it easier to plan and make decisions that shrink emissions and save money.

The costs of regulations and subsidies are not always visible, but they are almost always higher. Even if Canadian households do not see the higher costs of regulations or subsidies, they will still feel the costs of these policies.

Firms organize themselves to maximize their efficiency and productivity, and regulations require them to reorganize themselves in specific ways—typically by adopting new processes or technologies. These changes will create new costs for firms that they will pass on to consumers as much as possible.

To fund subsidies, governments require additional sources of revenue. This means higher taxes, spending cuts, or larger deficits.

Households have been shielded from the direct costs of these policies in Canada but have felt them indirectly in terms of higher prices and taxes and lower economic activity (Harris et al., 2015; Canada's Ecofiscal Commission, 2016; Vreins., 2018; Rivers & Wigle, 2018; Government of Canada, 2019c).

Historically, Canada has reduced emissions at a higher economic cost than necessary. We can do better. Relying more on carbon pricing and less on regulations and subsidies will help Canada achieve its emissions reductions while maintaining its economic prosperity.

Myth #10: There is no need to reduce Canada's emissions

Yes, Canada is a large, cold, sprawling country, and we face some challenges that many other nations do not. But that does not mean we should abandon our responsibility. We also have opportunities. Canadians want to be part of the solution to climate change. Many of the arguments against taking action—be it carbon pricing or other policies—are based on misperceptions.

Canada is not carbon neutral

The argument that Canada's forests, wetlands, grasslands, and crops absorb more GHGs than they emit is a common one. The evidence shows that it is not true.

Canada's forests cover 35% of its landmass (World Bank, 2018). They absorb a large number of GHGs and other types of pollution every year but nowhere near enough to make us carbon neutral. At most, Canada's forests, wetlands, grasslands, and crops absorb 30% of its GHG emissions.

Furthermore, forests store carbon only temporarily. When forests die or burn, they release that carbon back into the atmosphere—and Canada's wildfire seasons are getting worse. In terms of the total area burned, the worst wildfire seasons in British Columbia's history were 2017 and 2018. As severe wildfire seasons increasingly become the norm, our forests will become less reliable as carbon sinks (Wotton et al., 2010; Harvey & Smith, 2017; Government of British Columbia, 2018c; 2019b).

Carbon sinks and storage *do* have a role to play. In fact, carbon pricing can create incentives for *improving* carbon sequestration (Cameron, 2018). Offset programs like the one in Alberta can help fund projects that increase carbon storage in soil, forests, or land.

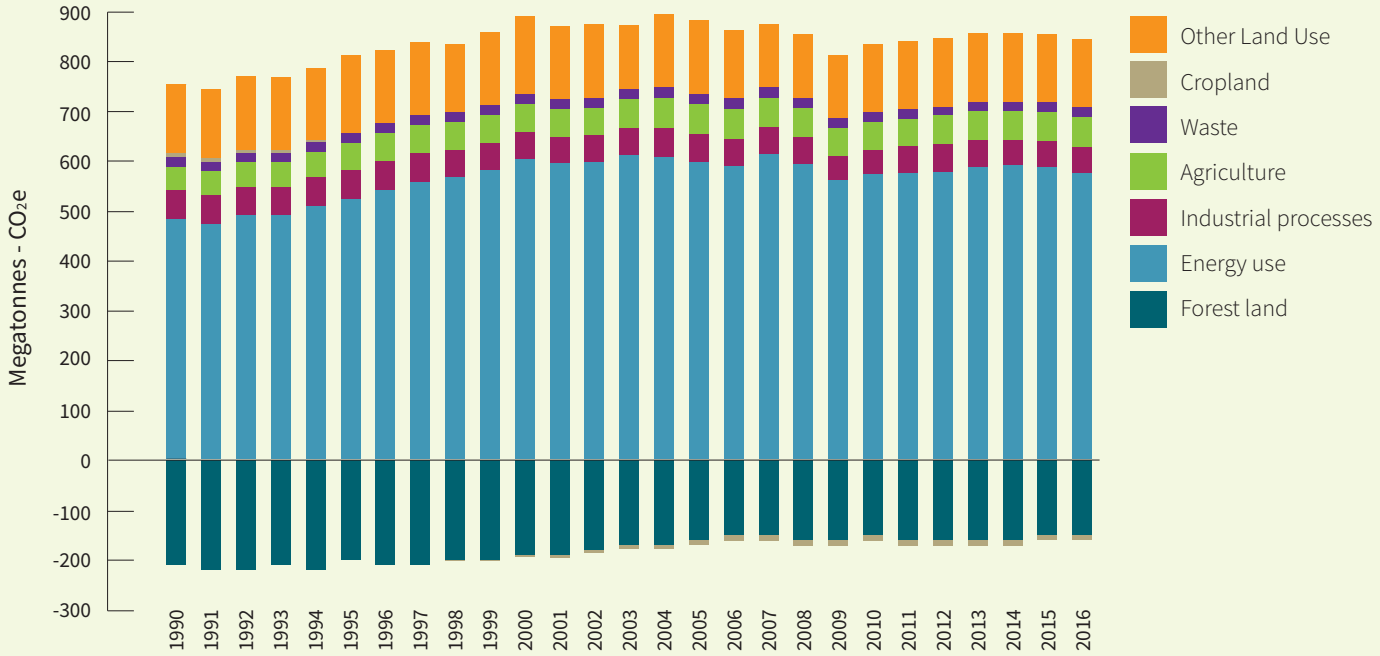
Climate change will not benefit Canada overall

Not all of the effects of climate change will be negative. An increase in global temperatures will bring some benefits to certain regions. Is Canada one of them?

Climate change might present some opportunities and benefits to Canada's economy, such as higher crop yields, longer construction seasons, and less wear and tear on our roads (Boyle et al., 2013; Ochuodho et al., 2016; Ricke et al., 2018). Some of these changes could well result in positive economic benefits for Canada (Burke et al., 2015).

However, costs will be significant as well. Canada is a small, open economy affected by global trends. Our standard of living depends on the continued prosperity of other nations. Our two largest trading partners—the United States and China—will experience some of the most significant economic costs from climate change (Ricke et al.,

Figure 3: The effect of carbon sinks on Canada's overall emissions



The figure show Canada's greenhouse gas emissions inventory over time. Canada's emissions are partially offset by our forests and croplands. The part of the bar that extends above 0 on the y-axis shows the GHGs we produce on an annual basis. The part of the bar that extends below the y-axis shows the GHGs absorbed by Canada's carbon sinks.

Source: (ECCC, 2018b)

2018; StatsCan, 2019). According to a report from the current U.S. government, climate change could shrink the United States' GDP by as much as 10% by 2100 (NCA, 2018). These disruptions will affect Canadian exporters, importers, supply chains, businesses, and communities.

Climate change will also increase the risk of shocks capable of undermining Canada's economic stability. Floods, heat waves, sea-level rise, and other climate impacts could cost Canada between $21 billion and $43 billion a year by 2050 (NRTEE, 2011). These risks will get worse over time.

Recent studies agree on the benefits of reducing GHG emissions. Unmitigated climate change could reduce average global incomes by 23% by 2100 (Burke et al., 2015). Another study found that the global economic benefits of meeting the Paris Agreement's 2°C target could be as high as US$17 trillion a year by 2100 (Kompas et al., 2018). Canada will share the costs of inaction and the benefits of greater ambition.

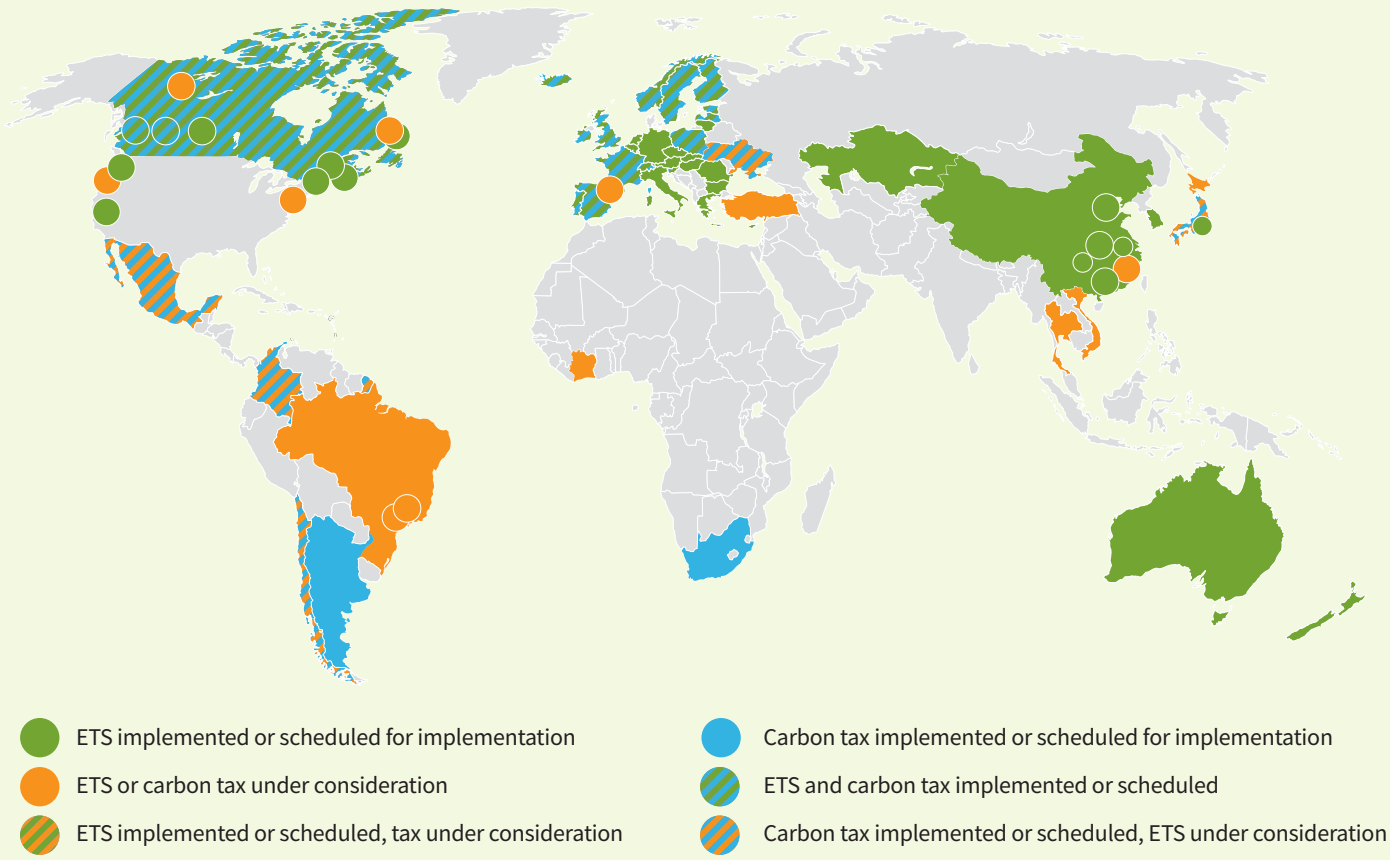
Canada is not alone in pricing carbon

Is Canada moving too fast on climate change? Often, we hear arguments that other countries are not doing as much as we are. Why should we shoulder the load?

But Canada is not acting alone on climate change. Every major economic power is taking steps to shrink their emissions. Many have adopted carbon pricing systems, and more are joining in, including Mexico and in many U.S. states. China began experimenting with carbon pricing in 2017 and already has the largest carbon trading market in the world (Zhang et al., 2018). The number of countries using carbon pricing has tripled in 10 years, and the world is on track to put a price on 20% of global emissions (World Bank, 2019).

The number of countries using carbon pricing has tripled in 10 years, and the world is on track to put a price on 20% of global emissions.

Figure 4: State of carbon pricing around the world, 2019



Note: An Emissions Trading System (ETS) is another term for a cap-and-trade system.

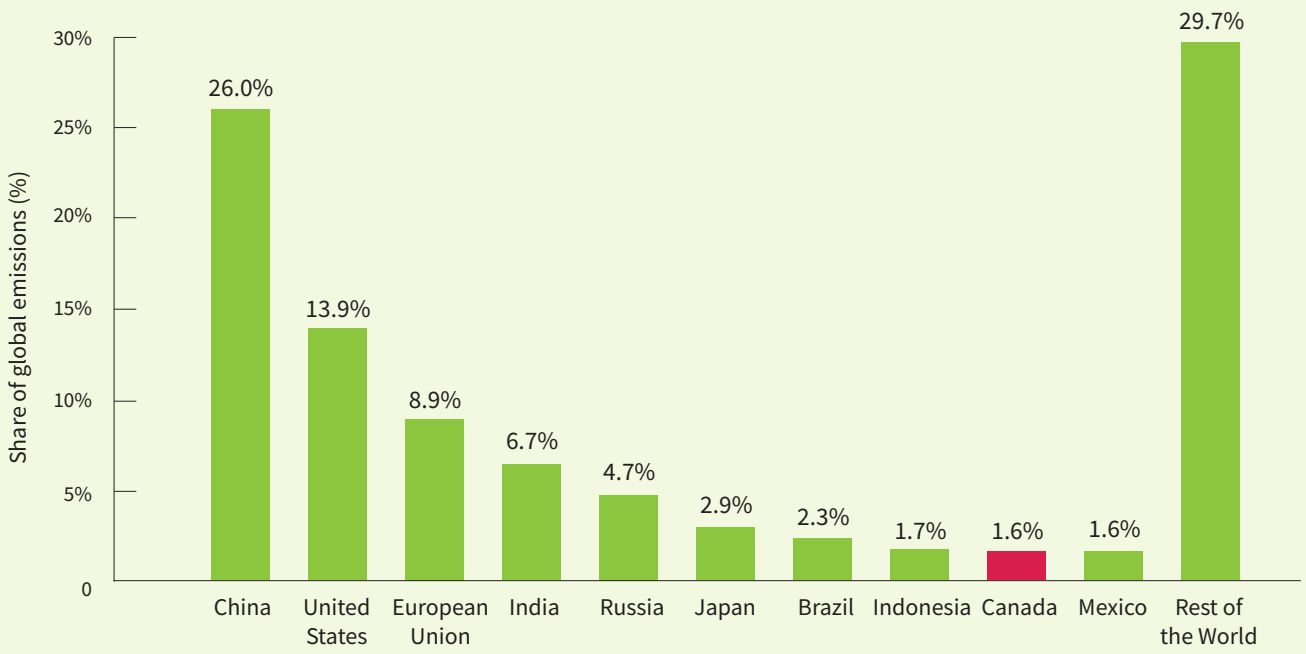
Source: World Bank, 2019

Canada's example matters

Canada produces 1.6% of global emissions, which makes us the ninth largest emitting country in the world (Government of Canada, 2018e). Countries that emit less than Canada make up 30% of global emissions. Canadians are also among the *highest per capita emitters* in the world, and the highest per capita emitters among OECD nations (OECD, 2019).

Both Canada and the world are far from where we need to be to keep global temperatures at a safe level. But short-term political trends cannot hide the underlying truth that the world is moving on climate change. The example set by wealthy countries matters. Canada, along with other developed nations, has a chance to lead and help spur serious collective action that matches the scale of the challenge. A rising price on carbon with household rebates will reduce emissions without harming our economy, will deliver benefits like improved air quality, and will serve as a model to other nations. How can we expect other countries to be ambitious if we fail to take action ourselves?

Figure 5: Top 10 global emitters



The figure illustrates the top 10 GHG emitting countries, globally. Although Canada produces 1.6% of global emissions, it is still one of the largest emitters in the world. The only country in the European Union with a larger share of global emissions than Canada is Germany.

Source: Government of Canada, 2018e

Conclusion

Carbon pricing can be a key piece of Canada's efforts to slow global climate change. In many parts of the country, it already is.

Canadians should continue to debate whether carbon pricing is the best way to reduce emissions and what role it should play. But debating carbon pricing and its alternatives means cutting through the myths and misunderstanding that currently pervade the public conversation.

We hope that this essay, which provides a map to key facts and evidence for carbon pricing, can be a useful resource in doing so. In it, we have walked through the details of the federal backstop, including how it will work without harming families, negatively affecting job creation, or exempting big polluters. We have shown why carbon pricing will work to help Canadians reduce their emissions and why it is not a cash grab. We have explored why carbon pricing is fair and why it is better for our economy than other policies. And we have shown why Canada needs to be part of the global efforts to slow climate change.

Over the last 10 years, Canada has made tremendous strides on carbon pricing. But continued progress is not guaranteed.

Over the last 10 years, Canada has made tremendous strides on carbon pricing. But continued progress is not guaranteed. Governments and advocates must continue to undertake additional efforts to explain the true costs and benefits of carbon pricing to Canadians. Without good information, Canadians are more likely to form their opinions based on myths.

Likewise, opponents of carbon pricing should debate carbon pricing based on the evidence. Canadians should have a thorough and honest discussion. Relying on myths or poor information is harmful not only to the debate over carbon pricing, but also to our broader public discourse. We can do better.

Canadians are ready to tackle climate change and debate solutions in good faith. The facts are out there. Let's use them.

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AESO: See Alberta Electric System Operator

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Canada's Ecofiscal Commission recognizes the generous contributions of the following funders and supporters:

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