

COMMENTARY

Considerations in a Comprehensive Approach to Canadian Climate Policy

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Over the past year, federal, provincial and territorial governments have been working together to hammer out pan-Canadian Framework on Climate Change and Clean Growth. Nothing is more Canadian than a collaborative approach to finding solutions to a common problem. After all, climate change will affect the entire country, and we are all in this together. If we are to meet our 2030 international climate commitments, a national framework should: recognize provincial action to date; glue together the current patchwork of policies to form a more cohesive approach; and, most importantly, **raise ambition** through robust set of policies and program solutions. An agreement on the pan-Canadian Framework will still require a great deal of work on policy design and implementation, which is expected to be completed over the coming years.

Setting the Stage

Climate leadership is often wrongfully portrayed as a cost. Such discourse misses the point on a number of fronts, including: the cost of inaction, the importance of Canadian leadership and the economic opportunities of climate action.

When juxtaposed with climate inaction, the benefits are clear. According to the [National Roundtable on Economy and Environment](#), climate change could cost Canadian economy between CAD \$21 billion and \$43 billion per year by the 2050s. Increasingly frequent severe weather events that can result in fires and floods, and a changing climate will affect our agriculture, fisheries and forestry sectors, to name a few, costing the Canadian economy. These costs could quickly get out of control, with most recent climate models presenting a bleak picture of the future and rising emissions. In fact, Canada could experience a temperature increase of as much as twice the global average.

This brings us to the second point: the narrative that Canadian emissions matter very little is a poor pretext for foot-dragging that has gotten us where we are today. It is important to remember that climate change is a global issue with local implications. If we are to achieve a climate safe future, we need to encourage large emitting countries to significantly reduce their emissions. Canadian leadership matters, as we have seen, for it is incredibly difficult to demand that others reduce their emissions if we are not doing the same at home. In order to influence others, a country must practice what it preaches.

Finally, growing prospects from clean technologies provide tremendous economic opportunities. We cannot afford to stand idle as the world shifts to a lower-carbon economy, lest we become technology takers. Instead, we should capitalize on emission reduction and clean energy technologies. With some of the most innovative companies in the world, Canada could become a leader in clean technologies. For this to materialize, we need to create conditions for growth of Canada's clean economy while phasing out fossil fuel subsidies that are distorting the market.



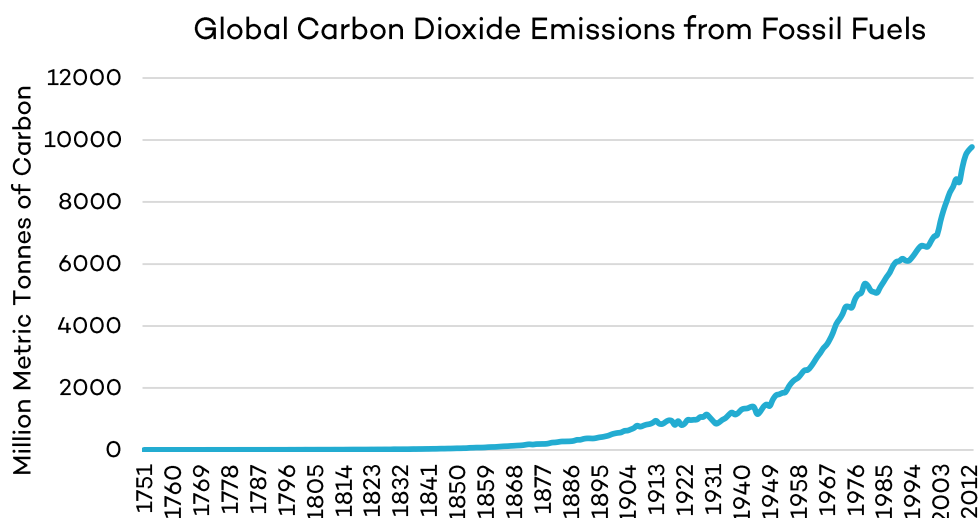
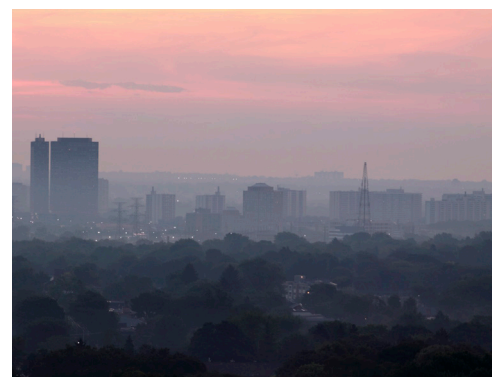
The economy and the environment can go hand in hand, but we need to make the right economic decisions. We need to create conditions for a transition to a clean economy whereby Canadian companies can compete in a world that is becoming increasingly carbon-constrained. The more we continue to delay action, the higher the cost of emission reductions will rise—costs that will be absorbed by future generations—and the less competitive our economy will be against our trading partners.

The pan-Canadian Framework on Climate Change and Clean Growth is expected to provide policy guidance to be implemented over the coming years. Below we provide an analysis of **key elements of an effective policy** implementation.

Polluter Pays Principle

The global climate dilemma that we are in is fed by greenhouse gas emissions, caused by human activity, that have been allowed to accumulate in our atmosphere. These emissions have grown at an increasing rate since the industrial revolution and at an exponential rate over the past century. In essence, emitters have been allowed to pollute the atmosphere while passing the cost of those emissions to society at large and to future generations in particular. Many economists have coined this a “market failure” that can be corrected by having the polluter pay or by regulating emissions.

Pricing carbon pollution is the most cost-effective approach to reducing emissions. It allows industry and individuals to decide on



Source: Calculated using T.A. Boden, G. Marland, and R.J. Andres. (2016). *Global Regional and National Fossil-Fuel CO₂ Emissions*, Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, U.S. Department of Energy, Oak Ridge, Tenn., USA DOI: [10.3334/CDIAC/00001_V2016](https://doi.org/10.3334/CDIAC/00001_V2016)

economical options in reducing emissions. We have seen support for carbon pricing across political parties in Canada. Critics, however, often frame it as a tax. Some have indicated a preference for regulatory approaches and others have suggested incentives as the way to go.

Regulations are more rigid and provide very little to no flexibility. Simply put, the command-and-control regulatory approach works but could come at a higher cost. Incentives, on the other hand, pass the cost of pollution on to taxpayers, and the costs to governments of some past emission reduction measures are not trivial. For example, according to the [International Energy Agency](#), carbon capture and storage (CCS) projects could cost between USD 40 and over 100 per tonne of carbon dioxide avoided. There is a role for



governments to invest in initial research and development of emission reduction technologies, including CCS. By pricing carbon, not only do governments create conditions for clean technology innovation but also, for projects such as CCS, to have the economic incentives to operate over the longer term.

In 1992, the [Rio Declaration on Environment and Development](#) called on countries “to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.” Putting a price on carbon pollution supports this objective.

According to the [World Bank](#), about 60 jurisdictions, covering 12 per cent of global emissions, have put a price on carbon pollution. Carbon pricing is no longer an exclusive club and the number of jurisdictions implementing carbon-pricing regimes will likely continue to grow. Governments that put a price on carbon will benefit by capitalizing on the transition to a clean economy while seeing their emissions decrease.

Canada’s gradual increase of carbon price to CAD 50 per tonne by 2022 is the right step, but the price signal is not stringent enough on its own to meet climate targets. Provinces will need to introduce a price on carbon that meets federal requirements in order to avoid having a carbon price imposed on them by Ottawa. Ontario will soon see its cap-and-trade program up and running. By linking with Quebec and California, Ontario will expand its carbon markets, which will allow it to access the lowest-cost emission reductions. Both Quebec and Ontario will need to have 2030 caps that are equivalent to Canada’s 2030 climate targets. Alberta has indicated its intent to increase its carbon price to meet federal targets; British Columbia will need to do the same on its carbon tax, which has been frozen since 2012. A number of other provinces are also in the process of developing their own carbon pricing regimes.

Cap and trade and carbon tax are two different approaches to pricing carbon, and it is difficult to directly compare the price on carbon between these two regimes. Although under Quebec and Ontario’s a cap-and-trade regime the price on carbon may be lower than the federal carbon tax, the former caps emissions while the latter does not. This cap would need to decline over years to meet 2030 targets. Under cap and trade, the price is market based, and could change based on a number of factors.

It would be poor policy argument if a jurisdiction refused to increase its carbon tax by comparing its price to the cap-and-trade regime. To be equivalent or comparable, a jurisdiction should either introduce a price that is similar to the proposed federal schedule or set declining caps on emissions to meet climate targets. Furthermore, provinces that get ahead of the federal regulatory curve will benefit by being able to design and administer their own carbon regimes that meet local circumstances, versus a carbon tax that will be administered by Ottawa.

In the meantime, because the carbon price policy is not stringent enough to result in emission reductions required to meet 2030 commitments, the framework will need to complement the carbon-pricing regime with regulatory and incentive measures.

KEY ELEMENTS OF AN EFFECTIVE POLICY:

- Provincial/territorial governments intending to introduce a cap-and-trade regime with declining emission limits to meet 2030 targets or a carbon tax that will reach CAN 50 per tonne by 2022.
- Recognition in the pan-Canadian Framework that the carbon price will be assessed and adjusted before 2022, based on emission reductions achieved.
- An approach to comparing federal and provincial policy measures.



Turning Down the Temperature by Phasing Out Short-Lived Climate Pollutants

Most of our carbon dioxide emissions are absorbed by our oceans, with the remainder staying in our atmosphere for thousands of years. However, short-lived climate pollutants are another story. These climate pollutants stay in the atmosphere for a much shorter period, but often have a significantly higher global warming potential. To this end, phasing out short-term climate pollutants as quickly as possible is critical to turning down the temperature in the short term and increasing the likelihood of staying within climate-safe limits.

To mitigate the effects of short-term pollutants, the international community made the right decision by agreeing to the [phase-out of hydrofluorocarbons](#) (HFCs) over the next few decades. HFCs are typically used in refrigerators and air conditioners, and there are many substitutes that can replace them.



Methane is a short-lived greenhouse gas that stays in the atmosphere for about 12 years. According to the [IPCC Fifth Assessment Report](#), methane (with climate-carbon feedbacks) has a global warming potential 86 times that of carbon dioxide. Despite its high global warming potential, emissions from methane venting and fugitive emissions are on the rise.

Methane accounts for 15 per cent of Canada's emissions, and is a result of venting and fugitive emissions from oil and gas systems, domestic livestock and landfills. Canada committed to reducing [methane emissions from the oil and gas sector](#) by 40–45 per cent by 2025. Although a good first step, this falls short of what is needed to meet climate objectives. Because of rising methane emissions, its very short climate life and its high global warming potential, maximizing reductions of this short-lived pollutant will be essential.

KEY ELEMENTS OF AN EFFECTIVE POLICY:

- A longer-term but accelerated plan to phase out methane emissions from all sources.

Dash to Gas, Not so Fast

In a November 2016 announcement, the Government of Canada committed to accelerating the [phase-out of coal-fired electricity emissions](#) by 2030. The federal policy will play an important role in reducing emissions in the electricity sector. Canada could soon have some of the cleanest electricity generation in the world.

However, missing in the announcement were specific measures to prevent coal-fired electricity from being replaced with natural gas. This is important because of the above-described global methane problem. When phasing out coal pollution, governments need to ensure that one problem is not replaced with another. In the absence of stringent regulations, a phase-out of coal-fired electricity could result in increased demand for natural gas, which could in turn result in methane emissions, flaring and black carbon pollution from production sites.





The other issue is that replacing coal with natural gas, which some may argue is a transition fuel, but also lock investment into yet another fossil fuel. Renewable portfolio standards can help set targets that allow coal-fired electricity generation that is being phased out to be replaced with renewables. These targets could also help increase the bankability of renewable energy projects.

Alberta (Canada's largest coal-fired electricity producer) has announced its intent to phase out coal-fired electricity emissions by 2030 while setting targets for renewables. On December 7, 2016, New Brunswick also announced it would set a coal phase-out target, though the target and approach remain to be decided. The other two provinces with large coal-fired electricity emissions are Nova Scotia and Saskatchewan. Nova Scotia has an [equivalency agreement](#) that caps emissions from the electricity sector at 4.5 megatonnes by 2030. Saskatchewan is also in the process of developing an [equivalency agreement](#) with the federal government related to its electricity sector. The details of these agreements are yet to be finalized.

KEY ELEMENTS OF AN EFFECTIVE POLICY:

- A clear plan that ensures that coal-fired electricity is not simply replaced with natural gas.
- Regulatory conditions (e.g., renewable targets) that incentivize renewable energy generation.

Transforming Transportation

Canada has already taken a number of steps to reduce emissions in the transportation sector, including [renewable fuel regulations](#) and planned infrastructure investment.

Our cities are designed for the car culture, which continues to incentivize urban sprawl. In the absence of high-speed train networks, in a country with significant distances between major centres, vehicle and air transport are more convenient modes of transportation. In order to tackle emissions from the sector, we must tackle the transportation challenge by investing in public transit and incentivizing improved urban densification.



In the meantime, we must reduce the carbon content of our fuels.

Canada took a major step with the recently announced intent to develop [clean fuel standards](#). However, in the absence of sustainability criteria, there is a significant risk for renewable and clean fuel standards to result in negative and unintended environmental impacts. These impacts could include deforestation of tropical forests to produce palm oil for biodiesel production and sugar cane for ethanol production. There will also be a risk of food products being used for fuel production. Furthermore, feedstock for renewable fuel production could also result in increased use of pesticides and fertilizers, which can have an impact on the local ecosystems. These risks could be mitigated by robust sustainability requirements and carve outs for other forms of lower-carbon fuels. Canada should also introduce electrical vehicle targets to accelerate market penetration of these vehicles.

KEY ELEMENTS OF AN EFFECTIVE POLICY:

- Holistic solutions to tackling the transportation challenge, including sustainability standards for cleaner fuels, electrical vehicle targets and sound infrastructure investments.

Establishing the Foundation for Buildings of the Future

The federal government has a role for setting standards and requirements for more energy-efficient homes and buildings. Structures that are not well insulated result in loss of energy, whether it is heat in the winter or cool air in the summer. This waste has an impact on the environment, but also on people's pocket books. Previous governments focused primarily on outreach and incentive measures. Although these are important tools, they are also costly and do not necessarily maximize emission reductions.

The best solution is to begin constructing buildings that meet the highest standards. This would require federal government and standards bodies setting improved building codes and provinces adopting them. This would be a good first step, but it does not address the existing building stock. Governments could require upgrades to existing homes and provide incentives, especially to lower-income families, for energy-efficiency upgrades. Purchasers or renters should also have access to better information on energy-efficiency ratings of homes and buildings. This would put into play market forces and incentivize energy-efficiency investments. Educating the public about these programs would be an important tool in empowering consumers to make the best decisions.



KEY ELEMENTS OF AN EFFECTIVE POLICY:

- Highest standards for building codes as a requirement and energy-efficiency labelling.

Enhancing and Protecting Ecosystems

Forests and wetlands are natural carbon sinks that help to reduce emissions by absorbing and storing carbon emissions. Many of Canada's carbon sinks, however, are being destroyed, and in the process, carbon is being released into the atmosphere. Restoring and protecting Canada's ecosystems are essential to ensuring revival of endangered species and can contribute to adaptation efforts. These efforts are also cost-effective means of reducing carbon emissions and provide natural solutions to floods, for example through wetland restoration.



KEY ELEMENTS OF AN EFFECTIVE POLICY:

- Recognition of the importance of ecosystems in mitigation and adaptation efforts.



International Climate Finance and Carbon Credits

Climate change, as noted above, is a global problem with local impacts. Reducing emissions anywhere in the world will benefit Canada. The Paris Agreement on climate change recognizes the importance of investment in emission reductions and adaptation measures in other jurisdictions in two ways.

First, international climate finance is based on the principle that we have an ethical duty to support climate action in developing and least-developed countries. Many of world's poorest jurisdictions will be unable to adapt to a changing climate and reduce their emissions. Climate finance will help these countries to move towards climate-resilient, low-emissions development. We cannot afford to close our eyes to the challenge ahead, and early action will maximize positive impacts. To this end, the international community, with contributions from Canada, has agreed to provide USD 100 billion in annual support for international climate finance. Provinces can also follow Quebec's lead by contributing support for developing countries.

The second aspect is carbon markets. One of the significant breakthroughs of the Paris Agreement is the explicit acknowledgment of international carbon markets. Like trade it itself, the logic of cap and trade as well as Internationally Transferred Mitigation Outcomes (ITMOs) is that different jurisdictions will have differing comparative advantages in achieving cost-effective emission reductions. Ontario's participation with Quebec and California in such an international initiative is exactly the type of instrument that the international climate regime welcomes. In order to maximize the benefits of carbon markets, a robust measurement, reporting and verification (MRV) system will be necessary. Canada has an opportunity to partner with other jurisdictions to develop a robust MRV system, develop rules related to ITMOs and further expand its cap-and-trade market by encouraging other jurisdictions to join California and Quebec in their initiative.

KEY ELEMENTS OF AN EFFECTIVE POLICY:

- Provincial contributions to international climate finance.
- Recognition of carbon markets as a cost-effective tool to reducing emissions.
- Commitment to developing a robust MRV system.

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