TOWARDS CANADA'S FAIR SHARE

New research on achieving a stronger climate target

BACKGROUNDER
April 2021

This backgrounder summarizes energy and greenhouse gas (GHG) modeling research that was commissioned by seven environmental organizations from across Canada and undertaken by EnviroEconomics and Navius, with the goal of showing how Canada can achieve its fair share of emission reductions over this decade.

The main findings of the research are:

- Canada can do its global fair share on climate change, which means achieving 60% emission reductions by 2030. It is a challenging endeavour, but the policies and technologies exist to make it happen.
- The economic implications are entirely manageable --jobs, investment and overall performance all remaining strong.
- Energy costs for households go down for every income group, despite a sharply rising carbon price, because cars and homes are more energy efficient, and fossil fuels are displaced by clean energy.
- Policies that restrict the production and use of fossil fuels are critical and, if implemented, a significant part of the transition away from fossil fuels would be completed by 2030.
- Counterintuitively, economic growth in Alberta would remain higher than the national average despite the oil and gas sector shrinking considerably. That is because the Albertan economy is more diversified than most people think, and an economic and energy transition away from fossil fuels involves investment in many growing industries.

The model used is the computable general equilibrium model gTech operated by Navius Research, which is an economic and energy model of the Canadian economy. The model is calibrated to historical energy and economy data for all Canadian provinces and territories, with all 13 provinces and territories modelled as separate yet integrated regions, including trade with the United States.

The modelling compares two scenarios. The first is a Stay-the-Course scenario, which includes current climate policies plus the proposed increasing carbon pricing to $170/tonne by 2030. The Fair-Share scenario shows how Canada can achieve its fair share of global emission reductions: 60% domestic GHG reductions by 2030. The Fair-Share target is achieved through flexible regulations, complemented with a more sharply increasing carbon price than the Stay-The-Course scenario.

CAN Rac Climate Action Network Réseau Action Climat Canada

Conservation Council of New Brunswick
Conseil de conservation du Nouveau-Brunswick
www.conservationcouncil.ca

Ecology Action Centre

environmental defence

équiterre

STAND.earth

WEST COAST Environmental Law

Context

Canada is at a crossroad on climate change. We can be a leader on climate action or a major oil and gas producer. We cannot be both.

The federal government will soon be making a decision on a new, strengthened 2030 emission reduction commitment under the Paris Agreement. Will Canada marginally strengthen its current commitment of 30% reductions by 2030? Or choose a truly ambitious path?

The Canadian Energy Regulator has suggested that crude oil production will keep increasing until 2039. And yet increased oil production is why Canada's greenhouse gas (GHG) emissions remain stubbornly high, despite increasing climate policy stringency over the past five years. Canada remains a top 10 global greenhouse gas polluter. And developing all of Canada's proven oil reserves would consume almost one-third of the carbon budget the world must meet to prevent climate catastrophe.

As presidents and prime ministers prepare to meet at U.S. President Biden's Leaders Climate Summit on Earth Day, April 22nd, environmental groups from across Canada call on the federal government to contribute to healthy, safer lives and communities for Canadians and people everywhere. Canada doing its fair share means doubling our commitments under the Paris Agreement, striving for a 60% reduction of GHGs here in Canada this decade.

The modeling being presented here shows Canada can do the hard work required to achieve this level of deep emissions reductions. Not only is this worth doing, Canadians will be better off. Household energy bills would fall; there would be more good, green, stable jobs; communities would be healthier; and there would be a lower risk of floods, wildfires, and other extreme weather events fuelled by increasing carbon emissions in the atmosphere.

To do our fair share on climate action, Canada needs more stringent policies that will fundamentally shift every emission source away from fossil fuels and towards zero-emitting technologies. Oil and gas companies' activities are the greatest and fastest growing source of GHGs in Canada, and governments need to cap and phase out their production. And, at the same time, we need stronger policies so that the zero-emitting technologies that are both available and affordable can be accessed by every Canadian family.

Maintaining a vibrant economy

The research confirms what many intuitively know already--that there is not a tradeoff between environmental protection and a vibrant economy. Canada can implement very stringent climate policies, achieve its fair share of GHG reductions, and still grow the economy by 19% between 2020 and 2030, an annual growth rate of 1.8% in GDP.[1]

But carbon pricing alone won't get the job done. In the Stay-the-Course scenario, carbon emissions would remain high and the economy would only see slightly greater economic growth: 23% growth over this decade or 2.1% annually. Canada would be abdicating its responsibility on climate change for marginal economic gains.

Private sector investment would also continue to grow under the Fair-Share scenario, only slightly slower than in the Stay-the-Course scenario (16.7% over the decade rather than by 17.9%). Not surprisingly, climate-friendly technologies would have the greatest growth, which sets up Canada for economic activity and job creation in energy-related industries that have already seen much higher growth globally in the last decade. Investment by businesses in low carbon technology would grow 34% more under the Fair-Share scenario while consumers would spend 32% more on low carbon technology.

[1] We use GDP as a measure of economic health, since that is the main metric used by the economic model and expected by policy experts. However, we recognize that community well-being is better represented by other socioeconomic indicators, such as health, employment, access to social services, access to affordable housing, etc.

The most important climate policies for success

To achieve deep emissions reductions, all polluting sectors of the economy would need to be regulated. Here are some of the most important policies for transforming the economy, creating job opportunities, and reducing GHG emissions as identified by our modelling. Flexible regulations would drive higher ambition before 2030, and the modelling used a carbon price to close the gap to the Fair-Share 2030 target.

Transportation regulations: In transportation, deeper reductions would be achieved through regulations in two main areas: increasing the renewable content of fuel (both diesel and gasoline) and mandating an increase in the sales of zero-emitting vehicles (light-, medium-,and heavy-duty vehicles).

- National Renewable Fuel Standard: A national renewable fuel standard would be implemented for diesel and gasoline. For gasoline, the standard would rise to 15% renewable by 2030 and for diesel to 34%.
- Zero-Emitting Vehicle Mandates: Car and truck manufacturers deliver an increasing supply of zero-emitting vehicles. For light duty vehicles, the target would be 40% of vehicles sold by 2025 would be zero-emitting, 80% in 2030 and 100% by 2035. For medium-duty vehicles, the target would be 11% zero-emitting by 2025 and 50% by 2030, while for heavy-duty trucks the target would be 8% zero-emitting by 2025 and 35% by 2030.

Industry Regulations: An emissions limit for all heavy emitters would require an 80% reduction in emission intensity by 2030 across all industrial emissions. To address competitiveness concerns, 20% of emissions would be granted for free, which implies that current heavy emitter programs should scale back the granting of free emissions at a rapid pace (currently 80-95% of emissions are free for heavy industries).

Other Fuel and Electricity Regulations. Two regulations have promise:

- Renewable Natural Gas Mandate in 2026: Renewable natural gas would make up 15% of all natural gas sales starting in 2026. The mandate is based on existing BC policy and would apply to all regions except Atlantic Canada and the territories, where natural gas access is an issue.
- Emissions Cap on Electricity Production: A cap on GHG emissions from electricity production would be implemented starting in 2026. Total national emissions would be capped at just under 9 million tonnes in 2030. This is equal to an 81% decrease in electricity sector GHGs in this decade.

Buildings: A Zero-Building Heat Emissions Standard would mandate zero-emission heating systems (electricity and biomass) in all buildings for new installations starting in 2021.

Increase the economy-wide carbon price substantially. To hit the Fair-Share target, emissions must fall 8% annually between 2020 and 2030. With the regulations in place, the carbon price in 2030 would be two to three times the currently proposed price of $170 per tonne. All carbon revenue collected would be recycled back to households and businesses to support emission reductions and to address income impacts, with a special emphasis on addressing low-income households and vulnerable people. Better targeting of carbon revenue to small- and medium sized enterprises should also be a priority.

Addressing emissions from the oil and gas industry, while the Alberta economy stays strong

Emissions from the oil and gas industry are the biggest barrier to climate success in Canada. The main reason Canada has not been able to reduce overall emissions over the last two decades--despite most sectors experiencing significant emission declines--is the oil and gas industry' s growing emissions. Rising emissions are inconsistent with staying within the global carbon budget. That is why we favour ending the expansion of the oil and gas industry and phasing out production over the next two decades.

In the Stay-the-Course scenario, with all combustion and process emissions priced at $170/tonne, Canadian oil production would fall 20% from current levels by 2030.[2] Adding flexible regulations to control methane and to improve the emissions performance of the sector would drop GHGs by 50% while production would fall 29% below 2020 levels in 2030. Yet even these policy measures still wouldn' t add up to emissions reductions in line with Canada' s fair share.

To achieve 60% GHG reductions by 2030--Canada' s fair share--it is necessary to develop a more comprehensive and stringent policy package, as assessed in the Fair-Share scenario. In this scenario, GHG emissions from oil and gas would fall 94%, while oil production fell 83% from 2020 levels. In this scenario, Alberta' s GDP would continue to grow at an annual rate of 1.9%, which would be above the national average of 1.8%.

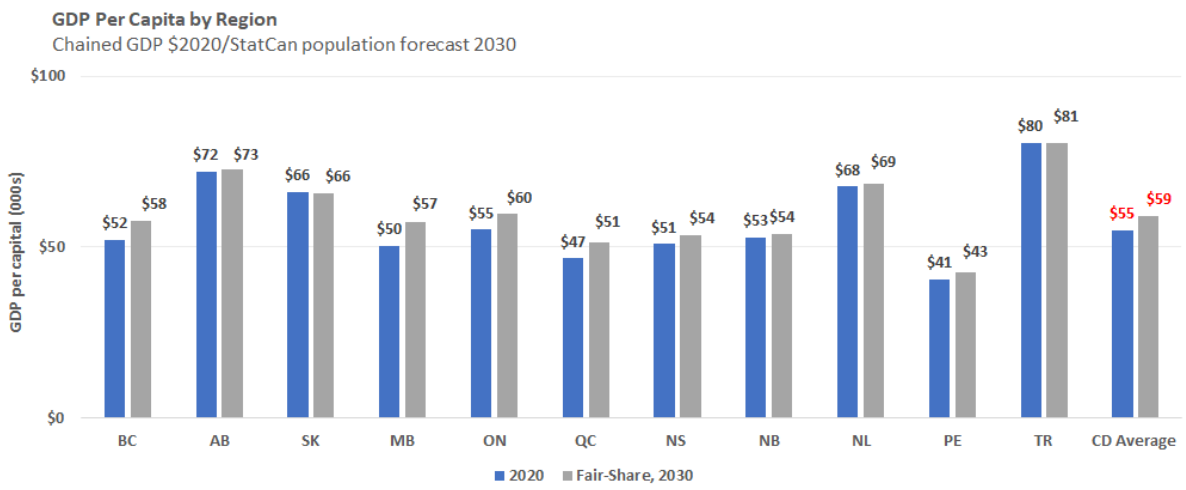
What happens within provinces?

If Canada undertakes ambitious climate action, emissions trajectories and economic trends would differ across regions and provinces due to the vast differences in the economic and emissions makeup of provinces.

Some of the outcomes are counterintuitive. For example, Alberta' s economy would continue to grow and diversify more than the rest of the country under the Fair-Share scenario, reaching a GDP per capita 23% higher than the national average. (The last six years has seen significant pain and uncertainty amongst Alberta and Saskatchewan workers and communities dependent on fossil fuels, but job losses have had much more to do with industry automation, the price of oil, and company downsizing than climate policies.)

Under the Fair-Share scenario the Atlantic region would also do well on a GDP per capita basis, primarily due to greater competitiveness and more domestic and international exports and fewer imports. On the other hand, provinces with lower carbon emissions, such as B.C., Manitoba, and Quebec, would be more insulated from carbon-related GDP fluctuations and impacts of trade activities. These provinces would show small changes in GDP per capita under the Fair-Share scenario. The territories, which have a high level of energy demand to move goods and people, would show the largest drop in GDP per capita. Overall, however, GDP in the territories would remain 36% above the national average.

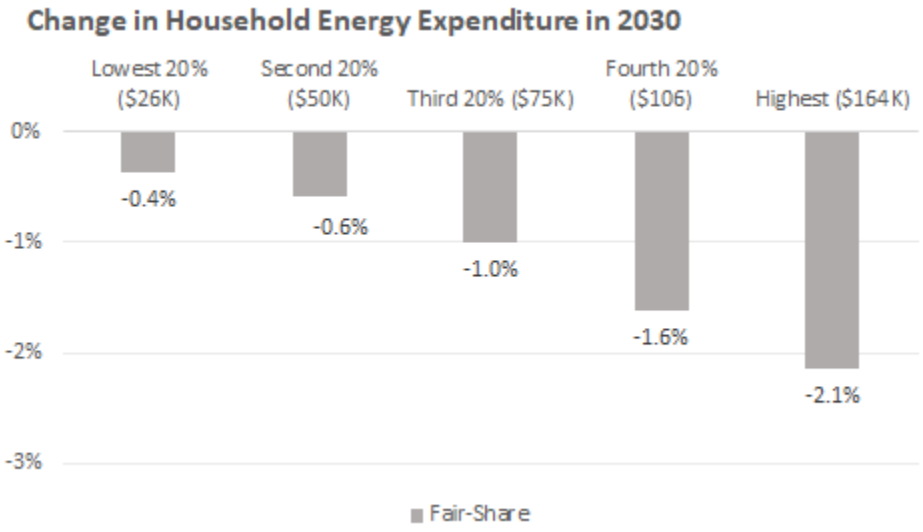
[2] In both scenarios, the assumed oil price forecast is USD $40 for West Texas Intermediate, reflecting falling oil demand in the United States under President Biden.



Household energy savings for Canadians

Under the Fair-Share scenario, in 2030 despite a rising price on carbon emissions, Canadian households would on average spend 1% less on their energy needs for heating, cooling, and transportation. The reason for these savings is that the increased price for using fossil fuels would be more than offset by the significant shift to lower-carbon energy options, which are more affordable in the long run. More electric vehicles would be used. More homes would be heated and cooled by electricity-run heat exchangers.

Energy savings would be realized across all income groups, but the impacts on household energy expenditures would be slightly regressive, i.e. those with lower incomes would have lower savings as a percentage of energy costs. This is why it is important to redistribute carbon revenue in a way that advantages low-income individuals and households.



Conclusion

Science tells us that ambitious climate action in the next decade is necessary if we are to avoid catastrophic climate change. The United Nations Intergovernmental Panel on Climate Change has said that global emissions must be halved by 2030 if we are to have a reasonable chance at limiting warming to 1.5 degrees. Under the Paris Agreement, Canada has committed to doing its fair share to strive to maintain that temperature limit. Because we are a wealthy country that has contributed considerably to the climate crisis, our fair share means reducing Canada' s domestic emissions by 60% by 2030, in addition to helping developing countries reduce their emissions.

Modelling tells us that a 60% reduction is not only doable, but economically viable. Decarbonizing the Canadian economy is a big but critical undertaking. Many aspects of our society will need to transition away from dirty, polluting forms of energy to clean, renewable energy.

The climate emergency demands this level of commitment. This research shows that, not only can we do it, but we can have ambitious climate action as well as a healthy economy. Acting with greater urgency now would in fact bring greater benefits to Canadians and the country. As Canada prepares to update its 2030 Paris commitment, this modelling shows that Canada has no excuse for doing less than its fair share.