

Written Submission for the Pre-Budget Consultations in Advance of the 2020 Budget

The Energy Transition: An Opportunity to Make Canada Better Off
The Climate Emergency: The Necessary Transition to a Low-Carbon Economy

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Thursday, August 1, 2019

Recommendations¹

Recommendation 1: The Government of Canada should create and broadly distribute an energy diagnostic test to make Canadians aware of their high energy use.

Recommendation 2: The Government of Canada should attempt to correct the country's low energy productivity through green taxation that increases energy prices and encourages businesses and individuals to adopt more productive consumption habits.

Recommendation 3: The Government of Canada should ensure everyone understands the twin goals of green taxation: making Canadians better off (through greater energy productivity) and reducing greenhouse gas (GHG) emissions through lower consumption of polluting energy products.

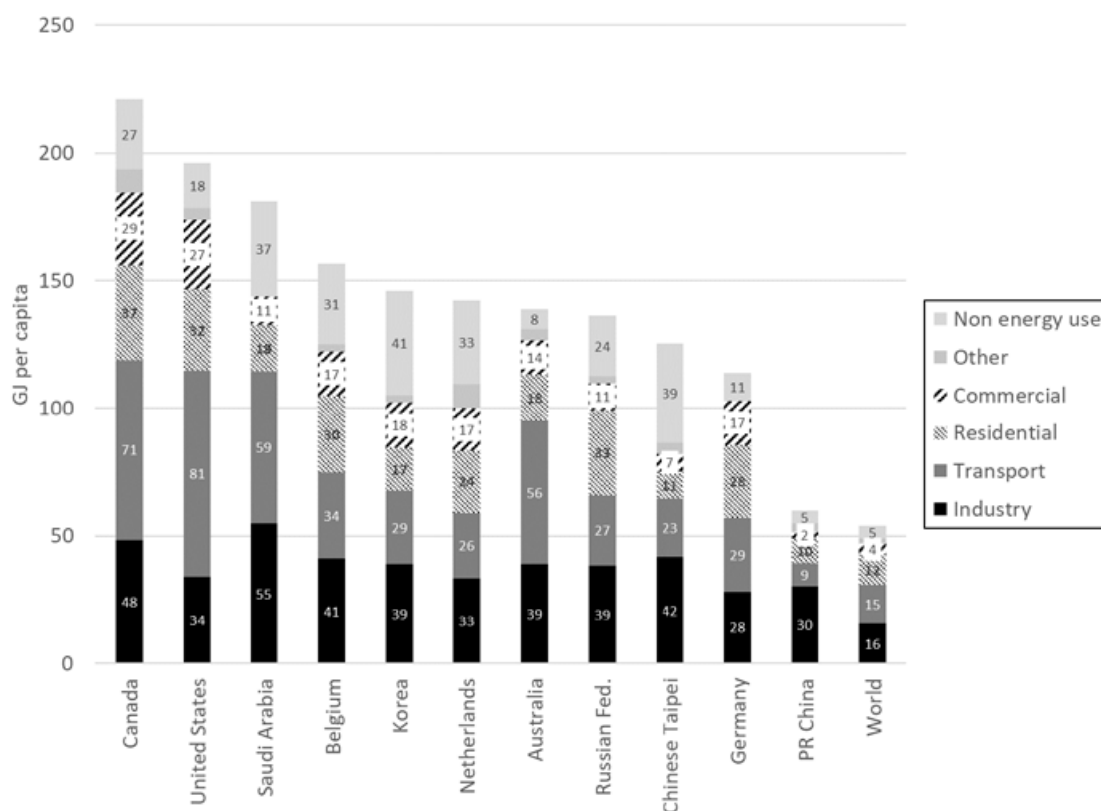
Recommendation 4: The Government of Canada should develop programs to protect the most vulnerable Canadians to ensure that, like every other segment of the population, they benefit from the greater collective wealth created by the fight against climate change.

¹ More detailed versions of these recommendations appear in the body of this document.

1. Energy and gross domestic product in Canada

Canada was the sixth-ranked energy producer in the world in 2016 and the fifth-ranked exporter for all energy sources (IEA, 2019).² This is remarkable for a country of 37 million people. As a result, energy accounts for a significant share of our economy: 10.6% of Canada’s gross domestic product (GDP) in 2017 (Natural Resources Canada, 2019a). Yet Canadians are the largest per capita energy consumers on the planet.³ As the figure below shows, average energy consumption in 2016 was 221 gigajoules (GJ) per person, taking into account consumption by industry, transportation, residential and commercial buildings and other sectors (such as agriculture) and consumption for non-energy uses (asphalt, petrochemicals, etc.). That is more energy than any other country with more than 10 million residents. It is 12% higher than the United States (196 GJ) and over four times the global average (54 GJ).

Figure 1 – Top 10 Per Capita Energy-Consuming Countries, Consumption in China and Global Average Consumption, 2016 (IEA, 2019)



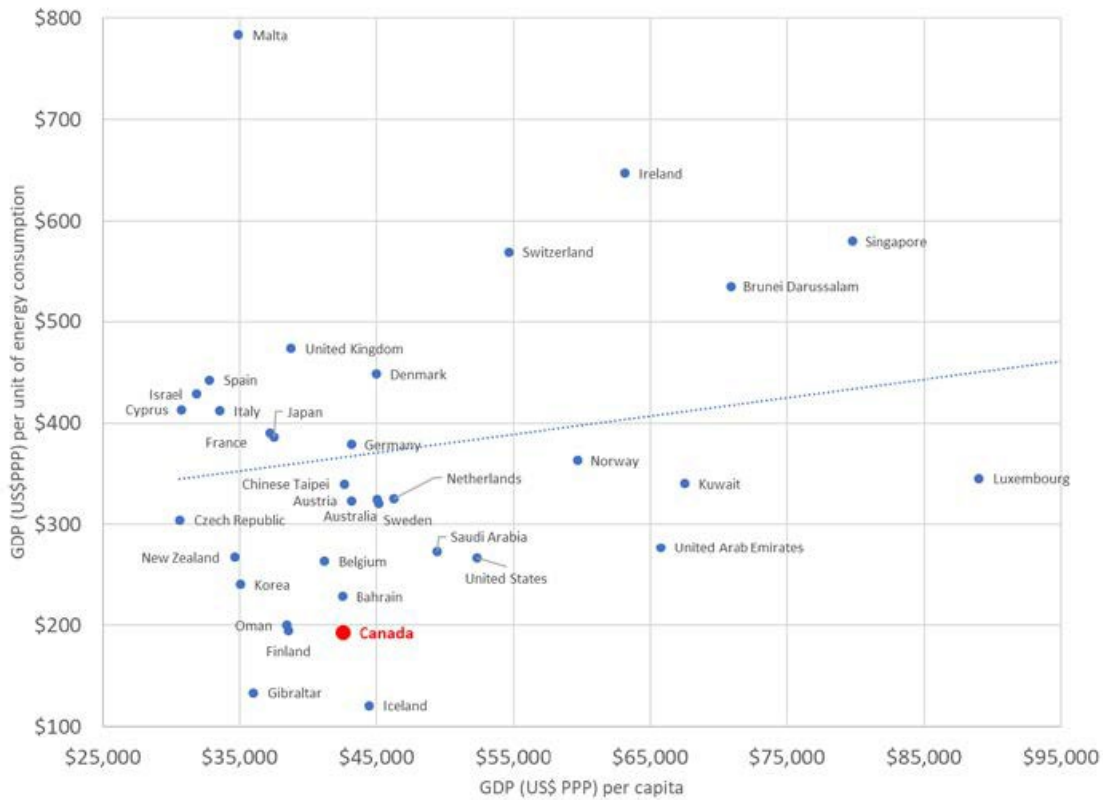
² The countries that produced more energy than Canada in 2016 were China, the United States, Russia, Saudi Arabia and India, while only Russia, Saudi Arabia, the United States and Australia exported more energy than Canada. Note that, while the United States is a major exporter (especially of refined petroleum products), it imports nearly twice as much energy as it exports (IEA, 2019).

³ Excluding countries of less than 10 million people (such as Qatar, Kuwait and the United Arab Emirates) (IEA, 2019).

This high energy consumption has helped boost Canada’s economy, as it has one of the world’s highest standards of living. However, Canada’s abundant, easily accessible natural resources have resulted in poor *energy productivity*. In 2016, only Iceland and Gibraltar generated less economic activity, measured in US dollars of GDP, per unit of energy consumed, than Canada among countries with a per capita GDP of more than US\$30,000.⁴

Nearly all countries manage to generate more than the Canadian figure of US\$192 of GDP per GJ of energy used (see Figure 2). That means Canada generates little value for every unit of energy consumed, which means it must use more energy than other countries to achieve its level of economic output.

Figure 2 – Economic Output Generated Per Unit of Energy Consumed and Per Capita Gross Domestic Product (GDP) Among Countries with Per Capita GDP Over US\$30,000, 2016 (IEA, 2019)



Canada’s low energy productivity cannot be explained by its industrial structure or climate: Australia and Norway are also resource-based economies, but they generate US\$325 and US\$363 of GDP per GJ respectively. Canada simply performs worse in energy terms than all of the countries it likes to compare itself with. As Atalla and Bean (2017) showed, economic productivity does not depend on economic structure or climate. In fact, it is sectoral improvements (energy efficiency gains) that matter.

⁴ GDP was adjusted using purchasing power parity (PPP) to better measure the standard of living associated with GDP levels. Of the 145 countries in the IEA (2019) database, 28 countries had a lower energy productivity than Canada, while 116 had a higher figure.

Nevertheless, the implications of Canada’s situation are very positive: the country can continue to enjoy high levels of GDP while significantly reducing its energy consumption.

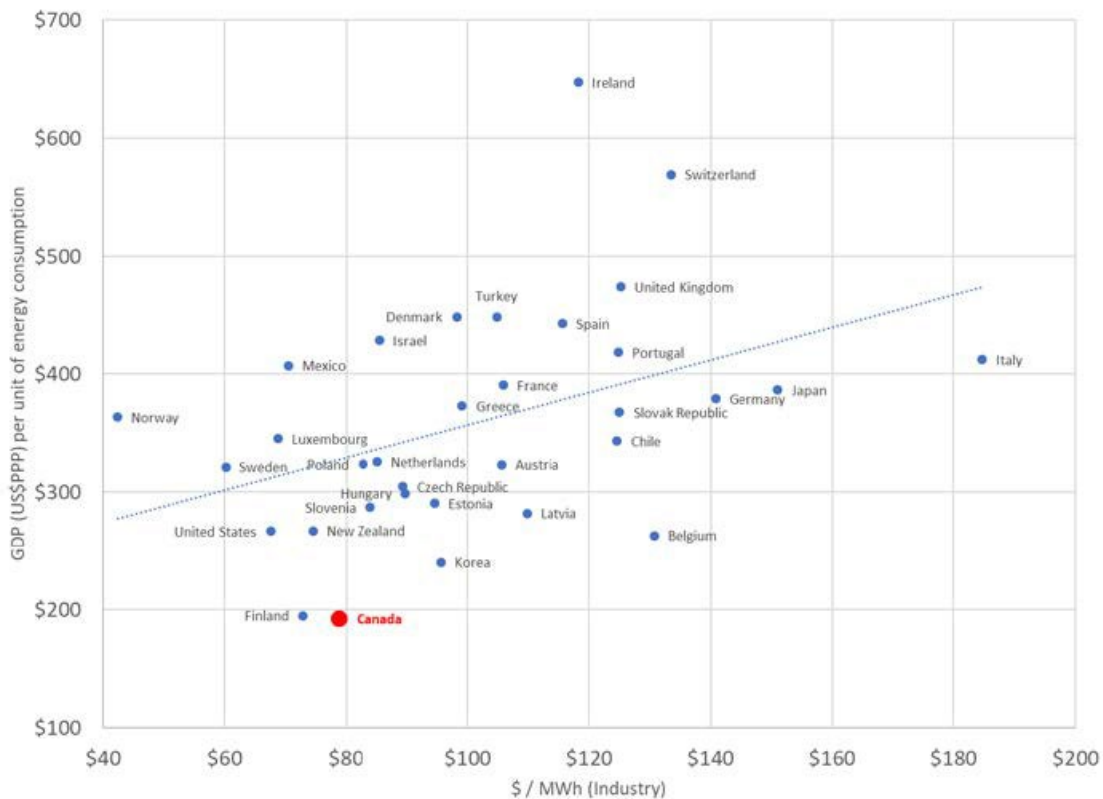
Recommendation 1: The Government of Canada should create and broadly distribute an energy diagnostic test to make Canadians aware of their high energy use. Natural Resources Canada, Statistics Canada, Environment and Climate Change Canada and the National Energy Board should jointly undertake this initiative.

2. Prices affect energy productivity

While low energy prices and low taxes are often considered important for competitiveness (just as a low Canadian dollar supports exports), over long periods these price levels keep energy productivity low. They discourage investments in energy efficiency and structure an economy to consume lots of energy.

Figure 3 shows the relationship between the price of energy and energy productivity. Energy prices (represented by the industrial price of electricity) and energy productivity are positively correlated. Atalla and Bean (2017) also documented this result, which suggests that a price signal can improve energy productivity.

Figure 3 – Economic Output Generated Per Unit of Energy Consumed (GJ) and Industrial Price of Electricity Among OECD Countries, 2016 (IEA, 2019)



Canada's decision to tax petroleum products at low levels compared with other OECD countries (except the United States and Mexico; see OECD, 2018) therefore contributes to its low energy productivity. Since 1995, the federal government has levied an excise tax of 10¢ per litre on gasoline and only 4¢ per litre on diesel (Natural Resources Canada, 2019b). Provincial taxes and carbon pricing have increased fuel prices, but not up to OECD levels. The simple fact that the excise tax is not indexed means that the relative price of gasoline is falling, and this should be corrected.⁵

Far from making countries with higher energy taxes poorer, this price signal stimulates energy productivity (Figure 3), which is itself positively correlated with economic growth (Figure 2).

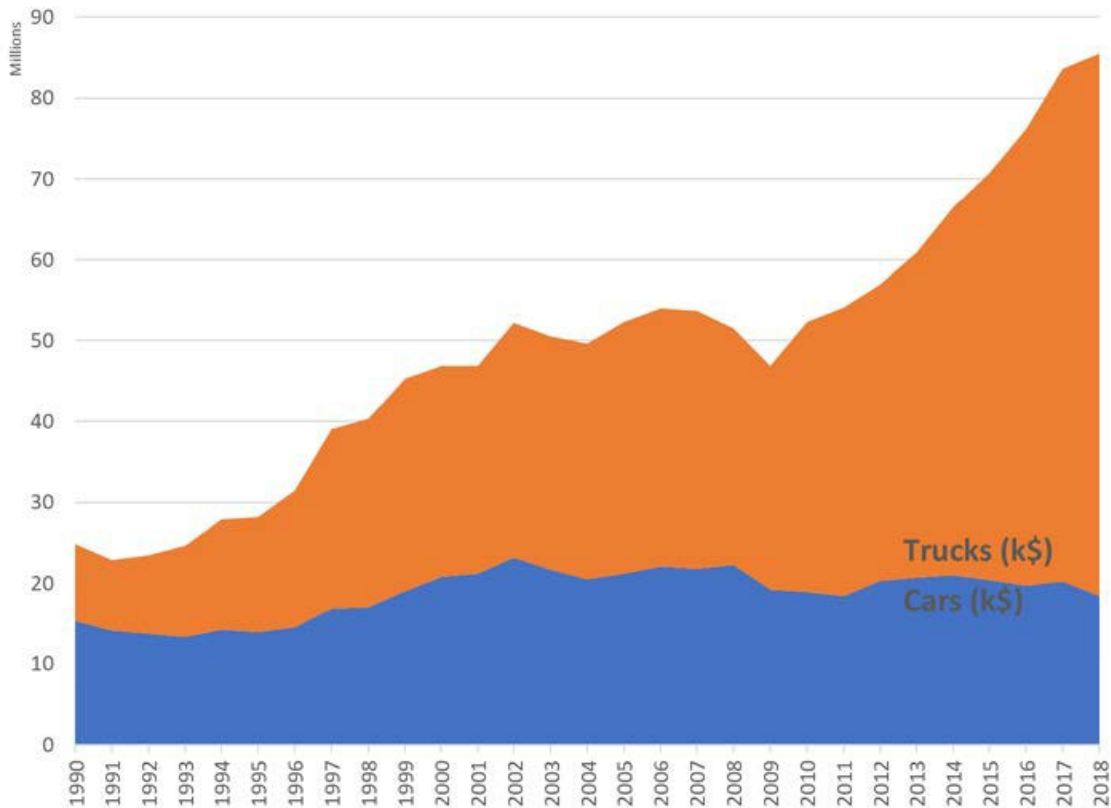
Recommendation 2: The Government of Canada should attempt to correct the country's low energy productivity through green taxation that increases energy prices and encourages businesses and individuals to adopt more productive consumption habits. The simplest mechanism would be to increase the excise tax on fuels, which has not changed since 1995.

3. An example: Canadians invest in pollution

While sales of motor vehicles stagnated in the first decade of the 2000s, Canada has experienced an explosion in sales of "trucks" (minivans, sport utility vehicles, light and heavy trucks, vans and buses) since 2010. Between 2000 and 2009, sales were about \$50 billion annually. Sales then steadily increased to \$85 billion in 2018 (Figure 4). That means an additional \$35 billion was spent on vehicles that are heavier and use more fuel than the alternative—cars—in 2018 compared with 2010. Accordingly, between 2010 and 2018 Canadians spent a great deal on vehicles that increase pollution rather than fight climate change.

⁵ If the excise tax had been indexed at a rate of 2% per year since 1995 (the approximate inflation rate), it would be 16.1¢ per litre in 2019.

Figure 4 – Annual Sales of New Cars and Trucks in Canada, in thousands of dollars (k\$), 1990–2018 (Statistics Canada, 2019)



This transportation example perfectly illustrates the current status of the fight against climate change in Canada. Not only is energy consumption not discouraged by appropriate price signals, but these low energy prices—along with low interest rates and a growing economy—have allowed Canadians to invest more in pollution rather than start the energy transition.

Recommendation 3: The Government of Canada should ensure everyone understands the twin goals of green taxation: making Canadians better off (through greater energy productivity) and reducing greenhouse gas (GHG) emissions through lower consumption of polluting energy products.

Conclusion

This brief communicates two ideas. The first is that the energy transition depends on price signals that, far from undermining Canadian competitiveness, will increase the country’s productivity. The second is that Canada has made itself poorer in recent years by accelerating its spending on high-pollution energy consumption. Spending on motor vehicles nearly doubled between 2010 and 2018, further tying Canadians to energy-intensive consumption habits.

Canada's energy transition is not merely about protecting the environment. Economic considerations are equally or even more important. Do we want to increase national, economic and societal productivity?

If the answer is yes, the solution is—and must be—lower energy consumption, spurred by a significant increase in the costs of energy consumption. Green taxation corrects the market failures caused by the overly low price of pollution (such as for greenhouse gas emissions), which leads the economy to be more productive, making all Canadians better off.

Obviously, these pricing reforms must be clearly explained to the public if they are to be understood and accepted. Measures to support the most vulnerable must also be developed to ensure a just energy transition. Access to high-quality affordable housing and personal mobility (through active and public transportation) would protect vulnerable Canadians from rising energy prices.

Recommendation 4: The Government of Canada should develop programs to protect the most vulnerable Canadians to ensure that, like every other segment of the population, they benefit from the greater collective wealth created by the fight against climate change. These protections should include access to high-quality affordable housing and personal mobility.

References

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