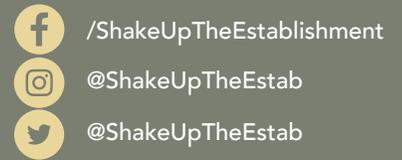


# Canada's Economy

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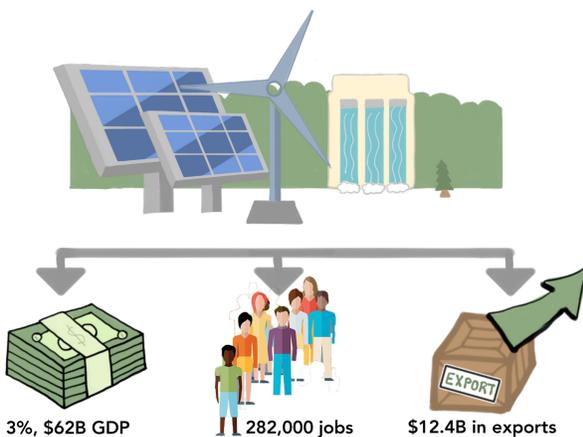
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Climate change will affect Earth's natural systems (e.g. ocean-level rise, increase in extreme weather events), but other human-created systems, such as Canada's economy, are also at risk. The drastic impact that climate change will have on Canada's economy will be seen in various industries, such as the forestry and insurance sectors. Economic estimates of these effects demonstrate the immense value of the environment we take for granted. One such study showed that

the impact of thawing Arctic permafrost and sea ice alone, with global warming limited to 1.5°C, would incur \$10 trillion in total global economic loss over the next 300 years (10). If steps are not taken to limit global warming, total economic loss rises to \$130 trillion, demonstrating the value of effective global warming mitigation (10).

Gross Domestic Product (GDP) is the monetary value of Canada's economy. This value is connected to how many goods are created, imported, and exported, meaning it is heavily dependant upon the natural resources we have in our country (11). for instance, British Columbia's (BC) GDP relies heavily on forestry for economic growth and prosperity (11). BC's forestry sector contributes an estimated \$12.9 billion of the provincial GDP and accounted for 34% of the provincial exports (1). Forestry is already experiencing the effects of climate change through many disasters (e.g. wildfires, drought, severe storms and disease/insect attacks) and changes to the timing of seasonal budding timing (1,2). With hotter and longer summers driven by climate change, these disasters will only increase and it is predicted that higher temperatures, along with lower humidity, will lead to decreased productivity within the sector (1,2,3).



Illustrated by: Chloe Graham

**Figure 1.** The environmental and clean technology sector makes up 3% or \$62 billion of Canada's GDP, representing around 282,000 jobs and \$12.4 billion in exports (9).

Changes in weather patterns will lead to larger and more frequent storms which, along with the warming of the oceans and melting of the polar ice caps, will lead to an increased frequency of flooding along Canada's coast lines (4,5). Efforts to reduce these types of disasters will put financial pressure on Canadian families and businesses within flood areas, as well as the federal budget and insurance agencies that are to provide monetary relief to those whose homes are affected (4,5,6).

A 2017 report from the Munk School of Global Affairs discussed floods, saying they are now the most expensive hazard with regards to property damage in urban centres, passing fire and theft as the most common reason for insurance claims (7). The extensive costs of flooding are dramatic and will have consequences for communities, including displacement from homes and disruption of important infrastructure resulting in the interruption of business (7). Steps to reduce the devastating effects of climate change, like flooding, will require an increase in tax revenue to support reactive measures, leading to higher interest rates for Canadians (6).

Beyond forestry and insurance, any area dependent on fossil fuel revenue is likely to face economic struggles when consumers change the amount of fossil-fuels they use in their daily lives in hopes of helping fight climate change's effects (8). One of the most important and impactful industries in Canada that will face this transition, is the oil and gas industry (8).

Oil and gas sector, and the energy industry in general, contributes so much to Canada's economy. This industry makes up 11.1%, or \$230 billion, of Canada's GDP, with crude oil

making up 2.8% of GDP and clean energy making up 1.3% of GDP (9). In 2018, the Canadian energy trade exported 23% of all goods, with a total worth of \$132.2 billion; over \$119 billion of this belonged to oil and gas exports (9). Therefore, oil and gas dominates the Canadian energy sector and contributes more to national GDP than any other energy source. Our economy is fuelled by oil and gas, but this does not change the need to lessen our use of fossil fuels in order to combat climate change.

One model suggests that the short-term economic losses as a result of shifting away from oil and gas could be found in the growth of cleaner, more sustainable technology and industries. In 2018, 269,000 people in Canada were directly employed by the energy industry, while 550,500 jobs were indirectly supported (i.e. depended on the existence of energy industry jobs to exist) (9). Of this, 62,000 were employed specifically in the oil and gas industry (9). As Canadians have gradually shifted away from fossil fuels, the Canadian environmental and clean technology sector, which now only makes up 3% or \$62 billion of GDP, represents approximately 282,000 jobs and \$12.4 billion in exports, leaving potential for further growth (9).

No matter the exact transition strategy, in order to protect the Canadian economy from the hugely negative effects of our rapidly changing environment, changes, especially in the energy industry, are necessary for long-term stability.



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