



A Healthy, Green and Just Recovery

Renewable Energy

FACTSHEET

April 2021

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Invest in renewable energy

OVER THE COMING YEARS, THE CANADIAN GOVERNMENT WILL BE INVESTING IN PROGRAMS AND POLICIES TO KICK START OUR ECONOMY AND GET PEOPLE BACK TO WORK AFTER THE COVID-19 PANDEMIC. THESE INVESTMENTS PROVIDE AN OPPORTUNITY TO REBUILD OUR ECONOMY AND COMMUNITIES TO ADDRESS THE GROWING THREAT OF CLIMATE CHANGE, MAKE OUR COMMUNITIES HEALTHIER AND MORE RESILIENT, WHILE REDUCING THE HEALTH INEQUITIES THAT HAVE BEEN HIGHLIGHTED BY THE COVID-19 PANDEMIC.

Renewable energy is good for us, our communities and our planet.

To create a more sustainable world, we must significantly reduce our reliance on fossil fuels because their extraction and use releases greenhouse gases (GHGs) that cause the global warming that is disrupting ecosystems around the world. The transition away from fossil fuels will require a fundamental transformation of our society. Where we have used coal, oil, natural gas, gasoline and diesel to power our factories, heat our buildings, and fuel our vehicles, we will need to use electricity in the future.

To meet these growing demands for electricity, we will need to expand our power grid and make it more reliable and resilient, while ensuring that the electricity generated emits no GHGs and produces as little air and water pollution as possible.

CANADA'S ELECTRICITY SECTOR

Canada is fortunate to have a relatively low-carbon electricity sector. In 2018, 82% of Canada's electricity was generated from carbon-free sources that emit no GHGs:

- 61% from hydro power;
- 15% from nuclear plants;
- 5% from wind power; and
- less than 1% from solar and geothermal.

The other 18% was generated from coal/coke (8%), natural gas (9%) and biomass (1%).

Biomass, such as wood pellets, is considered a renewable resource only if it is consumed at a slower rate than it can be produced. Biomass however releases air pollutants when used to generate electricity so is not an emissions-free source of electricity.

Over the last two decades, GHG emissions from Canada's electricity sector dropped by 43% due mostly to the phase-out of the five coal-fired power plants in Ontario. Despite this improvement, the electricity sector remains a significant source of GHG emissions, responsible for about 9% of Canada's total emissions in 2018. Most of those emissions came from the electricity that was generated in large coal-fired or natural gas-fired power plants.

In December 2018, Canada announced regulations to phase-out coal-fired power plants by 2030 and to limit GHGs for natural gas-fired power plants. These regulations aim to ensure that 90% of the electricity generated in Canada by 2030 will not emit GHGs.

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PROVINCES WITH HIGH EMITTING ELECTRICITY SECTORS

The four provinces that contribute most to GHG emissions from Canada’s electricity sector are:

- Alberta – responsible for 60% of the GHGs emitted by Canada’s electricity sector in 2018, while generating about 13% of Canada’s electricity (43% of that electricity from coal, 49% from natural gas);
- Saskatchewan – responsible for 21% of the GHGs while generating about 4% of the electricity (40% of that electricity from coal, 43% from natural gas);
- Nova Scotia – responsible for about 9% of the GHGs while generating approximately 1% of the electricity (63% of that electricity from coal and coke, 9% from natural gas, 4% from heavy fuel oil); and
- New Brunswick - responsible for 5% of the GHGs while generating approximately 2% of the electricity (30% of that electricity from natural gas, coal, heavy fuel oil and diesel).

Ontario was responsible for 3% of the GHGs emitted by Canada’s electricity sector in 2018 while generating approximately 23% of the country’s electricity. Only 5% was of Ontario’s electricity was generated with fossil fuels (natural gas). Over the next 20 years,

however, GHG emissions from Ontario’s electricity sector are expected to increase 8-fold because of government plans to increase the use of natural gas plants to provide baseload electricity while nuclear plants are offline for refurbishment. This would significantly increase GHG emissions at a time when dramatic reductions are needed.

RENEWABLE ENERGIES ARE A PRACTICAL AND AFFORDABLE OPTION FOR CANADA

Over the last decade, renewable energies have become a practical and affordable option for Canada. A 2019 Alberta study found that it would cost less to generate electricity using a clean energy portfolio than with new natural gas-fired power plants. A clean energy portfolio consists of renewable energies such as wind and solar power, that are supported by battery storage, policies that provide

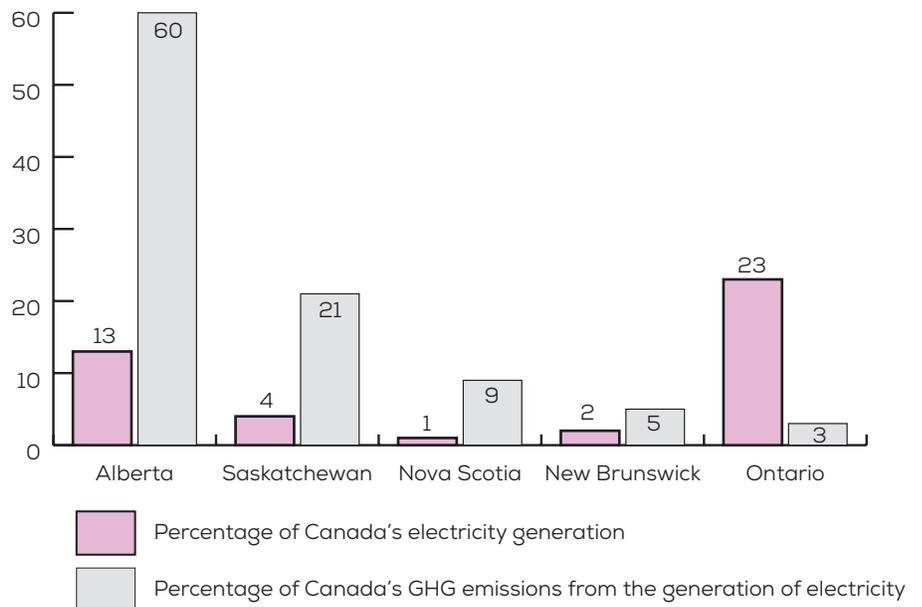
flexibility with regard to energy demand, and measures that increase energy efficiency (such as building retrofits).

AIR POLLUTION CONTINUES TO BE A MAJOR HEALTH CONCERN IN CANADA

Despite significant improvements in air quality in some regions of Canada over the last few decades, air pollution is still responsible for a significant burden of illness. Approximately 14,600 people die prematurely each year from heart disease, strokes, lung cancer and chronic obstructive pulmonary disease because of air pollution. These early deaths also represent many more adverse health impacts that result in emergency room visits, hospital admissions, visits to doctors, and lost time from work and school.

Coal-fired power plants emit significant quantities of the air pollutants, sulphur

Electricity generation and resulting greenhouse gas emissions, by province (2018)





Renewable energies such as solar, wind and hydro power release no air pollutants when used to generate electricity

dioxide (SO₂), nitric oxide (NO) and nitrogen dioxide (NO₂). These air pollutants can aggravate heart and lung conditions, and harm the heart and lungs directly. They also contribute to the formation of ground-level ozone, which triggers most of the smog alerts in Canada, and fine particulate matter (PM_{2.5}), the air pollutant that is most clearly linked to heart and lung diseases, including lung cancer, and premature deaths.

Air pollution is harmful to everyone, but it presents a greater risk for young children, older people, and those with pre-existing health conditions such as asthma. It also presents a greater risk to certain groups within Canada – including people who live on lower incomes, newcomers, Indigenous Peoples, racial minorities – who already experience higher rates of illness and premature deaths because of social disadvantages.

RENEWABLE ENERGIES REDUCE AIR POLLUTION

Estimates from 2014 indicate that the 14 coal-fired power plants operating in Canada are responsible for approximately 160 premature deaths and 140 hospital admissions or emergency room visits, and many other adverse health conditions in a single year. These adverse health impacts

have been valued at approximately \$800 million per year.

While natural gas-fired power plants do not emit SO₂, mercury and other toxics, they still emit NO and NO₂. Natural gas-fired power plants release far less NO and NO₂ than do coal-fired power plants, but those emissions can still add a substantial pollutant load to air sheds that are already heavily impacted by vehicle or industrial emissions. Renewable energies such as solar, wind and hydro power release no air pollutants when used to generate electricity.

RENEWABLE ENERGIES REDUCE MERCURY EXPOSURES

Mercury is a persistent toxic substance that accumulates in the aquatic food chain. Prenatal and early-life exposure to mercury (resulting from the consumption of mercury-contaminated fish) is linked to adverse developmental impacts such as reductions in intellectual abilities and motor skills. Women of childbearing age, pregnant women, young children, and populations that depend on fish as a traditional food source, are at greatest risk from mercury. In the early 2000s, coal plants were responsible for approximately 18% of mercury emissions in Canada. Renewable energies and natural gas-fired power plants release no mercury or other

toxics into the air or water when used to generate electricity.

COAL- AND NATURAL GAS-FIRED POWER PLANTS BOTH FUEL CLIMATE CHANGE

In order to avoid catastrophic levels of global warming, international organizations have concluded that all countries must reduce climate emissions by 45% by 2030 and to net zero by 2050. By accelerating the phase-out of Canada's coal plants to 2030, it is estimated that Canada could cut its total GHG emissions by 8.5% by 2030.

Natural gas (methane) was once viewed as a bridge fuel to a low-carbon future. While natural gas plants release 50 to 75% fewer GHGs than coal-fired power plants, they still emit a substantial amount. In addition, significant quantities of methane can be released during the extraction process. Because its global warming potential is many times greater than that of carbon dioxide, methane emissions are a concern for climate change and may be responsible for up to 15% of Canada's GHG emissions. Renewable energies release no GHGs when used to generate electricity and they do not require extraction to be utilized.



These essential investments will prepare our country for a healthier and more sustainable future

CLIMATE CHANGE IS ALREADY HARMING PEOPLE IN CANADA

The physical and mental health of people in Canada is already being harmed by climate change. In different parts of the country, climate change has contributed to an increase in the frequency and intensity of floods, wildfires, hurricanes, ice storms and heat waves over the last several decades. These events have exposed millions to extremely high levels of toxic air pollution, forced hundreds of thousands to evacuate their homes, and left hundreds of thousands without power for extended periods. Climate change is also melting permafrost in the far north, increasing sea levels on three coast lines, and extending the range of vector-borne diseases such as Lyme disease.

While climate change affects everyone, it has a greater impact on some. Young children, older people, and people with pre-existing health conditions are more sensitive to heat waves and wildfire smoke. Indigenous Peoples in northern communities can experience greater food insecurity as melting permafrost and

changes in animal and plant populations disrupt their access to traditional food sources. In addition, people who live on lower incomes may not have the resources to protect themselves or recover from extreme weather events such as heat waves, wildfires and floods.

INVESTING IN A HEALTHY, GREEN AND JUST RECOVERY

In the updated climate action plan for Canada, the federal government promised to:

- Invest nearly \$1 billion over four years to increase renewable energies, modernize the electricity grid and power storage, and prepare our communities for new electric technologies such as zero emission vehicles;
- Invest an additional \$300 million over five years to replace diesel-generated electricity with renewable energies in rural, remote and Indigenous communities; and
- Work with provinces and territories to help link provincial electricity grids with a long-term investment of \$5 billion.

These essential investments will prepare our country for a healthier and more sustainable future.

It has been estimated that investing \$6.7 billion over a 10-year period in the creation of a carbon-free and resilient electricity grid across the country could create almost one million jobs, virtually eliminate 75 million tonnes (Mt) of GHGs, and improve public health.

Raise your voice to express support for greater investments and a faster transition to renewable energies to create healthy, green and just communities.

For more information,
see our **Backgrounder**
on **Renewable Energies**

