

Whither BC's Shifting Nexus of Climate and Fossil Fuels

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Canada's ongoing [energy transition](#) is anticipated to lead to a future powered by clean, affordable, reliable and scalable electricity where Canada's wind and solar resources, in conjunction with energy storage, play a central role. Energy's contribution to Canada's economy is critically important. Smart energy policies will be needed to support Canada's ability to manage its growing debt – helping to ensure that it doesn't unduly burden future generations. The federal government stated in 2021 –during a period of historically low interest rates - that the best way to manage that rapidly [increasing debt](#) is to grow our economy. Today, when inflation is rampant, interest on that debt is growing and the global order has been ruptured by the war in Ukraine and increased geopolitical tensions, the world has even greater need of Canada's resources.

Since the first oil well was hand dug in Canada in 1858, oil has grown into a [major industry](#) that some estimates place at nearly 10% of Canada's GDP in 2022. Canada has the third largest [oil reserves](#) in the world and it is the fourth largest oil producer and exporter.

British Columbia produces approximately 1.5% of Canada's oil and equivalent from [natural-gas condensate](#). However, [natural gas](#) production is much more important to BC, with the highest Canadian production occurring in [Alberta](#) and [British Columbia](#). In addition to significant direct and indirect employment, royalties from natural gas contribute substantial government revenue.

The climate crisis puts the future of the oil and gas industry in question. Before the Ukraine war, Canada and British Columbia have been responding to growing demands for more rapid reduction in the production of and reliance on fossil fuels.

But hydrocarbons remain a key source of energy, and the most critical common component of economic development is energy use. Rising living standards mean greater energy demand with hydrocarbons remaining by far the most important source of energy.¹

So, with increased uncertainty, how effectively are short and long term objectives being adjusted to reflect ruptures in the global order? How might these impact BC's economy and related property markets? Is it possible for Canada to steward its resource development and still meet its ambitious climate objectives? How realistic are the

¹ Poloz, Stephen, former Governor of the Bank of Canada. *The Next Age of Uncertainty: How the World Can Adapt to a Riskier Future*. Penguin Random House. 2022. Page 89.

climate goals espoused by government when Canada's emissions represent a small percentage of global emissions while countries - like Russia - focus on monetizing natural resources as rapidly as possible? Or when China, the world's biggest carbon emitter, is still building [coal](#)-fired power plants, opening a new one virtually every week in 2020. And thermal coal consumption in India has doubled in the last decade.

What role is BC playing in developing strategic policies, incentives and constraints for resource development? What are the potential impacts on BC's regional economies and property markets?

Energy now accounts for more than a quarter of Canada's exports, a level last hit in 2014, when crude oil prices were also on a tear. Why? Because the world remains as dependent as ever on consuming oil. And Canada is among the world's largest producers of oil. Canada in recent months has exported [almost four million barrels a day](#) of crude oil to the United States. A [Globe & Mail editorial](#) recently argued that, as long as there is so much demand for Canadian oil, notably from the U.S., there is no economic or environmental logic in trying to artificially restrict Canadian oil production. The only result would be less money flowing into Canada, and more going to other countries with large oil reserves – including Russia, Saudi Arabia, and Venezuela.

Canada is responding to a global order ruptured by the Russian invasion of Ukraine, as well as to the need to reduce reliance on fossil fuels. That response, involving development of alternative sources of energy, requires not only a clear definition of a preferred future but workable strategies to reach that future. The [Business Council of British Columbia](#) (BCBC) aptly states that “bold vision without a solid grasp of the facts and context and a realistic plan of execution amounts to hallucination.” BCBC goes on to say that the goal is to achieve ‘net-zero’ through electrification, whereby today's fossil fuel energy system will transition, over time, to one run by water, wind, solar, biofuels, [hydrogen](#), nuclear and perhaps even [nuclear fusion](#).

Calls for governments, companies and other organizations to bolster commitments to reach net zero emissions are becoming increasingly widespread as the effects of failing to limit climate change become more apparent.

But what does “[net zero emissions](#)” actually mean? And importantly, what can be done to put the planet's emissions on a safe course? The World Economic Forum states that the term net zero applies to a situation where [global greenhouse gas emissions from human activity are in balance with emissions reductions](#). At net zero, carbon dioxide

emissions are still generated, but an equal amount of carbon dioxide is removed from the atmosphere as is released into it, resulting in zero increase in net emissions.

While sustainability efforts are increasing around the world, some sectors are harder to decarbonize than others. Heavy industries like iron and steelmaking, for example, and transport like aviation, shipping and road haulage, are particularly hard to electrify.

Abating emissions in these sectors requires new climate-tech solutions, such as carbon-capture utilization and storage (CCUS) technologies that prevent CO₂ emissions from heavy industry reaching the atmosphere. Canada and several of its provinces have identified [hydrogen strategy](#) as one focus area.

As part of Canada's strategy to reduce greenhouse gas emissions, it has joined 120 other countries in committing to a net-zero emissions goal by 2050. Prior to the Ukraine war, Canada and British Columbia created strategies to speed the shift from reliance on fossil fuels to cleaner energies, including green and blue hydrogen².

In November 2021, Alberta released its [Hydrogen Roadmap](#) to prepare for a lower-emission future, which outlined how Alberta is well positioned to become a global supplier of clean, low-cost hydrogen.

Hydrogen is a gas that is predominantly produced from natural gas through a method called steam methane reforming (SMR). Most of the hydrogen produced in Alberta right now is created through that method.

Hydrogen is used to produce synthetic crude oil in the oil and gas industry and is also used to produce fertilizers and ammonia.

British Columbia is well positioned to pursue energy market opportunities in the rapidly changing global environment. Positive attributes include the province's collaborative work with Indigenous Nations (particularly related to UNDRIP legislation); proactive

² **GREEN hydrogen** is produced from renewable sources, such as using clean electricity (e.g., hydro or wind power) to split water into hydrogen and oxygen through a process called electrolysis. Green (or renewable) hydrogen has a low carbon intensity when produced using clean electricity.

BLUE hydrogen is produced from non-renewable sources through steam methane reforming (SMR) with carbon capture and storage (CCS) or pyrolysis of fossil fuels, such as natural gas. With CCS, carbon dioxide is separated and sequestered underground, which reduces the carbon intensity of the produced hydrogen. With pyrolysis of natural gas, solid carbon is a byproduct. Blue hydrogen (or hydrogen from fossil fuels with CCS) has a low carbon intensity when produced using fossil fuel feedstock coupled with adequate and permanent CCS. [bc hydrogen strategy final.pdf \(gov.bc.ca\)](#)

leadership on measures and practices related to environmental, social and governance issues; favourable exchange rates; research and academic expertise in natural resources and clean energy; an integrated service and supply sector that supports industry both in Canada and around the world; and a strong regulatory and legal system. BC also is one of the few jurisdictions in the world with a virtually carbon-free electricity system.

BC is a hydrogen technology leader. In addition to [Ballard](#) Power Systems (TSX,NASDAQ:BLDP) and [Loop Energy](#) (TSX:LPEN) – two hydrogen fuel cell manufacturers – BC Hydro's [Powertech Labs](#) provides testing and some research and development for hydrogen technology.

BC's [hydrogen strategy](#) notes that "more than half of Canada's companies active in the hydrogen and fuel cell sector are located in BC". Success requires accelerating the adoption of renewable and low-carbon hydrogen through policy, partnerships, innovation, incentives, and infrastructure to help build a sustainable economy.

The International Energy Agency (IEA) recently released [a roadmap](#) for realizing net-zero carbon dioxide (CO₂) emissions in the energy sector by 2050.

IEA's roadmap proposes decarbonizing the power sector with renewables, complemented by a concerted effort to switch other sectors such as transportation, buildings and industry toward electricity based energy in order to take advantage of new renewables. This electrification process, a growing global population and increased economic development means that total electricity needs will increase drastically.

Looking at buildings, RBC Economics reports that greenhouse gas emissions from buildings have increased 28% between 1990 and 2019, while transportation and oil & gas have increased 55% and 87%, respectively (Figure 1).

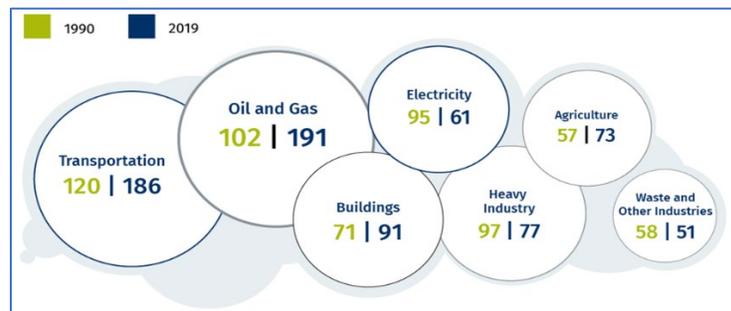


Figure 1 Canada's greenhouse gas emissions, million tonnes of CO₂ equivalent

Source: Environment and Climate Change Canada, [Canada's road to Net Zero](#)

The buildings sector has a very large carbon footprint when indirect emissions are accounted for. About 9% of global energy-related CO₂ emissions result from the use of fossil fuels in buildings, another 18% come from the generation of electricity and heat used in buildings, and an additional 10% is related to the manufacturing of construction materials.

Thus, [buildings](#)' entire lifecycle is responsible, directly and indirectly, for ~37% of global energy-related CO₂ emissions, which calls for whole-lifecycle emissions restrictions.

Achieving the goal of Net Zero Emissions by 2050 for the buildings sector requires a rapid shift to best-available technologies in all markets by 2030, dependant on rapidly stepping up the stringency of minimum energy performance standards (MEPS) for all end-uses. With growing [allegations of greenwashing](#), the climate challenge presents an opportunity for real-estate companies to respond pre-emptively as early adopters of a transparent ESG (environmental, social, governance) reporting framework that is meaningful to investors.

Despite its advantages, Canada's energy mix will continue to be dominated by oil and gas in buildings and transportation – both areas with significant impacts on property markets.

A recent Conference Board report estimates that by 2050, Canada's transportation energy mix will still be dominated by oil and gas, even though their share of the market will drop to about 60% from today's 90%. The magnitude of that drop will depend on the availability and rate of adoption of new liquid fuels, gas, and electricity technologies, along with consumer and business behaviour changes and policy leadership.

The rapid decline in fossil fuel use must be led by advanced economies, which are best-equipped to accelerate the transition to renewables. Phasing out fossil-based energy such as natural gas in developing countries may take longer if the world is to achieve net zero in a fair and equitable way.

In addition to challenges in effectively executing its longer-term energy strategy, Canada - with other countries - must necessarily re-evaluate its shorter term objectives as Russia's invasion of Ukraine has triggered a great resource reset and ruptured the global order.

That is, the world needs more [Canadian resources](#) as punitive sanctions against Russia strand its natural resource and agricultural production and offer opportunities to other resource-rich countries such as Canada, Australia and the United States.

Geologically, Canada is a mirror image of Russia and the two are among the world's biggest producers of oil and gas, uranium, nickel, potash and wheat. Countries are now competing to secure [Canadian](#) supplies of these and other commodities.

Energy challenges

According to the World Economic Forum, Russia's invasion of Ukraine has the potential to accelerate the global shift to green energy in the long run, but in the short-term it will have huge consequences on energy prices and market structures. Firstly, countries are working on contingency plans as a response to the shortage of oil and gas. The United States, the United Kingdom and Canada imposed an embargo on Russian oil and gas imports. The EU is working on plans to decrease dependence on Russian gas and oil by 2024. Other states and big private energy companies, like Shell, BP, Equinor, and Exxon are leaving Russia. Markets have reacted with a gas and oil price surge. Security and affordability will play a key role in shaping Western countries' energy policies, as the urgency to no longer be so dependent on fossil fuels has become more salient through the war in Ukraine and after the release of the [IPCC's](#) latest climate report.

This marks a shift in how we think about energy and where we get it from: the investment into renewables will be considered a component of energy security – and political stability. [Consequences](#) of the war in Ukraine will be far-reaching but may lead to more rapid development of the technologies needed for a green transition.

Crises create blurred opportunities

Economic development and innovation are key to Canada's efforts to meet its climate commitments, to leverage its competitive advantages in natural resources, and to support sustainable communities which have healthy property markets. To quote Matt Ridley, "[Innovation](#) is the child of freedom and the parent of prosperity."³

In Canada's three-tiered system of government, that requires shared understanding and clear definition of each tier's role in economic growth and development. Absent that

³ Matt Ridley. *How Innovation Work and Why It Flourishes in Freedom*. Harper Collins Publishers. New York, NY. 2020. P.373

clarity, the Institute of Municipal Finance and Governance ([IMFG](#)) states that more and more taxpayer money is invested in maintaining government departments, instead of rationalizing core services, reducing red tape and duplication, and funding sustainable, productive grassroots economic development efforts.

And clear vision of future green energy is critical but insufficient without public willingness, policy leadership and execution of workable strategies to achieve that vision.

Alberta presents an example where property markets are a key element in the province's shifting nexus toward greener energy and economic diversity

Following its 2014 'boom & bust' tailspin from over-reliance on oil and gas, the Government of Alberta started work for an innovation pick-up in the province, with an aim to be proactive rather than reactive to future economic risks.

The [Financial Post](#) reports that since 2014, Alberta has evolved in areas beyond the energy sector, particularly on the services side: the finance, real estate, healthcare and information and communication technology sectors have shown gains in contributions to GDP and employment, as the energy sector remained below its 2014 peak.

Importantly, Alberta's efforts are attracting the attention of global firms looking to set up shop in Canada. Aided by highly attractive commercial and residential real estate prices relative to other parts of the country (notably in Ontario and B.C.), in recent years, firms have migrated to Calgary: in November 2021, Amazon Web Services announced Calgary as its location for a new cloud-computing hub — a venture that is expected to add almost 1,000 new full-time jobs with an estimated increase of \$4.9 billion to Canada's GDP.

Changes in the economy, including the rise and now questionable future of globalization as well as the emergence of new disruptive technologies, have altered how governments are approaching economic development policy.

Government needs to answer [IMFG's](#) fundamental question regarding economic development: "What is the core role of each order of government?" Bold vision is insufficient. Innovation, role clarity and coordinated execution of effective strategies contribute to the growth of sustainable communities and healthy property markets.