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THE ROLE OF ENGINEERS IN CANADA'S LONG-TERM ECONOMIC RECOVERY

THE ENGINEERING PROFESSION'S POSITION

- To ensure Canada's long-term economic recovery from the events of the past few years, the federal government should make strategic economic investments in infrastructure, natural resources and energy, sustainable development, innovation, and equity, diversity and inclusion (EDI) initiatives.
- Engineers and the engineering profession play a vital role in growing Canada's economy.
- To have a lasting effect and ensure the best interests of the public, the economic recovery must be part of an approach that will ensure the integrity and quality of these economic investments.
- The federal government's coordination and collaboration with key stakeholders, particularly the engineering profession, are essential to Canada's economic recovery.

The challenge(s)

The COVID-19 virus spread with alarming speed around the world, infecting millions of individuals and bringing economic activity to a near-standstill in 2020. The economic damage of the COVID-19 pandemic is evident and represents one of the largest economic impacts the world has experienced in decades[1].

According to the International Monetary Fund, in 2020 Canada saw its estimated GDP shrink 5.2 per cent—the deepest global recession in decades—despite the extraordinary efforts of the international community to counter the pandemic with fiscal and monetary policy support[2]. Projections of economic growth are now at 3.9 per cent in 2022 and 2.8 per cent in 2023. The economic impact of COVID-19 is further exacerbated by the supply chain disruptions, the war in the Ukraine and its impact on the energy sector, as well as rising inflation. As governments grapple with an unprecedented global health and economic crisis, it is undeniable that Canada's federal government must continue its pandemic management while also focusing its attention towards rebuilding Canada's economy.

How Engineers Canada has contributed

Engineers Canada's submitted its budget recommendations to the House of Commons Standing Committee on Finance in September 2022 and re-iterated the need for increased investments in infrastructure, continued investments in green infrastructure, in the natural resources and energy sectors, and continued support for EDI initiatives.

Recommendations to the federal government

To ensure Canada's long-term recovery, the federal government should focus on the following:

Increased investments in infrastructure

Canada's long-term economic recovery requires that the federal government continue to increase investments in infrastructure projects and accelerate already planned infrastructure projects through the Investing in Canada Plan program, and other legacy programs. Much of Canada's core public and private infrastructure requires

[1] The World Bank (June 2020). "The Global Economic Outlook During the COVID-19 Pandemic: A Changes World". Retrieved September 16, 2022 from: https://www.worldbank.org/en/news/feature/2020/06/08/the-global-economic-outlook-during-the-covid-19-pandemic-a-changed-world

[2] Frasier Institute (September 2022). "Storm Without End" The Economic and Fiscal Impact of COVID in Canada." Retrieved September 16, 2022 from: https://www.fraserinstitute.org/studies/storm-without-end-the-economic-and-fiscal-impact-of-covid-in-canada

significant immediate and future investments to ensure its sustainability for its complete life and service cycle. Well-designed, properly built, continually maintained, and reliable infrastructure is critical to public safety, quality of life, and a competitive economy. The federal government is responding appropriately with infrastructure initiatives such as the Investing in Canada Plan and the Canada Infrastructure Bank; however, more is needed. By continuing to invest in infrastructure projects and accelerating project approvals, jobs across the country will be created and the economy will continue to be supported.

It is imperative that the federal government continue to consult engineers throughout the life cycle of projects that fall under the Investing in Canada Plan, the Canadian Infrastructure Bank, and other federally funded programs, including the Disaster Mitigation and Adaptation Fund and the National Infrastructure Assessment. Engineers allow for a comprehensive, evidence-based, and expert-driven assessment of public infrastructure needs in the short- and long-term. Public confidence and safety are at risk when engineers are not involved in the development and implementation of a wide range of regulations that require the application of engineering expertise. The unbiased expertise of the engineering profession is available to work collaboratively with the federal government to achieve evidence-based, long-term infrastructure planning that supports a net-zero emissions future while growing the national economy.

Continued investments in sustainable development through green infrastructure, natural resources and energy sectors

The federal government must continue to invest in sustainable development through green infrastructure to grow the Canadian economy, as well as to deliver on Canada's climate commitments. Retrofitting Canada's existing infrastructure to become energy efficient will support these economic and climate targets; an area of expertise that Canadian engineers are equipped to support and implement. The federal government should also continue to invest in nature-based solutions to tackle climate change. Estimates suggest that nature-based solutions can provide 37 per cent of climate change mitigation needed to achieve Canada's net-zero emissions by 2050[3]. Nature-based solutions also play a key role in climate change adaptation and building resilience in landscapes and communities. While we applaud the previous federal investments into the *Nature Smart Climate Solutions Fund* and other green infrastructure programs, more needs to be done in recognizing the role that green and natural infrastructure can play.

In addition, supporting Canada's natural resources sector remains critical to the national economy. The engineering profession plays a critical role in safely and sustainably extracting, processing, and delivering natural resources,

[3] Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (2019). "Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services". Retrieved on September 16 from: https://ipbes.net/sites/default/files/inline/files/ipbes_global_assessment_report_summary_for_policymakers.pdf

such as water, wood, sand, gravel, ores, oil, and gas. Increasing support for such projects will reduce the need and cost of importation, support the labour force, and increase Canada's self-sufficiency.

Continued support for innovation funding

Innovation can drive and improve productivity across all industrial sectors, and engineers are oftentimes at the forefront of this innovation and these productivity enhancements. Many industries that are essential to the economic growth of the country, such as construction, mining, telecommunications, and manufacturing, depend on innovative engineering thinking. The research, development, and innovation sectors across Canada are essential in keeping the Canadian economy running.

Continued support for equity, diversity, and inclusion initiatives

A 2022 Statistics Canada report found that women disproportionately lost their jobs when compared to men due to the COVID-19 pandemic[4]. Women disproportionately bore the brunt of childcare responsibilities and were therefore most impacted by the pandemic when compared to their male counterparts. To serve the economy, as well as Canadian society at large, the federal government must continue to support efforts to attract and retain talented individuals from Canada's diverse populations. With women making up approximately half of Canada's workforce, it is imperative that the federal government continue to support EDI initiatives to kick-start Canada's economic recovery. Engineers Canada is actively working to support the recruitment, retention, and professional development of women in the engineering profession, primarily through its 30 by 30 initiative. Engineers Canada is also working to increase the representation of Indigenous people in post-secondary engineering education as it provides significant benefits to Canadian society and the economy by increasing innovation, addressing skills shortages.

Role of engineers in Canada's long-term recovery

During the COVID-19 pandemic, many engineers—as part of listed essential services—have played a critical role, both on the frontline and in supporting frontline workers and communities across Canada. Engineers possess the skillset for innovative solutions to flourish in complex global situations, such as the design of personal protective equipment or the development of diagnostic tools to effectively screen large populations. On the frontlines, engineers have also played an important role in developing sustainable infrastructure that mitigates COVID-19 exposure, such as heating, ventilation, and air conditioning systems, physical distancing design, maintenance of facilities, and others. Engineers will continue supporting Canadians by playing an important role in the immediate-, short-, and long-term economic recovery of Canada.

The federal government's willingness to coordinate and collaborate with key stakeholders, particularly the engineering profession, is essential as the country focuses on economic recovery. Engineers are essential in the design, implementation, construction supervision and maintenance of all types of infrastructure, making

[4] Statistics Canada (July 2022). "Pandemic benefits cushion losses for low income earners and narrow income inequality – after-tax income grows across Canada except in Alberta and Newfoundland and Labrador". Retrieved September 16, 2022 from: https://www150.statcan.gc.ca/n1/daily-quotidien/220713/dq220713d-eng.htm

the engineering profession critical in connecting communities, driving our economy, and keeping Canadians safe.

The engineering profession plays a critical role in safely and sustainably extracting, processing, and delivering natural resources, such as minerals, water, wood, soil, oil, and gas.

How Engineers Canada will contribute

Engineers Canada will continue to:

- Provide input from engineers on federal legislation and regulations to ensure that federal policy is grounded in cutting edge technology and research and helps to build a more resilient and inclusive economy.
- Offer advice and technical expertise to ensure the federal government is informed on the needs of the engineering regulators and the engineering profession in Canada.
- Share recommendations from the engineering regulators and the engineering profession regarding Canada's long-term economic recovery and bring concerns to the attention of the federal government.