

THE ENGINEERING PROFESSION'S POSITION

- In this rapidly changing and highly competitive world, improvements to research, development, and innovation must remain a national priority. Industry and government investment in these activities contributes to both economic prosperity and quality of life.
- Engineers are and must continue to be at the forefront of innovative solutions in order to help Canadians meet the environmental, social, and economic challenges of the 21st century.
- Through enhancing innovation and productivity, engineers play a vital role in building and sustaining Canada's economy.

The challenge(s)

In 2019, the Bloomberg Innovation Index saw Canada advance two spots to break into the top 20 innovative countries for the first time in three years.¹ However, countries that are more innovative and increasingly productive are passing Canada on measures such as income per capita, exports, imports, and the quality of social programs. Falling behind on research, development and innovation greatly stunts our country's productivity, which consequentially has a large impact on the Canadian workforce and economy. Engineers Canada supports the federal government's increased investments in research, development, and innovation to ensure that Canada continues to advance to world leader status in innovation and productivity.

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 critical to adapting to life under COVID-19 conditions and are essential in keeping the Canadian economy running.

¹ Bloomberg (2019). "U.S. and Canada make strides in Bloomberg 2019 Innovation Index." Retrieved September 4, 2020 from: <https://www.bloomberg.com/news/articles/2019-01-28/u-s-canada-make-strides-in-bloomberg-2019-innovation-index>

How Engineers Canada has contributed

Engineers Canada is supportive of and encourages all levels of government investment in research, development, and innovation in Canada, and strongly supports the streamlining of those funding opportunities to maximize the benefits to all Canadians. Cooperation between the engineering profession and the federal government is invaluable in accomplishing this. Federal government support for research, development, and innovation helps to ensure that adequate funds are available to support the procurement and retention of talent, particularly during COVID-19.

Engineers Canada actively works to advance the attraction, retention, and equitable participation of women and Indigenous peoples in Canada's high-productivity sectors. Increased diversity within the engineering workforce provides significant benefits to Canadians by delivering a solution to overcoming skills shortages, increased innovation capacity, ensuring that engineering research is aligned with societal needs, and a greater return on human resource investment. Moreover, advancing and supporting the equitable participation of women and Indigenous peoples in Canada's high-productivity sectors has the potential

to add \$150 billion to Canada's GDP by 2026, or an annual increase of 0.6 per cent to the country's GDP growth.² The benefits of diversity extend beyond innovation as well. Welcoming and retaining more women and Indigenous peoples into engineering creates a positive voice for the profession in communities and encourages engineering role models for future generations.

Engineers Canada has contributed expertise to:

- Meetings organized by the federal government to explore ways to improve Canada's competitiveness, output, and quality of life.
- Federal submissions outlining recommendations to support innovation initiatives, research, and development, and economic prosperity in Canada.
- Initiatives to develop long-term approaches for sustained growth and prosperity by supporting practices, multidisciplinary research, and new techniques.

Recommendations to the federal government

The federal government must continue to invest in research and development and innovation in Canada. The technology sector is a key driver of Canada's economic competitiveness on the global stage and will form an important part of Canada's recovery post-COVID-19. The technology sector has contributed greatly to Canada's COVID-19 mitigation efforts through vaccine research, personal protective equipment innovations, COVID-resilient infrastructure, and more. Engineers are at the forefront of many

technology companies and are key drivers of innovation.

Engineers Canada supports Canada's Innovation and Skills Plan, which focuses on propelling Canada forward as a leader in science, technology, and innovation, and being recognized as one of the most innovative and competitive economies in the world. As of 2019, the federal government has worked diligently to increase Canada's innovative capacity, which in turn has led to:

- 55 per cent of workers completing post-secondary education - the highest proportion of all OECD member countries.³
- Canada holding the second position in the G7 for attracting venture capital financing.⁴
- Canada holding the first position in the G7 for higher-education sector research and development performance.⁵

We believe the federal government must continue to make significant investments into a strategic innovation agenda and frameworks to support the growth of incubators, accelerators, and emerging national networks for business and engineering innovation. The strategy must include rewarding the parts of our society, both public and private, that achieve or enable greater levels of innovation and productivity. Such examples include investments in green infrastructure while continuing to build a more inclusive economy or modernizing the federal government's procurement process to incentivize innovation. Finally, green infrastructure investments are key to achieving the post-pandemic economic recovery, clean growth, and climate change commitments made by the federal government.

² Global Affairs Canada (2019). "Trade and gender connection." Retrieved September 4, 2020 from: https://www.international.gc.ca/trade-commerce/gender_equality-egalite_genres/trade_gender-commerce_genre.aspx?lang=eng

³ Government of Canada (2019). "Canada's innovation strengths and priorities." Retrieved September 4, 2020 from: <https://www.tradecommissioner.gc.ca/innovators-innovateurs/strategies.aspx?lang=eng>

⁴ Ibid.

⁵ Ibid.

How Engineers Canada will contribute

With its network of expert volunteers,
Engineers Canada will:

- Provide advice on funding priorities for innovation and productivity in existing and emerging disciplines.
- Participate in government forums, national roundtables, and appear before House of Commons standing committees to advance innovation policies.
- Provide advice in the early stages and facilitate the development of legislation and federal regulatory frameworks that promote innovation and productivity.
- Continue working with our members to improve equity, diversity, and inclusion in the profession.