

THE ENGINEERING PROFESSION'S POSITION

- In this rapidly changing and highly competitive world, improvements to innovation and productivity must be a national priority.
- Engineers Canada believes the government must make investments in innovation and changes to its regulatory frameworks to ensure Canada advances to world leader status in innovation and improving productivity¹.
- Through enhancing innovation and productivity, engineers play a vital role in building and sustaining Canada's economy.

The issue

Canada ranks near the bottom of its peer group on innovation and increasing productivity. 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 these matters greatly stunts our country's productivity, which consequentially has a large impact on the Canadian workforce and economy.

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 engineering and innovative thinking.

How Engineers Canada has contributed

Engineers Canada helps promote innovation within engineering through our annual awards, our scholarship program, and accreditation standards. The Engineers Canada National Award for an Engineering Project or Achievement, for example, recognizes the innovation and ingenuity displayed by the conception, design,

and execution of an engineering project, or by a team of engineers in Canada.

The scholarships awarded annually by Engineers Canada help professional engineers return to university to conduct research to innovate the profession or their chosen academic field. Recipients are chosen largely based on how their research will contribute to innovation and its contribution to improving Canada through such mediums as job creation and economic improvement.

Within our engineering accreditation standards that must be met by post-secondary engineering education programs, there is a focus on the most modern engineering technologies and practices. There is also a culture that supports innovation and productivity while ensuring public and environmental safety. Engineers are not only educated in the physical elements of engineering technologies, but there is also a focus on engineering economics, which supports choosing the most productive solutions to engineering challenges.

Engineers Canada also actively works to advance the equality and 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, 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 percent to the country's GDP growth². 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 is a member of the Canadian Chamber of Commerce and has worked with Chamber members on the innovation file. The lack of a true innovation ecosystem has consistently been listed as one of the top 10 barriers to competitiveness for Canada.

Recommendations to the federal government

Although there are several avenues that can be taken to increase productivity, innovation is the most significant factor. In the absence of sustained innovation to drive projects, ideas, and assessments forward, the competitiveness of Canada's economy, coupled with individual productivity, becomes strained.

We believe the federal government must make significant investments each year 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. These frameworks would include such matters as intellectual property rights, taxation structure, and other encouraging regulatory structures. By focusing on innovation in

industries relevant to engineering, it is possible to increase productivity and contribute to the economic prosperity of Canada.

To support innovation and productivity in the engineering profession, the federal government should provide wage subsidies for new post-secondary engineering co-operative placements across Canadian employers. By allocating wage subsidies for co-operative placements, Canadian engineering employers will learn more about co-operative engineering programs and will benefit from innovative perspectives from the students they train. Engineering students who are better prepared to enter the profession will contribute greatly to Canada's economic growth and innovative agenda.

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 formal government forums, national round tables, and appear before House of Commons standing committees to advance sound innovation policies.

¹Global News (2016). "Canada ranks 15th on Global Innovation Index: Here's where we fall behind." Retrieved August 30th, 2017, from: <http://globalnews.ca/news/2888159/canada-ranks-15th-on-global-innovation-index-heres-where-we-fall-behind/>.

²McKinsey & Company Canada. (2017). "The Power of Parity: Advancing Women's Equality in Canada." Retrieved July 5th, 2017, from: <http://www.mckinsey.com/global-themes/women-matter/the-power-of-parity-advancing-womens-equality-in-canada>.