



# Written Submission for the Pre-Budget Consultations in Advance of the Upcoming 2024 Federal Budget

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# Recommendations to the federal government

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**Recommendation 1:** That the government prioritizes infrastructure investments toward a net-zero future.

**Recommendation 2:** That the government provides ongoing support for equity, diversity, and inclusion (EDI) initiatives across Canada, including measures to address discrimination, harassment, and enhance workplace inclusivity for women, Indigenous peoples, Black and other racialized communities, 2SLGBTQI+ individuals, and persons with disabilities.

**Recommendation 3:** That the government allocate funding to support access programs for Indigenous peoples pursuing post-secondary engineering education across Canada.

**Recommendation 4:** That the government's Department of Finance Canada collaborate with the Treasury Board of Canada Secretariat to streamline the licensing requirements for engineers within the federal public service.

## Recommendation 1: That the government prioritizes infrastructure investments toward a net-zero future

To effectively address Canada's climate commitments and foster economic growth, the federal government should prioritize infrastructure investments that lead us toward a net-zero future. This includes leveraging existing infrastructure and upgrading the transmission grid to overcome capacity and interconnectivity limitations. By doing so, we can make significant strides toward our net-zero objectives while simultaneously fostering sustainable development.

### Retrofitting existing infrastructure:

- The federal government should continue to invest in retrofitting Canada's existing infrastructure to enhance energy efficiency. By leveraging the expertise of engineers, we can optimize the performance of our infrastructure assets, aligning them with our economic and climate targets. Continued investments in green and natural infrastructure, building upon previous investments made through programs like the [Nature Smart Climate Solutions Fund](#), should remain a priority.

### Investing in nature-based solutions:

- Continued investment in nature-based solutions is critical for tackling climate change and achieving the net-zero emissions target by 2050. Nature-based solutions not only provide significant climate change mitigation but are also vital in climate change adaptation and building resilience in communities.

### Upgrading the transmission grid:

- To address the limitations in capacity and interconnectivity, the federal government must prioritize upgrading the transmission grid. This is particularly important in emergency scenarios, such as prolonged power outages following natural disasters. Additionally, strategic infrastructure investments should support resource extraction and transportation, particularly for materials like hydrogen, lithium, uranium, and other metals and minerals. This will foster self-sufficiency, reduce importation costs, and support the labour force.

By prioritizing infrastructure investments aligned with a net-zero future, leveraging existing assets, and upgrading the transmission grid, the federal government can create a resilient and sustainable infrastructure network. This will not only support Canada's climate commitments but also stimulate economic growth, enhance resource efficiency, and foster the well-being of all Canadians. Engineers possess the skills and knowledge to guide the federal government in addressing current and future challenges related to infrastructure. Through collaboration with the engineering profession and strategic allocation of resources, we can achieve a prosperous and sustainable future.

**Recommendation 2: That the government provides ongoing support for equity, diversity, and inclusion (EDI) initiatives across Canada, including measures to address discrimination, harassment, and enhance workplace inclusivity for women, Indigenous peoples, Black and other racialized communities, 2SLGBTQI+ individuals, and persons with disabilities.**

Engineers Canada is spearheading a nationwide initiative aimed at fostering greater gender equity within the field of engineering. At the forefront of our efforts is the “30 by 30” campaign. Together with engineering regulators, post-secondary institutions, and other engineering organizations, our goal is to ensure that by 2030, 30 per cent of newly licensed engineers identify as female. Currently, this figure stands at 19.8 per cent nationwide, with female-identifying engineers comprising only 14.4 per cent of the total profession.<sup>1</sup>

Achieving gender diversity is crucial for the engineering profession to better understand and safeguard the public interest, as it should be representative of the demographics it serves. Our recent research on the experiences of women in engineering has highlighted persistent barriers, such as gender-based discrimination and harassment. Women and gender-diverse engineers continue to face systemic obstacles and toxic work environments that are not experienced by their male counterparts. This culture of exclusion also affects Indigenous peoples, Black individuals, people of colour, 2SLGBTQI+ persons, and individuals with disabilities, who encounter similar barriers due to systemic discrimination and marginalization.

While Engineers Canada collaborates with provincial and territorial regulators, post-secondary institutions, and employers to address the underrepresentation of women, our influence on workplace practices and policies remains limited. Additional support from the federal government is required to incentivize small, medium, and large employers to prioritize EDI as a business imperative. The “30 by 30” initiative aims to raise the percentage of newly licensed engineers who identify as women to 30 per cent by 2030, a goal that necessitates commitments from employers to drive cultural change within the engineering profession, alongside existing commitments from regulators and post-secondary institutions.

The federal government should collaborate with the engineering profession to support advancements in EDI and a sense of belonging within the field. This includes funding employer training programs, workplace mentorship initiatives for women and underrepresented engineers, and work-integrated learning opportunities that foster a safe and supportive environment for women, Indigenous peoples, Black individuals, people of colour, 2SLGBTQI+ individuals, and persons with disabilities to pursue engineering education and careers.

Furthermore, the federal government should allocate funding to develop EDI training and resources specifically tailored for small and medium-sized enterprises, as well as remote workplaces in sectors such

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<sup>1</sup> Engineers Canada (2022). “National Membership Report” Retrieved from: <https://engineerscanada.ca/2022-national-membership-information#-sex-representation-in-engineering>

as construction, mining, natural resources, and other engineering fields that lack access to EDI resources. Individuals from marginalized communities deserve a profession that celebrates and safeguards their well-being, and the engineering field requires diverse problem-solvers to tackle the challenges in the public interest and drive Canada's innovative capacity.

### Recommendation 3: That the government allocate funding to support access programs for Indigenous peoples pursuing post-secondary engineering education across Canada.

Despite constituting over 4.9 per cent of the total Canadian population, Indigenous people account for only 0.6 per cent of engineering undergraduate enrolment. A 2021 report commissioned by Engineers Canada reveals that Indigenous representation in the engineering profession stands at a mere 0.73 per cent.<sup>2</sup>

These statistics highlight significant barriers that hinder Indigenous people from entering and continuing in engineering education and the engineering profession. These barriers include socio-economic disparities between Indigenous and non-Indigenous populations, the intergenerational trauma resulting from colonialism and systemic racism, inadequate funding for Indigenous schools, early education gaps for Indigenous students, discriminatory attitudes toward Indigenous people within the engineering profession, and limited awareness of engineering as a viable and appealing career option for Indigenous students.

While the federal government has expressed its commitment to supporting Indigenous people in STEM fields, it is crucial that sustainable funding be provided for Indigenous learners, along with support programs that equip them with the necessary tools for success in the post-secondary environment. Such initiatives will not only bolster the economy and Canada's innovation output but also align with the Truth and Reconciliation Commission's Call to Action to eliminate educational and employment gaps between Indigenous and non-Indigenous Canadians.<sup>3</sup>

Targeted, culturally relevant support programs for Indigenous students interested in engineering that cater to their academic, social, and cultural needs, have demonstrated success in increasing Indigenous undergraduate enrolment in engineering. Programs like the University of Manitoba's [Engineering Access Program](#) (ENGAP), Queen's University's [Aboriginal Access to Engineering](#) program, and the University of Saskatchewan's [Indigenous Engineering Access Program](#) are holistic initiatives that pave the way for Indigenous learners in engineering.

Engineers Canada's [Indigenous People's Access to Post-Secondary Engineering Education Programs: A Review in Practice Consensus](#) provides guidance for post-secondary engineering programs. We also

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<sup>2</sup> Engineers Canada (2021). "Indigenous Engineering in Canada." Retrieved from: <https://engineerscanada.ca/indigenous-engineering-in-canada>.

<sup>3</sup> Truth and Reconciliation Commission of Canada (2015). "Truth and Reconciliation Commission of Canada: Calls to Action." Retrieved from: [Reports - NCTR](#)

facilitate a resource network of engineering academics dedicated to decolonizing their programs. These tools are invaluable, but without funding sources Indigenous access programs cannot thrive and succeed.

By supporting these targeted programs within post-secondary institutions that address the academic, social, and cultural needs of Indigenous students, the federal government would enable access to post-secondary education and facilitate the future skill development of Indigenous learners. Engineers Canada's Indigenous Advisory Committee has developed [recommendations](#) for integrating truth and reconciliation into engineering education, published in the summer of 2022. However, the successful implementation of these recommendations requires financial support from federal agencies. It is not only essential to secure additional funding to advance the entry of Indigenous individuals into the engineering profession, but also to educate non-Indigenous individuals on the historical realities and attitudes that contribute to an engineering profession that can be psychologically unsafe for Indigenous people. Ongoing research and the development of tools for educators are crucial to enable truth-telling, decolonization, reconciliation, and foster a sense of belonging.

The federal government must continue its efforts to close the education gap between Indigenous and non-Indigenous populations, advance reconciliation through education and labour market opportunities, and collaborate with Indigenous leaders, communities, and the engineering profession to develop an effective and comprehensive strategy that supports Indigenous peoples' access to post-secondary engineering education.

#### **Recommendation 4: That the government's Department of Finance Canada collaborate with the Treasury Board of Canada Secretariat to streamline the licensing requirements for engineers within the federal public service.**

For many years federal departments and agencies have filled engineering positions in the public service, particularly those categorized as EN-ENG, without requiring engineering licensure as a condition of employment. This lack of licensure requirement for performing engineering work poses potential risks to public safety. The guidelines issued by the Treasury Board of Canada Secretariat (TBS) do not universally mandate occupational certification for all EN-ENG positions across federal departments, leading to inconsistent criteria for EN-ENG job postings throughout the federal public service. In cases where certification is required, the minimum standard merely refers to eligibility for professional engineering certification in Canada without specifying how eligibility is determined.

In Canada, engineering licences can be issued by any of the 12 provincial or territorial engineering regulators. However, the current TBS guidelines do not mandate applicants to have applied for licensure or be registered with any of these engineering regulators.

Furthermore, all engineering regulators have provisions in their provincial and territorial acts that prohibit non-licensed individuals from using the title 'engineer.' When positions within the federal public service include the term 'engineer' in their titles, it is crucial that only licensed engineers fill these roles. Disregarding the regulated use of the title 'engineer' confuses the public perception of an individual's

qualifications and undermines the high level of trust the public places in the engineering profession. Each engineering regulator strives to ensure that only licensed individuals can rightfully use the title 'engineer.'

Engineers Canada urges Finance Canada to work in collaboration with the Treasury Board of Canada Secretariat to ensure consistent standards across all federal departments and agencies. This can be achieved by making "certification as a professional engineer in Canada" a mandatory occupational certification requirement for all new positions at EN-ENG-03 level and above. Specifically, it is vital for the industry that individuals practicing engineering and using the title 'engineer' (or any similar variation) hold a licence from the engineering regulator in the province or territory where the title is being used. This minimizes risks to public safety and ensures that these activities are carried out by licensed engineers who are bound by stringent professional and ethical standards, working in the best interest of the public.

## About Engineers Canada

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Engineers Canada is the national organization that represents the 12 provincial and territorial engineering regulators that license the more than 300,000 members of the engineering profession in Canada. As the only national voice for the engineering profession, our organization has a long-standing history of working and collaborating with the federal government to help inform and develop legislation, regulations, and policies.