

## 30 by 30 and beyond

**Strategic priority 3: recruitment, retention, and professional development of women in the engineering profession**



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## Executive Summary

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In May 2018, Engineers Canada's Board of Directors approved a new strategic plan, which highlighted, in strategic priority 3 (SP3), the need to drive cultural change in the engineering profession in order to attain 30 by 30. SP3: Recruitment, retention, and professional development of women in the engineering profession expanded the 30 by 30 initiative to include the retention and professional development of women. SP3 is aimed at ensuring that, in partnership with the regulators, actions plans are developed and implemented to achieve an expanded scope.

Underpinning the SP3 sub-strategy is that Engineers Canada continues to act as a backbone organization, fostering collaboration with engineering regulators, and other engineering stakeholders, to work collectively and share authority, decision-making, and accountability to influence the achievement of 30 by 30. The work of the 30 by 30 network has identified that a great deal is being done by regulators, higher education institutions, and some companies to reach out to young women and also to retain women once they are in the profession.

However, more measures need to be taken to address the conversion between graduation and licensure, and to better address the retention and professional development situation in engineering workplaces. A greater emphasis on collaboration between stakeholders (ie. higher education institutions and regulators, regulators, and employers), as well as evaluation frameworks for programs that could help improve existing programs. The strategy also highlights the need for men to play a significant part in changing the engineering culture. Engineers Canada must work with the 30 by 30 Champions to ensure male allyship is developed and encouraged throughout the SP3 action plans, as well as to foster collaboration and partnerships, particularly with employers, to facilitate the culture shift in the workplace that is needed to make engineering a more welcoming place for women.

## Introduction

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The 30 by 30 goal first took shape due to the recognition, by engineering regulators, that the underrepresentation of women in the profession necessitated an intervention. Increasing women's participation was seen as part of the effort to increase diversity in the engineering profession, which would come with multiple benefits: meeting labour market needs; improved economic performance, as research shows companies with the highest share of women in leadership outperform all-male executive committees; and an engineering profession that reflects the diversity of Canada's population.

In 2011, the Association of Professional Engineering and Geoscientists Alberta (APEGA) launched a provincial initiative called 30 by 2030. In August of that year, Engineers Canada's newly created Women in Engineering Committee evaluated the feasibility of achieving a national engineering licensure rate of 30 per cent women by 2030. A revised 30 by 30 goal was adopted by Engineers Canada's Board as a proposed national goal and in 2014 Alberta, New Brunswick, Nova Scotia, and Prince Edward Island were the first regulators to adopt the national goal. As of July 2019, there are 12 regulator Champions, one Engineers Canada Board Champion, one CEO Champion, 21 Champions from post-secondary institutions, and five Champions from engineering organizations (i.e. the Canadian Federation of Engineering Students, the Canadian Academy of Engineers, Engineers of Tomorrow, the Association of Consulting Engineering Companies-Canada, and the Ontario Society of Professional Engineers). A detailed outline of the history of 30 by 30, statistics of women in engineering, and an overview of some of the current activities to support the recruitment, retention, and professional development of women are included as an attachment.

Engineers Canada's role in increasing women's participation in engineering must be based on the organization's capacity (i.e. resources, strengths, partnerships, etc.) and purpose (to serve the regulators, and to promote and maintain the interests, honour, and integrity of the Canadian engineering profession).

Engineers Canada must continue to act as a backbone organization, fostering collaboration with engineering regulators, and other engineering stakeholders, to work collectively and share authority, decision-making, and accountability to influence the challenge of 30 by 30. The backbone organization facilitates the work of the network and their full participation in the effort by managing tensions, supporting solutions to challenges, and creating a dynamic environment for new ideas through improvements to the 30 by 30 network structure.

## Desired state

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The intended outcomes of SP3 are:

- A coherent national strategy to achieve 30 by 30, with buy-in from regulators and other participating stakeholders/contributors, and high visibility among targeted stakeholders
- Published baseline data out to 2030
- Facilitation and support of the 30 by 30 Champions network to achieve new goals
- Ongoing review and refinement of actions to demonstrate progress towards

## Customer definition

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The provincial and territorial engineering regulators are our members. These engineering regulators are the main customers of Engineers Canada. They regulate the engineering profession and license engineers in Canada.

Engineers Canada exists to support the engineering regulators, and, therefore, the SP3 sub-strategy exists to support this group. Regulators are comprised of staff and/or volunteers.

## Stakeholders

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Engineers Canada is working with the higher education institutions (HEIs) as contributors on the work towards 30 by 30, as they play a vital role in the recruitment of girls (primarily grades 9-12) through their engineering outreach programs. In addition, Engineers Canada has and will continue collaborating with other contributors, including:

- educational organizations such as the Engineering Deans Canada (formerly the National Council for Deans in Engineering and Applied Sciences)
- engineering organizations such as the Canadian Federation of Engineering Students, Canadian Academy of Engineering, and the Ontario Society for Professional Engineers
- outreach organizations (i.e. Girl Guides of Canada, Scouts Canada, ACTUA)
- industry associations (i.e. Association of Consulting Engineering Companies- Canada)

## Gap analysis

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The [SP3 Environmental Scan](#) (APPENDIX A) includes a detailed analysis of the current state and the gaps. The key barriers outlined in the scan include:

- Lack of awareness and opportunities in the profession

- Lack of role models, mentorship, sponsorship, and support networks
- HEI culture and workplace culture

See [SP3 Environmental Scan](#) for more details.

## Recruitment action plan

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Recruitment is defined as follows: “Bringing new women into an HEI engineering program, an EIT/MIT program, and/or licensure.”

### Goals

All remaining HEIs approached by our President to participate on 30 by 30 network by end of 2020.

### Tactics

Engineers Canada facilitates the 30 by 30 K-12 working group to create resources to support the recruitment of girls into engineering.

Engineers Canada continues to support Go ENG Girl and the Girl Guide crest program.

Engineers Canada explores diversity in the accreditation process with the CEAB.

## Retention action plan

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Retention is defined as follows: “Keeping women in an HEI engineering program, an EIT/MIT program, licensure, and/or the workplace.”

### Goals

Regulator best practices on EIT/MIT programs, licensure assistance programs, and employer awareness programs compiled by Engineers Canada and shared by end of 2020.

### Tactics

Engineers Canada explores the development of an equity, diversity, and inclusion training module that is available to regulators.

Engineers Canada facilitates the 30 by 30 Early Career Working Group to create a workplan and work towards addressing the conversion between post-secondary graduation and licensure.

Engineers Canada collects and shares regulator best practices.

Engineers Canada continues to track national membership numbers and reports on progress.

## Professional development action plan

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Professional development is defined as follows: “The development of competence or expertise, and career advancement of women in engineering within an organization/faculty/company.”

### Goals

All Engineers Canada Board members and staff have equity, diversity, and inclusion training.

50% of Engineers Canada Board are women by 2025.

### Tactics

Engineers Canada participates in the CCWESTT conferences and sponsors student travel to the conference.

Engineers Canada directs the CEQB to develop a guideline regarding women in the workplace.

Engineers Canada facilitates the Industry Working Group to create a workplan and work towards improving the workplace.

Engineers Canada promotes regulator involvement in Global Marathon webinars for women in engineering.

## Resource requirements

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The Manager of Diversity, Equity, and Inclusion will support the implementation of the SP3 strategy. A large part of the work includes building relationships, maintaining communication and work flow within the 30 by 30 network, facilitating connections within the network and between Champions and external groups and individuals, and maintaining a high level of trust and credibility, both within and outside the 30 by 30 network. This also requires the manager to stay up-to-date on relevant research and news within the engineering profession, as well as create and maintain contact with researchers studying the issue of diversity in engineering.

The Vice President, Corporate Affairs and Strategic Partnerships, will support and advise on the implementation of SP3.

The Manager of Outreach will be involved where SP3 connects with Operational Imperative 8 (outreach strategy).

In addition to the primary resources who are tasked with delivering the strategy, there are other resources that will support the work outlined above, including administrative and communications support. External resources will be needed to support the diversity training module for regulators, and sponsorship for CCWESTT, Engendering Success in STEM, EngiQueers will be included in this strategy.

Occasional travel to present at workshops and conferences, and resources to coordinate the 30 by 30 network in-person meeting in Ottawa will also be required.

## Risk and mitigation strategies

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There is a reputational risk in failing to act to increase the representation of women in engineering. Engineers Canada endorsed the 30 by 30 goal in 2015 and there has been little progress in the numbers. Regulators have repeatedly indicated they need national support for improvements to be made. Clearly, the current situation needs fundamentally new thinking around systemic solutions, and Engineers Canada needs to contribute resources towards moving the needle. This strategy is focused on strengthening the effective collaboration within the 30 by 30 network and providing a constant space for national action-oriented discussions. Change takes time, but requires our investment now.

## Evaluation plan

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To assess the effectiveness of Engineers Canada's SP3 strategy, regular evaluations will be conducted.

Existing evaluation frameworks include:

- **National Membership Report:** tracks the number of newly licensed and practicing engineers who are women.
- **Enrolment and Degrees Awarded Report:** tracks the number of women enrolled and graduating from engineering programs.
- **30 by 30 survey:** The first one was conducted during the strategy development for SP3 in fall 2018. This will be made an annual survey, with the next to be conducted upon approval of the SP3 strategy.
- A semi-annual report to the Board (spring /fall) to track progress towards the SP3 goals.

## Appendix

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Appendix A – [SP3 Environmental Scan](#)