### 30 by 30 data

October 2021







### **Overview**

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### 30 by 30 overview



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### 30 by 30 overview

- 30 by 30 is *one* tactic that seeks to increase the number of female-identifying newly licensed engineers to 30 per cent by the year 2030
- A collective impact initiative that seeks to increase the number of female-identifying newly licensed engineers to 30 per cent by the year 2030
- Measuring diversity and inclusion = accountability, impact vs. intent
- Nationally accepted metric, regulators collect annual data on newly licensed engineers





### 30 by 30 Champions

- <u>Champions</u>: All engineering regulators, 29 higher education institutions, engineering employers, and associations, including ACEC
- Working Groups: K-12, Post-secondary, Early Career, Employer
- Collaborative network, knowledge sharing, research
- Community of practice for engineers and students addressing equity, diversity, and inclusion in the profession





### Why is data important?

- Engineers Canada and the regulators collect annual data and report on the representation of female-identifying engineers
- Tracking the numbers indicates the impact of our collective efforts and contributes to the evaluation of 30 by 30 initiatives across the country
- Following sections outline data provided by the 12 provincial and territorial engineering regulators





### National newly licensed data



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#### **Future of the profession**

 To understand the future of the profession and for the 30 by 30 goal, we track the number of **newly licensed engineers** each year. Newly licensed engineers includes individuals licensed as professional engineers for the first time that are Canadian Engineering Accreditation Boardtrained, internationally trained, or have obtained their licence by some other route. It does not include interprovincial mobility applicants.





### 30 by 30 goal

- 30 by 30 measures the percentage of femaleidentifying **newly licensed engineers**
- This is an important metric for tracking the impact of programs that support gender equity in engineering, since it marks a career milestone for engineers in their early careers, postgraduation from an accredited program, or for internationally trained engineers entering the Canadian job market
- Following data from <u>Engineers Canada's National</u> <u>Membership Report</u> for Jan. 1, 2020 – Dec. 31, 2020

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#### National data on newly licensed engineers



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#### National newly licensed engineers forecast trend



## National female-identifying newly licensed engineers forecast trend



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#### 2020 30 by 30 by province and territory



Percentage of femaleidentifying newly licensed engineers between Jan. 1 2020 to Dec. 31 2020

### National newly licensed engineers

	2014	2015	2016	2017	2018	2019	2020
Total Newly Licensed Engineers (male-identifying)	7,175	8,153	7,136	8,089	6,411	7,255	6,298
Total Newly Licensed Engineers (female- identifying)	1,470	1,652	1,482	1,773	1,414	1,577	1,635
Total Newly Licensed Engineers (gender unknown)	0	0	0	0	0	1	3
TOTAL	8,645	9,805	8,618	9,862	7,825	8,833	7,936
30 by 30*	17.0%	16.8%	17.2%	18.0%	18.1%	17.9%	20.6%

\* Percentage of newly licensed engineers who self-identify as female



## National newly licensed engineers 2014-2020

- Engineers Canada breaks down newly licensed engineers into three categories: Canadian Engineering Accreditation Board (CEAB)-trained, internationally trained, and engineers obtaining by other route
- **CEAB-trained** make up the majority of newly licensed engineers each year (average 69.2 per cent over seven years). Female-identifying CEAB-trained newly licensed engineers account for 71.4 per cent of total female-identifying newly licensed engineers
- Internationally trained make up on average 29.4 per cent of total newly licensed engineers. Female-identifying internationally trained newly licensed engineers account for 27.3 per cent of total female-identifying newly licensed engineers



### Canadian Engineering Accreditation Board (CEAB)trained newly licensed engineers



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### National Canadian Engineering Accreditation Board (CEAB)-trained newly licensed engineers

- In 2020, CEAB graduates accounted for 5,764, or 72.6 per cent, of the total newly licensed engineers in Canada, which is an increase from 71 per cent in 2019.
- Engineers Canada also reports on the number of CEAB students and graduates in the Enrolment and Degrees Awarded Report: <u>Canadian engineers for tomorrow</u> <u>2020 report</u>
- For a further analysis of the CEAB graduation numbers and licensure rates, see the 2021 National Membership Report section '<u>From engineering student to</u> <u>professional engineer</u>'
- Following slides provide data from <u>Engineers Canada's National Membership Report</u> for Jan. 1, 2020 – Dec. 31, 2020



### National Canadian Engineering Accreditation Board (CEAB)-trained newly licensed engineers

	2014	2015	2016	2017	2018	2019	2020
CEAB Trained (male- identifying)	4,977	5,473	4,932	5,047	4,521	5,124	4,554
CEAB Trained (female- identifying)	1,068	1,163	1,050	1,150	1,033	1,165	1,207
Total	6,045	6,636	5,982	6,197	5,554	6,290	5,764
30 by 30*	17.7%	17.5%	17.6%	18.6%	18.6%	18.5%	20.9%

\* Percentage of newly licensed engineers who self-identify as female



### National Canadian Engineering Accreditation Board (CEAB)-trained newly licensed engineers



## National CEAB-trained newly licensed engineers, sex representation



## National CEAB-trained female-identifying newly licensed engineers

	2014	2015	2016	2017	2018	2019	2020
Total CEAB female-							
identifying	1068	1163	1050	1150	1033	1165	1207
% CEAB female-							
identifying	17.7%	17.5%	17.6%	18.6%	18.6%	18.5%	20.9%
Growth rate	N/A	-0.8%	0.2%	5.7%	0.2%	-0.4%	13.1%
Average growth rate	3.0%						

- Growth rate calculation: (current year previous year)/previous year
- Average growth rate from 2015-2020. Sum of 6 years growth rate / 6 years = 3.0%



## National CEAB-trained female-identifying newly licensed engineers



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- Percentage femaleidentifying representation increasing
- Year-to-year average growth rate 2014 2020 = 3 %

### National internationally trained newly licensed engineers



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# National internationally trained newly licensed engineers

- Engineers Canada's National Membership Reports capture the number of internationally trained engineers who are licensed by provincial and territorial regulators each year.
- Further to this point, a Natural Sciences and Engineering Research Council of Canada (NSERC) 2010 report noted that the "future skilled labour force growth in Canada will be heavily dependent on immigration." The report goes on to explain that "the number of skilled immigrant women coming to Canada with degrees in the NSE [natural sciences and engineering] peaked in 2001 and has fallen considerably in recent years," and that the number of internationally trained men outnumber that of women, creating an even greater gender gap in this area.
- Following slides provide data from <u>Engineers Canada's National Membership Report</u> for Jan. 1, 2020 – Dec. 31, 2020.



# National internationally trained newly licensed engineers

	2014	2015	2016	2017	2018	2019	2020
Internationally Trained (male-identifying)	2,447	2,680	2,204	2,330	1,831	1,914	1,710
Internationally Trained (female-identifying)	449	489	432	455	365	385	426
Total	2,896	3,169	2,636	2,785	2,196	2,299	2,136
30 by 30*	15.5%	15.4%	16.4%	16.3%	16.6%	16.7%	19.9%

\* Percentage of newly licensed engineers who self-identify as female.



## National internationally trained newly licensed engineers



## National internationally trained newly licensed engineers, sex representation



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### National internationally trained femaleidentifying newly licensed engineers

	2014	2015	2016	2017	2018	2019	2020
Total Internationally Trained female-							
identifying	449	489	432	455	365	385	426
% Internationally Trained female-							
identifying	15.5%	15.4%	16.4%	16.3%	16.6%	16.7%	19.9%
Growth rate	N/A	-0.5%	6.2%	-0.3%	1.7%	0.8%	19.1%
Average growth rate	4.5%						

Average growth rate from 2015-2020. Sum of 6 years growth rate / 6 years = 4.5 %



### National internationally trained femaleidentifying newly licensed engineers



- Percentage representation increasing
- Year-to-year average growth rate 2014-2020 = 4.5 %



### **Engineers-in-training data**



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### **Engineers-in-training**

- Engineers Canada's National Membership Reports capture the number of Engineers-in-training \* (EITs).
- The number of EITs decreased between 2019 and 2020, by 5,261 members. While the number of EITs decreased for all gender identities, the proportion of female-identifying EITs increased from 21.2 per cent to 21.6 per cent.
- Following slides provide data from <u>Engineers Canada's National Membership Report</u> for Jan. 1 2020 – Dec. 31. 2020.

\* EIT Totals include Members-in-Training, junior registrants, engineering interns, but does not include students



### National Engineers-in-training (EITs) 2014-2020





Total EIT female-identifying

Total EIT male-identifying

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### Percentage of female-identifying EITs: 2014-2019, by regulator



□ 2014 ■ 2015 ■ 2016 ■ 2017 ■ 2018 ■ 2019

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### Post-secondary data



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#### Post-secondary enrolment and degrees awarded

- Engineers Canada reports on trends in enrolment and degrees awarded in post-secondary engineering education in Canada in the Enrolment and Degrees Awarded Report.
- Canadian post-secondary institutions continue to report a strong growth in undergraduate degrees awarded, presenting 24.7 per cent more engineering degrees in 2019 than in 2015.
- The proportion of female-identifying students enrolled in undergraduate and postgraduate programs, as well as the proportion receiving undergraduate degrees, has reached an all-time high. In 2019, female-identifying students comprised 23.4 per cent of undergraduate students, 26.6 per cent of postgraduate students, and 22.1 per cent of undergraduate engineering degrees awarded.
- Following slides provide data from <u>Canadian engineers for tomorrow 2020 report</u> with data from 2015-2019.



#### Female-identifying undergraduate enrolment



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### Undergraduate degrees awarded to femaleidentifying students

- In 2019, 4,017 female-identifying students graduated with undergraduate engineering degrees.
- 1.4 per cent increase from 22.0 per cent in 2018 to 23.4 per cent in 2019.
- The total number of female-identifying students enrolled in undergraduate-level engineering programs has increased by 5.3 per cent since 2018 and 26.5 per cent since 2015.



### Undergraduate degrees awarded to femaleidentifying students



Chart 2.6 - Undergraduate degrees awarded to female students (2015-2019)



#### Source: Canadian Engineers for Tomorrow, 2020

### Undergraduate degrees awarded to femaleidentifying students

- The disciplines with the highest growth over the previous year were materials or metallurgical engineering (9.9 per cent increase) and geological engineering (7.3 per cent increase).
- The disciplines that experienced the highest growth from 2015 were those of **materials** or **metallurgical** engineering (16.3 per cent increase) and **biosystems** engineering (6.0 per cent increase).



#### **Undergraduate degrees awarded**





Source: Canadian Engineers for Tomorrow, 2020

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### Thank you!



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