

# Ontario Power Generation

An aerial photograph showing a lush green landscape with a body of water on the left. In the distance, a power plant with several large white buildings is visible on a hill. The sky is clear and blue.

**Generating Diversity in the Skilled Trades**  
Ontario Construction Secretariat

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Darlington Refurbishment Project

October 2021

**ONTARIO****POWER**  
GENERATION



# Agenda

- About OPG – Our history
- Skilled Trades – supply and demand
- The case for diversity in the skilled trades
- Our successes
- Together we are better



# Who we are

Ontario Power Generation is a climate change leader with one of the most diverse generating portfolios in North America.

In 2014, we closed the last of our coal stations, which remains the world's single largest climate change action to-date.

We're investing in innovative technologies that will drive clean economic renewal – including transportation electrification, small modular reactors, energy storage, micro grids, and nuclear refurbishment.





# Our History

- 1906 – The Ontario Hydro-Electric Power Commission was created to provide access to electricity powered by Niagara Falls in Ontario – Hydro Electric Power Commission of Ontario (HEPCO)
- 1950's – Ontario Hydro started expanding its generation system bringing on line many new hydroelectric stations
- 1974 – Officially named Ontario Hydro
- 1960s and 1970s – Ontario Hydro started its nuclear generating program with the building of Douglas Point at the Bruce in 1965 and the first four units of the [Pickering Nuclear Generating Station](#) followed by stations at [Bruce Nuclear Generating Station](#) and a second four units at Pickering.
- 1993 – [Darlington Nuclear Generating Station](#) built



# Our impact

We are Ontario's largest clean power generator, 100% owned by the Province of Ontario and backed by \$59.8 billion of assets.

Over the past five years, OPG has returned more than \$4 billion in net income to the province, which helps fund essential programs and economic growth.

We employ more than 10,000 skilled, dedicated people and put thousands more to work through our clean energy projects and supply chains.

Our industry-leading development partnerships with Indigenous communities create lasting economic benefits and skilled workers.





# Our assets



2

**Nuclear**  
Stations



2

Leased  
**Nuclear**  
Stations



2

**Thermal**  
Stations



1

**Solar**  
Facility



66

**Canada**  
Hydroelectric  
Stations



85

**US**  
Hydroelectric  
Stations



4

**Atura Power**  
Gas-Fired  
Stations

# Darlington Refurbishment

- On June 4<sup>th</sup>, Unit 02 at Darlington Nuclear GS was reconnected to the electricity grid
- Historic milestone for the Refurbishment project which will provide 30+ years of reliable, clean, low-cost power.
- COVID-19 delayed Unit 3 refurbishment but work is well underway now
- The revised timeline will maintain the project's overall schedule to refurbish all four units by 2026 and the project remains on budget for \$12.8B.





# Looking to the future

Key areas of focus for near and mid term:

- Unit 3 Refurbishment. Planning underway for Units 1 and 4 refurbishment
- Continued operational excellence of Pickering
- Electrification initiatives (Ivy)
- Advance SMR development
- Hydro development projects including Calabogie, Ranney Falls and replacing two generating units at Sir Adam Beck I GS
- Pursue new development partnerships with Indigenous communities
- Look forward to helping rebuild Ontario's economy with our many partners and suppliers



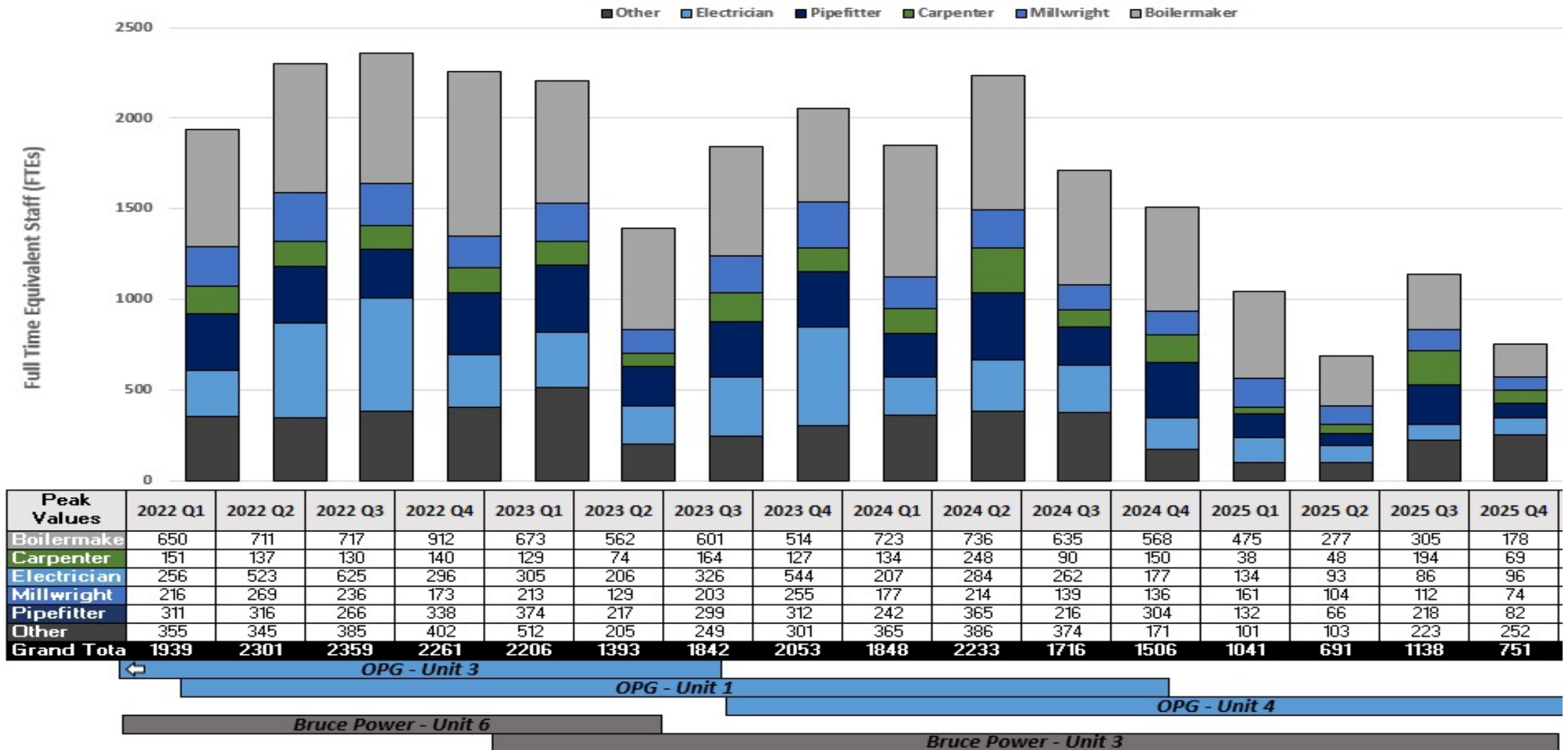


# Looking to the future – Hydroelectric investment

- 250 Hydroelectric units in Ontario – 66 stations
- Producing 7,478 MW collectively
- More than 1/3<sup>rd</sup> of OPG's electricity production
- Average age of Hydroelectric units is 82 years
- 174 units in need of repair/replacement
- Two largest stations are RH Saunders and Sir Adam Beck
- 22 year program = approx. 8 units per year



# OPG Trades demand - Nuclear







# Annual Report 2018



## Recommendation 2

- To ensure that the Darlington Nuclear Generating Station Refurbishment Project (Project) has enough skilled tradespeople to perform the necessary refurbishment work, we recommend that Ontario Power Generation (OPG):
  - Complete a forecast of the future supply of skilled trades identified as being at risk of shortage to determine the impact of this risk on the Project, and take action to prevent or mitigate such risk;
  - Work with Bruce Power Limited Partnership (Bruce Power) continuously and closely to manage the demand for staffing resources during the period when both OPG and Bruce Power have refurbishment work under way, and adjust the Project's work plans where appropriate; and
  - Collaborate with other stakeholders (such as the federal and provincial governments, trade unions and colleges) to increase the supply of skilled trades (particularly boilermakers) needed on the Project.

# Skills Trades Demand

Skilled trades shortage could undermine home construction in Ontario

by Richard Lyall on 02 Jun 2021

## High-Paying Trade Jobs Sit Empty, While High School Grads Line Up For University

April 25, 2018 · 4:33 PM ET

## Canada Will Face A 60,000 Person Shortage Of Skilled Worker Apprentices By 2025

## Women account for just 4.5% of skilled trade workers in Canada: report

ELECTION

## Trades worker shortage getting worse as politicians promise more construction

By PETER MAZEREUW SEPTEMBER 14, 2021

Construction projects in jeopardy due to worker shortage

Aug 9, 2021, 08:40am EDT | 759 views

## How To Fix The \$1 Trillion Skills Shortage Problem



Sam Zheng Forbes Councils Member  
Forbes Technology Council COUNCIL POST | Membership (fee-based)  
Innovation

The **shortage** of **skilled tradespeople** has become a perennial problem in **Canada**, with sagging interest from new generations to enter them and more and more veteran tradespeople retiring.

Canada's worker shortage problem isn't going away anytime ...

[FP financialpost.com/news/economy/canada-worker-shortage-problem](https://financialpost.com/news/economy/canada-worker-shortage-problem)

CANADA NEWS ♦ FEATURED ♦ HEADLINE NEWS

## Dire Shortage of Skilled Tradespeople Looming in Canada

September 20, 2021

## Manufacturers Can Leverage Immigration to Fill Labor Gaps, Address Prevailing Skills Shortage

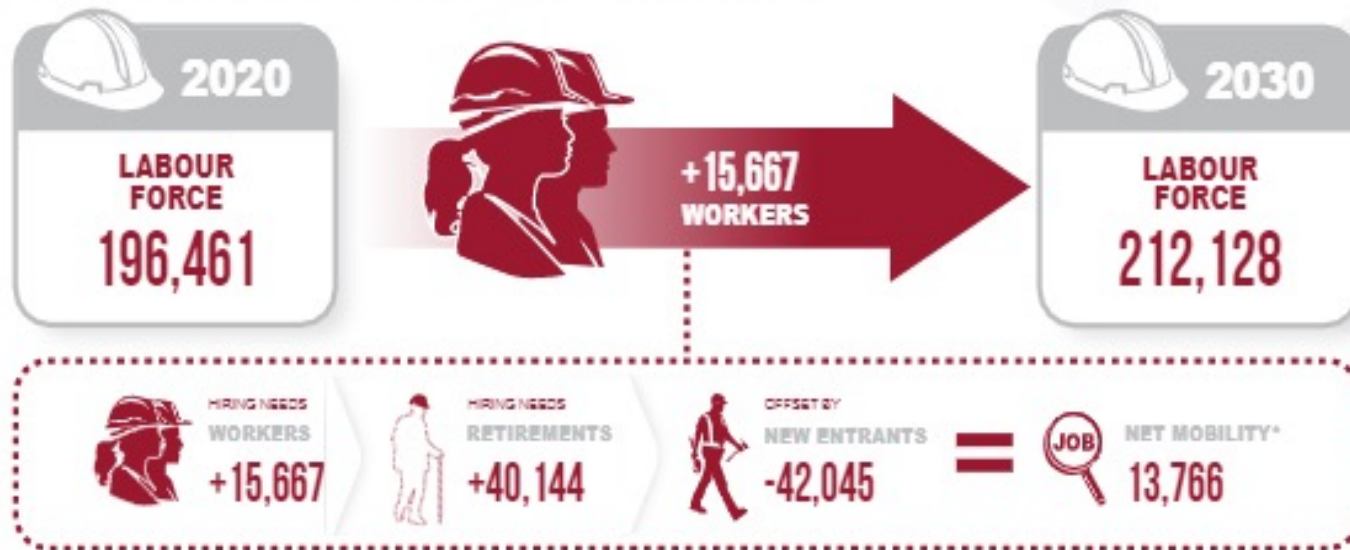
Monday, September 13, 2021

The shortage of skilled workers in Canada's industrial sector is reaching a new intensity



During the scenario period, industry will need to hire, train, and retain more than 116,200 additional workers to keep pace with expected demand growth and to replace the 92,500 workers – 21% of the current labour force – expected to retire. While the industry is estimated to recruit 84,800 new entrants aged 30 and younger from the local population, a projected gap of some 31,400 workers will need to be filled from outside the province's existing construction labour force to meet increased demands.

Figure 2: Changes in the non-residential labour force, Ontario



\* Net mobility refers to the number of workers needed to be brought into the industry from other industries or other provinces to meet rising demands or the number of workers that exit the industry in downturns. Positive net mobility means that industry must attract workers, while negative net mobility arises from an excess supply of workers in the local construction labour force.

Note: Due to rounding, numbers may not add up to the totals indicated.

Source: BuildForce Canada

## HIGHLIGHTS

- Construction activity is expected to recover in 2021 and continues rising to a peak in 2026, driven by major infrastructure, public transit, utility, mining, and industrial, commercial, and institutional (ICI) building construction.
- The construction industry adds more than 35,000 new workers by 2026 and retreats modestly afterward as non-residential projects complete and a projected down-cycle in residential construction takes hold. Over the scenario period, employment is expected to rise by 23,539 workers (+6%) over 2020 levels.
- In addition to industry growth, an aging labour force results in the expected retirement of more than 92,500 workers over the next decade – 21% of the current labour force.

# RBC Report – Powering Up: Preparing Canada's skilled trades for a post-pandemic economy



- Canada will face a shortage of at least 10,000 workers in nationally recognized Red Seal trades over that period—a deficit that swells tenfold when 250 provincially regulated trades are included
- The most severe shortages will be among industrial mechanics, welders and boilermakers.
- Across Canada, over 700,000 skilled tradespeople are expected to retire by 2028.



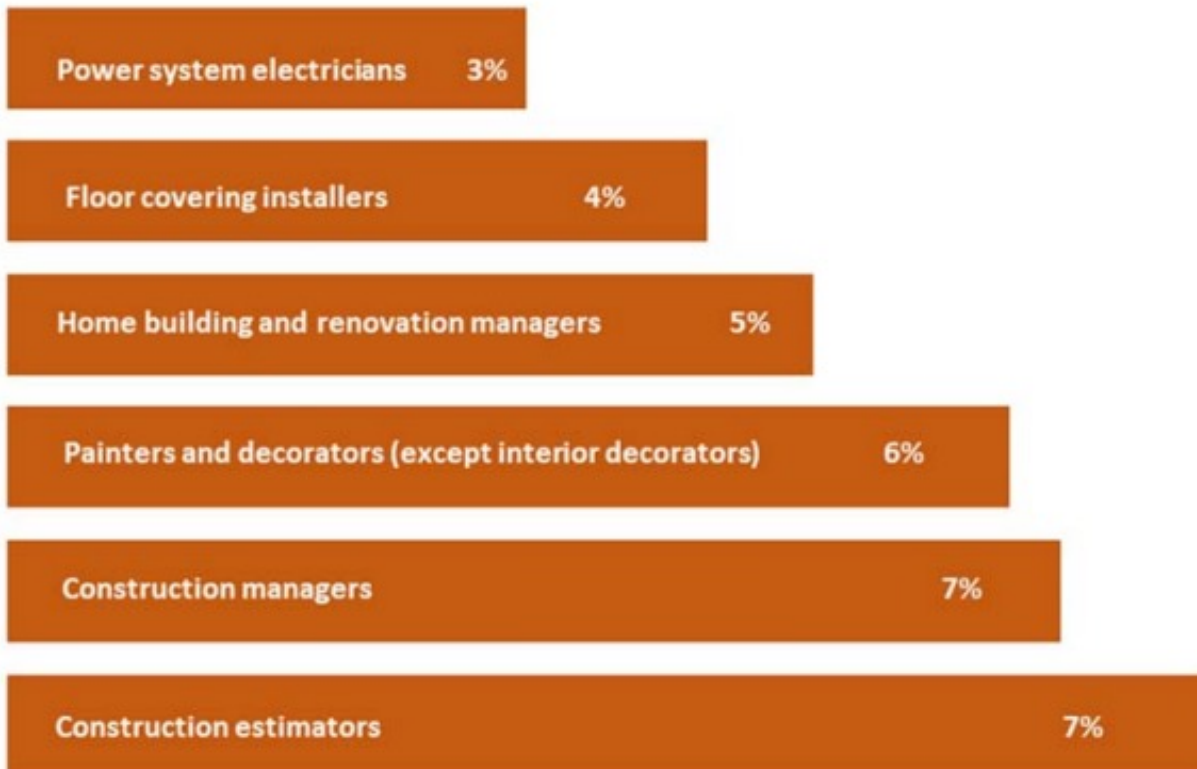


# **RBC Report – Powering Up: Preparing Canada's skilled trades for a post-pandemic economy**

- Women made up just 11% of new registrants for apprenticeship programs in 2019 and continue to represent less than 4% of workers in the most in-demand trades.
- Immigrants comprised 8.7% of apprentices despite accounting for more than 20% of the population.
- Canada is falling short of its goal to bring in 3,000 skilled tradespeople annually through immigration, admitting 2,365 such newcomers in 2019 through the Federal Skilled Trades Program.

# Women in the Skilled Trades

Figure 6 – Trade occupations with female participation above the union sector average (2%), 2016



Female representation in skilled trades is significantly low at 3%.

Women account for 2% of the unionized workforce (4% non unionized sector)

Women are represented at less than 2% for most trades





# Indigenous representation in the Skilled Trades

- Indigenous Peoples account for 3% of the construction workforce in Ontario, a slightly higher representation than the overall workforce (2.3%)
- Several trades have a significantly higher representation of Indigenous Peoples within the workforce, including Structural metal and platework fabricators (11%), Other trades – Labourers (11%) and Driller and Blasters (13%)
- Indigenous Peoples account for less than 2% of the workforce in the following trades – Concrete finishers, Heating refrigeration and air conditioning mechanics and Elevator constructors and mechanics
- Within Ontario, representation of Indigenous Peoples in the unionized workforce is highest in Northern Ontario (Northwest 11%) and Northeast (12%) and lowest in Stratford–Bruce Peninsula and Toronto (1%)

# How do we move forward?

- ☐ Targeted recruitment/awareness
- ☐ Addressing the stigmas head on
- ☐ Working with schools, educators, parents and community leaders to break down the stereotypes
- ☐ Training – is it keeping up with the needs of the workforce? Training for staff?
- ☐ Language changes – internal policies, procurement language and collective agreements
- ☐ What's the workplace culture?
- ☐ Collaboration and partnerships
- ☐ Utilize government funding







# OPG Nuclear Project Agreements and Committee

EPSCA NPA's in place for all trades – aimed to support nuclear project work (OPG and Bruce Power)

## First Nations Commitment:

- In addition to the Aboriginal Content provisions in the collective agreement, the Parties agree to work together proactively towards removing barriers that hinder appropriate participation of First Nations peoples in the BTU workforce on sites covered by this agreement.

## Apprenticeship:

- The Employer will work with local union's signatory to this Agreement to develop an apprenticeship protocol. The intention is that such protocol will include a minimum 20 percent "apprentice ratio" applicable to each employer covered by this agreement.

## Socially Progressive Programs:

- The parties agree to promote other socially progressive programs (e.g., Helmets to Hardhats, Hammerheads, CHOICE Pre-Apprenticeship Program, etc.). These programs may vary on a trade-by-trade basis.

# OPG Indigenous partnerships

- Proud of the many relationships we have built with Indigenous communities across the province.
- Our relationships laid the groundwork for a series of successful generation development partnerships that delivered jobs, skills training and lasting economic benefits.
- Key projects:
  - Lac Seul GS
  - Lower Mattagami Redevelopment
  - Peter Sutherland Sr. GS
  - Nanticoke Solar
  - Gull Bay Micro Grid







# Indigenous Opportunities Network

- ION is an initiative that improves the Recruitment and Retention of Indigenous peoples working at Power Generation and distribution facilities and/or projects through external vendors and building trade unions.
- ION benefits other energy and transmission industry projects, e.g., Bruce Power, Hydro One and assists with apprenticeship participation goals as well as Equity and Diversity and Inclusion goals.
- Indigenous population is rapidly increasing and relatively young compared to the national average – this offers a strategic pool of labour with which to meet future demands, though requires investment.
- ION has successfully placed 55 Indigenous candidates – growing annually (30% women)

# OPG Introduction to Millwright Program

**Industry partnership sees eight Indigenous candidates begin careers as UBC Millwrights in first-of-its-kind training program**

2021-09-24

- Program underway to train and employ 8 indigenous candidates
- 6 week program that allows successful candidates to join the Millwrights local and be referred to work at OPG sites
- Utilized government and indigenous community funding in support of participants to provide support needed to successful enter into a Millwright apprenticeship
- Partnership between the Millwright Regional Council of Ontario (MRCO), the Organization of Canadian Nuclear Industries (OCNI), the First Nations Power Authority (FNPA), Kagita Mikam, the Aboriginal Apprenticeship Board of Ontario (AABO) and OPG (ION program).





# OPG Skilled Trades Expanding Opportunities Program

- Piloted with the Millwrights, the program is a partnership with Durham College's Mechanical millwright tech program and provides opportunities for women in the program to write the Millwrights entrance exam and become indentured apprentices
- Started in the summer, 2021 the program has hired 4 women into the hall who have since started their careers at OPG working with OPG vendor partners – Aecon, Black & McDonald and GE (APM)



# “Sparking Success” program – Welding in DCDSB high schools

Collaboration between OPG, B&M, UA Canada, DCDSB and the Canadian Welding Bureau

- In December 2020, the CWB Welding Foundation, OPG, Durham Catholic District School Board (DCDSB), UA Canada and Black & McDonald partnered to enhance welding education at four DCDSB secondary schools (Pickering, Ajax, Whitby and Oshawa)
- Program helps students build skills to prepare them for good jobs in the welding trade, and develop the skilled welders required to fulfill OPG’s future workforce needs



## ONTARIO POWER GENERATION (OPG)

### Impact Summary (June 2021)

95	Students who were in Technology classes at the three schools that were operational in 2020-2021*
+50%	Projected increase to enrolment in 2021-2022 thanks to the upgraded facilities
21	Fully outfitted state-of-the-art welding booths at 4 high schools in Durham Region
18	Hours of hands-on training for each of the 6 technology educators (incl. health & safety theory)
\$350,000	<b>TOTAL PROJECT INVESTMENT**</b>





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# Together we are better



# ONTARIOPOWER GENERATION



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