

STUDENT GUIDE



ENERGIZE YOUR FUTURE
ELECTRICITY TRADES CAREERS



Trade Up For Success

So, you're starting to think about what you want to do after high school and you're a little unsure about choosing a career? You want to make a good living doing a job you enjoy, and using both your head and your hands.

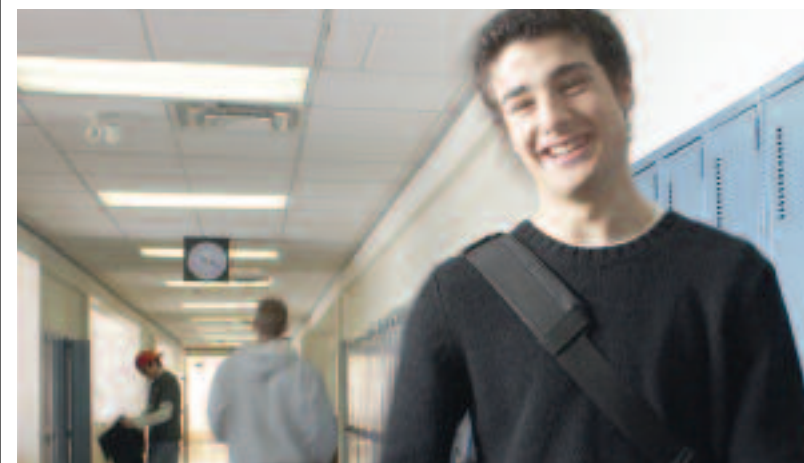
Have you ever thought about a

career in the skilled trades? Not only do they pay well, but they're in demand too. There's currently a shortage of skilled workers in Ontario, and the need is expected to grow. Right now lots of people are retiring from the skilled trades, and there's a real call for students like you to replace them.

In Canada alone, there are about 20,000 unfilled jobs right now, and by the year 2010 that number will grow to 50,000. So if you're a high school student who is starting to think about your career, you may want to think about becoming a skilled tradesperson.

Did you know that... ?

- Most of Canada's skilled tradespeople are expected to retire in the next 10 years, leaving Canada with a shortage of Plumbers, Electricians, Mechanics, Welders, Tool and Die Makers, Millwrights, Industrial Electricians, Machinists and more!
- In a recent national survey of private and public sector labour and management leaders "skills shortages" ranked among their top 10 concerns
- It is estimated that by 2007, more than one-third of jobs created in Canada will require a skilled trade designation or a college diploma
- Nearly 70 per cent of companies surveyed intended to hire technical workers in the next year
- Many skilled tradespeople now make six-figure incomes with excellent benefits



What's in it for me?

Okay, so now you're aware of the skilled trades as a career option, but you still need to know more. Such as, what's in it for you? And what's so great about the trades anyway? On the next page are a few great things trades careers have to offer you.

respect

Skilled tradespeople are important. The world can't function without them because we depend on the products and services provided by them for almost every aspect of our lives. They affect everything from the homes we live in to the food we eat. So, by choosing to become a skilled tradesperson, you are choosing to touch millions of lives. For example, by working in the electricity sector, you would be providing the energy that residents of Ontario need to heat their homes, light their workplaces and cook their meals.

opportunity

Simply put, skilled tradespeople are in demand everywhere, and this demand will only get bigger. It's a fact that 50 per cent of businesses say that a shortage of skilled tradespeople is a serious problem. And 30 per cent of firms pass up business because they don't have enough trained workers.

A recent survey conducted by the Ontario Ministry of Education found that:

- 95 per cent of college trades program grads (2002/2003) found jobs within six months
- The average annual earnings of one of these graduates was more than \$40,000
- 70 per cent of grads were satisfied with the work they found.

This means that your chances of finding a job as a skilled tradesperson are very high. For more information, check out Employment Profile 2002-2003 at the Ministry of Education's Web site: www.edu.gov.on.ca

choices

Since there are more than 200 careers to choose from, the skilled trades sector offers something for everyone. By choosing a trades program in college or becoming an apprentice right after high school, you are creating lots of opportunities for yourself. And when you're done, you will be able to choose to work for a successful company, teach, or be your own boss, using skills that will be in demand almost anywhere in Canada.

reward

Let's face it – if you choose a career as a skilled tradesperson, you're going to earn a competitive salary. And if you choose to become an apprentice, you'll start making money right away because you "earn while you learn." Some skilled tradespeople earn more than \$40,000 a year, and that's not including bonuses and overtime. With bonuses, a fully licensed Industrial Electrician can earn more than \$70,000 a year and a Tool and Die Maker more than \$90,000 a year. Sounds pretty good, right? Well, that's because it is.

Are trades for women?

There are a lot of misconceptions about careers in the skilled trades. Some people think this type of work isn't suitable for women. They're wrong. There isn't a single good reason why a young woman shouldn't consider a career in the skilled trades. Great pay and benefits, challenging work and great employers

are just a few of the great reasons why women *should* pursue a trades career. Members of the electricity sector actively encourage women to work in trades by taking part in education and career fairs across the province.

Diversity

The electricity sector supports diversity. We value and are committed to an equitable workplace where everyone can realize their full potential with equal access to opportunities. We

understand that a mix of talents, perspectives, backgrounds and experiences ultimately increases our collective capability.

What types of jobs are out there?

There are many interesting and challenging trade careers to choose from. Here are examples of five areas that you may want to explore:

Industry	Examples of Careers
Transportation	Aviation Technician, Automotive Painter, Fuel/Electrical Systems Technician, Automotive Service Technician.
Construction	Heavy Equipment Operator, Welder, Carpenter, Painter/Decorator
Service	Chef, Horticulturist, Florist
Manufacturing	Industrial Electrician, Precision Metal Fabricator, Tool and Die Maker, Water Well Driller, Instrumentation Technician, Millwright, Steamfitter, Boilermaker, Machinist
Electricity Sector	Mechanical Maintainer, Control Technician, Nuclear Operator, Truck and Coach Technician, Construction and Maintenance Electrician, Electrical Forester/Utility Arborist, Power Line Technician

For more information, please visit: www.hrsdc.gc.ca

Apprenticeship

Apprenticeship is hands-on training for people who enjoy learning by doing and want to work in a skilled trade. Apprentices are well paid and their wages increase with their level of skill and experience.

As a certified skilled worker, your knowledge can lead to a wide range of opportunities, such as working in different parts of Canada, being your own boss or teaching.

usually given at a local community college or provided by another approved training organization. The best part is that when you finish, chances are good there will be a job waiting for you.

Training provides access to well-paying jobs in skilled trades that demand a high level of skill, judgment and creativity.

About 80 per cent of apprenticeship training is provided in the workplace by employers who need workers with those skills. The remainder involves classroom instruction on theory –

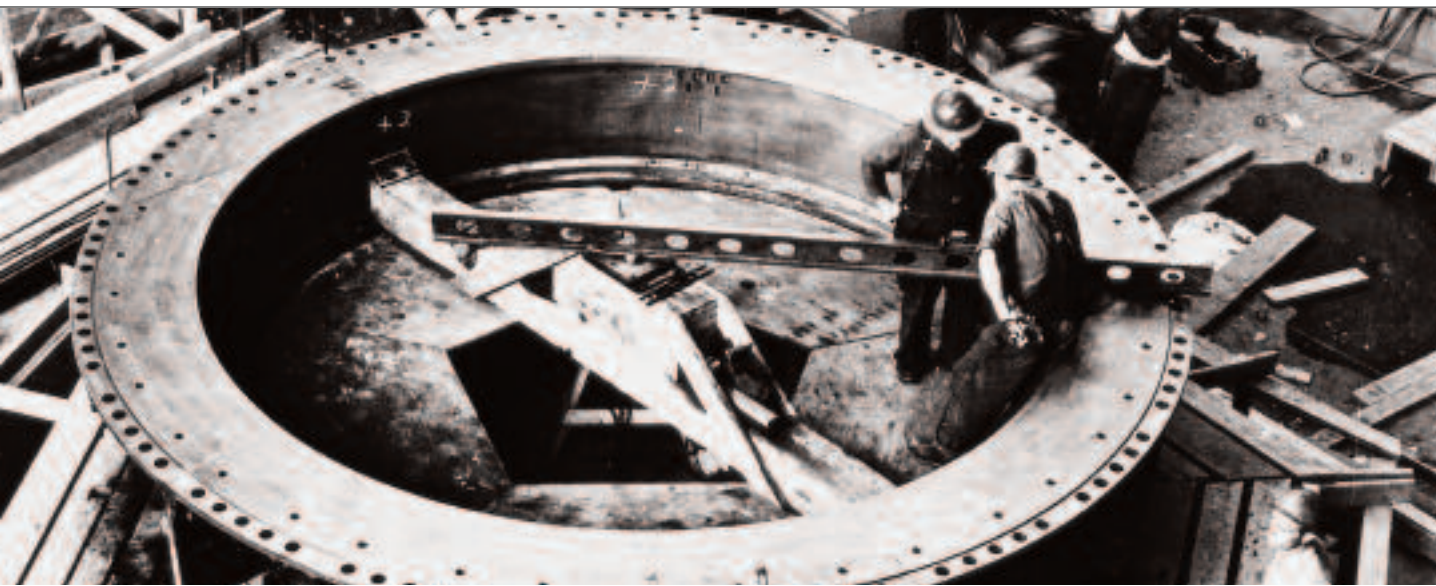
Electricity Sector

One area that has many interesting jobs available is the electricity sector. Due to the fact that many workers are reaching retirement age, approximately 40 per cent of employees in this industry are expected to leave their jobs in the next 10 years. Plus, it takes about five years for new employees to ramp up to their jobs, so there will be a real demand for graduates from skilled trades and apprenticeship programs in the near future.

important part in our lives. Each day we use electricity in a countless number of ways without giving it much thought. Power generation in Ontario is an important industry with a rich history of lighting our cities, warming our homes, cooking our food, and powering our TVs and computers.

These jobs are vital to everyone since energy is one of our most fundamental needs and plays an





A History of Electricity in Ontario

“We are off now, just let anyone try and stop us”. Uttering these words, Sir Adam Beck ushered in a new age of power when he opened the Wasdell Falls generating station in 1914. As the first chairman of the Hydro-Electric Power Commission of Ontario (as Ontario Hydro was originally known), he had a vision that electricity was the way of the future and it is that vision that still drives all of us in the industry today.

Beck wanted to bring light and power to all of Ontario’s people. He oversaw the development of a network of rural distribution lines that is now 100,000 kilometres long, and the construction of a number of new power plants at strategic locations on the great rivers of the province. Beck’s

vision and energy helped make Ontario the economic heartland that it would become during World War II. Expansion continued into the 1940s, when Ontario Hydro developed three new hydroelectric facilities to meet the growing needs for power during the Second World War.

After World War II, Ontario saw a period of economic prosperity, with the introduction of network television, transistor radios and many new electrical appliances. The demands for energy skyrocketed, and in order to meet the increased need, Ontario Hydro expanded its generating capacity by constructing new hydro, fossil and, for the first time, nuclear facilities.

Ontario Hydro completed its first nuclear plant in 1971 and began delivering that power to the province. Able to power more than 1.5 million homes, Ontario Hydro constructed several more nuclear facilities over the next two decades. In 1999, Ontario Hydro was divided into a number of different companies.

Without this power, the world would be a very different place, and without the people who work in this industry, it wouldn’t be possible to generate it. That’s why a career as a skilled tradesperson in the electricity sector is so important.

The Ice Storm

Another example of the importance of tradespeople in this industry is the Ice Storm of 1998, which hit eastern Ontario, throwing 150,000 customers into darkness and freezing temperatures for as long as three weeks. The damage in eastern Ontario and southern Quebec was so severe that major rebuilding, not repairing, of the electrical grid had to be undertaken. Nearly 2,200 employees from Ontario Hydro and other utilities braved the icy conditions, working 16-hour shifts, seven days a week to replace 10,750 wood poles, 1,800 pole-top transformers, and 2,800 kilometres of wire conductor.

The Blackout

One great example of the importance of trades is the 2003 Blackout. At 4:11 p.m. on August 14, the electricity grid across much of northeastern North America failed, leaving five million Ontario residents in the dark. While the public did its part to conserve energy and manage electricity usage, thousands of workers in the electricity sector worked tirelessly to reconnect generating systems to the grid. It was only because of the hard work and dedication of these skilled trades workers that we were able to recover from this event so quickly, and access the electricity that we depend upon so much.



Generation

Nuclear

Nuclear power is produced when the atoms that make up enriched uranium are split. Nuclear power provides more than 40 per cent of Ontario’s electricity. This type of



energy is important because it is reliable and these stations produce virtually none of the gasses that contribute to smog, acid rain or climate change.

Fossil Generation

Plants that run on oil, gas or coal are called fossil plants because the fuels they burn were formed from the remains of prehistoric plants. Fossil generation is a safe and cost-effective way to supply people with



the energy they need. Each station can be started up quickly in order to match daily or seasonal peak requirements.

Hydroelectric Generation

Hydroelectric power is generated by the force of falling water. Hydroelectric energy makes up about one quarter of the province’s overall electricity output. Low pro-



duction costs and zero emissions make this type of energy something we hope to depend upon even more in the future.

Green Power

Green power is electricity that is generated using clean energy resources. These resources include wind, solar, biomass (energy from trees and plants), geothermal, and low-impact hydro. Additionally, elec-



tricity generated by burning methane gas produced by landfills is considered green power because it is better to burn landfill gas and put it to work than to vent it directly to the atmosphere.

Transmission

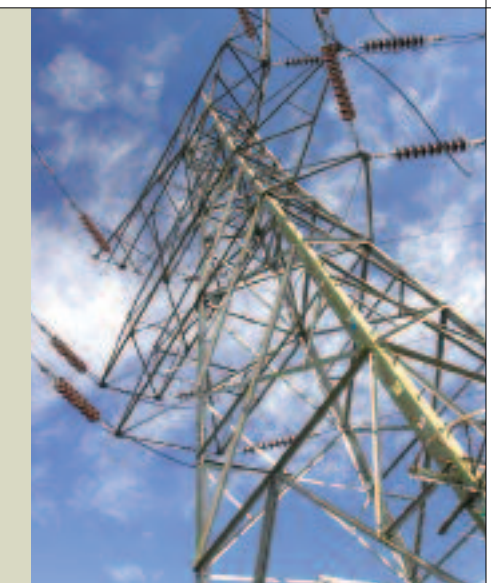
Hydro One’s transmission system is the electricity highway that carries power from generating stations to local distribution companies and large industrial customers. This electricity travels across our high-voltage

network of transformer stations, transmission towers and wires. Hydro One owns 97 per cent of the transmission system with 28,500 kilometres of high-voltage lines across the province.

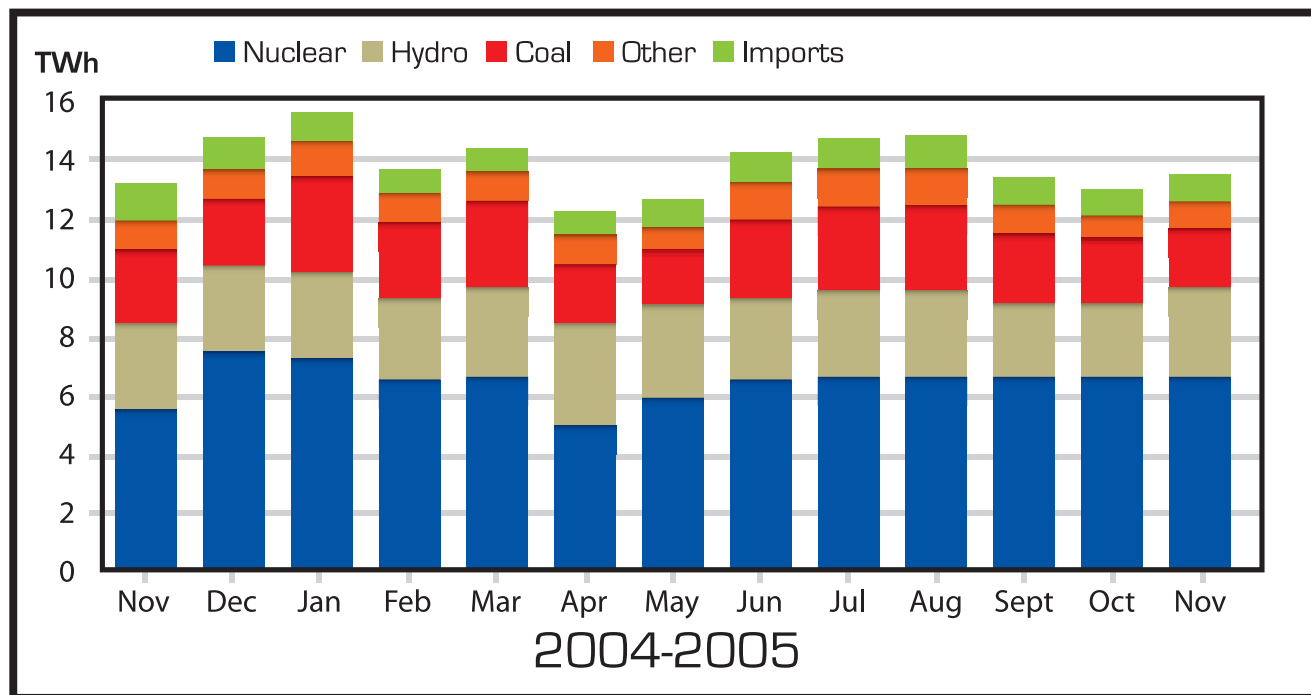
Distribution

Hydro One’s distribution system delivers electricity at lower voltages to homes, farms and businesses through a network of poles and lines. Our distribution network is the largest in the province with

almost 123,000 kilometres of wires, enough to wrap around the planet more than three times. Through these wires, Hydro One serves 1.3 million customers, mostly in rural areas.



Energy Supply By Fuel Type



Environmental Impact

The electricity sector knows that it has a responsibility to the environment, and makes sure that it minimizes its impact on the atmosphere, and follows all environmental laws. Everyone who is employed in this industry is committed to help preserve the environment, and is expected to help out in the following areas:

- Ecosystem protection
- Energy and resource use efficiency
- Pollution prevention
- Community relations

Smart Choice

Choosing a career in the electricity sector means opening a lot of doors. Many workers who start their job with one skill set will be trained to acquire many different skills and work at jobs that are a compilation of different trades. For example, if

you get a job as a Mechanical Maintainer, you may start off as an Industrial Mechanical Millwright, Tool & Die Maker, Machinist, Steamfitter, Welder, Mould Maker or Boiler Maker, however, working as a Mechanical Maintainer will

teach you the skills required for the rest of these professions.

Have a look on the next page to find out more about seven neat skilled trade careers in the electricity sector:



Trade	What's it all about?	What do I need?
Construction and Maintenance Electrician	You will work on virtually every kind of residential, industrial and commercial building. This will involve laying out, assembling, repairing, maintaining, connecting and testing electrical fixtures, apparatus, control equipment and wiring.	<ul style="list-style-type: none"> > A Grade 12 Ontario Secondary School Diploma (or equivalent) > Grade 12 English and math > One physics or electrical shop course > Related experience is an asset > *Applicants must be eligible to work in Canada.
Electrical Forester/Utility Arborist	You will clear electrical lines and right-of-ways of trees and brush.	<ul style="list-style-type: none"> > A Grade 12 Ontario Secondary School Diploma (or equivalent) > Grade 12 English and math > The ability to work at heights is an asset > A post-secondary education is an asset > *Applicants must be eligible to work in Canada.
Mechanical Maintainer	You will play an essential role in the equipment surveillance and maintenance programs to ensure safe and reliable plant operation.	<ul style="list-style-type: none"> > A Grade 12 Ontario Secondary School Diploma (or equivalent), plus the successful completion of a recognized two-year community college program in a mechanical discipline (e.g., Industrial Mechanic Millwright, Tool and Die Maker, Machinist, Mould Maker, Welder). Experience in any of these fields would be considered an asset. > *Applicants must be eligible to work in Canada.
Nuclear Operator	You will typically spend your day within a designated area monitoring such things as system pressure, temperatures and water levels, as well as reporting on abnormal conditions.	<ul style="list-style-type: none"> > A Grade 12 Ontario Secondary School Diploma (or equivalent) that includes Grade 12-U (University preparation) mathematics, physics or chemistry, and English, or Ontario Academic Course (OAC) credits in mathematics, physics or chemistry, and English. OR > An Ontario Secondary School Diploma (or equivalent) plus completion of a College Technician or Technologist diploma in a related program. > *Applicants must be eligible to work in Canada.
Power Line Technician	You will construct, repair and maintain transmission and distribution lines on poles, towers and structures.	<ul style="list-style-type: none"> > A Grade 12 Ontario Secondary School Diploma (or equivalent) > Grade 12 English and math > The ability to work at heights and related experience are assets > *Applicants must be eligible to work in Canada.
Control Technician	You will perform installations, commissioning, fabrications, modifications, overhaul inspections, troubleshooting, predictive maintenance, repair and preventive maintenance.	<ul style="list-style-type: none"> > A Grade 12 Ontario Secondary School Diploma (or equivalent), plus completion of a minimum two-year recognized community college program in Electrical, Instrumentation & Control or Electronics, plus experience in a related field. > *Applicants must be eligible to work in Canada.
Truck and Coach Technician	You will service and maintain all types of vehicles and equipment.	<ul style="list-style-type: none"> > A Grade 12 Ontario Secondary School Diploma (or equivalent) > Grade 12 English and math > A mechanical aptitude is an asset > *Applicants must be eligible to work in Canada.

Testimonials

Here's what some of our apprentices have to say about the smart choices they made:

Like many people, I came out of high school without much of an idea of how I wanted to spend the rest of my life. With the thousands of career options out there, finding the one for you seems rather overwhelming — especially when you have a wide range of interests. Most educators recommend post-secondary education as the only way to go. But, once again, you are faced with more pressures than directions, trying to choose courses you may need for a chance at what you might want.

This is an extremely difficult, and with the cost of tuition, a somewhat expensive decision. Many people for the lack of any better idea, simply take a loan and give it a shot. It works sometimes, but a lot of other people find they're barking up the wrong tree. Or they go all the way through with a diploma or degree and still can't find the job they were looking for when they started. The thing is, we can't all be academics,

nor does everyone want to, but that is all we're being taught in school. I like doing things and am a very hands-on person and finally realized I should look into the skilled trades.

There seems to be a stigma about skilled trades being more of a dummy type of job, which is completely undeserved. Technological advances mean an increasingly high level of training and education is required for skilled trades.

One position that caught my eye was Power Line Technician, a.k.a a Lineman. It requires a combination of physicality and know-how because of the potential danger of working around electricity. You need a grasp of physics and electricity theory to perform the job safely and you also need to apply those skills while strapped to the top of a hydro pole or being over 30 metres up on a tower.

I am currently enrolled in an appren-

ticeship program with Hydro One and have never had more fun learning. I get to do an important job with a good wage and benefits as part of one of the largest and most diverse utilities in the province, with even further opportunity for advancement.

The job is a challenging one that sends you to many different areas and changes daily. You get to be part of various groups of great individuals who are both highly trained, safety conscious and yet fun to work with.

Good luck finding what you're looking for, and remember to check out the skilled trades. They might be right for you too.

Morgan

First-year Power Line Technician Apprentice
Hydro One, Kenora



I'd always loved math, but I wasn't sure what I wanted to do for a career. My counsellor at Northern College suggested the Instrumentation Program at the Haileybury School of Mines since it offered a greater variety of careers to choose from, with the potential for higher earning power compared to the other courses I first considered. She also said that as a woman, I would have an advantage working in a traditionally male profession.

After graduation from the Instrumentation Engineering Technicians program at Northern College, I applied for, and got a temporary position with, the Power Workers' Union as a Control Technician with OPG. I continued to apply for full-time positions externally at www.mypowercareer.com because my experience at Darlington positively emphasized the career choice I had made.

At the beginning of an average day, our

supervisor briefs my co-workers and me on any events concerning safety of the plant or personnel from the previous day and then assigns jobs. Typically, my partner and I would begin gathering and verifying documents like electrical diagrams and flowsheets that are essential to the day's task.

After we gather the tools we need for the day's job, the supervisor does a 'pre-job' brief. We identify and discuss any hazards that might be encountered during the task, the work necessary needed to do the job safely and correctly, as well as "back-out conditions" that would cause us to stop the job. After performing the work, we enter reports into a computer program and discuss any difficulties encountered during a "post-job brief."

OPG is seriously committed to safety and everyone's health and wellbeing. It is reassuring to know safety is the number one priority for the company you work for.

In the time ahead, I will rotate through a variety of different work groups and gain experience with different systems and equipment. I'll also be able to attend scheduled training sessions that will assist me in preparing for the apprenticeship examination, as well as becoming a fully qualified Control Technician.

What's the best part about my job? The experienced Control Technicians I get to work with and the variety of tasks I do on a daily basis. I work with some of the most intelligent, skillful, knowledgeable tradespeople who go out of their way to educate me. Because of their expertise, I will also have the opportunity to learn more about my chosen career.

Tracy

Second-year Control Technician Apprentice
Ontario Power Generation

When I finished my career as an Olympic athlete racing luge, I wasn't sure what I wanted to do. I knew I wanted to work outside and do something physical that required skill and training, but I wasn't entirely sure of what that would be. I also knew I wanted to work in the woods, hopefully near my hometown. When I became aware of a career as an Electrical Forester with Hydro One, it sounded perfect.

Every day of my apprenticeship I get to learn something new, work with a great team and earn a good living. This was important to me, because after years as an athlete, I didn't want to spend a lot of time paying money to go to school before I could start getting paid. For every year of my apprenticeship I complete, I get another raise. By the time I finish my apprenticeship, I'll

not only have a job I know and like waiting for me with a great company, but I'll be qualified to work as a forester on any electrical system in Canada.

In some aspects, working as a forester is quite similar to my career as a luge racer. The respect for safety is exactly the same. You've got to be focused every day, every second, because there is zero margin for error. It's an exhilarating job when you're up an 80-foot tree. You're counting on the person on the ground to work with you and watch your back. Speed, like electricity, doesn't discriminate. If you make a mistake it can be incredibly costly.

The biggest difference between what I do now and what I did on the luge track is that this isn't a race. We're not in the business of taking chances.

Every day is different, depending on what we're doing on that particular day. Some days we work on maintaining the clearance around the lines, other days we get called in to help with restoring power after a storm. People are pretty happy to see the folks who put the lights back on so it feels good to be part of that team.

Clay

Second-year Electrical Forester Apprentice
Hydro One, Bancroft



I chose my career as an Authorized Nuclear Operator because I discovered I was more technical than I thought I was. I was in university studying History and Religious Studies when a course in Computer Science caught my eye. I not only really enjoyed it but I got very high marks and ended up with a job as a tutor for my co-op terms.

My typical work day involves turnover at around 7 or 7:30, either in the morning or night since I work 12-hour shifts. Once the outgoing ANO tells me what's happening on the unit, we do a panel walkdown together to make note of any changes since my last shift. In the first two hours of my shift I must complete panel checks of all the safety systems to check for impairments, and organize the work for the field based on the priority of management and the manpower complement. Every shift, I perform many safety system tests as well as routines, call-ups and

maintenance checks. A large part of my day on a running nuclear unit involves keeping it up and running by fuelling the unit regularly and ensuring all parameters are responding accordingly. When the unit is down, my efforts focus more on maintenance issues.

The most important part of my job every single day is to monitor everything that happens on the unit, keeping foremost in my mind, my commitment to control reactor power, cool the fuel and contain radioactivity. By doing that I can ensure personnel, plant, environment and public safety will not be compromised.

What I like best about my work is it is always interesting and always challenging. Every day brings something different I've never seen before. I get to work with amazingly talented people and learn from them all the time. There are also many opportunities for further learning

offered to me as a result of my position. The biggest challenge to becoming an Authorized Nuclear Operator is the intense training process. The program is a long, arduous journey that requires you to put your life on hold for a while in order to allow enough time for study and a successful outcome.

What I like best about Bruce Power's culture is the pride I can take in my workplace. Being very involved in my community it is with pride that I can say I work for Bruce Power, the company that gives so much to those things I care about, women's issues, aboriginal programs and the arts. I also really appreciate that Bruce Power recognizes and values my work and celebrates the diversity I bring to the workplace being a native woman.

Tracy

Authorized Nuclear Operator
Bruce Power

Should I be concerned about safety?

Did you know that when you start your career, you will be in the highest risk group for workplace accidents? It's true – young adults are two to three times more likely to be injured on the job than adults. Every day in Ontario, an average of 42 young workers are injured, become ill or are killed on the job, which works out to be almost two workers hurt every hour of every day of the week.

So when you're choosing a career, you'll want to be sure to look at the company's safety policy. Safety is a huge part of working at Bruce Power, Hydro One and

OPG, and supported by the Power Workers' Union, we all believe that healthy employees working safely in an injury-free workplace is good business. That's why we have created Young Worker Safety Programs to improve the safety knowledge and awareness of our present and future workers. In addition to sending Young Worker Safety Advocates out to talk to young people about health and safety in the workplace, we are also a proud sponsor of *PassPort to Safety*, a national online training program that builds your understanding of your rights and responsibilities regarding

health and safety. If you are a young worker looking to build your résumé, for a small fee, you can complete this challenging and educational Internet-based quiz that will improve your general safety awareness. Once you successfully pass, you will be awarded with a "transcript" that can be attached to your résumé to demonstrate to future employers your basic awareness of health and safety. For more information about PassPort to Safety, visit the Web site: www.passporttosafety.com

How do I fit in?

Trades businesses are constantly looking to the future, and for new ways to be efficient, safe and productive. That's why we need people like you to help us get there. There are lots of opportunities for qualified people, so why not start planning your course of action now?

The first step is deciding on what career you'd like to have. Once you've done that, you can start planning for it right away by starting to take the right courses in high school. Many college programs require you to complete certain courses in order to be admitted. Some of the more common courses that you may

need, depending on the trade, are Grade 12 English, mathematics, physics or electrical shop. For more details, check out the seven TradeUp brochures available at your guidance counsellor's office and be sure you speak to your guidance counsellor or career studies teacher if you have any specific questions.

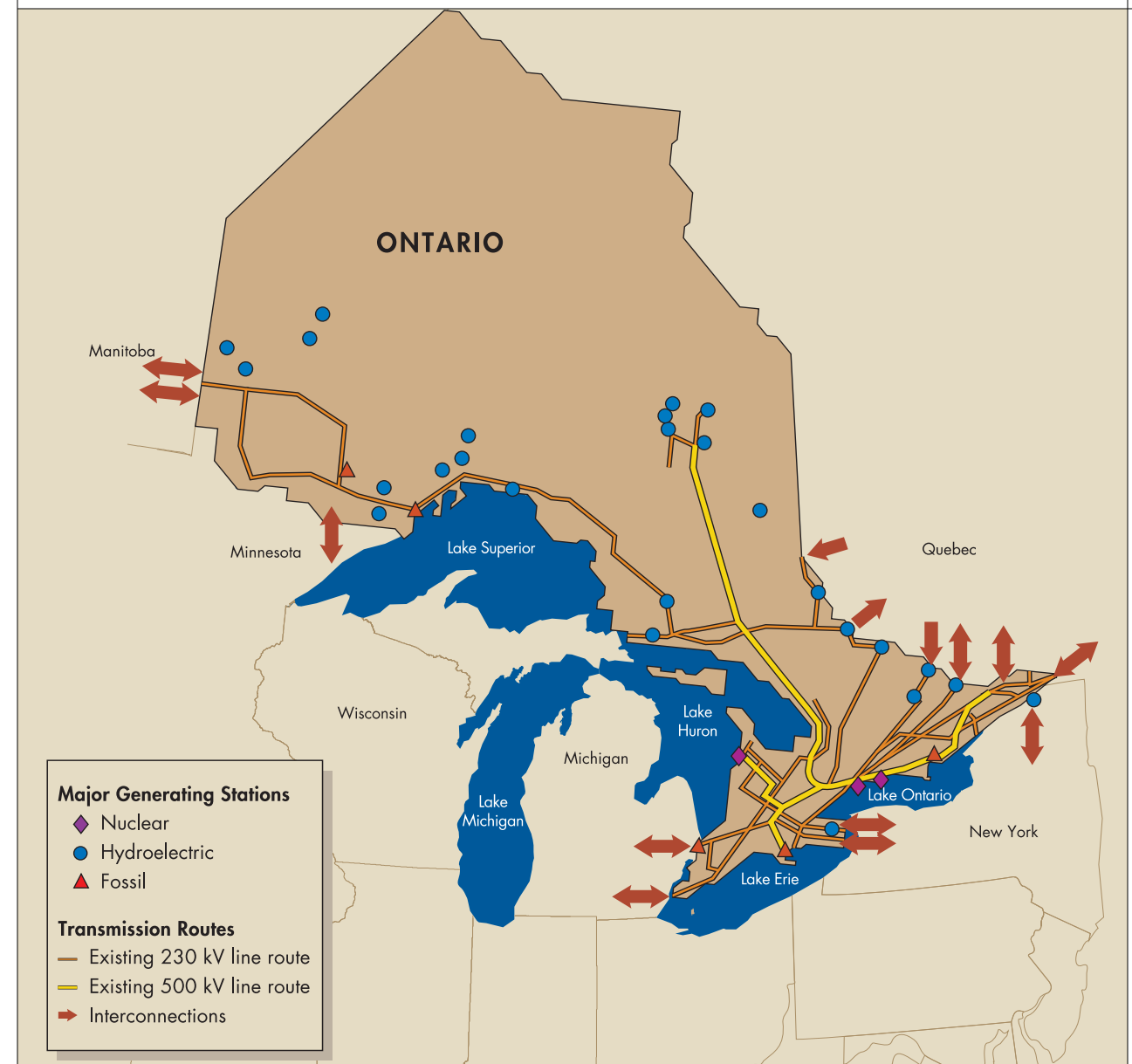
Tell me more!

So, you're interested in a career in the trades, but want some more information? Check out www.tradeup.ca to find out

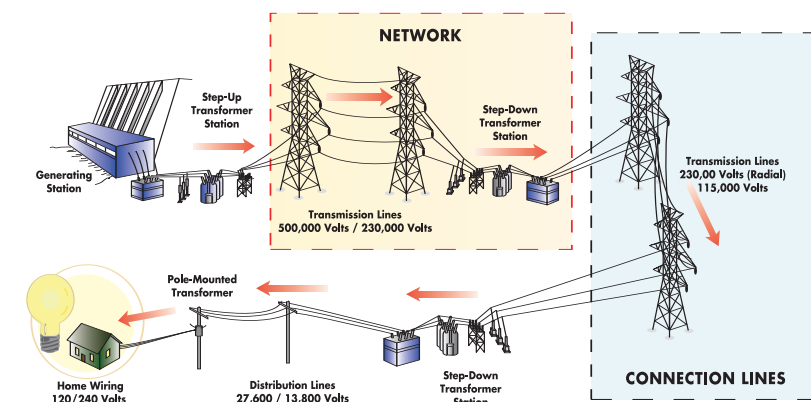
everything you need to know about the various trades careers that are out there, as well as the courses you'll need to take

while in high school to get yourself ready.

Power Stations Map



Ontario's Electricity System



Please check out the companies below and learn about where you might find a job in the electricity sector.



Hydro One delivers electricity safely, reliably and responsibly to homes and businesses across the province of Ontario. Hydro One Networks is involved in the planning, construction, operation, and maintenance of the company's transmission and distribution network.

This transmission system carries electricity from generating stations to local distribution companies and large industrial customers through our high-voltage network of transformer stations, transmission towers and wires.

Hydro One owns 97 per cent of transmission towers in Ontario with almost 30,000 kilometres of high-voltage transmission lines. Hydro One's distribution network is the largest in the province, with almost 123,000 kilometres of wires.



Ontario Power Generation is an Ontario-based electricity generation company whose principal business is the generation

and sale of electricity in Ontario. Our focus is on the efficient production and sale of electricity from our

generation assets, while operating in a safe, open and environmentally responsible manner.



Bruce Power is Canada's first private nuclear generating company. From its 920-hectare site on the shores of Lake

Huron, 250 kilometres northwest of Toronto, Bruce Power generates up to 20 per cent of Ontario's electricity

needs. With safety as its primary focus, Bruce Power operates six reactors at its Bruce A and B generating stations.



The roots of the Power Workers' Union go back to 1944, with the formation of the Employees' Association at Ontario Hydro. Eleven years later, in 1955, the Association became the

Ontario Hydro Employees' Union and joined the National Union of Public Service Employees, which merged with the National Union of Public Employees in 1963 to form the

Canadian Union of Public Employees (CUPE), Canada's largest union. The present name - the Power Workers' Union, was adopted in 1993.

Helpful Links

- www.apprenticesearch.com Search for Opportunities
- www.apprenticetrades.ca Skilled Trades – A Career You Can Build On
- www.brightfutures.ca Keeping the Future “Bright”
- www.brucepower.com Bruce Power
- www.careerccc.org Canadian Career Consortium
- www.citizenship.gov.on.ca Ministry of Citizenship and Immigration
- www.councils.org Alliance of Sector Councils
- www.edu.gov.on.ca Government of Ontario Ministry of Education and
Ministry of Training, Colleges and Universities
- www.hrsdc.gc.ca Human Resources & Skills Development Canada
- www.hydroone.com Hydro One
- www.jobfutures.ca Information on the World of “Work”
- www.mypowercareer.com Ontario Power Generation – Career Website
- www.nuclearsafety.gc.ca Canadian Nuclear Safety Commission
- www.olpg.on.ca The Ontario Business Education Partnership
- www.opg.com Ontario Power Generation
- www.passporttosafety.com Youth – Health and Safety
- www.pwu.ca Power Workers' Union
- www.red-seal.ca Red Seal Program – Inter-Provincial Standards
- www.skilledtrades.ca Good Careers – Great Futures
- www.skillswork.com Ontario – Skills Work!
- www.takeourkidstowork.ca Take Our Kids to Work
- www.tradeup.ca Tradeup For Success
- www.wsib.on.ca Workplace Safety and Insurance Board
- www.youth.gc.ca Government of Canada – Youth

Learn the Lingo

AC/DC	Alternating and direct currents; used to measure electrical current.
Acid gas emissions	Gases containing acid that are discharged into the air.
Acid Rain	Rain containing acids that form in the atmosphere when industrial gas emissions combine with water.
Air conditioning system	A system that cools and dries air.
Amp	The basic unit of electric current.
Apprenticeship	Hands-on training to learn a trade, art, or business while getting paid.
Arborist	A specialist in the care of trees.
Arc	The sparking that results when undesirable current flows between two points of differing potential.
Atoms	A part or particle, the smallest unit of an element.
Benefits	An entitlement available that covers the cost of some or all medical and well-being expenses.
Biomass	Plant material, vegetation, or agricultural waste used as a fuel or energy source.
Blackout	A temporary loss of power caused by a failure in generation or transmission.
Boiler maker	Someone who makes the boilers.
Brownout	A reduction or cutback in electric power, especially as a result of a shortage, a mechanical failure, or overuse by consumers.
Bucket truck	A truck with an aerial lift device used to work on lines, towers and poles.
Calandria tube	The calandria tube contains heavy water and is itself enclosed by a large vessel called the calandria, containing dozens of calandria tubes.
Calibrate	To check, adjust, or determine by comparison with a standard.
Circuits	A continuous path for the flow of electricity.
Coal	A fossil fuel that is burned to heat the water the water and produce electricity in a fossil power plant.
Commissioning	The act of granting certain work to external companies to carry out a particular task or duty.
Construction	The art, trade, or work of building.
Control Technician	Performs installations, commissioning, fabrications, modifications, overhaul inspections, troubleshooting, predictive maintenance, repair and preventive maintenance.
Distribution	Lower voltages of electricity that are distributed to households.
Electricians	People who install, maintain, repair, or operate the electrical equipment and circuitry.
Electricity	Electric current used as a source of power.
Electricity sector	The organizations, regulatory bodies and companies that are involved in the generation and delivery of electricity.
Electricity usage	The amount of electricity used by a customer.
Electronic	Devices that operate on electricity.
Energize	Connecting to a source of power.
Energy	A source of usable power.
Enriched uranium	Uranium that's uranium-235 content has been increased through the process of isotope separation.
Extraction equipment	Mechanical equipment used to extract fuel from a nuclear unit.
Fabrications	Things that are made or created.
Forester	A worker who clears trees and brush away from electrical lines and rights-of-way.
Fossil	A remnant or trace of an organism of the past, such as a skeleton or leaf imprint, embedded and preserved in the earth's crust.
Fossil plant	A generation plant fueled by fossil fuels: coal, oil or natural gas.
Gas	A gaseous fuel, such as natural gas.
Generating capacity	The maximum amount of electric power produced by a generator.

Generation	The process of production of electric power.
Geothermal	The internal heat of the earth.
Global warming	An increase in the average temperature of the earth's atmosphere, especially a sustained increase sufficient to cause climatic change.
Green power	Electricity produced from renewable sources such as wind, low-impact hydroelectric, biomass and solar.
Grid	The wires, transformation and distribution stations that make up the electrical system.
Health and safety	The promotion of awareness to achieve a safe environment and work ethic/procedure.
Heat	A form of energy associated with the motion of atoms or molecules.
Heat exchanger	A device which transfers heat through a conducting wall from one fluid to another.
Hydro pole	A wooden, steel or concrete pole that is used to support the distribution lines.
Hydroelectric	Generating electricity by converting the energy of running water.
Hydrostatic	Relating to fluids at rest or to the pressures they use or transmit.
Ice Storm of '98	Rain, ice pellets and a bit of snow fell for more than 80 hours. The precipitation exceeded 85 mm in Ottawa, 73 mm in Kingston, 108 mm in Cornwall and 100 mm in Montreal. The weight of the freezing rain was too great for the hydro towers, poles and wires causing them to collapse. Many people were out of power, some for more than three weeks.
Imaging equipment	Equipment used to examine devices for internal damage not visible to the naked eye.
Industrial Mechanical Millwright	A skilled tradesperson that works on machinery in an industrial environment.
Insulator	A material that insulates, in particular a nonconductor of electricity.
Journey person	A tradesperson who has completed his or her apprenticeship.
Landfills	Where waste material is disposed.
Lathe	A machine for shaping a piece of material, such as wood or metal, by rotating it rapidly along its axis while pressing against a fixed cutting or abrading tool.
Leak detection	Finding leaks in buried transmission lines or pipelines.
Machinist	One who makes, operates, or repairs machines.
Mechanical Maintainer	Plays an essential role in equipment surveillance and maintenance programs to ensure safe and reliable plant operations.
Mechanics	Workers skilled in making, using or repairing vehicles.
Metering	Measuring the amount of electricity used by a consumer for billing purposes.
Methane gas	An odorless, colorless, flammable gas, which is the major component of natural gas.
Milling machine	A machine in which metal that is secured to a carriage is fed against rotating cutters that shape it.
Millwright	Someone who designs, builds, or repairs mills or mill machinery.
Mould making	creating a mould that is used to shape or form a needed part, tool or product.
MW	A megawatt; one million watts.
Neutrons	Electrically neutral subatomic particles bound in an atoms nucleus.
Niagara Falls — Sir Adam Beck	A hydroelectric generating plant named after Ontario's founding father of electricity, Sir Adam Beck.
Non-intrusive infrared thermography	Used to detect heat variations on the transmission system that indicate areas in need of repair.
Nuclear	Energy that is produced by splitting the atoms of Uranium fuel. The heat produced is used to turn water into steam.
Nuclear Operator	Monitors equipment and systems to ensure strict adherence to all safety levels and procedures.
Oil	Any of numerous mineral, vegetable, synthetic substances, and animal and vegetable fats that are generally slippery, combustible, viscous, liquid or liquefiable at room temperatures, soluble in various organic solvents such as ether but not in water, and used in a great variety of products, especially lubricants and fuels.
Ontario Hydro	The predecessor company to ESA, Hydro One, IESO, and OPG.
Ontario Womens' Directorate	A division of the Ministry of Citizenship and Immigration, the OWD works to promote women's economic independence and prevent violence against women.
Outage	A temporary suspension of operation (e.g. power outage).
Overhaul	To refurbish a system or machine so that it is restored to 100 per cent form and function.

Overhead lines	Above ground distribution and transmission wires.
PassPort to Safety	An innovative national youth health and safety test and transcript program that verifies youth have a basic understanding of what they need to know to protect themselves from injury at work.
Pension	A sum of money paid regularly as a retirement benefit, earned after a defined number of years of service.
Plastic suits	Protective equipment used within nuclear stations in different radiation zones.
Plumber	A person who installs and repairs pipes and plumbing.
Pneumatic	A structure that is filled with air or powered by air pressure.
Pole-top transformers	About the size of a garbage can, these devices convert the voltage from the distribution lines into a usable voltage for the customer.
Power Line Technician	Constructs, repairs and maintains transmission and distribution lines on poles, towers and structures.
Prehistoric plants	Plant material from the prehistoric age, in fossil form.
Pressure tube	Pressurised water or heavy water flows through the pressure tubes and conveys the heat to a steam generator.
Pruning	Cutting off or removing parts or branches to improve shape or growth.
Radiation	Energy that is given off or transmitted as rays, waves, or in the form of particles.
Reciprocating equipment	Equipment that moves alternatively backwards and forwards, such as pumps, saws and other tools.
Reconnect to grid	Bringing generation back on line to the transmission and distribution network.
Refurbish	To make new through repair and replacement of worn parts.
Regulations	Principles, rules, or laws designed to control or standardize.
Respirators	A device that supplies oxygen or a mixture of oxygen and carbon dioxide for breathing.
Rights-of-way	A right-of-way is a type of easement that gives a utility company the right to erect power lines or bury a gas pipeline across a tract of land.
Roping/rigging	A system of pulleys, ropes and cables used to assist in lifting operations.
Rotating equipment	Mechanical equipment that has rotating devices.
Rural distribution	Lower voltages of electricity that are distributed to households outside of urban areas.
Safety advocates	Individuals working within the safety field.
Skilled trades	A job or career that requires a lengthy apprenticeship and considerable skill and expertise.
Solar	Energy that is harnessed from the sun's rays and transformed into usable energy.
Stationary equipment	Mechanical equipment without rotating devices.
Steam	Water converted to an invisible vapour or gas by being heated to the boiling point.
Steamfitter	Someone who installs and repairs heating, ventilating, refrigerating and air-conditioning systems.
String wire busses	Installing electrical wires from pole to pole.
Substation	A secondary or branch station.
Technician	One whose occupation requires training in a specific technical process.
Technologist	A specialist in technology.
Tool and Die Maker	Fabricates a wide variety of tools, jigs, fixtures and dies for use in industrial and manufacturing production.
Tooling	Work or ornamentation done with tools.
Torque	A turning or twisting force.
Toxic emissions	Harmful substances that are discharged into the air or water.
Transformer station	Converts the electricity produced at a generating station or from transmission lines into the voltage required for distribution lines.
Transmission	System that carries the electricity at high voltage from various generation points.
Transmission towers	Metal structures that support the transmission lines.
Tritium	A rare radioactive hydrogen isotope.
Troubleshoot	To determine and solve problems through methodical investigation.
Truck and Coach Technician	Services and maintains all types of vehicles and equipment.
Ultrasonic measure flow	Use the transit time principle to calculate flow rate.

Universal flow measuring equipment	Devices that measure flow rates through a variety of methods.
Ventilation	Admits fresh air in to replace stale or harmful air.
Vibration Analysis	
Voltage	The difference in electrical charge between two points in a circuit; expressed in volts.
Voltage — high	A voltage greater than 50,000 volts.
Voltage — low	A voltage less than 50,000 volts.
Welder	A person who joins metals by welding them together.
Wind Energy	Energy that is produced with the wind turns the blades on a windmill, which in turn turns the turbine that drives the generator producing electricity.
Wire conductor	A wire that carries an electrical charge.
Wires	Flexible metallic strands or rods made in many lengths and diameters, often electrically insulated, used to conduct electricity.
WIST	(Women in Skilled Trades) – Provides pre-apprenticeship training geared to increase the number of women in skilled trades jobs.



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