So you’re wondering what you’re going to do with your life…

You want to have a job where you make a positive difference. Where there’s a real need for what you do: A job with a future.

Think electric. Everyone depends on electricity. We all use it every day. That’s not going to change.

If you’re looking for a career where you make top dollar, where you can live just about anywhere and where there are plenty of opportunities, the electricity sector is for you. It offers dozens and dozens of different kinds of jobs with great pay and lots of room to advance.

Energize Your Future!

NOW is the best time to move up FAST

⇒ The big population bubble of people born just after World War II, the Baby Boomer Generation, is starting to retire. That’s going to leave a big hole in the job market. You can be there to fill it.

⇒ The pros who are coming to the end of their careers need to pass on the torch. You can be sure that they want the power grid to keep working smoothly once they leave. Now is the time to benefit from their years of experience. They are ready to help you fast-track your career if you’re eager to learn.

⇒ Each time you advance in career level your salary goes up and so does your level of responsibility. You lead bigger and bigger teams and projects. You tackle increasingly complex problems. BC’s Electricity sector is always on the lookout for talented people who aren’t afraid to meet the challenge. People like you!

Now, so now you know that the Electricity sector has lots of great career options. You still need to find out what’s in it for you.

Check out the next page for the answer!
Bringing power to the people - it’s important. Look at how vulnerable folks feel when they’re stranded without electricity during a power outage. In the electrical sector, there is never any doubt that your work serves a useful purpose. Without you, everyone would be in the dark. Literally.

opportunity
You are unlikely to hear of massive layoffs in the electricity sector. That’s because electricity is a necessity… and because electricity is used everywhere, you’ll never be stuck in one place. With the right training and experience, you can move all over Canada or even the world.

choices
Are you good with your hands? A math whiz? A technology guru? A people person? No matter what flavour of person you are, there’s a job for you in electricity. The variety of jobs in the sector is simply astounding. And as the current workforce gets older the demand for skilled people keeps growing. Your options keep on multiplying.

reward
The electricity sector pays some of the best salaries out there. As you gain experience and move up to more senior positions, your pay will increase. Learning is important… if the skill set you have is a rare commodity, people will pay you more. What’s more, if you’re in a situation where you need to start making money today, there are lots of opportunities for apprenticeships (that allow you to earn while you learn).

coolness factor
Imagine the rush of handling high voltage power, doing helicopter inspections of hydro lines or controlling millions of people on sophisticated high-tech equipment and massive engines and turbines. Not too many people can say that about their job!

Women are welcome!
Some people mistakenly believe that electricity sector is a ‘men’s-only’ club. Not true. Women CAN and DO work in every type of job. While it’s common knowledge that in the old days, almost all Engineers and Electricians were men, that’s certainly not the case anymore. A lot more women are entering these fields nowadays and the electricity sector is putting out the welcome mat. Some of the work is physically demanding… and we are seeing that the myth that says women aren’t cut out to work with their hands is absolutely wrong! Women are proving this everywhere in the industry. Electricians, for example, sometimes work in extreme weather conditions, dizzying heights and on heavy machinery. Women who do this job are every bit as capable as men. What’s important is not your gender: it’s that you enjoy that type of challenge.

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.

University Degree
Certiﬁcation jobs are only open to you if you have qualiﬁcations such as a bachelor’s or master’s degree in a specialized ﬁeld. People from all kinds of university back-grounds work in the electricity sector. From Environmental Science or Finance majors to Civil Engineers. Given the technical challenges of running a system as complex as the power grid, it’s not surprising that the industry relies heavily on the Engineering profession, with Electrical, Civil and Mechanical Engineers being the most common.

Apprenticeship
If you like to learn things by actually doing them, an apprenticeship is the way to go. On-the-job training (alongside an electrician, for example) counts for about 80% of apprenticeships. The remaining 20% involves classroom instruction at a community college or other training institution. This is where you get to connect your practical know-how with the theory behind it.

Apprenticeship programs are a good option for BC students interested in developing their skills. Part-time Secondary School Apprenticeships, Ace-It and Foundation Programs are all designed to help you take your ﬁrst steps towards getting your certiﬁcation. Visit www.aibc.ca to ﬁnd out more.

College Diploma
Community Colleges specialize in offering a combination of practical and theo-retical knowledge. They are great places to learn the skills you need for a variety of jobs. Some schools even offer co-op programs that allow you to get real-world job experience between semesters. There are so many college programs that open the door to a career in the electricity sector, we couldn’t possibly go into them all. Seeing that the electrical grid is entirely based on technology, it’s pretty obvious that a large number of jobs require specialized technical knowl-edge. If you want a job in the industry, you can’t go wrong with a diploma at an electrical technician or technician.

Colleges offer the advantage of being accessible to more people. Since they are found in a larger number of cities and towns than universities, you have a better chance of receiving an education in or near the place where you live. Typically, college programs run 2-3 years. Talk to your school guidance counsellor if you’d like to ﬁnd out more about your options.

University Degree
Certiﬁcations are only open to you if you have qualiﬁcations such as a bachelor’s or master’s degree in a specialized ﬁeld. People from all kinds of university back-grounds work in the electricity sector. From Environmental Science or Finance majors to Civil Engineers. Given the technical challenges of running a system as complex as the power grid, it’s not surprising that the industry relies heavily on the Engineering profession, with Electrical, Civil and Mechanical Engineers being the most common.

During your university studies, you have the option of taking courses in other ﬁelds. Knowledge you’ve acquired outside your particular ﬁeld (in business administration or communications for example) can really come in handy in your job.

Generally, a bachelor’s degree takes 4 years to complete, a master’s degree is another 2 years, and it takes a few years more to get all the way to a PhD. Some professions such as Engineering, require you pass a test and gain work experience after graduation before you can get your full credentials.
The Future of Electricity in BC is Your Future!

Green is the colour of your future... and British Columbia is committed to doing its part to help save the planet by putting a stop to global warming. Reducing waste through energy conservation is a big part of the answer. This means that cutting-edge expertise will be needed to help the province create green technology solutions. Eco-specialists such as Energy Efficiency Evaluators will be in big demand, helping homes and businesses take advantage of advances like smart metering and new energy efficient lighting, heating, and cooling systems. By joining the electricity sector, you can make a positive difference.

Your future will also see improvements in construction techniques as BC rolls out new energy efficient building standards. If you are up to speed in green projects and retro-fitting older buildings and homes. Power generation facilities will also be upgraded to make them more efficient and green technology experts will be leading the charge. In a similar vein, a new shift towards small-scale electricity production will spell big opportunities for people who design, build and install small power generation systems such as rooftop solar collectors and windmills.

Upgrades to the power grid will mean great work opportunities. Increased computer control of power transmission and distribution systems will require people who understand the technology, software and electronics behind these new systems. Staying ahead of the curve is important and the electricity workers of tomorrow will need to constantly fine-tune their expertise as technology breakthroughs change the industry. For example, advanced systems that allow data transfer along electrical power lines look like the answer for connecting rural and remote areas to the Internet.

As people become more environmentally aware, electric and hybrid cars will become more common. Fuel-cell technology is gaining momentum and the people who know how to maintain and repair electrical engines and energy storage systems are becoming hot property. Public transit is seeing an ongoing shift from fossil fuels to electricity. As a result, electricity consumption patterns will change, and this needs to be studied and planned for by utilities such as BC Hydro and BC Transmission Corp., who builds the grid. Engineers, Project Managers and Operations Managers will be on the front lines of this green revolution. The skill, creativity and ingenuity of many talented people will be required to build this sustainable energy future. Maybe you will be one of them!

The Future of Electricity in BC is Your Future!

Greasing the Grid

BC has always shown a strong commitment to renewable energy, with around 90% of power generated from hydro-electric dams. But we’re always trying to do more. A new commitment to clean, renewable energy sources means we’ll be seeing more projects that use bioenergy, geo-thermal energy, tidal, run-of-river, solar and wind power.

Move Over, Baby!

Baby boomers are retiring in record numbers and this is creating opportunities for up-and-coming electricity workers. In fact, the future has never looked so bright for new recruits! The first wave of new talent is already learning the ropes from experienced pros who are nearing retirement. Eager new workers are taking advantage of this and fast-tracking their careers in order to fill the void.

Hydroelectric

Hydroelectric power is generated by the force of falling water that turns huge magnets. Hydroelectric energy makes up about 90% of the BC’s overall electricity output.

Fossil

Power plants that run on oil, gas or coal are called fossil plants because the fuels they burn were formed from the remains of prehistoric organisms. BC has limited fossil fuel generation.

Renewables

Wind and solar powered electrical power generation are considered eco-friendly because they make use of a renewable energy source that will never be used up and won’t create harmful greenhouse gases. Other sources of green power generation include geo-thermal (using heat energy from the earth) and ocean energy (harnessing ocean waves and tidal currents). Although these types of power generation are still rare, we may see them used more widely as technological advances help us find new ways to tap into these sources of energy.

Biomass

Power generation from biomass converts the energy stored in living things into electricity. It can be considered green when this is done efficiently or uses waste products. Biomass energy is often derived from forest waste, such as sawdust or beetle-killed timber, or from agricultural plant and animal waste. Electricity generated by burning methane gas produced by garbage landfills is also considered eco-friendly because it is better to burn landfill gas and put it to work than to vent it directly to the atmosphere.

Generation

Low production costs and zero greenhouse gas emissions make this type of energy something we will rely on far into the future.
Environmental Impact

BC’s electricity sector takes its responsibility to the environment very seriously. Specialists are called in to ensure that we follow all environmental laws and minimize our impact on the atmosphere. Projects are designed so they will protect fish and wildlife and have the smallest ecological footprint. More and more effort is being made to use power more efficiently and educate consumers on how to conserve energy. We also make a positive impact when BC sells its surplus electrical power to other regions that might otherwise rely on more polluting energy sources.

Choosing the Right Job

1. Make a list of what you are good at.
2. Figure out what naturally appeals to you, look at your strengths, skills and abilities.
3. Make three (3) lists – what am I good at, what makes me happy and what do I not want to do?
4. Consider a wide range of jobs.
5. Narrow your choices down to 2 or 3 jobs.
6. Do some research to find out more about them.
7. Talk to people doing the work.

Smart Choice

Choosing a career in the electricity sector means a lot of doors are open to you. Many workers who start their job with one skill set will be trained to acquire many different skills and do a variety of jobs. This type of cross-training multiplies your career options and allows you to diversify and specialize in an area you particularly love.

The electricity industry also offers a chance to work in almost any geographic location. There are plenty of jobs where you can work in a big city like Vancouver or in a small town surrounded by nature. Country mouse or city mouse, it makes no difference. There is a job to fit the lifestyle you want.

A great many jobs in the electrical sector are fairly recession proof. It only makes sense: even in tough economic times, people still need to use electricity! What’s more, many of workers in the sector are part of a union and benefit from the power of collective bargaining. This means that co-workers have joined together to gain good work conditions, high pay and excellent benefits such as drug and dental plans. This is a big bonus, especially if you have a family.

Choosing the Best Jobs

For more detailed information about any of these jobs, check out the profiles at www.brightfuturesBC.ca

<table>
<thead>
<tr>
<th>Job</th>
<th>What’s it all about?</th>
<th>What do I need?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Line Technician</td>
<td>You are responsible for the construction, repair and maintenance of high voltage transmission and distribution lines; poles, towers or underground systems.</td>
<td>For your apprenticeship, a high school diploma or equivalent is recommended, including Gr 12 English and at least Gr 11 Math and Physics. Some employers may set a higher standard. A good driving record and an ability to work at heights and harsh weather are important.</td>
</tr>
<tr>
<td>Electrician</td>
<td>You will plan, design, install, operate, maintain and test a wide range of electrical operational and control equipment.</td>
<td>For your apprenticeship, a high school diploma or equivalent is recommended, including Gr 12 English and Gr 12 Math and Physics. Related employment experience, a pre-apprenticeship and a solid background in science are definite assets.</td>
</tr>
<tr>
<td>Power System Operator</td>
<td>You will control the transmission and distribution of electrical power. This involves monitoring and switching portions of the power grid and communicating with field crews and the public in case of outages.</td>
<td>For your apprenticeship, a high school diploma or equivalent is required, including Gr 12 Math, English, Technical and Professional Communications, Gr 11 Physics. Related employment experience is a definite asset.</td>
</tr>
<tr>
<td>Sustainable Future Facilitator</td>
<td>You may be called upon to design, install, maintain and configure test sophisticated equipment used to control and monitor the electrical grid.</td>
<td>A college or university degree in a relevant field or a mix of work experience and training in energy efficiency practices. Good knowledge of green technology solutions and sustainable energy practices.</td>
</tr>
<tr>
<td>Smart Energy Specialist</td>
<td>You may be called upon to design, install, maintain and configure test sophisticated equipment used to control and monitor the electrical grid.</td>
<td>A university degree in Engineering or a college degree as a Technician or Technician. Good knowledge of advanced power generation, transmission and distribution systems. Several years experience in the electricity industry and a proven track record in implementing technology solutions.</td>
</tr>
<tr>
<td>Electrician</td>
<td>You will plan, design, install, operate, maintain and test a wide range of electrical operational and control equipment.</td>
<td>For your apprenticeship, a high school diploma or equivalent is required, including Gr 12 Math, English, Technical and Professional Communications, Gr 11 Physics. Related employment experience is a definite asset.</td>
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<td>Engineer</td>
<td>You use mathematics, science and business knowledge to find cost-effective and safe solutions to difficult problems. You also estimate the time, cost and resources necessary to complete projects.</td>
<td>Your high school grade averages must meet university admission requirements, including Gr 12 English, Chemistry, Math and Physics. A degree in Engineering from a recognized university. To obtain your P. Eng. credentials you must gain work experience, including Gr 12 Math, English or Technical and Professional Communications, Gr 11 Physics. Related employment experience is a definite asset.</td>
</tr>
<tr>
<td>Project Manager</td>
<td>You are in charge of supervising projects from start to finish, overseeing the various stages of design and execution all the way to completion. This involves projecting costs, time and people involved to get the job done and making sure everyone sticks to the schedule.</td>
<td>A university degree in a relevant field of study, typically Engineering. Good knowledge of power generation, transmission and distribution systems. An ability to work your way up and gain knowledge of the industry.</td>
</tr>
<tr>
<td>Operations Manager</td>
<td>You are in charge of power generation, distribution, transmission or field operations. As the person responsible for the financial performance of your area of operation, you set targets and budget the money that will be spent to reach them. You create processes and procedures for your staff to follow and make sure that the power grid operates smoothly and safely.</td>
<td>A university degree in a relevant field of study, typically Engineering. Good knowledge of power generation, transmission and distribution systems. Several years experience in the electricity industry and a proven track record in leading teams of people.</td>
</tr>
</tbody>
</table>
**Power Systems Operator**

“I enjoy working as a Load Operator at BCTC because there is always interesting work to be done and new things to learn. My job is exciting because you never know what something big is going to happen; it could be a quiet day and then something might occur half-way across the province which causes your day to speed up. My managers are helpful in showing the way when I have a question and allow me time for on-the-job training. With the Real Time Operations team, I am able to face challenges and complete work with the satisfaction of a job well done.”

Lee Baxter, Load Operator, BCTC

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**Power Line Technician**

“To me, there was no other job I had heard of that offered what this trade does: that is, the exciting, changing environment that is working with electricity on this scale. Every day, you must be focused and ready to learn, and the reward is a career with lots of opportunity’s, and many challenges to continually grow and serve the needs of our society. I especially enjoy the challenge of combining all of our technical and practical skills to create the finished product, and have the confidence to do it safely and be at home at the end of the day.”

Matt Wilson, Power Line Technician, FortisBC

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**Electrician**

“For an active person like myself, the idea of sitting behind a desk felt too much like school and the idea of working a labour job where there was no mental challenge was not appealing either. So what was I to do? This is where the trades appealed to me, and ended up being the right choice for me as I have worked the last 15 years as an electrician. The job is physically active and also challenges me mentally; it’s a great fit for who I am. Skilled trades are wide open and have lots to offer many different people. Just take a look!”

Karen Porter, IBEW Journeyperson Electrician working at BC Hydro

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**Sustainable Future Facilitator**

“I focus on alternative energy technologies that aren’t yet part of B.C.’s electricity mix. One of my current projects is accelerating the deployment of geothermal energy – a technology that uses underground heat to make electricity. It all started in high school when I enjoyed a lot of different things: hiking, snowboarding, music, but especially multi-disciplinary and creative problem solving. What I enjoy most about my job is being able to help the environment.”

Jana Hanova, Strategic Technology Professional, BC Hydro

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**Smart Energy Specialist**

“I became a Certified Energy Advisor after working as an advisor’s assistant for a number of months. The job was a perfect fit for me as it allowed me to combine my environmental education and communication skills with my desire to help bring about positive environmental change. The combination of working from home and working in the field, which is in this job means conducting home energy assessments, provides a nice balance of office work, computer work, public engagement and hands-on investigation. At times it feels like you are a detective, trying to solve the mystery of the high heating bills, cold rooms or moisture issues. It’s a job where you really feel like you’re making a difference.”

Joy Beauchamp, Certified Energy Advisor

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**Project Manager**

“I like working at BCTC as a research and development project manager because my job is professionally challenging, intellectually interesting and personally rewarding. My job gives me opportunity to meet people from all over the world from other utilities, universities, research institutions, and companies. In my work I can grow professionally and personally while at the same time meeting the company’s objectives and achieving my career goals.”

Janos Toth, Ph.D., P.Eng., P.E., PMP, Project Manager, BCTC

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**Engineer**

“How would you like to have the electricity network at the palm of your hands? That’s what it feels like when you’re an Electrical Engineer. You can do so many cool things that will help improve power delivery, conserve energy or shorten the time without electricity. In this career you will use very specialized knowledge and advanced technologies to make our electrical distribution system more reliable and sustainable. This is my dream job. I enjoy working in a dynamic environment where technology is constantly changing and I never stop learning. University provides a solid foundation for this career and from there you will have the ability to build on that knowledge and expand it through your work.”

Valentina Dabic, Senior Engineer, BC Hydro

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**Operations Manager**

“I really appreciate and value my Engineering education and profession. It provides a solid base for a wide variety of careers, from design, construction and operations roles to sales, business and management. The education was practical and interesting. The profession has a high ethical standard and encourages its members to practice Engineering for the benefit of public safety, social values and the environment. This practice of applying technical knowledge to find solutions in a complex framework of technical, social and environmental framework is of key importance in our world today.”

Amy Stevenson, Vice President, Operations, Columbia Power
Safety is #1

Much the same as the fact that new drivers are the highest risk group for traffic accidents, young people starting out their careers are more prone to workplace mishaps. That’s why safety procedures and protocols are the first thing you learn about when starting a job in the electrical sector. Safety is ALWAYS the number one priority. Let’s face it, high voltage can be dangerous, so staying focused is important. Safety is only as good as the weakest link in the chain, which explains why there are always multiple backup systems in place to protect you and the public. What’s more, your co-workers are constantly watching your back and you’re doing the same for them. When you depend on each other in this way to get the job done safely, the friendships that form are real and lasting.

How do I fit in?

The electrical sector is constantly looking to the future. We are always working to find new ways to be more efficient, safe and productive. That’s why we need people like you to help us get there. This means you have opportunities for people with the right stuff...why not start planning your course of action now?

The first step is deciding on what career you would like to have. Once you’ve done that, you can start planning for it right away by taking the right courses in high school. Many college and university 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 job, are Grade 12 English and at least Grade 11 Math and Physics. For more details, check out the brochures available at your guidance counselor’s office www.brightfuturesBC.ca and be sure you speak to your guidance counselor or career studies teacher if you have any specific questions.

Tell me more!

So, you’re interested in a career in the electricity sector, but want some more information? Check out www.brightfuturesBC.ca to find out everything you need to know about the various careers that are out there, as well as the courses you’ll need to take while in high school to get yourself ready.

Myths and Realities

Myth

Jobs in the electrical sector are more dangerous because of high voltage.

Reality

Although it is true that high voltage must be handled with caution, the electrical sector has an exemplary safety record and does its best to maintain the very safest work environment possible.

Myth

Physically oriented jobs are not for students that get good grades.

Reality

Not true, and the most common misconception about physically demanding jobs. Reality is that the electrical sector requires individuals with a strong academic foundation in reading, writing, math and science. Building a career in electricity takes intelligence, dedication, focus and hard work.

Myth

You need a university or college degree to get a good job.

Reality

Achieving a certificate of qualification for a skilled trade is also a ticket to a good future, given the high demand, good pay and travel opportunities.

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Myth

A great deal of physical strength is required to work to do technical jobs in the electricity sector.

Reality

Physical work requires a wide range of capabilities. Technical jobs require dexterity, stamina, good hand-eye coordination and balance - all attributes that have little to do with strength.

Myth

Jobs in the electricity sector are so specialized you only get to do one thing.

Reality

When you take a job in the electricity sector, you embark upon a career path with many choices for advancement. From supervisory positions to management positions to the possibility of owning your own business, the options are unlimited. It’s up to you.

Myth

Women are not cut out for jobs in Engineering.

Reality

Engineering jobs require good aptitudes in math and science as well as superior problem solving and people skills. These aptitudes have nothing to do with gender. Women who work in the field of Engineering have proven time and again that they are every bit as capable as their male peers.

Myth

Many of the jobs are dirty and physically demanding.

Reality

No doubt many electricity jobs involve hands-on and outdoor work. But this is why you’re working in this field, doing the same for them. When you depend on each other in this way to get the job done safely, the friendships that form are real and lasting.

Tell me more!

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### 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.

### Arc
?- The sparking that results when undesirable current flows between two points of differing potential.

### 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 oversupply by consumers.

### Bucket truck
?- A truck with an aerial lift device used to work on lines, towers and poles.

### 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
?- Devices that operate on electricity.

### Energy
?- A source of usable power.

### Extraction equipment
?- Mechanical equipment used to extract fuel from a nuclear unit.

### Fabrications
?- Things that are made or created.

### Forester
?- A worker who cleans 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.

### Geo-thermal
?- 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.

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### Helpful Links

- **Energize Your Future Website**: [www.brightfuturesBC.ca](http://www.brightfuturesBC.ca)
- **Electricity Sector Council (ESC)**: [www.brightfutures.ca](http://www.brightfutures.ca)
- **Tradeup For Success**: [www.tradeup.ca](http://www.tradeup.ca)
- **International Brotherhood of Electrical Workers (IBEW)**: [www.ibew258.bc.ca](http://www.ibew258.bc.ca)
- **Columbia Power Corporation**: [www.columbiapower.org](http://www.columbiapower.org)
- **FortisBC**: [www.fortisbc.com](http://www.fortisbc.com)
- **Electrical Industry Training Institute Ltd.**: [www.riti.bc.ca](http://www.riti.bc.ca)
- **Joint Line Apprenticeship & Trades Training Committee**: [www.jlattc.ca/training.html](http://www.jlattc.ca/training.html)
- **Search for Opportunities**: [www.apprenticeshiptrades.ca](http://www.apprenticeshiptrades.ca)
- **Apprenticeship Trades**: [www.apprenticeshiptrades.ca](http://www.apprenticeshiptrades.ca)
- **Skilled Trades – A Career You Can Build On**: [www.apprenticeshiptrades.ca](http://www.apprenticeshiptrades.ca)
- **Canadian Career Consortium**: [www.careerccc.org](http://www.careerccc.org)
- **Alliance of Sector Councils**: [www.councils.org](http://www.councils.org)
- **Information on the World of “Work”**: [www.jobfutures.ca](http://www.jobfutures.ca)
- **Human Resources & Skills Development Canada**: [www.trede.gc.ca](http://www.trede.gc.ca)
- **Youth – Health and Safety**: [www.passporttosafety.com](http://www.passporttosafety.com)
- **Red Seal Program – Inter-Provincial Standards**: [www.red-seal.ca](http://www.red-seal.ca)
- **Good Careers – Great Futures**: [www.skilledtrades.ca](http://www.skilledtrades.ca)
- **Take Our Kids to Work**: [www.takeourkidstowork.ca](http://www.takeourkidstowork.ca)
- **Government of Canada – Youth**: [www.youth.gc.ca](http://www.youth.gc.ca)
- **BC Energy Plan**: [www.energyplan.gov.bc.ca](http://www.energyplan.gov.bc.ca)

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### Learn the Lingo

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC/DC</td>
<td>Alternating and direct currents; used to measure electrical current.</td>
</tr>
<tr>
<td>Acid gas emissions</td>
<td>Gases containing acid that are discharged into the air.</td>
</tr>
<tr>
<td>Acid Rain</td>
<td>Rain containing acids that form in the atmosphere when industrial gas emissions combine with water.</td>
</tr>
<tr>
<td>Air conditioning system</td>
<td>A system that cools and dries air.</td>
</tr>
<tr>
<td>Amp</td>
<td>The basic unit of electric current.</td>
</tr>
<tr>
<td>Apprenticeship</td>
<td>Hands-on training to learn a trade, art, or business while getting paid.</td>
</tr>
<tr>
<td>Arborist</td>
<td>A specialist in the care of trees.</td>
</tr>
<tr>
<td>Arc</td>
<td>The sparking that results when undesirable current flows between two points of differing potential.</td>
</tr>
<tr>
<td>Benefits</td>
<td>An entitlement available that covers the cost of some or all medical and well-being expenses.</td>
</tr>
<tr>
<td>Biomass</td>
<td>Plant material, vegetation, or agricultural waste used as a fuel or energy source.</td>
</tr>
<tr>
<td>Blackout</td>
<td>A temporary loss of power caused by a failure in generation or transmission.</td>
</tr>
<tr>
<td>Boiler maker</td>
<td>Someone who makes the boilers.</td>
</tr>
<tr>
<td>Brownout</td>
<td>A reduction or cutback in electric power, especially as a result of a shortage, a mechanical failure, or oversupply by consumers.</td>
</tr>
<tr>
<td>Bucket truck</td>
<td>A truck with an aerial lift device used to work on lines, towers and poles.</td>
</tr>
<tr>
<td>Calibrate</td>
<td>To check, adjust, or determine by comparison with a standard.</td>
</tr>
<tr>
<td>Circuits</td>
<td>A continuous path for the flow of electricity.</td>
</tr>
<tr>
<td>Coal</td>
<td>A fossil fuel that is burned to heat the water the water and produce electricity in a fossil power plant.</td>
</tr>
<tr>
<td>Commissioning</td>
<td>The act of granting certain work to external companies to carry out a particular task or duty.</td>
</tr>
<tr>
<td>Construction</td>
<td>The art, trade, or work of building.</td>
</tr>
<tr>
<td>Control Technician</td>
<td>Performs installations, commissioning, fabrications, modifications, overhaul inspections, troubleshooting, predictive maintenance, repair and preventive maintenance.</td>
</tr>
<tr>
<td>Distribution</td>
<td>Lower voltages of electricity that are distributed to households.</td>
</tr>
<tr>
<td>Electricians</td>
<td>People who install, maintain, repair, or operate the electrical equipment and circuitry.</td>
</tr>
<tr>
<td>Electricity</td>
<td>Electric current used as a source of power.</td>
</tr>
<tr>
<td>Electricity sector</td>
<td>The organizations, regulatory bodies and companies that are involved in the generation and delivery of electricity.</td>
</tr>
<tr>
<td>Electricity usage</td>
<td>The amount of electricity used by a customer.</td>
</tr>
<tr>
<td>Electronic devices</td>
<td>Devices that operate on electricity.</td>
</tr>
<tr>
<td>Energy</td>
<td>A source of usable power.</td>
</tr>
<tr>
<td>Extraction equipment</td>
<td>Mechanical equipment used to extract fuel from a nuclear unit.</td>
</tr>
<tr>
<td>Fabrications</td>
<td>Things that are made or created.</td>
</tr>
<tr>
<td>Forester</td>
<td>A worker who cleans trees and brush away from electrical lines and rights-of-way.</td>
</tr>
<tr>
<td>Fossil</td>
<td>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.</td>
</tr>
<tr>
<td>Fossil plant</td>
<td>A generation plant fueled by fossil fuels: coal, oil or natural gas.</td>
</tr>
<tr>
<td>Gas</td>
<td>A gaseous fuel, such as natural gas.</td>
</tr>
<tr>
<td>Generating capacity</td>
<td>The maximum amount of electric power produced by a generator.</td>
</tr>
<tr>
<td>Generation</td>
<td>The process of production of electric power.</td>
</tr>
<tr>
<td>Geo-thermal</td>
<td>The internal heat of the earth.</td>
</tr>
<tr>
<td>Global warming</td>
<td>An increase in the average temperature of the earth’s atmosphere, especially a sustained increase sufficient to cause climatic change.</td>
</tr>
<tr>
<td>Green power</td>
<td>Electricity produced from renewable sources such as wind, low-impact hydroelectric, biomass and solar.</td>
</tr>
<tr>
<td><strong>Constructs, repairs and maintains transmission and distribution lines on poles, towers and structures.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Plant material from the prehistoric age, in fossil form.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Pressurised water or heavy water flows through the pressure tubes and conveys the heat to a steam generator.</strong></td>
<td></td>
</tr>
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</table>

**Power Line Technician**

- Constructs, repairs and maintains transmission and distribution lines on poles, towers and structures.
- Plant material from the prehistoric age, in fossil form.
- 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.
- 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.
- Right-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.
- Rotating equipment: A system of pulleys, ropes and cables used to assist in lifting operations.
- 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.
- Substation: Someone who installs and repairs heating, ventilating, refrigerating and air-conditioning systems.

**Plumbing**

- A person who installs and repairs pipes and plumbing.

**Pneumatic**

- A structure that is filled with air or powered by air pressure.

**Ultrasonic measure flow**

- Universal flow measuring equipment

**Pass/Port to Safety**

- A material that insulates, in particular a nonconductor of electricity.
- Airplane that has completed his or her apprenticeship.

**Pension**

- 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.

**Pruning**

- A technique that involves removing any part of a plant that is damaged, diseased or growing into the wrong direction.

**Principle of operation**

- The wires, transformation and distribution stations that make up the electrical system.

**Oil**

- A material that insulates, in particular a nonconductor of electricity.

**Machinist**

- One who makes, operates, or repairs machines.

**Machinery and equipment**

- Plays an essential role in equipment maintenance and maintenance programs to ensure safe and reliable plant operations.

**Mechanics**

- Workers skilled in making, using or repairing vehicles.

**Mechanical Maintenance**

- Measuring the amount of electricity used by a consumer for billing purposes.

**Mechanical Safety**

- An odorless, colorless, flammable gas, which is the major component of natural gas.

**Mechanics**

- A machine in which metal that is secured to a carriage is fed against rotating cutters that shape it.

**Metal worker**

- Someone who designs, builds, or repairs mills or mill machinery.

**Molding**

- Creating a mould that is used to shape or form a needed part, tool or product.

**Non-intrusive infrared thermography**

- Used to detect heat variations on the transmission system that indicate areas in need of repair.

**Oil**

- A material that insulates, in particular a nonconductor of electricity.

**Overhead lines**

- A temporary suspension of operation (e.g. power outage).

**Pass/Port to Safety**

- Above ground distribution and transmission wires. 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.

**Pass/Port to Safety**

- A sum of money paid regularly as a retirement benefit, earned after a defined number of years of service.

**Pass/Port to Safety**

- newspaper that is issued by the police department to ensure that the public is aware of the crimes committed.

**Pass/Port to Safety**

- To determine and solve problems through methodical investigation.

**Pass/Port to Safety**

- Services and maintains all types of vehicles and equipment.

**Pneumatic**

- About the size of a garbage can, these devices convert the voltage from the distribution lines into a usable voltage for the customer.
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<td>Ventilation</td>
<td>Admits fresh air in to replace stale or harmful air.</td>
</tr>
<tr>
<td>Vibration Analysis</td>
<td>The process of monitoring the condition of equipment, and the diagnosis of faults in equipment through the measurement and analysis of vibration.</td>
</tr>
<tr>
<td>Voltage</td>
<td>The difference in electrical charge between two points in a circuit; expressed in volts.</td>
</tr>
<tr>
<td>Voltage — High</td>
<td>A voltage greater than 750 volts.</td>
</tr>
<tr>
<td>Voltage — Low</td>
<td>A voltage less than 750 volts.</td>
</tr>
<tr>
<td>Welder</td>
<td>A person who joins metals by welding them together.</td>
</tr>
<tr>
<td>Wind Energy</td>
<td>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.</td>
</tr>
<tr>
<td>Wire conductor</td>
<td>Flexible metallic strands or rods made in many lengths and diameters, often electrically insulated, used to conduct electricity.</td>
</tr>
<tr>
<td>Wires</td>
<td>A wire that carries an electrical charge.</td>
</tr>
</tbody>
</table>
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STUDENT GUIDE

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