

Future Energy Jobs Guide

Kick start your career in renewable energy

Who is this jobs guide for?

Students considering their future career

There are many pathways into renewable energy jobs for people starting out their career.

The Queensland Government is delivering more jobs as we create clean, reliable and affordable energy for future generations.

Read on to discover how you can build a career in renewable energy.

Workers considering a renewable energy career

A wide range of skills are readily transferable to the renewable energy sector.

The Queensland Government is supporting communities and workers to be partners in the energy transformation. This is diversifying local economies and creating good, secure and ongoing jobs.

Read on to discover how your skills can give you access to a future-focused career in renewable energy.

Find a job in renewable energy that sparks your interest



Be part of transforming Queensland's electricity system

We all know electricity is essential to our lives, and we know the electricity network is going through a **massive shift** as we reduce our greenhouse gas emissions, but have you thought about all the jobs that will make this transition happen?

The truth is that shifting to renewable energy is going to create all sorts of jobs that will offer exciting opportunities to help address the impact of climate change and promote more equitable access to renewable energy.

And the people who will fill these jobs are now at school, early in their career or looking to make a career change. People like you.

Did you know?

The Queensland Government invests over \$1.2 billion annually in skills and training to deliver high quality training and creating exciting career pathways for Queenslanders.

That's why we've produced this guide – to help you understand more about the opportunities out there and how you can grab them.

There are so many great jobs that we cannot include them all here, but the guide lists a range of jobs on offer and study pathways into the industry.

In some jobs you will work on site on a renewable energy project and at others in an office. Some jobs involve lots of travel and others keep you close to home.

So why not read through the guide, find what sparks your interest and follow the link at the bottom of each job profile to learn more and make your next career move.

The Queensland Government is supporting the continued development of the clean energy workforce

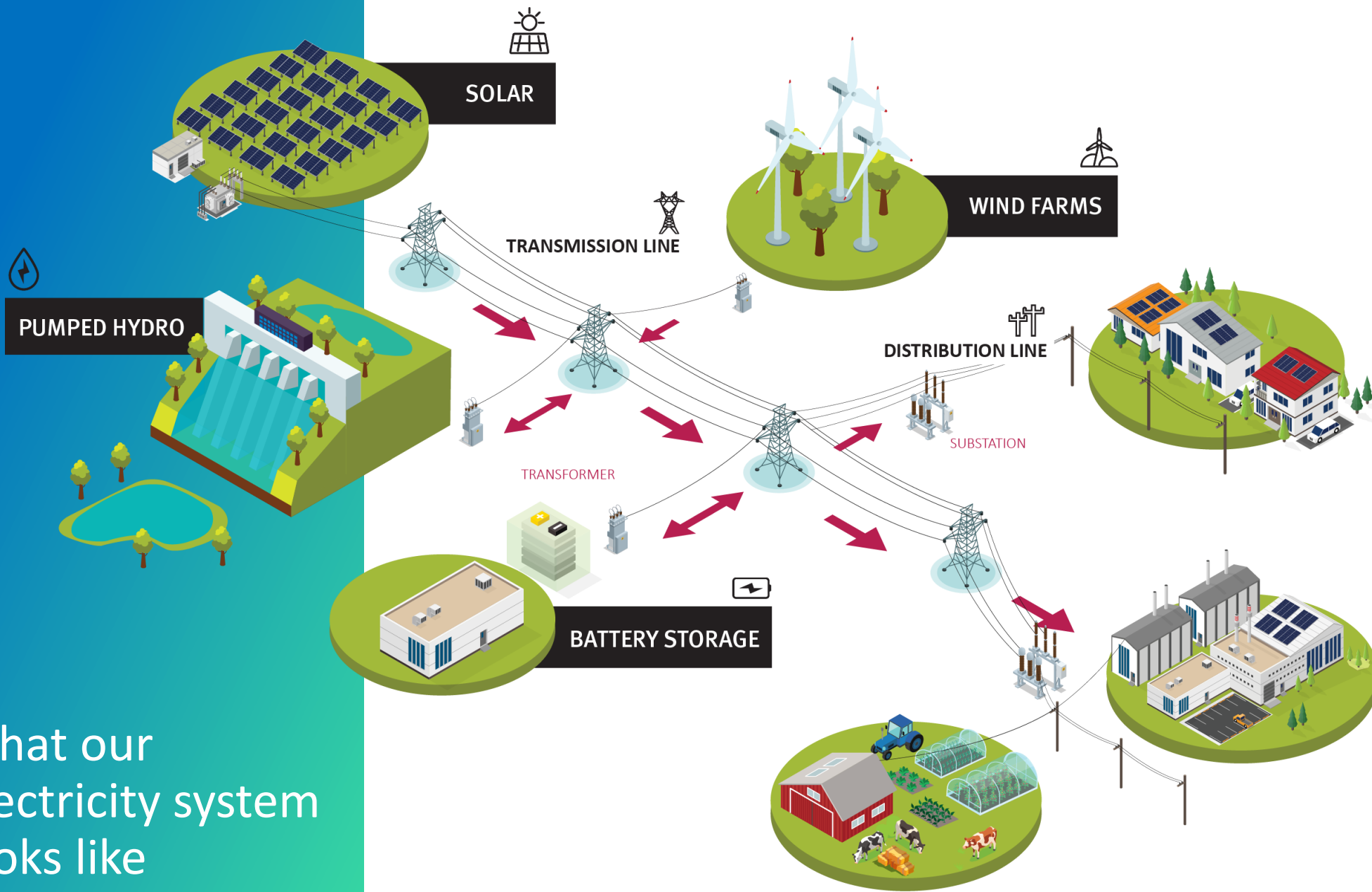
*100,000 new Queensland jobs supported through the delivery of the **Queensland Energy and Jobs Plan...most in regional communities***

*An **initial \$30 million investment** through **Queensland's Clean Energy Workforce Roadmap 2023-2035***

\$70 million** in actions under the **Queensland Workforce Strategy

*Over **\$50 million** has been invested in renewable energy training infrastructure across Queensland*

What our electricity system looks like



80% of Queensland's electricity will come from renewables by 2035. Here's how we'll get there.

SOLAR



We've all seen solar panels on rooftops and in solar farms. We need to install millions more photovoltaic solar panels by 2035. These solar farms will need to be designed, installed and maintained, as will all the new rooftop solar that will be installed on homes, businesses and farms.

PUMPED HYDRO



Queensland is building the world's biggest pumped hydro facility. Hydropower converts the energy of moving water into electricity. When demand for power is low, excess electricity is used to pump water from a lower dam to a higher one. The water is then released to generate electricity when required. Pumped hydro requires designing, constructing and maintaining dam walls, pump stations and turbines.

WIND FARMS



Wind is a fantastic source of energy, day and night, and Queensland has the right climate for it. That's why the State plans to build up to 3,000 wind turbines to make the energy transition. These wind farms will need a variety of specialist skills to design, construct and maintain wind farm assets.

BATTERY STORAGE



Batteries are part of the energy storage solution. From households to community batteries to public utilities, batteries will ensure users have a reliable supply of electricity. The manufacturing, assembly, installation and maintenance of batteries are all highly technical activities.

Want to work in a particular part of the energy sector?
Look for the icons listed above, next to roles throughout the guide.



TRANSMISSION

Transmission involves the large metal structures and powerlines that move high-voltage electricity from where it is generated in regional areas to substations near towns and cities. Queensland will need around 2,000 kilometres of new transmission lines to connect new renewable energy to the grid.



DISTRIBUTION

Distribution lines carry electricity from substations to homes, businesses and farms. Distribution infrastructure will need to adapt to the new electricity system, as rooftop solar, batteries and electric vehicles are integrated into the network.



This guide can help you find the right career in future energy

This guide details jobs, skills, and training requirements to help you find the right career in future energy.

IN THIS GUIDE YOU WILL FIND

Job profiles, with an overview of future energy roles and relevant qualifications and skills.

Stories from people working in future energy.

Links to further information.

Where will you work?

When it comes to working in the renewable energy sector, no two jobs are the same. Some jobs will involve travelling far and wide across Queensland to project sites, while other jobs will involve working from offices in cities or regional centres.

To understand where you will work, look out for these icons. Some jobs include both.

	Site	✓
	Office	✓

What phases of projects will you work in?

Queensland has many renewable energy projects. Some people will stay with one employer while others will work with different employers on projects that match their skills and interests. Look out for these icons to discover what roles are needed across the life of each project.

Designing, financing, consulting the community and gaining approvals



Construction

Building the infrastructure

Keeping everything running smoothly

Operations & Maintenance

Repurpose and Recycle

Repurposing power stations and end-of-life recycling to complement local manufacturing

Future energy skills are in high demand

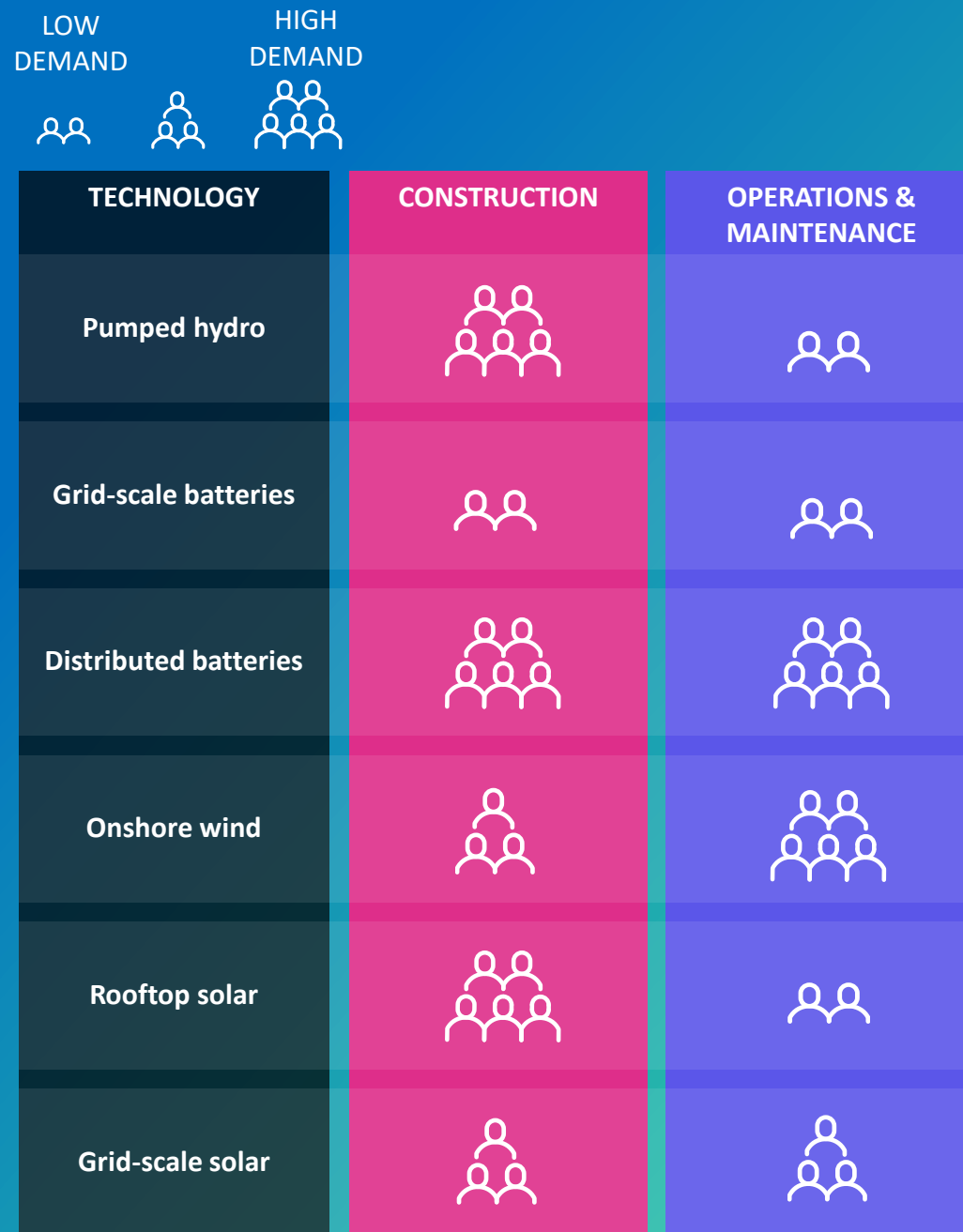
The future energy sector needs technically skilled workers, particularly engineers and electricians to design, install and operate renewable energy systems. It needs trades people and technicians to operate and maintain large scale wind, solar and battery assets as well as installers for home and business rooftop solar and batteries. The sector also needs highly skilled corporate professionals for community liaison, commercial trading and project management roles, just to name a few.

The range of emerging technologies in the renewable energy sector means that new specialist jobs will be created such as battery engineers and chemists, circular energy system designers, remanufacturing technicians and energy traders.

This guide will be reviewed and developed to keep pace with these opportunities as they emerge.

The Queensland Energy and Jobs Plan indicates how much new infrastructure for each technology is required by 2035 to meet our renewable energy targets and make sure electricity supply is reliable and affordable.

The symbols on the right hand side of this page provide an insight into the demand for jobs during the construction phase and ongoing operations and maintenance phase for each renewable energy technology.



We have identified job categories that are key to Queensland's renewable energy future



ELECTRICAL TRADES



CONSTRUCTION ROLES



TECHNICIANS



ENGINEERS



SCIENCE & TECHNOLOGY PROFESSIONALS



CORPORATE ROLES



EDUCATION, TRAINING AND DEVELOPMENT



Explore the range of roles on offer in future energy

ELECTRICAL TRADES

[General electrician](#)

[Generation trades worker](#)

[Distribution trades worker](#)

[Transmission trades worker](#)

CONSTRUCTION ROLES

[Construction occupations](#)

[Machinery operators](#)

[Construction trades](#)

[Mechanical and fabrication trades](#)

TECHNICIANS

[Field technician](#)

[Control room operator](#)

[Civil technician](#)

[Science technician](#)

ENGINEERS

[Electrical engineer](#)

[Civil engineer](#)

[Mechanical engineer](#)

[Chemical engineer](#)

[Software engineer](#)

SCIENCE AND TECHNOLOGY PROFESSIONALS

[Software professional](#)

[Surveyor](#)

[Environmental scientist](#)

[Natural and physical scientist](#)

CORPORATE ROLES

[Commercial
Strategy and planning](#)

[Community engagement
Marketing and digital](#)

[Workplace health and safety
Human resources](#)

[Finance and procurement
Governance, legal, regulatory and compliance](#)

EDUCATION, TRAINING AND DEVELOPMENT

Electrical trades

use technical expertise to connect Queensland homes and industry to renewable energy

What do electrical trades workers do?

Electrical trades workers enable Queensland homes and businesses to utilise electricity generated through renewable energy technology. They perform work across the electricity network, including in homes and buildings, on transmission and distribution lines, and at substations and generation facilities.

Is this career right for you?

Electrical trades workers need manual dexterity and problem-solving skills. It's an ideal career for people that enjoy working with their hands and being active. This career can lead to opportunities like progressing into supervisory roles, specialising in certain technologies, or starting your own business as a contractor.

How can you get into this career?

Most electrical trades workers need a Certificate III in Electrotechnology (Electrician). This four-year apprenticeship includes work experience and training from a Registered Training Organisation (RTO). The qualification provides a pathway to a wide range of electrical trades occupations.

To work in transmission and distribution you will need a relevant Certificate III in Electrical Supply Industry (ESI). Depending on the qualification, a Certificate III in ESI takes one to four years to complete and enables you to work in a specialised field. If you already hold a Certificate III in Electrotechnology then you could be eligible to obtain a relevant Certificate III in ESI in less than a year. Post trade certifications may be required to specialise in work related to high voltage, live wire and substations.

The clean energy sector needs qualified and experienced electrical trades workers.

General electricians are qualified to work in many renewable energy roles. You may need additional on-the-job training or further certification, depending on the role. Read through the roles in the guide, find what sparks your interest and follow the link at the bottom of each job profile to learn more.

There are so many great jobs that we cannot list them all, but this guide presents a range of electrical trades roles on offer within the renewable energy sector.

ELECTRICAL TRADES WORKERS

General electrician

Generation trades worker

Distribution trades worker

Transmission trades worker



General electrician



Enable energy consumers to switch from carbon-intensive energy sources to renewables.

Electrification of our energy system opens huge opportunities for general electricians to work across the electricity system and contribute to a net zero future.

As a qualified electrician you could do a range of jobs that enable the use of renewable energy:

RESIDENTIAL ELECTRICIAN

Residential electricians do a broad range of tasks, including installing switchboards, wiring, power outlets, switches and high-power chargers for electric vehicles in homes. They will be in high demand to install smart meters to manage electricity demand and to install electrical appliances for heating and cooking as houses may choose to transition to renewable energy sources.


COMMERCIAL ELECTRICIAN

Commercial electricians install electric circuits and components, including energy monitoring systems in commercial settings. Their work locations range from warehouses to shopping centres and sport stadiums to ensure wiring and electrical components are operating efficiently.

INDUSTRIAL ELECTRICIAN


Industrial electricians work in factories, plants and mine sites, where they install electrical wiring and components, to power energy intensive equipment. Demand for industrial electricians is expected to increase as industrial facilities switch from fossil fuels to renewable energy.

Where will you work?


 Site

 Office

What phase you will work in?

 Development

 Construction

 Operations & Maintenance

Is this career right for you?

You have good mathematical knowledge, physical dexterity, a safety-first mindset, and great hand-eye coordination.

What should you study?

A Certificate III in Electrotechnology with an open electrical work licence. This is a versatile qualification that enables you to work across many different settings and specialise in many different areas of renewable energy.

FOR MORE INFORMATION 



Generation trades worker



Install and maintain electric circuits for vital energy generation assets, with opportunities in urban and regional locations.

Generation trades workers specialise in electric circuits and components, such as those used in solar and wind farms, which turn the energy of natural replenishable resources into useable power.

As a qualified electrician you could do many different jobs at renewable generation facilities.

COMMISSIONING ELECTRICIAN

These electricians are critical to ensuring safety. They verify that electric circuits and equipment are installed correctly and safely before bringing them online. They test and verify the performance of electrical systems and equipment before they become fully operational.

Note: In addition to the Certificate III in Electrotechnology, for some commissioning roles a Diploma or Advanced Diploma in Electrical Engineering may be advantageous.


[Learn more](#)


POWER PLANT ELECTRICIAN

These electricians install wiring and components such as inverters and switches to connect solar panels, wind turbines and batteries to the grid. They gain experience that sets them up to transition to operational roles. Many choose to remain in construction, which provides relocation and travel opportunities.


Note: In addition to the Certificate III in Electrotechnology, you could specialise in an area by completing a relevant post trade qualification.

Where will you work?


 Site

 Office

What phase you will work in?

 Development

 Construction

 Operations & Maintenance

Is this career right for you?

Over and above the core electrician traits, you enjoy physical work outdoors. A role as generation electrician can be a stepping stone to specialise as electrical technician.

What should you study?

A Certificate III in Electrotechnology and an open electrical work licence. To progress in your career, you may be required to complete relevant post-trade qualifications.

FOR MORE INFORMATION 



Distribution trades worker



Install and maintain vital infrastructure, such as poles and wires, to deliver electricity to homes and businesses.

Distribution networks are getting more complex as they need to incorporate battery systems, rooftop solar and other energy infrastructure. Distribution networks are augmented and maintained by distribution trades workers.

A Certificate III in ESI Distribution (Underground or Overhead) unlocks many jobs in distribution.

CABLE JOINTER

These trade workers protect and connect insulated electric power cables installed in underground conduits and trenches and prepare cable terminations for connection to electrical equipment.

What you should study: A Certificate III in ESI – Distribution Underground. (2-year apprenticeship).

[Learn more](#)

OVERHEAD LINEPERSON

These trade workers work on the overhead electrical lines in towns and regional distribution networks. Using elevated work platforms, they install and service equipment such as conductors, pole-mounted circuit breakers and switches. They rectify faults and isolate the network for repairs.

What you should study: A Certificate III in ESI – Distribution Overhead. (4-year apprenticeship).

[Learn more](#)

GRID CONNECTION ELECTRICIAN

These trade workers install and maintain voltage regulation equipment and inverters in the distribution network.

What you should study: To perform live line work you will need to do a Certificate IV in ESI – Network Systems after you completed your relevant Certificate III in ESI.

[Learn more](#)

Where will you work?

Site

Office

What phase you will work in?

Development

Construction

Operations & Maintenance

Is this career right for you?

You enjoy physical work outdoors. For overhead lines work you need to be comfortable working at heights.

What should you study?

Certificate III in ESI Distribution (Underground or Overhead). If you have a Certificate III in Electrotechnology then you could be on the fast track to obtain your relevant Certificate III in ESI.

FOR MORE INFORMATION

UNDERGROUND →

OVERHEAD →



Transmission trades worker

Build and maintain the long-distance electricity transmission network that delivers renewable electricity to where it is needed.

Transmission trades workers will be in high demand. Queensland needs around 2,000 kilometres of new transmission to connect new renewable generation facilities to demand centres.

A Certificate III in ESI Transmission Overhead unlocks many opportunities in transmission.

TRANSMISSION LINEPERSON

These trade workers construct new powerlines and substations. For example, they ensure conductors (also called transmission cables) are placed correctly on the insulators, adjusted to the right tension, and earthing wires are installed correctly.

HIGH VOLTAGE LINEPERSON

These trade workers inspect and maintain live or de-energised transmission lines. Experienced transmission workers can specialise to become live wire electricians. In Queensland, this training is provided by Powerlink for staff and contractors.

Note: To perform live line work you will need to do a Certificate IV in ESI – Network Systems. [Learn more](#)

HIGH VOLTAGE SUBSTATION ELECTRICIAN

These trade workers install and maintain critical components including transformers, which step voltage up or down and switch transmission circuits. Experienced substation electricians can specialise to work on live substations.

Note: You will be required to do a Certificate IV in ESI – Substations. (6 months to 2 years depending on the options you choose). [Learn more](#)

Where will you work?

- Site
- Office

What phase you will work in?

- Development
- Construction
- Operations & Maintenance

Is this career right for you?

You enjoy working on site, often in regional and remote locations. You are comfortable with a physically demanding job and working at heights.

What should you study?

Certificate III in ESI Transmission Overhead. If you have a Certificate III in Electrotechnology then you could be on the fast track to obtain your relevant Certificate III in ESI.

FOR MORE INFORMATION 

Construction roles

will continue to be in high demand in the coming decades

What do construction workers do?

Construction is a big and exciting industry. Many construction roles are involved in planning, building and maintaining renewable energy infrastructure across Queensland. Many career pathways are available, including earning while learning on the job, through an apprenticeship or traineeship or university pathways for professional roles.

Is this career right for you?

A construction role in renewable energy provides opportunities for different types of work. Some people will work on site and others in an office environment. If you enjoy working outside and doing physical labour, then a construction occupation, trade, or a machinery operator role might be right for you. As you gain experience, the construction industry offers opportunities to progress into supervisory roles or to start your own business working as a contractor on large projects.

How can you get into this career?

Entry level roles are available to anyone willing to put in the work, learn new skills and gain experience. Machinery operators usually progress from light machinery to heavy machinery as they gain skills and experience. Construction occupations require a ticket or a Certificate, and to become a qualified tradesperson, you need a Certificate III in your chosen field, undertaken as an apprenticeship or traineeship that can last up to four years. To take a university pathway, obtain your undergraduate degree in your chosen field and then join a cadetship or graduate program.

The clean energy sector needs qualified and experienced construction workers.

Construction roles in future energy usually require the same qualifications as other construction projects. You may need additional on-the-job training depending on the role you're interested in. Read through the roles in the guide, find what sparks your interest and follow the link at the bottom of each job profile to learn more.

There are so many great jobs that we cannot list them all, but this guide presents a range of construction roles on offer within the renewable energy sector.

Construction roles

Construction occupations

Machinery operators

Construction trades

Mechanical and fabrication trades



Construction occupations



Play a hands-on role in building Queensland's renewable energy infrastructure.

Construction workers bring valuable and skilled hands to construction projects, building complex infrastructure from the ground up. This could mean preparing a site for wind turbines or helping lay the foundation for transmission and distribution lines.

A few of the jobs you might be interested in:

SCAFFOLDER

Scaffolders erect and dismantle temporary metal scaffolding on structures and building sites to provide a safe platform for people working at height on a renewable energy project. With experience as a scaffolder, you may progress to become a rigger.

What you should study: Certificate III in Scaffolding.


[Learn more](#)


RIGGER

Riggers set up pulleys, cables, ropes and other equipment to move heavy objects onsite. Working with crane operators, they lift parts one by one to assemble wind turbines more than 200 metres tall.


What you should study: Rigging ticket or a Certificate III in Rigging. [Learn more](#)


Where will you work?


 Site

 Office

What phase you will work in?

 Development

 Construction

 Operations & Maintenance

Is this career right for you?

You don't mind rolling up your sleeves to get a job done. You are active and hands-on and enjoy working outdoors.

What should you study?

Certificate III in your chosen field.

FOR MORE INFORMATION 



FORM WORKER

Form workers construct temporary structures to shape concrete as it is poured and cured, helping build large, stable concrete foundations for tall electricity transmission towers or hydroelectric facilities. Form workers often progress to become steel fixers.

What you should study: Certificate III Carpentry. [Learn more](#)

CONCRETER

Concreters pour, spread, smooth and finish concrete for structures. With the huge pipeline of infrastructure planned, concreters will be in demand across many projects, including building pumped hydro electricity generation and storage facilities.

What you should study: Certificate III in Concreting. [Learn more](#)

STEEL FIXER

Steel fixers read building plans to determine what materials are needed for a build. They then shape and fit steel bars or mesh structures to reinforce concrete in construction projects such as foundations for electrical substations. Steel fixers often progress to become concreters.

What you should study: Certificate III in Steelfixing. [Learn more.](#)



Machinery operators



Do the heavy lifting to build our renewable energy infrastructure, from wind turbines to substations.

Excavators, bulldozers and cranes are among the heavy machinery used to build hydroelectric facilities or for site preparation to build solar farms.

A few of the jobs you might be interested in:

EARTHMOVING PLANT OPERATOR

Plant operators control pieces of machinery such as a backhoe, bulldozer, excavator, grader or loader. This equipment excavates, moves and breaks up earth and rock, then levels, smooths and compacts surfaces.



What you should study: Progress from labouring and by completing tickets or study Certificate III in Civil Construction Plant Operations. [Learn more](#)

PAVING PLANT OPERATOR




Paving plant operators utilise machinery to spread and level hot bituminous paving materials and lay concrete on areas such as access roads and car parks for renewable energy projects.

What you should study: Certificate III in Civil Construction (Stream 1 – Bituminous Surfacing). [Learn more](#)

Where will you work?

-  Site
-  Office

What phase you will work in?

-  Development
-  Construction
-  Operations & Maintenance

Is this career right for you?

You enjoy manual activities and working with machinery, have good hand-eye coordination, and can follow instructions closely.

What should you study?

Operators require proof of competency which can be gained through a combination of on-the-job training and experience, or a formal qualification. You may also require a high-risk work licence.

FOR MORE INFORMATION 

CRANE OPERATOR

Crane operators safely lift, move and install heavy materials and pieces of equipment. Crane operators will be in demand across a range of renewable energy projects.

What you should study: Certificate III in Construction Crane Operations. [Learn more](#)

ELEVATED WORK PLATFORM (EWP) OPERATOR

EWP operators operate mobile platforms to lift and lower people and equipment to perform above groundwork safely. Elevated work platforms are used by transmission trades workers to access lattice towers to perform overhead jobs such as positioning and terminating conductors.

What you should study: Complete a short course to obtain a ticket or licence to operate an EWP.

Day in the life of a Crane Operator

What does your day-to-day job involve?

My day kicks off with pre-start checks, ensuring the crane and equipment are in good condition. Working with riggers, we set up exclusion zones for safe lifting. Safety is important, and double-checking all aspects is critical. From there, I will spend the day moving material around site to enable the build.

What do you most like about your job?

Working a crane is integral to a whole project, without it a project stops. Working in construction establishing infrastructure for renewable energy sources offers a real connection to sustainable progress.

How did you first start out?

I started out as a rigger. From there, I decided to get my crane license which opened opportunities in the industry.

What's the best advice you can give to someone who wants to work in Queensland's renewable energy industry?

If you're not sure what occupation might suit you best, try and find out about pre-employment programs so you can try out the industry. Whether it's engineering, construction or maintenance, getting the relevant qualifications under your belt is your best first step. From there – it's all about building experience and learning from the experts!

What you've learnt through your experience?

My experience has taught me the critical importance of safety on site. Every move, every job revolves around strict safety rules. I've realised safety isn't just a box to check, it's a way of working. Planning ahead, being careful, and staying watchful are as crucial as the technical skills – after all, we all want to get home safe.



Construction trades



Use your skills and expertise to build and maintain Queensland's future energy network.

Construction trades people are essential to building Queensland's renewable energy infrastructure. They also play an important, hands-on role in energy assets functioning well.

A few of the jobs you might be interested in:

PLUMBER

Plumbers will be in high demand in pumped hydro facilities to install instrument tubing and drainage systems. In our homes and businesses, they reduce our energy emissions by installing solar hot water systems.

What you should study: Certificate III in Plumbing.

[Learn more](#)

CARPENTER

Carpenters cut, shape and install building materials in the construction of energy infrastructure. They work primarily with wood but are also on site to maintain structures such as framing, interior and exterior support decks, flooring and walls.

What you should study: Certificate III in Carpentry.

[Learn more](#)

Where will you work?

Site

Office

What phase you will work in?

Development

Construction

Operations & Maintenance

Is this career right for you?

You are comfortable performing very physical roles requiring strength, endurance and dexterity.

What should you study?

Certificate III in your relevant trade, completed as part of your apprenticeship or traineeship that can take up to four years.

FOR MORE INFORMATION

PLUMBING →

CARPENTRY →



Mechanical and fabrication trades



Help to build the structures and machinery vital to a renewable energy future.

Mechanical and fabrication tradespeople use manual tools and automated machinery to cut, shape and join metal pieces, turning raw materials into finished products.

A few of the jobs you might be interested in:

WELDER

Welders use welding torches to apply heat to metal pieces, melting and fusing them to form a permanent bond. Solar panels, wind turbines and hydropower and steel lattice towers all require welders for building and ongoing maintenance.

What you should study: Certificate III Engineering – Fabrication. [Learn more](#)

ENGINEERING MACHINIST

Machinists operate specialised tools to shape metal parts with precision. They work with manual and computer-controlled (CNC) machines to cut, drill and shape metal according to specifications.

What you should study: Certificate III in Engineering – Mechanical Trade. [Learn more](#)


Where will you work?


 Site

 Office

What phase you will work in?

 Development

 Construction

 Operations & Maintenance

Is this career right for you?

You enjoy working with metal, and like combining creativity and physical work to bring ideas to life.

What should you study?

Certificate III in your relevant trade, completed as part of your apprenticeship or traineeship that can take up to four years.

FOR MORE INFORMATION

MECHANICAL 

FABRICATION 



METAL FABRICATOR (BOILERMAKER)

Metal fabricators work with metal sheets, bars or tubes to fabricate and assemble metal structures or components. They design, cut, bend, shape and join metals to create products ranging from machinery parts to architectural structures.

What you should study: Certificate III in Engineering – Fabrication Trade. [Learn more](#)

SHEET METAL TRADES WORKER

These trades workers manipulate thin metal sheets. They shape, cut and fabricate these sheets to create products such as ductwork to maintain proper airflow and manage heat dissipation. This is essential in turbine rooms, control rooms and heat exchange systems.

What you should study: Certificate III in Engineering – Fabrication Trade. [Learn more](#)

MECHANICAL FITTER

Also referred to as mechanical technicians, they fit and assemble infrastructure, and install, repair and maintain components and machinery parts to operational standards. They are also in high demand in hydrogen production and critical mineral processing.

What you should study: Certificate III in Engineering - Mechanical Trade. [Learn more](#)

PIPEFITTER

Pipefitters install, assemble and maintain piping systems. For example, in pumped hydro they install large pipes to transfer water between reservoirs. They are also in high demand in hydrogen production and critical mineral processing.

What you should study: Certificate III in Engineering – Mechanical Trade. [Learn more](#)



Technicians

will be vital to keeping future energy infrastructure working

What do technicians do?

Technicians improve the safety, efficiency and reliability of systems. When issues or malfunctions occur, technicians troubleshoot and diagnose the problem. They are the bridge between trades and engineers. Civil and science technicians are also called technical officers. They support engineers and scientist in research and construction activities which are vital to the development of renewable energy infrastructure.

Is this career right for you?

Technicians are tasked with maintaining complex systems and solving problems in real time. If you are interested in the application of engineering and science and you enjoy travelling to work sites, you should consider a career as a field technician, control room operator or a civil or science technician.

How can you get into this career?

Field technicians and control room operators typically need at least a relevant Certificate III, with a post trade qualification often required. Technical officers typically require an Advanced Diploma, while obtaining a Bachelor's degree is advantageous. An Advanced Diploma can be a great stepping stone to obtaining a Bachelor's degree while you gain valuable industry experience and earn a good salary.

The clean energy sector needs qualified and experienced technicians.

If you are qualified and perform a similar role in an adjacent industry, you may already meet the requirements to work in the renewable energy sector. Some future energy technician roles are highly specialised and require further study. Your employer may provide on-the-job training depending on the role. Read through the roles in the guide, find what sparks your interest and follow the link at the bottom of each job profile to learn more.

There are so many great jobs that we cannot list them all, but this guide presents a range of technician roles on offer within the renewable energy sector.

Technicians

Field technician

Control room operator

Civil technician

Science technician



Field technician



Use sophisticated tools to solve problems in real time on site.

Field technicians mostly work in operations and maintenance. They identify the root cause of an issue and then dismantle and repair components, replace faulty parts or adjust control settings to restore proper functionality to renewable energy infrastructure.

A few of the jobs you might be interested in:

INSTRUMENTATION TECHNICIAN

These technicians troubleshoot and repair electronics and instrumentation. For example, they install and calibrate electronic digital voltmeters, anemometers (measure the speed of wind), level sensors or flow meters to provide important information to control room operators.


What you should study: Certificate III in Instrumentation and Control, while a Certificate IV in Instrumentation and Control is advantageous. [Learn more](#)

TELECOMMUNICATIONS TECHNICIAN

These technicians usually work at lower voltage systems to manage and maintain telecommunications networks. They install the systems that enable control room operators to monitor conditions and control equipment remotely. For example, they support data-sharing such as volt measurements, wind logs, reservoir levels or water flow rates.

What you should study: Certificate III in Telecommunications Technology. [Learn more](#)

Where will you work?

 Site	✓
 Office	✓

What phase you will work in?

 Development	
 Construction	✓
 Operations & Maintenance	✓

Is this career right for you?

You are practical and enjoy troubleshooting and problem solving. You enjoy working outdoors. For some roles you need to be comfortable working at heights.

What should you study?

Certificate III and relevant post trade qualifications such as an Associate Degree, as required. Employers may also provide on-the-job training as you complete your qualification.

FOR MORE INFORMATION →



METERING TECHNICIAN

These technicians install, maintain, and calibrate smart meters and EV chargers. They are skilled in metering technologies and associated software. They contribute to energy efficiency initiatives through accurate measurement and analysis of electrical consumption.

What you should study: Certificate III in Electrotechnology. Advanced Diploma of ESI - Power Systems would be an advantage [Learn more](#)

PROTECTION TECHNICIAN

These technicians work on systems to detect when there is an outage in the electrical network or when there are faults. Working with protection infrastructure, they safeguard people and equipment against anything that may cause harm.

What you should study: Certificate III in Electrotechnology. Advanced Diploma of ESI - Power Systems or a Bachelor's degree in engineering would be an advantage. [Learn more](#)

SOLAR INSTALLATION TECHNICIAN

These technicians assemble, install and connect inverters and other components to create functional solar power systems. They could work on rooftops of homes and tall office towers, or in solar farms.

What you should study: Certificate III in Electrotechnology; a Diploma of Renewable Energy Engineering is advantageous. [Learn more](#)

ELECTRICAL DESIGNER

These designers prepare complex designs for electrical systems, such as distribution and transmission networks. These designs, and associated cost estimates, are used to enhance the electricity network by creating new components for the network as well as designing refurbishments of existing parts.

What you should study: Diploma of Electrical Engineering or Advanced Diploma of Engineering Technology – Electrical. [Learn more](#)



PROCESS PLANT TECHNICIAN

These technicians install and test process plant equipment such as pressure gauges and control valves in hydroelectric systems. They are also in high demand in hydrogen production and critical mineral processing.

What you should study: Certificate III in Process Plant Operation, with options to progress to a Certificate IV, Diploma or Advanced Diploma in Process Plant Technology. [Learn more](#)

WIND TURBINE TECHNICIAN

These technicians perform maintenance, diagnose faults and replace components inside wind turbine nacelles. The nacelle sits atop the tower and contains the gearbox, speed shafts, generator, and brake.

What you should study: Certificate III in ESI Generation, with the option to specialise in Certificate IV in Wind Power Generation. Further global wind organisation training would be an advantage. [Learn more](#)

BATTERY CELL ASSEMBLY TECHNICIAN

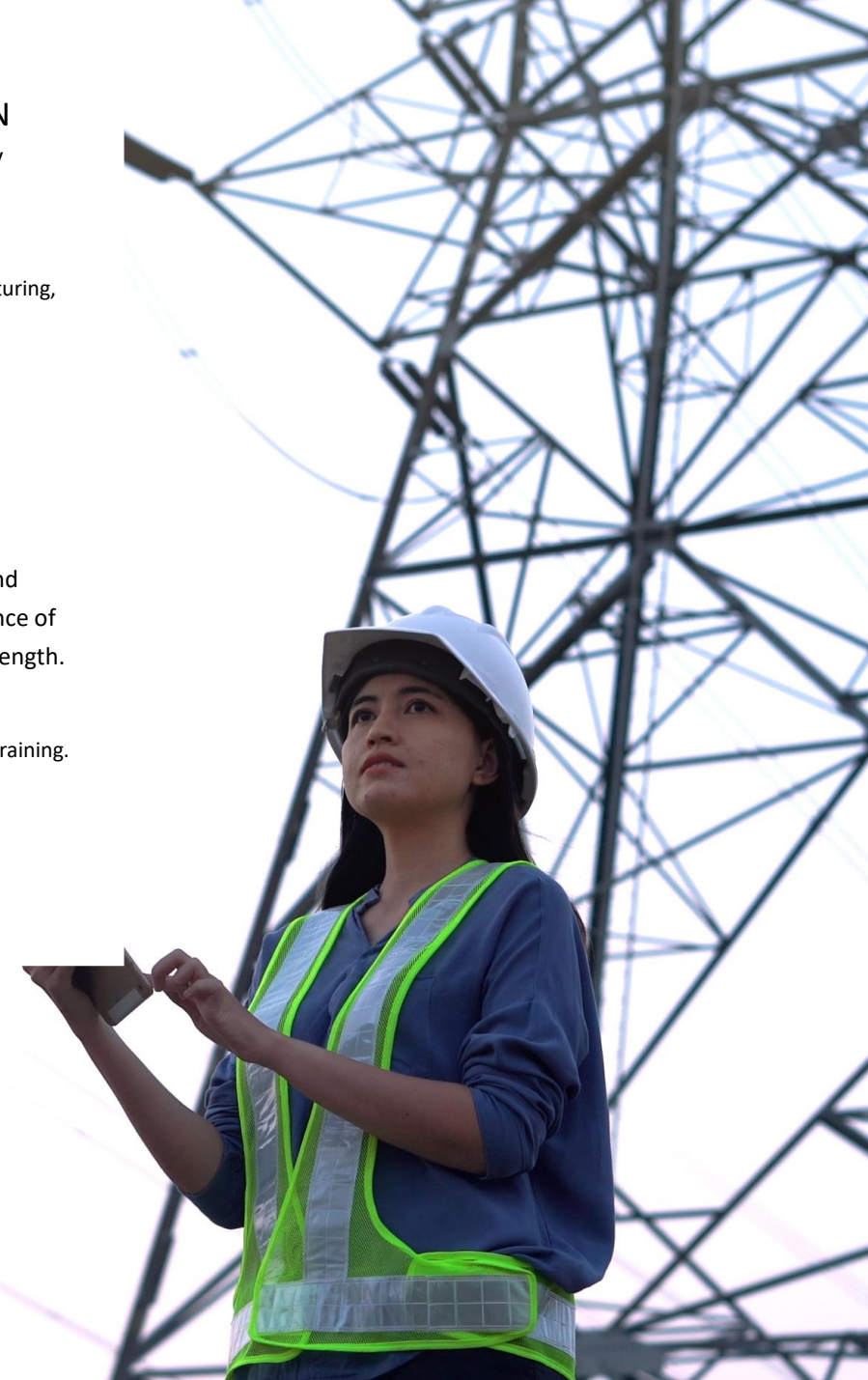
These technicians perform manual battery assembly tasks and operate a range of automated battery manufacturing equipment.

What you should study Certificate III in Process Manufacturing, with options to progress to a Certificate IV in Process Manufacturing or Diploma of Production Management. [Learn more](#)

WIND BLADE TECHNICIAN

These technicians repair and replace wind blades and nacelles. They inspect damage and ensure the balance of wind blades which range from 18 to 110 metres in length.

What you should study: Certificate III in Engineering – Composites Trades, along with global wind organisation training. [Learn more](#)



Control room operator



Remotely monitor and control electricity generation and flow across the future energy network.

Control room operators solve problems in real time. If renewable energy generation conditions change, equipment fails or a transmission line trips, they act instantaneously to keep the lights on for homes and businesses.

A few of the jobs you might be interested in:

POWER GENERATION PLANT OPERATOR

These operators monitor generation sites remotely from a centralised control room. For example, they curtail generation remotely by switching turbines off or adjust generation settings in solar farms when the network is oversupplied.

What you should study: Certificate III in the ESI Generation. A Certificate IV in ESI Generation or a Diploma of ESI Generation would be an advantage. [Learn more](#)

NETWORK OPERATOR

These operators oversee distribution and transmission networks, regulating electricity flow and maintaining grid stability.

What you should study: Certificate III in Electrotechnology. A Certificate IV in Energy Management and Control or a relevant diploma could be required for some roles. [Learn more](#)



PROCESS PLANT OPERATOR

These operators monitor process conditions and control flow rates remotely in pumped hydro plants. They are also in high demand for hydrogen production and critical mineral processing.




What you should study: Certificate III in Process Plant Operation. A Certificate IV, Diploma or Advanced Diploma in Process Plant Technology would be an advantage.

[Learn more](#)

Where will you work?

-  Site ✓
-  Office ✓

What phase you will work in?

-  Development
-  Construction
-  Operations & Maintenance ✓

Is this career right for you?

You enjoy managing people and problems in real time with strong resilience and the ability to make clear decisions.

What should you study?

Certificate III and relevant post trade qualifications, as required. Employers may also provide on-the-job training as you complete your qualification.

For more information

ESI GENERATION →

PROCESS PLANT OPERATIONS →



Civil technician



Support engineers and project managers to design and construct civil works such as dams, structures and pipe networks.

Using detailed drawings and measuring equipment, they ensure renewable energy infrastructure meet design and mandatory safety specifications.

A few of the jobs you might be interested in:

CIVIL ENGINEERING DRAFTSPERSON

A draftsman transforms concepts into blueprints, detailing how energy infrastructure, such as transmission lines, need to be laid out and built. Using computer-aided design (CAD) software, they produce technical drawings and help oversee the construction of civil structures.


What you should study: Certificate IV in Engineering Drafting. A Certificate III in ESI or Electrotechnology could be an advantage for many draftsman roles in renewable energy. [Learn more](#)

SURVEYING TECHNICIAN

These technicians support surveyors in measuring and mapping the characteristics and boundaries of land. For solar farms, for example, they analyse geospatial data, site plans and specifications to inform design teams where solar infrastructure is best positioned.

What you should study: Certificate III in Surveying and Spatial Information Services. [Learn more](#)

Where will you work?

-  Site ✓
-  Office ✓

What phase you will work in?

-  Development ✓
-  Construction ✓
-  Operations & Maintenance ✓

Is this career right for you?

You like the diversity of working indoors and on site. You enjoy drafting and interpreting engineering drawings.

What should you study?

Some roles require a Certificate III qualification, whereas others would require a relevant Diploma or Advanced Diploma in Civil Construction or Design.

FOR MORE INFORMATION →



GEOTECHNICAL TECHNICIAN

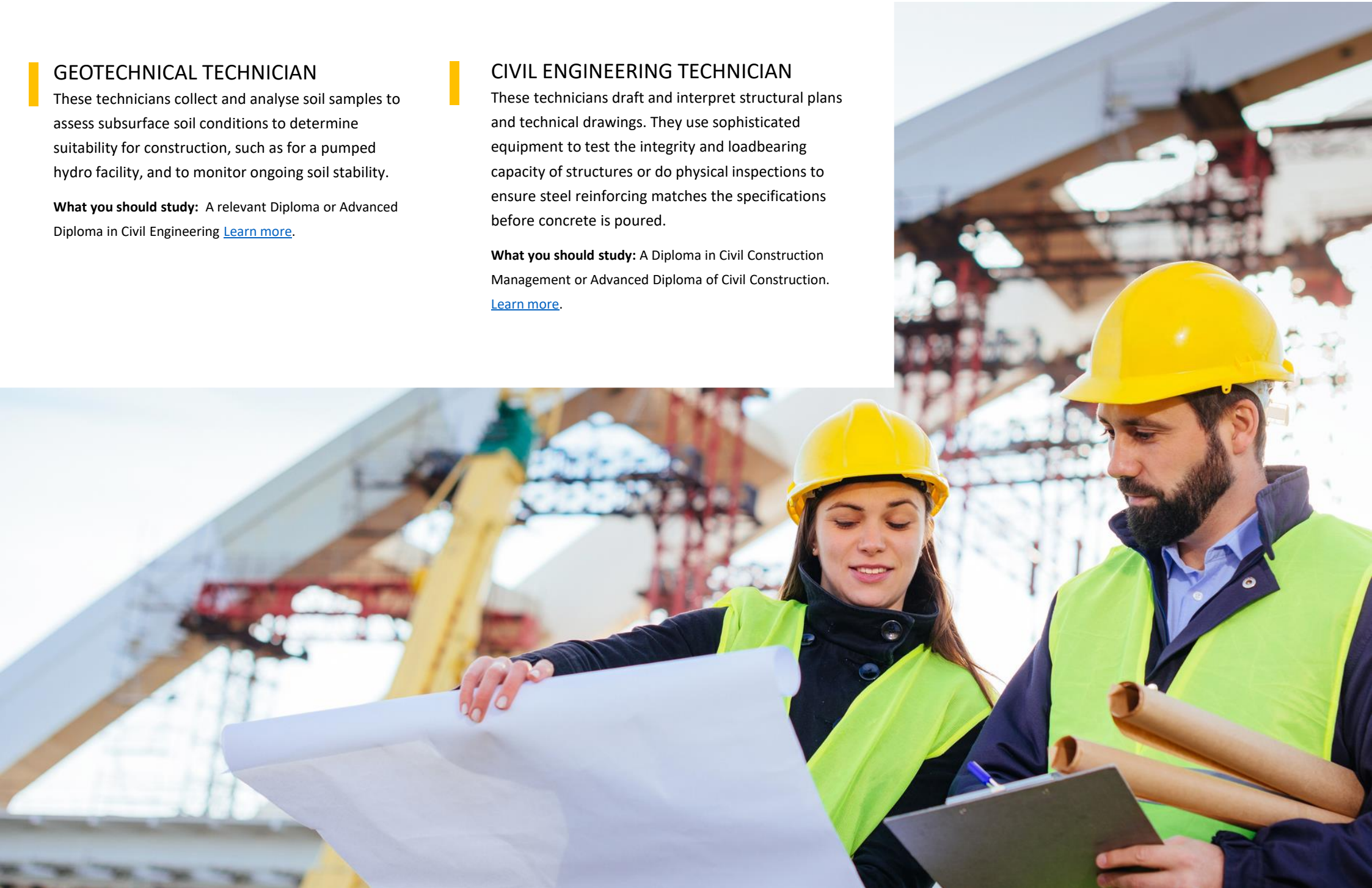
These technicians collect and analyse soil samples to assess subsurface soil conditions to determine suitability for construction, such as for a pumped hydro facility, and to monitor ongoing soil stability.

What you should study: A relevant Diploma or Advanced Diploma in Civil Engineering [Learn more](#).

CIVIL ENGINEERING TECHNICIAN

These technicians draft and interpret structural plans and technical drawings. They use sophisticated equipment to test the integrity and loadbearing capacity of structures or do physical inspections to ensure steel reinforcing matches the specifications before concrete is poured.

What you should study: A Diploma in Civil Construction Management or Advanced Diploma of Civil Construction. [Learn more](#).



Science technician



Perform experiments to support renewable energy research, design and development.

From analysing the power capacity potential of batteries to designing efficient recycling systems, science technicians are critical to optimising and advancing Queensland's energy future.

A few of the jobs you might be interested in:

LABORATORY TECHNICAL OFFICER

Laboratory technicians prepare materials for experimentation, calibrate and maintain test equipment and conduct field and laboratory experiments. They support scientists and engineers to develop new battery technologies, recycle solar panels, manufacture wind blades and analyse soil samples.



What you should study: Certificate IV in Laboratory Techniques and/or a Diploma of Laboratory Technology. [Learn more](#)

EARTH SCIENCE TECHNICAL OFFICER




These technical officers collect and test water and soil samples. They record observations and analyse data to support of Geologists or Geophysicists.

What you should study: Diploma of Environmental Monitoring and Technology. [Learn more](#)

Where will you work?

-  Site ✓
-  Office ✓

What phase you will work in?

-  Development ✓
-  Construction ✓
-  Operations & Maintenance ✓

Is this career right for you?

You are interested in a career in science, doing experiments to better understand the world.

What should you study?

A Bachelor of Science allows you to work in science-related roles across the energy system. Alternatively, you can complete a Certificate as an entry qualification, such as a Certificate III in Laboratory Skills.

FOR MORE INFORMATION →



Engineers

apply science and mathematics to solve future energy challenges

What do engineers do?

Engineers use science and mathematics to develop practical solutions to complex problems and deliver results that have a real impact on the world, including contributing to a renewable energy future.

Is this career right for you?

If you are an analytical thinker who loves solving big problems, then being an engineer in future energy could be an exciting career for you. A wide variety of engineers are needed to meet future energy needs. When deciding which one is right for you, consider your interests and aptitude, and the environment you want to work in.

How can you get into this career?

You need a Bachelor of Engineering. Most Queensland universities offer electrical, civil, mechanical, chemical and software engineering qualifications. Subject selections usually allow you to tailor your degree. Some universities offer engineering degrees more targeted at future energy by combining subjects from different engineering disciplines. If you already hold a relevant Diploma or Advanced Diploma, you can work as an engineering technician while you study towards a Bachelor's degree. You will gain industry experience and earn a good salary while your qualification could count towards completing a Bachelor's degree. You must also apply to become a Registered Professional Engineer Queensland (RPEQ) to comply with industry standards.

The clean energy sector needs qualified and experienced engineers.

Engineers will be one of the most in demand occupations during the energy transformation. If you are considering a career change then the jobs in this guide presents some of the opportunities available to you. Read through the roles in the guide, find what sparks your interest and follow the link at the bottom of each job profile to learn more.

There are so many great jobs that we cannot list them all, but this guide presents a range of engineering roles on offer within the renewable energy sector.

Engineers

Electrical engineer

Civil engineer

Mechanical engineer

Chemical engineer

Software engineer



Electrical engineer



Find solutions to the hardest challenges in our electricity system and help grow the renewable energy future.

Electrical engineers design our future energy system. They also oversee construction and play a crucial role in the ongoing operation and maintenance of electrical infrastructure.

As a qualified electrical engineer, you could do many different jobs across renewable energy:



TRANSMISSION SYSTEM ENGINEER

These engineers design high voltage networks, including transformers, transmission cables and safety systems, using sophisticated design software. Transmission networks are becoming increasingly complex due to renewable energy technology generating electricity intermittently, and more generation facilities being added to the grid.

DISTRIBUTION NETWORK ENGINEER

These engineers optimise and maintain the distribution networks that deliver power to homes and businesses. They design systems to integrate energy resources such as rooftop solar and battery storage into distribution networks to keep supply affordable and reliable.

Where will you work?

-  Site ✓
-  Office ✓

What phase you will work in?

-  Development ✓
-  Construction ✓
-  Operations & Maintenance ✓

Is this career right for you?

You are curious and creative with an analytical mindset. You are strong at maths, science and physics and computer literate.

What should you study?

A Bachelor of Electrical Engineering.

FOR MORE INFORMATION →



BATTERY INSTALLATION ENGINEER

These engineers design and support installation for large-scale and community batteries. They connect battery storage to the grid to provide firming power during periods of low renewable energy generation.

COMMISSIONING ENGINEER

These engineers bring new facilities on-line. For example, on a solar farm they test individual panels and verify performance before it becomes fully functional. They often progress to operational roles, while others may re-locate to work on the next project under development.

CONTROL SYSTEM ENGINEER

These engineers design automated control systems to regulate electricity generation and storage to optimise grid performance. This includes developing demand management algorithms that can reduce household energy bills.

HYDROELECTRIC ENGINEER

These engineers design hydroelectric facilities and integrate them into the grid. They install and maintain hydroelectric turbines, power lines, substations and hydroelectric control systems.

GRID CONNECTION ENGINEER

These engineers use dynamic simulation models to understand how new renewable connections will impact the network and National Energy Market. Results are used to design the electrical systems and components which are required to connect windfarms, solar farms and backup battery storage safely to the grid.

RENEWABLE ENERGY ENGINEER

These engineers combine electrical, mechanical and chemical engineering principles to explore renewable energy technologies. Not only do renewable energy engineers focus on solar and wind farm developments, but they also develop solar thermal systems and biomass facilities and increase energy efficiency.

"It's nice to be able to work in an industry that is a key contributor to Australia's emerging renewable energy economy, help our country meeting its Paris agreements and to provide much needed renewable power to Queenslanders."

Baxter, Electrical Project Engineer,
ACCIONA Energía.



Civil engineer



Design and deliver the renewable infrastructure needed to transform our energy system.

Civil engineers design and construct large renewable energy infrastructure that will power our world into the future.

As a qualified civil engineer, you could do many different jobs across renewable energy:

STRUCTURAL ENGINEER

These engineers design critical infrastructure, including dam walls, water inlets, pressure tunnels, penstocks, powerhouses and turbines for hydroelectric facilities. They use mathematical calculations, computer simulations and engineering principles to ensure infrastructure can withstand gravity, wind, water or even earthquakes.



GEOTECHNICAL ENGINEER

These engineers assess ground conditions of future energy generation and storage sites and transmission corridors to determine whether the ground can withstand the pressures of construction. This requires examining geotechnical suitability, topography, soil conditions and environmental impact.




TUNNELLING ENGINEER

These engineers specialise in tunnel design and construction. In pumped hydropower schemes, tunnels allow water to transfer between reservoirs. Tunnels are constructed using specialised drilling and construction equipment.

Where will you work?

-  Site ✓
-  Office ✓

What phase you will work in?

-  Development ✓
-  Construction ✓
-  Operations & Maintenance ✓

Is this career right for you?

You want to combine technical knowledge with creative design to help build renewable infrastructure from the ground up.

What should you study?

Bachelor of Civil Engineering.

FOR MORE INFORMATION 



ENVIRONMENTAL ENGINEER

These engineers minimise the impact on ecosystems of infrastructure projects such as hydroelectric schemes and generation facilities. They use the principles of engineering, soil science, biology and chemistry to develop solutions to environmental problems.

CONSTRUCTION PROJECT MANAGER

These professionals manage infrastructure construction. They develop and execute project plans to ensure that equipment and material arrives on time, tasks are co-ordinated, and construction teams know what to deliver. Not all project managers are engineers, however, many civil engineers become project managers. Project managers should be familiar with engineering principles and require a high degree of industry knowledge and skills.

“I studied engineering at university and later completed a Master in Business Administration in addition to a Diploma in Project Management. Over the course of my career, I’ve worked across many different sectors and have had a variety of different roles. My transferable skills, natural curiosity and a desire to be part of the energy transition helped me make the change across sectors and roles.”



Mechanical engineer



Produce renewable energy more efficiently through improved designs and technologies.

Mechanical engineers improve renewable technologies through better designs that make it more efficient to procure, store and distribute renewable energy.

As a qualified mechanical engineer, you could do many different jobs across renewable energy:

MECHANICAL DESIGN ENGINEER

These engineers design turbines, blades, compressors and control valves – critical components used in wind farms and hydroelectric facilities. They reduce the environmental impact and cost of renewable energy by designing more efficient turbines.



MANUFACTURING ENGINEER

These engineers find ways to produce renewable energy components more efficiently. They also work with materials engineers to develop commercial processes to recycle old batteries and solar plants.




COMPOSITE ENGINEER

Composites engineers develop materials with superior, engineered properties. Materials that are light weight, strong and durable are perfect for use in wind blades.

Where will you work?

-  Site
-  Office

What phase you will work in?

-  Development
-  Construction
-  Operations & Maintenance

Is this career right for you?

You love to analyse objects and systems in motion. You want to use knowledge of maths and physics to create machines and tools that are more efficient and safer.

What should you study?

Bachelor of Mechanical Engineering.

FOR MORE INFORMATION 



Chemical engineer



Make renewable energy more affordable through improved chemical processes and equipment design.

Hydroelectric industries and battery manufacturing offer many exciting career opportunities for chemical engineers, who are also in high demand in adjacent industries such as hydrogen, biogas and critical mineral processing.

As a qualified electrical engineer, you could do many different jobs across renewable energy:

PROCESS ENGINEER

These engineers develop and optimise industrial processes. In hydroelectric plants, they design equipment such as tanks, pumps, valves, pipes and control systems to operate the plant safely at the required pressure and temperatures.

PROJECT DEVELOPMENT ENGINEER



These engineers commercialise industrial processes by making them efficient and cost effective. For example, in battery manufacturing, they collect process data to determine the best reactor configuration and operating conditions for the design of an industrial facility.

MATERIALS ENGINEER

These engineers combine chemical engineering and mechanical engineering to design facilities to recycle solar panels and spent batteries. Batteries comprise several metals and minerals. Materials engineers specialise in batteries' recovery and re-use, minimising the waste from future energy that ends in landfill.

Note: You could also study a Bachelor's degree in [Mechanical Engineering](#), specialising in materials engineering.

Where will you work?

-  Site ✓
-  Office ✓

What phase you will work in?

-  Development ✓
-  Construction ✓
-  Operations & Maintenance ✓

Is this career right for you?

You are interested in the practical application of science maths and chemistry. You want to design processes to transform raw materials into finished products.

What should you study?

Bachelor of Chemical Engineering.

FOR MORE INFORMATION →



“If you’re thinking about a career in STEM already, your mind is in the right place. There’s going to be lots of new opportunities in the future energy space, with an equal number of challenges, so keep an open mind!”

Hayden Cartmill, Growth and Future Energy Graduate, Stanwell Corporation



Software engineer



Develop, test and apply computer programs to meet big challenges.

The technical sophistication of future energy systems means software – and the professionals who work with it – are essential to the electricity network.

As a qualified software engineer, you could do many different jobs across renewable energy:

SOFTWARE ENGINEER

Software engineers design and maintain software solutions to automate processes and manage data. Software engineers in renewable energy develop demand side management tools that interact with smart meters in homes and determine when to charge or draw down batteries. They also develop energy trading platforms to allow traders to buy and sell energy in real time.

SCADA ENGINEER

SCADA (supervisory control and data acquisition) engineers develop software and hardware for real-time data capture, control and visualisation. They ensure seamless communication between the future energy systems and the operators overseeing performance of plants, like wind farms.


Note: You could also study a Bachelor's degree specialising in either [Electrical Engineering](#) or [Electronics Engineering](#).

AUTOMATION ENGINEER

These engineers combine electrical engineering, mechanical engineering and computer science to automate renewable generation controls. For example, they design wind tower control systems so blades can respond to changing wind conditions to maintain a steady electricity supply.

Note: You could also study a Bachelor's degree in either [Electrical Engineering](#) or [Mechanical Engineering](#).

Where will you work?

-  Site ✓
-  Office ✓

What phase you will work in?

-  Development ✓
-  Construction ✓
-  Operations & Maintenance ✓

Is this career right for you?

You spend a lot of time with computers (gaming might be a hobby), understand coding and enjoy learning programming languages.

What should you study?

Bachelor of Software Engineering.

FOR MORE INFORMATION →



Science and technology professionals

bring smart scientific solutions to future energy projects

What do science and technology professionals do?

Science and technology professionals bring specialist knowledge to analyse and respond to a range of challenges. From developing software to managing the environment around us, many science professionals will be needed to design, build and optimise our future energy infrastructure while protecting the environment.

Is this career right for you?

Future energy will require a diverse range of science and technology professionals. This guide could help you understand the different disciplines and the type of work you could do. You should consider your interests, aptitude and the environment you would like to work in.

How can you get into this career?

Most science and technology professionals require formal qualifications usually in higher education, supplemented with on-the-job experience.

The clean energy sector needs qualified and experienced science and technology professionals.

If you are considering a career change, this section presents some of the job opportunities in science and technology. Read through the roles, find what sparks your interest and follow the link at the bottom of each job profile to learn more.

There are so many great jobs that we cannot list them all, but this guide presents a range of science and technology roles on offer within the renewable energy sector.

Science and technology professionals

Software professional

Surveyor

Environmental scientist

Natural and physical scientist



Software professional



Design, analyse and apply software solutions to understand and control the electricity network.

Software professionals develop applications to analyse network performance, forecast supply and demand and optimise operations.

A few of the jobs you might be interested in:

DATA ANALYST

Data analysts utilise data to gather insights into performance, improvements and inefficiencies. They analyse data output from electronic measuring devices in networks to monitor performance and identify trends.

What you should study: Bachelor of Computer Science, Information Technology or a related field.

SYSTEMS ARCHITECT

Systems architects design and implement complex software systems and applications. They define the scope, structure, work-flow and quality of new software applications, and ensure that solutions are aligned with the business requirements.

What you should study: Bachelor of Computer Science, Information Technology or a related field. [Learn more](#)

Where will you work?



Site



Office



What phase you will work in?



Development



Construction



Operations & Maintenance



Is this career right for you?

You spend a lot of time using technology and computers and enjoy working with data.

What should you study?

Some roles require relevant Diploma or Advanced Diploma. However, a Bachelor of Computer Science, Information Technology or a related field would be an advantage.

FOR MORE INFORMATION →



NETWORK ADMINISTRATOR

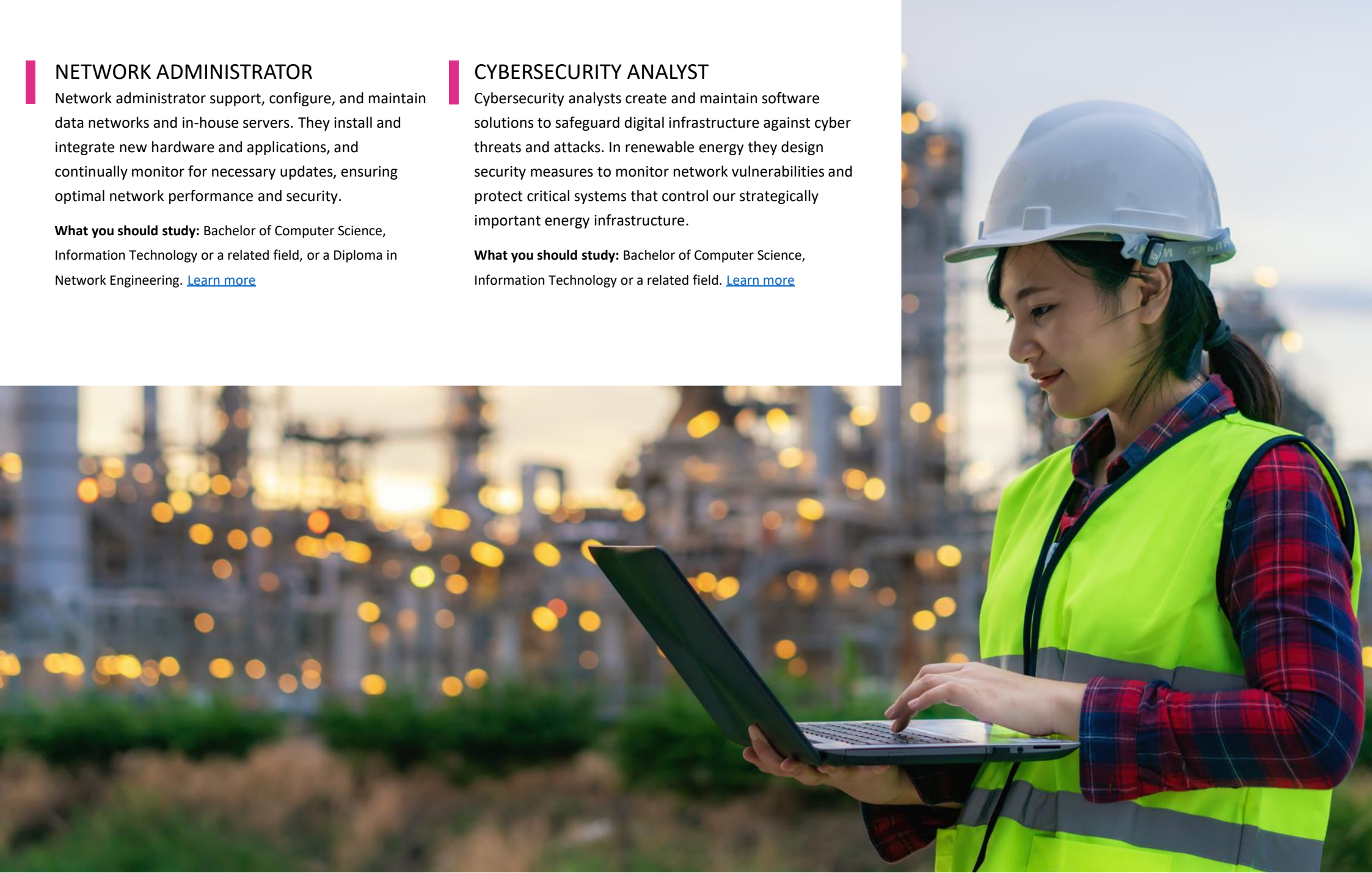
Network administrator support, configure, and maintain data networks and in-house servers. They install and integrate new hardware and applications, and continually monitor for necessary updates, ensuring optimal network performance and security.

What you should study: Bachelor of Computer Science, Information Technology or a related field, or a Diploma in Network Engineering. [Learn more](#)

CYBERSECURITY ANALYST

Cybersecurity analysts create and maintain software solutions to safeguard digital infrastructure against cyber threats and attacks. In renewable energy they design security measures to monitor network vulnerabilities and protect critical systems that control our strategically important energy infrastructure.

What you should study: Bachelor of Computer Science, Information Technology or a related field. [Learn more](#)



Surveyor



Measure and map the Earth's surface to determine the exact locations of features such as underground rivers and topography.

Using specialised equipment and techniques, surveyors gather data and information on the shape of the land to support the construction and layout of future energy infrastructure.

As a qualified surveyor, you could do many different jobs across renewable energy:

SITE ANALYSIS SURVEYOR

These surveyors analyse data on terrain, topography and other land features to evaluate the suitability of a site for future energy installations. From assessing an area's slope, orientation and sun exposure to determining the optimal placement of solar panels, they focus on maximising energy generation.



CONSTRUCTION SITE SURVEYOR

These surveyors lay out markers on the ground to ensure accurate positioning of equipment, foundations, and other construction components. They ensure complex infrastructure, such as transmission lines, are built to the specified design coordinates.



HYDROGRAPHIC SURVEYOR

These surveyors analyse bodies of water for future energy systems powered by water, such as pumped hydro facilities. Hydrographic surveyors use specialised equipment to measure water depths, evaluate underwater landforms and understand complexities of the underwater floor.

Where will you work?

-  Site
-  Office

What phase you will work in?

-  Development
-  Construction
-  Operations & Maintenance

Is this career right for you?

You want a mix of office and field work, enjoy working with computers, and have great spatial awareness and attention to detail.

What should you study?

Bachelor of Surveying or Spatial Science. You could also complete a Diploma of Surveying as a stepping stone before completing your Bachelor's degree.

FOR MORE INFORMATION 



Environmental scientist



Protect natural resources, ecosystems and biodiversity on the land used by future energy systems.

From helping developers identify environmental risks to promoting sustainable practices such as waste reduction, environmental managers are critical to maintaining the “future” in future energy.

A few of the jobs you might be interested in:

ECOLOGIST

Ecologists study the relationship between plants, animals and their environment. They collect and analyse data to assess the impacts future energy systems have on wildlife and natural resources. They work to minimise environmental damage, conserve species, design more sustainable practices and advise organisations on ecological policies.



What you should study: Bachelor of Science. Common major subjects include biology, zoology, botany and environmental science. [Learn more](#)

ENVIRONMENTAL RESEARCH SCIENTIST




These scientists assess the impact of human activity, including large infrastructure projects, on the environment. Research areas include the impact of distribution lines or wind turbines on bird populations or land degradation due to construction activities. They seek to understand what the impact of activities have on the environment and how can we strive to be more environmentally aware.

What you should study: Bachelor of Environmental Science. [Learn more](#)

Where will you work?

-  Site ✓
-  Office ✓

What phase you will work in?

-  Development ✓
-  Construction ✓
-  Operations & Maintenance ✓

Is this career right for you?

You love biological sciences and want to preserve our biodiversity and natural environment.

What should you study?

Bachelor of Science. Common major subjects include biology, zoology, botany and environmental science.

FOR MORE INFORMATION →



CONSERVATION OFFICER

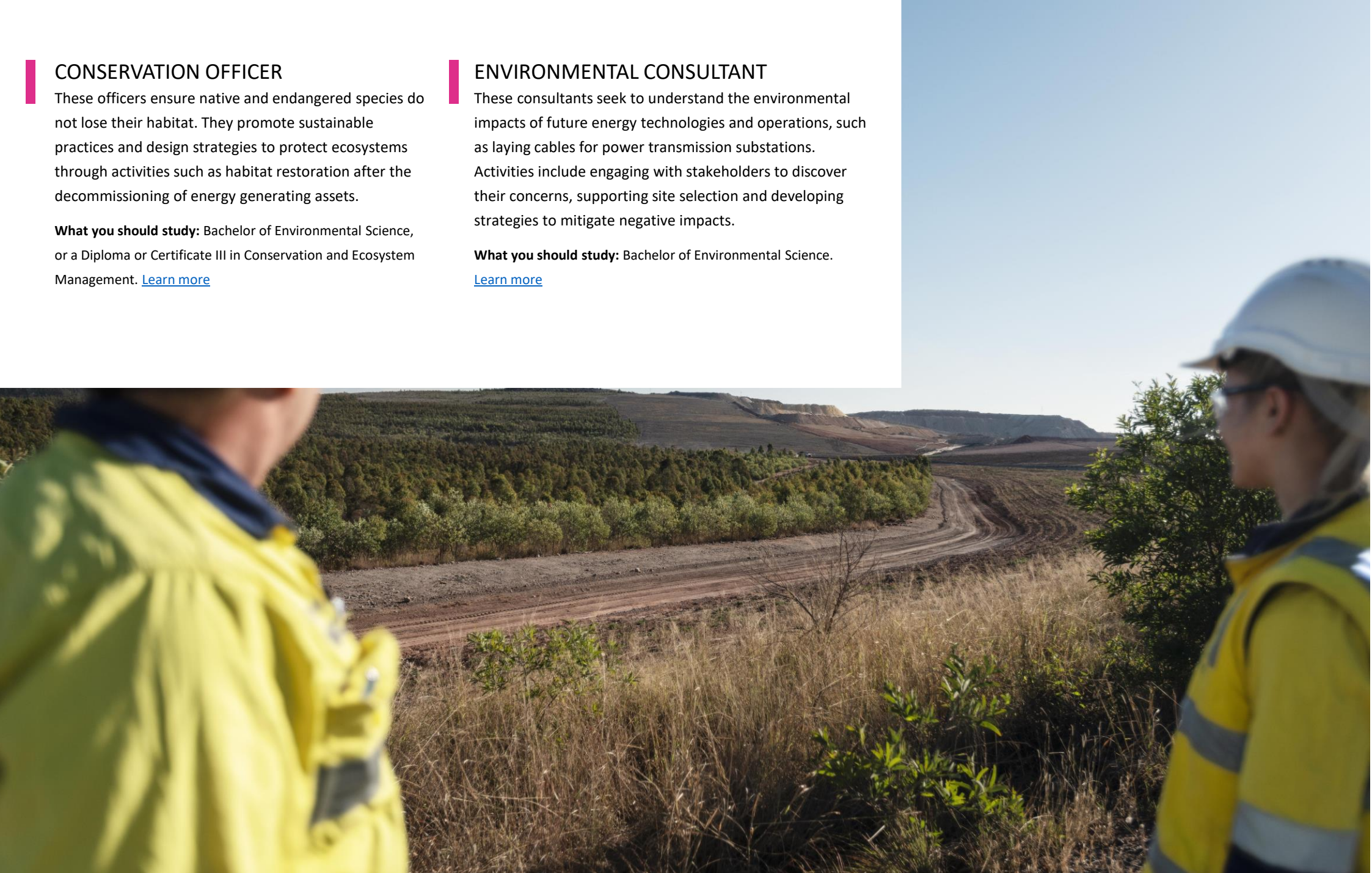
These officers ensure native and endangered species do not lose their habitat. They promote sustainable practices and design strategies to protect ecosystems through activities such as habitat restoration after the decommissioning of energy generating assets.

What you should study: Bachelor of Environmental Science, or a Diploma or Certificate III in Conservation and Ecosystem Management. [Learn more](#)

ENVIRONMENTAL CONSULTANT

These consultants seek to understand the environmental impacts of future energy technologies and operations, such as laying cables for power transmission substations. Activities include engaging with stakeholders to discover their concerns, supporting site selection and developing strategies to mitigate negative impacts.

What you should study: Bachelor of Environmental Science. [Learn more](#)



Natural and physical scientist



Analyse the physical world to understand how to best interact with it.

By conducting research, analysing data and defining scientific insights and solutions, natural and physical scientists ensure that renewable energy is sustainable and effective.

A few of the jobs you might be interested in:

CHEMIST

Chemists conduct experiments in labs to analyse substances and determine their reactive properties to develop new products or improve existing ones. Working on battery storage technology, they help achieve better performance, lifespans and safety measures. They analyse cell degradation and help develop hybridised materials.

What you should study: Bachelor of Science (Chemistry). [Learn more](#)

METEOROLOGIST

Meteorologists use knowledge of weather and climate change to optimise energy production for systems such as solar farms. They analyse weather conditions, model potential energy production, and ensure that power generation is prepared for changes in climate and weather.

What you should study: Bachelor of Science (Atmospheric Science). [Learn more](#)

Where will you work?

- Site
- Office

What phase you will work in?

- Development
- Construction
- Operations & Maintenance

Is this career right for you?

You are curious about the natural environment around you. You would want to better understand the world and how to work through observations and experiments.

What should you study?

Bachelor of Science, majoring in your field of interest.

FOR MORE INFORMATION 



GEOLOGIST

Geologists understand the Earth's structure to identify the best locations for energy production and to mitigate geological risks such as earthquakes. Using geological analysis, resource assessment and risk planning, they identify reliable bases for facilities such as wind farms.

What you should study: Bachelor of Science (Geology).

[Learn more](#)

HYDROGEOLOGIST

Hydrogeologists analyse the Earth's waterflow data to understand distribution and evaluate the availability of water for systems like pumped hydro. They also assess sites to understand the potential for land erosion from underground water reservoirs.

What you should study: Bachelor of Science (Environmental Science or Geology). [Learn more](#)

GEOPHYSICIST

Geophysicists study the Earth's surface to provide insights on site development and maintenance. For transmission towers, for instance, they evaluate seismic activity and geospatial data to understand system stability and design.

What you should study: Bachelor of Science (Geophysics or Geoscience). [Learn more](#)

FLUVIAL GEOMORPHOLOGIST

Fluvial geomorphologists study the flow of rivers and their dynamics to assist in selecting sites for pumped hydro plants. They analyse river channel sediment transport and behaviour, evaluating effects on river ecosystems and biodiversity.

What you should study: Bachelor of Science (Geology). [Learn more](#)



Corporate roles

enable the success of renewable energy projects

What do people in corporate roles do?

Many corporate roles are needed to plan activities, oversee finances, ensure compliance with regulations, and care for employees, customers and the community. There are opportunities to move between different corporate roles as you gain experience and build your career in the renewable energy sector.

Is a corporate role the right career for you?

Corporate roles involve working as part of a big team with a diverse array of skills. The roles are usually based in offices in cities and regional centres, but often involve visits to project sites. Working in corporate roles in the renewable energy sector is a great opportunity to have a positive impact on the environment and economy.

How can you get into this career?

Some corporate roles require a Bachelor's degree while others need a VET qualification or industry experience. If you study and gain experience in what captures your imagination, there is a great chance you will be able to work in renewable energy. People who have performed corporate roles in other industries, or have trade or technical experience, could find many opportunities to transition into roles in renewable energy.

The clean energy sector needs qualified and experienced workers with corporate or industry experience.

If you are an experienced professional looking to work in a renewable energy organisation, your skillset could be transferrable. You will learn all about Queensland's future energy sector through performing your new role and from colleagues and supervisors.

There are so many great jobs that we cannot list them all, but this guide presents a range of corporate roles on offer within the renewable energy sector.

Corporate roles

Commercial
Strategy and planning

Community engagement
Marketing and digital

Workplace health and safety
Human resources

Finance and contracts
Governance, legal, regulatory
and compliance



Corporate roles



COMMERCIAL

Commercial teams trade electricity to match supply with the needs of users.

The team sells electricity to achieve the best possible price. Electricity is instantaneous, and supply and demand fluctuate across the day. When there are more buyers than sellers, the price for electricity will go up. The commercial team executes energy sales through a mix of negotiated term contracts and spot deals. They continuously monitor their energy portfolio to ensure supply balances demand.

Roles you may be interested in:

Deal originator

Contracts manager

Energy trader

Sales planning analyst

STRATEGY AND PLANNING

The strategy and planning team aligns business performance with external influences and evolving market conditions.

The team shapes the direction for the business. It works with the marketing team and renewable engineers to forecast production and sales volumes many years into the future. It sets business targets and evaluates and prioritises investment decisions.

Roles you may be interested in:

Strategy and business development analyst

Energy economist

Production planning analyst

Performance analyst



Corporate roles



COMMUNITY ENGAGEMENT

The community engagement team supports delivery of renewable energy projects that align with community expectations.

Landowners and the community play a vital role in planning and delivering renewable energy projects. The team engages with communities to understand and act on their concerns. This is particularly critical when working with Indigenous communities to negotiate land use in the transition to renewables. The team helps communities and energy providers work together to benefit both parties and minimise negative impacts.

Roles you may be interested in:

Community engagement officer

Land access officer

Indigenous engagement advisor

Public relations advisor

DIGITAL AND MARKETING

The digital and marketing team uses strategic communication and design to garner support, interest and investment for renewable energy projects, spanning from local communities to government.

The team creates awareness in renewable energy to educate stakeholders and community representatives and promote renewable energy projects. Through strategic campaigns, digital platforms, and content, they engage audiences, drive support, and shape positive perceptions of renewable technologies. Their efforts attract talent and investment while also inspiring public support.

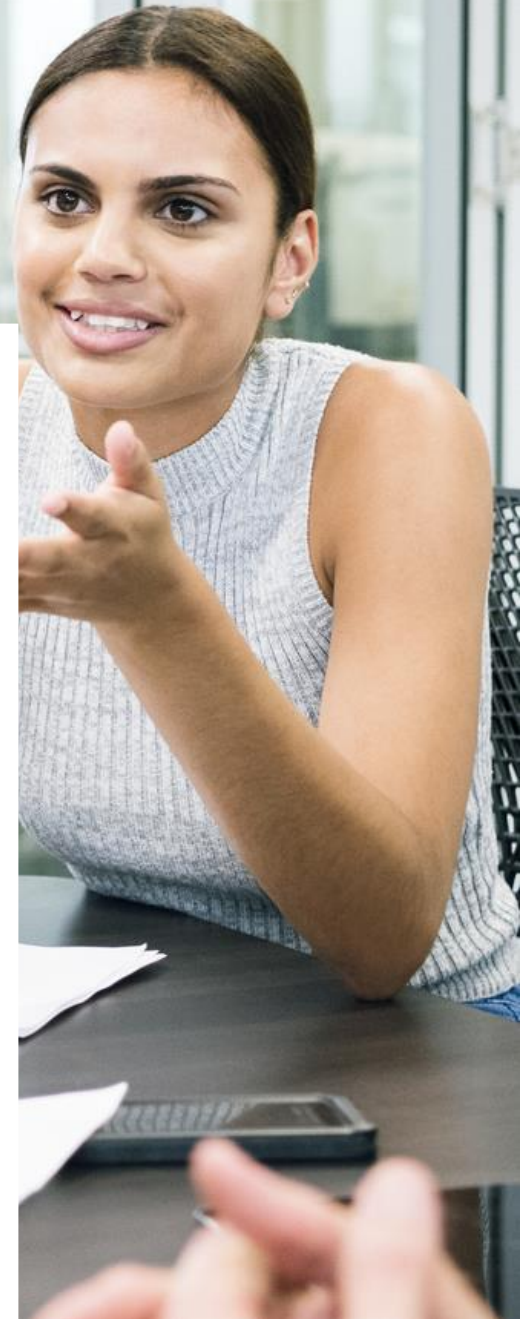
Roles you may be interested in:

Campaign director

Media advisor

Brand strategist

Web publisher



Corporate roles



WORKPLACE HEALTH AND SAFETY

The workplace health and safety (WHS) team ensures health and safety is embedded across the organisation.

The team implements safety management systems to minimise the risks in the workplace, ensure work health and safety issues are dealt with fairly, and help businesses and workers achieve a healthier and safer working environment.

Roles you may be interested in:

Occupational health and safety practitioner

Safety coordinator

Health and first aid officer

WHS educational officer

HUMAN RESOURCES

The human resources team sources the right talent to get the job done for all types of renewable energy projects.

The team leads hiring and onboarding new staff, overseeing performance reviews, developing shift rosters and negotiating employee benefits in the workplace.

Roles you may be interested in:

Talent acquisition consultant

Training and development officer

Industrial relations advisor

Rostering manager



Corporate roles



FINANCE AND CONTRACTS

The finance and contracts team manages the finances for the organisation and procures contractors and the raw materials to build and run renewable energy systems.

The finance team sets and manages budgets and ensures the business generates funds to operate and grow.

The procurement team acquires resources, equipment and services for renewable energy project implementation and operation. The team ensures cost-efficient sourcing, vendor partnerships and adherence to budget constraints.

Roles you may be interested in:

Financial accountant

Quantity surveyor

Procurement officer

Payroll administrator

GOVERNANCE, LEGAL, REGULATORY AND COMPLIANCE

The governance, legal, regulatory and compliance team ensures renewable energy projects meet their requirements and eliminates obstacles on the path to net zero.

The team navigates complex legal frameworks so that regulations are adhered to, and risks are mitigated.

By providing strategic guidance and maintaining ethical and legal standards, the team assists in securing permits, managing environmental compliance, and addressing contractual obligations.

Roles you may be interested in:

Commercial lawyer

Compliance officer

Risk officer

Governance officer



Education, training and development

The people designing, building and maintaining future energy infrastructure will need training in a wide array of specialist skills. Who better to train these workers than those who have had experience working in the field?

Training the workforce of the future is a rewarding career move for people with practical experience and expertise that they want to pass on. There are many opportunities to teach through universities, registered training organisations or within industry. Depending on the area of expertise, trainers may be teaching in the classroom or in the field.

There are two formal training pathways to gain teaching expertise:

- [Certificate IV in Training and Assessment](#)
- Bachelor of Adult and Vocational Education

I completed studies in Instrumentation and Electrical (I&E), and then received my Red Seal Certification in both trades. During this time, I had the opportunity to work in a variety of industries including power generation, and water treatment and finally ending in the oil and gas sector which allowed me to grow not only as a field level technician, but into other roles, such as an I&E lead, and a supervisor for various projects.







After 15 years in industry, I made the move to an educational role with CQUniversity. This has not only allowed me to continue my passion of helping others in the trade and build on my own knowledge in the field of control systems, I've also been able to work on various other certificates such as a Diploma of Leadership and Management, and my Master of Business Administration.







Lance Chorneyko – Teacher Electrical/Instrumentation









Roles by future energy technologies

Here's a list of all the future energy jobs included in the guide. There are opportunities to work across all technologies for every job category that are key to Queensland's renewable energy future.

Electrical trades						
General electrician						
Residential electrician	✓	✓	✓	✓		
Commercial electrician	✓	✓	✓	✓		
Industrial electrician	✓	✓	✓	✓		
Generation trades worker						
Commissioning electrician	✓	✓	✓	✓		
Power plant electrician	✓	✓	✓	✓		
Distribution trades worker						
Technical cable jointer						✓
Overhead linesperson						✓
Grid connection electrician						✓
Transmission trades worker						
Transmission linesperson					✓	
High voltage linesperson					✓	
High voltage substation electrician					✓	

Construction roles						
Construction occupations						
Scaffolder	✓	✓	✓	✓	✓	✓
Rigger		✓	✓		✓	✓
Form worker	✓	✓	✓	✓	✓	✓
Steel fixer	✓	✓	✓	✓	✓	✓
Concreteur	✓	✓	✓	✓	✓	✓
Machinery operators						
Earthmoving plant operator	✓	✓	✓	✓	✓	✓
Paving plant operator	✓	✓	✓	✓	✓	✓
Crane operator	✓	✓	✓	✓	✓	✓
Elevated work platform operator		✓	✓	✓	✓	✓
Construction trades						
Plumber			✓			
Carpenter	✓	✓	✓	✓	✓	✓
Mechanical and fabrication trades						
Welder	✓	✓	✓	✓	✓	✓
Engineering machinist	✓	✓	✓	✓	✓	✓
Metal fabricator (boilermaker)	✓	✓	✓	✓	✓	✓
Mechanical fitter	✓	✓	✓	✓	✓	✓
Sheet metal trades worker	✓	✓	✓	✓	✓	✓
Pipefitter			✓	✓		

Technicians						
Field technician						
Instrumentation technician	✓	✓	✓	✓	✓	✓
Telecommunications technician	✓	✓	✓	✓	✓	✓
Metering technician	✓	✓	✓	✓	✓	✓
Solar installation technician	✓					
Protection technician	✓	✓	✓	✓	✓	✓
Electrical designer	✓	✓	✓	✓	✓	✓
Process plant technician			✓	✓		
Battery cell assembly technician				✓		
Wind turbine technician		✓				
Wind blade technician		✓				
Control room operator						
Power generation plant operator	✓	✓	✓			
Network operator					✓	✓
Process plant operator			✓	✓		
Civil technician						
Civil engineering draftsperson	✓	✓	✓	✓	✓	✓
Surveying technician	✓	✓	✓	✓	✓	✓
Geotechnical technician	✓	✓	✓	✓	✓	✓
Civil engineering technician	✓	✓	✓	✓	✓	✓
Science technician						
Laboratory technical officer	✓	✓	✓	✓		
Earth science technical officer	✓	✓	✓	✓	✓	✓

Engineers						
Electrical engineer						
Transmission system engineer					✓	
Distribution network engineer	✓			✓		✓
Battery installation engineer				✓		
Hydroelectric engineer			✓			
Commissioning engineer	✓	✓	✓	✓	✓	✓
Grid connection engineer	✓	✓	✓	✓	✓	✓
Control systems engineer	✓	✓	✓	✓	✓	✓
Renewable energy engineer	✓	✓	✓	✓	✓	✓
Civil engineer						
Structural engineer	✓	✓	✓	✓	✓	✓
Geotechnical engineer	✓	✓	✓	✓	✓	✓
Tunnelling engineer			✓			
Environmental engineer	✓	✓	✓	✓	✓	✓
Construction project manager	✓	✓	✓	✓	✓	✓
Mechanical engineer						
Mechanical design engineer		✓	✓			
Manufacturing engineer	✓	✓	✓	✓		
Composite engineer		✓				
Chemical engineer						
Process engineer			✓	✓		
Project development engineer			✓	✓		
Materials engineer	✓	✓		✓		
Software engineer						
Software engineer	✓	✓	✓	✓	✓	✓
SCADA engineer	✓	✓	✓	✓	✓	✓
Automation engineer	✓	✓	✓	✓	✓	✓



Science and technology professionals						
Software professional						
Data analyst	✓	✓	✓	✓	✓	✓
Systems architect	✓	✓	✓	✓	✓	✓
Network administrator	✓	✓	✓	✓	✓	✓
Cyber security analyst		✓	✓	✓	✓	✓
Surveyor						
Site analysis surveyor	✓	✓	✓	✓	✓	✓
Construction site surveyor	✓	✓	✓	✓	✓	✓
Hydrographic surveyor			✓			
Environmental scientist						
Ecologist	✓	✓	✓	✓	✓	✓
Environmental research scientist	✓	✓	✓	✓	✓	✓
Conservation officer	✓	✓	✓	✓	✓	✓
Environmental consultant	✓	✓	✓	✓	✓	✓
Natural and physical scientist						
Chemist			✓	✓		
Meteorologist	✓	✓	✓			
Geologist	✓	✓	✓	✓	✓	✓
Geophysicist	✓	✓	✓		✓	✓
Hydrogeologist	✓		✓			
Fluvial geomorphologist			✓			

Corporate functions						
Commercial	✓	✓	✓	✓	✓	✓
Deal originator	✓	✓	✓	✓	✓	✓
Contracts manager	✓	✓	✓	✓	✓	✓
Energy trader	✓	✓	✓	✓	✓	✓
Sales planning analyst	✓	✓	✓	✓	✓	✓
Strategy and planning	✓	✓	✓	✓	✓	✓
Strategy and business development analyst	✓	✓	✓	✓	✓	✓
Energy economist	✓	✓	✓	✓	✓	✓
Production planning analyst	✓	✓	✓	✓	✓	✓
Performance analyst	✓	✓	✓	✓	✓	✓
Community engagement	✓	✓	✓	✓	✓	✓
Community engagement officer	✓	✓	✓	✓	✓	✓
Land access officer	✓	✓	✓	✓	✓	✓
Indigenous engagement advisor	✓	✓	✓	✓	✓	✓
Public relations advisor	✓	✓	✓	✓	✓	✓
Digital and marketing	✓	✓	✓	✓	✓	✓
Campaign director	✓	✓	✓	✓	✓	✓
Media advisor	✓	✓	✓	✓	✓	✓
Brand strategist	✓	✓	✓	✓	✓	✓
Web publisher	✓	✓	✓	✓	✓	✓

Corporate functions						
Workplace health and safety	✓	✓	✓	✓	✓	✓
OHS practitioner	✓	✓	✓	✓	✓	✓
Safety coordinator	✓	✓	✓	✓	✓	✓
Health and first aid officer	✓	✓	✓	✓	✓	✓
WHS educational officer	✓	✓	✓	✓	✓	✓
Human resources	✓	✓	✓	✓	✓	✓
Talent acquisition consultant	✓	✓	✓	✓	✓	✓
Training and development officer	✓	✓	✓	✓	✓	✓
Industrial relations advisor	✓	✓	✓	✓	✓	✓
Rostering manager	✓	✓	✓	✓	✓	✓
Finance and contracts	✓	✓	✓	✓	✓	✓
Financial accountant	✓	✓	✓	✓	✓	✓
Quantity surveyor	✓	✓	✓	✓	✓	✓
Procurement officer	✓	✓	✓	✓	✓	✓
Payroll administrator	✓	✓	✓	✓	✓	✓
Governance, legal, regulatory and compliance	✓	✓	✓	✓	✓	✓
Commercial lawyer	✓	✓	✓	✓	✓	✓
Compliance officer	✓	✓	✓	✓	✓	✓
Risk officer	✓	✓	✓	✓	✓	✓
Governance officer	✓	✓	✓	✓	✓	✓

For more information

For more information about any of the jobs in the guide, here are some useful links.

GOVERNMENT

[Manufacturing Skills Queensland](#)

[Myfuture](#)

[Queensland Curriculum and Assessment Authority](#)

[Queensland Skills Gateway - Department of Youth Justice, Employment, Small Business and Training](#)

[Queensland Tertiary Admissions Centre](#)

[Queensland Training Information Service \(QTIS\) - Department of Youth Justice, Employment, Small Business and Training](#)

[Study Assist – Australian Government](#)

[Training and careers – Department of Youth Justice, Employment, Small Business and Training](#)

[Workforce Australia](#)

[Your Career](#)

PROFESSIONAL ASSOCIATIONS

[Become a Registered Professional Engineer of Queensland - Board of Professional Engineers of Queensland](#)

[Construction Pathways - Construction Skills Queensland](#)

[Electrogroup](#)

[Energy Skills Queensland](#)

GOVERNMENT-OWNED ENERGY ORGANISATIONS

[CleanCo Queensland](#)

[CS Energy](#)

[Energy Queensland](#)

[Powerlink Queensland](#)

[Queensland Hydro](#)

[Stanwell](#)

SKILLS AND TRAINING

[Australian Apprenticeships Pathways](#)

[Career HQ](#)

[TAFE Queensland](#)

[The Good Universities Guide](#)

UNIONS

[Australian Manufacturing Workers Union](#)

[CFMEU Construction & General - Queensland & Northern Territory](#)

[Electrical Trades Union - Queensland & Northern Territory](#)

[Professionals Australia](#)

[The Services Union](#)

[The Australian Workers Union](#)

[Plumbing and Pipe Trades Employees Union](#)