Central-West Orana Renewable Energy Jobs Guide

2026 - 2035

Central-West Orana Renewable Energy Zone

NSW GOVERNMENT



Acknowledgement of Country

The Energy Corporation of New South Wales acknowledges that it stands on Aboriginal land. We acknowledge the Traditional Custodians of the land and we show our respect for Elders past and present through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically.

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About the guide

NSW is undergoing one of the largest changes to its energy system in its history. As coal-fired power stations retire, we need to upgrade our grid to keep the lights on for everyone in the state.

How to use this guide

This guide is designed to help you navigate workforce opportunities and a career in NSW's renewable energy sector. Using the guide, you will:

- **Understand how renewable energy projects are planned, built, and operated**
- **Explore which roles are in demand across NSW's energy transition**
- **See how skills and qualifications map to real jobs in the sector.**

Overview

Renewable energy, storage, and new electricity infrastructure will ensure households and businesses have reliable, affordable, and clean electricity for generations to come.

This guide outlines the jobs, skills, and career pathways that support this transition.

It provides practical information on the roles needed to plan, build, operate, and maintain renewable energy infrastructure across NSW, with a particular focus on opportunities within renewable energy zones (REZs).

The guide is designed to help people make informed career, workforce, and training decisions by showing what these roles involve, where they are located, how to enter them, and how careers can develop over time.

This guide is intended for all people involved in, considering, or working in renewable energy:

- **School students**
- **Trades and university students**
- **Jobseekers and career changers**
- **Employers and industry partners**
- **Education and training providers**
- **First Nations people**
- **Career advisors**
- **Women considering careers in traditionally male-dominated roles**

Message from the Minister

New South Wales is undergoing one of the most significant energy transitions in its history.



Penny Sharpe,
Minister for Energy
of New South Wales

As coal-fired power stations retire, we are building the infrastructure needed to ensure reliable, affordable and clean energy for future generations.

This transition to renewables will unlock new investment, jobs and economic opportunities across regional NSW while delivering more clean, affordable energy to homes and businesses. Our role is to maximise the benefits of this transformation, particularly for regional communities.

That's why I'm pleased to introduce the NSW Renewable Energy Jobs Guide, a clear and practical resource to help people understand renewable energy career pathways, local opportunities and how to take part in them.

Whether you're a student considering your future, a worker looking to change careers or a business seeking to understand emerging workforce opportunities, this guide has been designed to help you navigate the growing renewable energy sector.

Major projects in generation, storage and transmission are driving strong demand for workers, particularly in regional communities. As projects move through planning, construction and operation, workforce needs will grow and change. Around 9,000 jobs during peak construction of renewable energy zones and transmission projects and 4,450 ongoing jobs are forecast to be created across NSW, mostly in our regions.

The renewable energy rollout is increasing demand for workers in local manufacturing, retail, transport and the supply of goods and services. We're committed to ensuring local communities have an opportunity to participate in building the projects we need to upgrade our grid. This guide is your invitation to be part of that future.

Whether you're starting out, looking for a new direction or seeking to grow your business, I encourage you to use this guide to explore how you can get involved in one of NSW's most important and growing industries and work on powering the future with us.



Wind Farm near Carcoar Dam in the Central West Orana REZ

Understanding renewable energy across NSW

About EnergyCo

EnergyCo leads the delivery of renewable energy zones to ensure long-term energy security for NSW.

Renewable energy zones across NSW



There are five REZs across NSW

Each REZ brings planning, development and day-to-day operations for renewable energy projects together in one place. This creates more local job opportunities, makes it easier to connect projects to the grid, and supports coordinated community engagement.

To learn more about the renewable energy zones, visit energyco.nsw.gov.au/our-projects/what-is-a-renewable-energy-zone.

The Central-West Orana REZ is helping lead NSW's energy transition

NSW's first Renewable Energy Zone, the Central-West Orana REZ is unlocking new renewable energy generation, storage and transmission infrastructure to help power homes and businesses across the state.

The Central-West Orana Renewable Energy Zone (REZ) is located in central NSW and spans approximately 20,000 square kilometres centred around Dubbo and Dunedoo, on the lands of the Wiradjuri, Wailwan and Kamilaroi peoples.

The Central-West Orana REZ is the first of five Renewable Energy Zones (REZs) being coordinated across NSW as part of the state's transition to a more reliable, affordable and low-emissions electricity system. EnergyCo is the NSW Government agency responsible for leading the delivery of REZs across NSW, including planning and coordinating the transmission infrastructure and access arrangements needed to connect renewable energy generation and storage projects to the electricity network.

The REZ will initially unlock at least 4.5 gigawatts (GW) of network capacity by the late 2020s, enabling up to 7.7 GW of wind and solar generation to connect to the grid. This is enough renewable energy to power more than two million homes each year.

The Central-West Orana REZ is expected to attract up to $23 billion in private investment, supporting jobs, regional economic development and long-term opportunities for local communities, businesses and workers.

As NSW's first REZ, Central-West Orana is helping establish the blueprint for future renewable energy development across the state.

At a glance

7.7 GW of wind and solar generation

Expected to connect through the REZ.

Up to $23 billion

Expected private investment.

State's first REZ

Leading the transition to a cleaner energy system.

~3,400 direct jobs required during peak construction*

Supporting the delivery of renewable energy, storage and transmission infrastructure across the Central-West Orana REZ.

~1,100 direct jobs supporting project operations and maintenance*

Creating long-term employment opportunities across renewable energy, storage and transmission infrastructure.

Explainer: Gigawatts (GW) describe electricity generation capacity — the maximum amount of power a system can produce at any moment.

**As additional projects are developed over time, further workforce demand is expected across the coming decades.*

90% of NSW's electricity will come from renewables by 2035

Different technologies are used to generate, store and move electricity across NSW's energy system. Each technology requires different types of workers to design, build, operate and maintain the infrastructure.

Major generation and storage project technologies across NSW



Solar energy

Large-scale solar farms need to be designed, built and maintained, alongside rooftop systems for homes and businesses. In NSW, there are plans to develop around 21 large-scale solar projects.



Onshore wind energy

Wind farms require skilled workers to design, build, connect and maintain turbines over many years. In NSW, there are plans to develop around 22 large-scale wind farms.



Battery storage system

Batteries store electricity so it can be used when it is needed. Building, installing and maintaining battery systems requires specialised technical skills. NSW leads Australia with more than 200 battery projects currently being built or planned.



Pumped hydro

Hydropower turns moving water into electricity. NSW is exploring 11 pumped hydro projects which require workers to design, build and operate dams, pumps and turbines. These projects are being developed in selected locations across NSW.

Electricity infrastructure within and connecting the REZs



Transmission

Transmission lines carry electricity from where it is generated to substations near where it is used. Across NSW, nearly 1,500km of new transmission lines are planned to support connections for new projects — particularly in the REZs, bringing more wind, solar and storage into the grid.

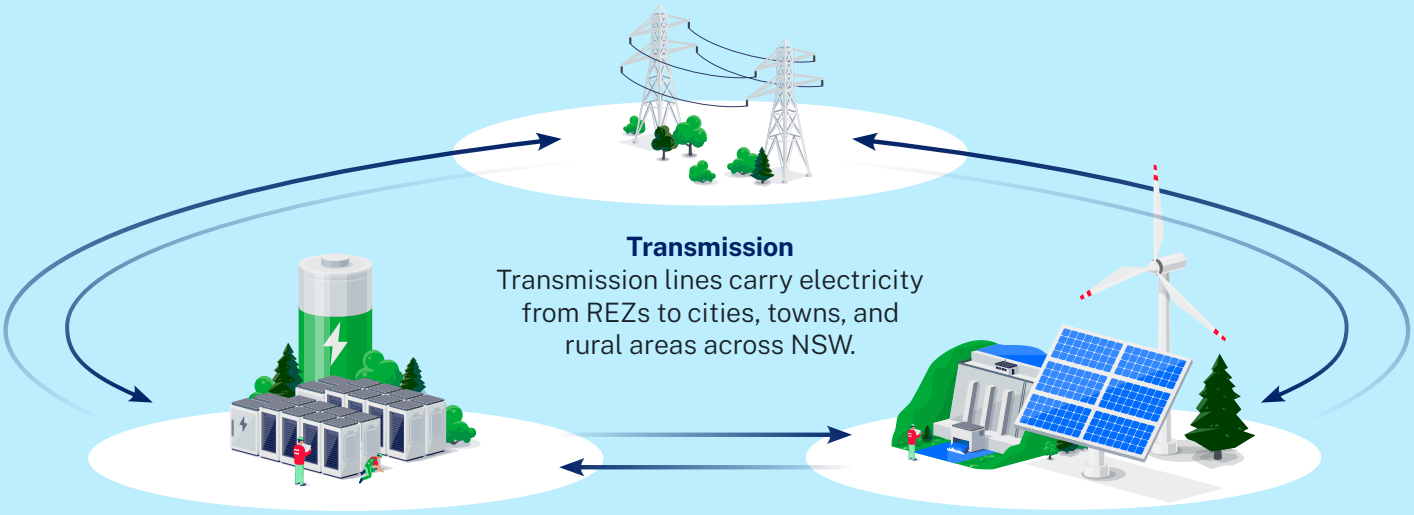


Distribution

Distribution networks deliver electricity from substations to homes, businesses and farms. As rooftop solar, batteries and electric vehicles become more common, these networks will need upgrades to manage two-way electricity flows and changing demand.

What does the electricity system look like?

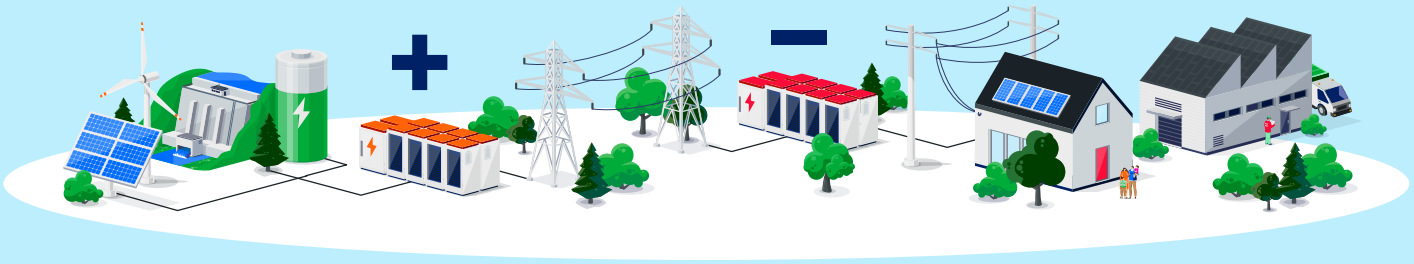
A modern electricity system consists of many renewable generators across NSW.



Transmission
Transmission lines carry electricity from REZs to cities, towns, and rural areas across NSW.

Energy Storage
Energy storage holds surplus power, ensuring reliable electricity during peak times.

Power generation
In a REZ, clean energy is generated by wind, solar, and hydro projects.



Generation and storage
These projects produce or store energy. They can include wind, solar, battery and pumped hydro projects.

Generator substation
Converts low voltage electricity to a higher voltage for efficient transport.

Transmission lines
Carry electricity over long distances.

Distribution substation
Converts high voltage electricity to a lower voltage for distribution.

Distribution lines
Carry low voltage electricity to consumers.

Energy users
Homes, offices and factories use electricity for lighting and heating and to power appliances.

Major transmission infrastructure is being developed to connect the REZs and move electricity from where it is generated to where it is used. Large-scale storage allows electricity generated by renewable energy to be used later, when it is needed most. This helps maintain system reliability. Managing the many parts of the electricity system requires advanced coordination and control.

Work across a variety of locations and environments

Jobs in renewable energy can take place in offices, communities, workshops, or out in the field.

In the renewable energy sector, you can work in a range of different environments.

These depend on the phase of a project, how far the project has progressed and the physical location where the work takes place.

Understanding this will help you navigate the sector based on your experience, expertise, and career preferences.

Where will you work?

When it comes to work in the renewable energy sector, no two jobs are the same. Renewable energy careers in NSW span a mix of on-site, office, and regional settings, reflecting the diversity of projects across the state.



On-site work

Most construction, commissioning, and operational roles are based on-site. Teams coordinate project delivery, maintain safety, and ensure smooth system integration. You may even move across different sites, gaining exposure to a range of environments and technologies.



Office and field work

Design, planning, project management, and monitoring tend to involve a mix of office work and in-field work. You support multiple projects at once, and focus on areas like design, community outcomes, and system performance.

What phases of projects will you work in?

NSW has many renewable energy projects and like all projects, they are divided into phases of work. Each phase outlines different priorities, activities, and timelines.

Look out for these icons to discover what roles are needed across the life of each project:



Development

This phase involves planning, site assessment, environmental studies, approvals, and community engagement. Development sets the foundation for safe, efficient, and sustainable renewable energy projects.



Construction

Construction transforms designs into physical infrastructure. Activities include civil works, turbine and panel installation, electrical connections, and commissioning. Construction delivers the visible assets of renewable energy and the systems and infrastructure to generate and deliver renewable energy.



Operations and maintenance

Once a project is operational, ongoing monitoring, maintenance, and optimisation ensure safe, reliable, and efficient electricity generation.

Workforce demand

Meeting future workforce demand will rely on local people, local businesses and strong regional partnerships.

Major renewable energy, storage and transmission projects are being developed across the Central-West Orana region, creating workforce demand across a broad range of occupations and skill levels. Whether you're starting out, changing careers or building on existing skills, the renewable energy transition is creating opportunities across planning, construction, operations and maintenance.

Work on projects that shape the future

The Central-West Orana REZ is expected to create workforce demand across renewable energy generation, storage and transmission projects as the region continues to grow as a clean energy hub.

Grow your career as projects grow

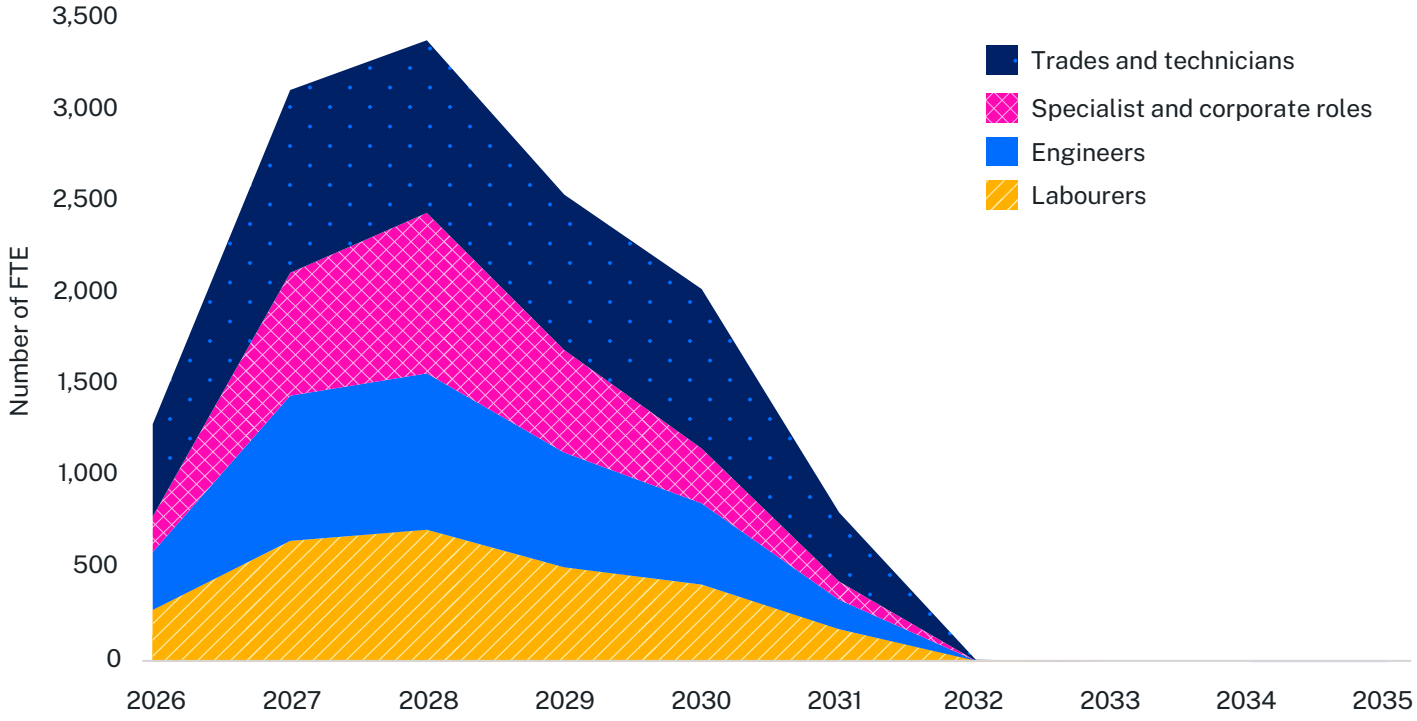
As projects move through development, construction and operation, opportunities are expected across trades and technicians, engineering, construction, project delivery, transport, logistics, business services and specialist occupations.

A career that can take you anywhere

The skills developed on renewable energy and transmission projects are highly transferable and can support careers across infrastructure, utilities, construction and emerging clean energy industries. With ongoing learning and experience, workers can build long-term careers across a range of projects, regions and sectors.

Total direct workforce demand (FTE) by occupation during construction phase from 2026-2035:

As additional projects are developed over time, further workforce demand is expected across the coming decades.



Building Central-West Orana's Renewable Energy Workforce

The Central-West Orana REZ is being developed within a region that already has strong agricultural, industrial, transport and service industries.

Renewable energy is creating an additional industry that will require workers across a broad range of occupations and skill levels.

Workforce demand associated with renewable energy development is expected to create opportunities for local people, businesses, training providers and communities throughout the region.

Long-term careers

While workforce demand peaks during construction, renewable energy infrastructure requires an ongoing workforce long after projects are built.

Wind farms, solar farms, battery energy storage systems and transmission infrastructure require workers to operate, maintain and manage assets throughout their operational life, creating long-term career opportunities across regional NSW.

The charts below show projected workforce demand between 2025 and 2035 during the construction and operational phases of the current pipeline of renewable energy, storage and transmission projects within the Central-West Orana REZ.

Full-time equivalent (FTE) measures the total amount of work required and does not represent the number of people employed at any one time.

Community and Employment Benefit

EnergyCo launched the Central-West Orana Community and Employment Benefit Program in 2024 to help ensure local communities share in the benefit of renewable energy development.

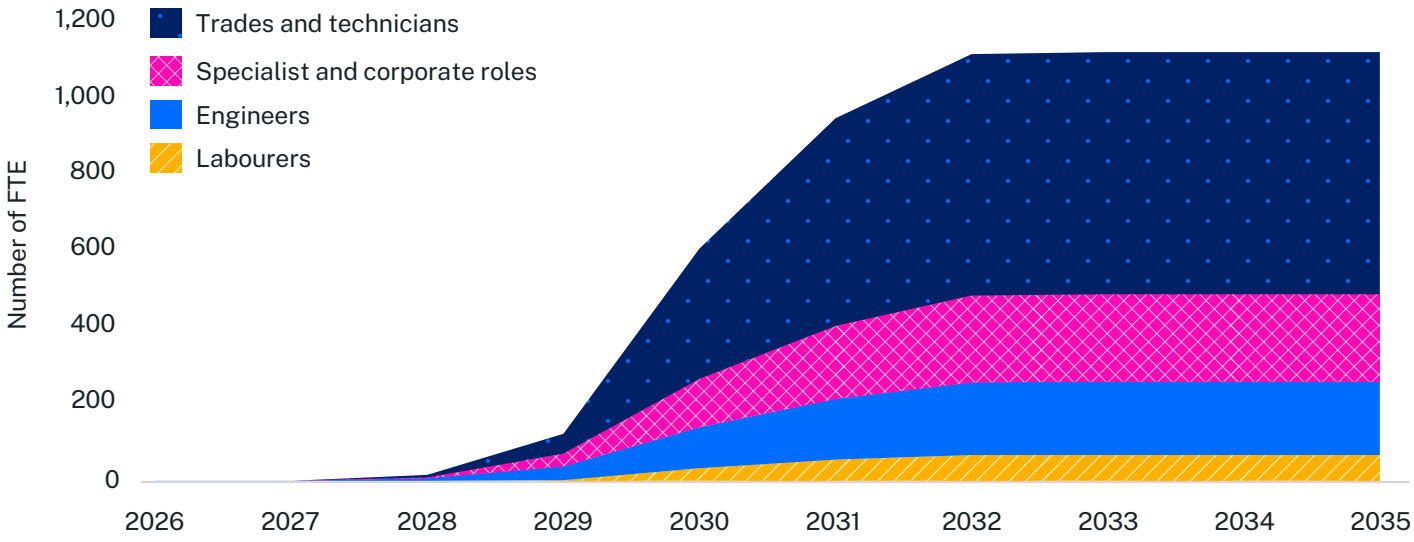
The program is designed to support long-term regional benefits through investment in community projects, education and training pathways, First Nations programs and workforce development opportunities.

The program is now delivering community projects, legacy infrastructure and skills, training and workforce initiatives as part of a once-in-a-generation opportunity.



Total direct workforce demand (FTE) by occupation during operational phase from 2026-2035:

As additional projects are developed over time, further workforce demand is expected across the coming decades.



Opportunities across the community

The renewable energy sector is creating opportunities for people from all walks of life and backgrounds. Across NSW, initiatives are helping make these careers more accessible and inclusive. Below are examples of different pathways into the industry, along with organisations and resources that can help you get started.

Skilled workers looking to join the renewable energy sector

Many people entering the renewable energy sector join with valuable experience. If you've worked in mining, coal or other large infrastructure industries, renewable energy is a natural fit.

The work environment, safety expectations and project structures are familiar, and many skills and qualifications transfer directly across. Most people don't need to retrain from scratch; they start by learning how renewable projects work, then apply existing experience as projects roll out across NSW.

As the industry grows, this creates opportunities for continuity of work and long-term careers, where you can continue to switch between technologies and projects.

What support programs and initiatives are available to me?

- Prepare to work in the Renewable Energy industry | TAFE NSW: Introductory micro skill course explaining renewable energy work, pathways, and job opportunities.
- Trade Pathways Program for experienced workers | CTPM: Helps workers transition into new industries without substantial retraining.

Young people looking to join the renewable energy sector

Renewable energy offers long-term career opportunities across NSW, with multiple ways to get started and no single "right" path. You don't need to have finished school or followed a traditional education route to enter the industry. Many people start by exploring the sector, trying short or introductory learning, and then moving into training, apprenticeships or entry-level roles.

As projects continue to roll out, there are ongoing opportunities to build skills, gain experience and develop stable careers — while changing direction or specialising as you go.

What support programs and initiatives are available to me?

- Key Apprenticeship Program | Australian Apprenticeships: Provides financial support for apprentices entering renewable energy.
- Career Pathways | Clean Energy Council: Explains renewable energy roles, required skills, and ways to enter.
- Electrify Your Future | The Australian Power Institute: Introduces students to careers in the power and energy sector.

First Nations people looking to join the renewable energy sector

Renewable energy projects increasingly recognise the value of First Nations knowledge, connection to Country and local communities. Entry can be enabled through wraparound supports that help you prepare for work, feel supported on projects, and move between projects as opportunities arise.

This means renewable energy can offer more than one-off jobs – it can support ongoing careers, with training, mentoring and employment pathways designed to work across multiple projects over time.

What support programs and initiatives are available to me?

- Barranggirra Skilling for Employment Initiative | NSW Government: Provides First Nations jobseekers with end-to-end support across training, mentoring, and employment.
- First Nations Apprenticeships | Apprenticeship Support Australia: Connects First Nations apprentices with employers to start and complete training.
- OCHRE Opportunity Hubs | NSW Government: Supports First Nations youth transition from school to further education or employment.

Women looking to join the renewable energy sector

More women are working across construction, operations and engineering roles than ever before. As the sector grows, industry members and employers are increasingly running targeted support, mentoring and entry programs to help women join and progress in non-traditional areas.

There are multiple ways to enter the workforce, and participation does not require exceptional experience. With long-term project pipelines, you have a stable career that can grow as the industry continues to expand.

What support programs and initiatives are available to me?

- Women in Construction Program | NSW Government: Supports women entering construction through training, mentoring, and employer partnerships.
- Women in Renewables Mentoring Program | Clean Energy Council: Connects women with industry mentors supporting sustainable careers.
- Equal by 30: A commitment to work towards equal pay, equal leadership, and equal opportunities for women in the clean energy sector by 2030.



Women in Construction Taster Program, Central-West Orana REZ

Explore the range of careers on offer in renewable energy

Learn about the careers available to you in the following slides and pick those that interest you.

Trades and technicians

- Electrical trades
- Distribution and transmission trades
- Civil trades
- Mechanical and fabrication trades
- System technicians
- Process technicians
- Surveyors
- Draftspersons

Engineering and project delivery

- Electrical engineers
- Civil engineers
- Mechanical engineers
- Environmental engineers
- Site managers
- Software engineers
- Chemical engineers

Site support

- Site labourers
- Mobile plant operators
- Site operators
- Site services and facilities staff

Specialist and corporate roles

- Community engagement
- Commercial, procurement and finance
- Governance, legal, and compliance
- Project managers and administrators
- Workplace health and safety
- Asset management
- Scientists
- Technology and systems
- Human resources
- Marketing and digital
- Strategy and planning

Indirect and supplementary roles

Indirect and supplementary roles support and enable renewable energy projects across the entire lifecycle.

These roles may not directly build or operate infrastructure, but they provide the services, expertise, and systems that allow projects to be planned, delivered, and run effectively at scale.

This includes a wide range of functions, such as transport and logistics, education and training, and other support services that underpin workforce capability and project delivery.

Explore this guide to the right career for you:

Trade Certificate · Bachelor degree · Licences

Job families	Development	Construction	Operations / Maintenance	Typical qualifications*
Electrical trades		■	■	● ●
Distribution and transmission trades		■	■	● ●
Civil trades		■	■	● ●
Mechanical & fabrication trades		■	■	● ●
System technicians	■	■	■	● ●
Process technicians	■	■	■	● ●
Surveyors	■	■		● ●
Draftspersons	■	■		●
Electrical engineers	■	■	■	●
Civil engineers	■	■	■	●
Mechanical engineers	■	■	■	●
Environmental engineers	■	■	■	●
Site managers		■	■	● ●
Software engineers	■	■	■	●
Chemical engineers	■	■	■	●
Site labourers		■		● ●
Mobile plant operators		■		● ●
Site operators		■	■	● ●
Site services and facilities staff		■	■	●
Community engagement	■	■	■	●
Commercial, procurement and finance	■	■	■	●
Governance, legal, and compliance	■	■	■	●
Project managers and administrators	■	■	■	●
Workplace health and safety	■	■	■	●
Asset management			■	●
Scientists	■	■	■	●
Technology and systems	■	■	■	●
Human resources	■	■	■	●
Marketing and digital	■	■		●
Strategy and planning	■			●



First Tower Installed Guyed, Central-West Orana REZ

Trades and technicians

Trades and technicians are involved in building, installing, and maintaining the infrastructure that keeps renewable systems running.

What do Trades and Technicians do?

These kinds of roles let you work hands-on, building, installing, and maintaining the clean energy systems powering NSW's future.

You'll develop practical skills that are in demand across solar, wind, batteries, and emerging technologies, giving you flexibility to move between projects and sectors as the industry grows.

With experience and as projects evolve, you can progress into crew leadership, site supervision, or specialise in advanced technical areas.

Further study can also open pathways into engineering and other higher-level technical roles.



Why people choose this career?

- Hands-on work with clear results
- Skills are valued across many industries
- No two days are the same
- You work as part of a team on real projects
- Strong pathways to leadership and specialist roles

What does a typical day look like?

- Starts the day with a safety briefing and job planning session with other team members
- Installs, tests, or maintains machinery and equipment
- Troubleshoots issues with the team on site using general and special tools

The following occupations are included in this category:

- Electrical trades
- Distribution and transmission trades
- Civil trades
- Mechanical & fabrication trades
- System technicians
- Process technicians
- Surveyors
- Draftspersons

Hear from the people building NSW's renewable energy future



Trades and technicians

Kacee Milnes – Operations Manager, Squadron Energy

Five years ago, Kacee, a former mining electrician from Broken Hill, made the leap into the renewable energy industry and hasn't looked back. Kacee's interest in renewable energy as a career was piqued when she passed the wind turbines on her regular drives to Adelaide.

"My closest major city [growing up] was Adelaide [which] involved a six-hour drive passing multiple wind farms near Hallett and Burra. I had always found wind turbines fascinating and wanted to make a change to an industry I believed to be kinder to the environment and in a time of major growth."

Today, Kacee is the Operations Manager overseeing 37 wind turbines at Squadron Energy's Crudine Ridge Wind Farm, located just south of Mudgee, NSW.

"I feel like it's part of my responsibility to try to motivate and encourage because I didn't have a lot of role models when I was coming up through the industry. I would love to inspire the next generation to become involved in the industry."

Kacee is one of thousands of NSW locals benefiting from the renewable energy transition across the state. This once-in-a-generation upgrade to our electricity network is creating jobs and new apprenticeships for people from all backgrounds.

"I feel like renewables is definitely the future. I think that's the way it's all going now and there's so much room for growth. It's the best office in the world."

Kacee Milnes



Electrical trades

Electrical tradespeople install, test, and maintain the electrical systems that power NSW's renewable energy projects, with skills that easily transfer across solar, wind, batteries, and all other technologies.

Technology

Work location

Project phase

Salary range

- **Apprentice (0-4 years):** $90,000 – $110,000
- **Qualified worker (5-9 years):** $120,000 – $190,000
- **Specialist level (10+ years):** $200,000+

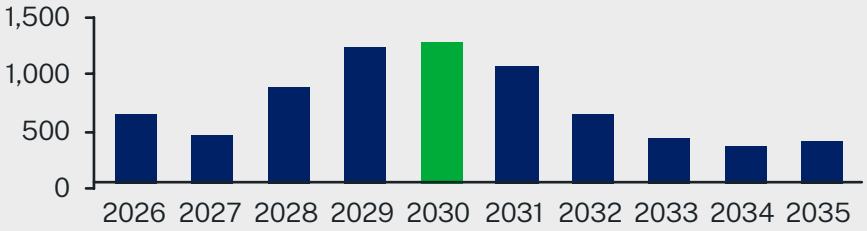
Qualification requirements

Complete a Certificate III in Electrotechnology Electrician through a 4-year apprenticeship

Demand over the next 10 years in NSW

Demand for electrical trades is projected to grow from 2026, accelerating through the late 2030s as infrastructure is delivered and commissioned. Current modelling indicates a peak around 2030, followed by sustained demand through the mid-2030s as assets transition to operations and maintenance.

NSW demand for electricians over the next 10 years



As an electrician, you could be a...

Battery Energy Storage System (BESS) Electrician

Installs and maintains big batteries including inverters and protection systems that store energy.

Generation Electrician

Installs and maintains generation equipment and the electrical systems, across all energy generation sites.

Residential Electrician

Installs and maintains safety systems and rooftop solar connections in houses and small buildings.

Commercial Electrician

Installs and maintains electrical systems in commercial buildings, ensuring safe power supply for businesses and public spaces.

Commissioning Electrician

Tests and brings new electrical systems online, making sure performance meets design and safety standards.

Powerplant Electrician

Maintains and repairs electrical equipment to keep renewable energy sites operating safely and reliably.

Industrial Electrician

Installs and maintains heavy-duty electrical systems and automated equipment in large industrial facilities and processing plants.

How do you become an **electrician**?

Pre-apprenticeship / VET in schools: 6 Months to 2 years	**Apprenticeship:** 4 years	**Qualified Tradesperson / Technician:** 2 to 3+ years	**Senior / Specialist / Tradesperson / Technician:** 3 to 8+ years	**Supervisor / Team Lead / Manager:** 5 to 15+ years
0	1	2	3	4
Learn electrical basics and how power systems operate on real sites.	Complete certification while building installation, testing and fault-finding skills on the job.	Independently install, maintain and troubleshoot systems across project sites.	Lead complex technical work using advanced high-voltage and control skills.	Lead teams and oversee safety, quality and systems performance.

0 **Students:** Enter via school, VET or apprenticeships

2 **Career Changers:** Enter via related industries with transferable skills

3 **Senior / Specialists:** Enter with deep technical or leadership experience

Skilling and training

What does this look like in practice?

Start with a 4-year apprenticeship in:

- Certificate III in Electrotechnology Electrician

Refer to NSW Government's step-by-step guide on how to find an apprenticeship employer and training provider.

Upon completing an apprenticeship, you will automatically receive a Trade Skills Recognition (TSR) Certificate of Proficiency and will need to apply for licensing to be qualified.

What skills are needed to enter the renewable energy workforce?

Project-or technology-specific requirements may require you to undertake further short courses in:

- White Cards
- Solar Accreditation Australia (SAA) accreditation
- Working at Heights
- High Risk Work Licences
- Global Wind Organisation (GWO) training

What specialist skills are needed on specific projects?

Progress your career into specialist roles via courses like:

- Powerplant management e.g. Certificate IV in ESI Generation

Progress to management via courses like:

- Program management e.g. Diploma of Project Management | Certitude Australia

Move into adjacent careers via courses such as:

- Electrical engineering design e.g. Advanced Diploma of Electrical - Engineering

Distribution and transmission trades

These workers build, connect, and maintain the transmission and distribution systems that move renewable energy from wind and solar farms to homes, businesses, and communities. This is hands-on, skilled work at the centre of the energy transition.

Technology

Work location

Project phase

Salary range

- **Apprentice (0-4 years):** $95,000 – $120,000
- **Qualified worker (5-9 years):** $130,000 – $170,000
- **Specialist (10+ years):** $180,000+

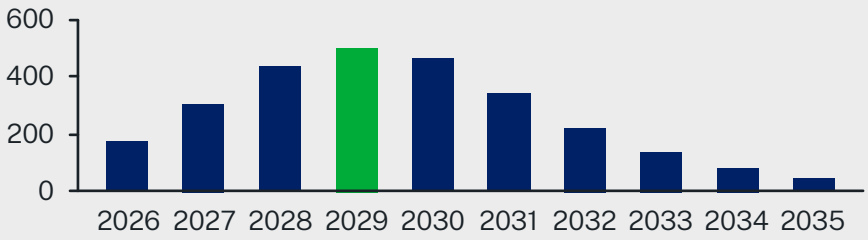
Qualification requirements

Complete Certificate III in electrotechnology, distribution, transmission, or instrumentation and control through a four-year apprenticeship

Demand over the next 10 years in NSW

Demand is driven by sustained investment in network expansion and upgrades across the system. Workforce needs to rise strongly to 2030, then remain consistently high across the next five years as networks transition from build-out to reinforcement, connection works and ongoing reliability improvements.

NSW demand for D&T trades workers over the next 10 years



As a D&T trades worker, you could be a...

Electrical Instrumentation Tradesperson

Installs and maintains electrical systems and works on wiring and equipment to keep systems running safely.

Transmission Linesperson

Constructs and maintains large transmission lines that move electricity over long distances.

Grid Connection Electrician

Connects new renewable energy projects to the electricity grid. Tests systems to make sure they meet safety and technical standards.

Overhead Linesperson

Builds and repairs powerlines that carry electricity across cities and regional areas. Works at heights to install poles, cables and equipment that deliver electricity across regions.

Technical Cable Jointer

Installs and connects underground power cables. Tests and seals connections to make sure electricity flows safely and reliably.

Substation Electrician

Installs and maintains equipment inside substations, including transformers and switchgear that control and distribute electricity.

How do you become a **D&T trades worker**?

Pre-apprenticeship / VET in schools: 6 Months to 2 years	**Apprenticeship:** 4 years	**Qualified Tradesperson / Technician:** 2 to 3+ years	**Senior / Specialist / Tradesperson / Technician:** 3 to 8+ years	**Supervisor / Team Lead / Manager:** 5 to 15+ years
0	1	2	3	4
Learn electrical system basics and how energy networks deliver electricity.	Complete certification while gaining supervised field experience on lines, cables, and substations.	Independently install, maintain, and troubleshoot systems across live network environments.	Lead complex high-voltage, control, and automation work on network assets.	Lead teams and oversee safety, quality and systems performance on network assets.

0 **Students:** Enter via school, VET or apprenticeships

2 **Career Changers:** Enter via related industries with transferable skills

3 **Senior / Specialists:** Enter with deep technical or leadership experience

Skilling and training

What does this look like in practice?

Start with a 4-year apprenticeship in:

- Certificate III in ESI – Distribution Overhead
- Certificate III in ESI – Transmission Overhead
- Certificate III in Instrumentation and Control
- For general roles – Certificate III in Electrotechnology Electrician

Upon completing an apprenticeship, you will automatically receive a Trade Skills Recognition (TSR) Certificate of Proficiency and will need to apply for licensing to be qualified.

What skills are needed to enter the renewable energy workforce?

Project- or technology-specific requirements may require you to undertake further short courses in:

- Electronics and control systems e.g. Certificate IV in Industrial Electronics and Control
- Network live line work e.g. Certificate IV in ESI: Network Systems
- White Cards
- Working at Heights
- High Risk Work Licences
- Confined Space training

What specialist skills are needed on specific projects?

Progress your career into specialist roles via courses like:

- Design and test networks e.g. Advanced Diploma of ESI - Power Systems
- Energy system control and management e.g. Advanced Diploma of Instrumentation and Control Engineering

Progress to management via courses like:

- Substation management e.g. Advanced Diploma of ESI - Power Systems
- Project Management e.g. Short courses by National Electrical and Communications Association

Civil trades

Civil trades workers construct the structures and ensure infrastructure is built to last. This is work with visible impact, steady demand and pathways into supervisory roles.

Technology

Work location

Project phase

Salary range

- **Apprentice (0-3 years):** $50,000 – $70,000
- **Qualified worker (4-8 years):** $80,000 – $95,000
- **Specialist (9+ years):** $100,000+

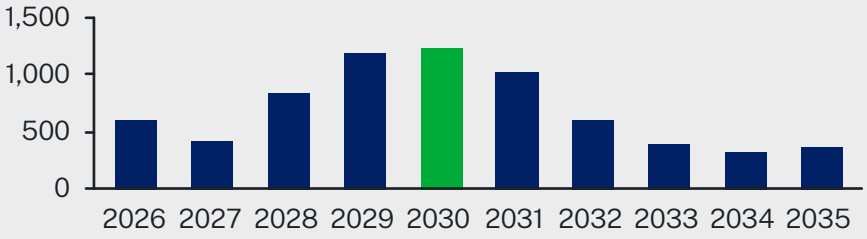
Qualification requirements

Complete Certificate III in Civil Construction, Carpentry, Concreting or Plumbing through a four-year apprenticeship

Demand over the next 10 years in NSW

Civil trades experience a pronounced surge in demand through the late 2020s as construction activity ramps up rapidly. Demand reduces after 2030, aligning with the completion of major build phases, before stabilising at lower levels to support maintenance, access works and remediation.

NSW demand for civil tradesworkers over the next 10 years



As a civil tradesworker, you could be a...

Plant Operator

Operates plant equipment to support construction and site operations, with opportunities to specialise in heavy machinery and other plant operations.

Civil Technician

Tests soil, materials, and construction work on site to make sure foundations and structures meet safety and quality standards.

Plumbers

Installs and maintains water supply and drainage systems as well as gas piping and fire safety systems like hydrants and sprinklers.

Concreter

Pours, shapes, and finishes concrete for foundations, slabs, and equipment bases that support energy infrastructure.

Surveying Technician

Measures land and site levels before and during construction. Collects data to ensure infrastructure is built in the right place and at the right height.

Carpenter

Builds and installs structural frameworks and formwork used to support concrete foundations and infrastructure for renewable energy projects, as well as associated enabling infrastructure such as site facilities and temporary accommodation.

How do you become a **civil tradesworker**?

0	1	2	3	4
Pre-apprenticeship / VET in schools: 6 Months to 2 years	**Apprenticeship:** 4 years	**Qualified Tradesperson / Technician:** 2 to 3+ years	**Senior / Specialist / Tradesperson / Technician:** 3 to 8+ years	**Supervisor / Team Lead / Manager:** 5 to 15+ years
Learn construction fundamentals, materials, and site safety.	Complete certification while gaining supervised experience maintaining structural and civil infrastructure.	Independently deliver structural designs, through testing and standards compliance.	Lead foundation works and structural builds for complex or high-risk infrastructure projects.	Lead teams, manage site delivery and oversee safety, quality and asset performance.

0 **Students:** Enter via school, VET or apprenticeships

2 **Career Changers:** Enter via related industries with transferable skills

3 **Senior / Specialists:** Enter with deep technical or leadership experience

Skilling and training

What does this look like in practice?

Start with a 3 to 4-year apprenticeship in:

- Certificate III in Carpentry
- Certificate III in Concreting
- Certificate III in Civil Construction
- Certificate III in Plumbing

Refer to NSW Government's step-by-step guide on how to find an apprenticeship employer and training provider.

Upon completing an apprenticeship, you will automatically receive a Trade Skills Recognition (TSR) Certificate of Proficiency and will need to apply for licensing to be qualified.

What skills are needed to enter the renewable energy workforce?

Skilling and training to enter the renewable energy workforce relies mostly on experience on the job.

However, project-or technology-specific requirements may require you to undertake further short courses in:

- White Cards
- Working at Heights
- High Risk Work Licences
- Confined Space training
- Engineering design support e.g. Certificate IV in Civil Construction Design

What specialist skills are needed on specific projects?

Renewable energy projects need civil trades work but typically don't require special certifications.

Skill development mainly comes from practical experience, though training in equipment design and installation can help workers understand the technology better.

Progress to management via courses like:

- Planning site management e.g. Diploma of Civil Construction Management
- Civil technical supervision e.g. Certificate IV in Civil Construction

Mechanical and fabrication trades

Mechanical and fabrication trades workers build, assemble, and maintain the mechanical systems and structures that power assets and facilities. This is skilled technical work at the heart of major projects, with strong projected demand.

Technology

Work location

Project phase

Salary range

- **Apprentice (0-3 years):** $35,000 – $50,000
- **Qualified worker (4-10 years):** $60,000 – $110,000
- **Specialist (11+ years):** $120,000+

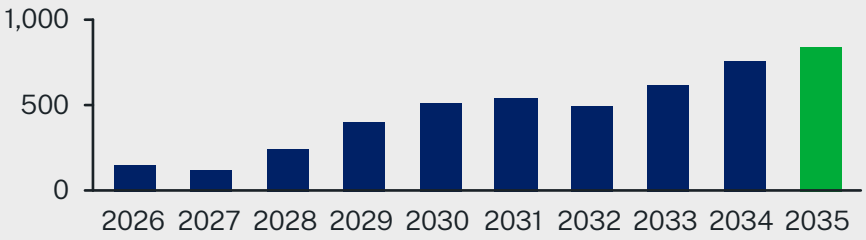
Qualification requirements

Complete Certificate III in Engineering – Mechanical or Fabrication Trade through a four-year apprenticeship

Demand over the next 10 years in NSW

Demand grows rapidly through the late 2020s, closely linked to the installation of complex plant, equipment and mechanical systems. This growth continues to strengthen into the late 2030s, reflecting ongoing mechanical support, retrofitting and upgrades of new and existing assets.

NSW demand for mechanical and fabrication tradesworkers over the next 10 years



As a mechanical and fabrication tradesworker, you could be a...

Metal Fabricator

Measures, cuts and shapes structural steel and various metal materials to create or fix metal products and structures like solar panel frames, collaborating closely with welders.

Mechanical Fitter

Installs and maintains mechanical equipment such as turbines, pumps, conveyors, and gear systems critical to generation and storage facilities.

Wind Turbine Technician

Maintains and repairs the mechanical parts of wind turbines, including gearboxes, and drive systems.

Engineering Machinist

Machines and repairs precision metal parts for turbines, pumps, and gearboxes using advanced workshop equipment.

Welder

Joins and repairs metal components to ensure structures and pressure systems are strong and secure.

Blade Technician

Maintains and repairs the blades for the top of wind turbines, fixing surface damage and balance issues to keep turbines operating safely.

How do you become a **mechanical and fabrication tradesworker**?

0	1	2	3	4
Pre-apprenticeship / VET in schools: 6 Months to 2 years	**Apprenticeship:** 4 years	**Qualified Tradesperson / Technician:** 2 to 3+ years	**Senior / Specialist / Tradesperson / Technician:** 3 to 8+ years	**Supervisor / Team Lead / Manager:** 5 to 15+ years
Learn the basics of mechanical systems, tools, materials and safety.	Complete certification while gaining supervised field experience in fabrication, assembly, installation, and maintenance.	Independently fabricate, install, assemble, and maintain mechanical systems.	Lead complex fabrication work, including precision alignment, advanced welding, and critical system installations.	Lead teams, manage technical delivery of entire sites, and oversee safety, quality, and system performance of sites and assets.

0 **Students:** Enter via school, VET or apprenticeships

2 **Career Changers:** Enter via related industries with transferable skills

3 **Senior / Specialists:** Enter with deep technical or leadership experience

Skilling and training

What does this look like in practice?

Start with a 3 to 4-year apprenticeship in:

- Certificate III in Engineering – Mechanical Trade
- Certificate III in Engineering – Fabrication Trade

Refer to NSW Government's step-by-step guide on how to find an apprenticeship employer and training provider.

Upon completing an apprenticeship, you will automatically receive a Trade Skills Recognition (TSR) Certificate of Proficiency and will need to apply for licensing to be qualified.

What skills are needed to enter the renewable energy workforce?

Skilling and training to enter the renewable energy workforce relies mostly on experience on the job.

However, project-or technology-specific requirements may require you to undertake further short courses in:

- Mechanical systems maintenance e.g. Certificate IV in Engineering
- Quality control and automation e.g. Certificate IV in Industrial Automation and Control
- White Cards
- Working at Heights
- High Risk Work Licences
- Confined Space training

What specialist skills are needed on specific projects?

Progress your career into specialist roles via courses like:

- Energy infrastructure maintenance e.g. Certificate IV in Wind Power Generation

Skill development mainly comes from practical experience, though training in equipment design and installation can help workers understand the technologies better.

Progress to management via courses like:

- Leadership and management training e.g. Diploma of Leadership and Management

System technician

System technicians install, test, and maintain the electrical, control, communications, and monitoring systems that enable energy networks to operate safely and reliably. This is skilled technical work at the heart of major projects, with strong projected demand.

Technology

Work location

Project phase

Salary range

- **Apprentice (0-3 years):** $60,000 – $80,000
- **Qualified worker (4-10 years):** $90,000 – $130,000
- **Specialist (11+ years):** $140,000+

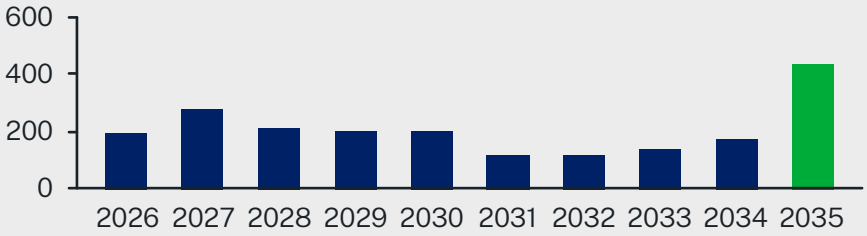
Qualification requirements

Complete Certificate III in Electrotechnology Electrician or Certificate IV in Instrumentation and Control from an accredited institution through a four-year apprenticeship

Demand over the next 10 years in NSW

System technician demand rises in line with new system deployment and early operations, peaking around 2030. While demand reduces after this point, it remains sustained through the mid-2030s, reflecting the need for specialist technicians to keep increasingly complex systems operating reliably.

NSW demand for system technicians over the next 10 years



As a system technician, you could be a...

Instrument Technician

Installs, calibrates, and faults-finds sensors and control instruments (e.g. pressure, temperature, flow) so energy assets can be monitored and operated safely.

Telecommunications Technician

Installs and maintains site communications networks (fibre, radio, IP) that connect turbines, substations, and control rooms for reliable data and voice links.

Piling Technician

Installs deep foundation components (piles) for projects to support heavy structure by operating and maintaining piling machinery such as vibratory hammers and drilling rigs.

Protection Technician

Tests and maintains protection relays and secondary systems that detect electrical faults and isolate equipment to prevent damage and outages.

Metering Technician

Installs, tests, and commissions metering hardware and communications so generation and load are measured accurately for billing and grid compliance.

How do you become a **system technician**?

0	1	2	3	4
Pre-apprenticeship / VET in schools: 6 Months to 2 years	**Apprenticeship:** 4 years	**Qualified Tradesperson / Technician:** 2 to 3+ years	**Senior / Specialist / Tradesperson / Technician:** 3 to 8+ years	**Supervisor / Team Lead / Manager:** 5 to 15+ years
Learn the basics of electrical systems, tools, digital equipment and safety practices used on energy sites.	Complete certification while gaining supervised field experience setting and maintaining electrical, control, and communications systems.	Independently install, test, fault-find, and maintain system equipment across turbines, substations, and networks.	Lead complex system work like commissioning, protection testing, advanced diagnostics, and critical asset maintenance.	Lead teams, manage technical delivery across sites, and oversee safety, quality, and system performance of assets.

0 **Students:** Enter via school, VET or apprenticeships

2 **Career Changers:** Enter via related industries with transferable skills

3 **Senior / Specialists:** Enter with deep technical or leadership experience

Skilling and training

What does this look like in practice?

Start with a 3 to 4-year apprenticeship in:

- Certificate III in Electrotechnology Electrician
- Certificate III in Electrical Fitting

Refer to NSW Government's step-by-step guide on how to find an apprenticeship employer and training provider.

Upon completing an apprenticeship, you will automatically receive a Trade Skills Recognition (TSR) Certificate of Proficiency and will need to apply for licensing to be qualified for electrical system work.

What skills are needed to enter the renewable energy workforce?

Skilling and training to enter the renewable energy workforce relies mostly on experience on the job.

However, project-or technology-specific requirements may require you to undertake further short courses in:

- Instrumentation and Control e.g. Certificate IV in Instrumentation and Control
- Electrical Systems and asset maintenance e.g. Diploma of Electrical Engineering
- White Cards
- Working at Heights
- High Risk Work Licences
- Confined Space training

What specialist skills are needed on specific projects?

Progress your career into specialist roles via courses like:

- Energy infrastructure maintenance e.g. Certificate IV in Wind Power Generation

Skill development mainly comes from practical experience, though training in equipment design and installation can help workers understand the technologies better.

Progress to management via courses like:

- Leadership and management training e.g. Diploma of Leadership and Management

Process technician

Process technicians operate, monitor, and maintain the processing systems that keep renewable energy and industrial facilities running safely and efficiently. This is work with visible impact, steady demand and pathways into supervisory roles.

Technology

Work location

Project phase

Salary range

- **Apprentice (0-3 years):** $65,000 – $85,000
- **Qualified worker (4-10 years):** $95,000 – $120,000
- **Specialist (11+ years):** $125,000+

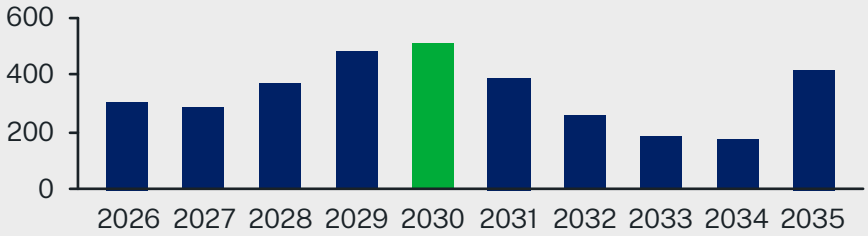
Qualification requirements

Complete Certificate III in process plant operations from an accredited institution through a four-year apprenticeship

Demand over the next 10 years in NSW

Process technician demand rises in line with new system deployment and early operations. Demand continues at a steady level, supported by roles focused on operating and maintaining systems once construction is complete.

NSW demand for process technicians over the next 10 years



As a process technician, you could be a...

Process Plant Technician

Maintains and troubleshoots plant equipment (pumps, valves, conveyors, sensors and controls) to keep processing systems running safely, efficiently, and within operating limits.

Utilities Technician

Maintains, installs, and repairs essential service infrastructure, conducting inspections, troubleshooting equipment like pumps or inverters, and ensuring compliance with safety standards.

Process Plant Operator

Monitors and operates processing plant systems, adjusting set-points, running start-up/ shutdown steps, and responding to alarms to maintain safe and steady production.

How do you become a **process technician**?

Pre-apprenticeship / VET in schools: 6 Months to 2 years	**Apprenticeship:** 4 years	**Qualified Tradesperson / Technician:** 2 to 3+ years	**Senior / Specialist / Tradesperson / Technician:** 3 to 8+ years	**Supervisor / Team Lead / Manager:** 5 to 15+ years
0	1	2	3	4
Learn the basics of plant systems, procedures, and safety used in processing and industrial operations.	Complete a qualification while gaining supervised experience in equipment use, procedures, and maintenance support.	Independently monitor plant performance, run start-up/shutdown steps, and carry out routine checks.	Coordinate isolations/permits and complex diagnostics to reduce downtime and incidents.	Lead crews, manage safe operations across shifts, and oversee quality, compliance, and site performance outcomes.

0 **Students:** Enter via school, VET or apprenticeships

2 **Career Changers:** Enter via related industries with transferable skills

3 **Senior / Specialists:** Enter with deep technical or leadership experience

Skilling and training

What does this look like in practice?

Start with a 3 to 4-year apprenticeship in:

- Certificate III in Process Plant Operations

Refer to NSW Government's step-by-step guide on how to find an apprenticeship employer and training provider.

Upon completing an apprenticeship, you will automatically receive a Trade Skills Recognition (TSR) Certificate of Proficiency.

What skills are needed to enter the renewable energy workforce?

Skilling and training to enter the renewable energy workforce relies mostly on experience on the job.

However, project-or technology-specific requirements may require you to undertake further short courses in:

- Forklift Operation e.g. Licence to operate a forklift truck
- White Cards
- Working at Heights
- High Risk Work Licences
- Confined Space training

What specialist skills are needed on specific projects?

Progress your career into specialist roles via courses like:

- Process Plant Technology e.g. Certificate IV in Process Plant Technology

Skill development mainly comes from practical experience, though training in equipment design and installation can help workers understand the technologies better.

Progress to management via courses like:

- Leadership and management training e.g. Diploma of Leadership and Management

Surveyors

Surveyors measure, map, and assess land, infrastructure, and environmental conditions to translate complex spatial and land data into information for accurate planning and construction.

Technology

Work location

Project phase

Salary range

- **Entry level (0-4 years):** $55,000 – $75,000
- **Qualified worker (5-9 years):** $85,000 – $110,000
- **Specialist (10+ years):** $120,000+

Qualification requirements

Complete a Certificate III/IV in Surveying and Spatial Information Services or a Bachelor of Surveying (or equivalent) from an accredited institution through a four-year apprenticeship



Demand over the next 10 years in NSW

Demand for surveyors grows steadily through the late 2020s, reflecting intensive needs during early project scoping, site identification, approvals and construction setup. As major projects progress, demand increasingly shifts toward more targeted surveying work linked to site extensions, upgrades and maintenance activities, supporting infrastructure throughout its operating life.

As a surveyor, you could be a...

Engineering Surveyor

Verifies construction aligns with designs, checking levels, positions, and measurements to ensure project accuracy.

Geospatial Surveyor

Analyses maps and spatial data to plan project layouts, ensuring sites fit terrain and constraints precisely.

How do you become a **surveyor**?

1	2	3	4	5
Education: 3 years	**Graduate / Trainee:** 1 to 3 years	**Independent Professional:** 3 to 6 years	**Senior / Lead Officer:** 10 to 15+ years	**Authority / Expert Advisor:** 10 to 15+ years
Learn surveying fundamentals, spatial science and how to use measurement tools and software across infrastructure projects.	Apply surveying principles, spatial measurement and mapping tools under supervision in the field and office.	Conduct surveys independently, collect and analyse field data and prepare reports to support design and construction.	Lead survey teams, manage complex sites, and ensure work meets technical and regulatory standards.	Set surveying standards, advise on major projects, and mentor technical staff across the organisation.

1 **Students:** Enter via VET or a Bachelor degree

3 **Career Changers:** Enter via related industries with transferable skills

4 **Senior / Specialists:** Enter with deep technical or leadership experience

Skilling and training

What does this look like in practice?

Start with either a 3-year Bachelor degree or VET certification:

- Bachelor of Surveying (or equivalent)
- Certificate III in Surveying and Spatial Information Services (or equivalent)
- Certificate IV in Surveying and Spatial Information Services (or equivalent)

To become a registered surveyor, you will need to complete the Diploma in Surveying and Spatial Information Services and apply for registration. More information on qualifications is available at bossi.nsw.gov.au/candidates/candidate_land_surveyors/recognised_qualifications.

What skills are needed to enter the renewable energy workforce?

Skilling and training to enter the renewable energy workforce relies mostly on experience on the job.

Project-or technology-specific requirements may require you to undertake further short courses in:

- White Cards
- High Risk Work Licences

What specialist skills are needed on specific projects?

Renewable energy projects need surveying work but typically don't require special certifications.

Skill development mainly comes from practical experience, though training in equipment design and installation can help workers understand the technology better.

However, some courses can help progress your career into specialist roles, like:

- Engineering construction surveying e.g. Advanced Diploma of Surveying

Progress to management via training in leadership and management.

Draftspersons

Draftspersons turn engineering concepts into detailed drawings and plans that ensure compliance, accuracy, and clarity on the ground.

Technology

Work location

Project phase

Salary range

- **Apprentice (0-4 years):** $65,000 – $80,000
- **Qualified worker (5-9 years):** $90,000 – $110,000
- **Specialist (10+ years):** $120,000+

Qualification requirements

Complete a Certificate III Engineering – Technical or a Certificate IV in Civil Construction Design (or equivalent) through a three-year apprenticeship



Demand over the next 10 years in NSW

Draftsperson demand rises strongly in the lead-up to 2030, driven by high volumes of detailed design, documentation and system layouts required for large-scale project delivery. As projects move beyond initial design, demand transitions toward more specialist drafting work, supporting design refinements, upgrades and future expansions rather than large volumes of new designs.

As a draftsperson, you could be a...

Civil Engineering Draftsperson

Prepares detailed drawings of structures, foundations, and site layouts.

Mechanical Engineering Draftsperson

Creates technical drawings of machinery, equipment, and mechanical systems.

Electrical Engineering Draftsperson

Produces schematics, wiring diagrams, and layouts for electrical systems.

How do you become a **draftsperson**?

Education: 3 years	**Graduate / Trainee:** 1 to 3 years	**Independent Professional:** 3 to 6 years	**Senior / Lead Officer:** 10 to 15+ years	**Authority / Expert Advisor:** 10 to 15+ years
1	2	3	4	5
Learn drafting fundamentals, tools, and software and explore how drawing support infrastructure and energy projects.	Apply CAD, drawing standards and technical documentation under supervision in real project environments.	Produce and update drawings, resolve design queries and maintain accuracy while coordinating with engineers and site teams.	Provide advanced technical drafting support, coordinate workflows and mentor drafting staff to ensure quality and timely delivery.	Lead technical drafting standards, manage complex documentation and provide authoritative design governance and approvals.

1 **Students:** Enter via VET or a Bachelor degree

3 **Career Changers:** Enter via related industries with transferable skills

4 **Senior / Specialists:** Enter with deep technical or leadership experience

Skilling and training

What does this look like in practice?

Start with a 3-year apprenticeship in:

- Certificate III Engineering – Technical
- Certificate IV in Civil Construction Design

With this certification, you can now work as a qualified draftsperson.

What skills are needed to enter the renewable energy workforce?

Skilling and training to enter the renewable energy workforce relies mostly on experience on the job.

Project-or technology-specific requirements may require you to undertake further short courses in:

- White Cards
- High Risk Work Licences

What specialist skills are needed on specific projects?

Renewable energy projects need drafting work but typically don't require special certifications.

Skill development mainly comes from practical experience, though training in equipment design and installation can help workers understand the technology better. However, some courses can help progress your career into specialist roles, like:

- Engineering design support e.g. Certificate IV in Engineering Drafting

Progress to management via courses such as Planning site management – e.g. Diploma of Civil Construction Management

Hear from the people building NSW's renewable energy future



Trades and technicians

Robbie Shankster – Operational Site Manager, Akaysha Energy

Robbie began his career with a mechanical fitter and machinist apprenticeship after finishing high school. Early roles installing high-voltage transformers led him to New Zealand, where he spent seven years installing and refurbishing hydro turbines. After returning to Australia, he worked across major power stations including Bayswater, Mount Piper and Collie before moving into renewable energy as Operational Site Manager at the Waratah Super Battery.

Robbie now oversees daily operations, safety approvals and system performance, balancing planning in the office with time on site. Having worked his way up from an apprentice, he encourages newcomers to explore the possibilities and gain hands-on experience wherever possible.

"Batteries operate a lot like generators. The technology changes, but the fundamentals from traditional power generation still apply."

Robbie Shankster

Engineering and project delivery

Design, integrate, and optimise complex systems that generate, store, and transmit renewable energy for use safely and reliably.

What do Engineers and project delivery workers do?

Engineers and project delivery workers design and build the renewable energy systems shaping NSW's future. You'll see your ideas become physical infrastructure that powers homes and communities.

Your skills are highly transferable across solar, wind, storage, and grid projects, giving you flexibility to move between technologies as the sector evolves.

With experience and as projects evolve, you can progress into technical leadership, project management, or specialist expert roles and corporate roles, with strong career mobility and long-term demand.



Why people choose this career?

- See designs become real infrastructure on the ground
- Solve complex technical and delivery challenges
- Skills are transferable across energy, construction and infrastructure
- Clear pathways into technical leadership and senior management roles

What does a typical day look like?

- Reviews site progress, safety, and technical priorities for the day
- Resolves technical, design, or construction issues as they arise
- Oversees quality, safety, and performance to keep projects on track

The following occupations are included in this category:

- Electrical engineers
- Civil engineers
- Mechanical engineers
- Environmental engineers
- Site Managers
- Software Engineers
- Chemical engineers

Hear from the people building NSW's renewable energy future



Trades and technicians

Jessica Haugh – Renewables Engineer, Zenviron

Jessica's interest in engineering began in high school, influenced by her parents' careers in mining and early work experience at a local electrical and metalworking company.

She entered the University of Newcastle's Renewable Energy Engineering degree in 2019, where assignments closely reflected real industry work, including engineering design, compliance with Australian Standards, and using simulation software.

A guest lecture from Zenviron during her second year led to a 12-week placement, followed by a casual role and then full-time employment in 2023.

Jessica now works on large-scale wind farms and battery storage projects, designing electrical systems and supporting construction teams.

For her, transitioning from study to industry meant learning how engineering concepts translate into practical, buildable infrastructure.

"I can view projects thinking 'I was a part of this."

Jessica Haugh


BORGERS
BORGERS

Electrical engineer

Electrical engineers design and improve power systems that keep life running. They solve complex technical challenges across solar, wind, storage, and grid projects. It's a high skill career, with the flexibility to move between technologies as the sector evolves.

Technology

Work location

Project phase

Salary range

- **Entry level (0-3 years):** $85,000 – $110,000
- **Mid-career level (4-9 years):** $120,000 – $180,000
- **Senior level (10+ years):** $190,000+

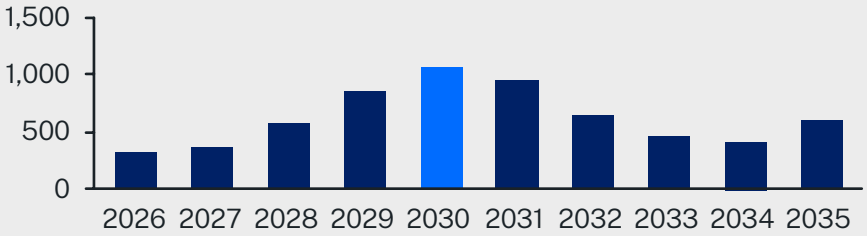
Qualification requirements

Complete a Bachelor of Engineering (Electrical or equivalent) from an accredited institution – 4 to 5 years

Demand over the next 10 years in NSW

Electrical engineers play a critical role across design, approvals, commissioning and early operations, driving strong demand growth through 2030. Beyond this peak delivery phase, demand continues in a more operational focus – supporting system performance, reliability, fault resolution and incremental upgrades as assets enter long-term service.

NSW demand for electrical engineers over the next 10 years



As an electrical engineer, you could be a...

Battery Installation Engineer

Designs how large battery systems are set up, connected, and protected so they can safely store and release electricity.

Automation and Controls Engineer

Designs the automated systems that monitor and control renewable energy equipment.

Grid Connection Engineer

Manages the technical process of connecting new energy projects to the main electricity grid.

Instrumentation Engineer

Designs and manages sensors and monitoring systems that track how equipment and plants perform.

Commissioning Engineer

Tests new energy systems before they go live to make sure everything works safely and correctly.

Distribution Network Engineer

Plans upgrades to local electricity networks so homes and businesses can reliably receive power.

Hydroelectric Engineer

Designs and maintains electrical systems in water-powered energy stations.

Transmission System Engineer

Designs and improves high-voltage power lines and substations that move electricity across the state.

How do you become an **electrical engineer**?

Education*: 4 years	**Graduate Engineer:** 1 to 2 years	**Project / Discipline Engineer:** 3 to 5 years	**Senior / Lead Engineer:** 6 to 10 years	**Principal / Authority / Manager:** 11 to 15+ years
1	2	3	4	5
Learn and apply core electrical theory across power systems, control, protection safety and applied design.	Apply engineering standards, support design and commissioning and assist project teams under supervision.	Own technical scopes, manage interfaces with other disciplines, and solve practical power system challenges.	Lead workstreams, make higher-stakes technical decisions, oversee compliance and risk and mentor junior engineers.	Influence technology choices across portfolios, govern large-scale systems, and provide strategic technical direction.

1 **Students:** Enter via relevant university studies

3 **Career Changers:** Enter via related industries with a relevant degree

5 **Senior / Specialists:** Enter with deep technical or leadership experience

Skilling and training

What does this look like in practice?

Undertake a 4-year Honours degree to become an engineering professional:

- Bachelor of Electrical Engineering (Honours) (or equivalent accredited degree).

*Alternatively, you can first become:

- An engineering associate through a relevant Advanced Diploma or Associate Degree.
- A technologist through a 3-year Bachelors degree.

And then undertake the Honours degree to become an engineering professional.

What skills are needed to enter the renewable energy workforce?

Project-or technology-specific requirements may require you to undertake further short courses in:

- Circuit design and simulation e.g. Digital Circuit Design | UNSW
- Grid and power systems fundamentals e.g. Power Electronics and Renewable Energy Systems | University of Newcastle
- Electrical safety and compliance e.g. AS/NZS 3000 Wiring Rules | Engineering Education Australia

What specialist skills are needed on specific projects?

Progress your career into specialist roles via courses like:

- High-voltage and substation design e.g. AS2067 Substation and HV Installations | Engineering Education Australia
- Renewable energy system integration e.g. Integration of Renewable and Distributed Generation | University of Wollongong
- Instrumentation and control systems e.g. Certificate IV in Instrumentation and Control

Progress to management via:

- Team management e.g. Managing diverse engineering teams | Engineers Australia

Civil engineers

Civil engineers design the structures, groundworks, and infrastructure that make wind farms, solar sites, and transmission networks safe and stable. It's a career that combines analytical design with real-world project delivery, offering long-term stability.

Technology

Work location

Project phase

Salary range

- **Entry level (0-4 years):** $75,000 – $90,000
- **Mid-career level (5-9 years):** $100,000 – $180,000
- **Senior level (10+ years):** $190,000+

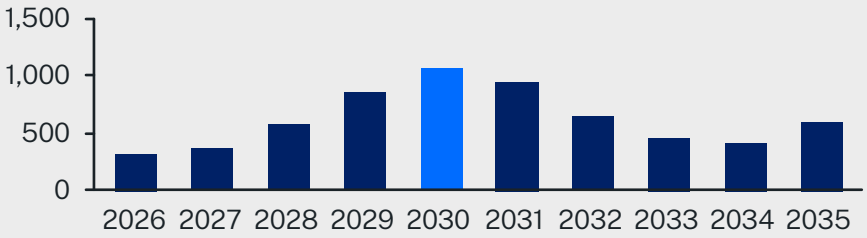
Qualification requirements

Complete a Bachelor of Engineering (Civil or equivalent) from an accredited institution – 4 to 5 years

Demand over the next 10 years in NSW

Civil engineering demand builds steadily through the late 2020s, reflecting the scale and complexity of infrastructure delivery activity. Over time, roles increasingly shift from large-scale construction oversight toward asset stewardship, performance monitoring and planning for future augmentations and network improvements.

NSW demand for civil engineers over the next 10 years



As a civil engineer, you could be a...

Geotechnical Engineer

Analyses soil and rock conditions to guide safe, durable, and stable infrastructure design and construction.

Drainage Engineer

Designs and oversees systems that safely transport water or other fluids across infrastructure projects.

Tunnelling Engineer

Plans and supervises underground works, ensuring tunnels and below-ground structures are built safely and correctly.

Geospatial Engineer

Measures and maps land and site conditions to support planning, design and construction decisions.

Structural Engineer

Designs the frameworks and supports that keep infrastructure strong, safe and able to handle heavy loads.

How do you become a **civil engineer**?

Education*:
4 years

1

Learn core civil, geotechnical, structural, and surveying principles, applied design, and regulatory frameworks.

Graduate Engineer:
1 to 2 years

2

Apply engineering standards, support civil infrastructure analysis and design, and build practical problem-solving skills under supervision.

Project / Discipline Engineer:
3 to 5 years

3

Own civil design scopes, enabling infrastructure, resolve construction challenges and ensure safety, quality and compliance.

Senior / Lead Engineer:
6 to 10 years

4

Lead multi-disciplinary teams, oversee complex civil systems, and make technical decisions on infrastructure designs and delivery.

Principal / Authority / Manager:
11 to 15+ years

5

Influence major project decisions, set technical direction and govern infrastructure performance at scale.

1 **Students:** Enter via relevant university studies

3 **Career Changers:** Enter via related industries with a relevant degree

5 **Senior / Specialists:** Enter with deep technical or leadership experience

Skilling and training

What does this look like in practice?

Undertake a 4-year Honours degree to become an engineering professional:

- Bachelor of Civil Engineering (Honours) (or equivalent accredited degree).

*Alternatively, you can first become:

- An engineering associate through a relevant Advanced Diploma or Associate Degree.
- A technologist through a 3-year Bachelors degree.

And then undertake the Honours degree to become an engineering professional.

What skills are needed to enter the renewable energy workforce?

Project-or technology-specific requirements may require you to undertake further short courses in:

- Systems design and drafting e.g. Civil Design Practice | UNSW
- Foundational technology e.g. Concrete Technology for Civil Engineering | Engineering Education Australia
- Civil standards and regulation e.g. The value of Australian Standards | TAFE NSW

What specialist skills are needed on specific projects?

Progress your career into specialist roles via courses like:

- High-voltage and substation design e.g. AS2067 Substation and HV Installations | Engineering Education Australia
- Renewable energy system integration e.g. Integration of Renewable and Distributed Generation | University of Wollongong
- Instrumentation and control systems e.g. Certificate IV in Instrumentation and Control

Progress to management via courses such as Team management e.g. Managing diverse engineering teams | Engineers Australia

Mechanical engineer

Mechanical engineers work on mechanical systems that enable energy infrastructure to perform safely, efficiently, and reliably over time. It's a career focused on performance and problem-solving, with pathways into specialist technical roles, leadership or delivery.

Technology

Work location

Project phase

Salary range

- **Entry level (0-4 years):** $70,000 – $110,000
- **Mid-career level (5-9 years):** $120,000 – $190,000
- **Senior level (10+ years):** $200,000+

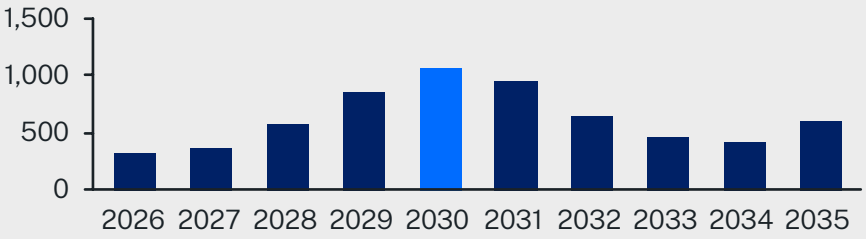
Qualification requirements

Complete a Bachelor of Engineering (Mechanical or equivalent) from an accredited institution – 4 to 5 years

Demand over the next 10 years in NSW

Mechanical engineering demand remains strong across the entire period, with growth extending well beyond initial project delivery. This reflects the long operational life of mechanical systems and the ongoing need for engineers to support maintenance strategies, performance optimisation, retrofitting and technology upgrades through the mid-2030s.

NSW demand for mechanical engineers over the next 10 years



As a mechanical engineer, you could be a...

Composite Engineer

Designs and improves advanced materials and components used in renewable energy equipment.

Manufacturing Engineer

Improves how mechanical components are produced, ensuring quality and efficiency in fabrication.

Mechatronics Engineer

Designs and develops smart, automated machines and robotics for intelligent systems.

Process Safety Engineer

Evaluates and mitigates mechanical and operational risks, to ensure mechanical systems run safely and meet standards.

Reliability Engineer

Analyses equipment performance and prevents failures to keep energy infrastructure running smoothly.

How do you become a **mechanical engineer**?

Education*: 4 years	**Graduate Engineer:** 1 to 2 years	**Project / Discipline Engineer:** 3 to 5 years	**Senior / Lead Engineer:** 6 to 10 years	**Principal / Authority / Manager:** 11 to 15+ years
1	2	3	4	5
Learn core mechanical principles, design fundamentals, reliability and process systems theory.	Apply mechanical knowledge to support plant design, equipment integration, and reliability tests under supervision.	Lead mechanical design delivery, resolve operational challenges and coordinate integration.	Oversee complex systems, manage technical teams and ensure projects meet safety, operational and compliance standards.	Advise on high-stakes mechanical systems, optimize asset performance and set technical standards and strategy.

1 **Students:** Enter via relevant university studies

3 **Career Changers:** Enter via related industries with undergraduate studies

5 **Senior / Specialists:** Enter with deep technical or leadership experience

Skilling and training

What does this look like in practice?

Undertake a 4-year Honours degree to become an engineering professional:

- Bachelor of Mechanical Engineering (Honours) (or equivalent accredited degree).

*Alternatively, you can first become:

- An engineering associate through a relevant Advanced Diploma or Associate Degree.
- A technologist through a 3-year Bachelors degree.

And then undertake the Honours degree to become an engineering professional.

What skills are needed to enter the renewable energy workforce?

Project-or technology-specific requirements may require you to undertake further short courses in:

- Machinery design e.g. Pumping Systems Design for Engineers | Engineering Education Australia
- System monitoring and troubleshooting e.g. Vibration Analysis, Balancing, Alignment, Predictive and Precision Maintenance of Machinery course | Engineering Institute of Technology

What specialist skills are needed on specific projects?

Progress your career into specialist roles via courses like:

- Maintenance strategy development e.g. Fundamentals of Asset Maintenance and Reliability Management | Engineering Education Australia
- Automation systems e.g. Automation and Robotics in Construction | IAT

Progress to management via courses like:

- Team management e.g. Managing diverse engineering teams | Engineers Australia

Environmental engineer

Environmental engineers protect nature by managing environmental risks, following regulations, and using sustainable designs that ensure low impact both in the short-and long-term.

Technology

Work location

Project phase

Salary range

- **Entry level (0-4 years):** $80,000 – $110,000
- **Mid-career level (5-9 years):** $120,000 – $190,000
- **Senior level (10+ years):** $200,000+

Qualification requirements

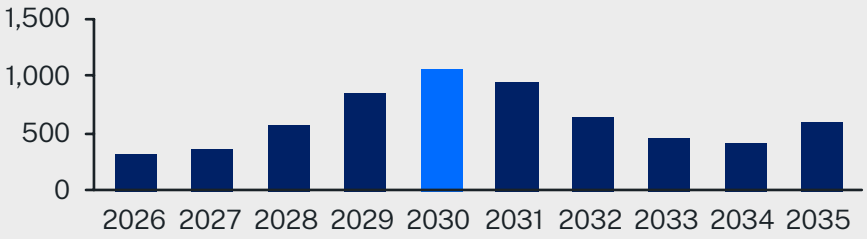
Complete a Bachelor of Engineering (Environmental or equivalent) from an accredited institution – 4 to 5 years



Demand over the next 10 years in NSW

Demand increases during planning, approvals and construction, where environmental assessment and controls are most intensive. As projects transition into operation, roles evolve toward ongoing monitoring, compliance management and continuous environmental improvement, supporting long-term sustainability outcomes.

NSW demand for environmental engineers over the next 10 years



As an environmental engineer, you could be a...

Contaminated Land Engineer

Develops systems and procedures to minimise environmental risks to the land project sites sit on.

Hydrogeology Engineer

Analyses groundwater and water systems to guide project design that protects the land and natural environment.

Remediation Engineer

Plans and executes strategies to restore, protect, and sustain natural systems affected by projects.

How do you become an **environmental engineer**?

Education*:
4 years

1

Learn environmental assessment, remediation principles, and sustainable design and regulatory fundamentals.

Graduate Engineer:
1 to 2 years

2

Support investigation, compliance monitoring, and design reviews under supervision.

Project / Discipline Engineer:
3 to 5 years

3

Manage risks and deliver solutions that meet regulatory and sustainability targets.

Senior / Lead Engineer:
6 to 10 years

4

Lead environmental analyses and sustainability decisions while coordinating delivery across teams.

Principal / Authority / Manager:
11 to 15+ years

5

Influence outcomes by providing expert advice on regulation, remediation and sustainability strategy.

1 **Students:** Enter via relevant university studies

3 **Career Changers:** Enter via related industries with a relevant degree

5 **Senior / Specialists:** Enter with deep technical or leadership experience

Skilling and training

What does this look like in practice?

Undertake a 4-year Honours degree to become an engineering professional:

- Bachelor of Environmental Engineering (Honours) (or equivalent accredited degree).

*Alternatively, you can first become:

- An engineering associate through a relevant Advanced Diploma or Associate Degree.
- A technologist through a 3-year Bachelors degree.

And then undertake the Honours degree to become an engineering professional.

What skills are needed to enter the renewable energy workforce?

Project-or technology-specific requirements may require you to undertake further short courses in:

- Contaminated land management e.g. Contaminated Site Assessment, Remediation and Management (CSARM) short course | UTS
- Land use standards e.g. Project Remediate: Safety standards at occupied sites | TAFE NSW

What specialist skills are needed on specific projects?

Progress your career into specialist roles via courses like:

- Impact of renewable energy projects e.g. Master of Engineering (Renewable Energy) | Macquarie University

Other courses that teach about the effects and environmental needs of renewable energy projects are helpful for environmental engineers.

Progress to management via courses like:

- Team management e.g. Managing diverse engineering teams | Engineers Australia

Site managers

Site managers coordinate and oversee construction on renewable energy projects, ensuring work is delivered safely, on time and to specification while managing crews, contractors and site activities.

Technology

Work location

Project phase

Salary range

- **Entry level (0-4 years):** $110,000 – $140,000
- **Mid-career level (5-9 years):** $150,000 – $180,000
- **Senior level (10+ years):** $190,000+

Qualification requirements

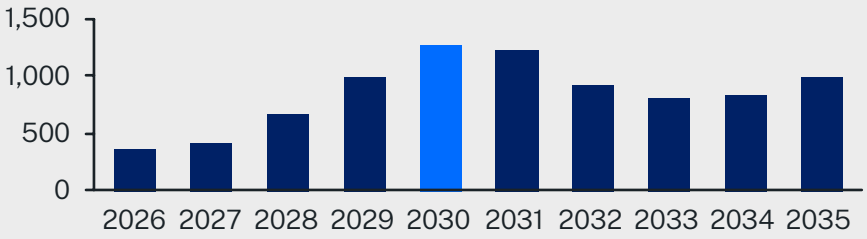
Complete a Certificate III/IV, Diploma or Bachelor degree in construction management, civil construction, or civil engineering from an accredited institution – 2 to 4 years



Demand over the next 10 years in NSW

Demand for site managers increases sharply through the late 2020s, reflecting the need to coordinate multiple large projects operating in parallel. As delivery programs mature, roles increasingly focus on managing staggered project schedules, commissioning activities and ongoing works across operational sites, maintaining demand into the 2030s.

NSW demand for site managers over the next 10 years



As a site manager, you could be a...

Commissioning Manager

Oversees testing and final preparation of equipment before operations begin.

Health, Safety, and Environment Manager

Oversees health, safety and environmental practices on sites, ensuring compliance with safety regulations and procedures.

Construction Manager

Oversees daily site operations by coordinating teams and contractors, schedules, budgets and safety.

How do you become a **site manager**?

1	2	3	4	5
Education: 2 to 4 years	**Graduate Engineer:** 1 to 2 years	**Project / Discipline Engineer:** 3 to 5 years	**Senior / Lead Engineer:** 6 to 10 years	**Principal / Authority / Manager:** 11 to 15+ years
Learn construction site fundamentals and build knowledge of how construction projects are delivered.	Support construction activities and learn how sites operate and what the safety, compliance, and resource management procedures are.	Progress into managing contractors, construction activities and work packages.	Lead full construction sites or major project packages, managing workforce, schedule, safety performance and delivery outcomes.	Oversee delivery of multiple projects as a construction director or project executive.

1 **Students:** Enter via relevant university studies

3 **Career Changers:** Enter via related industries with a relevant degree

5 **Senior / Specialists:** Enter with deep technical or leadership experience

Skilling and training

What does this look like in practice?

Start by getting site certification from NSW-approved RTOs:

- White Card – (CPCWHS1001 – Prepare to work safely in the construction industry)

While not always mandatory, undertake a trade qualification or Bachelor degree:

- Certificate III/IV in Civil Construction
- Diploma of Building and Construction (Building)
- Bachelor of Civil Engineering (Honours) (or equivalent accredited degree).
- Bachelor of Construction Management & Property (or equivalent accredited degree).

What skills are needed to enter the renewable energy workforce?

Skilling and training to enter the renewable energy workforce relies mostly on experience on the job.

- However, project- or technology-specific requirements may require you to undertake further short courses in:
- Working at Heights
- High Risk Work Licences
- Confined Space training
- Team management e.g. Managing diverse engineering teams | Engineers Australia

What specialist skills are needed on specific projects?

Skill development mainly comes from practical experience, though training in equipment design and installation can help workers understand the technology better.

Progress your career into specialist roles via courses like:

- Civil technical supervision e.g. Certificate IV in Civil Construction

Software engineer

Software engineers design and maintain digital systems that enable the secure, reliable and efficient monitoring, coordination and operation of energy systems.

Technology

Work location

Project phase

Salary range

- **Entry level (0-4 years):** $80,000 – $110,000
- **Mid-career level (5-9 years):** $120,000 – $180,000
- **Senior level (10+ years):** $190,000+

Qualification requirements

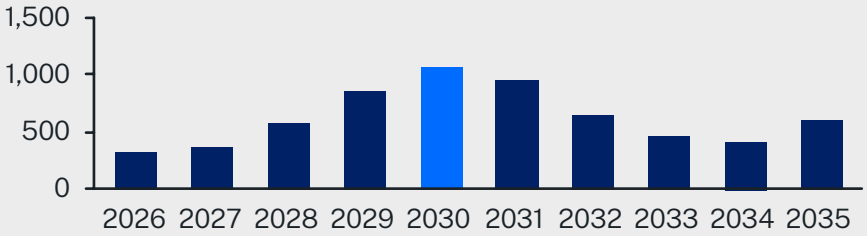
Complete a Bachelor of Engineering (Software or equivalent) from an accredited institution – 4 to 5 years



Demand over the next 10 years in NSW

Software engineering demand grows rapidly through the late 2020s as digital systems, automation and monitoring platforms are implemented. In the 2030s, demand remains sustained as software becomes central to day-to-day operations, asset optimisation and data-driven decision-making across the system.

NSW demand for software engineers over the next 10 years



As a software engineer, you could be a...

Automation Engineer

Creates and sets up automated systems to make operational systems more reliable, easier to control, and more efficient.

Supervisory Control and Data Acquisition Engineer

Ensures remote monitoring and control systems operate reliably, safely, and accurately across assets.

Information and Communication Technology Engineer

Develops and maintains digital and communication systems to help energy infrastructure work smoothly and connect easily.

How do you become a **software engineer**?

Education*: 4 years	**Graduate Engineer:** 1 to 2 years	**Project / Discipline Engineer:** 3 to 5 years	**Senior / Lead Engineer:** 6 to 10 years	**Principal / Authority / Manager:** 11 to 15+ years
1	2	3	4	5
Learn programming, automation, data systems, and control theory fundamentals.	Support design, integration and monitoring to ensure safe reliable operation.	Own software or automation solutions and develop, implement, optimise and trouble shoot systems integration and operations.	Lead teams delivering advanced software or control systems, make critical decisions and oversee integration.	Influence digital outcomes by setting software architecture, automation standards and direction.

1 **Students:** Enter via relevant university studies

3 **Career Changers:** Enter via related industries with a relevant degree

5 **Senior / Specialists:** Enter with deep technical or leadership experience

Skilling and training

What does this look like in practice?

Undertake a 4-year Honours degree to become an engineering professional:

- Bachelor of Software Engineering (Honours) (or equivalent accredited degree).

*Alternatively, you can first become:

- An engineering associate through a relevant Advanced Diploma or Associate Degree.
- A technologist through a 3-year Bachelors degree.

And then undertake the Honours degree to become an engineering professional.

What skills are needed to enter the renewable energy workforce?

Project-or technology-specific requirements may require you to undertake further short courses in:

- Cybersecurity e.g. Introduction to Cyber Security | TAFE NSW
- Program development and data analysis e.g. Software Programming and Data Modelling | IAT

What specialist skills are needed on specific projects?

Progress your career into specialist roles via courses like:

- SCADA systems e.g. Programmable Logic Controllers (PLCS) & SCADA Systems course | Engineering Institute of Technology

Progress to management via courses like:

- Team management e.g. Managing diverse engineering teams | Engineers Australia

Chemical engineer

Chemical engineers design and improve processes that make up energy production, storage, and industrial systems. It's a career built on problem-solving, with pathways into technical leadership, project delivery or expert roles.

Technology

Work location

Project phase

Salary range

- **Entry level (0-4 years):** $60,000 – $90,000
- **Mid-career level (5-9 years):** $100,000 – $150,000
- **Senior level (10+ years):** $160,000+

Qualification requirements

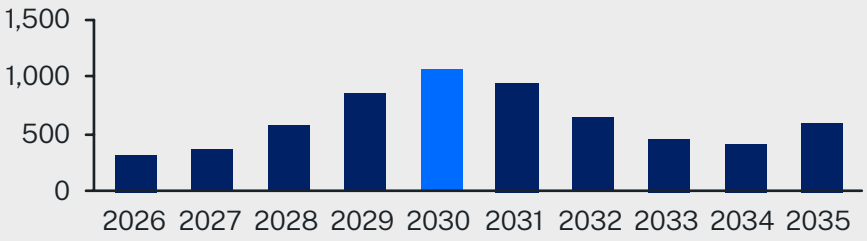
Complete a Bachelor of Engineering (Chemical or equivalent) from an accredited institution – 4 to 5 years



Demand over the next 10 years in NSW

Chemical engineers are increasingly required through system design and commissioning phases as complex processes come online. Over time, demand remains steady as roles focus on operational optimisation, safety management, emissions control and process efficiency across operational assets.

NSW demand for chemical engineers over the next 10 years



As a chemical engineer, you could be a...

Process Engineer

Designs and improves industrial processes to increase efficiency, safety, and performance in energy systems.

Materials Engineer

Selects and tests materials to ensure equipment and infrastructure are durable, safe, and long-lasting.

How do you become a **chemical engineer**?

Education*: 4 years	**Graduate Engineer:** 1 to 2 years	**Project / Discipline Engineer:** 3 to 5 years	**Senior / Lead Engineer:** 6 to 10 years	**Principal / Authority / Manager:** 11 to 15+ years
1	2	3	4	5
Learn chemical and process fundamentals, material behaviour and project design principles.	Apply engineering standards to support process design, operational analysis and material evaluation under supervision.	Own defined process scopes and systems and monitor, troubleshoot and optimise safe, efficient operations.	Lead process teams to solve complex chemical and material issues and maintain safety and operational compliance.	Influence process and materials strategy by guiding design choices and advising on risk across multiple projects.

1 **Students:** Enter via relevant university studies

3 **Career Changers:** Enter via related industries with a relevant degree

5 **Senior / Specialists:** Enter with deep technical or leadership experience

Skilling and training

What does this look like in practice?

Undertake a 4-year Honours degree to become an engineering professional:

- Bachelor of Chemical Engineering (Honours) (or equivalent accredited degree)

*Alternatively, you can first become:

- An engineering associate through a relevant Advanced Diploma or Associate Degree.
- A technologist through a 3-year Bachelors degree.

And then undertake the Honours degree to become an engineering professional.

What skills are needed to enter the renewable energy workforce?

Project-or technology-specific requirements may require you to undertake further short courses in:

- Process safety and hazard management e.g. Hazardous Chemicals Training | Australian Training Solutions
- Infrastructure corrosion e.g. ASM Corrosion | Materials Australia

What specialist skills are needed on specific projects?

Progress your career into specialist roles via courses like:

- BESS system design e.g. Grid-Connected Battery Storage Systems Design and Install | New Energy Training
- Hydropower system design e.g. Hydropower training | Entura

Other courses that teach about the effects and environmental needs of renewable energy projects are helpful for chemical engineers.

Progress to management via courses such as Team management e.g. Managing diverse engineering teams | Engineers Australia



Women in Construction Taster Program, Central West Orana REZ

Site support workers

Site support workers are involved in physically preparing, constructing, and operating project sites for reliable, long-term performance.

What do site support workers do?

Site support workers play a critical role across renewable projects by assisting with civil works, equipment handling, and plant operation support.

You work outdoors, handling tasks such as moving materials, preparing work areas, and operating machinery. Collaborating with professionals across trades, operators, and supervisors, you play a vital role in ensuring that assets are constructed, maintained, and operated efficiently and reliably. This career provides an entry point into many other roles across the clean energy workforce.

Why people choose this career?

- Hands-on work with clear results
- Transferable skills across many industries and leverage experience for interstate or international projects
- Dynamic work – no two days are the same
- Work as part of a team on real projects
- Strong pathways to leadership and specialist roles
- Simpler to join
- Build experience short-term, seasonally, or as a practical stepping-stone into further study or long-term careers



What does a typical day look like?

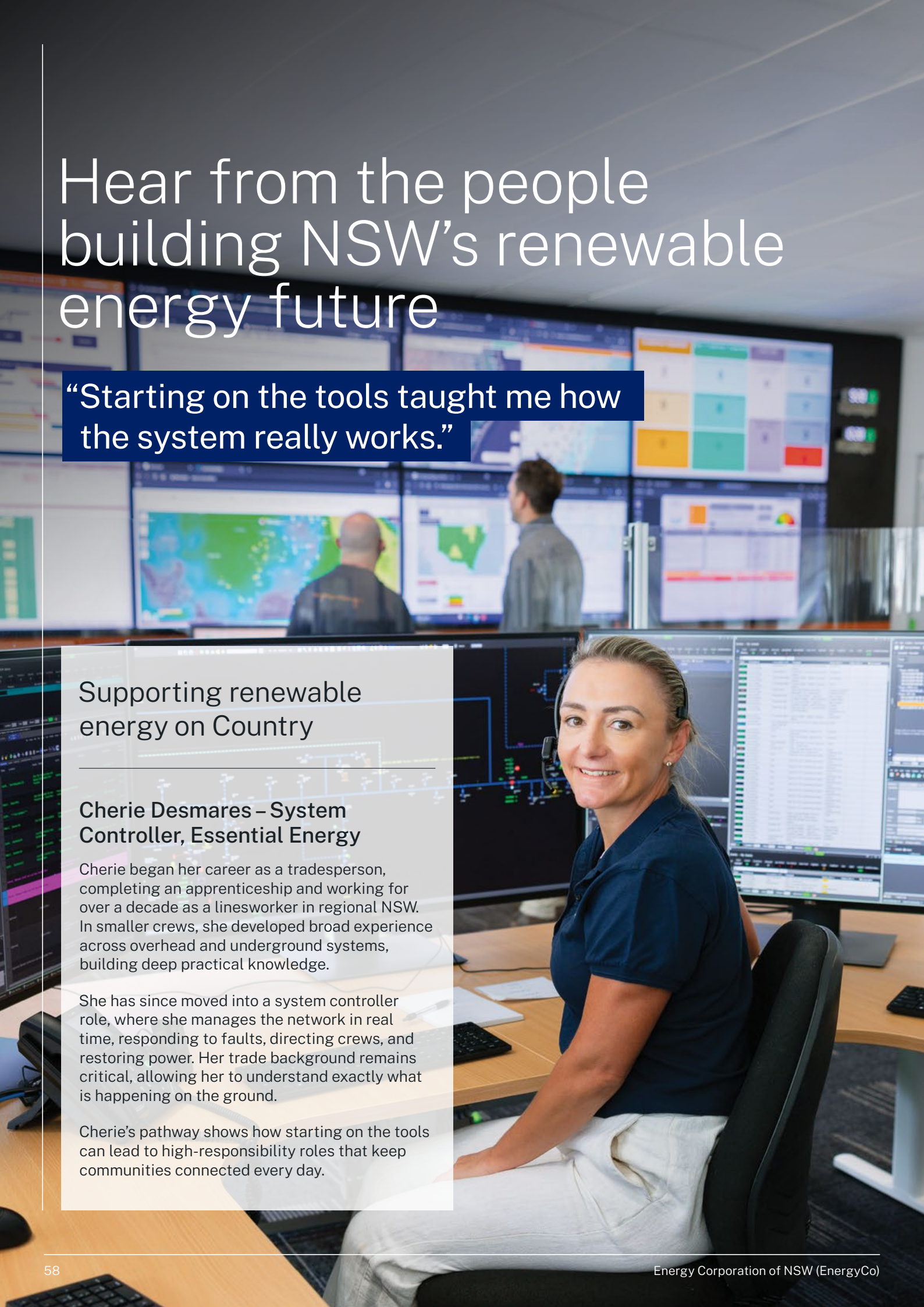
- Start your day with safety briefings and equipment checks
- Perform hands-on work and operate equipment to develop project sites and facilities
- Coordinate with supervisors and site teams
- Clean up, secure equipment, and prepare for next day

The following occupations are included in this category:

- Site labourers
- Mobile plant operators
- Site operators
- Site services and facilities staff

Hear from the people building NSW's renewable energy future

"Starting on the tools taught me how the system really works."



Supporting renewable energy on Country

Cherie Desmares – System Controller, Essential Energy

Cherie began her career as a tradesperson, completing an apprenticeship and working for over a decade as a linesworker in regional NSW. In smaller crews, she developed broad experience across overhead and underground systems, building deep practical knowledge.

She has since moved into a system controller role, where she manages the network in real time, responding to faults, directing crews, and restoring power. Her trade background remains critical, allowing her to understand exactly what is happening on the ground.

Cherie's pathway shows how starting on the tools can lead to high-responsibility roles that keep communities connected every day.



Site labourers

Site labourers prepare locations for renewable energy assets and systems, including handling materials, performing basic installations, and setting up equipment and machinery essential for construction.

Technology

Work location

Project phase

Salary range

- **Entry level (0-2 years):** $75,000 – $95,000
- **Experienced (3-7 years):** $100,000 – $120,000
- **Leading Hand/Specialist Tickets (10+ years):** $130,000+

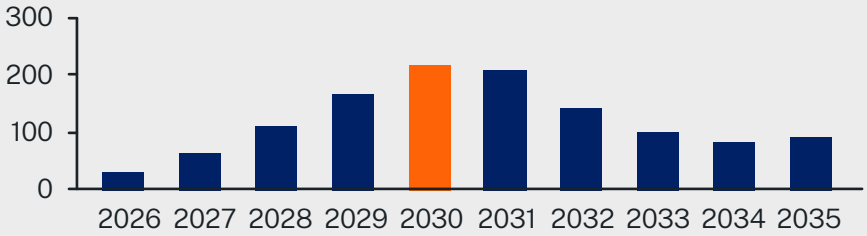
Qualification requirements

Certificate I/II in Construction (desirable), White Card (mandatory), relevant tickets (e.g. Working at Heights, Confined Spaces).

Demand over the next 10 years in NSW

Demand for site labourers rises significantly during the height of construction activity in the late 2020s. As project delivery slows, employment opportunities become more targeted, supporting maintenance programs, system upgrades and smaller-scale construction works that continue across operational sites.

NSW demand for site labourers over the next 10 years



As a general labourer, you could be a...

Trade Assistant

Support electricians, mechanical fitters and technicians with installation, cable pulling, mounting equipment and general site tasks.

Rigger and Doggers

Guide and secure loads during lifting operations for turbines, transformers, and large equipment (requires licence).

Site Support Labourers

Manage materials, traffic control, housekeeping, and safety compliance across active construction sites.

Pipe Layer / Civil Labourer

Assist with trenching, conduit installation, drainage, and underground services for solar farms and substations.

Scaffolder

Erect and dismantle scaffolding systems to enable safe access to wind turbines, substations, and transmission infrastructure.

How do you become a **labourer**?

Education:
6 months to 2 years

Site Labourer:
1 to 3 years

Specialist labourer/ supervisor:
3 to 5 years

1

Builds core site skills, safety knowledge and basic credentials to work on construction and energy projects. Provides entry into site-based roles and pathways into trades or technical work.

2

An accessible, hands-on entry pathway focused on real-world site experience, safety awareness and exposure to different construction activities. Often a steppingstone into skilled trade or specialist roles.

3

Offers progression into more skilled work with greater responsibility, including leading asks, coordinating with teams or moving into supervisory or operational roles.

1 **Students:** Enter via VET or apprenticeships

2 **Career Changers:** Enter via related industries with relevant licences or tickets

3 **Senior / Specialists:** Undertake a trade or specialise on-site.

Skilling and training

What does this look like in practice?

Start by getting site certification from NSW-approved RTOs:

- White Card – (CPCWHS1001 – Prepare to work safely in the construction industry)

While not mandatory, for foundations in site safety, basic tools, measurements, and workplace practices, you can also complete:

- Certificate I in Construction (CPC10120)
- Certificate II in Construction (CPC20120)

You can also enter directly from related industries (e.g. civil, mining, infrastructure) that provide transferable experience.

What skills are needed to enter the renewable energy workforce?

Project-or technology-specific requirements may require you to undertake further short courses in:

- Working at Heights and Confined Spaces – Prepares workers to safely operate on solar structures, wind towers, and within trench or substation environments
- Elevated Work Platform (EWP) or Forklift Licence – Enables safe materials handling and support of installation crews on active construction sites

What specialist skills are needed on specific projects?

Progress your career into specialist roles via courses like:

- Dogging or Rigging e.g. Certificate III in Rigging
- Scaffolding e.g. Certificate III in Scaffolding

Progress to management via courses like:

- Construction management e.g. Certificate IV in Building and Construction

Mobile plant operators

Mobile Plant operators operate special heavy machinery to prepare sites, move materials and support the safe construction and installation of renewable energy infrastructure, with salaries reflecting the complexity of their work.

Technology

Work location

Project phase

Salary range

- **Entry level (0-2 years):** $75,000 – $130,000
- **Experienced (3-7 years):** $110,000 – $180,000
- **Leading Hand/Specialist Tickets (10+ years):** $120,000 – $220,000+

Qualification requirements

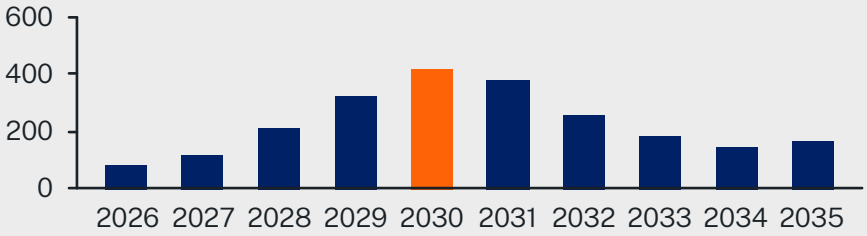
Certificate III in Construction (desirable), White Card (mandatory), relevant tickets (e.g. Working at Heights, Confined Spaces training, High Risk Work Licence)



Demand over the next 10 years in NSW

Mobile plant operator demand is closely aligned to intensive civil and bulk construction works, with highest demand during early and peak delivery phases. Over time, work becomes more selective and project-specific as infrastructure transitions into stable operation.

NSW demand for mobile plant operators over the next 10 years



As a mobile plant operator, you could be a...

Earth Moving Plant Operator

Operates heavy earth moving machinery to excavate, level and prepare renewable energy sites for construction.

Crane Operator

Operates cranes to safely lift and position large components such as turbines, transformers and battery units. High Risk Work Licences may be required.

Paving Plant Operator

Operates paving and compaction equipment to build access roads, hardstands and site surfaces.

Elevated Work Platform (EWP) Operator

Operates EWPs to safely position workers and equipment at height during construction activities. High Risk Work Licences may be required.

How do you become a **mobile plant operator**?

Education:
6 months to 2 years

Site-base operator:
1 to 3 years

Specialist operator/ supervisor:
3 to 5 years

1

Build core plant operation skills, safety knowledge and technical know-how to support your entry into site-based roles and pathways into specialist or high-skill operator work.

2

Focus on real-world site experience and safe operation of machinery, being exposed to a range of construction activities and equipment used across infrastructure projects.

3

Progress into more skilled roles with greater responsibility, including operating complex machinery or lead into leading-hand, specialist operator, or supervisory roles.

1 **Students:** Enter via VET or apprenticeships

2 **Career Changers:** Enter via related industries with relevant licences or tickets

3 **Senior / Specialists:** Specialise in on-site operator roles

Skilling and training

What does this look like in practice?

Start by getting site certification from NSW-approved RTOs:

- White Card – (CPCWHS1001 – Prepare to work safely in the construction industry)
- Machinery-specific competency – (e.g. RIIMPO301E)
- High Risk Work Licence – (High Risk Work Licence | SafeWork NSW)
- You can also enter directly from related industries (e.g. civil, mining, infrastructure) that provide transferable experience

What skills are needed to enter the renewable energy workforce?

Project-or technology-specific requirements may require you to undertake further short courses in:

- Working at Heights and Confined Spaces – Prepares workers to safely operate on solar structures, wind towers, and within trench or substation environments
- Elevated Work Platform (EWP) or Forklift Licence – Enables safe materials handling and support of installation crews on active construction sites
- Traffic Management – Enables safe movement of vehicles and plant where works interface with public roads or site haul routes

What specialist skills are needed on specific projects?

Progress your career into specialist roles via courses like:

- Dogging or Rigging e.g. Certificate III in Rigging
- Scaffolding e.g. Certificate III in Scaffolding

Progress to management via courses like:

- Construction management e.g. Certificate IV in Building and Construction

Site operators

Site operators manage the day-to-day operation of renewable energy assets, monitoring and controlling plant and network systems to ensure safe, reliable energy generation and ongoing performance.

Technology

Work location

Project phase

Salary range

- **Entry level (0-2 years):** $60,000 – $80,000
- **Experienced (3-7 years):** $90,000 – $120,000
- **Leading Hand/Specialist Tickets (10+ years):** $130,000+

Qualification requirements

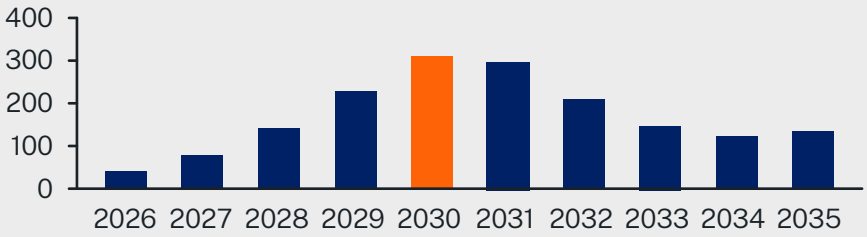
Certificate III or IV in relevant operations or technical field and site-specific licences required for live plant or network operations



Demand over the next 10 years in NSW

Site operator demand grows as projects move through commissioning and into early operations. As assets mature, demand settles into steady operational roles focused on safe, efficient day-to-day running of infrastructure.

NSW demand for site operators over the next 10 years



As a site operator, you could be a...

Power Generation Plant Operator

Operates and monitors renewable generation equipment to support safe, reliable power production and routine site operations.

Process Plant Operator

Operates and monitors process plant equipment to ensure safe and efficient operation of energy and industrial facilities.

Network Operator

Operate and monitor network assets supporting the safe flow of electricity through substations and distribution infrastructure.

System Controller

Monitor and control energy systems at a system level, coordinating multiple assets to maintain safe, reliable and efficient operation.

How do you become a **site operator**?

Education:
6 months to 2 years

Site-base operator:
1 to 3 years

Specialist operator/ supervisor:
3 to 5 years

1

Builds core site operation skills, safety knowledge and technical know-how to support your entry into site-based roles and pathways into specialist or high-skill operator work.

2

Focus on real-world site experience through routine inspections, monitoring, and safe operation of energy assets on renewable sites.

3

Progress into more skilled roles with greater site operation responsibility, including managing complex equipment, coordinating activities, or stepping into leading-hand or supervisory positions.

1 **Students:** Enter via VET or apprenticeships

2 **Career Changers:** Enter via related industries with relevant licences or tickets

3 **Senior / Specialists:** Undertake a trade or specialise on-site.

Skilling and training

What does this look like in practice?

Start by getting site certification from NSW-approved RTOs:

- White Card – (CPCWHS1001 – Prepare to work safely in the construction industry)

While not mandatory, for foundations in site safety, basic tools, measurements, and workplace practices, you can also complete:

- Certificate I in Construction (CPC10120)
- Certificate II in Construction (CPC20120)

You can also enter directly from related industries (e.g. civil, mining, infrastructure) that provide transferable experience.

What skills are needed to enter the renewable energy workforce?

Project-or technology-specific requirements may require you to undertake further short courses in:

- Working at Heights and Confined Spaces – Prepares workers to safely operate on solar structures, wind towers, and within trench or substation environments
- Elevated Work Platform (EWP) or Forklift Licence – Enables safe materials handling and support of installation crews on active construction sites

What specialist skills are needed on specific projects?

Progress your career into specialist roles via courses like:

- Authorized Switching Operator e.g. Electrical Switching Operations | UEPOPS124
- Renewable Energy Operations e.g. Renewable Energy Operations | UEPOPS152

Progress to management via courses like:

- Construction management e.g. Certificate IV in Building and Construction

Site services and facilities staff

Site services and facilities staff support the safe, secure and day-to-day operations of renewable energy sites. They provide essential on-site services that enable construction and operation work to run smoothly.

Technology

Work location

Project phase

Salary range

- **Entry level (0-2 years):** $55,000 – $70,000
- **Experienced (3-7 years):** $70,000 – $90,000
- **Leading Hand/Specialist Tickets (10+ years):** $100,000+

Qualification requirements

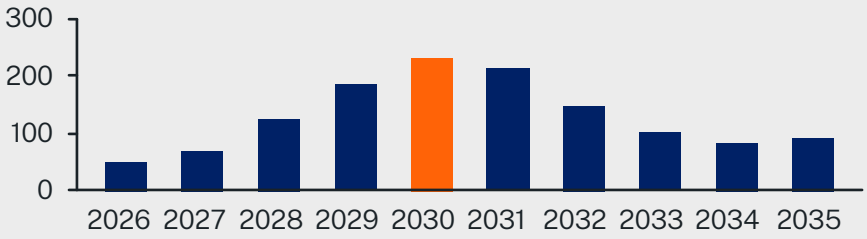
Qualifications vary by role and typically include Certificate II–IV training plus site-specific licences or tickets for safe on-site work



Demand over the next 10 years in NSW

Demand increases alongside workforce growth during major delivery periods and then stabilises as sites enter long-term operation. These roles remain essential in supporting safe, functional and well-run operational environments over the life of infrastructure.

NSW demand for site services and facilities staff members over the next 10 years



As a site services and facilities staff member, you could be a...

Security Officer

Controls site access, conducts patrols, and responds to incidents to protect people, equipment, and infrastructure.

Facilities Services Worker

Maintains amenities, buildings, and common areas to ensure the health, safety, and wellbeing of workers and the efficient use of the sites.

Site Administrator

Provides on-site administrative support, including inductions, record-keeping, and coordination of site documentation.

Traffic Controller

Directs vehicle and pedestrian movements on and around site to maintain safe access for workers and contractors.

How do you become a **site services and facilities staff member**?

Education:
6 months to 2 years

Site labourer:
1 to 3 years

Specialist labourer/ supervisor:
3 to 5 years
(eg. facilities coordinator)

1

Builds core site skills, safety knowledge, and basic credentials to work on construction and energy projects. Provides entry into site-based roles and pathways into trades or specialist work.

2

An accessible, hands-on entry pathway focused on real-world site experience, safety awareness, and exposure to different site activities. Often a steppingstone into specialist or supervisory roles.

3

Offers progression into more skilled work with greater responsibility, including leading tasks, coordinating teams, or moving into supervisory or operational roles.

1 **Students:** Enter via VET or apprenticeships

2 **Career Changers:** Enter via related industries with relevant licences or tickets

3 **Senior / Specialists:** Enter with deep technical or leadership experience

Skilling and training

What does this look like in practice?

Start by getting site certification from NSW-approved RTOs:

- White Card – (CPCWHS1001 – Prepare to work safely in the construction industry)

While not mandatory for all roles, foundations in workplace safety, communication and basic computer skills are helpful.

Experience from related industries (e.g. construction, logistics, cleaning, security, mining and utilities is highly transferable.)

What skills are needed to enter the renewable energy workforce?

Project-or technology-specific requirements may require you to undertake further short courses in:

- Security Operations e.g. Certificate III in Security Operations
- Forklift Licence e.g. Licence to operate a forklift truck
- Cleaning Operations e.g. Certificate III in Cleaning Operations

What specialist skills are needed on specific projects?

Progress your career into specialist roles via courses like:

- Site coordination/ logistics e.g. Certificate IV in Supply Chain Operations

Progress to management via courses like:

- Facilities Management e.g. Diploma of Facilities Management
- Leadership and Team Supervision e.g. Certificate IV in Leadership and Management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Specialist and corporate roles

They plan, fund, organise, and support projects, to keep businesses, people, and projects operating smoothly.

What do specialist and corporate roles do?

A corporate career plays a vital role in planning, managing, and governing renewable energy projects, while supporting the other people involved.

You work in diverse teams that bring a wide range of skills to the table, often in office settings with important field visits, for example to project sites or local communities.

These careers are highly flexible and transferable across industries. Over time, you can move between corporate areas and across sectors. By having or building energy sector knowledge, you can also progress into corporate management and leadership roles within the sector.



Why people choose this career?

- Work on decisions that shape major infrastructure projects
- Skills are valued across many industries
- Exposure to complex, real-world commercial and policy challenges
- Clear pathways into leadership and specialist roles

What does a typical day look like?

- Reviews priorities, data, or stakeholder inputs to plan the day
- Analyses information, prepares reports, or develops recommendations
- Works with technical, project, and community teams to support delivery

The following occupations are included in this category:

- Community engagement
- Governance, legal and compliance
- Workplace health and safety
- Scientists
- Asset management
- Technology and systems
- Commercial, Procurement and Finance
- Human resources
- Project managers and administrators
- Marketing and digital
- Strategy and planning

Hear from the people building NSW's renewable energy future

"You move from solving problems to shaping the whole system."

Supporting renewable energy on Country

Jay Esson – Head of Substations and Systems Engineering, Essential Energy

Jay began as an electrical engineer, building technical expertise across planning, operations, and system control before moving into leadership. She now works at a corporate level, overseeing teams responsible for integrating renewable energy into the grid while managing ageing infrastructure.

Her role involves strategic planning, policy development, and cross-team coordination, balancing risk, reliability, and future system needs. Having a strong technical foundation enables her to lead complex projects while maintaining a clear understanding of operational needs.

Jay's journey highlights how corporate roles in energy combine technical expertise with leadership to shape long-term system outcomes.



Community engagement

Community engagement professionals build strong relationships with landholders, communities, and Traditional Owners, helping projects earn trust, address concerns, and deliver shared benefits across all the people involved.

Technology

Work location

Project phase

Salary range

- **Entry level (0-4 years):** $65,000 – $85,000
- **Mid-career level (5-9 years):** $95,000 – $120,000
- **Senior level (10+ years):** $130,000+

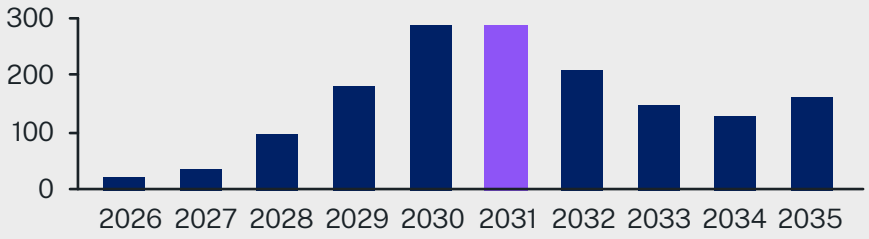
Qualification requirements

Complete a Bachelor's degree in Communications, Public Relations, or Community Development from an accredited institution – 3 years

Demand over the next 10 years in NSW

Demand grows strongly through the late 2020s as projects expand and interaction with local communities intensifies. While peak demand occurs around 2029, roles remain important into the 2030s as communities transition to long-term operation and ongoing communication, issue resolution and relationship management.

NSW demand for community engagement professionals over the next 10 years



As a community engagement professional, you could be a...

Community Engagement Officer

Builds relationships with local communities, explains project plans, analyses social impact, and shapes project outcomes.

Land Access Officer

Works with landowners to secure access rights and agreements needed for renewable project delivery and construction.

Social Procurement Specialist

Explores opportunities for local businesses, diverse suppliers, and First Nations participation.

Indigenous Engagement Advisor

Supports respectful engagement with First Nation communities, ensuring cultural interests and participation in project benefits.

Public Relations Advisor

Manages communications with media and stakeholders to share accurate project information and build positive perception.

How do you become a **community engagement professional**?

Education*: 3 years	**Graduate / Officer:** 1 to 3 years	**Specialist / Advisor:** 2 to 5+ years	**Manager / Functional Lead:** 5 to 8+ years	**Executive / Authority:** 12+ years
1	2	3	4	5
Study communications, social science, or community development, to understand impacts on people and communities.	Support consultations, prepare materials, and document feedback while learning respectful engagement practices.	Lead engagement with communities, landholders, and Traditional Owners, to build trust and support project delivery.	Develop engagement strategies, manage complex issues, and guide teams working across multiple projects or regions.	Set engagement standards and partnerships to deliver lasting social value and maintain community trust.

1 **Students:** Enter via relevant university studies

3 **Career Changers:** Enter via related industries with transferable skills

5 **Senior / Specialists:** Enter with deep technical or leadership experience

Skilling and training

What does this look like in practice?

Start with a 3-year Bachelor degree:

- Bachelor of Communications (majoring in Public Relations)
- Bachelor in Community Development
- Bachelor of Arts (Social Sciences)

On completion, you will generally be eligible to apply in various sectors. Electives focused on the renewable energy sector further enhance your understanding of the specific aspects of community impact and engagement within renewable energy.

What skills are needed to enter the renewable energy workforce?

Negotiation skills, and empathetic and responsive listening are essential while experience engaging with communities or landholders is desirable.

Skilling and training for renewable energy jobs mainly relies on hands-on work experience relevant to the field and your understanding of community impact and engagement tools and systems from the real-world.

What specialist skills are needed on specific projects?

Progressing your career mostly depends on building experience and expertise. However, there are some courses that can help you better prepare for specialisation:

- First Nations engagement eg., Aboriginal and Torres Strait Islander Cultural Competence Course | Reconciliation NSW
- Community engagement decision-making eg., Community Consultation and Engagement course | UTS

Progress to management via courses like:

- Strategic leadership and management eg., Accelerated Leadership Program | UNSW

Governance, legal, and compliance

Governance, legal, and compliance professionals manage governance and legal obligations, risk, and regulatory approvals, helping renewable energy projects operate safely, ethically, and within complex rules.

Technology

Work location

Project phase

Salary range

- **Entry level (0-4 years):** $65,000 – $85,000
- **Mid-career level (5-9 years):** $90,000 – $130,000
- **Senior level (10+ years):** $140,000+

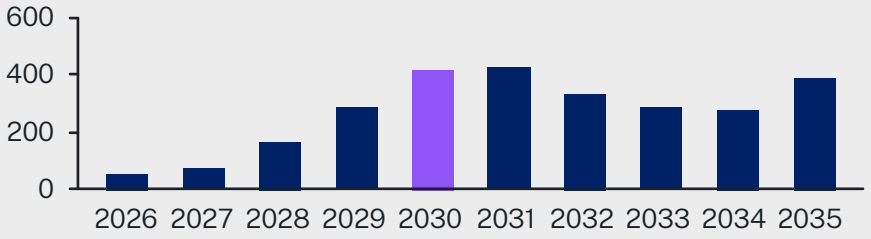
Qualification requirements

Complete a Bachelor's degree in Law, Business, Public Policy or Commerce from an accredited institution – 3 years

Demand over the next 10 years in NSW

Demand grows consistently through the late 2020s as projects scale and regulatory complexity increases. This demand remains into the 2030s, reflecting enduring requirements for compliance management, governance oversight and legal support across long-life operations.

NSW demand for governance, legal, regulatory and compliance professionals over the next 10 years



As a governance, legal, regulatory and compliance professional, you could be a...

Commercial Lawyer

Provides legal advice on contracts, transactions, and risks to protect organisations and ensure lawful outcomes.

Governance Officer

Supports organisational policies, reporting, and decision-making processes to ensure accountability and transparency.

Environmental, Safety & Quality Officer

Ensures projects adhere to environmental regulations, monitor environmental impact, and follow sustainability policies.

Compliance Officer

Monitors business activities to ensure they meet legal and regulatory requirements.

Risk Officer

Identifies and evaluates risks, helping the projects reduce harm such as fire risk and make informed decisions.

Note: There are also *indirect* governance, legal, regulatory and compliance roles. These sit mainly within government agencies, regulators and planning bodies, supporting renewable energy delivery through policy development, approvals, and system-wide oversight beyond individual projects.

How to get into **governance, legal, regulatory and compliance**?

1	2	3	4	5
Education: 3 years	**Graduate / Officer:** 1 to 3 years	**Specialist / Advisor:** 2 to 5+ years	**Manager / Functional Lead:** 5 to 8+ years	**Executive / Authority:** 12+ years
Build knowledge in law, governance, or risk management to understand regulation policy and accountability.	Support compliance reporting, policy administration, and risk tracking to learn how to meet legal and regulatory obligations.	Provide legal, governance, or risk advice that supports decision-making, and ensures regulatory compliance.	Lead governance frameworks, oversee risk systems, and manage legal or compliance teams.	Set organisational governance, legal, and risk strategy, ensuring integrity, accountability, and lawful operations.

1 **Students:** Enter via relevant university studies

3 **Career Changers:** Enter via related industries with transferable skills

5 **Senior / Specialists:** Enter with deep technical or leadership experience

Skilling and training

What does this look like in practice?

Start with a 3-year Bachelor degree:

- Bachelor of Law
- Bachelor of Commerce
- Bachelor of Business (Public Policy)

Upon completion, you will generally be eligible to apply in various sectors. Electives focused on the renewable energy sector further enhance your understanding of the specific aspects of governance, legal, regulatory and compliance within renewable energy.

What skills are needed to enter the renewable energy workforce?

Foundational knowledge in corporate governance, risk management, and legal compliance is critical, as is understanding policies, standards, and risk frameworks. Knowledge is transferable from other sectors.

Skilling and training for renewable energy jobs mainly relies on hands-on work experience relevant to the field and your understanding of governance, legal, regulatory and compliance tools and systems from the real-world.

What specialist skills are needed on specific projects?

Progressing your career mostly depends on building experience and expertise. However, there are some courses that can help you better prepare for specialisation:

- Contract law eg., Contract Law for Non-Lawyers | UNSW
- Laws and policy eg., Renewable Energy Law and Policy | UNSW

Progress to management via courses like:

- Strategic leadership and management eg., Accelerated Leadership Program | UNSW

Project managers and administrators

Project managers and administrators plan, coordinate, and track projects, ensuring timelines, budgets, contracts, and teams stay aligned from early development through construction and operation.

Technology

Work location

Project phase

Salary range

- **Entry level (0-3 years):** $70,000 – $100,000
- **Mid-career level (3-7 years):** $110,000 – $165,000
- **Senior level (8+ years):** $170,000+

Qualification requirements

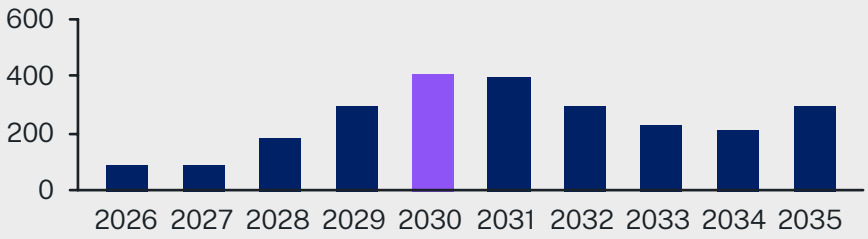
Complete a Certificate IV, Diploma or Bachelor's degree in project management from an accredited institution – 6 months to 4 years



Demand over the next 10 years in NSW

Project management and administration demand grows strongly during peak delivery years as projects scale in size, complexity and number. Over time, demand transitions toward managing overlapping projects, asset upgrades and operational initiatives, supporting continued workforce needs beyond the main construction phase.

NSW demand for project managers and administrators over the next 10 years



As a project manager or administrator, you could be a...

Planning Manager

Develops and tracks project timelines, identifying delays and coordinating teams to stay aligned with processes and approvals.

Project Controls Analyst

Monitors project budgets, schedules, and risks, producing reports to manage costs and track delivery progress.

Project Administrator

Supports project teams by coordinating documentation, schedules, reporting, and communications.

Project Manager

Plan, coordinate and deliver projects, balancing scope, time, cost, safety and stakeholder requirements across the lifecycle.

How do you become a **project manager or administrator**?

Education: 6 months to 4 years	**Graduate / Officer:** 1 to 3 years	**Specialist / Advisor:** 2 to 5+ years	**Manager / Functional Lead:** 5 to 8+ years	**Executive / Authority:** 12+ years
1	2	3	4	5
Build basic knowledge in planning, coordination, budgeting and delivery.	Start with supporting project documentation, scheduling, reporting and coordination across teams.	Manage project planning, schedules, budgets or delivery streams while coordinating teams.	Lead full projects, overseeing budgets, schedules, risk management and coordination across teams.	Direct major programs, overseeing delivery strategy, investment performance and project governance.

1 **Students:** Enter via relevant university studies

3 **Career Changers:** Enter via related industries with transferable skills

5 **Senior / Specialists:** Enter with deep technical or leadership experience

Skilling and training

What does this look like in practice?

While not always mandatory, start by getting a trade qualification or Bachelor degree:

- Certificate IV in Project Management Practice
- Diploma in Project Management
- Bachelor of Project Management (Honours) (or equivalent accredited degree).

Upon completion, you will generally be eligible to apply in various sectors. Electives focused on the renewable energy sector further enhance your understanding of the specific aspects of project management and administration within renewable energy.

What skills are needed to enter the renewable energy workforce?

Practical planning, communication, and management skills are essential while experience in project controls, regulations and contract administration are beneficial.

Skilling and training for renewable energy jobs mainly relies on hands-on work experience relevant to the field and your knowledge.

What specialist skills are needed on specific projects?

Progressing your career mostly depends on building experience and expertise. However, there are some courses that can help you better prepare for specialisation:

- Project management certification (e.g. PRINCE2, PMP)

Progress to management via courses like:

- Strategic leadership and management eg., Accelerated Leadership Program | UNSW

Workplace health and safety

Workplace health and safety professionals ensure compliance with work health and safety legislation, manage risks and promote worker wellbeing across renewable energy projects.

Technology

Work location

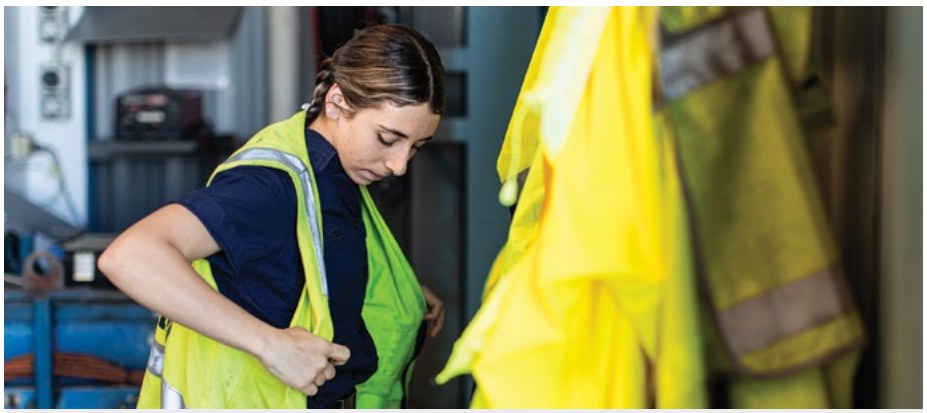
Project phase

Salary range

- **Entry level (0-4 years):** $65,000 – $85,000
- **Mid-career level (5-9 years):** $95,000 – $120,000
- **Senior level (10+ years):** $130,000+

Qualification requirements

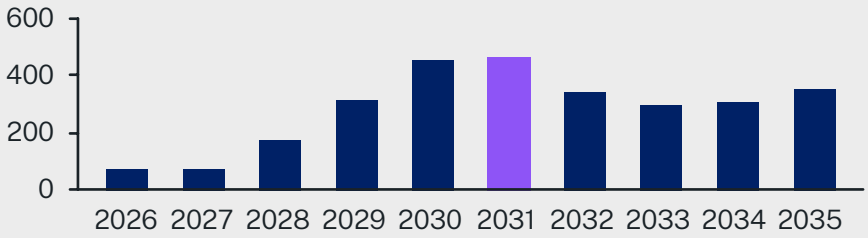
Complete a Certificate IV in Work Health and Safety or a Bachelor's degree in Occupational Health and Safety from an accredited university – 6 months to 3 years



Demand over the next 10 years in NSW

Workplace health and safety roles expand rapidly during the delivery and commissioning phases, when on-site activity is at its highest. Into the 2030s, demand remains as operational environments continue to require strong safety systems, monitoring and continuous improvement.

NSW demand for workplace health and safety over the next 10 years



As a workplace health and safety professional, you could be a...

OHS Practitioner

Identifies workplace hazards, assesses and controls risks and supports compliance with work health and safety legislation.

Health & First Aid Officer

Provides immediate first aid response, maintain resources and support emergency preparedness in the workplace.

Safety Coordinator

Coordinates inspections, incident reporting, training and documentation to support safe work practices.

WHS Educational Officer

Delivers training and safety awareness to build worker capability and promote safe work behaviours.

How do you become a **workplace health and safety professional**?

Education: 1.5 year to 3 years	**Graduate / Officer:** 1 to 3 years	**Specialist / Advisor:** 2 to 5+ years	**Manager / Functional Lead:** 5 to 8+ years	**Executive / Authority:** 12+ years
1	2	3	4	5
Study work health and safety, risk management and legislation and how to support safe places.	Learning how WHS requirements are applied in day-to-day operations.	Provide advice on managing and identifying risks, conduct audits, and help improve safe work practices.	Lead WHS systems and teams, manage complex risks and embed safety, wellbeing and compliance.	Set organisational WHS strategy, oversee governance and compliance and create long-term safety culture and performance.

1 **Students:** Enter via relevant university studies

3 **Career Changers:** Enter via related industries with transferable skills

5 **Senior / Specialists:** Enter with deep technical or leadership experience

Skilling and training

What does this look like in practice?

Start with either VET certification or a 3-year Bachelor's degree:

- Cert IV in Work Health and Safety
- Diploma in Work Health and Safety
- Bachelor of Occupational Health and Safety

Upon completion, you will generally be eligible to apply in various sectors. Electives focused on the renewable energy sector further enhance your understanding of how WHS operates in renewable energy.

What skills are needed to enter the renewable energy workforce?

Practical risk assessment, communication and stakeholder engagement skills are essential, with the ability to apply WHS legislation, procedures and safe systems of work in real-world settings desirable.

Skilling and training for renewable energy jobs mainly relies on hands-on work experience relevant to the field and your understanding of WHS systems, risk controls, incident management and compliance requirements in real project environments.

What specialist skills are needed on specific projects?

Progressing your career mostly depends on building experience and expertise. However, there are some courses that can help you better prepare for specialisation:

- Incident Cause Analysis Method Course eg. ICAM Lead Incident Investigation Course | OHSA
- ISO 45001 OHS Management Systems eg. ISO 45001 Training Courses - Health and Safety | BSI

Progress to management via courses like:

- Strategic leadership and management eg., Accelerated Leadership Program | UNSW

Asset management

Asset management professionals oversee performance, reliability and long-term value of renewable energy assets. They ensure safe, efficient operations in-line with technical and regulatory requirements.

Technology

Work location

Project phase

Salary range

- **Entry level (0-4 years):** $70,000 – $90,000
- **Mid-career level (5-9 years):** $95,000 – $130,000
- **Senior level (10+ years):** $140,000+

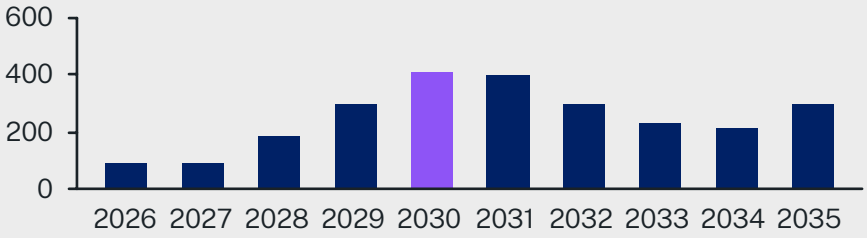
Qualification requirements

Complete a Bachelor's degree in Engineering, Science or Business from an accredited institution – 3 to 4 years

Demand over the next 10 years in NSW

Asset management demand grows progressively across the entire period, becoming especially strong as newly delivered infrastructure moves into operation. Roles increasingly focus on whole-of-life asset planning, condition monitoring, performance optimisation and long-term investment decision-making into the mid-2030s and beyond.

NSW demand for asset management professionals over the next 10 years



As an asset management professional, you could be a...

Renewable Asset Manager

Oversees the long-term performance, risk and value of renewable energy asset across their operating life.

Asset Operations Manager

Manages day-to-day site operations to ensure renewable assets run safely, reliably and within performance targets.

Maintenance Planner

Plans and schedules preventive and corrective maintenance activities to support safe and reliable asset operation.

Asset Performance Analyst

Analyses operational data to identify performance issues, reliability risks and opportunities to improve energy output.

Operations and Management Manager

Leads maintenance programs, teams and contractors to maximise asset availability and minimise downtime.

How do you become an **asset management professional**?

Education: 3 years	**Graduate / Officer:** 1 to 3 years	**Specialist / Advisor:** 2 to 5+ years	**Manager / Functional Lead:** 5 to 8+ years	**Executive / Authority:** 12+ years
1	2	3	4	5
Study engineering, science or business to understand how renewable assets operate and are maintained.	Support asset monitoring, reporting, maintenance planning, and compliance activities.	Analyse performance, improve reliability, and guide operational and maintenance decisions.	Lead teams, manage budgets, and optimise performance across sites or portfolios.	Set asset strategy, performance standards, and long-term investment priorities.

1 **Students:** Enter via relevant university studies

3 **Career Changers:** Enter via related industries with transferable skills

5 **Senior / Specialists:** Enter with deep technical or leadership experience

Skilling and training

What does this look like in practice?

Start with a 3-year to 4-year Bachelor degree:

- Bachelor of Engineering
- Bachelor in Science
- Bachelor of Business

Upon completion, you will generally be eligible to apply in various sectors. Electives and experience relevant to renewable energy can help you build an understanding of asset performance, maintenance strategies, and long-term infrastructure management.

What skills are needed to enter the renewable energy workforce?

Technical understanding, data analysis and problem solving are essential, while understanding of maintenance systems and site operations is desirable

Skilling and training for renewable energy jobs mainly relies on hands-on work experience relevant to the field and your understanding of how renewable assets perform under real operating conditions.

What specialist skills are needed on specific projects?

Progressing your career mostly depends on building experience and expertise. However, there are some courses that can help you better prepare for specialisation:

- Asset Management eg., Asset Management Fundamentals | Asset Management Council (Australia)
- Asset Reliability eg., Asset Maintenance and Reliability | Engineering Education Australia

Progress to management via courses like:

- Strategic leadership and management eg., Accelerated Leadership Program | UNSW

Scientists

Scientists apply environmental, geological and physical sciences to assess impacts, manage risks and support safe, compliant and sustainable energy project delivery, including environmental and cultural heritage assessments.

Technology

Work location

Project phase

Salary range

- **Entry level (0-4 years):** $70,000 – $90,000
- **Mid-career level (5-9 years):** $95,000 – $130,000
- **Senior level (10+ years):** $140,000+

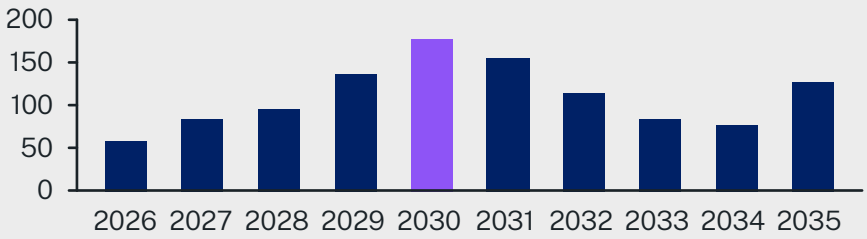
Qualification requirements

Complete a Bachelor of Science (or equivalent) from an accredited institution – 3 years

Demand over the next 10 years in NSW

Demand for scientists increases through project delivery and commissioning, supporting analysis, testing and system performance validation. As infrastructure moves into long-term operation, roles continue to support monitoring, optimisation and evidence-based decision-making, creating steady demand beyond peak delivery years.

NSW demand for scientists over the next 10 years



As a scientist, you could be a...

Ecologist

Assesses ecosystems and species impacts, conducting field surveys and analysis to support conservation and development decisions.

Conservation Officer

Protects the natural environment by managing land, enforcing regulation and supporting conservation programs.

Chemist

Supports Battery Energy Storage System facilities by analysing battery materials, soils, and water to manage safety, contamination, and regulatory compliance.

Geologist

Studies rock, soil and landform conditions to assess ground stability, resources and environmental risks.

Environmental Research Scientist

Designs and conducts environmental studies, analysing data to inform policy, regulation and environmental management.

Hydrogeologist

Assesses groundwater systems for pumped hydro, battery storage sites and transmission infrastructure, supporting water management and risk mitigation.

Geophysicist

Uses physical measurements and modelling to analyse subsurface structures and geological processes.

Fluvial Geomorphologist

Studies river systems and sediment movement to inform flood risk, river management and restoration.

How do you become a **scientist**?

Education:	**Graduate Scientist:**	**Senior Scientist:**	**Principal Scientist:**	**Technical Authority:**
3 years	1 to 3 years	3 to 6 years	10 to 15+ years	10 to 15+ years
1	2	3	4	5
Learn core scientific principles, data methods, and regulation to assess environmental, physical, and natural systems.	Apply scientific methods to assist with fieldwork, data analysis, and report under supervision.	Interpret results, resolve technical issues, and provide specialist advice to deliver projects.	Oversee complex workstreams, manage technical risk, and oversee regulatory and performance requirements.	Advise on high-risk issues, set technical standards, and provide independent expert judgement to support long-term outcomes.

1 **Students:** Enter via relevant university studies

3 **Career Changers:** Enter via related industries with transferable skills

5 **Senior / Specialists:** Enter with deep technical or leadership experience

Skilling and training

What does this look like in practice?

Start with a 3-year bachelor degree:

- Bachelor of Science
- Bachelor of Advanced Science
- Bachelor of Environmental Science

Upon completion, you can apply your skills across a range of sectors.

Electives and experience in renewable energy can help build your understanding of environmental systems, data analysis, and the role of science in planning, operating, and improving energy infrastructure.

What skills are needed to enter the renewable energy workforce?

Practical communication, technical writing, and analytical skills are essential, along with the ability to explain scientific findings to project teams, regulators, and non-technical stakeholders.

Skilling and training for renewable energy jobs mainly relies on hands-on work experience relevant to the field and your understanding of scientific assessment methods, data collection and analysis, and how evidence is applied in real-world renewable energy projects.

What specialist skills are needed on specific projects?

Progressing your career mostly depends on building experience and expertise. Courses like the below can help you better prepare for specialisation:

- Spatial monitoring eg., Graduate Certificate in GIS and Remote Sensing | Charles Sturt University
- Environmental impact assessment eg., Environmental Impact Assessment | Newcastle University

Progress to management via courses like:

- Strategic leadership and management eg., Accelerated Leadership Program | UNSW

Technology and systems

Technology and system professionals manage data, networks, cybersecurity and systems architecture supporting energy operations.

Technology

Work location

Project phase

Salary range

- **Entry level (0-4 years):** $70,000 – $95,000
- **Mid-career level (5-9 years):** $100,000 – $130,000
- **Senior level (10+ years):** $140,000+

Qualification requirements

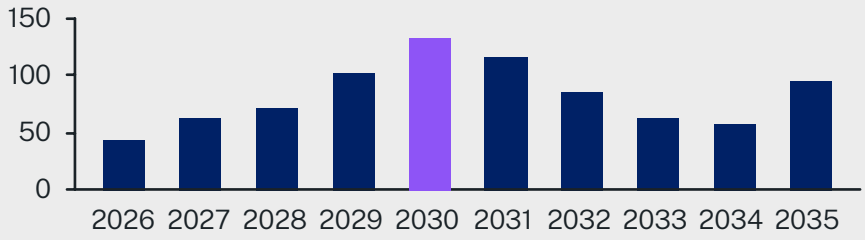
Complete a Bachelor's degree in Computer Science, Information Technology or Data Analytics from an accredited institution – 3 years



Demand over the next 10 years in NSW

Technology and systems roles grow strongly through the late 2020s as digital platforms, monitoring tools and operational systems are deployed. While demand moderates after initial rollout, roles remain essential into the 2030s as digital systems underpin day-to-day operations, optimisation and resilience.

NSW demand for technology and systems professionals over the next 10 years



As a technology and system professional, you could be a...

Data Analyst

Collects and analyses data from systems, projects or operations to support reporting, planning and performance improvement.

Network Administrator

Manages and maintains digital networks so sites, systems and teams can communicate and operate without disruption.

Systems Architect

Defines and connects the digital systems that support business operations, ensuring that platforms work together reliably and securely.

Cyber Security Analyst

Helps protect digital systems by monitoring for threats, identifying vulnerabilities, and responding to security incidents.

How do you become a **technology and systems professional**?

Education: 3 years	**Graduate / Officer:** 1 to 3 years	**Specialist / Advisor:** 2 to 5+ years	**Manager / Functional Lead:** 5 to 8+ years	**Executive / Authority:** 12+ years
1	2	3	4	5
Study how digital systems, data, and networks support complex infrastructure and energy projects.	Support data analysis, system configuration, reporting, and monitoring tasks while learning how digital systems are used.	Design, configure, and optimise data platforms, networks, or cyber security controls.	Lead technology strategies, manage specialist teams, and oversee digital systems across multiple projects or assets.	Set digital and cyber standards, oversee technology strategy, and govern systems that enable safe, secure, and efficient operations.

1 **Students:** Enter via relevant university studies

3 **Career Changers:** Enter via related industries with transferable skills

5 **Senior / Specialists:** Enter with deep technical or leadership experience

Skilling and training

What does this look like in practice?

Start with a 3-year Bachelor degree:

- Bachelor of Computer Science
- Bachelor of Data Analytics
- Bachelor of Cybersecurity

Upon completion, you will generally be eligible to apply in various sectors. Electives focused on the renewable energy sector further enhance your understanding of how digital systems support energy infrastructure, operations and systems reliability.

What skills are needed to enter the renewable energy workforce?

Analytical thinking, digital literacy, and problem-solving skills are essential, while experience with enterprise systems, cloud platforms, or cyber security tools is desirable.

Skilling and training for renewable energy jobs mainly relies on hands-on work experience relevant to the field and your understanding of real-world system operations, data flows, and cyber risks within large infrastructure and energy environments.

What specialist skills are needed on specific projects?

Progressing your career mostly depends on building experience and expertise. However, there are some courses that can help you better prepare for specialisation:

- Cyber security eg., Graduate Certificate in Cybersecurity | UNE
- Digital systems and infrastructure eg., Master of Information Technology | University of Newcastle

Progress to management via courses like:

- Strategic leadership and management eg., Accelerated Leadership Program | UNSW

Commercial, procurement and finance

Commercial, procurement, and finance roles support the planning, funding, and delivery of renewable energy projects across the entire lifecycle.

Technology

Work location

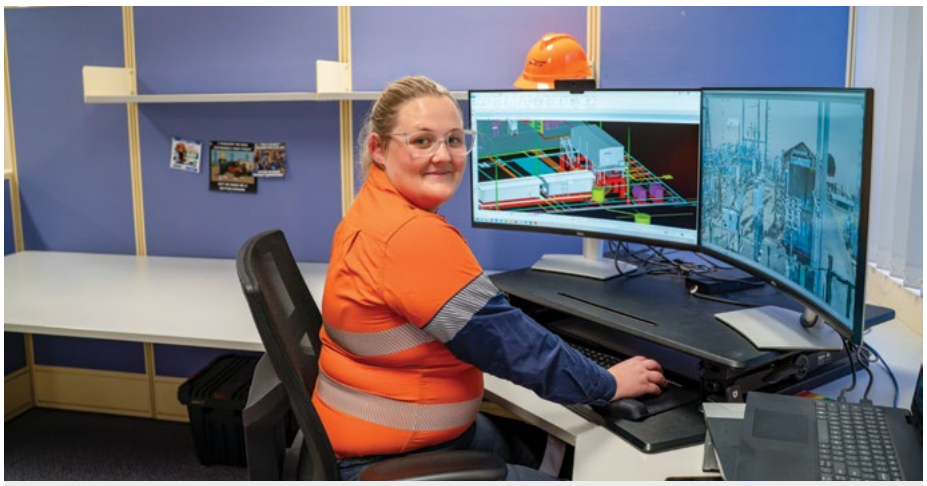
Project phase

Salary range

- **Entry level (0–4 years):** $70,000 – $100,000
- **Mid-career level (5–9 years):** $110,000 – $150,000
- **Senior level (10+ years):** $160,000+

Qualification requirements

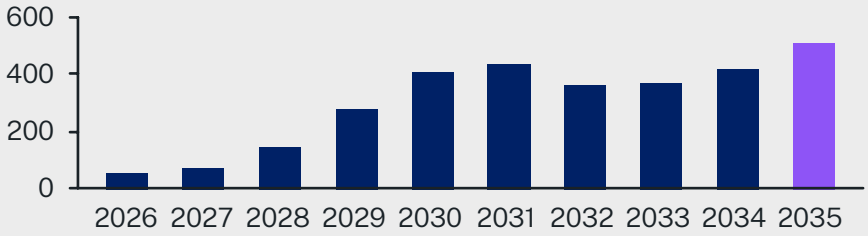
Complete a Bachelor's degree in Commerce, Business, Accounting or Finance or Economics from an accredited institution – 3 years



Demand over the next 10 years in NSW

Demand for commercial, procurement, and finance roles is projected to grow from 2026, accelerating as renewable energy projects move into planning, procurement, and construction phases. Based on current modelling, demand peaks as large volumes of projects are delivered, before stabilising at a steady level as projects transition into ongoing operations and asset management.

NSW demand for commercial, procurement, and finance roles over the next 10 years



As a commercial, procurement or finance professional, you could be a...

Commercial Manager

Oversees commercial strategy, project budgets, and risk across delivery.

Contracts Manager

Develops and manages contracts to ensure projects are delivered on time and within budget.

Financial Analyst

Tracks project costs, performance, and financial outcomes.

Accountant

Manages financial records, reporting, and compliance.

1	2	3	4	5
Education: 3 years	**Graduate / Officer:** 1 to 3 years	**Specialist / Advisor:** 2 to 6 years	**Manager / Functional Lead:** 5 to 10+ years	**Executive / Authority:** 12+ years
Study business, commerce, accounting, finance, economics, to understand budgeting, contracts, and investment decisions.	Support budgeting, procurement and reporting, while learning how financial decisions influence project delivery	Manage contracts, supplier relationships, financial analysis, and risk to support project performance.	Oversee budgets, procurement strategies, contract frameworks, and supplier performance while leading teams.	Set commercial and financial strategy, guide investment decisions, and manage large portfolios of projects and partnerships.

1 **Students:** Enter via relevant university studies

3 **Career Changers:** Enter via related industries with transferable skills

5 **Senior / Specialists:** Enter with deep technical or leadership experience

Skilling and training

What does this look like in practice?

Start with a 3-year Bachelor degree:

- Bachelor of Commerce
- Bachelor of Business
- Bachelor of Accounting or Finance
- Bachelor of Economics

You can build experience through graduate roles across energy, infrastructure, or finance sectors, with opportunities to specialise in commercial management, procurement, or project finance.

What skills are needed to enter the renewable energy workforce?

- Commercial and financial analysis
- Contract management and negotiation
- Data analysis and problem-solving
- Stakeholder engagement and communication
- Understanding of project delivery and risk

Skills are highly transferable from industries such as infrastructure, construction, mining, and professional services.

What specialist skills are needed on specific projects?

Progress your career through experience and specialist training such as:

- Contract negotiation and procurement
- Energy market and project economics

Progress to leadership through training in:

- Strategic leadership and management
- Commercial and financial governance

Human resources

Human resource professionals recruit, develop, and support the workforce that delivers renewable energy, ensuring projects and organisations have the right skills, culture, and working conditions to get their jobs done.

Technology

Work location

Project phase

Salary range

- **Entry level (0-4 years):** $60,000 – $80,000
- **Mid-career level (5-9 years):** $90,000 – $120,000
- **Senior level (10+ years):** $130,000+

Qualification requirements

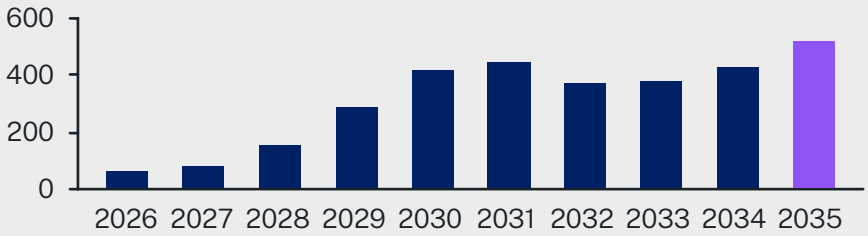
Complete a Certificate IV in Human Resource Management or a Bachelor's degree in Human Resources, Business or Psychology from an accredited institution – 6 months to 3 years



Demand over the next 10 years in NSW

HR demand rises progressively across the period, growing further in the 2030s as workforce management shifts from rapid recruitment toward skills development, retention and capability uplift. These roles become increasingly important as organisations move into long-term operations.

NSW demand for human resources professionals over the next 10 years



As a human resources professional, you could be a...

Industrial Relations Advisor

Provides guidance on developing business and workforce relations with other industry members.

Talent Acquisition Consultant

Finds, interviews, and helps hire people to fill roles needed for projects and company operations.

Rostering Manager

Creates and manages staff schedules to ensure workers are where they're needed when they're needed.

Training Officer

Organises education and upskilling so workers have the skills needed for their roles and future progression.

How do you become a **human resources professional**?

1	2	3	4	5
Education: 3 years	**Graduate / Officer:** 1 to 3 years	**Specialist / Advisor:** 2 to 5+ years	**Manager / Functional Lead:** 5 to 8+ years	**Executive / Authority:** 12+ years
Study human resources, psychology or business to understand how organisations attract and develop people.	Support recruitment, onboarding and training to learn how workforce systems support project delivery.	Manage talent acquisition, workforce planning, or employee relations to build a skilled and supported workforce.	Lead HR programs and oversee workforce capability, culture, and performance systems.	Set workforce strategy and culture direction to attract, retain and develop people long term.

1 **Students:** Enter via relevant university studies

3 **Career Changers:** Enter via related industries with transferable skills

5 **Senior / Specialists:** Enter with deep technical or leadership experience

Skilling and training

What does this look like in practice?

Start with either VET certification or a 3-year Bachelor's degree:

- Certificate IV in Human Resource Management
- Bachelor of Business (majoring in Human Resource Management)
- Bachelor of Commerce (majoring in Human Resource Management)
- Bachelor of Psychology

Upon completion, you will generally be eligible to apply in various sectors. Electives focused on the renewable energy sector further enhance your understanding of the specific aspects of human resource management within renewable energy.

What skills are needed to enter the renewable energy workforce?

Practical talent management, employment law, and organisational development are essential.

HR, workforce planning, and employment law experience from any sector translates directly into corporate energy roles.

Skilling and training for renewable energy jobs mainly relies on hands-on work experience relevant to the field and your understanding of human resource management tools and systems from the real-world.

What specialist skills are needed on specific projects?

Progressing your career mostly depends on building experience and expertise. However, there are some courses that can help you better prepare for specialisation:

- Industrial relations eg., Graduate Certificate in Industrial Relations | Charles Sturt University

Progress to management via courses like:

- Human resource advisory eg., Diploma of Human Resource Management | AIM
- Strategic leadership and management eg., Accelerated Leadership Program | UNSW

Marketing and digital

Marketing and digital professionals communicate the purpose, progress, and impact of renewable energy projects through clear messaging, campaigns, and digital platforms.

Technology

Work location

Project phase

Salary range

- **Entry level (0-4 years):** $65,000 – $80,000
- **Mid-career level (5-9 years):** $85,000 – $120,000
- **Senior level (10+ years):** $130,000+

Qualification requirements

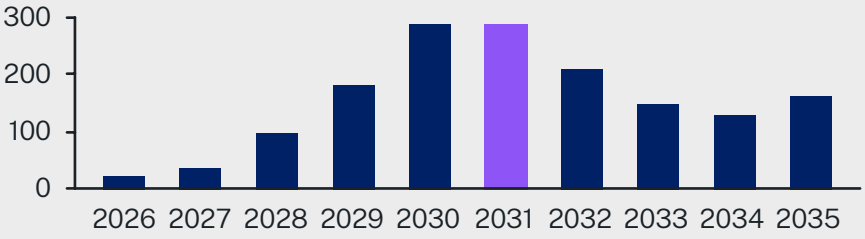
Complete a Certificate IV or a Bachelor's degree in Communications or Marketing from an accredited institution – 3 years



Demand over the next 10 years in NSW

Marketing and digital roles expand through planning and delivery phases, supporting stakeholder engagement, public communication and information sharing. Into the 2030s, demand reduces, focused on operational communications, reputation management and digital engagement.

NSW demand for marketing and digital professionals over the next 10 years



As a marketing and digital professional, you could be a...

Campaign Director

Plans and leads communication campaigns that explain projects clearly, support engagement and align messaging across channels.

Media Advisor

Manages relationships with media to share accurate information and support public understanding about projects.

Brand Strategist

Defines and protects brand identity, ensuring projects are presented consistently, clearly and in line with organisational values.

Web Publisher

Develops and maintains digital content so project information is current, easy to find and accessible online.

How do you become a **marketing and digital professional**?

1	2	3	4	5
Education: 3 years	**Graduate / Officer:** 1 to 3 years	**Specialist / Advisor:** 2 to 5+ years	**Manager / Functional Lead:** 5 to 8+ years	**Executive / Authority:** 12+ years
Study marketing or communications to understand the impact of clear messaging, campaigns and digital platforms.	Support campaigns and prepare material while learning how marketing and digital tools are applied in practice.	Lead campaigns, manage media relationships, and use digital platforms to communicate project purpose, progress and impact.	Develop strategies, manage complex issues and guide teams delivering campaigns across multiple projects.	Set standards, oversee brand and communication frameworks and build partnerships that support long-term value and trust.

1 **Students:** Enter via relevant university studies

3 **Career Changers:** Enter via related industries with transferable skills

5 **Senior / Specialists:** Enter with deep technical or leadership experience

Skilling and training

What does this look like in practice?

Start with a 3-year Bachelor degree:

- Bachelor of Business (Majoring in Marketing)
- Bachelor of Communications
- Bachelor in Digital Marketing

Upon completion, you will generally be eligible to apply in various sectors. Electives focused on the renewable energy sector further enhance your understanding of how marketing operates within renewable energy.

What skills are needed to enter the renewable energy workforce?

Practical communication, stakeholder management, and content development skills are essential, with experience working across digital or public-facing channels desirable.

Skilling and training for renewable energy jobs mainly relies on hands-on work experience relevant to the field and your understanding of real-world marketing and digital engagement tools and systems.

What specialist skills are needed on specific projects?

Progressing your career mostly depends on building experience and expertise. However, there are some courses that can help you better prepare for specialisation:

- Digital and Social media Marketing eg. Digital and Social Media Marketing | UTS
- Digital Marketing Analytics eg., Digital Marketing Analytics | Charles Sturt University

Progress to management via courses like:

- Strategic leadership and management eg., Accelerated Leadership Program | UNSW

Strategy and planning

Strategy and planning professionals analyse markets, performance, and future trends to guide decision-making that protects projects from design to maintenance while responding to changing conditions.

Technology

Work location

Project phase

Salary range

- **Entry level (0-4 years):** $75,000 – $100,000
- **Mid-career level (5-9 years):** $110,000 – $180,000
- **Senior level (10+ years):** $190,000+

Qualification requirements

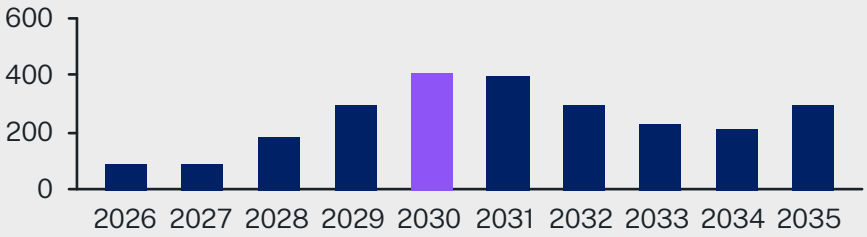
Complete a Bachelor's degree in Economics, Commerce or Business from an accredited institution – 3 to 4 years



Demand over the next 10 years in NSW

Demand for strategy and planning roles grows strongly through the late 2020s as organisations design investment pipelines and delivery programs. Roles remain highly relevant into the mid-2030s, supporting long-term system evolution, future planning and continuous improvement.

NSW demand for strategy and planning professionals over the next 10 years



As a strategy and planning professional, you could be a...

Energy Economist

Analyses economic trends, prices, and policy impacts to advise on cost and value outcomes.

Production Planner

Plans and models production needs to match energy supply with demand, ensuring efficient operation of assets.

Performance Analyst

Monitors project results, identifies improvement areas, and supports decisions that make operations run better.

Business Analyst

Researches opportunities, competition, and trends to guide business growth and strategic decision-making.

How do you become a **strategy and planning professional**?

1	2	3	4	5
Education: 3 years	**Graduate / Officer:** 1 to 3 years	**Specialist / Advisor:** 2 to 5+ years	**Manager / Functional Lead:** 5 to 8+ years	**Executive / Authority:** 12+ years
Build foundations in economics, analytics, or strategy to understand markets, policy, and performance drivers.	Support research, modelling and reporting while learning how strategy guides investment and operations.	Lead market analysis, forecasting, and business planning to support growth and competitiveness in renewable energy.	Coordinate strategic programs, align business units, and translate market and policy signals into action.	Shape long-term vision, growth pathways, and major investments as the energy system evolves.

1 **Students:** Enter via relevant university studies

3 **Career Changers:** Enter via related industries with transferable skills

5 **Senior / Specialists:** Enter with deep technical or leadership experience

Skilling and training

What does this look like in practice?

Start with a 3-year Bachelor degree:

- Bachelor of Economics
- Bachelor of Commerce
- Bachelor of Business (majoring in Strategy, Management, or Planning)

On completion, you will generally be eligible to apply in various sectors. Electives focused on the renewable energy sector further enhance your understanding of the specific aspects of strategy and planning within renewable energy.

What skills are needed to enter the renewable energy workforce?

Practical analytical, problem-solving, and planning skills are critical while experience in data analysis, research, or corporate planning is desirable.

Skilling and training for renewable energy jobs mainly relies on hands-on work experience relevant to the field and your understanding of strategy and planning tools and systems from the real-world.

What specialist skills are needed on specific projects?

Progressing your career mostly depends on building experience and expertise. However, there are some courses that can help you better prepare for specialisation:

- Digitalisation of strategy eg., Shaping Strategy to Create Value course | UNSW
- Strategic planning eg., Strategic Planning course | UTS

Progress to management via courses like:

- Strategic leadership and management eg., Accelerated Leadership Program | UNSW

Hear from the people building NSW's renewable energy future



Trades and technicians

Jacob Murray – Superintendent, Port of Newcastle

Jacob Murray began his career as an electrician, first installing solar systems before completing his apprenticeship in mining. Starting on the tools gave him a strong technical foundation, which he built on across roles in mining, rail, and heavy industry. He worked on large haul truck fleets and specialised in maintaining mobile harbour cranes, developing deep expertise in large, complex equipment operating in high-risk environments.

This hands-on experience became the platform for his progression. At the Port of Newcastle, Jacob transitioned into operations, where he now works as a superintendent overseeing cargo logistics, equipment coordination, and compliance across one of Australia's busiest ports. While his role is less tool-based today, his trade background remains critical. It allows him to understand how equipment behaves, support maintenance decisions, and work closely with crews on the ground.

His day-to-day involves coordinating shipping schedules, managing stakeholders, planning yard operations, and ensuring safety and environmental compliance. The role is fast-paced and often unpredictable, requiring problem-solving, resilience, and strong communication skills.

Jacob's journey shows how a trade can open doors beyond traditional pathways. By continuously building skills – such as high-risk licences and design tools like AutoCAD – and learning from experienced mentors, he has moved into leadership while staying connected to the technical side of the work. His advice is simple: stay open to opportunities, build relationships, and back your experience.

"It's the people on the ground that know how to do this work and experience comes from the people — lean on the experts including the transport companies, the guys handling and moving this heavy lift cargo everyday — they're the ones with experience and they'll be the ones that will be valuable," he tells us.

> "Never thought I'd be anything other than an electrician... If you work hard enough, you might be able to do something you're chasing."
>
> **Jacob Murray**

Indirect and supplementary roles

Indirect and supplementary roles enable and support renewable energy projects. Unlike direct roles, they do not deliver, build, operate, or maintain assets, but provide essential functions that allow direct project teams to perform effectively and at scale.

Transport and logistics

Transport and logistics roles are critical to the movement, storage, and sequencing of renewable energy materials, components, and equipment.

These positions enable project delivery teams to focus on technical delivery while ensuring that turbines, transformers, batteries, and other infrastructure reach project sites safely and on time.

Careful planning and coordination ensures timely delivery and helps mange the challenges associated with transporting oversized and overmass equipment.

Workers operate across transport networks, ports, warehouses, and staging areas, coordinating complex supply chains that support construction continuity and prevent delays in projects.

Examples of roles

- ✓ **Logistics and Supply Chain Coordinator:** plans and coordinates transport, storage, and sequencing of major components.
- ✓ **Heavy Vehicle Operator:** transports large components safely between suppliers, storage facilities, and project sites.
- ✓ **Stevedore:** loads, unloads, and positions equipment at ports, depots, and site.
- ✓ **Pilot / Drone Operator:** conducts aerial surveys, monitors site conditions, and supports safe planning and inspection.
- ✓ **Inventory Manager:** oversees storage, tracking, and retrieval of equipment.

Education, training and development

Education, training and development professionals help build the renewable energy workforce by designing, delivering and supporting learning opportunities across the sector. They equip people with the skills and practical experience needed to plan, build, operate and maintain renewable energy infrastructure.

These roles exist across universities, registered training organisations (RTOs), industry training providers and employers. Depending on their expertise and field of study, educators and trainers may work in classrooms, workshops, laboratories or on project sites, helping current and future workers develop the skills needed for long-term careers in renewable energy.

Examples of roles

- ✓ **Skills Coordinators:** connects training providers, employers and jobseekers to renewable energy employment opportunities, helping local communities access training, apprenticeships and career pathways linked to renewable energy projects.
- ✓ **Training Officer:** develops and delivers trade and technical courses that are practical and hands-on.
- ✓ **Workforce Development Coordinator:** designs and executes programs to enhance the skills of current employees and tailor training to meet specific project needs.
- ✓ **Simulation or Lab Facilitator:** manages training laboratories or virtual simulations, providing a safe environment to learn operational, control, and safety protocols.

Skills training and diversity targets

The Infrastructure Skills Legacy Program (ISLP) aims to address construction skill shortages and promote workforce diversity.

The NSW Government, working with industry leaders, mandates the program for all government infrastructure projects by developing targets for projects to fulfil. The aim is to provide training, increase apprenticeships, and boost representation of young people, Aboriginal communities, and women.

The Infrastructure Skills Legacy Program

The Infrastructure Skills Legacy Program (ISLP) is designed to address skill shortages and promote diversity within the construction sector. Its primary objective is to increase the number of skilled construction workers while fostering a more inclusive workforce.

The NSW Government partners with industry leaders to develop skills, build capacity, and encourage diversity. Participation in the program is now mandatory for all NSW Government infrastructure projects.

The program's key goals include:

- Reducing skill shortages in construction
- Enhancing workforce diversity
- Providing on-the-job training to develop skills
- Expanding apprenticeship opportunities
- Increasing representation of young people, Aboriginal communities, and women
- Ensuring training and employment opportunities for workers in local areas

The table below outlines specific targets established for the ISLP, detailing required skills, training objectives, and diversity goals. These targets are jointly set by government and industry stakeholders and are closely aligned with major infrastructure projects across sectors such as solar energy, wind power, transmission networks, and other large-scale developments.

This comprehensive framework is designed to equip the workforce with essential skills, promote inclusivity, and meet the evolving demands of critical infrastructure initiatives.

Given that renewable energy construction projects typically exceed contract values of $100 million, the program requires all targets to be fully met:

- **Apply the relevant Aboriginal procurement policy**
- **20% of the Trades Workforce to be apprentices**
- **2% of the Trades Workforce to be women**
- **Report % of women in non-traditional roles**
- **20% of the project workforce to be learning workers**
- **8% of the project workforce to be young people**
- **Report local employment outcomes**

Hear from the people building NSW's renewable energy future

"The electrical industry offers so many avenues to explore; you'll never stop learning."



Supporting women in trades to start, stay, and thrive

Lucinda Shilcock – Women in Trades Manager, TAFE NSW

Lucinda is a proud Aboriginal woman and qualified electrician who has progressed from hands-on trade work into statewide leadership. After leaving school, where dyslexia made traditional learning challenging, she found her strength through vocational education, starting an electrical apprenticeship and building critical, in-demand skills across domestic, commercial, and heavy industrial sectors. These experiences not only shaped her technical capability but also fuelled her strong advocacy for women in the trade sector.

Often the only woman on site, Lucinda encountered barriers throughout her trade career that reflect the experiences faced by many women in industry. Navigating these challenges strengthened her commitment to building inclusive, skills-based pathways that ensure more women can access, develop, and apply trade qualifications in real-world settings.

Today, as Women in Trades Manager at TAFE NSW, Lucinda leads initiatives that support people to gain the practical skills, confidence, and industry experience needed to enter, remain, and progress in trades. She works closely with industry to align training opportunities with workforce needs, including helping to build a pipeline of skilled, job-ready workers to support Australia's growing renewable energy sector and future workforce demands.

Top 10 occupations supporting the Central-West Orana REZ

Based on projected workforce demand associated with the current Central-West Orana REZ project pipeline, these occupations are expected to play an important role in the delivery, construction, operation and maintenance of renewable energy infrastructure across the region.

The occupations shown below are the top 10 highest-demand occupations on renewable energy, storage and transmission projects within the Central-West Orana REZ. These are occupations that are typically required on-site or within the local region to support project delivery throughout the construction and operational phases.

The list highlights the diversity of opportunities available across the renewable energy workforce, spanning construction, engineering, electrical trades, logistics, plant operation and technical roles.

As NSW's first Renewable Energy Zone continues to develop, these occupations are expected to form a significant part of the local workforce needed to support renewable energy infrastructure across the region.

1. Electricians
2. Construction Managers
3. Construction and Infrastructure Labourers
4. Mechanical Trades Workers
5. Building and Engineering Technicians
6. Engineering Technicians
7. Mobile Plant Operators
8. Electronics and Communications Trades Workers
9. Truck Drivers
10. Stationary Plant Operators

What this tells us

Construction and infrastructure occupations are expected to make up a significant share of workforce demand. Electrical, mechanical and communications trades will play an important role in building, operating and maintaining renewable energy infrastructure. Plant operators, truck drivers and logistics workers are critical to supporting the delivery of large-scale renewable energy and transmission projects. Engineering technicians and technical specialists help ensure projects are delivered safely, efficiently and reliably.

Opportunities exist across a broad range of skill levels, from entry-level and trade-based careers through to technical and supervisory roles.



Wellington Show

Education and training resources across Central-West Orana

Central-West Orana is home to a range of education, training and workforce development organisations that can help people prepare for careers supporting the renewable energy transition.

If you're interested in working in renewable energy, there are clear pathways to gain skills, build experience and explore career opportunities supporting NSW's energy transition. You can learn in a classroom, undertake vocational training, complete an apprenticeship or traineeship, or gain practical experience through industry-led programs and employers across the region.

Providers, programs and workforce development across Central-West Orana:

Provider	Overview
TAFE NSW	Campuses across Dubbo, Wellington, Mudgee and surrounding towns delivering vocational training, apprenticeships, and renewable energy-related skills including electrical and construction trades.
Charles Sturt University	Campuses in Dubbo and Orange offering engineering, environmental science, agriculture, and education pathways aligned to energy and regional infrastructure.
GTO Program	Creating pathways to renewable energy careers in the Central-West Orana REZ, The GTO program provides comprehensive support for apprentices and trainees throughout each stage of their journey.
Macquarie University (regional partnerships)	Supports energy and infrastructure capability through research partnerships and workforce development initiatives linked to the REZ.
Skillset Limited	Regional training provider based in Dubbo delivering apprenticeships, traineeships, and employment services across construction, trades and infrastructure sectors.
VERTO	Provides employment services, training and career support across Dubbo and the Central West, connecting jobseekers to infrastructure and energy opportunities.
Regional Development Australia – Central West	Supports workforce planning, regional skills initiatives, and coordination between industry, training providers and government.

Now is the time to be part of the transition and build a career in renewable energy.

For more information, explore the relevant learning and training at:
energyco.nsw.gov.au/jobs-guide

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