



Empower Your Future in Clean Energy



Explore VET and Tertiary Education Pathways in Engineering, Electrical, and Laboratory Skills

The Clean Energy Industry is at the forefront of Australia's transition to a sustainable future. With the nation's commitment to achieving net-zero emissions by 2050 and a Renewable Energy Target of 82% for small- and large-scale generation by 2030, there's an unprecedented demand for skilled professionals. *Clean Energy Capacity Study*.

This brochure provides an overview of the career paths available in this dynamic industry, focusing on VET and tertiary education opportunities in Engineering, Electrical, and Laboratory Skills.

Why Choose a Career in Clean Energy?

Australia's Clean Energy Transition: Australia has a net-zero emissions target by 2050. Clean Energy jobs are not in isolation-they are present across Hydro, Solar, Wind, Construction and R&D.

Australia will need approximately 26,000 to 42,000 more electricians in the next seven years, and the clean energy supply workforce will likely need to grow from approximately 53,000 workers today to 84,000 by 2050.

The Clean Energy Generation Workforce -needs for a net zero economy by Jobs and Skills Australia.



Clean Energy Projects in the Mallee Region

Renewable Energy Zones

The Northern Mallee region is increasingly becoming a key player in Australia's clean energy sector, particularly through the development of solar farms and Renewable Energy Zones. Key REZs include:

Murray River REZ: Covering Northern Mallee, this zone is ideal for solar energy due to high solar irradiance and strong infrastructure, supporting projects like Kiamal Solar Farm.

Western Victoria REZ: Extending into areas south of Northern Mallee, this zone is significant for both wind and solar energy, aligning with Victoria's Renewable Energy Action Plan.

Central North Victoria REZ: Adjoining Northern Mallee, this zone focuses on integrating solar energy into the grid while enhancing regional development.



Image Source: Climate Council

Notable Projects

The Mallee Hydrogen Technology Cluster, led by the Mallee Regional Innovation Centre, collaborates with SuniTAFE, the University of Melbourne, and industry partners to develop a hydrogen ecosystem.

Another innovative project, supported by the Australian Renewable Energy Agency (ARENA), converts agricultural waste and mallee biomass into electricity using a commercial-scale gasifier

Solar Farms

The 200 MW Kiamal Solar Farm, located near Ouyen is a critical component of the region's energy infrastructure. RayGen Resources is revolutionising renewable energy storage by combining advanced solar technology with thermal storage to deliver reliable, on-demand electricity. Their Carwarp power plant is the world's largest next-generation, longduration energy storage project.

Atmos Renewables' Karadoc Solar Farm is located approximately 25km south of Mildura, Victora and is connected to the 66kV Powercor network via the onsite substation. The Karadoc Solar Farm is expected to generate over 170GWh of electricity per annum.



VET Pathways into Clean Energy

Vocational Education and Training (VET) delivered to school students (VDSS)

- Engineering Skills:
 - Course: Certificate II in Engineering studies

-Focus Areas: Welding, metal fabrication, and technical drawings for clean energy infrastructure

- Electrical Skills:
 - Course: Certificate II in Electrotechnology (Career Start)
 - -Certificate II in Electrotechnology Studies (Pre-vocational)
 - Focus Areas: Electrical systems, renewable energy technology, and safety practices
- · Laboratory Skills:
 - Course: Certificate III in Laboratory Skills.
 - Focus Areas: Laboratory testing, environmental monitoring, and data analysis.

School Based Apprenticeships and Traineeships

- Engineering Skills: Certificate III Level in Engineering; Career Outcomes: Metal fitters, machinists, and maintenance technicians
- Electrical Skills: Certificate III Level in Electrotechnology; Career Outcomes: Electricians, electrical engineers, and solar panel installers
- Laboratory Skills: Certificate III Level in Laboratory Skills; Career Outcomes: Laboratory technicians, environmental scientists, and quality control analysts

Australian Apprenticeships

- **Engineering Skills:** Certificate III Level in Engineering; Career Outcomes: Metal fitters, machinists, and maintenance technicians
- **Electrical Skills:** Certificate III Level in Electrotechnology; Career Outcomes: Electricians, electrical engineers, and solar panel installers
- Laboratory Skills: Certificate III or Certificate IV Level in Laboratory Skills; Career Outcomes: Laboratory technicians, environmental scientists, and quality control analysts

Post Secondary Clean Energy VET Study Programs at Registered Training Organisations:

MEM Manufacturing and Engineering Training Packages UEE Electrotechnology Training Packages MSL Laboratory Operations Training Packages

Tertiary Education Pathways in Clean Energy

Engineering:

- -Course: Bachelor of Engineering (Renewable Energy)
- -Bachelor of Engineering (Photovoltaics and Solar Energy)
- -Focus Areas: Renewable energy systems, sustainable design, and project management.

-Career Outcomes: -Renewable energy engineers, wind and solar power plant designers, and energy efficiency consultants

Electrical Engineering:

- -Bachelor of Engineering (Electrical and Renewable Power)
- Focus Areas: Advanced electrical systems, smart grids, and energy storage solutions
- Career Outcomes: Electrical engineers, power systems engineers, and energy auditors

Lab Skills and Environmental Science:

- Course: Bachelor of Science (Environmental Science)
- Focus Areas: Environmental impact assessment, pollution control, and sustainable resource management
- Career Outcomes: Environmental scientists, lab managers, and research analysts

Relevant Links for Course Exploration

VET Pathways: 1. MySkills - National Directory of VET Courses and Training Providers: <u>https://www.myskills.gov.au</u> 2. TAFE Victoria: <u>https://www.tafecourses.com.au</u> 3. Australian Apprenticeships: <u>https://www.australianapprenticeships.gov.au</u>

Tertiary Education Pathways:

 Course Seeker: <u>https://www.courseseeker.edu.au</u>
<u>ANU - Bachelor of Engineering (Honours) in Renewable Energy Systems</u>
RMIT University - Electrical Engineering: <u>https://www.rmit.edu.au/study-with-us/engineering/electrical-and-electronic-engineering</u>
University of Melbourne - <u>Bachelor of Science (Environmental Science)</u>
UNSW - Renewable Energy Engineering: <u>https://www.unsw.edu.au/study/undergraduate/bachelor-of-renewable-energy-engineering</u>



The Path to a Sustainable Career

Start your journey towards a fulfilling career in the Clean Energy Industry today. Whether through VET or tertiary education, the opportunities are vast and impactful.

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