



Australian Government



**Net Zero
Economy
Authority**



HUNTER JOBS OF THE FUTURE

Your guide to careers, industries and opportunities
in Australia's changing energy system.



WHAT IS THE ENERGY TRANSITION?

Australia's energy system is changing to reduce emissions, moving toward cleaner energy like wind and solar. Traditional energy systems, such as coal and gas-fired power stations, are also ageing, becoming costly to run and facing reliability issues.

As the country's energy systems evolve, clean energy projects and investment in Australia's regions will grow, creating new jobs, technologies and training pathways. This will require skilled workers across many fields, including trades, engineering, construction, technology and environmental science.

The clean energy supply workforce will likely need to grow from approximately 53,000 workers today to 84,000 by 2050.²

Australia is not making these changes alone. Countries around the world are also working toward lower-emissions economies and investing in new energy systems and technologies.

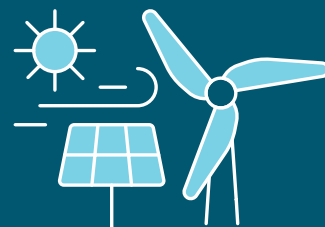
NZEA'S ROLE IN THE ENERGY TRANSITION

The Net Zero Economy Authority (NZEA) has a vision for a better future for industrial regions, communities and workers in a net zero economy. Our research and work recognise Australia's energy transition is more than delivering or facilitating clean energy project investment and development.

It involves supporting workers, industries and communities in priority regions, like the Hunter, to prepare for new economic opportunities and meet workforce needs.

OPPORTUNITIES FOR NEW INDUSTRIES

- ◆ Renewable energy generation
- ◆ Electricity transmission and energy networks
- ◆ Construction and infrastructure
- ◆ Electrification and energy services
- ◆ Hydrogen and emerging energy technologies.



A GROWING WORKFORCE

Australia's renewable energy workforce is expanding. The Australian Bureau of Statistics estimates around 26,850 people currently work in all combined areas of renewable energy activities in Australia as of 2019. From 2009 to 2019, employment in renewable energy increased by 120 per cent, creating approximately 14,650 jobs.¹

Workforce modelling from Jobs and Skills Australia also suggests employment in renewable electricity systems alone could grow from approximately 19,000 workers today to approximately 81,000 by 2049.²

Renewables, including solar and wind, powered 43% of Australia's electricity grid in the first three months of 2025.³

TOP JOBS OF THE FUTURE

As Australia's energy mix changes and new industries grow, demand for skilled workers is expected to increase across many occupations around the country.

Research from Jobs and Skill Australia suggests demand for 38 critical clean energy occupations could grow by around 15 per cent in the next seven years, representing an increase of almost 240,000 workers across Australia.²

Occupations with the highest growth rates (2023-2030) in Australia include:

- ◆ Telecommunications Trades Workers
- ◆ Electronics Trades Workers
- ◆ Electrical Engineering Draftspersons and Technicians
- ◆ Structural Steel Construction Workers
- ◆ Construction Managers
- ◆ Plumbers and Electricians.

Growth in the hydro-electricity generation, wind generation, solar generation, and offshore wind generation sectors across the country could add around 14,000 jobs by 2030 and around 70,000 by 2050.²

Construction is also likely to grow in Australia. Emerging energy supply industries are reliant on a strong construction pipeline and this could create around 450,000 jobs in the next seven years.²



WHAT DOES THIS MEAN FOR THE HUNTER?

While these trends reflect what is happening nationally, they also point to the opportunity possible in the Hunter. As industries across Australia respond to the transition, the region's strong industrial base, workforce history and growing clean energy investment means these figures can be translated locally into secure, long-term jobs.

Australia may require between 26,000 and 42,000 additional electricians within the next seven years to support the energy transition.²

CAREER PATHWAYS INTO CLEAN ENERGY JOBS

Vocational education and training – TAFE and apprenticeships

Apprenticeships and traineeships provide opportunities to learn practical skills while working in industry, including qualifications in:

- ◆ electrotechnology
- ◆ renewable energy systems
- ◆ hydrogen and clean technology trades
- ◆ advanced manufacturing
- ◆ electrical and mechanical trades.²

TAFE Hunter Net Zero Manufacturing Centre of Excellence

The Hunter Net Zero Manufacturing Centre of Excellence is partnering with industry and universities to support the national transition to clean energy.

The Hunter Net Zero Manufacturing Centre of Excellence, located at the TAFE NSW Tighes Hill campus, will provide high-quality training products to support the national transition of traditional mining, energy and manufacturing industries into cleaner, renewable energy sources.



University degrees

University degrees can support roles in research, project design, technology development and energy planning, with careers in:

- ◆ engineering
- ◆ natural and physical sciences
- ◆ biological sciences
- ◆ economics
- ◆ information technology
- ◆ sustainability and climate science.²

University of Newcastle's New Energy Skills Hub

The University of Newcastle is building a New Energy Skills Hub to help the region develop the critical skills needed for the energy transition. The Hub will provide critical hands-on training for STEM students from universities and TAFE, as well as industry, including:

- ◆ short courses and micro-credentials
- ◆ bespoke industrial and commercial courses
- ◆ industry placements
- ◆ access to a range of stem pathways.

Research from Jobs and Skills Australia suggests around 47 per cent of workers in existing energy industries may be able to transition into clean energy jobs with minimal additional training.⁴



REAL STORIES FROM THE ENERGY TRANSITION



Seth Fitzgerald – Engineering student and innovator, Hunter

Growing up in the small town of Aberdeen in the Upper Hunter, Seth Fitzgerald always had a passion for building things. At just 17, Seth discovered a valuable resource right on his doorstep that would help turn his ideas into something real: The Melt Modern Manufacturing Centre in Muswellbrook.

The Melt supports innovators to develop and scale hardware and renewable technologies, enabling new solutions to be piloted in real-world environments. Now at 18, Seth has commenced a Mechatronics Engineering degree at the University of Newcastle, studying modern technologies with applications ranging from the control of robots and the optimisation of modern vehicles to appliance design and biomechanics.

After graduating, he envisions returning to the Upper Hunter to establish his own engineering business.

'I think renewable energy is something we need to keep investing our time in – there is room for more innovation,' says Seth.

Trent - Project and Engineering Manager, MCI Carbon, Hunter

'I spent years working as an operations manager at industrial sites across Australia, and the skills are exactly the same – operating plants, managing safety, solving process problems. The difference here is that you know the work is part of the solution. Being able to use my experience to build something that genuinely cuts emissions and aims to help make existing essential industry sustainable in the long term has been incredibly rewarding.'

Edwin Higginson, Founder and Director of Australian EVS, Hunter

With a background in commercial fleet management at companies like Qube Mining, Edwin Higginson saw the growing pressure on fleets to cut emissions without disrupting operations or increasing costs. Edwin founded Australian EVS, building electric vehicle solutions that aren't currently available off the shelf. Rather than rebuilding diesel or petrol engines, the team converts vehicles – often 20 to 30 years old – to electric power.

This approach allows fleets to reduce emissions immediately while keeping reliable equipment in service. What began as a one-person consulting business has rapidly expanded. In just four years, Australian EVS has grown to 16 staff and doubled its workshop space, demonstrating the strong demand for pragmatic, low emissions technologies.

HUNTER PROJECTS CREATING FUTURE JOBS:



MCi Carbon: Mineral decarbonisation technology



Kardinia Energy: Flexible, printed solar manufacturing



AGL Hunter Energy Hub: Renewable energy generation and grid-scale batteries



Port of Newcastle Clean Energy Precinct: Hydrogen production and export



MGA Thermal: Manufacturing and clean energy storage



Hunter Valley Solar Foundry: Solar manufacturing

Visit our Investment Map to see all renewable energy and research projects across Australia

Currently, there's more than 800 Commonwealth Government-supported renewable energy and research projects taking shape across Australia's cities and regions.



To explore the size and scale of these projects, scan the QR code to view our Net Zero Investment Map.

ADDITIONAL RESOURCES



Explore Your Career

Use the Australian Government's Your Career website to search industries, occupations and study options to find a career that's right for you and what you can do to get there.



Discover net zero related degrees at University of Newcastle

From a Bachelor of Environmental Science and Management to a Master of Clean Energy, University of Newcastle offers a range of degree options in net zero related fields.



Explore VET study options at TAFE NSW

Discover apprenticeships and study options at TAFE NSW Centre of Excellence, including Renewable Energy Solutions for Manufacturing and Introduction to Circular Economy in Manufacturing courses.



Learn about paid internships via NSW Skills for Net Zero | CSIRO

NSW Skills for Net Zero initiative aims to help NSW transition to a decarbonised economy, where tertiary students can gain access to decarbonisation-focused career pathways via paid internships.

REFERENCES:

- 1 Australian Bureau of Statistics. (2018-19). *Employment in Renewable Energy Activities, Australia*, ABS Website, accessed 24 March 2026.
- 2 Jobs and Skills Australia. (2023). *The Clean Energy Generation: Workforce needs for a net zero economy*. Australian Government accessed 24 March 2026.
- 3 Climate Council. (2025). *Power surge: renewable energy hits record high as coal splutters*. Climate Council Website, accessed 24 March 2026.
- 4 Jobs and Skills Australia. (2023). *Clean Energy Capacity Study: Discussion paper*. Australian Government accessed 24 March 2026.