

Towards 2030: NSW Renewable Energy Skills Strategy

Building the skills for our clean energy transition



Acknowledgement of Country



We acknowledge that across NSW we live and work on Aboriginal land, and the many Countries that are within that footprint.

We sincerely pay our respects to Elders past and present and celebrate the diversity of Aboriginal peoples' unique cultural and spiritual relationship to Country, and their rich contribution to Australia.

The NSW Department of Education is committed to being a strong culturally responsive and inclusive education system where every Aboriginal and/or Torres Strait Islander student is known, valued, and cared for to learn, grow, and belong.

We acknowledge our longstanding partnership agreement with the NSW Aboriginal Education Consultative Group Inc., which is based on the principles of respect, commitment, collaboration and accountability to improve educational outcomes for Aboriginal learners.

Equity is at the cornerstone of our NSW Renewable Energy Skills Strategy which aims to transform lives through learning. Our commitment to creating an equitable and outstanding vocational education and training system affirms Aboriginal education is well positioned as being everybody's business.

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Minister's foreword



The NSW Renewable Energy Skills Strategy is our government's plan to help deliver the skilled workforce needed for our energy transition.

It is imperative that NSW has a diverse, adaptable and skilled workforce to support our energy transition, especially amidst persistent skills shortages and a global surge in renewable energy.

Our government's key plan to deliver our energy transition is the Electricity Infrastructure Roadmap (the Roadmap). The Roadmap will coordinate up to \$77 billion of private sector investment in renewable energy infrastructure by 2035. By 2030, it is expected to deliver at least 12 gigawatts of renewable energy generation and 2 gigawatts of long duration storage and contribute to a 73% reduction to our state's electricity generation emissions.

This strategy will support the successful delivery of the Roadmap by building the pipeline of skilled workers we need across 5 priority areas:

- **Awareness** – Students are informed about, interested in, and get a taste of renewable energy pathways
- **Access** – Students can access renewable energy pathways where there are renewable energy jobs

- **Support** – Students are supported through renewable energy education, training and employment pathways
- **Equity** – Under-represented cohorts have a fair share of renewable energy opportunities
- **Mobility** – Employers can access skilled workers from other sectors, regions and countries to meet critical skills gaps.

Supporting the net zero transformation is a priority under the National Skills Agreement. I wish to acknowledge the Australian Government's commitment and thank the Hon. Andrew Giles MP, Minister for Skills and Training, for supporting this strategy and providing additional funding for its initiatives through the National Skills Agreement.

I look forward to working with everyone to ensure the Roadmap delivers not only our state's energy transition but also long-term benefits to our regional workforces and communities.

The Hon. Steve Whan, MP

Minister for Skills, TAFE and Tertiary Education

Minister's foreword



Delivering the energy transition is a big challenge that comes with real opportunities for thousands of good, local and secure jobs.

The energy sector in NSW is undergoing a transformation away from coal-fired generation towards renewable energy. Through the Electricity Infrastructure Roadmap, the NSW Government is leading a once-in-a-generation upgrade of our electricity network to power our state with affordable, clean and reliable energy for everyone.

We have already made much progress in driving the energy transformation. We have already secured around two-thirds of the Roadmap's target of 12 gigawatts of renewable energy generation by 2030, as well as 40% of the Roadmap's target of 2 gigawatts of long duration storage by 2030.

The Central West Orana Renewable Energy Zone, for example, has just commenced construction and is forecast to support an annual average of about 1,850 direct jobs in the local area during construction, and about 930 ongoing operational jobs from 2034. Generators with access rights have already committed to creating 266 apprenticeship jobs throughout construction.

The NSW Government is further investing over \$11.2 million to establish the Renewable Energy Awareness and Career Training (REACT) Centre in Wellington which will help locals secure renewable energy jobs. These are only the first of many long-term benefits the Roadmap will deliver for local communities.

Developing the skilled workforce needed to deliver the Roadmap, while maximising its skills and employment benefits, will require a shared effort. Governments, industry, education and training providers, and local communities will need to work together to access, train and support the skilled workforce needed.

The NSW Government is committed to helping coordinate this effort and supporting the range of education, training and employment pathways into and within the workforce. Our Renewable Energy Skills Strategy sets out how.

The Hon. Penny Sharpe, MLC

Minister for Climate Change, Minister for Energy, Minister for the Environment, and Minister for Heritage



About the strategy

Our vision: NSW has the skilled workforce it needs to successfully deliver the Electricity Infrastructure Roadmap, and the Roadmap delivers skills and employment legacies for local communities.

The NSW Renewable Energy Skills Strategy (the strategy) supports the delivery of the Electricity Infrastructure Roadmap, a strategic priority of the NSW Government. The Roadmap is the government's plan to transform our electricity system to deliver clean, affordable and reliable energy for everyone.

The strategy aims to help develop the skilled workforce needed for the Roadmap's successful delivery. The strategy outlines priority areas and actions that will lay the foundation for strong partnerships across industry, education and training providers and local communities to support local students and workers into the renewable energy workforce. As such, coordination and collaboration between delivery partners will be key to the strategy's outcomes. The strategy is also intended to be high-level, enabling delivery partners to tailor its implementation to their own organisations as well as the distinct needs and opportunities of each Renewable Energy Zone (REZ) or project.

The strategy builds on the NSW Skills Plan 2024-28, which identifies net zero and the energy transition as one of 6 Critical Skills Areas. The strategy also builds on the Our Plan for NSW Public Education by supporting meaningful post-school pathways and enhancing access to high-quality vocational education and training in schools. The strategy

further builds on the Apprenticeship and Traineeship (A&T) Roadmap (2024-26) by increasing the take-up of A&T pathways including among under-represented cohorts, supporting flexibility in training delivery and increasing the capacity of training providers.

The strategy aligns with the NSW Higher Education Strategy 2025-29 by supporting the development of the critical skills and workforces needed now and into the future. The strategy also aligns with:

- the NSW State Migration Plan, which aims to help meet critical skills needs (including in net zero)
- the NSW Industry Policy, which aims to support NSW to become a globally competitive, sustainable and low-carbon economy
- the NSW Government's Regional Economic Development Strategies, which identify economic development opportunities (including net zero) for regional NSW.

Our partnerships

Our strategy is a partnership with the Australian Government and EnergyCo.

National Skills Agreement

Supporting the economy's net zero transformation is an agreed national priority under the National Skills Agreement. Under this agreement, the NSW and Australian Governments are partnering to deliver:

- the Next Generation Energy program, building on the Regional Industry Education Partnerships program, to provide students with industry learning opportunities
- Group Training Organisation services to make it easier for renewable energy employers to take on apprentices, and to provide ongoing supports for apprentices
- the Primed for Power program to provide students, apprentices and workers with the foundation skills needed to work in renewable energy
- the Reskilling for Renewables program to support existing workers to upskill or reskill to work in renewable energy and meet the sector's skills needs
- three TAFE Centres of Excellence – in the Hunter, the Illawarra, and in Western Sydney – to help deliver the skilled workforce needed to meet national challenges.

Community and Employment Benefit Program

The NSW Government is investing in the Community and Employment Benefit Program (CEBP) to ensure local communities share in the benefits of the Renewable Energy Zones (REZs). The CEBP will contribute to the long-term prosperity of local communities by funding community-led initiatives, public infrastructure,

“The transformation of our electricity system is a once-in-a-generation opportunity to foster long-term prosperity in our regional communities which are central to the Roadmap.”

- The Hon. Penny Sharpe, MLC, Minister for Energy¹

Aboriginal and/or Torres Strait Islander projects, and programs to support local businesses and workforces.

The NSW Government has allocated \$128 million over 4 years to the CEBP for the Central West Orana (CWO) REZ, which is being administered by EnergyCo. This is just the start, as hundreds of millions of dollars will be made available for community and employment benefits in the CWO REZ over the next 3 decades.

Leveraging the CEBP, the Department of Education is partnering with EnergyCo to deliver the Next Generation Energy program and apprenticeship supports such as Group Training Organisations (as outlined), as well as:

- Local Skills Coordinators, based on the Infrastructure Skills Legacy Program model, to help employers access, train and support local students and workers
- the Women in Construction and Renewables Taster Programs to increase the participation of women in the sector.

Source:

1. NSW Government (2023) *\$128 million downpayment for communities in the Central-West Orana REZ*, NSW Government website, <https://www.nsw.gov.au/media-releases/funding-for-communities-central-west-orana>

The skills opportunity

The Electricity Infrastructure Roadmap provides a significant opportunity to upskill our workforce.

Jobs and Skills Australia has identified over 280 occupations in high demand across the state¹ — many of which are critical to the energy transition, including electricians, mechanical trades and technicians, and electrical engineers.² These roles are not only key to building the energy infrastructure of the future, but also offer long-term career and employment opportunities across a wide range of industries.

The energy transition presents an opportunity to strengthen regional economies by investing in the essential workforce needed to grow and sustain regional industries and communities. This includes increasing local capacity in early childhood education and care, healthcare, education, and housing.³

We recognise that a skilled workforce is only one component of regional resilience, and other components, such as housing, transport and local infrastructure and services, require strategic investments too.⁴ Our strategy is part of a whole-of-government effort to deliver the Roadmap and maximise its benefits to regional communities.

Through the Community and Employment Benefit Program, for example, the government is also delivering a broad range of community-led projects and public infrastructure to boost liveability and drive economic development.



Image provided by TAFE NSW

Sources:

1. Jobs and Skills Australia (2025) *Occupation Shortage List*, JSA website, <https://www.jobsandskills.gov.au/data/occupation-shortages-analysis/occupation-shortage-list>
2. Briggs, C., Langdon, R., Jacobs, J. & Rutovitz, J (2022) *Skills Audit for Renewable Energy in NSW*, UTS Institute of Sustainable Futures and Energy Skills Queensland, Sydney
3. Briggs, C., Atherton, A., Gill, J., Langdon, R., Rutovitz, J., Nagrath, K. (2022) 'Building a "Fair and Fast" energy transition? Renewable energy employment, skill shortages and social licence in regional areas' *Renewable and Sustainable Energy Transition*, Volume 2 (2022).
4. Houghton, K., Barwick, A, and Pregellio, S. (2023) *Regional Jobs, 2022: The Big Skills Challenge*, Regional Australia Institute website, https://www.regionalaustralia.org.au/common/Uploaded%20files/Files/Regional%20Job%20Updates/The_Big_Skills_Challenge_Report.pdf; The Mckell Institute (2023) *The Up-Skill Battle: NSW's Growing Regional Skills Shortage*, The Mckell Institute website, <https://mckellinstitute.org.au/wp-content/uploads/2023/07/McKell-%E2%80%94-Regional-Skills.pdf>; Commonwealth of Australia (2023) *Working Future: The Australian Government's White Paper on Jobs and Opportunities*, Treasury website, <https://treasury.gov.au/sites/default/files/2023-10/p2023-447996-working-future.pdf>

Key opportunities

Our NSW Renewable Energy Skills Strategy focuses on 5 key opportunities to develop the workforce.

1. Raise awareness of renewable energy job opportunities and education and training pathways

There is limited awareness within school and local communities regarding the employment opportunities and career pathways offered by the renewable energy sector and the education and training pathways to access them. The Electricity Infrastructure Jobs Advocate observed that this is partly because the emerging sector does not yet function as a clearly delineated, unified industry, with clear, long-term career pathways.¹ Rather, it may be more accurate to say there are renewable energy jobs across the workforce and renewable energy applications across diverse jobs, trades and projects.²

2. Expand access to renewable energy education and training pathways where there are jobs

There is currently limited availability of relevant vocational education and training (VET) in the Renewable Energy Zones (REZs) where most renewable energy infrastructure will be built. Training providers are disincentivised from delivering such training given its high costs, low

student demand, and VET workforce shortages.³ In the New England REZ, for example, qualifications in renewable energy are not available at TAFE Armidale, TAFE Inverell, or the New England Training School.⁴

3. Support students and employers to undertake and provide renewable energy pathways, which can be difficult as they often span across different projects and employers

Apprenticeships in the renewable energy sector can be challenging for students to complete, requiring students to access and work across a range of employers and projects. The short duration of renewable energy projects, and often high levels of uncertainty around their progress and delivery, can also disincentivise employers or limit their capacity to take on apprentices, given the longer-term resourcing commitment this involves. The National Centre for Vocational Education and Research (NCVER) found, for example, that the individual completion rate after 4 years for apprentices and trainees commencing electrotechnology and telecommunications trades workers roles in 2018 in NSW was 52.3%.⁵

Sources:

1. Electricity Infrastructure Jobs Advocate (2022) *Electricity Infrastructure Jobs Advocate's first report to the Minister for Energy*, NSW Treasury website, <https://www.energy.nsw.gov.au/sites/default/files/2022-11/electricity-infrastructure-jobs-advocates-first-report-to-minister-for-energy-for-publication.pdf>
2. Jobs and Skills Australia (2023) *The Clean Energy Generation: workforce needs for a net zero economy*, JSA website, <https://www.jobsandskills.gov.au/download/19313/clean-energy-generation/2385/clean-energy-generation/pdf>
3. Briggs, C., Langdon, R., Jacobs, J. & Rutovitz, J (2022) *Skills Audit for Renewable Energy in NSW*, UTS Institute of Sustainable Futures and Energy Skills Queensland, Sydney Clean Energy Council (2022) *Skilling the Energy Transition*, CEC website, https://assets.cleanenergycouncil.org.au/documents/CEC_Skilling-the-Energy-Transition-2022.pdf
4. Electricity Infrastructure Jobs Advocate (2023) *Electricity Infrastructure Jobs Advocate's second report to the Minister for Energy*, NSW Treasury website, <https://www.energy.nsw.gov.au/sites/default/files/2024-08/NSW-Electricity-Infrastructure-Jobs-Advocate-Second-Report.pdf>
5. National Centre for Vocational Education Research (2024) *Australian vocational education and training statistics: completion and attrition rates for apprentices and trainees 2023*, NCVER Adelaide

4. Increase the participation of under-represented cohorts in the sector, such as Aboriginal and/or Torres Strait Islander people, women and people with disability

Aboriginal and/or Torres Strait Islander people, women and people with disability have traditionally been under-represented in the energy sector. Jobs and Skills Australia found that the national renewable energy generation and distribution workforces respectively consist of:¹

- 20% and 25% women, while women make up about 50.5% of the NSW population and about half the paid workforce in Australia²
- 1% and 2% Aboriginal and/or Torres Strait Islander people, while Aboriginal and/or Torres Strait Islander people make up about 3% of the NSW labour force³
- 5% and 7% people with long-term health conditions, while about 30.9% of the NSW population have long-term health conditions.⁴

5. Assist employers to access skilled workers from other sectors, regions and countries, to meet critical skills needs

With low unemployment in NSW, particularly in some REZs, local workforces in the REZs are not projected to have the scope and scale of available skilled workers needed to deliver the Roadmap. Employment demand for key occupations is projected to exceed labour supply in the New England and South West REZs in peak periods, while making up around two-thirds of labour supply in the Central West Orana REZ at its peak.⁵

Delivering a local employment legacy

As we heard from REZ communities, the delivery of the Roadmap cannot simply be about building solar and wind farms. They should leave a skills and employment legacy, which can in turn deliver transformational benefits for local communities. The Avonlie Solar Farm, for example, brought life-changing training and employment opportunities to the small town of Narrandera, delivering ongoing jobs for 90% of its workers and giving the community a renewed sense of pride.⁶ As recommended by the NSW Renewable Energy Sector Board's Plan, the government has incorporated minimum requirements for local content as merit criteria in the tenders for long-term energy service agreements (LETASAs) and REZ access rights.⁷ Proponents will be required to make commitments relating to employment, skills and diversity, which will become contractually binding upon award.



Sources:

1. Jobs and Skills Australia (2023) *The Clean Energy Generation: workforce needs for a net zero economy*, JSA website, <https://www.jobsandskills.gov.au/download/19313/cleanenergy-generation/2385/clean-energy-generation/pdf>
2. Centre for Epidemiology and Evidence (2025) *Population estimates NSW*, NSW Ministry of Health, Sydney. Available at: www.healthstats.nsw.gov.au
3. Australian Bureau of Statistics (2021) *New South Wales, 2021 Census Aboriginal and/or Torres Strait Islander people Quickstats*, ABS website, <https://www.abs.gov.au/census/find-census-data/quickstats/2021/IQSAUS>
4. Australian Bureau of Statistics (2022) *Long-term health conditions*, ABS website, <https://www.abs.gov.au/articles/long-term-health-conditions>
5. Briggs, C., Langdon, R., Jacobs, J. & Rutovitz, J (2022) *Skills Audit for Renewable Energy in NSW*, UTS Institute of Sustainable Futures and Energy Skills Queensland, Sydney.
6. Norman, J (2023) 'How a small town's trajectory changed after the construction of a 600-hectare solar farm', *ABC News*, <https://www.abc.net.au/news/2023-12-21/workforce-narrandera-construction-solar-farm/103235476>
7. NSW Government (2022) *NSW Renewable Energy Sector Board's Plan*, Office of Energy and Climate Change website, <https://www.energy.nsw.gov.au/sites/default/files/2022-09/nsw-renewable-energy-sector-board-plan.pdf>



Key outcomes

To grasp these opportunities, our NSW Renewable Energy Skills Strategy focuses on 5 outcomes.



Awareness

Students are informed about, interested in, and get a taste of renewable energy pathways



Access

Students can access renewable energy pathways where there are renewable energy jobs



Support

Students are supported through renewable energy education, training and employment pathways



Equity

Under-represented cohorts have a fair share of renewable energy opportunities



Mobility

Employers can access skilled workers from other sectors, regions and countries to meet critical skills gaps

The strategy on a page

Our vision: NSW has the skilled workforce it needs to successfully deliver the Electricity Infrastructure Roadmap, and the Roadmap delivers skills and employment legacies for local communities.

Outcomes	1. Awareness Students are informed about, interested in, and get a taste of renewable energy pathways	2. Access Students can access renewable energy pathways where there are renewable energy jobs
Programs	<p>Connecting students with industry</p> <ul style="list-style-type: none"> • Next Generation Energy • Educational Pathways Program • Start Your Future • Trade Readiness programs • Group Training Organisation (GTO) pre-apprenticeship and pre-traineeship program <p>Delivering VET pathways in schools</p> <ul style="list-style-type: none"> • Vocational Education and Training for Secondary Students • School Based Apprenticeships and Traineeships • Infrastructure Traineeship Program <p>Providing careers information and guidance</p> <ul style="list-style-type: none"> • TAFE NSW online microskills • Launch your Career • Workplace Learning 	<p>Delivering fee-free and subsidised training</p> <ul style="list-style-type: none"> • Smart and Skilled • Fee-free TAFE • Pre-apprenticeships and pre-traineeships <p>Growing the VET workforce</p> <ul style="list-style-type: none"> • TAFE NSW Paid to Learn program <p>Developing VET facilities</p> <ul style="list-style-type: none"> • TAFE NSW Manufacturing Centres of Excellence • TAFE NSW Mobile Training Units • Renewable Energy Awareness Career Training (REACT) Centre • Hydrogen Centre of Excellence



Image provided by TAFE NSW

<p>3. Support Students are supported through renewable energy education, training and employment pathways</p>	<p>4. Equity Under-represented cohorts have a fair share of renewable energy opportunities</p>	<p>5. Mobility Employers can access skilled workers from other sectors, regions and countries to meet critical skills gaps</p>
<p>Supporting employers to access workers and funded programs</p> <ul style="list-style-type: none"> • Local Skills Coordinators • NSW Skills for Net Zero <p>Aligning and expanding supports for students</p> <ul style="list-style-type: none"> • Apprenticeship and Traineeship Roadmap • GTOs and other supports • Primed for Power <p>Delivering apprenticeship and traineeship pathways through the public sector</p> <ul style="list-style-type: none"> • Essential Energy's Apprenticeship Program • 1,000 NSW Public Sector Apprentices and Trainees Program 	<p>Increasing the number of women in the sector</p> <ul style="list-style-type: none"> • Women in Construction/ Renewables Taster Program • Girls Can Too <p>Supporting Aboriginal and/or Torres Strait Islander students and workers</p> <ul style="list-style-type: none"> • Barranggirra Skilling for Employment Initiative • OCHRE Opportunity Hubs <p>Engaging the unemployed and underemployed</p> <ul style="list-style-type: none"> • Get Back in the Game • Adult and Community Education 	<p>Enabling interstate and international migration</p> <ul style="list-style-type: none"> • NSW State Migration Plan • Skilled Migration Pilot Initiative • Automatic Mutual Recognition scheme <p>Upskilling and re-skilling workers</p> <ul style="list-style-type: none"> • Reskilling for Renewables • Smart and Skilled Targeted Priorities Prevocational and Part Qualification program • Trade Pathways for Experienced Workers

Outcome profiles and case studies

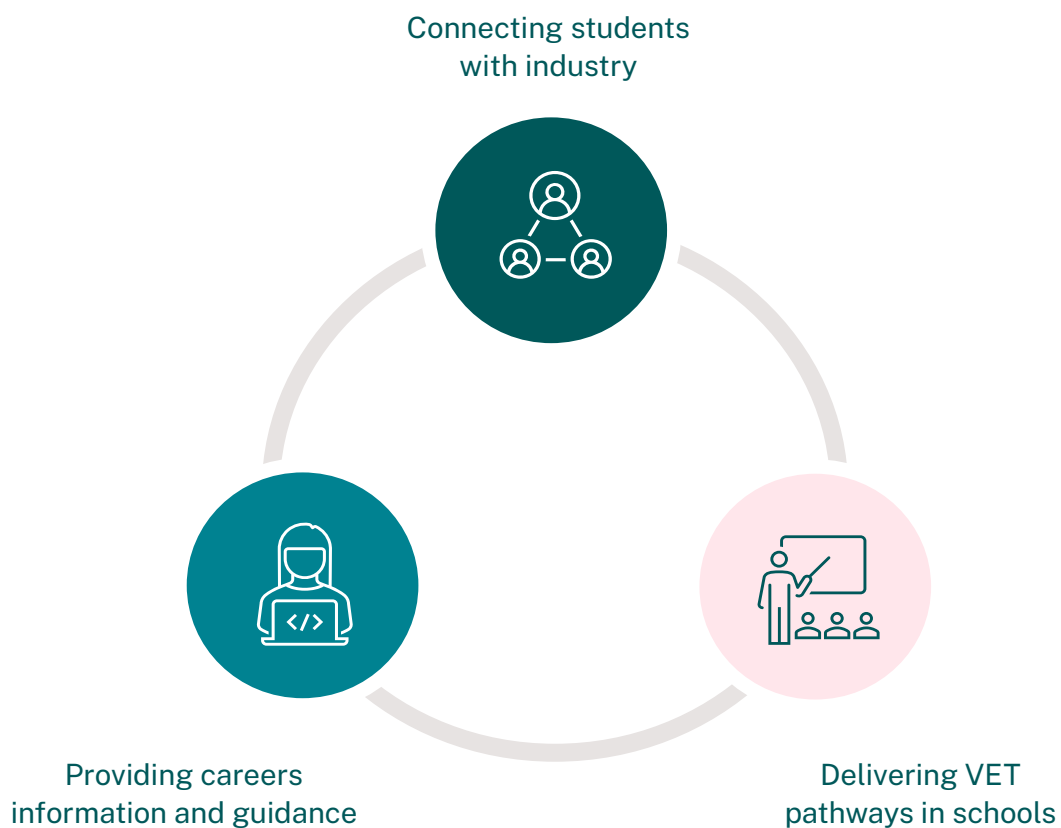


1. Awareness

Students are informed about, interested in, and get a taste of renewable energy pathways

The NSW Government is increasing awareness of renewable energy pathways by:

1. Connecting students with industry (e.g. Next Generation Energy Program)
2. Delivering VET pathways in schools (e.g. School Based Apprenticeships and Traineeships)
3. Providing careers information and guidance (e.g. Launch Your Career events).



Regional Industry Education Partnerships - Central West Orana Renewable Energy Zone Industry Forum

Need

- Increased visibility of the Central West Orana Renewable Energy Zone (CWO REZ) in the local community
- Increased awareness of current CWO REZ projects and the broad range of career opportunities and pathways within the renewable energy sector

Action

- In March 2024, the Regional Industry Education Partnerships program partnered with EnergyCo and 5 CWO REZ stakeholders, including Squadron Energy, Tilt Renewables, ACEN Renewables, Origin Energy and Charles Sturt University, to conduct a renewable energy industry forum at Wellington High School.
- The forum included a Yarning Circle with Aboriginal and/or Torres Strait Islander students from the Clontarf Academy and National Aboriginal Sporting Chance Academy.

Outcomes

- Five local schools from the CWO REZ, including over 120 students from Years 9 to 12, participated in the forum.
- The CWO REZ stakeholders showcased their organisations, local REZ projects and career pathways in the sector.
- They built strong connections with the local community, including Aboriginal and/or Torres Strait Islander students and communities.

“Forums like this are really important to raise awareness of the renewable energy sector and start planting the seed of careers and pathways for school students when they leave school.”

- **CWO REZ proponent**

“You can’t be what you can’t see.”

- **CWO REZ community stakeholder**

“Awareness initiatives in schools need to happen now in order to ensure a pipeline of apprentices over the next decade.”

- **Training and employment services provider**



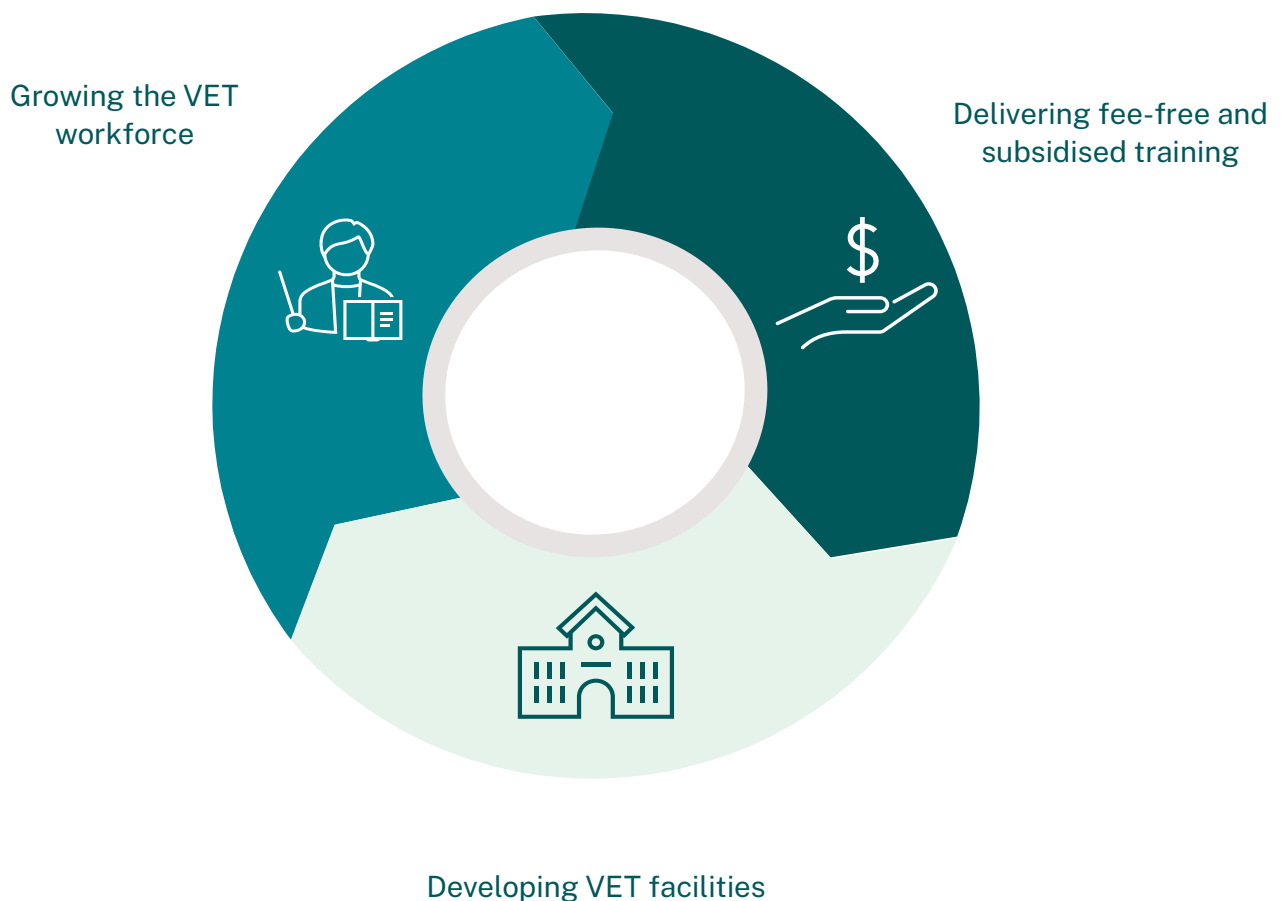


2. Access

Students can access renewable energy pathways where there are renewable energy jobs

The NSW Government is improving access to renewable energy pathways by:

1. Delivering fee-free and subsidised training (e.g. Smart and Skilled)
2. Developing VET facilities (e.g. TAFE NSW Centres of Excellence)
3. Growing the VET workforce (e.g., TAFE NSW Paid to Learn program).



TAFE NSW Net Zero Manufacturing Centre of Excellence in the Hunter

Need

- High-quality training products to support the renewable energy transition
- Innovative and place-based training in emerging renewable energy technologies

Action

- The NSW and Australian Governments are jointly investing \$56.2 million to establish the Hunter Net Zero Manufacturing Centre of Excellence (the centre) at TAFE NSW's Tighes Hill campus in Newcastle.
- The Australian Government is investing an additional \$5.3 million to fast-track the establishment of the centre through its Turbocharging TAFE Centres of Excellence initiative.

Outcomes

The centre will:

- train, retrain and upskill 1,000 apprentices and workers in the Hunter region to work in the net zero economy
- increase access to training in regional and remote areas of northern NSW through a mobile training unit
- establish a National Renewable Energy Microskills Marketplace, enabling TAFEs across Australia to share and access digital non-accredited courses
- implement a higher apprenticeship model integrating vocational education and training (VET) and higher education.

“This centre [...] will strengthen the VET system by providing high-quality and responsive skills training in the clean manufacturing economy.”

- The Hon. Andrew Giles MP, Federal Minister for Skills and Training¹

“This centre is a vital investment in the future of Western NSW, helping to address critical skills shortages in renewable energy. With its strategic location near key Renewable Energy Zones and emerging industries like offshore wind and hydrogen, the Tighes Hill campus is perfectly positioned to drive the region's growth.”

- Hunter Jobs Alliance²



Sources:

1. Australian Government (2024) *Net Zero Manufacturing TAFE Centre of Excellence for the Hunter*, Department of Employment and Workforce Relations website, <https://www.dewr.gov.au/newsroom/articles/net-zero-manufacturing-tafe-centre-excellence-hunter>
2. Hunter Jobs Alliance (2024) *Centre of excellence set to supercharge Hunter's net zero transition*, HJA website, <https://hunterjobsalliance.org.au/centre-of-excellence-set-to-supercharge-hunters-net-zero-transition/>



3. Support

Students are supported through renewable energy education, training and employment pathways

The NSW Government is delivering supports for students and employers in renewable energy by:

1. Supporting employers to access workers and funded programs (e.g., Local Skills Coordinators)
2. Aligning and expanding supports for students (e.g., Apprenticeship and Traineeship Roadmap)
3. Delivering apprenticeship and traineeship pathways through the public sector (e.g., Essential Energy's Apprenticeship Program).

Supporting employers
to access workers and
funded programs



Delivering apprenticeship and
traineeship pathways through
the public sector



Aligning and expanding
supports for students

Essential Energy's Apprenticeship Program

Need

- Increased number of apprentices, including women and Aboriginal and Torres Strait Islander people, to grow the pipeline of skilled workers

Action

Essential Energy:

- partnered with the Department of Education's Barranggirra program to provide culturally appropriate mentoring to Aboriginal and Torres Strait Islander apprentices¹
- partnered with Tradies in Sight to deliver the Life Skills program to train apprentices to navigate work, financial, family, and friend-related stresses effectively²
- partnered with On-Country Pathways to support young Aboriginal and/or Torres Strait Islander people to explore career pathways in a culturally safe environment³
- delivered a tailored onboarding program and buddy system for female apprentices and trainees⁴
- introduced a specialist role to support Aboriginal and Torres Strait Islander and female apprentices and trainees.⁵

Outcomes

- Essential Energy's apprenticeship program sees about 93% of apprentices graduate, more than 90% of graduates remaining with the business, and about one in four promoted to higher-level technical and supervisory roles.⁶
- Essential Energy won the Australian Apprenticeships Employer Award at the 2024 Australian Training Awards, gaining recognition for their innovative improvements in training that benefit their apprentices and trainees and their local communities.⁷

The apprenticeship program's "success is underpinned by smart approaches to attracting and hiring the best people for electrical trades, providing opportunities for people from a diverse range of backgrounds, using technologies and mentors and buddies to make training a great experience, and providing opportunities for promotion into higher level positions."

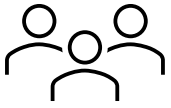
- John Cleland, CEO Essential Energy⁸

Essential Energy's "trade pathways create genuine career opportunities across regional, rural and remote NSW. Essential Energy recruits and trains locally, and this is key to its success."

- Australian Training Awards⁹

Sources:

1. Essential Energy (2025) *Essential Energy Annual Report 2024-25*, Essential Energy website, https://www.essentialenergy.com.au/ext/ar2025/files/2025/11/Essential-Energy_Annual-Report_2024-25.pdf
2. Essential Energy (2024) *Program provides apprentices with essential life skills*, Essential Energy website, <https://www.essentialenergy.com.au/media-centre/media-release/news-07062024-apprentices-skills-for-life>
3. Essential Energy (2024) *Essential Energy Annual Report 2023-24*, Essential Energy website, https://www.essentialenergy.com.au/ext/ar2024/pdf/Essential-Energy_Annual-Report_2023-24.pdf
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6. Essential Energy (2025) *Award-winning apprenticeship program welcomes 2025 intake*, Essential Energy website, <https://www.essentialenergy.com.au/media-centre/media-release/News-10022025-apprentice-welcome>
7. Australian Government (2024) *Essential Energy*, Australian Training Awards website, <https://www.australiantrainingawards.gov.au/finalist/essential-energy>
8. Essential Energy (2019) *Essential Energy wins Australian Training Award for Apprenticeship Program*, Essential Energy website, <https://www.essentialenergy.com.au/media-centre/media-release/mr-22112019>
9. Australian Government (2024) *Essential Energy*, Australian Training Awards website, <https://www.australiantrainingawards.gov.au/finalist/essential-energy>

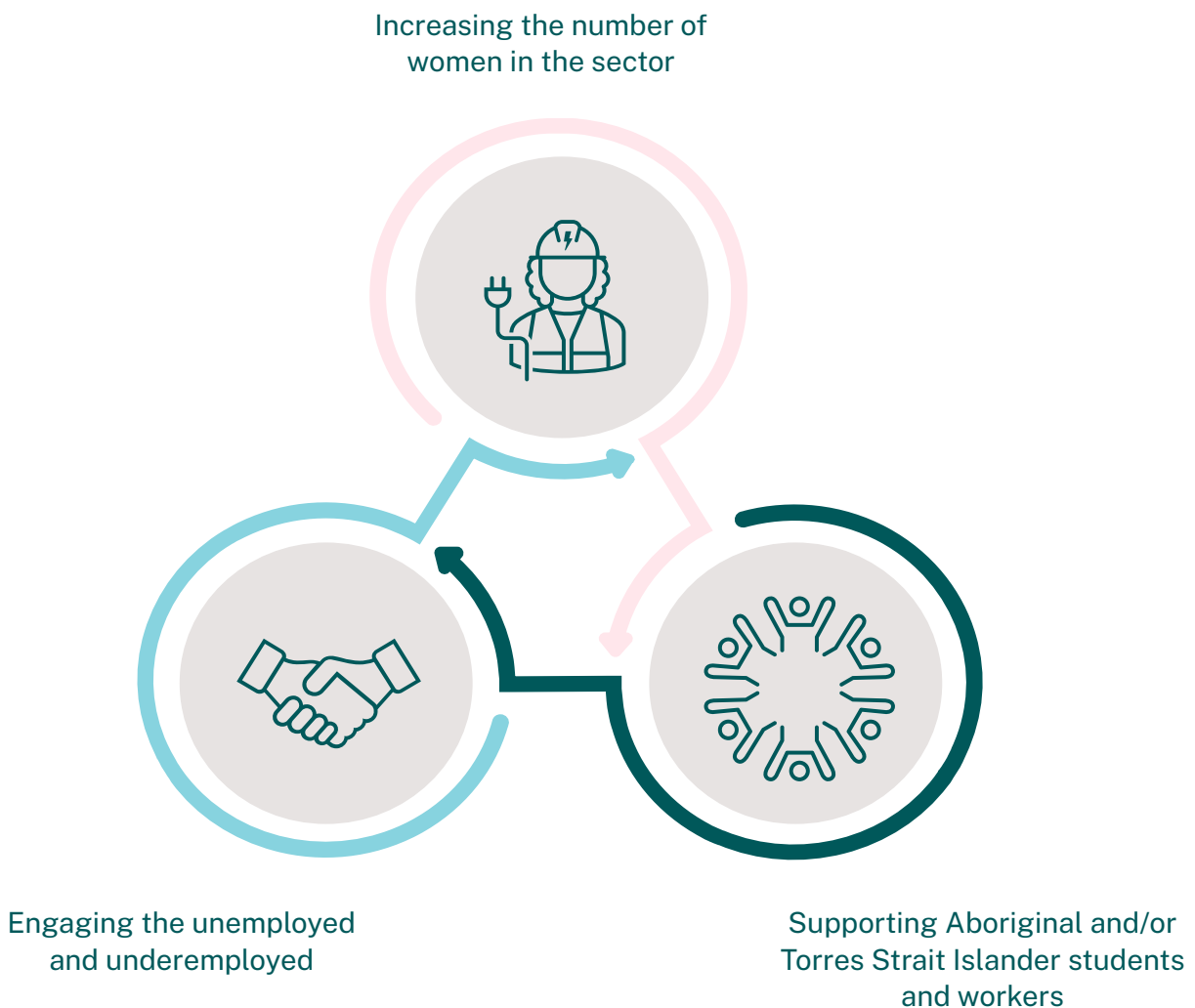


4. Equity

Under-represented cohorts have a fair share of renewable energy opportunities

The NSW Government is improving outcomes for under-represented cohorts in renewable energy by:

1. Increasing the number of women in the sector (e.g. Women in Construction Taster Program)
2. Supporting Aboriginal and/or Torres Strait Islander students and workers (e.g. Barranggirra Skilling for Employment Initiative)
3. Engaging the unemployed and underemployed (e.g. Get Back in the Game).



Avonlie Solar Farm Construction

Need

- A local, skilled workforce to build the 245 megawatt Avonlie Solar Farm in Narrandera, South-West NSW

Action

- Beon Energy Solutions (Beon) approached the Local Aboriginal Land Council (LALC) to meet the community, introduce the project, and identify local barriers to employment.
- They identified a lack of formal ID documentation as a key barrier for local communities to training and employment.
- Beon held an 'ID day' to help the community submit the paperwork needed and obtain formal ID documentation.
- Beon ran a week-long program to build relationships with employees, shaping expectations and building confidence.

Outcomes

- Over 30 Aboriginal and/or Torres Strait Islander people were employed in the construction phase – none had worked on a solar farm before and many were long-term unemployed or had never worked before.
- 90% of these workers secured ongoing employment within months of the solar farm's construction.

“The legacy that the [Avonlie] solar farm has left in this town is generational change.”

- **Shaurntae Lyons**¹

“The road to net zero runs through First Nations land [...] First Nations are a ready-made workforce in regional and remote Australia where the majority of projects necessary for the transition will be placed.”

- **First Nations Clean Energy Network**²

“Provision of a workplace culture built on equality, diversity, and inclusion [...] can help the sector compete for skilled workers.”

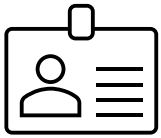
- **AGL Energy**³



Image provided by TAFE NSW

Sources:

1. Norman, J (2023) 'How a small town's trajectory changed after the construction of a 600-hectare solar farm', *ABC News*, <https://www.abc.net.au/news/2023-12-21/workforce-narrandera-construction-solar-farm/103235476>
2. First Nations Clean Energy Network (2024) *Submission: National Energy Workforce Strategy - Consultation Paper*, FNCN website, https://assets.nationbuilder.com/fncn/pages/2890/attachments/original/1725265017/Submission_-_DCCEEW_National_Energy_Workforce_Strategy_-_Consultation_Paper_-_Aug_2024.pdf?1725265017
3. AGL (2024) *AGL's response to the Discussion Paper*, AGL website, <https://www.agl.com.au/content/dam/agl-thehub/240524-elec-energy-sector-plan-sub-april-24.pdf>



5. Mobility

Employers can access skilled workers from other sectors, regions and countries to meet critical skills gaps

The NSW Government is improving access to skilled workers in renewable energy by:

1. Enabling interstate and international migration (e.g. NSW State Migration Plan)
2. Upskilling and reskilling workers (e.g. Reskilling for Renewables Program).



NSW State Migration Plan

Need

- Alignment of migration policy with NSW priorities and needs, including net zero and the energy transition
- Specialised skilled workers for the renewable energy sector as well as other essential sectors, such as health and early childhood education and care

Action

The NSW Government will:

- work with the Australian Government to implement a national multi-year migration planning model to better align migration policies with long-term needs across all levels of government
- deliver strategies to attract and retain skilled workers in critical skills areas, in consultation with key stakeholders
- work with regional communities to ensure migration supports their economies and meets their skills needs
- improve skills assessment and recognition for migrants
- support migrants to settle and integrate into local communities.

Outcomes

The NSW State Migration Plan will help to:

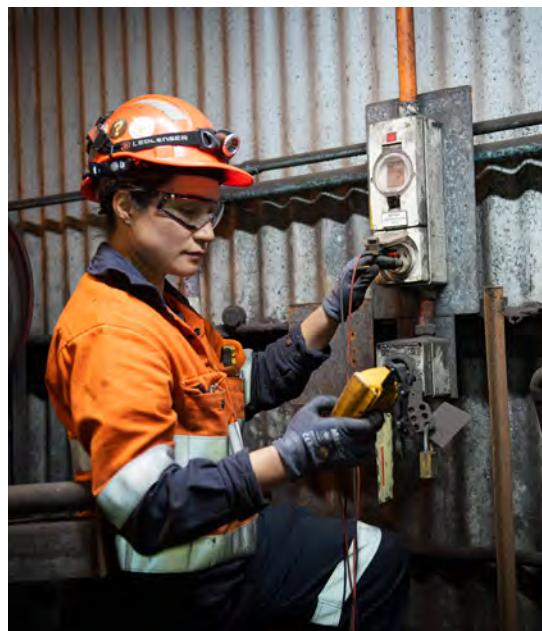
- meet critical skills needs in priority industries and regional NSW
- improve the coordination of education, training and migration systems
- deliver an efficient and fair migration system for migrants and sponsors.

“NSW is home to the largest share of migrants to Australia – this [State Migration] Plan will support migrant success and NSW priorities.”

- **NSW Government**¹

“It is important that visas for these skills are offered with a view to ongoing employment and settlement in regional Australia.”

- **Employer**

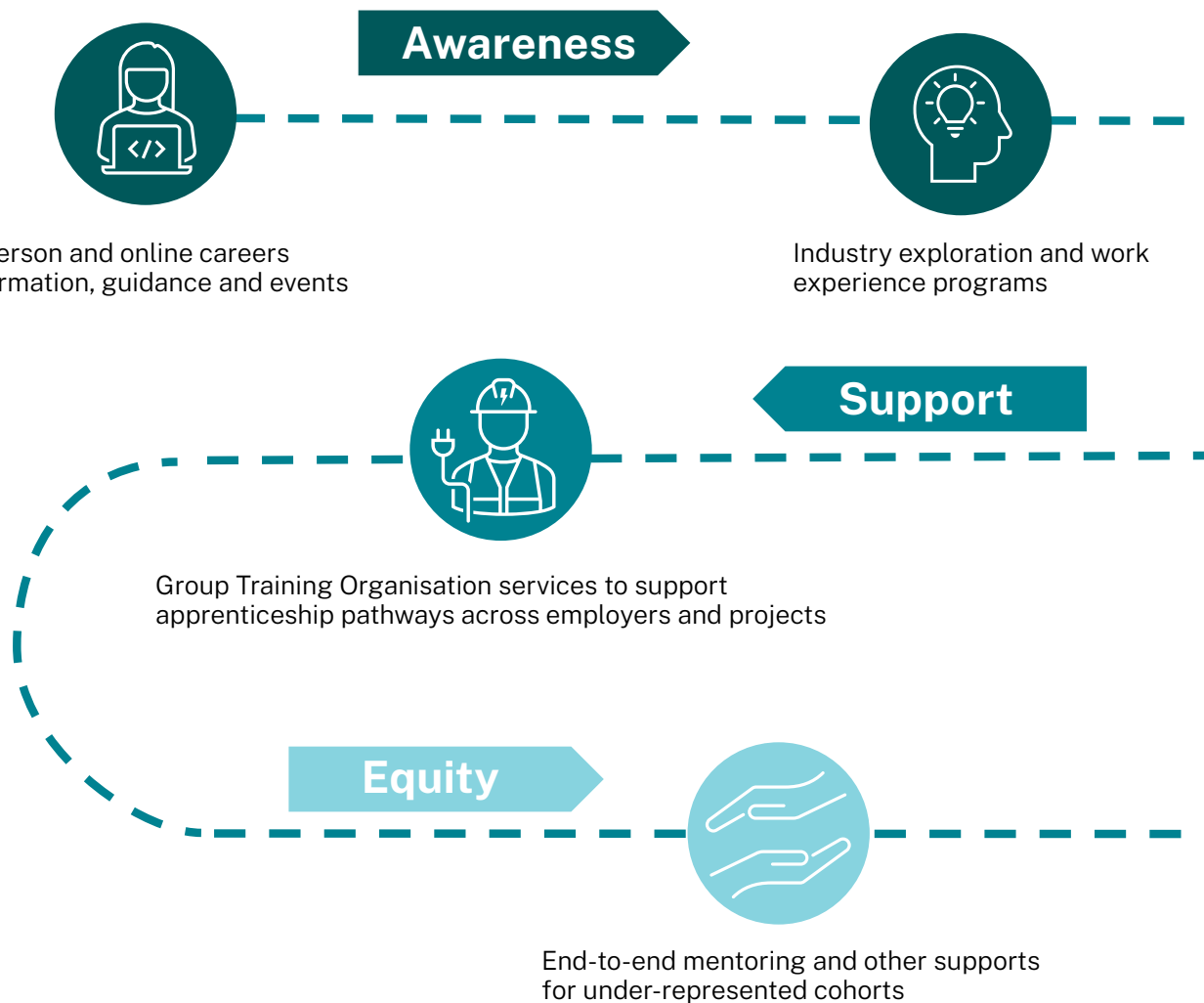


Source:

1. NSW Government (2024) *NSW State Migration Plan – Strategic Overview 2024-28*, NSW Government website, <https://www.nsw.gov.au/sites/default/files/noindex/2024-11/nsw-state-migration-plan.pdf>

The journey

Our NSW Renewable Energy Skills Strategy supports students and workers along the journey towards successful and sustainable careers in the renewable energy sector.





Access



'Taster' and trade-readiness programs



Local Skills Coordinators to connect local workers with employers and facilitate training tailored to employer needs



Fee-free and subsidised training, including apprenticeships and traineeships

Mobility



Recognition of existing skills and experience and gap training to upskill towards a nationally recognised qualification



Prioritised skilled migration pathways to support the renewable energy sector

Stakeholder consultation

Our sincere thanks to everyone who participated in our consultations to help develop this strategy:

- Aboriginal Affairs NSW
- ACEN Renewables
- ACERERZ
- Apprenticeship Employment Network
- AusEnergy Services Limited
- Australian Constructors Association
- Australian Government
- Australian Manufacturing Workers Union
- Clean Energy Council
- Electrical Trades Union
- Engineers Australia
- Energy Corporation of NSW
- Essential Energy
- First Nations Clean Energy Network
- Hunter Workers
- Infrastructure NSW
- Institute for Sustainable Futures
- Mid-Western Regional Council
- NSW Department of Climate Change, Energy, the Environment and Water
- NSW Department of Primary Industries and Regional Development
- NSW Electricity Infrastructure Jobs Advocate
- NSW Teachers Federation
- NSW Treasury
- Powering Skills Organisation
- Premier's Department NSW
- Shellharbour City Council
- Skillset Limited
- Squadron Energy
- TAFE NSW
- The Cabinet Office NSW
- The University of Newcastle
- Tilt Renewables
- Unions NSW
- Warrumbungle Shire Council.

Stakeholder consultation included online consultation, roundtable events and one-to-one meetings. The strategy does not necessarily represent the views or positions of the organisations consulted.



Appendix – NSW Government Skills programs supporting the renewable energy sector



1. Awareness

Students are informed about, interested in, and get a taste of renewable energy pathways

Program	
Connecting students with industry	
Next Generation Energy program (building on the Regional Industry Education Partnerships (RIEP) program)	<p>The Next Generation Energy program builds on the RIEP program and aims to partner renewable energy employers with schools to provide students with bespoke industry learning opportunities.</p> <p>The RIEP program has worked with over 30 industry partners in the renewables energy sector, including companies such as Squadron Energy, Tilt Renewables and ACEN Renewables, to deliver over 1,100 industry learning opportunities for students. These include trade-taster programs, careers expos, industry visits and other activities.</p>
Educational Pathways Program (EPP)	<p>The EPP includes 8 initiatives that aim to improve education and career outcomes for young people by introducing NSW public high school students to a range of training and employment pathways. It is delivered in 183 public high schools across 11 regions and supports about 77,000 students each year, including 1,800 School-Based Apprenticeships and Traineeships.</p>
Start Your Future	<p>TAFE NSW delivers the Start Your Future initiative to engage students in vocational tasters in a wide range of industries.</p>
Trade Readiness programs	<p>Trade Readiness programs introduce school students to trade pathways in construction through hands-on taster training and through meeting with employers. Over 4,000 placements in Trade Readiness programs have been offered to over 240 schools across NSW.</p>
Group Training Organisation (GTO) Pre-Apprenticeship and Pre-Traineeship Program	<p>The GTO pre-apprenticeship and pre-traineeship program aims to support GTOs to deliver targeted training programs to equip participants with the skills, experience and guidance needed to transition into full-time apprenticeships and traineeships.</p>

Program

Delivering VET pathways in schools

Vocational Education and Training for Secondary Students (VETSS)	VETSS enables secondary school students to get workplace skills through nationally recognised training while still at school. VETSS courses can contribute to the Higher School Certificate (HSC) and the Australian Tertiary Admission Rank (ATAR). VETSS includes courses in construction and electrotechnology.
School-Based Apprenticeships and Traineeships (SBATs)	SBATs allow students to commence an apprenticeship or complete a traineeship while at school. The program combines paid work, formal training and school, allowing students to work towards a nationally recognised qualification while completing the HSC.
Infrastructure Traineeship	The NSW Government's Infrastructure Traineeship is designed for Year 12 students to develop their professional skills for working in the infrastructure industry. The pathway provides students with a salary to complete a Certificate IV in Business, Project Management Practice, Procurement and Contracting or Surveying, and provides workplace experience with government, commercial construction firms, and professional consultancies.

Providing careers information and guidance

TAFE NSW Online Microskills	TAFE NSW provides targeted short courses designed with industry to encourage the uptake of training pathways and support entry into the renewable energy sector. Subsidised microskills such as 'Discover Renewable Manufacturing Careers', 'Prepare to Work in the Renewable Energy Industry' and 'Introduction to the Wind Energy Industry' provide valuable careers information and guidance. TAFE NSW is also developing microskills in Solar, Hydro, Grid-Scale Battery Storage, and Transmission.
Launch your Career (LyC)	The NSW Government delivers interactive events through Launch Your Career to equip students with up-to-date careers information. LyC connects students to industries, training opportunities, and relevant courses to support their career development, helping them make informed decisions about their post-school and career pathways.
Workplace Learning	Workplace learning offers work experience to students aged 14 and over, helping them gain job-ready skills, explore career options, and experience real-world work environments.



2. Access

Students can access renewable energy pathways where there are renewable energy jobs

Program

Delivering fee-free and subsidised training

<p>Smart and Skilled</p>	<p>The NSW Government offers subsidies for training through the Smart and Skilled program. Smart and Skilled provides eligible students with:</p> <ul style="list-style-type: none"> • an entitlement to government-subsidised training up to and including Certificate III • government funding for higher-level courses (Certificate IV and above) in targeted priority areas. <p>This includes a range of qualifications relevant to renewable energy, including the Certificate III in Electrotechnology Electrician and the Certificate III in Engineering – Technical.</p> <p>Under Smart and Skilled, apprenticeships and traineeships are fee-free until 30 June 2027, meaning no upfront training costs for students or employers.</p>
<p>Fee-Free TAFE</p>	<p>NSW Fee-free TAFE, a joint initiative of the Australian and NSW Governments, offers tuition-free training for those looking to train, retrain or upskill.</p>
<p>Pre-apprenticeships and pre-traineeship programs</p>	<p>Pre-apprenticeship and pre-traineeship programs help students make informed career decisions and support them into apprenticeship and traineeship pathways. Approved courses are fee-free, with programs available in a range of renewable energy trades, such as electrical, construction and plumbing.</p>

Growing the VET workforce

<p>TAFE NSW Paid to Learn</p>	<p>The TAFE NSW Paid to Learn program helps meet the increased demand for Vocational Education Teachers by leveraging the skills and experience of current industry professionals. The 14-week program pays experienced industry professionals to undertake the Certificate IV in Training and Assessment, and upon completion, take up a teaching role at TAFE NSW.</p>
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Program

Developing VET facilities

<p>TAFE NSW Manufacturing Centres of Excellence</p>	<p>The NSW and Australian Governments are partnering to establish:</p> <ul style="list-style-type: none">• the Hunter Net Zero Manufacturing Centre of Excellence at TAFE NSW's Tighes Hill campus in Newcastle• the Illawarra Heavy Industry Manufacturing Centre of Excellence at TAFE NSW Wollongong• the Western Sydney Advanced Manufacturing Centre of Excellence at TAFE NSW's Wetherill Park campus. <p>These centres will strengthen the capability and capacity of the VET system to provide high-quality training for critical and emerging industries, including the transformation to a net zero economy.</p>
<p>TAFE NSW Mobile Training Units (MTUs)</p>	<p>MTUs are trailers or trucks that are fitted out to transport specialist training equipment to deliver practical training at multiple, regional TAFE campuses.</p> <p>TAFE NSW is developing 2 Energy Future Skills Centre MTUs to generate interest in renewable energy careers and expand access to training in regional areas. These units will deliver high-demand skills in areas such as electrotechnology, welding, and digital trades.</p>
<p>Renewable Energy Awareness Career Training (REACT) Centre</p>	<p>Under the Community and Employment Benefit Program for the Central West Orana Renewable Energy Zone, the NSW Government is investing over \$11.2 million to develop the REACT Centre Training Facility in Wellington. The Centre will deliver renewable energy training in partnership with industry and other education and training providers.</p>
<p>Hydrogen Centre of Excellence</p>	<p>The NSW Government is investing \$25 million to develop the state's first Hydrogen Centre of Excellence in Glenwood, in partnership with the Plumbing Industry Climate Action Centre (PICAC). The Centre will train plumbers and gasfitters with the specialist skills required for hydrogen systems.</p>



3. Support

Students are supported through renewable energy education, training and employment pathways

Program

Supporting employers to access workers and funded programs

<p>Local Skills Coordinators</p>	<p>Local Skills Coordinators will work closely with employers across renewable energy projects to promote renewable energy pathways, access funded programs, engage local workforces and communities (particularly under-represented cohorts) and facilitate tailored training solutions.</p> <p>The Local Skills Coordinator model is partly based on the Infrastructure Skills Legacy Program (ISLP) model, where a project officer may provide expert advice and guidance to project developers and contractors regarding available funding and support programs, and coordinate or drive the implementation of training and employment programs.</p>
<p>NSW Skills for Net Zero</p>	<p>The NSW Government is funding the CSIRO to deliver the NSW Skills for Net Zero pilot initiative. This initiative supports tertiary students to undertake paid internships at eligible businesses (at least 200 hours of paid work) to work on decarbonisation-focused projects. Businesses receive a \$2,500 payment to subsidise the intern's wages. The initiative will support 100 internship placements from 2025 to 2028.</p>

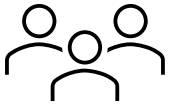
Program

Aligning and expanding supports for students

Apprenticeship and Traineeship (A&T) Roadmap	The A&T Roadmap aims to strengthen A&T model to flexibly meet industry skills needs, including in renewable energy, and drive increased training commencements and completions, including by aligning and expanding resources and learner supports.
Group Training Organisation (GTO) services	GTOs recruit apprentices and trainees, taking on employer responsibilities, and place them with host employers. The NSW Department of Education (the department) will seek to increase access to GTOs, particularly in the Renewable Energy Zones, to make it easier for renewable energy employers to take on apprentices, and to provide ongoing supports for apprentices.
Primed for Power	The Primed for Power program will aim to provide students, apprentices and workers with training in the foundation skills needed for sustainable careers in renewable energy. The department will work with industry and training providers to further develop this program.

Delivering apprenticeship and traineeship pathways through the public sector

Essential Energy's apprenticeship program	<p>Essential Energy's apprenticeship program was recognised at the 2024 Australian Training Awards, as Essential Energy won the Australian Apprenticeships Employer Award (Gold). The program was commended for its innovation, cutting-edge training, higher education partnerships, and focus on future skills.</p> <p>Essential Energy has trained more than 1,350 apprentice electrical technicians, cable jointers and powerline workers since 2001.</p>
1,000 NSW Public Sector Apprentices and Trainees Program	<p>The NSW Government has committed to employ an additional 1,000 apprentices and trainees across government agencies and State Owned Corporations over 3 years (to 30 June 2026).</p> <p>The program has supported Essential Energy to take on an additional 88 apprentices and trainees over 2023-24 and 2024-25, including in the following qualifications: Certificate III in Electrotechnology Electrician, Certificate III in ESI – Distribution Overhead, Certificate III in ESI - Distribution Underground, Certificate II in ESI – Asset Inspection and Testing, Certificate II in Electrotechnology (Career Start).</p>



4. Equity

Under-represented cohorts have a fair share of renewable energy opportunities

Program

Increasing the number of women in the sector

Women in Construction/Renewables Taster Program

The Women in Construction/Renewables Taster Program is a 2 week, hands-on, accredited training program that aims to introduce under-represented cohorts to career pathways in construction and renewable energy and support them into entry-level roles, including apprenticeships. The program provides hands-on training including in traffic control, power tools and basic machinery operations, as well as job readiness. The Women in Construction Taster Program is focused on women, while the Renewables Taster Program is focused more broadly on under-represented cohorts.

Girls Can Too

As part of the Regional Industry Education Partnerships program, the Girls Can Too program provides young women with opportunities to try a trade. The week-long taster course provides insight into the electrical, plumbing, carpentry and sign writing trades, and includes a 'speed networking' event with industry partners.

Engaging the unemployed and underemployed

Get Back in the Game

The Get Back in the Game program helps young people aged 15 to 19 years who are not involved in work, education, or training to re-engage with education, transition to vocational training or find employment. It provides specialist support and mentoring to overcome barriers to learning or employment, including professional counselling, tailored career guidance and the brokerage of pathways to training and employment.

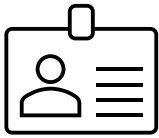
Adult and Community Education (ACE)

Adult and community education (ACE) helps students develop essential skills for work and daily life. Tailored courses boost confidence and enable individuals to reach their personal and career goals. They also provide the bridge some people need to re-enter the workforce in a safe and encouraging environment.

Program

Supporting Aboriginal and Torres Strait Islander students and workers

<p>Barranggirra Skilling for Employment Initiative</p>	<p>Barranggirra provides end to-end support for Aboriginal and/or Torres Strait Islander students and workers through culturally appropriate mentoring to support retention and completion of training and improve post-training employment outcomes.</p>
<p>OCHRE Opportunity Hubs</p>	<p>Opportunity Hubs aim to provide Aboriginal young people with the confidence and knowledge to follow a supported pathway between school and further education and/or employment. They provide Aboriginal young people with clear pathways to employment opportunities by:</p> <ul style="list-style-type: none">• working with schools to assist Aboriginal young people to develop career aspirations and pursue them through school, further education and/or training and employment• coordinating local opportunities including employment, mentoring, scholarships, internships and volunteer work, as well as opportunities to facilitate connection with culture, identity and community• mentoring and supporting Aboriginal students each step of the way.



5. Mobility

Employers can access skilled workers from other sectors, regions and countries to meet critical skills gaps

Program	
Enabling interstate and international migration	
NSW State Migration Plan	The NSW State Migration Plan sets out strategic priorities for migration, including its important role in meeting critical skills shortages across the state, including those related to net zero and the energy transition.
Skilled Migration Pilot Initiative	The NSW and Australian Governments are jointly developing a pilot initiative to streamline skills recognition and licensing for migrant tradespeople, accelerating their entry into critical trades.
Automatic Mutual Recognition (AMR) scheme	The AMR scheme enables licensed or registered professionals to work in a different state or territory using their 'home' state or territory license, without needing to apply for a new license or pay additional fees. The AMR scheme covers occupational groups including building work, electrical, engineer, and plumbing, draining and gasfitting.
Upskilling and re-skilling workers	
Reskilling for Renewables	Reskilling for Renewables will aim to support existing workers to upskill or reskill to work in renewable energy and meet the sector's skills needs. The department will work with industry and training providers to further develop this program.
Smart and Skilled Targeted Priorities Prevocational and Part Qualification (TPPPQ) program	The Smart and Skilled TPPPQ program provides subsidised training to address skills gaps in priority industries and support workforce development. The program supports individuals seeking to upskill or reskill, as well as businesses seeking to develop their workforce.
Trade Pathways for Experienced Workers (TPEW)	The TPEW program supports experienced workers to undertake a Recognition of Prior Learning (RPL) assessment, before undertaking any gap training needed to obtain a trade qualification. A broad range of renewable energy qualifications are available.



We acknowledge the homelands of all Aboriginal and/or Torres Strait Islander people and pay our respect to Country.

Say hello

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