

Energy Skills Australia

Submission to the National Energy Workforce Strategy Consultation Paper

For the Department of Climate Change, Energy, the Environment
and Water (DCCEEW)

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Questions

- 1. What do you consider to be the main barriers to growing the clean energy workforce? What actions can be taken to overcome these barriers and attract more workers to the sector?**

An Electrical Apprenticeship is rigorous, academically demanding and a potentially dangerous undertaking. Training requires a long-term skills investment from registered training organisations (RTO), employers, and the apprentices themselves. One of the common barriers to growing the clean energy workforce are too many people who commence an electrical apprenticeship do not complete.

Unfortunately, there are many reasons why apprentices do not complete their chosen field of study, including workplace issues, low wages, cost of living pressures, poor advice before entering, inadequate language, literacy and numeracy (LLN), and dissatisfaction with the work. However, a major barrier to non-completions, is lack of support and mentoring apprentices receive.

Apprentices and trainees need support and mentoring from those within their occupation or industry. Occupational specificity is particularly important in sectors undergoing rapid change, such as the energy industry, as it transitions to more sustainable renewable sources of generation.

Investing in industry-led programs such as mentoring and ongoing support are critical components in ensuring that all apprentices including women electrical apprentices remain committed to and successfully complete their training. Effective mentoring and support systems can significantly improve completion rates, addressing one of the primary challenges faced by the electrotechnology sector.

- 2. What could be done to attract more First Nations people as well as underrepresented groups, such as women, Culturally and linguistically Diverse (CALD) people and people with a disability to the sector and address barriers to greater participation?**

We need to change the perception that the electrical industry is not suitable for women. Addressing the gender imbalance and fostering a more inclusive culture within this traditionally male-dominated field is critical for its growth, innovation, and ability to meet our future workforce needs and targets. It is worth noting that employer associations and unions have been running some great programs to attract and retain more female apprentices. These programs are beginning to increase female participation, however with targeted support, more could be done.

It's essential to provide the right support and assistance to address these disparities and meet the growing demand for skilled labor in the Energy sector.

Change is needed around structural issues such as a culture of long and inflexible hours as well as insufficient work-life balance, inadequate gendered amenities and personal protective equipment (PPE). These barriers are not unique to the energy industry, but are systemic across many trade sectors. These issues are well-known and have been long-standing challenges. Combined, they significantly constrain the future supply of workers, and if left unaddressed, will likely prevent supply from meeting demand.

Addressing and changing the hypermasculine workplace cultures so that women stay in the occupation and consider trades as a viable career path. Complemented by increased promotion of trade related skills and career pathways to young girls and First Nations People will be essential to achieving increased underrepresented participation.

3. What skills or qualifications are most in demand for clean energy roles, and how can education and training programs better align with these needs?

The Clean Energy Generation Report identifies electricians as a critical occupation in the transition to renewables. However, with current completion rates on a downward trajectory, we won't meet the demands required to achieve our nationwide net zero goal by 2050. According to the Jobs and Skills Australia Skills Priority List, the occupation of electrician is currently facing a shortage and has been for many years.

Traditionally, the vocational education and training (VET) pathway for the energy industry is through an apprenticeship with a nominal duration of four years. Most commonly, apprentices will embark on a Certificate III pathway, gaining both practical and theoretical knowledge during their apprenticeships. Often qualified electrical tradespeople will continue on a trajectory of life-long learning, by undertaking post-trade qualifications in specialist areas. The industry also offers Certificate II pathways; however, these are often used as a gateway into an apprenticeship.

The qualifications that are most in demand for clean energy roles lead to an occupational outcome.

These qualifications are:

- UEE30820 Certificate III in Electrotechnology Electrician
- UEE32220 Certificate III in Air Conditioning and Refrigeration
- UET30521 Certificate III in ESI - Transmission Overhead
- UET30621 Certificate III in ESI - Distribution Overhead
- UET30821 Certificate III in ESI - Distribution Underground

Clean energy roles can align with these qualifications, through appropriate choice of elective streams or through post-trade training on the latest renewable energy technologies, such as solar power systems, battery storage, and electric vehicle charging infrastructure.

4. What actions are needed to ensure the clean energy workforce has appropriate skills, competencies and qualifications relating to safety?

A significant amount of work undertaken within the clean energy sector is licensed electrical work, and the majority of the clean energy workforce will achieve an electrical licence by undertaking an electrical apprenticeship. Outside of this pathway, to ensure the clean energy workforce has the appropriate skills, competencies, and qualifications relating to safety, a multifaceted approach is needed. This includes integrating comprehensive safety training into all relevant qualifications and regularly updating safety standards to reflect new technologies and industry practices.

Additionally, hands-on training should emphasise real-world safety scenarios, while ongoing professional development should be mandatory to keep workers current on the latest safety practices and industry specific technological advancements. Fostering a strong safety culture within organisations, conducting regular safety audits, and ensuring compliance with safety regulations are essential.

5. What actions are needed to ensure clean energy jobs offer attractive pay and conditions, security, and safety?

Although there are great career opportunities and earning potential for most trade occupations once trained, training wages can be seen as prohibitive when potential apprentices are making decisions about entering an apprenticeship. This is compounded for mature aged apprentices or people undertaking a career change, who may already have a family and significant financial obligations and commitments.

The situation calls for a nuanced understanding of the economic barriers that prospective and current apprentices face, along with an evaluation of existing incentives and support mechanisms provided by the Commonwealth, State, and Territory governments.

To ensure clean energy jobs offer attractive pay, conditions, security, and safety, several key actions are necessary:

- **Bridging the wage gap between Mature age and Junior Apprentices:** Ensuring apprenticeship wages reflect the real cost of living while taking into consideration maturity, skills and experience.
- **Increased Awareness and Accessibility:** Many potential and current apprentices might not be aware of the support available to them. Increasing awareness and simplifying the application processes for support programs could improve uptake. This can be through a national mentoring scheme.

- Trade apprentice registration discount: Introducing a vehicle registration discount for trade apprentices who use their cars for work could alleviate some financial pressures on apprentices and support their commitment to completing their training.
- Reintroduce Tools For Your Trade incentive: Help apprentices afford the necessary tools and equipment, which can be a significant financial burden.
- Industry specific Apprenticeship Connect Australia (ACA) organisations: To ensure informed industry focussed and specific advice and program information is provided to clean energy apprentices.
- Utilising industry led Group Training Organisations (GTO): To ensure security of work and adequate scope of training across various renewable energy projects.

6. What remaining barriers are there to increasing training capacity for clean energy occupations, particularly in regional areas that are not being addressed, or require more intervention?

Despite efforts to expand training capacity for clean energy occupations, particularly in regional areas, several barriers remain unaddressed or require further intervention. Geographical isolation continues to be a significant challenge, as many rural apprentices lack access to nearby training facilities and have fewer local employment opportunities compared to those in urban centres. This isolation can hinder the ability to attract and retain apprentices in these areas.

Limited access to training facilities and qualified educators in rural regions exacerbates the challenge, often forcing apprentices to travel long distances to attend training facilities for of-the-job training and assessment. While some progress has been made, more targeted investment in remote learning technologies and the development of local training hubs is essential. Implementing a blend of face-to-face and virtual mentorship programs can connect rural apprentices with experienced electricians and trainers, providing much-needed guidance and support.

Additionally, financial barriers related to travel and accommodation for training or work placements outside of their local area can discourage participation. Offering travel and accommodation subsidies or reimbursements is crucial to alleviate these costs and make training more accessible.

Finally, stronger engagement with renewable energy employers and Group Training Organisations (GTO) in rural areas is necessary to create local employment pathways for apprentices. This engagement can help ensure that rural apprentices have access to relevant work placements and long-term job opportunities within their communities, reducing the need to relocate to urban centres for work.

7. Do you consider worker retention in the clean energy sector to be a concern? If yes, what would help to retain more workers, particularly women?

Yes, worker retention in the clean energy sector is a significant concern, particularly given the ongoing skill shortages and high demand for occupations in the energy sector, which has persisted for over two decades. The sector is also undergoing rapid changes due to technological advancements, increased adoption of renewable energy, and the electrification of homes and businesses, which further strains retention efforts, particularly for electricians.

To retain more workers, especially women, several strategies could be implemented. Creating an inclusive and supportive work environment is crucial, as it encourages diversity and helps reduce turnover. This includes providing flexible work arrangements, offering mentorship programs, and ensuring equitable opportunities for career advancement.

In addition, ESA suggests the introduction of a completion incentive. A one-time financial bonus awarded to apprentices upon the successful completion of their apprenticeship program thereby encouraging persistence, enhancing skill levels, and contributing to a more qualified workforce.

8. What actions could help to reduce the risk of bias and harassment in the workplace?

To reduce the risk of bias and harassment in the workplace, several actions are essential. Improving workplace culture is key, and employers must take decisive steps to eliminate toxic behaviors and create an environment where employees feel safe to voice their concerns. This requires introducing and strictly enforcing a zero-tolerance policy for harassment and bullying, with clear consequences for violations. Leadership must champion this policy to ensure it is taken seriously across all levels of the organisation, and everyone - including management, employees, contractors, and on-site visitors must be fully aware of the policy details and their responsibilities under it.

In addition, providing training on diversity, equity, and inclusion is vital to addressing unconscious biases and fostering a more respectful work environment. To support businesses in implementing these changes, they should be provided with resources, guidance, and ongoing support.

From a government perspective, clear and impactful messaging campaigns could be implemented to target workplace harassment and bullying. Similar to campaigns on online bullying, transport safety, and public health, these initiatives would raise awareness about the seriousness of harassment, promote a zero-tolerance culture across industries, and help shift societal attitudes. Such campaigns would encourage reporting and support the development of safer, more respectful workplaces nationwide.

9. Do you think there is a need to improve ease of mobility of workers between states or from overseas? If yes, what could be done to improve mobility?

The energy industry is inherently dangerous, making it crucial to protect the health and safety of workers consumers and the broader community. The Department of Climate Change, Energy, the Environment and Water (DCCEE) should engage directly with electrical regulators, employer associations and unions to see if there is the appetite to harmonise electrical licensing requirements across Australia. If there is the appetite for change from industry, then it could be beneficial to the mobility of electrical workers and business across jurisdictions.

With over 10,000km of new transmission lines needing to be built across the country, there is an immediate need to introduce an industry endorsed pathway for overseas transmission line workers. The process should largely replicate what is in place for licensed electricians - that is, an initial offshore/onshore technical skills assessment (OTSR), followed by an industry endorsed gap training course (including work performance) in Australia to ensure Australian regulations, standards and work practices are understood and demonstrated.

10. Does skilled migration help address workforce or expertise shortfalls? If Yes, what are the barriers to engaging overseas workers that need to be addressed?

Providing opportunities to local workers must be the primary goal in meeting the workforce demands of the clean energy sector. However, skilled migration does play a role in addressing workforce shortfalls, but only if the overseas workers are fully qualified for the industry, they are to be working in.

There have been examples of exploitation of migrant workers in Australian renewable energy projects, who have not been provided adequate training or conditions that align with what is expected by domestic operatives.

To prevent this, a labour agreement specific to the energy industry is urgently needed to enforce strict migration standards.

For instance, visas for electricians and air-conditioning and refrigeration mechanics are regulated by Trades Recognition Australia, which, in collaboration with the Electrical Regulatory Authorities Council, mandates a clear process that includes a requirement of up to six years of verifiable experience.

Despite the high level of knowledge and skills among many overseas workers, there are often gaps in how these skills need to be applied in Australia due to differences in standards, regulations, industry codes and work practices.

To bridge this critical skills gap, it is essential that migrant workers meet both qualification and occupational license requirements specific to Australia.

There are currently some inconsistencies in how this has been applied across some Australian jurisdictions. These should be streamlined for electricians and as mentioned previously, expanded to include transmission line workers.

11. Are there any data limitations that restrain the planning and/or progression of clean energy projects or precincts?

Data limitations do pose challenges in the planning and progression of clean energy projects or precincts. The current classification system, such as the Australian and New Zealand Standard Classification of Occupations (ANZSCO), does not adequately reflect the modern Australian labour market, particularly for emerging industries like clean energy. The ongoing review of ANZSCO by the government aims to address these shortcomings, including the need for a clearer and more comprehensive definition of 'clean energy' and the occupations that fall within this category. The current lack of precise classification leads to data duplication and the use of vague labels like "not further defined (nfd)," which hampers accurate workforce planning and analysis.

Additionally, training data gathered by the National Centre for Vocational Education Research (NCVER) is valuable, offering insights into training trends, such as commencements, completions, and total participation. However, this data is typically released with a six-month lag, limiting its real-time applicability for workforce planning and immediate decision-making. To improve the efficiency and effectiveness of clean energy workforce planning, there needs to be more timely data releases and an updated, detailed classification system that accurately captures the evolving nature of the sector.

To overcome these limitations, there needs to be more direct engagement with State Training Authorities (STA), Registered Training Organisations (RTO) and employers. This approach can provide real time information on workforce needs, and training capacities, trends and emerging gaps before this is available in national datasets.

12. What data or information would help with workforce planning? Why is this data needed? This could include more detailed data on the current workforce and/or analysis of future workforce needs.

More granular data on specific roles in skills within the clean energy workforce and more information on demographic of the current workforce including age, gender, and diversity.

Such data would help identify workforce gaps and inform training programs and target recruitment efforts into the clean energy sector.

13. What clean energy workforce policy/planning coordination do you think is needed nationally and what governance and other arrangements are needed to facilitate necessary coordination?

National clean energy workforce policy and planning coordination must prioritise two barriers the harmonisation of licensing requirements across all states and territories and the lack of foundational skills, particularly in language, literacy, numeracy, and digital skills (LLND).

Harmonisation of licensing requirements will ensure that workers can move seamlessly across borders without compromising safety standards, particularly in critical and high-risk sectors like electrotechnology – so long as there is an appetite from industry to do so.

Effective coordination requires a centralised governance structure that includes representatives from federal, state, and territory governments, industry bodies, unions, and electrical licensing regulatory bodies across Australia and New Zealand. An industry-based body should be formed to oversee the development and implementation of consistent training, safety standards, and certification processes nationwide.

Given their critical importance in technical roles like electrical apprenticeships a comprehensive approach that addresses foundational skills, particularly in language, literacy, numeracy, and digital skills (LLND) is required. The recent NAPLAN scores, which show that one in three Australian students is performing below LLND benchmarks, highlight the urgency of this issue. As Australia transitions to a clean energy workforce, improving LLND skills from as early as preschool is essential to ensure that future workers are equipped to meet the demands of the industry.

A national framework for clean energy workforce development is needed, with governance structures that facilitate collaboration between federal, state, and territory governments, industry bodies, educational institutions (early education and primary school), and unions. This framework could either be an add on to the Science, Technology, Engineering and Mathematics (STEM) or on its own.

14. What type of coordination role should the commonwealth Government play?

The Commonwealth Government should play a pivotal coordination role by leading efforts to harmonize licensing and safety standards across all states and territories, ensuring consistency in

workforce qualifications and mobility. This would create a unified national framework that enables workers to move seamlessly across borders, particularly in critical industries like clean energy.

Additionally, the Commonwealth Government should advocate for long-term funding commitments from both government and industry stakeholders. Adequate financial resources are essential to sustain initiatives that drive cultural and systemic change, ensuring the success of workforce development and safety programs nationwide.

15. What resources or information would make it easier to navigate? – including resources for industry, unions, government, and the general public in particular job seekers and students?

To make navigating the electrotechnology and clean energy sectors easier, a comprehensive and centralised online platform should be developed. This platform would serve as a vital resource for industry, unions, government, and the general public, particularly job seekers and students. The platform would provide up-to-date information on licensing requirements, training programs, job opportunities, and industry standards.

Given the crucial role of the electrotechnology sector in global sustainability and innovation, this platform would also work to elevate the perception of energy work. It would promote the profession to underrepresented groups, particularly women and First Nations people, target potential apprentices, and offer impactful career advice and guidance. By inspiring and fostering early interest among students, it could help cultivate a diverse pipeline of future energy workers equipped to support Australia's transition to renewable energy.

Educational campaigns aimed at the general public would further raise awareness of career opportunities in clean energy, highlight the importance of safety and licensing standards, and emphasise the benefits of a harmonized national approach to workforce development.

For job seekers and students, the platform would provide tailored information on career pathways, apprenticeship programs, and required qualifications in the clean energy sector. Interactive tools, career advice, and connections to mentoring programs would make it easier to explore and pursue opportunities in the field.

Additionally, the platform would offer clear guidelines and toolkits for businesses and industry bodies, outlining best practices for compliance, safety standards, workforce training, and licensing requirements across states and territories. This would help companies streamline processes and ensure consistent application of standards, thereby supporting the broader goals of workforce development and sustainability in the clean energy sector.

