Tuesday, 10 September 2024

Submission – National Energy Workforce Strategy

The Clean Energy Council welcomes the opportunity to make a submission in response to the National Energy Workforce Strategy (NEWS) Consultation Paper.

The Clean Energy Council is the peak body for the clean energy industry in Australia. We represent and work with around 1,000 businesses operating in Australia across renewable energy, energy storage, and renewable hydrogen.

The Clean Energy Council welcomes the development of the NEWS. There is an important role for the Commonwealth government to play in coordinating a national response to the workforce challenges of the energy transition. The scale and pace of change involved is unprecedented in Australia's history. It is also a transition that will occur in the context of other economic megatrends, including the digital transformations of artificial intelligence and automation, and growth of the care and support economy.[1]

This submission will briefly review the strategic context, which justifies the urgent need for a coordinated response to achieve the stated objectives of the NEWS. It will examine enduring data gaps that inhibit workforce planning and the role of regional Australia in achieving the transition. It will examine the opportunities afforded by skilled migration to meet workforce needs. Finally, it will describe existing industry initiatives and opportunities for partnership through the NEWS. Recommendations for the Department's consideration are made throughout the paper and tabulated in the Appendix.

Strategic context

The energy transition is well underway, with almost 40% of electricity generated from renewables in 2023.[2] The pace and scale of deployment of new renewables needs to accelerate dramatically for Australia to achieve its target of 82% renewable electricity in the National Electricity Market by 2030. The Australian Energy Market Operator (AEMO) projects that this requires an average of 6.8

[1] Jobs and Skills Australia. (2023a). Towards a National Jobs and Skills Roadmap – Annual Jobs and Skills Report 2023. URL: https://www.jobsandskills.gov.au/download/19298/towards-national-jobs-and-skills-roadmap/1968/2023-annual-jobs-and-skills-report/pdf

[2] Clean Energy Council. (2024a). Clean Energy Australia 2024. URL: https://assets.cleanenergycouncil.org.au/documents/resources/reports/clean-energy-australia/Clean-Energy-Australia-2024.pdf

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GW of new utility-scale wind and solar be installed each year to the end of the decade.[3] This requires a strong project pipeline. However, the total annual generation capacity of utility-scale projects reaching financial commitment last peaked in 2018 at 6.9 GW.[4] Between 2019-2023, it has tracked at an average of 3 GW per annum. A consequence of this reduced project pipeline is a highly compressed build schedule to achieve 2030 targets. AEMO projects much of this build to occur between 2026-27 and 2030-31, peaking at 10.8 GW being built in 2029-30 alone.

Accelerated deployment will occur in the context of existing workforce shortages. Clean energy projects are currently experiencing skill shortages in critical occupations including electricians and construction workers. The 2023 Skills Priority List (SPL) found that 73% of Electrotechnology and Telecommunications Trades and 100% of Construction Trades Workers occupations are in shortage nationally.[5] Many of these occupations require apprenticeships with lengthy training lead times. These occupations are also experiencing trainer shortages, which creates a bottleneck on the number of new apprentices that can be accommodated by existing trainer capacity. Worker shortages are affecting the cost of renewable projects and are delaying the completion of projects in the development pipeline. They are also diverting investment dollars overseas.

There is also a climate of intensifying competition, both domestically and internationally, for skilled workers. There are several competing pressures, including:

- **A tight domestic labour market.** Despite showing signs of loosening, with the unemployment rate rising fifty basis points to 4.2% in the last financial year, the labour market is historically very competitive.[6]
- **Competition for trades workers between industries.** The Government's Future Made in Australia (FMIA) agenda may induce competition for workers from a constrained pool of prospects between the clean energy, manufacturing and mining industries.
- **A record pipeline of infrastructure investment.** This is creating domestic competition for construction workers due to large-scale public infrastructure projects. At present, there is a projected shortfall of 229,000 public infrastructure workers, a 129% capacity shortfall. Significant shortages are projected to continue to 2027 (Figure 1).
- **Global competition for investment and skilled workers.** This is due to accelerating decarbonisation ambitions by countries across the globe, resulting from state industrial policy including the United States' Inflation Reduction Act and the European Commission's Green Deal Industrial Plan.

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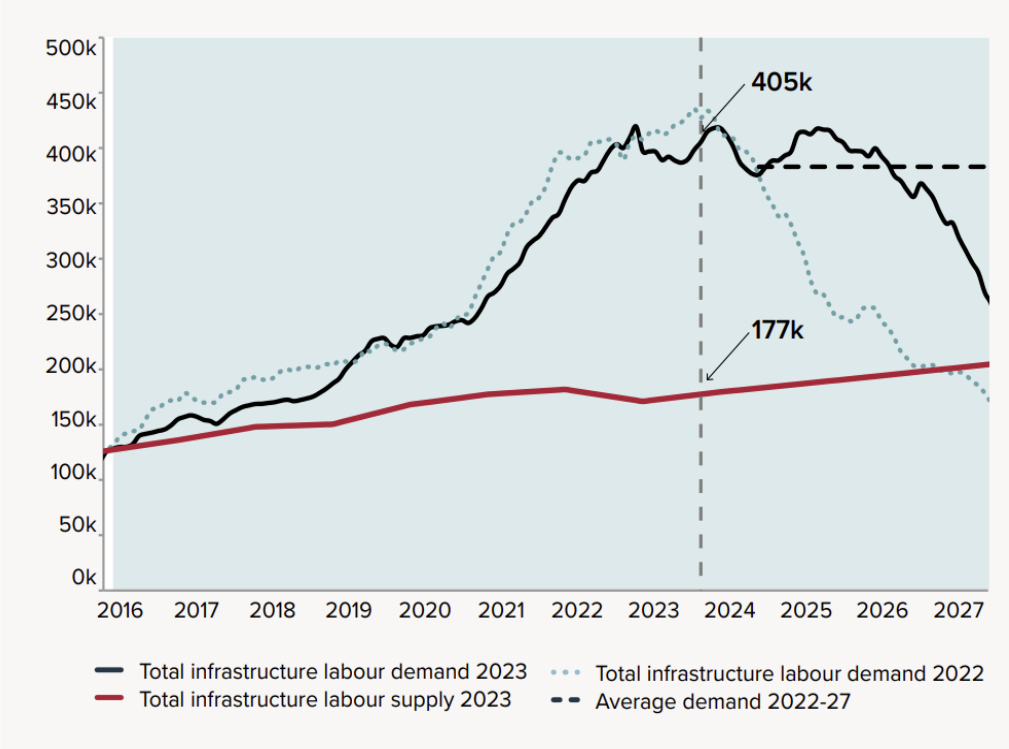
[3] Australian Energy Market Operator. (2024). 2024 Integrated System Plan. URL:
[4] Clean Energy Council. (2024b). Renewable Projects Quarterly Report - Q1 2024. URL: https://assets.cleanenergycouncil.org.au/documents/resources/reports/Renewable-projects-quarterly-report_Q1-2024.pdf
[5] Jobs and Skills Australia. (2023b). 2023 Skills Priority List - Key Findings Report. URL: https://www.jobsandskills.gov.au/sites/default/files/2023-09/2023%20SPL%20Key%20Findings%20Report_0.pdf
[6] Australian Bureau of Statistics. (2024). Labour Force, Australia. Accessed 26 August 2024. URL: https://www.abs.gov.au/statistics/labour/employment-and-unemployment/labour-force-australia/jul-2024



Note: Public infrastructure pipeline demand includes major public infrastructure projects, non-major public infrastructure projects, road maintenance projects and privately funded infrastructure for public use.

Source: Nous Group commissioned by Infrastructure Australia (2023).

Figure 1 | Demand and supply of public infrastructure workers.[7]

1. Enduring data gaps

Current size and distribution of the clean energy workforce

Australia lacks the bottom-up data needed to understand the current state of the clean energy workforce and plan for its future. This is a result of incumbent data frameworks, including the Australia and New Zealand Standard Industry Classification (ANZSIC) and the Australia and New Zealand Standard Classification of Occupations (ANZSCO) being maladapted to the characteristics

[7] Infrastructure Australia. (2023). Infrastructure Market Capacity 2023 Report. URL: https://www.infrastructureaustralia.gov.au/sites/default/files/2023-12/IA23_Market%20Capacity%20Report.pdf

of the clean energy industry. ANZSIC distributes clean energy workers across a range of aggregated industry Divisions, including Manufacturing, Construction and Electricity, Gas, Water and Waste Services. An outcome of this is limited data available regarding the size, location, composition and distribution of the clean energy workforce. Jobs and Skills Australia's (JSA) 2023 report, The Clean Energy Generation, recommended that the Australian Government commission a comprehensive and regular Australian Energy Employment Report (AEER). An AEER would regularly survey the clean energy industry to produce bottom-up estimates on the size and composition of the energy workforce. It would leverage the whole-of-labour market mapping initiated by the report and establish a consistent approach to measuring the workforce.

This is the approach currently undertaken in the United States of America. The United States Department of Energy conducts an annual survey of U.S. energy sector employers to produce the United States Energy and Employment Jobs Report (USEER). It is a comprehensive summary of national and state-level energy jobs, reporting by industry, technology and region. It includes key demographic data and employer perspectives on growth and hiring. It combines surveys of businesses and public workforce data to inform and report on policymaking initiatives. The USEER provides a useful basis for the kinds of data that should be captured in an AEER.

An AEER would address critical data gaps limiting Australia's ability to identify and project future needs in emerging sectors and across the supply chain. A regular report would support all levels of government, industry and the education and training sector to effectively manage the clean energy transformation. Outputs from the survey could be used to provide critical insights into reviews of the suitability of the ANZSCO framework, the Skills Priority List, and the Core Skills Occupation List. It would enable a planned and orderly transition for fossil fuel-dependent communities, while maximising benefits for local communities, First Nations peoples and workers.

Recommendation	
1.1	Commission an adequately fund a comprehensive and regular AEER, modelled on the USEER and adapted to the Australian context.

Workforce pressures resulting from the superpower agenda

Appendix A of the Discussion Paper outlines existing policy measures and Commonwealth funding, including $22.7 billion for FMIA initiatives to establish Australia as a clean energy superpower. This represents substantial public investment, which is intended to unlock further private investment across a range of industries including renewable hydrogen, critical minerals processing, green metals, low carbon liquid fuels and clean energy manufacturing. Currently, these industries appear to lie outside of the scope of the NEWS.

As noted, the FMIA may exacerbate worker shortages by inducing competition between the clean energy, manufacturing and mining industries for workers. A comprehensive, holistic approach to workforce planning is important to understand and plan for these risks, as well as for the upstream

renewable energy impacts that may result. For example, producing renewable hydrogen and green metals will require a considerable uplift in renewable electricity generation and storage capacity. If this is not factored into the NEWS, there is a serious risk that developing new export industries via the FMIA will induce unanticipated workforce pressures.

There is no comprehensive modelling regarding the size, timing, location and makeup of the workforce needed for Australia to become a clean energy superpower. All existing studies provide partial, contestable insights. For example, the most comprehensive research into Australia's renewable hydrogen opportunity is from Net Zero Australia, a collaborative research project between the University of Melbourne, the University of Queensland, Princeton University and the Nous Group. It found that replacing Australia's fossil fuel exports with renewable hydrogen would require ~500,000 new direct jobs to 2060 across the hydrogen supply chain, including electricity generation, hydrogen production, transport, storage, and conversion to energy carriers such as ammonia.[8] This is approximately double the domestic workforce at the same point in time. Failure to plan for the impacts of these and other FMIA priority industries will affect the likelihood that Australia develops the workforce needed to achieve its net zero ambitions.

Recommendations	
1.2	Expand the scope of the NEWS to include the FMIA workforce.
1.3	Conduct research into the upstream and downstream workforce opportunities of becoming a clean energy superpower, across the full range of industries covered by the FMIA.

Emerging occupations

The clean energy industry has many new and emerging occupations that are not defined in the incumbent ANZSCO framework. This will continue to occur as new clean energy technologies such as offshore wind, hydrogen electrolysis and direct air capture are deployed at scale in Australia. The inability of existing data structures to accommodate the emerging clean energy industry inhibits workforce planning. In turn, this prevents training and education providers from responding to the needs of emerging markets by developing new course content.[9] It also prevents the inclusion of these occupations in the Core Skills Occupations List, which limits opportunities for skilled migration from markets with advanced or recent experience in these technologies.

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[8] McCoy, J., Davis, D., Mayfield, E., Brear, M. (2023). Downscaling – Employment impacts. URL: https://www.netzeroaustralia.net.au/wp-content/uploads/2023/04/Downscaling-Employment-impacts.pdf

[9] Victorian Hydrogen Hub. (2022). *Hydrogen Skills Roadmap*. Swinburne University. URL: https://commons.swinburne.edu.au/file/80f8414f-5646-4d6b-ac77-b2038857ea7a/1/swinburne_hydrogen_report.pdf

The emerging hydrogen industry is complex and multifaceted. It comprises a variety of workforce roles across its value chain. While some segments are well understood, notable upstream electricity generation, many are not. These include hydrogen production, storage, distribution, carrier conversion and end use, including as a feedstock for chemicals, low carbon liquid fuels, and green metals, mobility, and commercial uses. While there is an existing hydrogen industry in Australia, there are major technological, skill and capacity changes that must occur to achieve the scale required to support the transition to net zero. Each segment will experience growth in demand and face unique challenges that may include upskilling, trainer capacity, thin markets, etc. At this stage, quantitative projections of workforce demand and qualitative skills mapping of all roles remains a gap. Explicitly bringing this workforce within scope for the NEWS is an essential first step to delivering this work.

Recommendations	
1.4	Conduct research into the occupation and skill-level needs of emerging clean energy industries, including offshore wind, renewable hydrogen and direct air capture, across all lifecycle stages.
1.5	Clarify the scope of the NEWS to include the hydrogen workforce across the value chain.

2. Place-Based Planning

The energy transition will have an outsized impact on regional Australia. This includes both communities affected by the closure of emissions-intensive industries, and new energy communities hosting utility-scale infrastructure for electricity generation, storage and transmission. The success of the transition depends on achieving and maintaining the social license to operate within these communities.

The Government has rightly recognised the importance of supporting communities exposed to job losses due to industrial closures. The Net Zero Economy Agency has been established in part to ensure an equitable transition for affected regions by developing Regional Workforce Transition Plans. These enable place-based approaches to change that recognise and respond to the unique workforce characteristics and needs of each community. A localised approach is more likely to achieve optimal outcomes for workers and their families, while promoting and maintaining social license for the transition.

This program should be extended to the new energy communities that are being created through the transition. These communities outnumber transitioning communities and are dispersed across potential Renewable Energy Zones (REZs) across the country. While the promise of new clean energy jobs is intended to create economic opportunities for these communities, there is enduring uncertainty regarding the capacity and capability of the regions to realise these benefits in the

short- and longer-terms. There has been insufficient holistic planning and place-based analyses of the workforce and infrastructure readiness of local communities to accommodate and capitalise on job growth. Capacity analysis has typically been treated as an afterthought in Renewable Energy Zone (REZ) planning. Siting determinations have occurred without place-based analyses of the workforce and infrastructure readiness of a region to accommodate job growth.

The absence of capacity analysis affects capability planning. JSA has documented numerous training and education barriers that need to be addressed for regional Australia to realise the benefits of new clean energy jobs. These include thin markets, the availability of training providers, lack of trainers and facilities.[10] They have also catalogued the numerous barriers to participation facing First Nation communities. If these challenges are not resolved, regional and First Nations communities may be locked out of new jobs, which would then be filled by domestic or international migration. A vocational education system unable to anticipate and rapidly respond to growing demands in regional Australia could stymie our superpower aspirations. This poses a pressing risk to social license and the delivery of clean energy projects that is poorly understood by governments.

This knowledge gap could be resolved by conducting Readiness Assessments for each proposed REZ. These could be conducted by the Net Zero Economy Agency or in partnership with the states and territory governments and local communities. Readiness Assessments would include analysis of the capacity and implications for each REZ over time with regards to infrastructure, transport, housing and accommodation, workforce, supply chains, waste management, other land uses and social infrastructure. They should be an opportunity to seek community input and perspectives including local industry and First Nations considerations. Readiness Assessments would be a vital tool for developing government understanding and securing the social license of communities for renewable energy developments. Queensland provides a model for this analysis in their REZ Readiness Assessments which are being delivered as part of the Queensland Energy Jobs Plan.[11] They will resolve a persistent knowledge gap and enable more effective planning and project coordination.

Recommendation	
2.1	Extend the remit of the Net Zero Economy Agency to develop Readiness Assessments for new energy communities created by the transition. Alternatively, fund local capacity or partner with state and territory governments to deliver this initiative.

[10] Jobs and Skills Australia. (2023c). The Clean Energy Generation. URL: https://www.jobsandskills.gov.au/sites/default/files/2023-10/The%20Clean%20Energy%20Generation_0.pdf

[11] Queensland Renewable Energy Zone Roadmap. (2024). Department of Energy and Climate. URL: https://www.epw.qld.gov.au/__data/assets/pdf_file/0019/36037/draft-2023-queensland-rez-roadmap.pdf

Transition planning

To date, the relatively constrained scale and pace of utility-scale clean energy project deployment has necessitated little coordination of project delivery. This will change as clean energy projects increase in size to gigawatt-scale, are delivered at a more rapid rate and are co-located in REZs. A continued lack of coordination may risk communities' abilities to realise the benefits of the energy transition. In turn, this threatens to erode the social license of renewable projects to operate in REZs and the achievement of decarbonisation targets. The risks of an uncoordinated deployment include:

- Boom-bust construction cycles due to delays between the completion of one project and the commencement of another.
- Larger peaks in workforce demand, exacerbating skill shortages and local impacts.
- Impacts on the local economy from large spikes of temporary workers, including localised inflation of house prices, rental and temporary accommodation, and goods and services.
- Pressure on the local availability of in-demand occupations including electricians and the construction workforce for residential or commercial purposes.
- Constrained opportunities for local businesses to expand capacity as needed to tender for subcontracting opportunities.
- Consultation fatigue for residents due to multiple prospective developers seeking to engage concurrently.
- Elevated project costs, resulting in increased costs to consumers.

A higher level of coordination between industry, communities, and governments, at state, federal and local levels would smooth the transition and enable the management of these impacts. This should be a joint effort funded and led by the Commonwealth Government, in partnership with the new Net Zero Authority, state and local governments. A coordinated rollout would deliver the following workforce benefits for regional communities:

- Increase the utilisation of apprentices by enabling a group training organisation-type approach to managing placements between clean energy projects. This would mitigate existing challenges including the time-limited nature of construction projects being typically shorter than the length of an apprenticeship, and the limited range of experiences offered by individual projects.
- Aggregate regional skill and training needs across projects, mitigating the problem of thin markets for education and training providers.
- Clarify the timing, demand and duration of specific occupations and skills, enabling responsive investment in training and education.
- Provide local businesses with a continuous pipeline of work across the duration of the transition. Confidence in future demand enables investment in equipment and workers. Local procurement may be the preferred instrument of some communities to receive local benefits from the transition.

- A unified approach to delivering the net zero transition across state government departments and bodies.

Transition planning would also assist with proactively managing the impacts of project delivery on local housing and social infrastructure. No individual project proponent is equipped to solve this problem in isolation. Individual accommodation solutions are likely to tend towards low-cost, short-term worker camps. These may be located offsite where sufficient land is cheaply available, delivering limited economic stimulus to local communities. With appropriate planning, fund pooling from multiple projects may enable legacy housing developments, investment in connection of utilities, or social infrastructure including roads, community buildings, healthcare facilities etc., determined by local priorities. This would also enable industry to efficiently contribute to lasting change and enduring benefits in the communities in which they operate.

Recommendations	
2.2	Extend the remit of the Net Zero Economy Agency to develop Transition Plans for each new energy communities affected by the transition. Alternatively, fund local capacity or partner with state governments to deliver this initiative.
2.3	In consultation with industry, develop and implement a trial to appoint a Group Training Organisation in a new energy community to improve uptake of apprentices on clean energy projects.

Offshore wind

Over the next decade, the offshore wind industry will experience a rapid and sustained uplift in demand for skilled workers to meet state targets. These roles will be located in offshore wind areas, require an intersection of maritime and energy skills, and will likely experience greater continuity of work due to the logistical sequencing of offshore wind projects. Offshore wind areas have also been declared in fossil fuel-dependent communities in Gippsland and Newcastle, providing opportunities for transitioning workers. With sufficient investment in planning and coordination, offshore wind presents an attractive prospect to create jobs for local communities over a medium-term period. This would require:

- Management of timing – industry has partnered with training and education providers to publish detailed guides for workers transitioning to offshore wind from the coal industry. However, the closure of power plants will not necessarily align with offshore wind project delivery. For example, Eraring is scheduled to close in 2027, while the offshore wind industry in Newcastle is unlikely to commence construction until the 2030s.
- Development of new vocational and tertiary courses – offshore wind is a new industry to Australia. There have been no audits of existing vocational and tertiary training and education offerings to identify skills gaps. This work should be a high priority to ensure that new course offerings are developed that meet the needs of the emerging industry.

- Increase the visibility of energy careers in schools – the offshore wind industry can create careers in clean energy for local communities, but only if students are aware of the job opportunities available to them. The development of a high school curriculum for communities in offshore wind zones would serve to improve visibility and provide a platform for early engagement with students contemplating career and study options post-high school.

Recommendations	
2.4	Jobs and Skills Australia to complete a detailed audit of existing vocational and tertiary course offerings and the skill requirements of the offshore wind industry.
2.5	Partner with Department of Employment and Workplace Relations to develop a high school curriculum for offshore wind zones that includes careers in industry.

3. Skilled migration

It is logical for emerging industries in Australia to utilise skilled workers from countries where these industries are more established. Many project developers are global organisations, with experienced international workforces that have delivered projects overseas. This will also be necessary for projects in established industries that lack recent experience in large-scale project delivery, like transmission, hydropower and offshore wind.[12] The rapid growth of the Australia's clean energy industry may also incentivise the repatriation of skilled workers to Australia.

Australia's clean energy workforce has differing rates of utilisation of skilled migration across occupations. This is largely determined by the skill and education level of the job. Higher-skilled professionals, especially engineering occupations, have rates of skilled migration that exceed 50% (see Figure 2). However, JSA analysis also demonstrates that a high proportion of skilled migrants with electrical engineering qualifications are working in lower skilled jobs.[13] This may be due to qualifications that are incommensurate with Australian standards. Conversely, trade occupations have a very low utilisation of workers born overseas, despite being in high demand. These cases demonstrate the importance of an expedited approach to skills recognition for overseas qualifications and competencies relevant to clean energy.

[12] Clean Energy Council. (2022). Skilling the Energy Transition. URL: https://assets.cleanenergycouncil.org.au/documents/CEC_Skilling-the-Energy-Transition-2022.pdf
[13] Jobs and Skills Australia. (2023c).

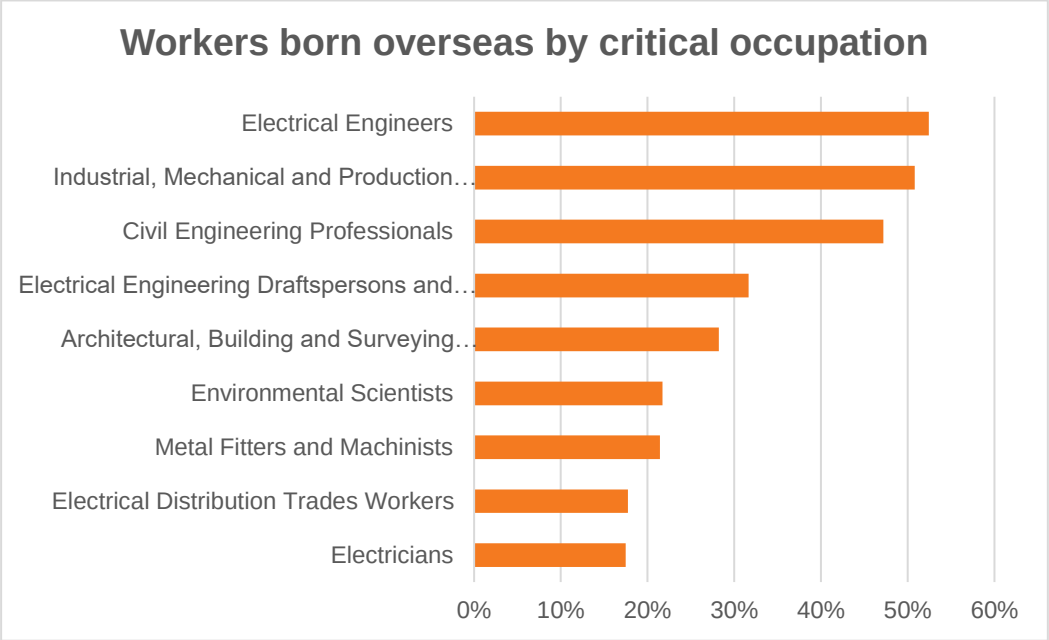

Figure 2 | Source: ABS Census of Population and Housing 2021. Includes nine critical occupations relevant to both the clean energy supply and enabling segments of JSA's taxonomy. Average rate across all occupations is 30.7%.

Recommendation	
3.1	Develop expedited approaches to skills recognition and provisional licensing to reduce time delays and cost for skilled migrants in clean energy occupations.

4. Industry initiatives

The NEWS should seek to promote and support work already being progressed by industry. The Clean Energy Council is currently leading several relevant initiatives and projects. These include Careers For Net Zero, Clean Energy Required Training projects in Victoria and Queensland, and our Women in Renewables program.

Careers For Net Zero

In October 2023, the Clean Energy Council and the Energy Efficiency Council launched Careers For Net Zero. This nationwide movement seeks to enhance the visibility of clean energy careers, attracting and securing the workforce needed to achieve Australia's ambitious decarbonisation

targets. Careers For Net Zero highlights the diverse career opportunities available across the clean economy for Australians of all levels of education and experience.

The campaign was launched at the inaugural Careers For Net Zero Fair. This event was well attended, with participants from State and Commonwealth Governments, education and training, clean energy and energy efficiency industries. Following the success of this event, we have received requests from interested parties to hold similar events across the country. In partnership with the Queensland Government, we held three regional events in Toowoomba, Gladstone and Townsville in August 2024. We have also received strong interest in holding events in New South Wales and Western Australia and have had preliminary conversations regarding an event in South Australia. We have received speaking requests from regional networks including the South East and Outer East Local Learning & Employment Networks. This widespread interest confirms the enduring desire of communities to understand the critical occupations and skill needs of the energy transition. It also demonstrates that Careers For Net Zero has been established as a trusted, empowering brand that provides a pathway for everyone that wants to get involved in Australia's decarbonisation journey.

Careers For Net Zero is a demonstrated, trusted brand that can assist the NEWS objective of improving visibility and attraction of workers to clean energy. We would welcome partnering with the Commonwealth Government in pursuit of these outcomes. Specifically, such a partnership would involve:

- Extending the program of events, with one large metropolitan event each year and several regional events in key jurisdictions hosting Renewable Energy Zones.
- Rolling social media campaigns designed to promote visibility of clean energy careers.
- Maintaining and expanding our existing digital assets to include a comprehensive range of occupations critical to secure the energy transition.
- Identifying, coordinating, and recruiting new champions in these occupations.
- Developing strategic leadership and supporting the complex stakeholder engagement and coordination necessary across State and Commonwealth Governments, industry, unions, professional and business associations etc.
- Working with the Net Zero Economy Agency on identifying and promoting opportunities and pathways for transitioning workers.
- Developing a range of assets, materials and programs to extend visibility and awareness of clean energy careers to school-aged audiences, including emerging occupations in offshore wind and hydrogen.

Recommendation	
4.1	The Commonwealth Government should explore partnership with the Clean Energy Council and Energy Efficiency Council to support the expansion of Careers For Net Zero as a means of addressing ongoing visibility challenges of clean energy careers.

Clean Energy Required Training

The Clean Energy Council has commenced Clean Energy Required Training (CERT) projects in Victoria and Queensland. The CERT projects aim to improve worker mobility for the clean energy industry. They will establish consistent, industry-agreed benchmarks on the qualifications required for trade workers employed in the construction, commissioning and operations of onshore wind, solar and battery projects in each state.

This information will be published via a digital platform including a worker passport solution. It will enable workers and prospective workers to identify career pathways relevant to their existing skills, upload qualifications for independent verification, and identify relevant employment and/or professional development opportunities in the industry. This information will inform a training matrix that underpins a digital platform to track worker competencies.

The objectives of the CERT projects are to:

- Develop and benchmark the skills and training required across trade occupations for clean energy projects so that industry can communicate with workers, RTOs, government, and employment services about their training needs.
- Increase the pool of qualified and experienced workers, including under-represented or marginalised labour groups, the long-term unemployed, and workers transitioning out of the thermal energy sector, available to clean energy developers and contractors.
- Enable individual workers to establish career development pathways and move between clean energy projects more efficiently and seamlessly because they understand what skills and training are required for specific occupations and what opportunities exist.

The outcomes of these projects are:

- Improved training participation, by clarifying demand to the TAFE and training sector and aligning delivery with industry requirements. It would also provide governments with the evidence-base to make data-driven decisions regarding training investment.
- Improved productivity for industry, by increasing efficiency for project owners and contractors in attracting and employing job-ready workers, reducing time-to-competency and overheads from unnecessary in-house training.
- Improved outcomes for workers, by clarifying, harmonising, and tracking worker qualifications. This will empower the workforce through clear progression pathways.

Once deployed in 2025, we envisage the digital solution will provide a valuable mechanism through which industry can identify future training needs including core competencies, transferable skills, and new skill requirements in emerging technologies.

At this stage, the projects have been limited to jurisdictions that have provided funding. There is an opportunity to expand this work across each state and territory to deliver a consistent approach and digital solution. This would promote workforce mobility to a greater extent.

Recommendations	
4.2	The Commonwealth Government should explore partnership with the Clean Energy Council to support the development of a Clean Energy Required Training program in each state and territory.
4.3	The Commonwealth Government through the Energy and Climate Change Ministerial Council should lead work on harmonising the licensing requirements of clean energy occupations to the highest common standard between state and territory jurisdictions to enable workforce mobility.

Women in Renewables Program

The Clean Energy Council's Women in Renewables program enables and champions women working in the renewable energy industry. By building a united community of people who share a collective mission and vision, we support women to step up as empowered leaders within their organisations. The Women in Renewables initiative has five core aims:

1. To showcase the contribution of women in renewables.
2. To provide professional development opportunities and advice for women in renewables.
3. To foster a sense of valued community, and wider industry pride in Women in Renewables.
4. To provide opportunities for informal self-guided development and support for women in renewables.
5. To foster positive change in the renewable industry so it can be more inclusive and supportive of women.

The program includes a suite of initiatives, including:

- A **Mentoring Program** that facilitates connections and support for women in the industry as they progress their careers.
- **Women in Renewables Scholarships**, including the Chloe Munro Scholarship for Transformational Leadership and the Australian Institute of Company Directors Scholarship. These enable professional development of women in the clean energy industry.
- The **Panel Pledge**, which commits signatories to only participate in forums and panels that embrace gender diversity.
- A **Speakers Guide**, which showcases the breadth, expertise and knowledge offered by women in the sector to event organisers.
- The **Career Launcher Program**, which enables member companies to sponsor a student or recent graduate who identifies as a woman to attend a major conference.

The Clean Energy Council is also an experienced leader in developing and delivering continuing professional development for clean energy professionals.

Recommendations	
4.4	Partner with the Clean Energy Council to deliver a more extensive mentoring program across the industry. At present, the mentoring program runs for four months of the year, and is only open to member companies.
4.5	Partner with the Clean Energy Council to develop industry tools and continuing professional development resources to improve Diversity, Equity and Inclusion in workplaces, including inclusivity guidelines for sites.

We thank the Department for the opportunity to provide input and feedback on the development of the NEWS.

Yours sincerely,

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Appendix: Summary of recommendations

Recommendations	
1.1	Commission a comprehensive and regular AEER, modelled on the USEER and adapted to the Australian context.
1.2	Expand the scope of the NEWS to include the FMIA workforce.
1.3	Conduct research into the upstream and downstream workforce impacts of becoming a clean energy superpower, across the full range of industries covered by the FMIA.
1.4	Conduct research into the occupation and skill-level needs of emerging clean energy industries, including offshore wind, renewable hydrogen and direct air capture, across all lifecycle stages.
1.5	Clarify the scope of the National Energy Workforce Strategy to include the hydrogen workforce across the value chain.
2.1	Extend the remit of the Net Zero Economy Agency to develop Readiness Assessments for each new energy communities affected by the transition. Alternatively, fund local capacity or partner with state governments to deliver this initiative.
2.2	Extend the remit of the Net Zero Economy Agency to develop Transition Plans for each new energy communities affected by the transition. Alternatively, fund local capacity or partner with state governments to deliver this initiative.
2.3	In consultation with industry, develop and implement a trial to appoint a Group Training Organisation in a new energy community to improve uptake of apprentices on clean energy projects.
2.4	Jobs and Skills Australia to complete a detailed audit of existing vocational and tertiary course offerings and the skill requirements of the offshore wind industry.
2.5	Partner with Department of Employment and Workplace Relations to develop a high school curriculum for offshore wind zones that includes careers in industry.
3.1	Develop expedited approaches to skills recognition and provisional licensing to reduce time delays and cost for skilled migrants in clean energy occupations.

4.1	The Commonwealth Government should explore partnership with the Clean Energy Council and Energy Efficiency Council to support the expansion of Careers For Net Zero as a means of addressing ongoing visibility challenges of clean energy careers.
4.2	The Commonwealth Government should explore partnership with the Clean Energy Council to support the development of a nationally consistent Clean Energy Required Training.
4.3	The Commonwealth Government through the Energy and Climate Change Ministerial Council should lead work on harmonising the licensing requirements of clean energy occupations to the highest common standard between state and territory jurisdictions to enable workforce mobility.
4.4	Partner with the Clean Energy Council to deliver a more extensive mentoring program at greater scale.
4.5	Partner with the Clean Energy Council to develop industry tools and continuing professional development resources to improve Diversity, Equity and Inclusion in workplaces, including inclusivity guidelines for sites.