



Tuesday, 29 August 2023

Submission – Universities Accord Interim Report

The Clean Energy Council (CEC) and the Australian Hydrogen Council (AHC) welcome the opportunity to make a joint submission in response to the *Universities Accord Interim Report* (the Review).

The CEC is the peak body for the clean energy industry in Australia. We represent and work with more than 1,000 businesses operating in Australia across renewable energy, energy storage, and renewable hydrogen.

AHC is the peak body for the Australian hydrogen industry. AHC connects the hydrogen industry and its stakeholders in building a secure, clean, and resilient energy future that sustainably produces and uses hydrogen within the energy mix. AHC's members are from a range of sectors, including energy, transport, consulting, banking and technology.

A high-quality higher education system is essential to enabling the clean energy transition at the pace needed to decarbonise our energy system by 2050. As documented in the Clean Energy Council's *Skilling the Energy Transition* report, a third of all electricity, gas, water and waste workforce has a bachelor degree or higher¹. The clean energy sector has a higher percentage of workers with graduate, post-graduate, and PhD qualifications than the broader Australian workforce.

As the Review notes, the clean energy transition is a national priority, and is well underway. Australia has world-leading rates of installed rooftop solar, and renewables met 32% of electricity in 2022². However, the industry is already experiencing shortages of critical occupations, including electricians and engineers. Worker shortages are contributing to high costs of renewables and delaying the completion of projects in the development pipeline. Urgent reform of the higher

¹ Clean Energy Council. (2022). *Skilling the Energy Transition*. URL: https://assets.cleanenergycouncil.org.au/documents/CEC_Skilling-the-Energy-Transition-2022.pdf

² Department of Climate Change, Energy, the Environment and Water. (2023). *Australian Energy Statistics, Table O*. URL: <https://www.energy.gov.au/publications/australian-energy-statistics-table-o-electricity-generation-fuel-type-2021-22-and-2022>

education sector is needed to ensure Australia has the workforce needed to mitigate the worst impacts of climate change and achieve its decarbonisation targets of 82% renewable electricity by 2030 and net zero emissions by 2050. Existing shortages are attributable to a range of factors relevant to the Review:

- **Regional and remote location** – 75% of new clean energy jobs will be in regional and remote Australia. This is a major impediment to attracting qualified graduates who are typically attracted to metropolitan areas. Regional Australia also suffers from thin training markets, lack of training infrastructure and facilities, and a shortage of training capacity.
- **Training capacity and capability** –Australia’s enduring STEM (science, technology, engineering, mathematics) crisis threatens clean energy project developments, which rely heavily on STEM-based skills. Australia’s output of engineering graduates at 8.2% is among the lowest in the OECD³. As a result, 59% of Australia’s engineers are born overseas⁴. As the Review notes, recent reforms, including the Job-ready Graduates Package, further disincentivised universities from offering STEM courses.
- **Diversity, equity, and inclusion** – while the participation of women in the Australian clean energy industry is favourable when compared to renewables internationally, it is lower than the broader Australian workforce. Women are further underrepresented in senior leadership and board roles. Participation is also lower in STEM roles⁵.
- **Uncertainty regarding emerging renewable industries** – there is a lack of research and data into the timing, location, and workforce requirements of emerging renewable industries such as the clean hydrogen supply chain. This has inhibited the development of new training offerings to meet the needs of these industries⁶. Australia’s renewable superpower ambitions could deliver hundreds of thousands of additional jobs to the

³ Organisation for Economic Cooperation and Development. (2022). *Tertiary graduates by field*. Accessed 16 June 2022. URL: <https://data.oecd.org/students/tertiary-graduates-by-field.htm>

⁴ Engineers Australia. (2020). *Migrant engineers – research and resources*. URL: <https://www.engineersaustralia.org.au/news-and-media/2022/07/migrant-engineers-research-and-resources>

⁵ Australian Bureau of Statistics. (2022). *Occupation (OCCP) by Sex*. [Census TableBuilder]. Accessed 24 August 2023.

⁶ 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

regions⁷, but a higher education system unable to anticipate and rapidly respond to growing demand could stymie these aspirations.

The clean energy transition presents a unique nexus of intersectional factors contributing to disadvantage and inequitable participation in regional Australia. The Review proposes several recommendations and priorities for further consideration with relevance to these factors in isolation. However, a detailed analysis of the current challenges and future state of the clean energy workforce could assist with identifying intersectional opportunities for reform. This would assist with shaping recommendations that concurrently address multiple sources of inequity, better preparing higher education to meet the workforce and skill needs of the clean energy transition at the pace demanded of Australia's decarbonisation agenda. Jobs and Skills Australia's pending Clean Energy Workforce Capacity Study could be an instrumental research base for this purpose.

In essence, the higher education sector has a critical role to play in ensuring and supporting Australia's transition to clean energy. This is not just an opportunity for the sector but a responsibility. The University Accord, as a key visioning document, should identify, define, and reflect this important role.

We thank the Panel for the opportunity to provide this feedback and inform discussion regarding the best ways to align higher education provision with the needs of the clean energy transition.

Yours sincerely,



Dr Anita Talberg
Director, Workforce Development
atalberg@cleanenergycouncil.org.au



Julian McCoy
Senior Policy Officer
jmccoy@cleanenergycouncil.org.au

⁷ McCoy, J., Davis, D., Mayfield, E., Brear, M. (2023). *Downscaling – Employment impacts*. Net Zero Australia. URL: <https://www.netzeroaustralia.net.au/wp-content/uploads/2023/04/Downscaling-Employment-impacts.pdf>