



Monday, 16 January 2023

Feedback – Clean Energy Capacity Study draft Terms of Reference

The Clean Energy Council (CEC) and the Australian Hydrogen Council (AHC) welcome the opportunity to provide feedback on the Clean Energy Capacity Study draft Terms of Reference.

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.

We welcome the study as an opportunity to address persistent gaps in understanding the future workforce needs of the clean energy transition. Our feedback concerns recommendations to clearly define the scope of the study to ensure these research gaps are accounted for and addressed. All recommended changes to scope have been italicised with explanations below.

0. Conduct a desktop review of existing research.

We recommend the addition of a preliminary step to conduct a desktop review and analysis of existing research. Numerous reports have been recently published regarding the future clean energy workforce, such as 'Skilling the Energy Transition'¹, 'Net Zero Australia Employment Impacts Preliminary Results'², 'The Australian Electricity Workforce for the 2022 Integrated System Plan'³ and 'Queensland's Renewable Future'⁴. A review of existing research could provide insights into existing

¹ https://assets.cleanenergycouncil.org.au/documents/CEC_Skilling-the-Energy-Transition-2022.pdf

² <https://www.netzeroaustralia.net.au/employment-impacts-aug-2022/>

³ <https://www.racefor2030.com.au/fast-track-reports/>

⁴ <https://www.csq.org.au/renewables/>

gaps and limitations that could be addressed through the Clean Energy Capacity Study.

1. Develop an appropriate definition of the Australian clean energy workforce that considers direct and indirect jobs.

We recommend an explicit consideration of direct and indirect jobs in defining the clean energy workforce. Direct jobs are those associated with primary activity such as electricity generation or the production of green hydrogen. Indirect jobs are associated with the goods and services needed by direct jobs. When considering the future clean energy workforce, indirect jobs include those involved in the production of ammonia, green steel, or the increase in demand for critical minerals extraction and processing. Indirect jobs may comprise a significant proportion of the clean energy workforce. Considering both direct and indirect jobs would ensure a robust definition of how far upstream and downstream the clean energy sector extends.

2. Establish the current state of the *clean* energy workforce – including a demographic overview, numbers of employers, job vacancies, reliance on international specialists, *occupation, skill level and employment conditions, as well as conducting a qualitative assessment of workforce mobility.*

We recommend that current state analysis be extended to the broader energy workforce. Such an analysis would inform the evaluation in 4b of the extent to which future clean energy workforce demands can be met by workers from transitioning sectors. It should be expanded to include occupation, skill level, and employment conditions, including factors such as remuneration, location (urban/rural), rostering (shift work), etc.

As part of the analysis of workforce supply, we recommend a qualitative assessment of workforce mobility be undertaken using social science methods, such as interviews or focus groups. This should address factors affecting mobility between regions (e.g., urban to rural, rural to urban, rural to rural), and between states. This analysis would inform a deeper understanding of workforce capacity and willingness to transfer (and the key social determinants of these by technology or region), as well as employment conditions affecting mobility, such as including remuneration, duration of contract, duration of travel, fly-in fly-out, etc.

3. Analyse future demand (at the national, state and regional level) for clean energy roles over the next 30 years in the context of Australia’s transition plans, alongside the impact on demand for employment in high-emitting sectors undergoing transition, *using the existing best-practice scenarios and relevant sensitivities.*

We recommend that ‘future demand’ be explicitly aligned with existing best-practice research scenarios, such as those used by Net Zero Australia. Net Zero Australia have identified five decarbonisation scenarios covering both domestic and export emissions at a national level from 2020 to 2060 in five-year timestamps, with varying demand and supply drivers. These involve different assumptions regarding rates of electrification and technology makeup. The project is presently downscaling results to state and region-based levels. This industry-leading project covers the full suite of technologies needed to achieve net zero in Australia, providing the most complete picture of the future energy sector to date.

Finally, we also recommend the explicit consideration of a demand sensitivity that accounts for an increase in domestic manufacturing, reflecting various Governments’ policy priorities.

We thank Jobs and Skills Australia for the opportunity to provide feedback and look forward to providing further feedback throughout the study.

Yours sincerely,



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