



Friday, 8 November 2024

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## Submission – Wind and Renewable Hydrogen Worker Training Centres

The Clean Energy Council welcomes the opportunity to make a submission in response to the Request for Information process on Victoria's Wind Worker and Renewable Hydrogen Worker Training Centres.

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 investment in training and education for clean energy skills. Jobs and Skills Australia's The Clean Energy Generation report described a growing gap between supply and demand of critical clean energy skills, particularly in the technical and trade workforce.<sup>1</sup> Increases in installed capacity of renewable generation infrastructure will require commensurate increases in the skills needed to operate and maintain this growing fleet. Many of these skills are in short supply already.<sup>2</sup> The geographically distributed nature of renewable generation assets creates challenges for locating new training and education facilities. Regional training providers reportedly struggle with thin markets for clean energy skills. As such, investment in new facilities should seek to collaborate and complement existing capabilities, such as Federation University's Asia Pacific Renewable Energy Training Centres (APRETC) at Ballarat and Gippsland.

This submission briefly reviews the operating contexts of the wind and renewable hydrogen industries as relevant to the timing and size of their respective workforce needs. It recommends paths of least regret to minimise the possible impacts of any uncertainties facing industry.

### Onshore and offshore wind

The Institute for Sustainable Futures University of Technology Sydney has recently published projections of the clean energy workforce needed to deliver the various net zero scenarios

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<sup>1</sup> Jobs and Skills Australia. (2023). The Clean Energy Generation: Workforce needs for a net zero economy. URL: [https://www.jobsandskills.gov.au/sites/default/files/2023-10/The%20Clean%20Energy%20Generation\\_0.pdf](https://www.jobsandskills.gov.au/sites/default/files/2023-10/The%20Clean%20Energy%20Generation_0.pdf)

<sup>2</sup> Jobs and Skills Australia. (2024). 2024 Occupation Shortage List: Key Findings and Insights Report. URL: [https://www.jobsandskills.gov.au/sites/default/files/2024-10/2024\\_osl\\_key\\_findings\\_and\\_insights\\_report\\_0.pdf](https://www.jobsandskills.gov.au/sites/default/files/2024-10/2024_osl_key_findings_and_insights_report_0.pdf)

described in Australian Energy Market Operator's (AEMO) 2024 Integrated System Plan (ISP). The Step Change scenario, considered the most likely outcome by AEMO's expert panel, requires a considerable expansion of the wind workforce. Total jobs nationally will increase almost fourfold by the end of the decade, growing from around 6,000 to just under 24,000 full-time equivalent jobs.<sup>3</sup> Only 4,500 of these jobs will be in Victoria. Most of these new jobs are short-term construction and installation roles to support the delivery of new electricity generation infrastructure. From 2031, the workforce balance shifts towards ongoing operations and maintenance jobs. Onshore wind accounts for most of these jobs, with offshore wind comprising a small minority.

Given the constrained size of Victoria's potential wind workforce, the wind training centre should aim to support the growing skill needs of the national wind workforce. This will mitigate the risk of thin markets that clean energy training and education providers face and attract interstate students to Victoria. The training centre should also prioritise common and transferrable skills shared between onshore and offshore wind, at both construction and installation and operation and maintenance lifecycle phases. This includes electrical, engineering and mechanical trade skills, in occupations such as:

- Fabrication Supervisors – oversee the assembly and construction of wind turbine components, ensuring that quality and safety standards are met.
- Installation/Repair Technicians – responsible for installing wind turbine components, including nacelles, blades, and towers. They also undertake testing and commissioning of the turbines.
- Wind Turbine Technicians – responsible for the routine maintenance and repair of wind turbines and gearboxes. Roles can focus on electrical and mechanical maintenance. Their role is crucial for the long-term operation and efficiency of wind farms.
- Blade Repair Technicians – specialise in maintaining and repairing turbine blades, which are subject to wear and damage over time.

## Renewable hydrogen

The emerging renewable hydrogen industry in Australia is in a state of precarity. Despite a world-leading project pipeline and billions in federal funding for Hydrogen Headstart and the Hydrogen Production Tax Incentive, almost no projects have progressed beyond the feasibility or engineering stages.<sup>4</sup> The range of economically viable uses for hydrogen has continued to narrow as the cost of

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<sup>3</sup> Rutovitz, J., Gerrard, E., Lara, H., and Briggs, C. (2024). The Australian Electricity Workforce for the 2024 Integrated System Plan: Projections to 2050. Prepared for RACE for 2030. URL: [https://www.uts.edu.au/sites/default/files/2024-09/NEM%202024%20Workforce\\_FINAL.pdf](https://www.uts.edu.au/sites/default/files/2024-09/NEM%202024%20Workforce_FINAL.pdf)

<sup>4</sup> Department of Climate Change, Energy, the Environment and Water. (2024). National Hydrogen Strategy 2024. URL: <https://www.dcceew.gov.au/sites/default/files/documents/national-hydrogen-strategy-2024.pdf>

electrification has dropped faster than electrolyzers. An enduring challenge is the considerable green premium attached to production. In the absence of demand-side policies, proponents have had trouble in securing long-term offtake agreements. Major proponents including Origin, Woodside and Fortescue Metals have exited Australian projects due to market uncertainty.

This market uncertainty is compounded by an increasingly crowded training and education landscape. State and territory governments sought to capitalise on the promise of a lucrative hydrogen export industry by developing internal hydrogen strategies. Many of these strategies included an explicit focus on skills and training, paired with funding to enhance training and education capacity and capability.

Table 1 summarises announced funding for training facilities that include hydrogen skills by jurisdiction. Of these jurisdictions, Victoria is the only state without a project shortlisted under Hydrogen Headstart or underwritten by government. While the details of these facilities are pending in terms of their capability and capacity, state competition for scarce market share risks creating thin markets.

*Table 1 | Announced hydrogen training and education facilities receiving state and federal funding by jurisdiction.*

Jurisdiction	Facility	Funding
Queensland	Hydrogen Training Centre of Excellence at Beenleigh	\$20 million
Queensland	Pinkenba Renewable Energy Training Facility	\$17 million
Queensland	Hydrogen and renewable energy training facility at the Bohle Trade Training TAFE in Townsville	\$13.2 million
New South Wales	Hydrogen Centre of Excellence	\$25 million
South Australia	TAFE SA Green Energy Technology Training Academy	\$2.1 million
Victoria	Renewable Hydrogen Worker Training Centre	\$18 million
Western Australia	TAFE Clean Energy Skills National Centre of Excellence	\$70.5 million over five years

Adopting a pathway of least regret is one approach to mitigating these risks. Studies examining the skill gaps with the existing workforce have identified that incumbent gas and electrical workers will

require upskilling in overlapping skills.<sup>5</sup> Targeting this cohort would require developing training infrastructure and capacity that could be used to support the expansion of the electrical trade workforce. Analysis from Powering Skills Organisation suggests that Australia requires an additional 20,500 electrical apprentices training per annum to mitigate the increased demand of the energy sector.<sup>6</sup> This shortage has the potential to derail ambitious decarbonisation targets and delay the electrification of homes and transport. Investing in a training and education centre that provided upskilling in hydrogen education while addressing the needs of the underlying electrical workforce would mitigate the risks of competition with other jurisdictions and sunk cost while securing the workforce needed across a range of clean energy applications.

We thank the Department for the opportunity to provide input on this consultation and look forward to reviewing further announcements as the program is developed.

Yours sincerely,



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<sup>5</sup> Hydrogen Skills Roadmap. (2022). Swinburne University. URL:

[https://www.swinburne.edu.au/downloads/Hydrogen\\_Skills\\_Roadmap\\_Report\\_September\\_2022-reduced.pdf](https://www.swinburne.edu.au/downloads/Hydrogen_Skills_Roadmap_Report_September_2022-reduced.pdf)

<sup>6</sup> Powering Skills Organisation. (2024). The New Power Generation: Challenges and Opportunities Within Australia's Energy Sector. URL: [https://poweringskills.com.au/wp-content/uploads/2024/10/Workforce-Plan-Report\\_2024\\_Version-14-August-2024\\_with-appendix.pdf](https://poweringskills.com.au/wp-content/uploads/2024/10/Workforce-Plan-Report_2024_Version-14-August-2024_with-appendix.pdf)