

# Powering Up

PSO Initial Energy Workforce Scan  
Extended Summary



# About the Initial Workforce Scan



Powering Up is the first workforce report prepared by Powering Skills Organisation (PSO). It draws on preliminary workforce and training intelligence to distil existing information and set a path for identifying and resolving challenges in the energy workforce.

The scan provides a cursory definition and size of the PSO energy workforce in Australia; and identifies the unprecedented challenges that workforce confronts. The scan also outlines the number of VET trainees in the supply pipeline feeding into that workforce in recent years.

The centrepiece of the scan is PSO's initial five focus areas – these will commence the heavy lifting required to address workforce challenges over the coming years. These areas of focus will also help dictate where PSO prioritise their near-term efforts and consultation.

This report is not a full and all-inclusive workforce plan. As a newly formed body with a workforce facing once-in-a-generation change, it will take time for PSO to build expertise in workforce planning. This initial scan will be built upon in future and evolve in an updated format each year. At maturity it will transform into a comprehensive workforce plan for the Australian energy workforce.

This extended summary is a selection of themes and findings from the Initial Workforce Scan report, along with some novel insights. The contents of this summary and the broader scan are provisional and may be revised in future.

A program of specific consultation with stakeholders on this scan, along with a deeper investigation of existing energy workforce strategies across the nation, were still in development at the time of publication.

## Defining the PSO Energy Workforce



# 275,000K

The Australian energy workforce within PSO's remit is currently around 275,000 workers.

Defining a workforce establishes a provisional scope for PSO's future workforce planning activities and is the first step in the workforce planning process. For this initial scan, the workforce is defined using the ANZSCO occupations linked to the four VET training packages in the PSO portfolio (other definitions based on ANZSIC industry codes will be explored in future).

This definition indicates there are around 275,000 people in this workforce in 2023<sup>1</sup>, with roles spanning 12 trade and technical occupations (see list below). Electricians are the largest occupational group, and account for around half of the workforce.

- Electricians
- Electrical and Telecommunications Trades Assistant
- Technical Cable Jointers
- Airconditioning and Refrigeration Mechanics
- Power Generation Plant Operators
- Electrical Distribution Trades Workers
- Electronics Trades Workers
- Electrical Engineering Draftspersons, Technicians
- Gasfitter
- Telecommunications Trade Workers
- Electrical Linesworkers
- Chemical, Gas, Petroleum & Power Plant Operators

This workforce is male dominated (with females estimated in only 3.6% of roles<sup>2</sup>), mainly employed full-time, and has large parts of the labour force operating in regional and remote areas. Many occupations also require long training times and licensing to operate.

<sup>1</sup>Australian Government. Labour Market Insights. Retrieved from <https://labourmarketinsights.gov.au/>

<sup>2</sup>Australian Bureau of Statistics – Census 2021


# Challenges Confronting the Energy Workforce

The clean energy transition is the most profound challenge this workforce has faced in a generation, perhaps ever. Current shortages in transition critical roles mean we are already behind.

The once-in-a-generation changes the transition will have on the energy industry are well-known. Common highlights include:

- Decarbonising the entire energy supply by dramatically scaling up renewable generation
- The emergence of new sectors like energy storage and green hydrogen
- Increased demand for electric vehicles
- Extensive transmission infrastructure to connect renewable energy to the grid

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 11 out of 12

These challenges will disproportionately affect, and depend on, the PSO energy workforce. For instance, 11 of the 12 PSO energy occupations are critical to the recently defined clean energy labour force proposed by Jobs and Skills Australia (JSA). Few other sections of the labour market are as exposed to the transition challenge as the roles in PSO's remit.

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And this challenge is uniquely difficult. The transition requires a permanent and simultaneous lift in both the capacity and capability of this workforce. Dramatically more energy workers are required in future (capacity) and new skills for rapidly emerging sectors, like hydrogen, are needed (capability). Take the requirement for more workers. Australia will likely need 32,000 more electricians in the next seven years, but faces a major shortfall in supply, according to a recent report by JSA.

Compounding the challenge are shortages of many energy occupations at present, including Electricians, Electrical Linesworkers, Technical Cable Jointers, and Gasfitters.



# The Energy Workforce in Training

Enrolments, commencements, and completion rates in the energy workforce will require a sustained boost in future to meet expected demand. Especially female participation which accounts for only 5% of the total training activity.



90,000

28.5% <sup>↗</sup>

2022

Around 90,000 people began training in 2022



70,000

2019

Up from 70,000 three years prior

Trends in PSO's four training packages (shown below) indicate that enrolments across all qualifications have recently increased. Around 90,000 people began training in 2022, up from 70,000 three years prior<sup>2</sup>. Training commencements, which are sub-set of enrolments including only apprenticeship and traineeships, have also increased over the same period. Commencements increased from 12,700 to 18,200, a growth rate of around 44%<sup>3</sup>.

While positive, much of this increase in training activity may be from a temporary pandemic-era stimulus payment to employers of apprentices. Either way, even higher enrolments and commencements will be required in future to meet prospective demand.

## Trades & Technicians

60-65%

Completion rates remain stubbornly steady, and within their long-term historical range of 60-65% for most of the trades and technicians in PSO's remit. Like enrolments and commencements completion rates will need to increase in future.

Further analysis of these trends, and associated efforts to boost training system metrics for underrepresented groups like women, will be a core focus of PSO.



UEG

Gas Industry Training Package



UEE

Electrotechnology Training Package



UET

Transmission, Distribution and Rail Sector Training Package



UEP

Electricity Supply Industry Training Package

<sup>2</sup> National Centre for Vocational Education Research (NCVER) – Total VET students and courses

<sup>3</sup> NCVER – Apprentices and trainees

# Adapting the Labour Market and Training System to the Workforce Challenge

PSO offers five initial focus areas to address the workforce challenges identified. Ultimately, these areas aim to investigate and plug the stark capacity and capability gaps emerging.

Workforce planning is more than just defining a workforce and diagnosing labour market issues – appropriate strategy design, consultation, delivery, and evaluation are then required to target and remedy those issues.

PSO offer five preliminary focus areas to start addressing the set of workforce challenges identified (see below). Focus areas numbered one and two in this list aim to boost capacity, four and five target capability, while the third area explores both capacity and capability.

These areas will evolve over time as they are tested with stakeholders and PSO's own internal intelligence sharpens, but for now, they help outline critical starting points to adapt the labour market and training system to the challenges that await.

## A

### Focus Area One

Articulate pathways to trades to attract more diverse groups. This includes migrants, women, First Nations people, students (including unsuccessful apprentice applicants), regional populations, and workers transitioning from mining and fossil fuel industries.

## D

### Focus Area Two

Determine if the training capacity and capability of the VET system can meet prospective demand. For example, if sufficient trainers and facilities for energy trades exist to meet a future upturn in enrolments.

## A

### Focus Area Three

Assess barriers to commencement and completion rates for energy trades. Leverage this understanding to increase completion rates, especially for diverse cohorts like women, First Nations and regional workers.

## P

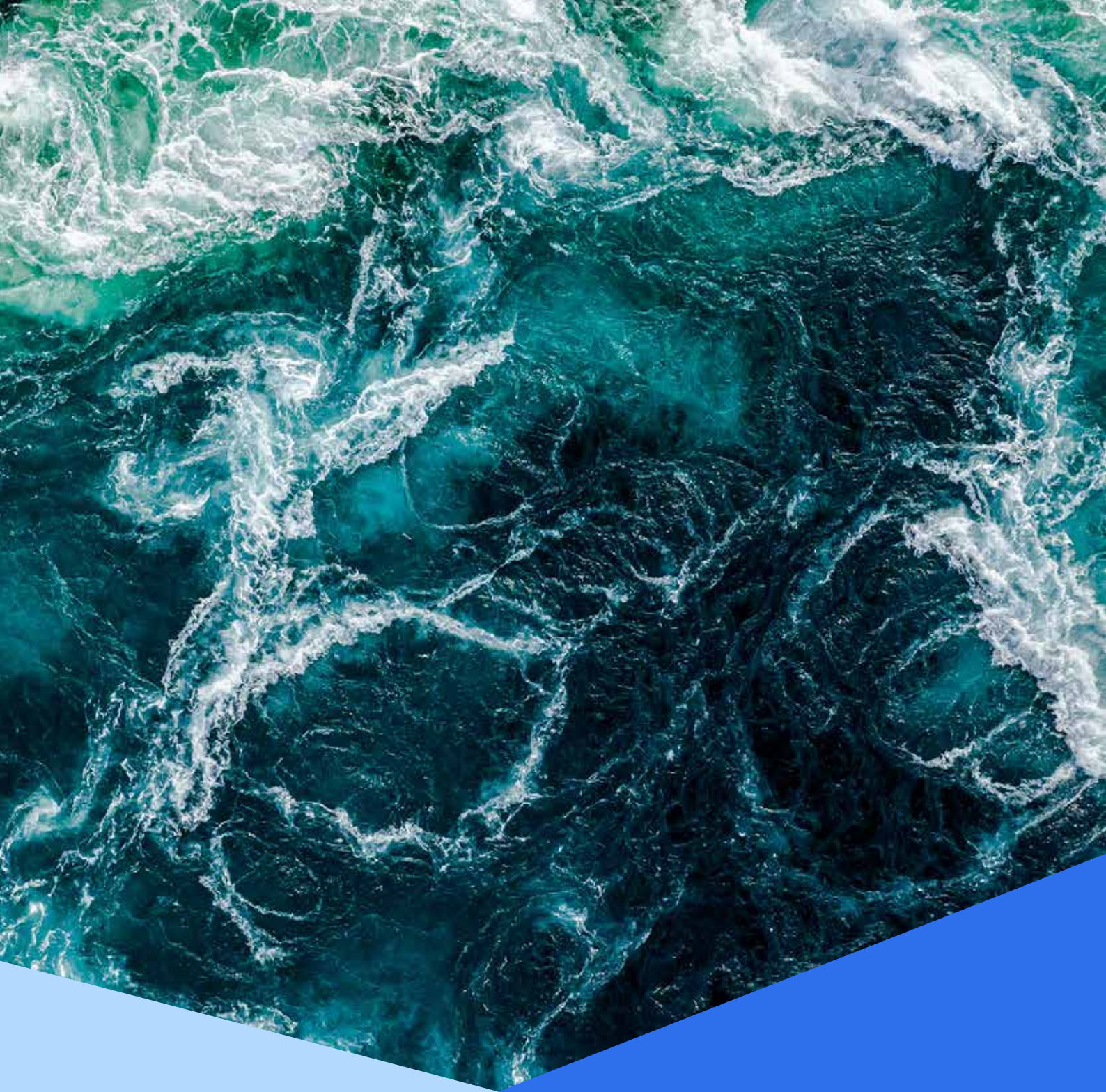
### Focus Area Four

Prioritise a suitability review of the training packages in PSO's remit to determine suitability. For future needs, current uptake and delivery rates, and potential scope for enhancements like dual-trade pathways.

## T

### Focus Area Five

Training package review to explore renewable pathways into the energy sector. This will include an expansion of existing work to map future occupations and skill requirements to training delivery.



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