

Clean Energy Capacity Study Team
Jobs and Skills Australia

Via email: CleanEnergyWorkforce@jobsandskills.gov.au

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Re: Clean Energy Capacity Study (CECS) Discussion Paper

The Energy Efficiency Council (EEC) welcomes the opportunity to comment on Jobs and Skills Australia's Clean Energy Capacity Study Discussion Paper. The EEC is Australia's peak body for energy efficiency and management, with a membership of businesses, universities, governments and NGOs working to guide Australia on the path to an efficient, prosperous net zero economy.

The EEC would like to express its strong support for the development of workforce data and projections to underpin Australia's transition to a net zero economy, and will be delighted to assist the study team in any way possible. The EEC's comments on the discussion paper are provided below.

1. The CECS should embrace a holistic view of the clean energy workforce.

Through the transition to a net zero economy, there will be significant changes to both how energy is supplied, but also how energy is used. The balance between activity on the supply-side and the demand-side of the energy system is a critical determinant of the cost of the transition. In an energy system characterised by high levels of variable renewable energy, managing energy use is just as important as creating new energy supply to drive down the overall cost of the transition. These concepts are explored in more detail in the EEC's recent report, [Clean Energy, Clean Demand](#).

Therefore, it is critical that the CECS seeks to understand the workforce needs of both the demand- and supply-side of the clean energy transition. While the CECS has identified *energy efficiency* as a core part of the transition, this is a relatively narrow focus and should be expanded in line with the Government's focus on *energy performance* – decarbonising the demand side of the energy system by making the most effective use of energy through energy efficiency, fuel switching and electrification, and demand management.

The conceptual definition on page 8 is a good start. However, in the first paragraph, the focus on clean energy use as 'equipment and technology that uses clean energy rather than fossil fuels' is too narrow. The clean energy transition is enabled not only by installing new equipment that uses renewable energy, but also through reducing and managing energy use to expedite the transition. We would therefore suggest that **the conceptual definition includes the concept of equipment, processes and expertise that improve energy performance**, including energy efficiency, energy management and other avenues to decarbonise energy use (as well as energy supply).

In the second paragraph of the definition, the CECS attempts to set a boundary around the clean energy workforce for certain purposes. However, restricting the scope '*to those workers who require skills specific to adopting, developing, generating, distributing and supplying energy generated from renewable sources*' is again too narrow, and should contemplate a broader conception of the clean energy workforce that includes both energy supply and energy demand. For example, energy management, advisory and auditing include a critical set of skills that enables the adaption of business processes to make the most effective use of energy, improving energy performance. These skills are also critical to making the best use of cheaper renewable energy, but they do not seem to meet the threshold for examination of workforce barriers and enablers. The EEC recommends using

a more holistic conception of the energy system that recognises the importance of both energy supply and energy demand to maintain balance in the energy system.

2. Energy use professionals are unlikely to be properly captured by the proposed workforce boundaries

Many energy use professionals share strong skillsets and occupation codes with energy supply professionals. For example, the Australian and New Zealand Standard Classification of Occupations (ANZSCO) does not differentiate between electricians and electrical engineers who work on the supply of energy, rather than in the use of energy. While these skillsets have much in common and will ultimately compete for a similar pool of workers, there are significant differences in expertise, skills and professional development pathways for these workers. Energy use professionals will require differentiated skills and experience, and certification and ongoing development of these skills.

For example, the EEC maintains several professional certifications for energy use professionals to demonstrate their proficiency in demand-side techniques that will be critical to enable the clean energy transition. These include the Performance Measurement and Verification Analyst (PMVA) certification, that attests to proficiency among engineers in implementing measurement and verification (M&V) solutions that demonstrate reductions in energy use. This certification is required for delivering M&V solutions under state-based energy efficiency schemes such as the NSW Energy Savings Scheme and the Victorian Energy Upgrades Program. Certified EnMS Advisors are specialist energy use professionals who assist businesses to implement processes and procedures that enable continuous improvement in energy performance. Neither of these professionals are currently recognised by ANZSCO codes, yet their involvement in the clean energy transition is critical to ensuring that energy use properly aligns with changing energy supply dynamics.

3. A range of scenarios should be considered in developing workforce data and predictions

We would encourage Jobs and Skills Australia to consider how data and projections might accurately determine how many additional energy professionals such as electricians and engineers will be required for both the demand side and supply side of the energy transition. There are a range of possible scenarios toward decarbonising our energy use. Building on research undertaken by international bodies like the International Renewable Energy Agency (IRENA) and the International Energy Agency (IEA), the EEC will shortly be publishing commissioned research that explores how energy system decarbonisation could be achieved through a range of different scenarios – some which are more heavily reliant on supply side intervention, while others put greater emphasis on energy efficiency and electrification opportunities on the demand side. Currently, there is no pre-determined pathway for decarbonising the energy system, and hence there is no one single, pre-determined mix of skills that will be required to effect the transition.

Creating a range of scenarios, which require different balances of supply- and demand-side skills, will be an important part of the CECS. At a minimum, the AEMO's Integrated System Plan contains a range of different scenarios which need consideration, but further scenario development including higher demand-side emissions reduction activity in response to renewed Government policy attention should also be an important component of the capacity study.

4. Limitations on existing data can be substantially lessened through deploying the AEER

Current limitations on accuracy and availability of data regarding the energy workforce – particularly those involved in energy efficiency and energy management – are likely to be significantly ameliorated should a comprehensive, appropriately funded Australian Energy Employment Report (AEER) proceed. The AEER, as originally envisioned as an equivalent of the United States Energy and

Employment Report (USEER), is not reliant on incomplete ANZSCO codes to quantify employment. Rather, the workforce data could be imputed from the economy-wide surveys and analysis that a properly executed AEER would bring.

Pursuing the AEER survey on an opt-in, self-selected basis is unlikely to provide significant or useful economy-wide data about the energy workforce, and many of the questions that the CECS is likely to encounter would be answered by the results of a properly comprehensive, appropriately funded AEER. The EEC urges the Government to commit to undertaking the AEER as originally proposed in the RACE for 2030 [Developing the future energy workforce report](#) (October 2021).

International benchmark examples exist, such as the USEER, which uses sampling rather than opt-in surveys. This provides the ability to make whole-of-economy estimates about the workforce size and makeup, critical data which is not available to the CECS at the current time.

5. Diversity, equity and inclusion initiatives are underway

The energy industry lacks diversity in its workers, which presents a challenge to sufficiently scaling up the energy supply and demand professionals needed to successfully effect the transition to clean energy. Several institutions within the energy industry are undertaking initiatives to promote improved representation from women, as well as other underrepresented groups. Across the clean energy sector, a commitment has been made to the 'Equal by 30' initiative, which seeks to close the gender gap in the energy industry.

Clean energy organisations are also recognising the importance of practical programs to improve diversity. The Australian Power Institute runs the 'POWERful Women Program', which develops the leadership capabilities of more than 70 women spread across early career professionals and experienced technical professionals. The EEC is developing its own Emerging Leaders program, with an embedded mechanism to offer a large proportion of places in the program to women and other underrepresented groups.

However, these initiatives will not remove the need for larger scale programs to bring a wider range of professionals into the clean energy workforce. Further action will be required to ensure that the transition will be undertaken (and supported) by a wide cross section of the community, with a particular emphasis on women, culturally and linguistically diverse communities, and First Nations communities.

6. Industry-led training and certification is filling gaps

Training and certification delivered by industry groups is currently critical to enabling parts of the transition. For example, the EEC's Certified Insulation Installer program is underpinning state and territory government initiatives to deploy insulation to buildings, improving thermal performance and reducing energy system emissions associated with heating and cooling buildings.

These types of training and certification programs bridge the gap between licenced professions and unregulated services. Delivering training and certification through industry groups represents a flexible, rapid and responsive avenue for delivering relevant training, which may not be available through traditional VET or higher education providers. In some cases, these programs have led to the development of nationally-recognised training. In others, the gap still remains, with simpler pathways for introducing industry-developed competency specifications and training courses into the National Register of VET required, as this is essential to scaling deployment.

We would encourage JSA to consider how these types of training and certification schemes can effectively support workforce development. The time to achieve emissions reduction targets is short – just over six years remain to achieve our 2030 target – so developing rapidly scalable clean energy workforce capacity will be critical to successfully implementing the transition to net zero emissions.

The EEC would be delighted to further assist JSA in this study. Should you require further information, please contact [REDACTED]

Yours sincerely



Energy Efficiency Council