

The Economic Impact of the REZs

Australia's Net Zero Transition – exploring the economic implications

AARES24 Pre-conference workshop

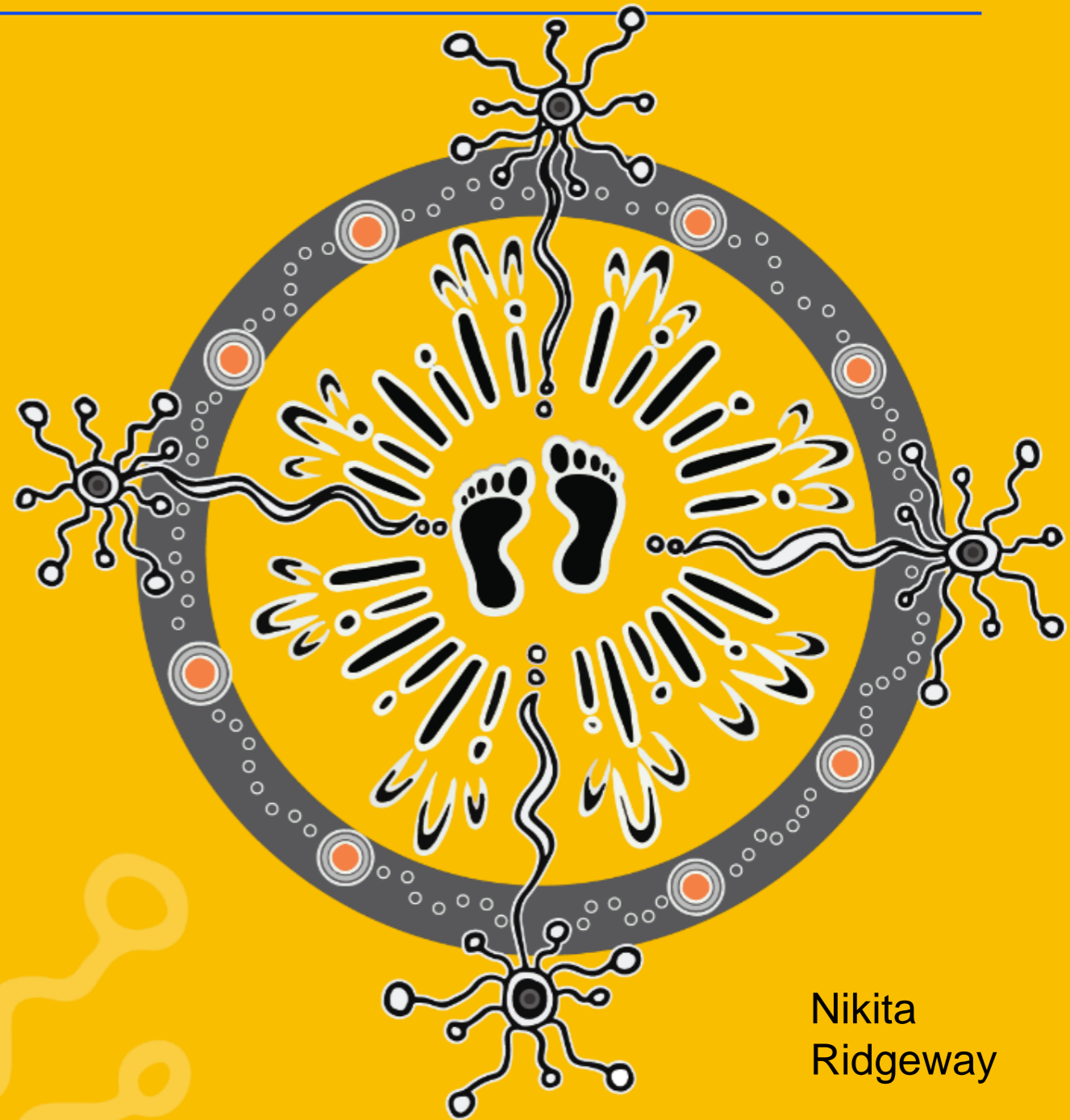
Chris Briggs, Institute for Sustainable Futures, University of Technology Sydney



Acknowledgement of Country

We acknowledge that today we meet on Aboriginal lands.

We acknowledge the traditional custodians of the lands and we show our respect for elders past, present and emerging through thoughtful and collaborative approaches to our work.



Nikita
Ridgeway

Introduction

The economic impacts of the REZs?

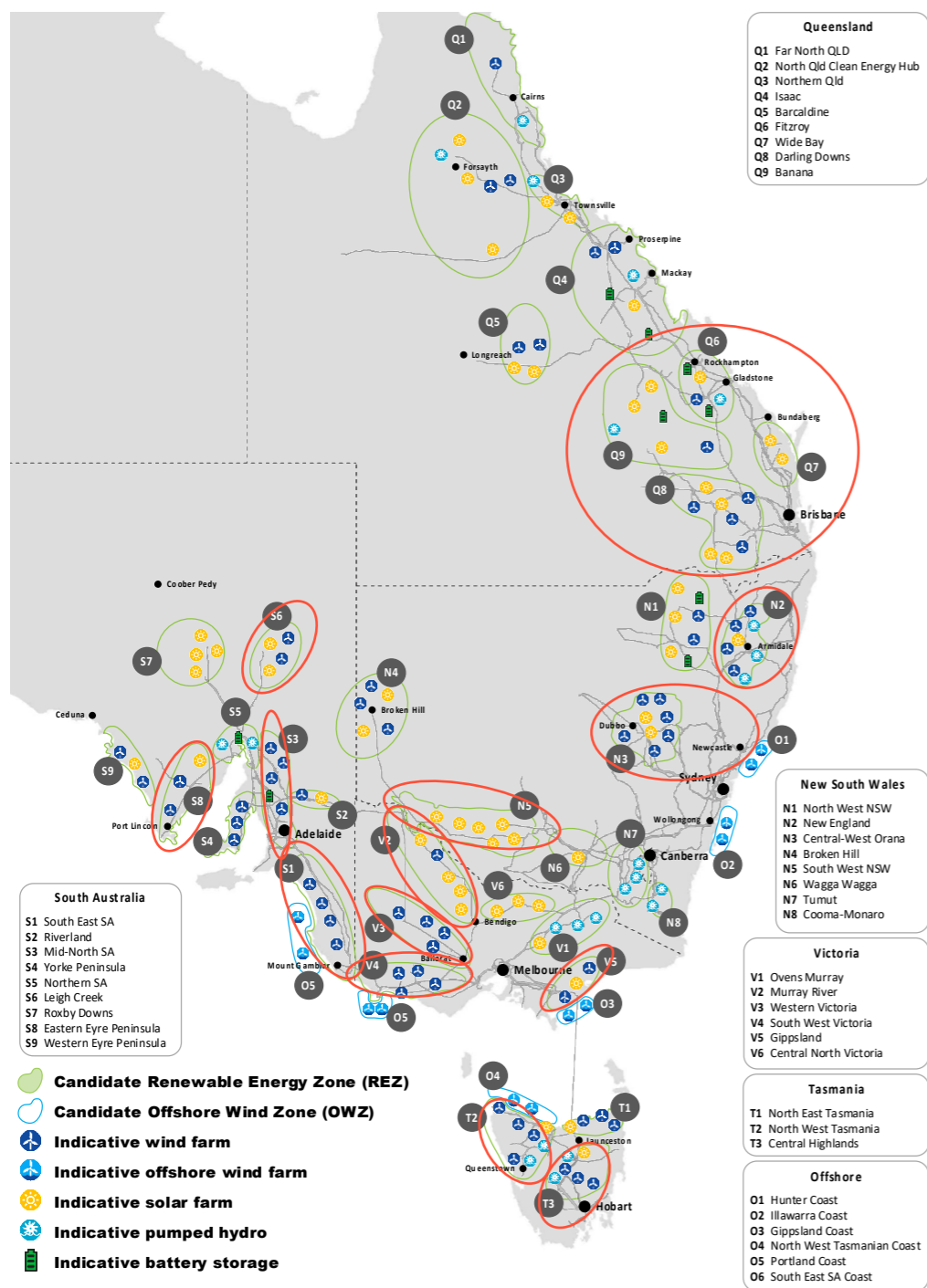
- net zero scenarios: techno-economic models assume labour available in regions
- 'just transition' studies and industry policy focussed on carbon and coal regions

Four key observations

- Risks of labour shortages amidst rapid scale-up in economies built around agriculture/resources
- REZs contribute to diversification - but macro impact in regions likely to be relatively modest (exc. regional hotspots under 'hydrogen superpower' scenario)
- Opportunity to improve economic equity – First Nations
- Political economy of REZ: the economic foundations for a political coalition?

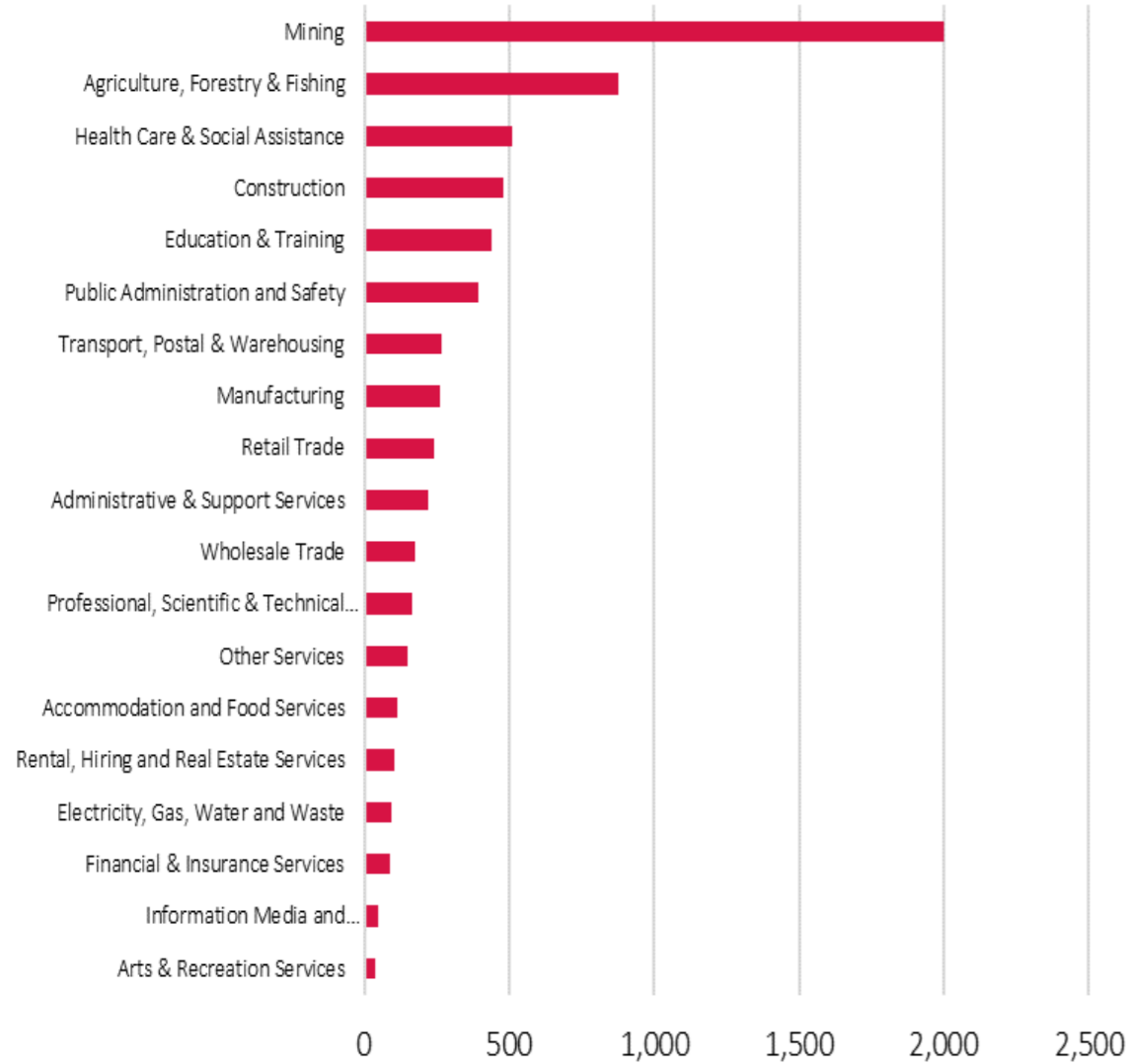


Classifying Renewable Energy Zones

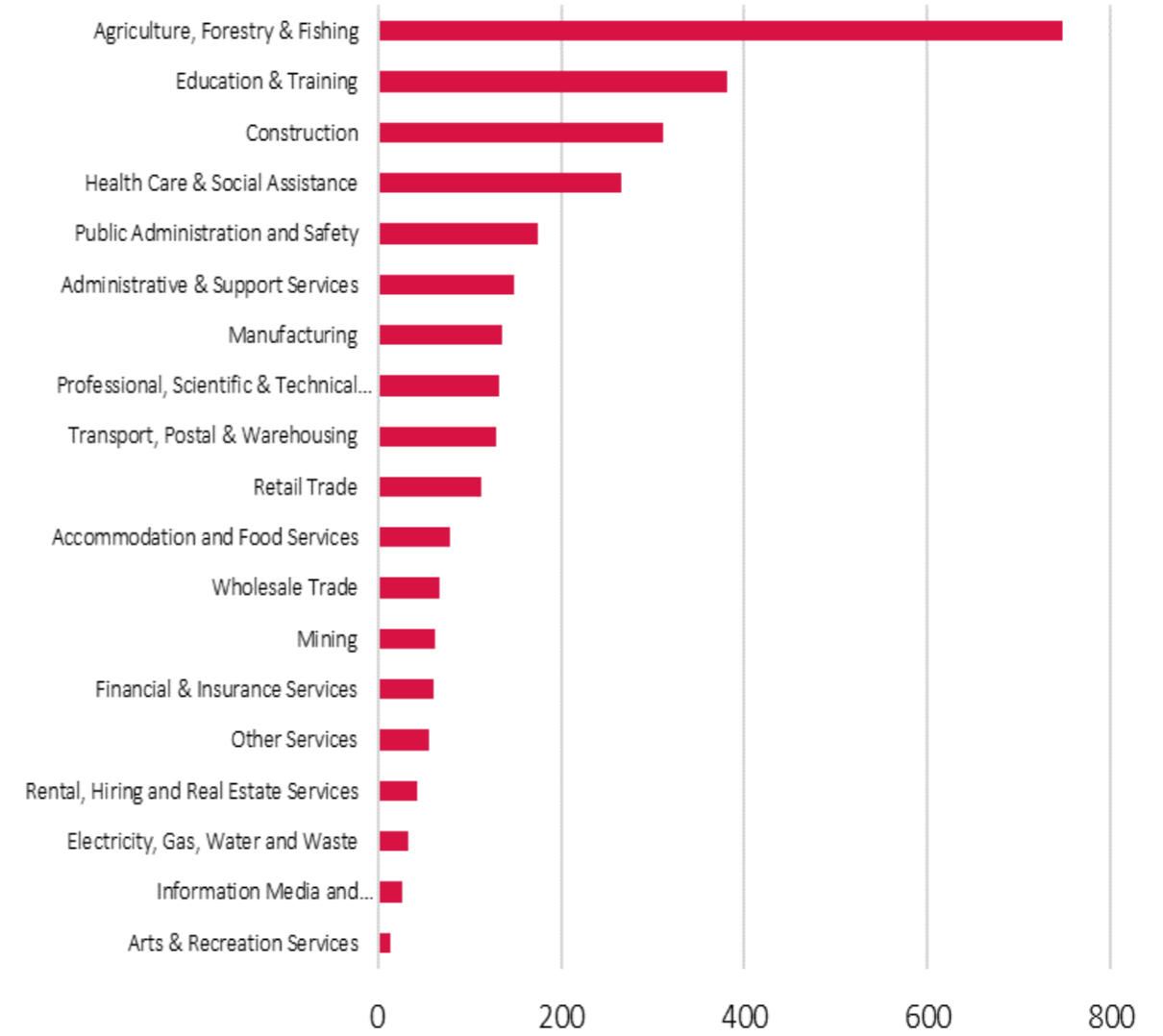


- AEMO identified 44 REZs – state government programs are actively developing a smaller group
- Broadly two types of REZs:
 - Inland regions – large-scale renewable energy, storage and transmission being introduced into primarily agricultural and resource-based economies
 - Industrial regions (e.g Hunter, Gippsland, Wollongong) –transition from fossil-fuel based economies
- The primary objective of the REZs is to coordinate transmission investment with new generation and storage – mostly occurring the inland REZs
- NSW REZs as case studies

Economic Structure - Central-West Orana and New England REZs

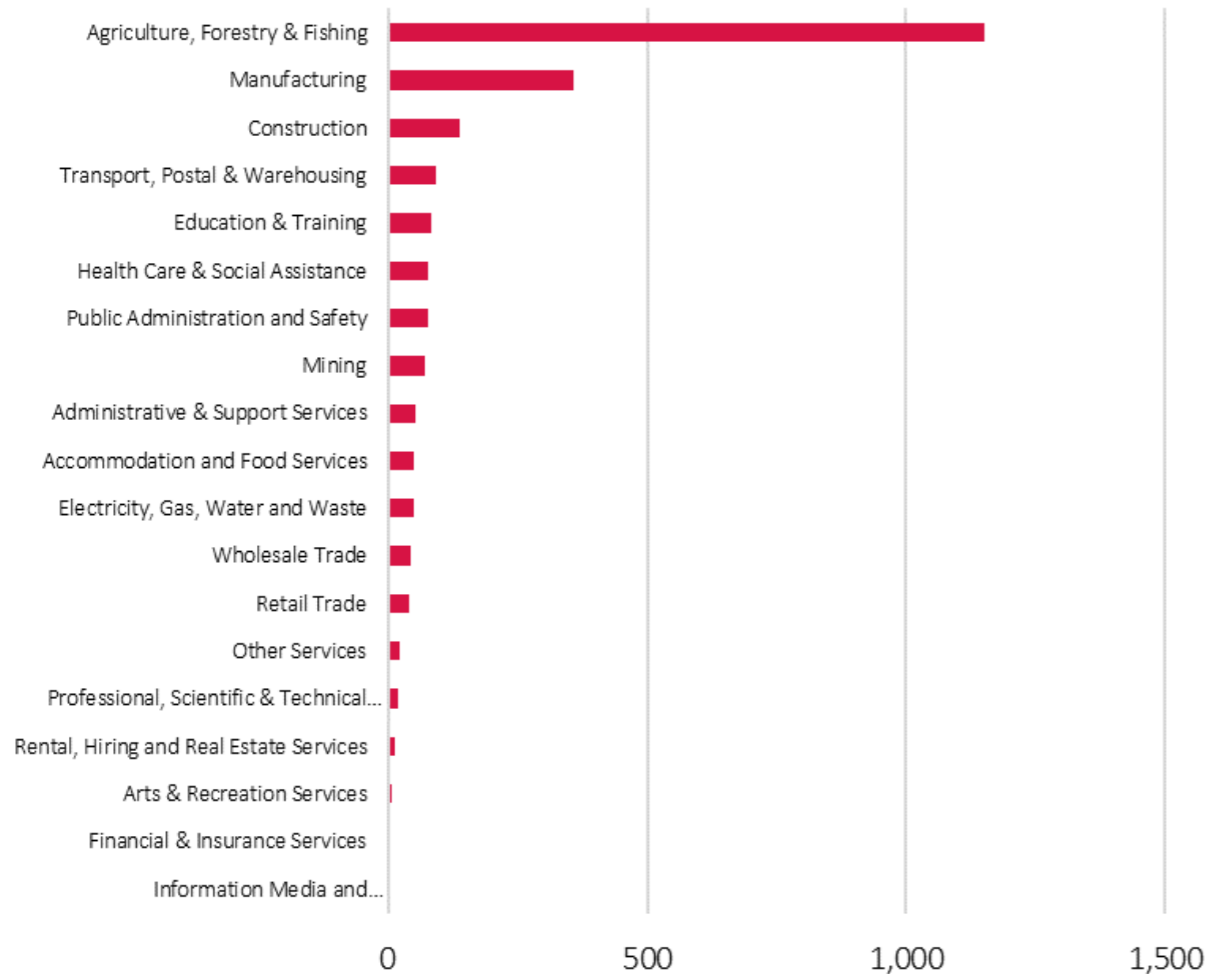


Central-West Orana REZ



New England REZ

NSW Renewable Energy Zones – South-West



South-West REZ

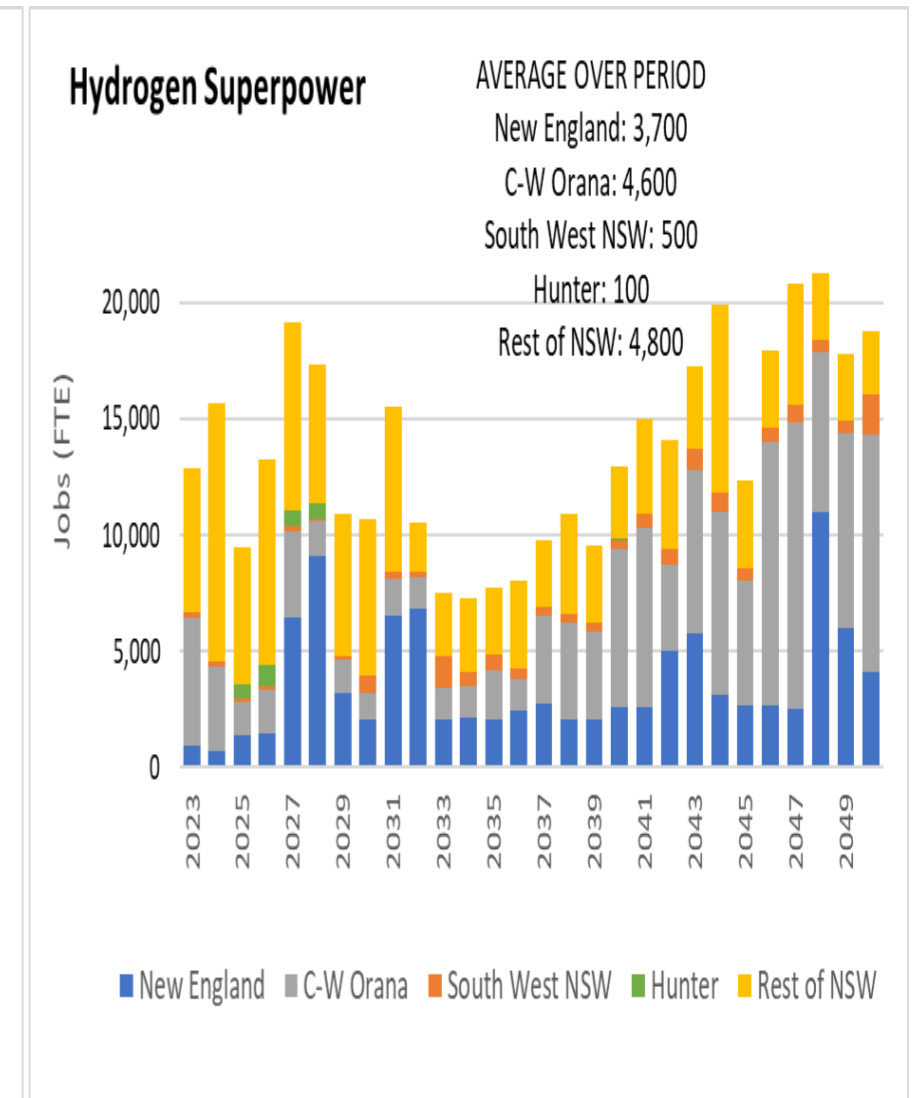
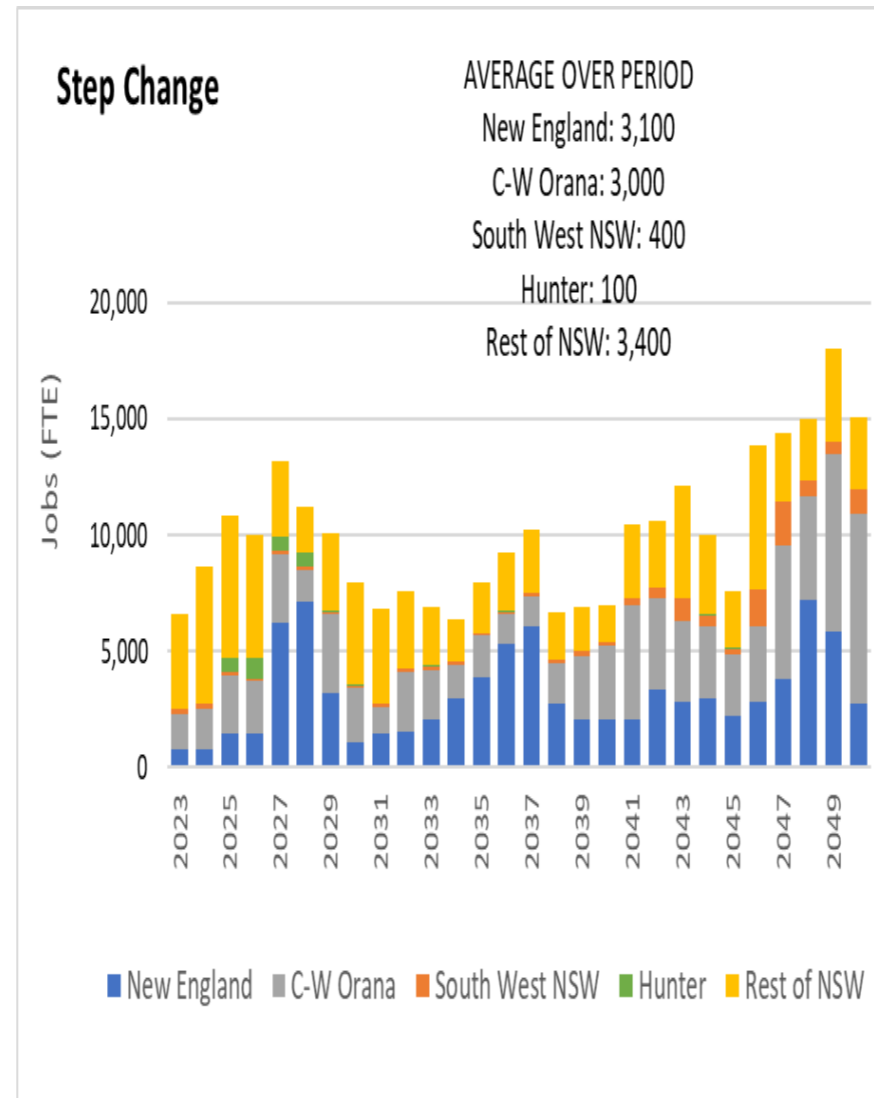
- Strong agricultural presence
- Mining only significant presence in CWO
- Construction is the 3rd sector – but generally <10%
- Low manufacturing presence – except in South-West REZ where it's >10%
- Long tail – 40-50% of economy comprised by a range of sectors <5% (mostly services)
- Electricity, gas, water and waste is one of the smallest sectors in each of the REZs

What are the key pathways through which there will be economic impacts?

- Construction – spike in economic activity from mid-2020's with period bursts including spillovers (accommodation etc) - but also crowding-out?
- Operations & Maintenance – less economic activity but major source of employment from mid-2030s
- Limited activity likely in other parts of the supply-chain:
 - Low manufacturing presence – if Australia develops renewable energy manufacturing (e.g. wind tower manufacturing) or manufacturing based on low-cost renewables it will mostly be located in traditional industrial centres n.b. scope of 'local content' rules is Australia + NZ
 - End of life – there could be recycling facilities and circular economy precincts (e.g. South-West REZ)
 - Planning and development – mostly professional employment located in major cities (and abroad)
- Landholders – NSW Government projects \$1.5 billion in lease payments to 2042 (Central-West \$430m, New England \$660m, South-West \$280m)
- Infrastructure development and Education and training – especially young population (springboard into trades with flow-ons for population retention and other sectors)?

Rapid scale-up in workforce for renewables, transmission & storage +

- 12,000 extra workers across NEM under Step Change scenario by 2025 (31,000 in the Hydrogen Superpower)
- Job growth concentrated in a handful of REZs.
- **New England** – peaks at 6000-7000 jobs (2027-28), driven largely by wind and transmission construction.
- **Central-West Orana** employment is more evenly distributed between wind, utility-scale PV, and transmission construction - peaking around 3,300 jobs.



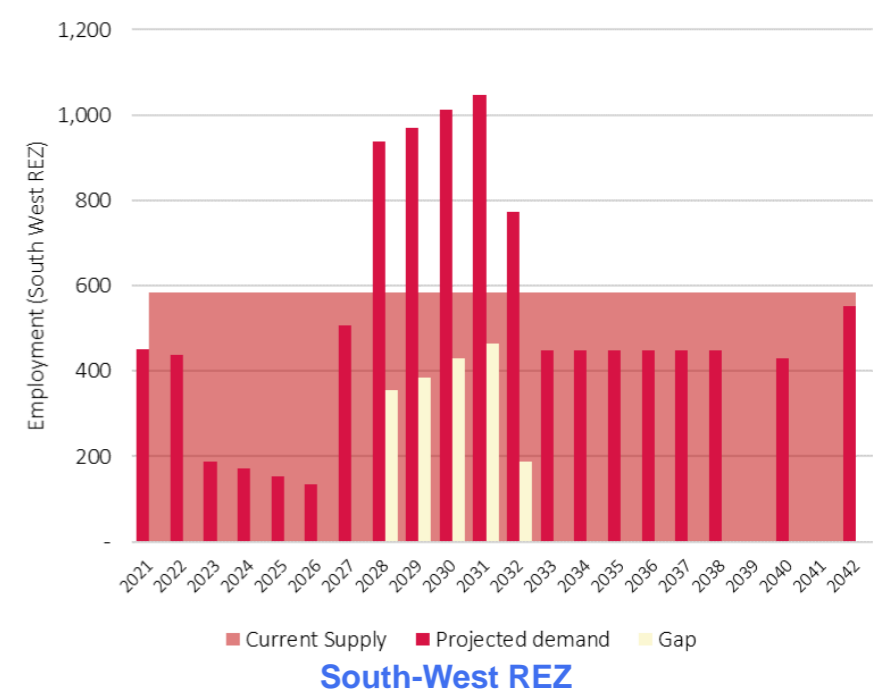
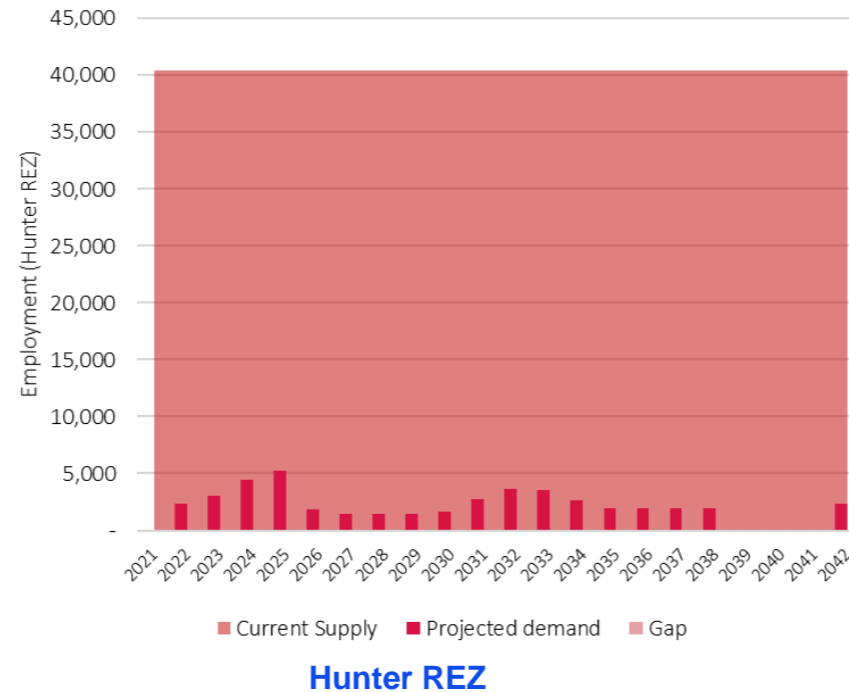
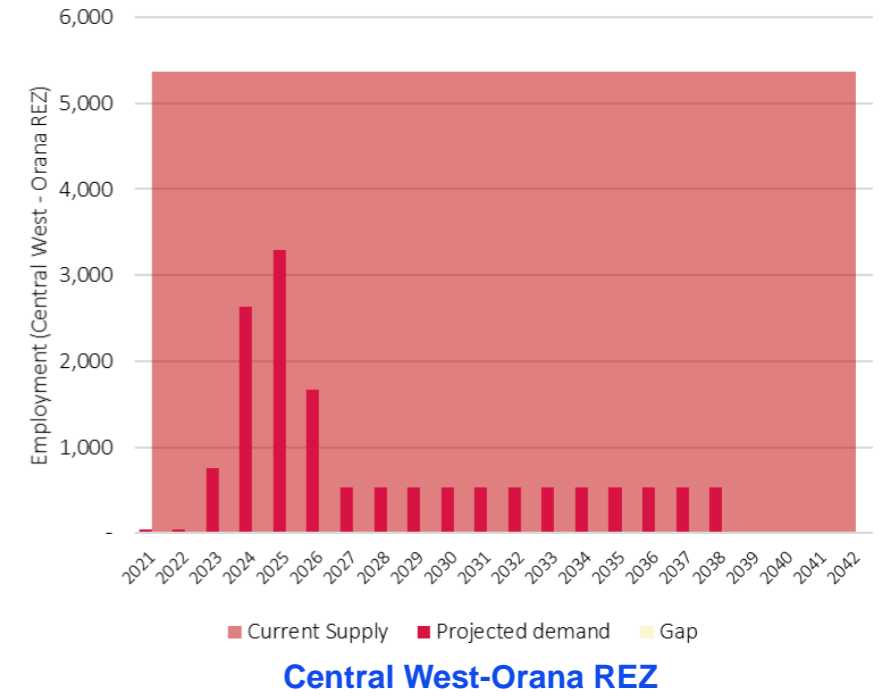
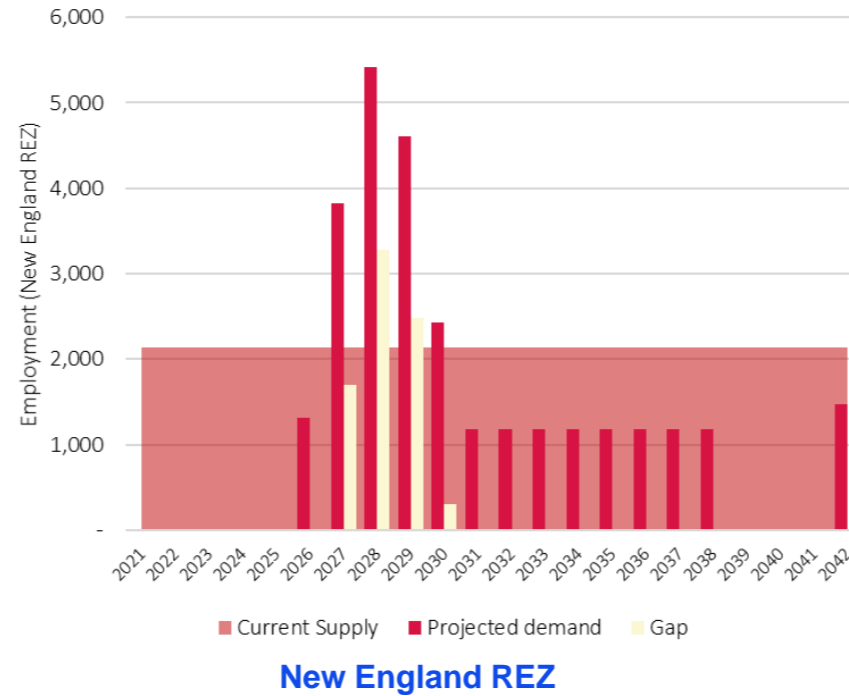
+ regional labour markets with limited depth in key occupations

Construction peaks are large relative to scale of labour supply in adjacent occupations

- In New England and the South West REZs, it is projected that peak demand for key occupations will outstrip supply
- In Central West-Orana, the peak demand is around 2/3 of current labour supply

Scaling up training and workforce is challenging:

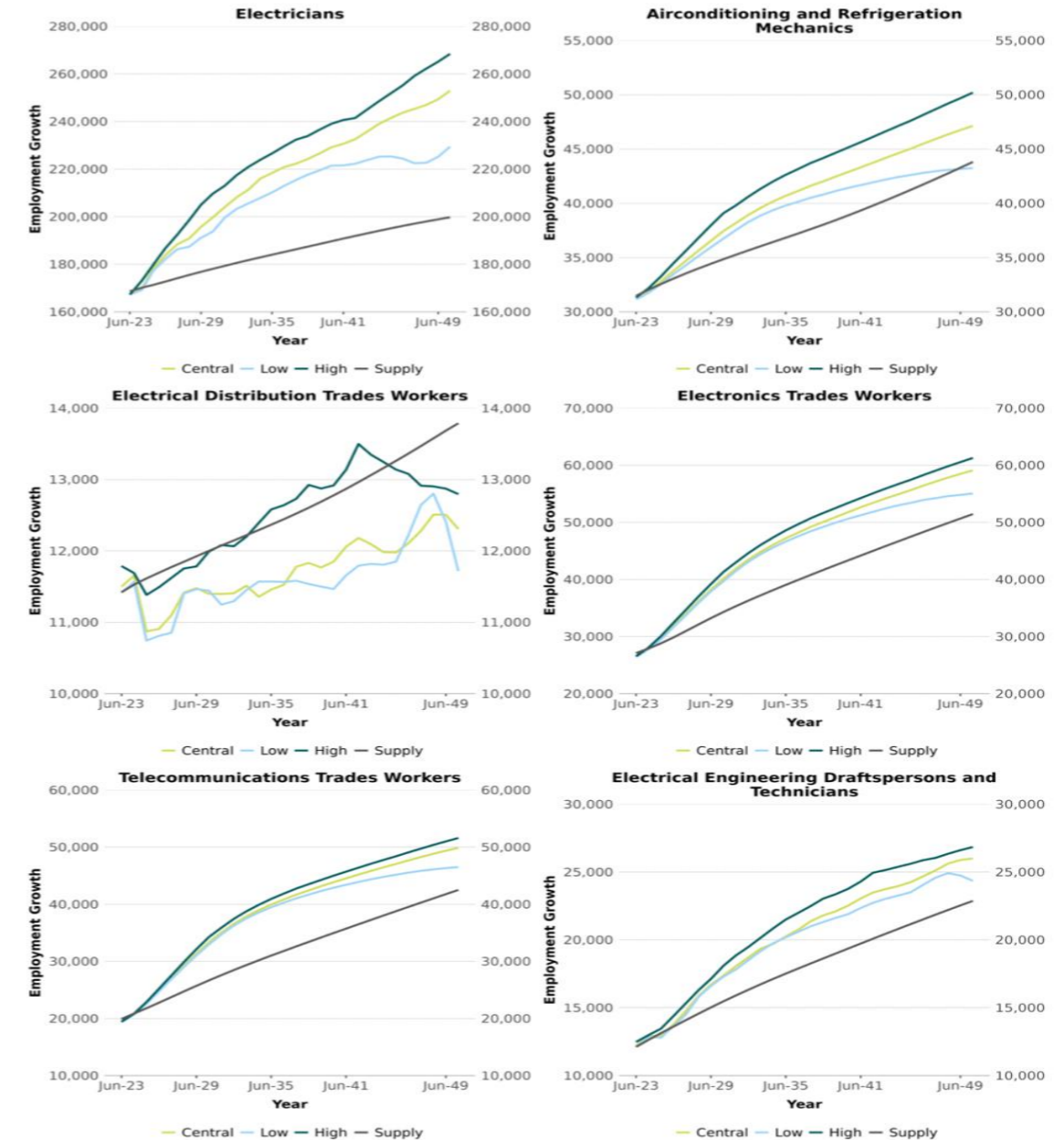
- low training capacity in context of 'thin markets'
- Renewables sector does not have a strong culture of training and workforce development



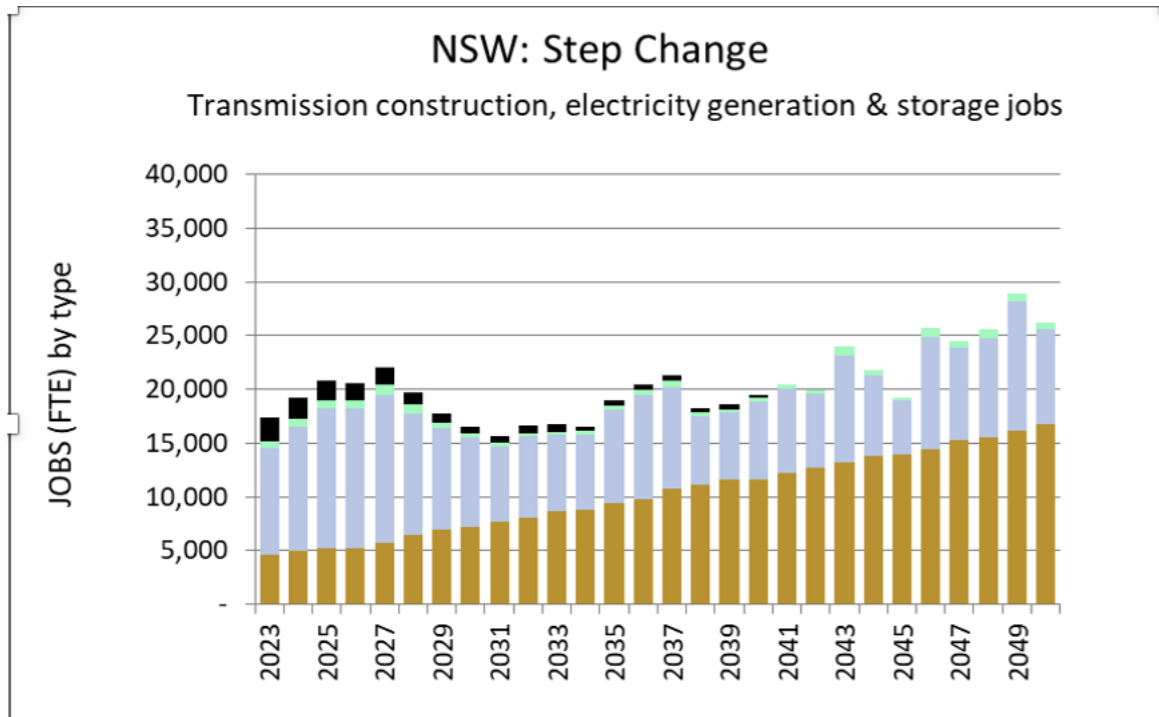
= serious risk of skill shortages and uncertainty over economic benefit for REZs

- **Low spare capacity** – currently the lowest unemployment rates for decades (but could change)
- **Competing infrastructure builds** – Australia is in the midst of an ‘unprecedented infrastructure boom’
- **Challenges attracting labour**
 - the renewables sector typically moves a core workforce around to projects – but growth challenging limits of that model
 - Growth can occur in local regions or by attracting labour into regions – but renewable sector will be competing against other Australian infrastructure projects and global demand
- **The benefit to local economies is uncertain**
 - How much employment and business will be supplied locally?
 - How much ‘crowding out’ & negative externalities?

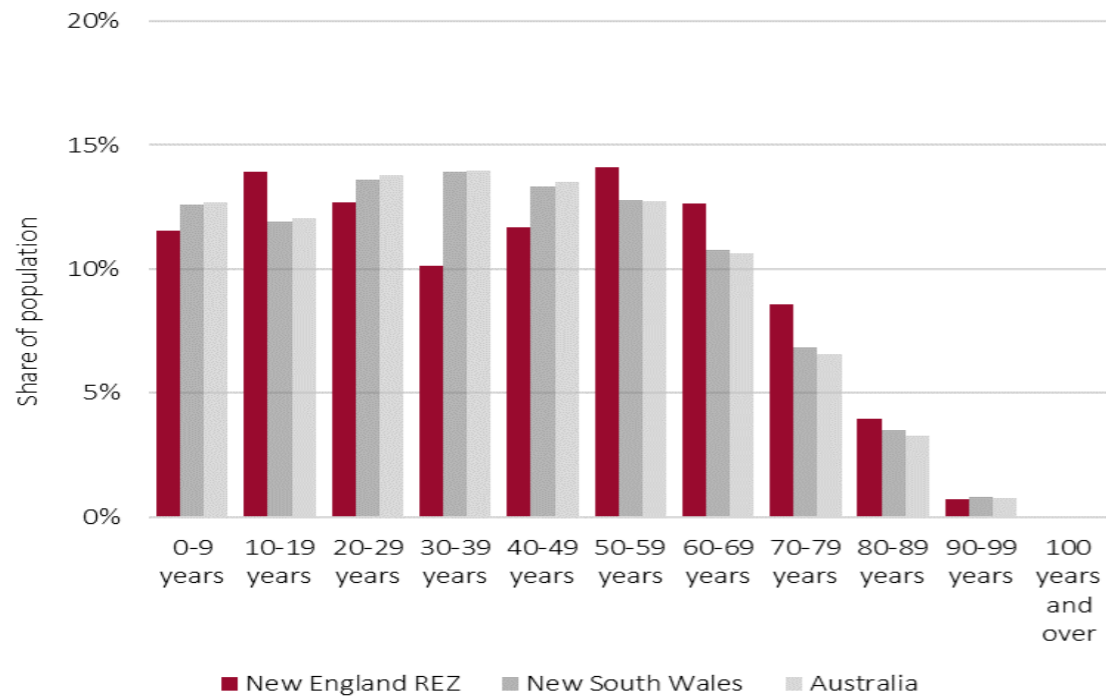
Figure 5.8. Demand (all scenarios) and supply for electrical trades and technicians, 2023-2050



After the construction boom?



- O&M employment accounts for majority of jobs from mid-2030s – diversification, stable, but not large in macro picture for REZs
- Other industry development opportunities? Infrastructure development and skills development could be wider legacy
- REZs have low shares of prime-aged workers – higher shares amongst young people and old people
- Building pathways for different labour market segments into sector key part of increasing labour supply and local economic benefit e.g. mature-aged, people out of labour force, women
- Key group is school students – major pool of labour and opportunity to leave legacy by increasing regional skill base (e.g. pathways into apprenticeships)



The opportunity for First Nations jobs and training in REZs

There is a very persistent gap in employment between First Nations and other Australians

- Around half of First Nations aged 15 – 64 are employed compared to two-thirds population-wide – and this gap has remained constant for past two decades

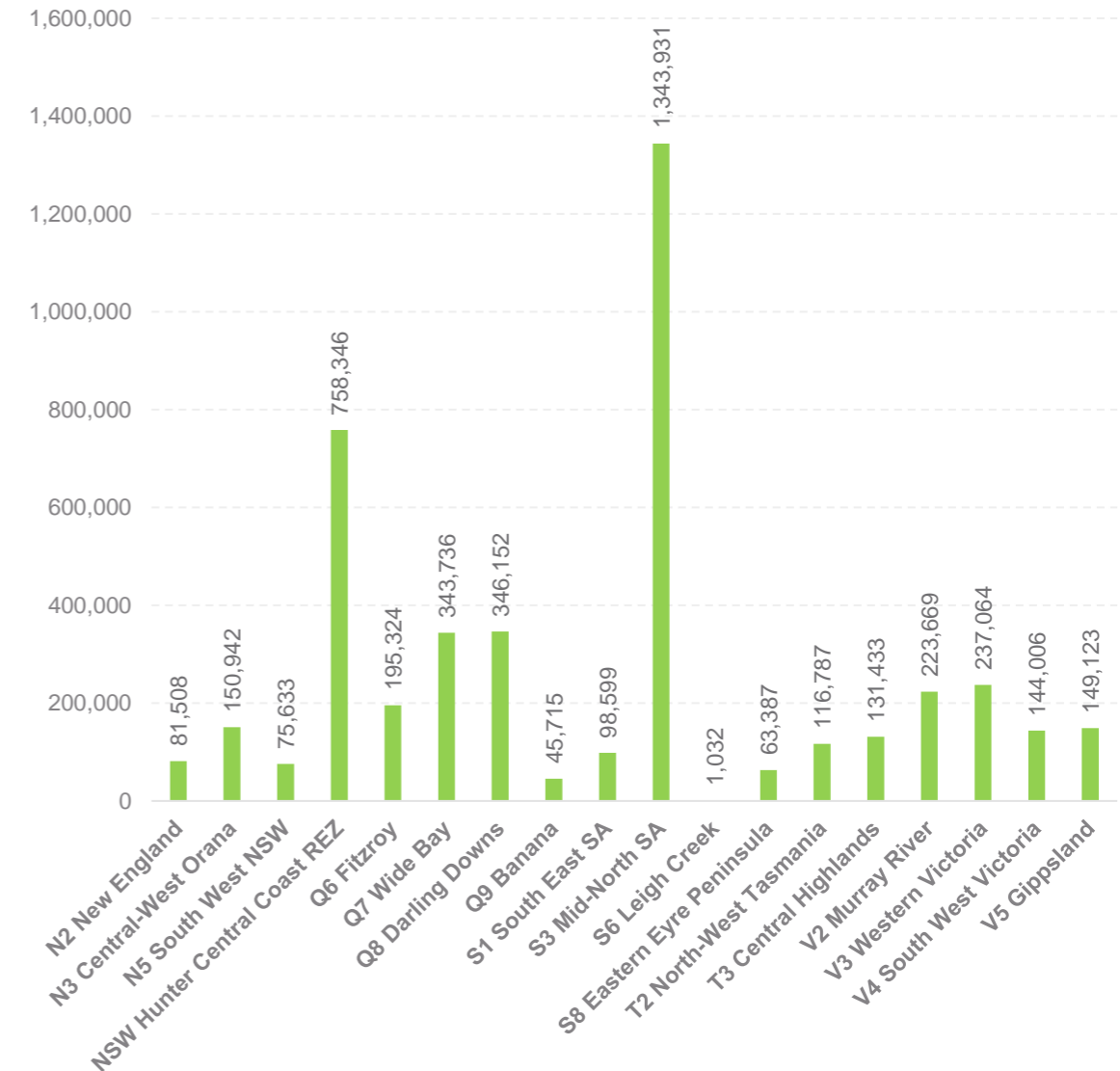
REZs have higher First Nations populations – especially in NSW

On average, FN people make up 6.2% of REZ populations compared to 3.8% nationally:

- In the NSW REZs the First Nations population share is 9.4% (New England) and 12.7% (Central-West Orana)
- In the Qld REZs, the First Nations share is generally <10% but higher than national average - in the biggest REZs the share is 7.5% (Fitzroy) and 5.9% (Darling Downs)
- FN population share in the Victorian REZs is notably lower < 5%.

First Nations populations in the REZs are young

- Half the First Nations population across the REZs are less than 19 years



ISF, SGS Economics, Alinga Energy and Indigenous Energy Australia are undertaking study for First Nations Clean Energy Network

REZ and First Nations analysis: key findings

- Very low base in adjacent occupations. 1.5% employment target could be achieved now but likely in a narrow base of low-skill jobs because of heavy concentration in small number of occupations (e.g. truck drivers)
- Range of opportunities identified:
 - First Nations people in unemployment/out of labour force to solar farms - very high social impact – but needs programs to build pathway, support solar farms and workers and transition into accredited training and employment after construction
 - Integrating programs into climate and energy programs e.g. apprenticeships within Indigenous housing retrofits
 - Schools programs: the high proportion of First Nations in the REZs who are school students provides a labour pool broadly equivalent to a 10% target.
 - pilot programs in a range of occupations (e.g. wind turbine technicians, community engagement)
- Medium-term targets equivalent to First Nations population (5 – 10%) in REZs appear feasible



Conclusion

- Risks of labour shortages amidst rapid scale-up in economies built around agriculture/resources
- REZs contribute to diversification - but macro impact in regions likely to be relatively modest (exc. regional hotspots under 'hydrogen superpower' scenario)
- Bigger opportunity to improve economic equity – First Nations
- Political economy of REZ: the economic foundations for a political coalition?

