

RENEWABLE ENERGY JOBS:
FUTURE GROWTH IN
AUSTRALIA
2017 SUPPLEMENT

Climate Council of Australia

ACKNOWLEDGEMENTS

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KEY FINDINGS

1. When compared to business as usual, 28% renewable energy in 2030 would mean:
 - Around 6,600 less net jobs in the electricity sector than business as usual (8% lower employment). This reflects fewer jobs in large-scale wind and solar farm construction and operation.
 - Less net jobs in the electricity sector in NSW, Queensland, and South Australia.

2. When compared to 50% renewable energy, 28% renewable energy in 2030 would mean:
 - Around 20,000 less net jobs in the electricity sector compared with 50% renewable energy (32% lower employment). This reflects fewer jobs in large-scale wind and solar farm construction and rooftop solar.
 - Less net jobs in the electricity sector in every state.

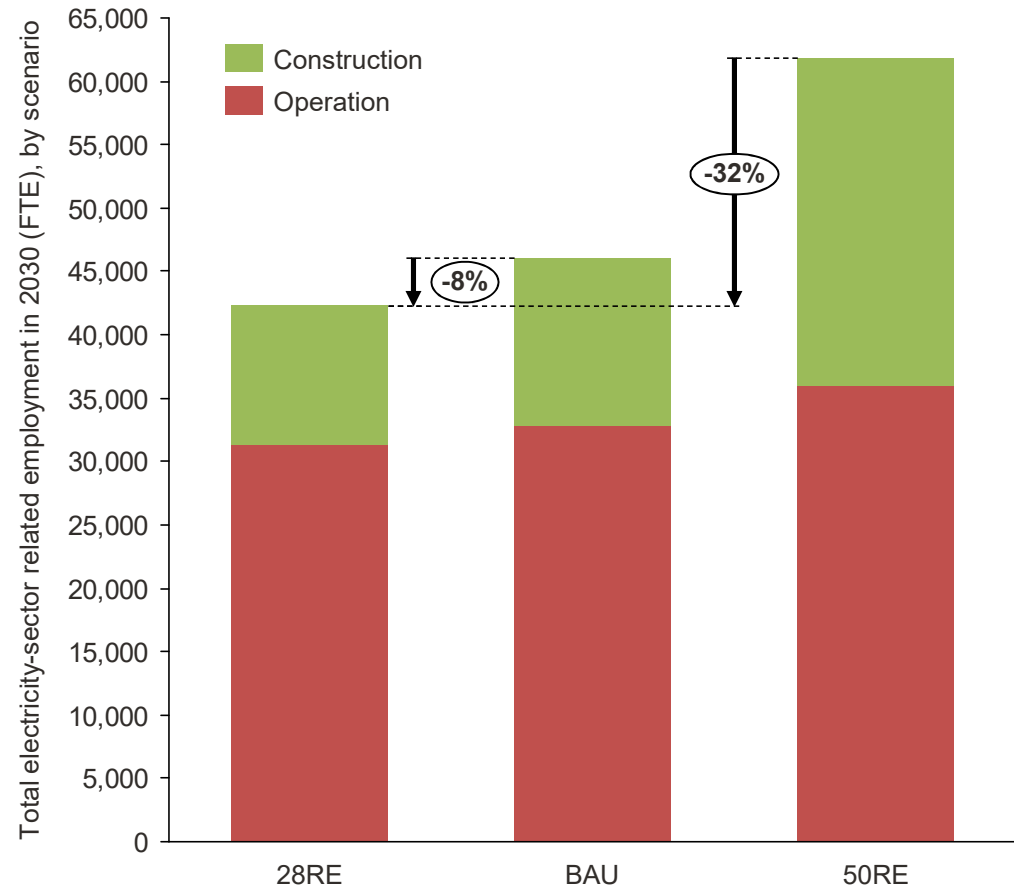
3. The 28% renewable energy NEG projection would result in negligible large-scale wind and solar construction from 2020 onwards.
 - As large-scale renewable energy projects are generally located in regional and rural areas, these areas would be impacted the most.
 - The modelling also projected no new coal capacity constructed during the 2020s, with some additional gas capacity added during the late 2020s.

BACKGROUND

- In October 2017, the Australian Government put forward an alternative policy for the Australian electricity sector, the National Energy Guarantee (NEG). The NEG has two core components, a Reliability Guarantee and an Emissions Guarantee, with the obligation for meeting these requirements borne by electricity retailers.
- While the operational details of the NEG are currently being developed, initial modelling by the Energy Security Board (ESB) suggests that these NEG requirements could be met by between 28-36% renewable electricity generation, with around 10% of renewable generation being dispatchable, by 2030.
- In 2016, EY modelled the employment impacts of a 50% renewable electricity scenario for 2030. The report, “Renewable Energy Jobs: Future Growth in Australia” found 50% renewable electricity would create over 28,000 additional jobs in 2030 compared to a business as usual scenario.
- In this 2017 Supplement, we explore the impact of the low-end ESB forecast for the NEG of 28% renewable electricity on employment in the electricity sector in Australia. We compare the employment impacts of this 28% renewable energy scenario (28RE) against our earlier business-as-usual (BAU) and 50% renewable energy (50RE) scenarios to 2030.
- With the details of the NEG still to be set out, these results should be taken as indicative of the potential impact of the NEG on employment in the electricity and related sectors.

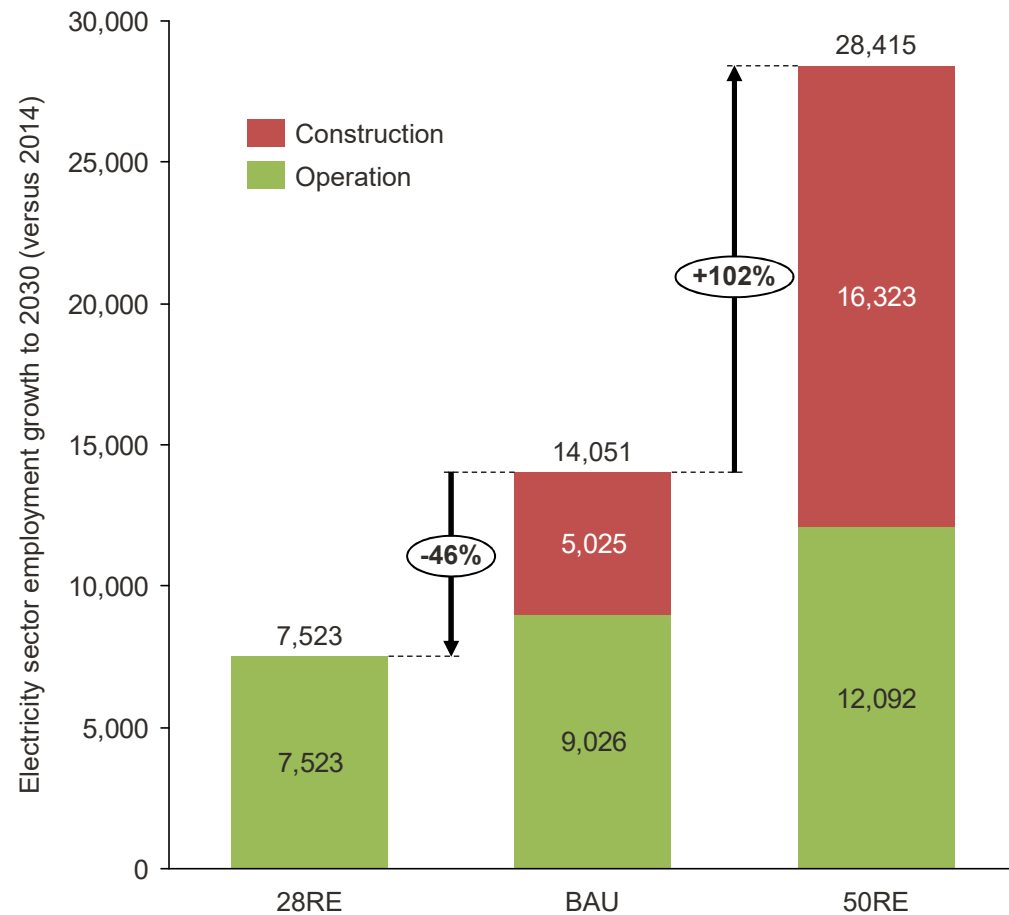
ELECTRICITY SECTOR EMPLOYMENT IN 2030 IS LOWER UNDER 28% RENEWABLE ENERGY

- Lower employment under the 28RE scenario relates to fewer construction jobs in the wind and large scale solar PV sectors.
- Employment from rooftop solar PV installation and operation is significantly reduced compared to a 50RE scenario.



ADDITIONAL ELECTRICITY SECTOR EMPLOYMENT IN 2030 IS 46% BELOW BUSINESS AS USUAL

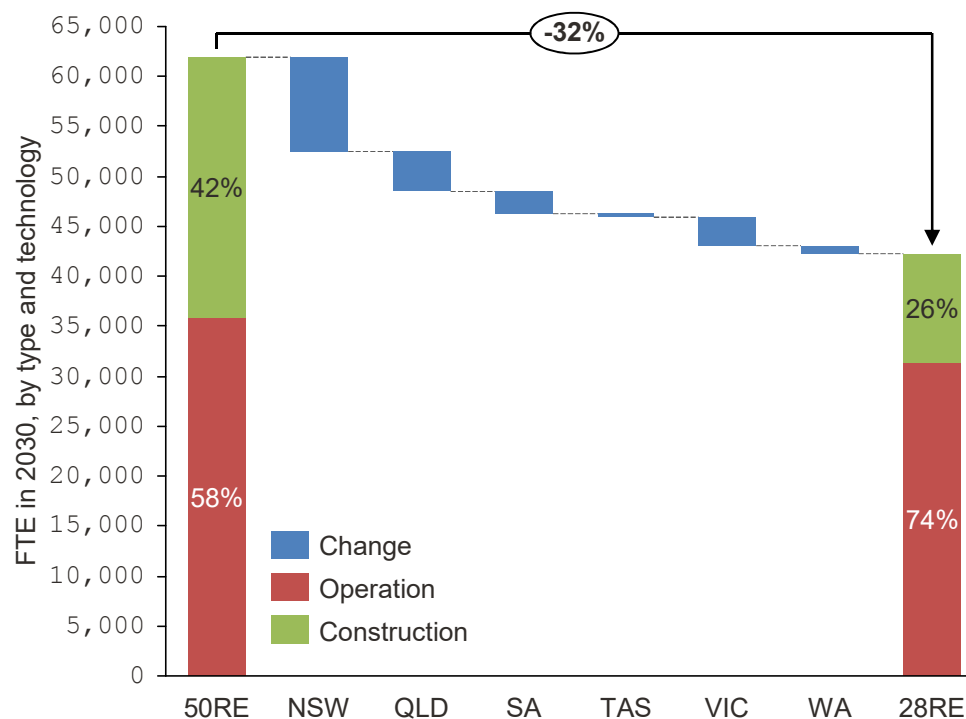
- Most electricity sector-related employment losses under the 28RE scenario are related to construction in the wind and large scale solar PV sectors. Under this scenario, there will be less electricity construction jobs in 2030 than in 2014.
- Additionally the 50RE scenario sees significantly reduced employment from rooftop PV construction.



ELECTRICITY SECTOR EMPLOYMENT IN 2030 IS LOWER WITH 28% RENEWABLE ENERGY

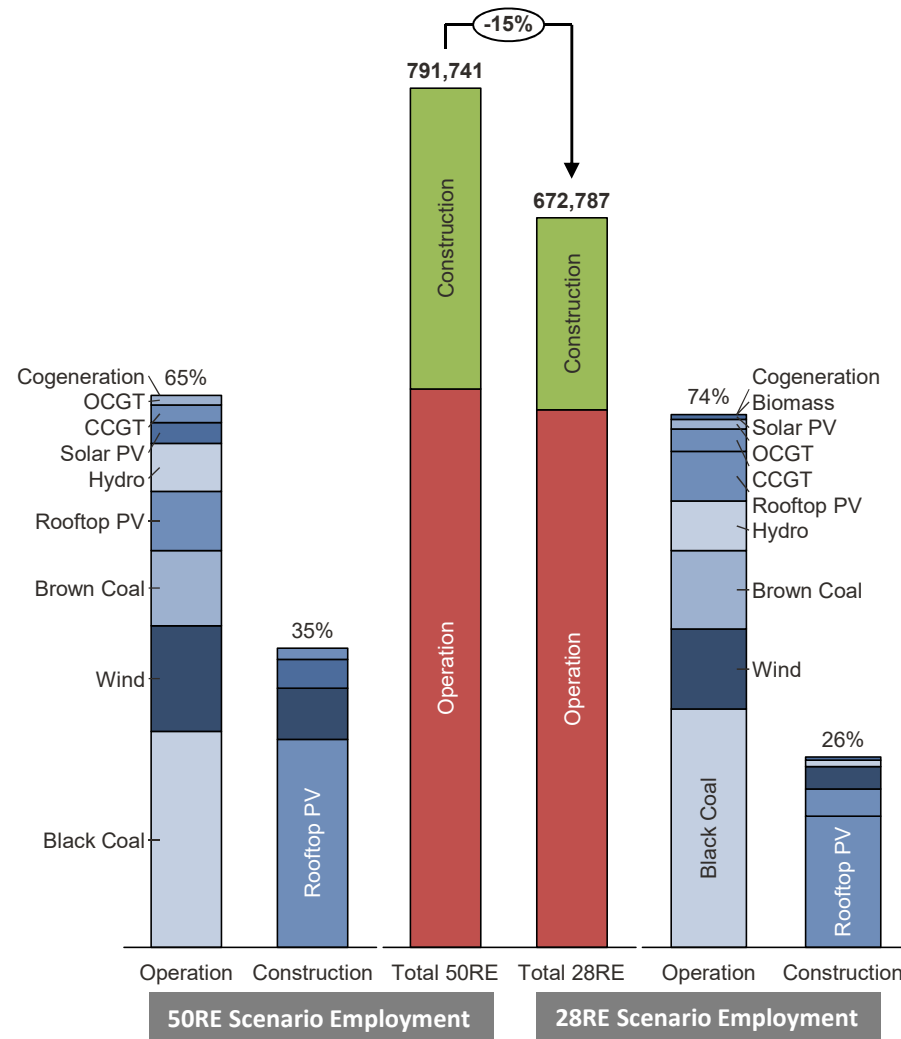
- Compared to a 50% renewable energy scenario, employment under a 28RE scenario is around 32% lower in 2030.
- Lower employment is experienced in all states; however, NSW and Queensland experience the greatest loss of employment in the sector, accounting for two-thirds of the reduced employment under the 28RE scenario.

Employment in 2030
50RE versus 28RE



ELECTRICITY SECTOR EMPLOYMENT TO 2030 FOR 28% RENEWABLE ENERGY IS 15% LOWER THAN 50% RENEWABLE ENERGY

- The 28RE scenario is forecast to generate 15% less electricity sector employment over the modelling period to 2030.
- This means around 119,000 fewer job-years across the country, or 7,000 jobs (on average) per year.
 - Job-years shows the overall employment outcome over the period from 2014 to 2030. Job-years is calculated by adding the number of full time equivalent (FTE) jobs associated with the electricity in each year to 2030.
- Construction employment over the period is around one-third higher in the 50RE scenario than in the 28RE scenario.



MODELLING NOTES

- This 2017 Supplement relies on the same BAU supply and demand model as was used in the Climate Council's 2016 Renewable Energy Jobs publication. By retaining the core modelling assumptions, direct comparison between the 2017 Supplement's 28RE scenario, and the earlier BAU and 50RE scenarios, is achieved.
- Key assumptions for the 28RE scenario include:
 - Retains the same overall demand profile (grid demand plus rooftop solar PV generation) to 2030 as the BAU scenario.
 - Renewables (large scale wind and solar PV, hydro, rooftop PV and biomass) meet 28% of overall demand in 2030.
 - Around 10% (of the 28%) of demand is met by dispatchable renewables (as per the ESB advice). This includes existing hydro and biomass, plus new hydro capacity and additional dispatchability of wind and solar through retrofitting some battery storage
 - Large scale wind capacity continues to grow to 2020, at which point new construction ceases. Minor new wind capacity (equivalent to anticipated age-related wind capacity closure) occurs from 2028 onwards.
 - Large scale solar PV capacity continues to grow to 2020, and which point construction ceases. No further new large scale solar PV capacity is installed over the modelling period to 2030
 - No new black coal capacity is constructed; however, there is a minor increase in the capacity factor of black coal generators during the 2020's.
 - New combined cycle gas turbine (CCGT) capacity is added late in the 2020's, above the growth of CCGT included in the BAU scenario.

