

Executive Summary

This analysis and report focusses on new jobs resulting from the transition to Renewable Energy (RE) within the South West Interconnected System (SWIS) system. The vision presented in this report is premised on reaching 90% of electricity provided by clean energy in the SWIS in 2030 (including rooftop energy behind the meter). Key findings from this report are presented here.

Our modelled transition to 90% RE by 2030 determined the following direct jobs:

- 55,100 job-years (2020-30) with an average of 5,000 jobs per annum.
- 8,600 FTE jobs in 2030 of which approximately 2,700 would be ongoing operations and maintenance jobs.
- Approximately 50-60% of the jobs created can be in regional areas.

Analysis of independent industry information on jobs created from the installation of new RE in Australia shows two major RE job categories will be created:

- Repeat construction work for anything up to 24 months per project, followed by
- Ongoing long-term operations and maintenance work.

There will also be jobs created from the closure and rehabilitation of existing carbon-based energy systems such as the Muja power plants.

Resources developments in WA have shown that the construction work for new projects has become an industry in itself. This analysis indicates that something as significant as the transition to high levels of RE will create a sustainable RE construction industry.

In the creation of this new industry, the WA Government has the choice of a hands off "industry will decide approach" which is likely to involve significant delay followed by problematic booms and busts in RE construction employment, or a managed approach. We have assumed a more rational managed approach where there is a steady flow of new jobs through an informed and well directed government policy. The WA Government Energy Transformation Taskforce is key to providing the strong guidance needed.

The majority of jobs considered in this report are related to new wind and solar energy as well as pumped hydro and storage. All of them create significant new jobs:

- Wind energy construction jobs of 280 FTE per new 100 MW.
- Wind energy operations and maintenance jobs of 22 FTE per new 100 MW.
- Solar rooftop PV construction jobs of 580 FTE per new 100 MW.
- Solar rooftop PV operations and maintenance jobs of 16 FTE per new 100 MW.
- Solar utility PV construction jobs of 230 FTE per new 100 MW.
- Solar utility PV operations and maintenance jobs of 11 FTE per new 100 MW.

Our energy modelling was developed using SEN's published and open source system modelling tools using a cost optimised blend of clean energy RE and storage technologies, with limited utilisation of fossil gas.

Should the transition be slower as a result of ineffective policies or a delayed response, then a similar level of new jobs will still be created, but over a longer timeframe.

The jobs referred to in this report are direct jobs only. New jobs create indirect and induced jobs through multiplier effects, but these have not been taken into account in this report. The resources industry tends to assume the creation of indirect and induced jobs in its reporting so this important factor needs to be considered when making comparisons with other jobs reporting.

The scenario we consider in this report excludes the significant upsurge in energy demand expected to flow from a substantial transition to electric vehicles and fuel switching from gas to electricity in domestic, commercial and industrial applications. These factors are expected to significantly increase electricity demand and therefore RE jobs over those presented in this report.

The transition of an electricity system to high levels of RE results in clean energy. There is an increasing demand for clean energy in existing and new industries. This has also not been directly taken account of in the figures in this report and provides considerable additional upside.

