

A BRIGHT RENEWABLE FUTURE FOR QUEENSLAND

43,500

Additional renewable
construction and installation
job years by 2030



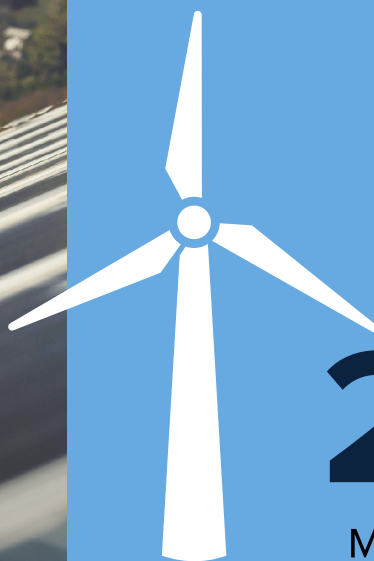
2,000

Additional renewable
jobs in operations and
maintenance by 2030



233%

More large-scale solar
and wind capacity



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Summary

Global pressure is mounting for Australia to adopt stronger climate action targets. In recent months, a number of countries have announced more ambitious climate action and renewable energy commitments – including the United States, China, South Korea and Japan^{1,2}.

This report uses least cost modelling from the Australian Energy Market Operator (AEMO) to determine the approximate number of renewable energy jobs that could be created in Queensland over the coming decades if global, state and federal governments adopt more ambitious emission reduction and renewable energy policies. The findings of this report demonstrate that fast-tracking Queensland's energy transition will create a significant number of construction and ongoing jobs in renewable energy.

The most rapid transition scenario modelled by AEMO in the 2020 Integrated System Plan³, the Step Change scenario, would see more than double the amount of large-scale solar and wind generation built by 2030 than currently exists or is committed in Queensland – with rooftop solar capacity modelled to become four times greater than Queensland's largest coal generator.

If this scenario becomes reality, Queensland would see 43,500 clean energy job years created in the construction and installation of solar, wind and distributed storage by 2030 as well as an additional 2,000 jobs in operations and maintenance.

This scenario would result in 21,700 more construction and installation job years, and 900 jobs in operations and maintenance in Queensland by 2030 compared with continuing on a business-as-usual trajectory.



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Jobs in Solar, Wind and Distributed Battery Storage in Queensland by Future Scenario

The Australian Energy Market Operator's latest Integrated System Plan models a future scenario where the transition to renewable energy is undertaken at a faster pace in line with more ambitious global and domestic action on climate change.

This Step Change scenario is the only scenario modelled in the 2020 ISP that is compatible with limiting climate change to within 1.4°C to 1.8°C⁵.

AEMO defines the Step Change scenario as⁶:

The Step Change scenario reflects strong action on climate change that leads to a step change reduction of greenhouse gas emissions. In this scenario, aggressive global decarbonisation leads to faster technological improvements, accelerated exit of existing generators, greater electrification of the transport sector with increased infrastructure developments, energy digitalisation, and consumer-led innovation.

In the Step Change scenario, the Victorian and Queensland renewable energy targets are exceeded, as is the Australian Government's goal of reducing emissions in the NEM by 26 percent come 2030.

Using renewable energy job factors from the Institute for Sustainable Futures⁷, we're able to quantify the number of clean energy jobs that could be created in Queensland under the Step Change scenario⁸. It should be noted, however, that this report doesn't calculate potential jobs in large-scale battery storage, pumped hydro or hydrogen projects.

The findings show that if more ambitious renewable energy policies were adopted it could create 43,500 clean energy job years⁹ in the construction and installation of solar, wind and distributed storage in Queensland by 2030 as well as an additional 2,000 jobs in operations and maintenance.

By 2040, a total of 92,600 construction and installation job years would be created, and 4,600 in operations and maintenance. Averaging the number of construction and installation job years over the 20 year period equates to over 4,600 ongoing jobs over that period.

In comparison, under AEMO's Central scenario, which reflects current climate and energy policy settings¹⁰, there would be 21,700 fewer job years in the construction and installation of solar, wind and distributed battery storage by 2030. By 2040 this will grow to a total of 43,300 fewer construction and installation job years. The Central scenario would also see almost 2,000 fewer jobs in operations and maintenance by 2040.

The Step Change Scenario

New jobs created in Queensland's Renewable Energy Zones in AEMO's Step Change scenario

Renewable Energy Zone	Number of renewable construction job years by 2030	Number of ongoing jobs by 2030	Total number of renewable construction job years by 2040	Number of ongoing jobs by 2040
Far North Queensland	1,935	135	6,835	485
Isaac	3,605	235	3,605	235
Fitzroy	1,400	50	2,520	180
Wide Bay	840	60	1,300	80
Darling Downs	7,265	445	31,170	1,770
Totals	15,045	925	45,430	2,750

Rooftop Solar

Under the Step Change scenario, Queensland's rooftop solar capacity is modelled to grow to over 7000MW by 2030 – creating an additional 21,900 installation job years, and 750 jobs in operations and maintenance. By 2040 this grows to more than 9,200MW and creates a further 12,700 installation job years, and another 440 jobs in operations and maintenance.

Distributed Batteries

Battery storage uptake is modelled to thrive under the Step Change scenario, with capacity growing to 1,250MW by 2030. This growth would underpin 6,500 installation job years by 2030, and 350 jobs in operations and maintenance. By 2040 this grows to more than 2,350MW and creates a further 6,100 installation job years, and another 330 jobs in operations and maintenance.

Footnotes and References

1. National Geographic. (2020). Trump vs. Biden on the environment—here's where they stand.
2. Beardsworth, R. & Corry, O. (2020). Climate change: Joe Biden could ride a wave of international momentum to break deadlock in US.
3. Australian Energy Market Operator. (2020). Integrated System Plan.
4. Australian Energy Market Operator. (2020). 2020 ISP Appendix 5. Renewable Energy Zones.
5. Australian Energy Market Operator. (2019). 2019 forecasting and planning scenarios, inputs, and assumptions (pp. 21).
6. Australian Energy Market Operator. (2019). 2019 forecasting and planning scenarios, inputs, and assumptions (pp. 4).
7. Institute for Sustainable Futures. (2020). Renewable Energy Jobs in Australia: Stage One. University of Technology Sydney.
8. Job factors were current as of 2020 do not take into account any declines in the amount of labour required as technology improves over time.
9. A job year is a full time equivalent job ongoing for a year.
10. Australian Energy Market Operator. (2019). 2019 forecasting and planning scenarios, inputs, and assumptions (pp. 3).

