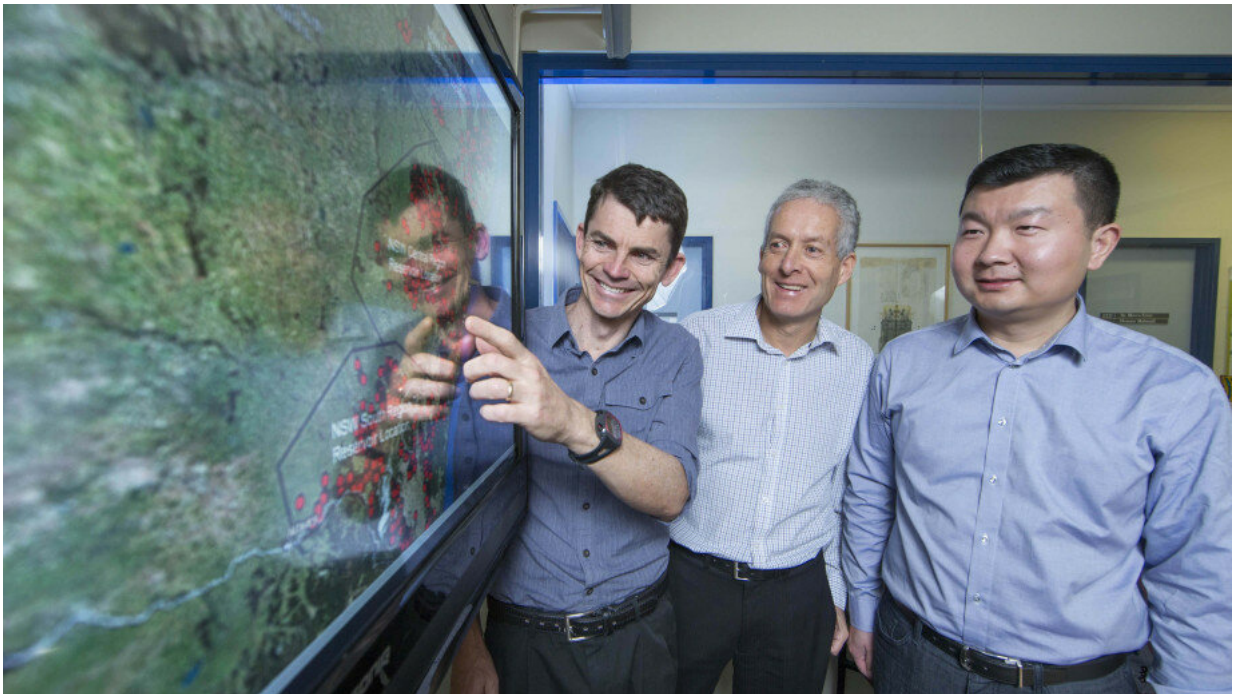


Australia streaks ahead to be renewables world champion

February 8 2019, by Will Wright



Dr Matthew Stocks, Professor Andrew Blakers and Bin Lu (left to right). Credit: ANU

Research from the Australian National University (ANU) has found that Australia is installing renewable power per person each year faster than any other country, helping it to meet its entire Paris Agreement emissions reduction targets five years early.

Lead researcher Professor Andrew Blakers said Australia was installing [renewable power](#) per capita several times faster than the European Union, Japan, China and the United States, based on preliminary data available for installations globally last year.

"The installation of renewables in Australia last year really ramped up compared to these other major economies, and we expect that trend to continue this year and beyond," said Professor Blakers from the ANU Research School of Electrical, Energy and Materials Engineering (RSEEME).

"The electricity sector is on track to deliver Australia's entire Paris emissions reduction targets five years early, in 2025—without the need for any creative accounting.

"Australia is on track to reach 50 per cent renewable electricity in 2024 and 100 per cent by 2032. The Australian renewable [energy](#) experience offers real hope for rapid global emissions reductions to preserve a living planet."

Co-researcher Dr. Matthew Stocks said the net cost of achieving the 2030 carbon emission targets set in the Paris Agreement would be zero because expensive fossil fuels were being replaced by cheaper renewables.

"The price of electricity from large-scale solar PV and windfarms in Australia is currently about \$50 per Megawatt-hour (MWh), and steadily falling," Dr. Stocks said.

"This is below the cost of electricity from existing gas-fired [power stations](#) and is also below the cost of new-build gas and coal power stations. Nearly all of the new power stations are either PV or wind. We anticipate that this will continue into the future, provided that [energy](#)

[policy](#) is not actively hindering development."

Co-researcher Bin Lu said stabilising a 100 per cent [renewable electricity](#) grid would be possible with technology that is already widely used in Australia, in addition to new smart energy systems that are being developed for electricity grids.

"We can do this with energy storage, demand management and strong interstate connection using high-voltage transmission lines to smooth out the effect of local weather," Mr Lu said.

"By far the leading storage technologies are pumped hydro and batteries. Australia's coal power stations are old and are becoming less reliable, and transition to a modern renewable energy system can improve grid stability."

Pumped hydro [energy storage](#) sites such as Snowy 2.0 require pairs of reservoirs at different altitudes, in hilly terrain and joined by a pipe with a pump and turbine. Water is pumped uphill when wind and solar energy is plentiful, and [electricity](#) is available on demand by releasing the stored water through a turbine.

More information: Australia: the renewable energy superstar:
[re100.eng.anu.edu.au/publicati ... ts/100renewables.pdf](https://re100.eng.anu.edu.au/publications/100renewables.pdf)

Provided by Australian National University

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