

Really Australia, it's not that hard: 10 reasons why renewable energy is the future

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Australia's latest greenhouse gas figures [released today](#) show national emissions fell slightly last year. This was by no means an economy-wide effort—solar and wind energy did most of the heavy lifting.

Emissions fell 0.9% last year compared to 2018. The rapid deployment of solar and [wind](#) is slashing emissions in the [electricity sector](#), offsetting increases from all other sectors combined.

Renewables (solar, wind and hydro) now comprise [26% of the mix](#) in the National Electricity Market. In 2023, renewables will likely pass black coal to become the largest [electricity](#) source.

In an ideal world, all sectors of the economy—transport, agriculture, manufacturing and others—would pull in the same direction to cut emissions. But hearteningly, these figures show the huge potential for renewables.

Here are 10 reasons why [renewable energy](#) makes perfect sense for Australia.

1. It can readily eliminate fossil fuels

About 15 gigawatts of solar and [wind farms](#) will probably start operating [over 2018-2021](#). That's on top of more than 2 gigawatts of rooftop solar to be added each year.

It averages out at about 6 gigawatts of additional solar and [wind power](#) annually. Research from the Australian National University, which is under review, shows the rate only has to double to about 12 gigawatts to eliminate [fossil fuels](#) by 2050, including from electricity, transport, heating and industry.

Fossil fuel mining and use causes 85% of total [national emissions](#) – and doubling the renewables deployment rate would eliminate this.

The task becomes more than achievable when you consider the continual fall in renewables prices, which helped treble solar and wind deployment

between 2017 and 2020.

2. Solar is already king

Solar is the top global energy technology in terms of new generation capacity added [each year](#), with [wind energy](#) in second spot. Solar and wind energy are already huge industries globally, and employ 27,000 people [in Australia](#) – a doubling in just three years.

3. Solar and wind are getting cheaper

Solar and wind electricity in Australia already costs less than it would from new coal and gas plants.

The price is headed for [A\\$30 per megawatt hour](#) in 2030. This undercuts most existing gas and coal stations and competes with gas for industrial heating.

4. Stable renewable electricity is not hard

Balancing renewables is a [straightforward exercise](#) using existing technology. The current high voltage transmission network must be strengthened so projects in regional areas can deliver renewable electricity into cities. And if wind and sun is not plentiful in one region, a stronger transmission network can deliver electricity from elsewhere. Electricity storage such as [pumped hydro](#) and batteries can also smooth out supplies.

5. There's enough land

To eliminate all fossil fuel use, Australia [would need](#) about 60 square metres of solar panel per person, and one wind turbine per 2,000 people.

Panels on rooftops take up no land, and wind turbines use very little. If global energy consumption per person increased drastically to reach Australian levels, [solar farms](#) on just [0.1% of Earth's surface](#) could meet this demand.

6. Raw materials won't run out

A solar panel needs silicon, a glass cover, plastic, an aluminium panel frame, copper and aluminium electrical conductors and small amounts of other common materials. These materials are what our world is made of. Recycling panel materials at the end of their life adds only slightly to larger existing recycling streams.

7. Nearly every country has good sun or wind

Three-quarters of the global population lives in the planet's sunbelt (lower than 35 degrees of latitude). This includes most developing countries, where most of the growth in energy consumption and greenhouse emissions [is occurring](#).

8. We will never go to war over sunshine

Solar and wind power make energy systems much more robust in the face of a pandemic, disasters or war. They are difficult to misuse in any significant way for military, terrorist or criminal activities. And it is hard to destroy billions of [solar panels](#) spread over millions of square kilometres.

9. Solar accidents and pollution are small

Solar panel accidents pale in comparison to spilled radioactive material (like Fukushima or Chernobyl), an oil disaster (like BP's Deepwater

Horizon), or a coal mine fire (like Hazelwood in Victoria). Wind and solar electricity eliminates oil imports, oil-related warfare, fracking for gas, strip mining for coal, smokestacks, car exhausts and smog.

10. Payback time is short

For a sunny country like Australia, the time required to recover the energy invested in panel manufacture is [less than two years](#), compared with a panel lifetime of 30 years. And when the world is solar powered, the energy required to produce more panels is non-polluting.

The future is bright

While COVID-19 triggered a significant fall in global emissions so far this year, they may bounce back. But if solar and wind deployment stay at current levels, Australia is tracking towards meeting its Paris target.

The Reserve Bank of Australia [says](#) investment in renewables may moderate in the near term, but "over the longer term, the transition towards renewable [energy](#) generation is expected to continue".

But there are hurdles. In the short term, more transmission infrastructure is needed. Electrifying transport (with electric vehicles) and urban heating (with electric heat pumps) is straightforward. More difficult is eliminating fossil fuels from industries such as steel and fertilisers. This is a task for the 2030s.

But it's clear that to get to net-zero carbon emissions by mid century, solar and wind are far and away Australia's best option.

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