Most Australians believe wind turbines are not really green. This is what we found

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As election day draws near, energy policy is a battleground yet again – though this time around, the debate has been largely framed as a cost-of-living issue rather than climate change.

The Albanese government's goal for renewable energy to reach 82 per cent of the grid by 2030 is back within striking distance thanks to a surge of investment in 2024.

The government made an election promise to provide incentives for uptake of household batteries, a policy that will particularly benefit the 40 per cent of home owners in outer suburbs and regional towns with rooftop solar.

The Coalition is proposing to build nuclear power plants to provide "baseload" energy, lower the price of gas by reserving some for domestic use, and temporarily drop the fuel excise. Its business case assumes renewables will be about 54 per cent of the grid, though the opposition now says this is not a "cap".

Voters trying to assess the various policies could be hampered by a few persistent myths dogging the energy debate. We have debunked a few of the most common.

Myth: Wind turbines and electric vehicles are not really green alternatives

A nationally representative survey last year found that 58 per cent of Australians find the statement "electric cars are as bad for the planet as petrol cars" somewhat or very believable.

The research published in the Ipsos Climate Change Report 2024, with a sample size of 1000 people, also found that 51 per cent find it believable that "wind farms take more energy to build than they provide to the grid over their lifetime".

Variations on these claims have done the rounds on social media, especially Facebook, for more than five years.

The most common version, illustrated by a wind turbine in flames, reads in part:

“A two-megawatt windmill is made up of 260 tonnes of steel that required 300 tonnes or [sic] iron ore and 170 tonnes of coking coal, all mined, transported and produced by hydrocarbons.”

It goes on: “A windmill could spin until it falls apart and never generate as much energy as was invested in building it.”

The claim is intended to discredit wind power altogether.

However, it comes from a partial quote from geoscientist David Hughes, writing in 2009 about so-called energy or carbon payback – how long it takes for a turbine to offset the amount of carbon emissions used in its creation.

His full quote read: “The question is: how long must a windmill generate energy before it creates more energy than it took to build it? At a good wind site, the energy payback day could be in three years or less; in a poor location, energy payback may be never. That is, a windmill could spin until it falls apart and never generate as much energy as was invested in building it.”

Hughes has told Reuters that his comments were taken out of context and were intended to show that not every location was suitable.

Since 2009, technology has improved markedly. The federal energy department says the carbon payback time for an offshore wind turbine is now five to 12 months into a 30-year lifespan, and between 85 and 94 per cent of its weight can be recycled. Various studies put the payback for onshore wind at four to six months.

Similarly, electric vehicles are emissions intensive at first because of the embedded carbon in their batteries. The average payback time is about 41,000km of driving, Bloomberg New Energy Finance (NEF) says, and their lifespan in 2024 was about 250,000km.

Payback can be expected to shrink further as technology improves.

Myth: There’s no point in acting until China does

This has been a popular line for sceptics of climate action for a decade at least, and it seems to make sense – China overtook the US as the world’s biggest greenhouse gas emitter in 2006, and it now builds more coal-fired power plants than the rest of the world put together.

But there is more to the story.

China is determined to achieve energy independence, and since it imports 60 per cent of its oil and 55 per cent of its coal, it is building a new energy system at high speed to wean itself off foreign energy sources.

“For every coal plant they build, they build six wind and solar projects, and they build a battery project, and they build a nuclear project,” says energy analyst Tim Buckley.

Last year China accounted for about 45 per cent of the world’s solar installations, 65 per cent of the world’s wind installations and 60 per cent of the world’s battery energy storage systems.

As a result, it is likely that China hit peak emissions last year, or will do so this year, five years ahead of target.

Even without its high-speed transformation, China is not the world’s singular climate villain.

It might be the biggest overall emitter, but per person China creates 8.89 tonnes of greenhouse pollution a year – much less than both Australia (15 tonnes) and the US (17.7 tonnes).

In a speech last week, apparently made with an eye on the climate policies of US President Donald Trump, Chinese President Xi Jinping said, “However the world may change, China will not slow down its climate actions, will not reduce its support for international co-operation, and will not cease its efforts to build a community with a shared future for mankind.”

Myth: We need nuclear for baseload power

Whatever the case for nuclear energy – and it is a case that is at best contested – the need for baseload power is not it.

In the Ipsos survey, 50 per cent of Australians believe that “building more renewable energy generation will lead to more blackouts and brownouts”.

Advocates for nuclear power claim that it will provide necessary baseload power for “when the sun doesn’t shine and the wind doesn’t blow”.

But the very notion of “baseload power” is old-fashioned, says Bruce Mountain, director of the Victoria Energy Policy Centre at Victoria University. He says the idea was born during the creation of the first huge coal-fired power plants in France and England in the 1930s.

Since the machines – like Australia’s ageing coal fleet – could not be turned up or down to meet demand, excess capacity had to be built into the system.

Modern grid technology is built to closely meet peaks and troughs in demand with variable renewables coming from various sources, backed by batteries, pumped hydro and gas.

The Australian Energy Market Operator predicts that reliability is likely to be maintained over the coming years as long as investment in renewable energy is adequate.

Myth: Offshore wind farms cause harm to whales

The claim that offshore wind turbines harm or even kill whales is quite simply wrong, and there is credible research that suggests it is misinformation deliberately spread by fossil fuel interests.

The claim – which half of survey respondents found believable – has been thoroughly debunked by scientists.

In fact, as reported by this masthead, whales swim around obstacles such as wind turbines.

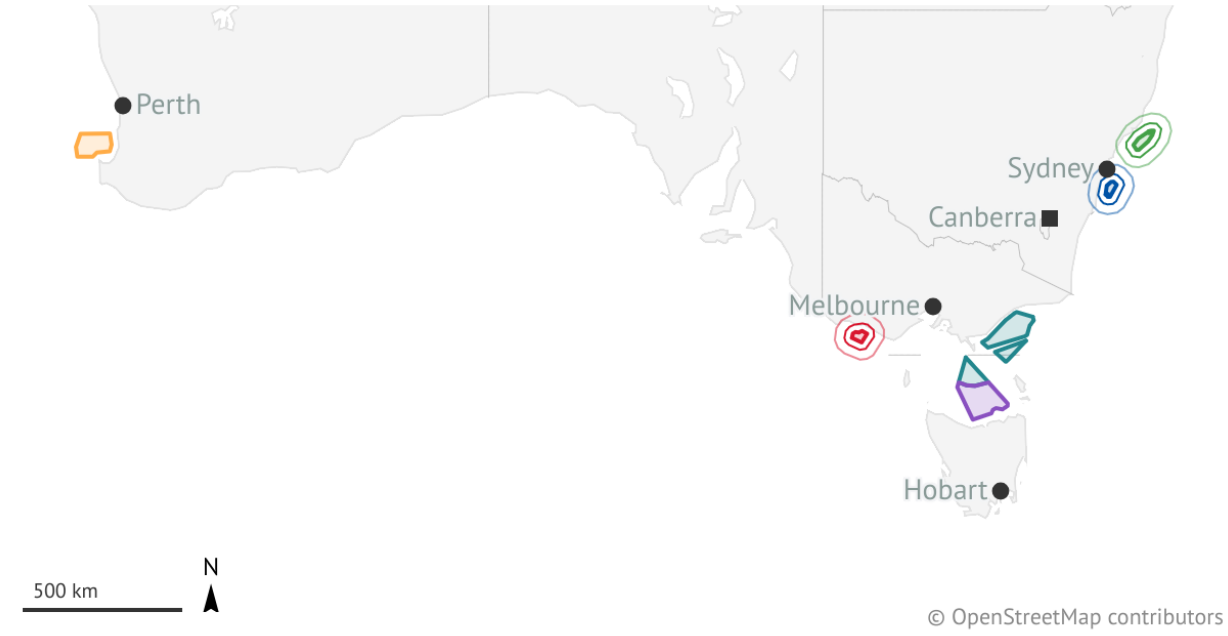
What about other species? Wind turbines in general – both offshore and onshore – can kill birds, though much less than traditional energy production, high-rise buildings, or cats, and there are solutions such as painting one blade black. Offshore wind infrastructure can benefit fish by creating an artificial reef.

Myth: Floating wind turbines are novel, unproven technology

The federal government has declared six offshore wind zones around Australia. In some locations – including the Illawarra and Hunter coasts in NSW – the proposal is to use floating turbines in deeper water.

Australia's offshore wind areas

Showing a low-resolution version of the map. Make sure your browser supports WebGL to see the full version.



Source: dcceew.gov.au/energy/renewable/offshore-wind/areas

A common criticism is that this has never been done before and is unlikely to work.

Globally, most offshore wind development to date consists of turbines fixed to the seabed floor. However, that does not mean the engineering challenges of floating turbines are new.

Associate Professor Michelle Voyer from the University of Wollongong and the Australian Centre for Offshore Wind Energy, says the offshore oil and gas industry has used floating infrastructure for years.

Floating offshore wind farms are already being built overseas, including in Scotland and Norway, she adds.

Voyer says Australia is at least seven years away from constructing floating turbines and will be able to learn from overseas experience.

“The companies involved are going to be doing a lot of work around questions of feasibility,” she said.

Myth: Building more solar and wind farms is taking away our best agricultural land

Half of Australians believe that renewable energy is taking away our best farming land, the Ipsos survey found.

In fact, wind turbines and solar panels can and do co-exist with both cropping and livestock farming, and can even provide agricultural as well as financial benefits, as reported by this masthead.

Professor Andrew Blakers, a specialist in renewable energy engineering at the Australian National University, estimates that the renewable transition needs 1200 square kilometres nationally – less if there is strong growth in offshore wind or household solar.

https://www.smh.com.au/environment/climate-change/most-australians-believe-wind-turbines-are-not-really-green-this-is-what-we-found-20250428-p5lunt.html