

# Wind power creates a strong headwind for insurers

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## At a glance

- Onshore and offshore wind farms are the fastest growing renewable energy source in Australia, and the demand is accelerating.
- Wind technology presents distinct and expensive challenges for operators and their insurers.
- As the technology evolves, there are still many unknowns, and insurers are actively informing and stabilising the market.
- Specialist loss adjusters and legal advisors have key roles to play in mitigating risks and managing outcomes.

## Wind speed

Wind power is the fastest growing renewable energy source in Australia. Acceleration in this sub-sector is expected to continue unabated to 2030 and beyond.<sup>1</sup> The Queensland Government is aiming to source 50% of its energy from renewable sources by 2030.<sup>2</sup> Construction has already started on Queensland's MacIntyre Wind Precinct and the Clarke Creek Wind, Solar and Battery Farm. Respectively, these two projects are the largest wind and renewable energy projects in Australia. Combined, they are estimated to add a further 1,500 megawatts (MW) – enough to power more than one million households.

In 2020, wind supplied around a third of Australia's clean energy (10% overall) and several gigawatts (GW) of capacity have been added since. New projects have included:

- completion of the Warradarge Wind Farm (WA) in 2020, adding 184MW of capacity

- stage 2 of the Murra Warra Wind Farm (Vic), due to be completed this year with a further 435MW of capacity
- the Rye Park Wind Farm (NSW), expected to be commissioned in 2024 with a further 396MW of capacity, made up of 66 6MW Vestas turbines, and
- the steps to declare the Bass Strait Gippsland region (Vic) as Australia's first zone for offshore wind development. This development has enormous potential.

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[Wind projects appear] to be showing no signs of slowing down.

Will Hiller, GCube

<sup>1</sup> <https://www.cleanenergycouncil.org.au/resources/technologies/wind>; <https://www.ga.gov.au/scientific-topics/energy/resources/other-renewable-energy-resources/wind-energy#:~:text=The%20wind%20energy%20industry%20is,Europe%20and%20the%20United%20States>

<sup>2</sup> <https://www.epw.qld.gov.au/about/initiatives/renewable-energy-targets#:~:text=The%20Queensland%20renewable%20energy%20target,exceeds%2050%25%20of%20Queensland's%20consumption>

According to Will Hiller, Underwriter at GCube:

*“GCube has seen continued year-on-year increases in the number of new wind projects in Australia, however, it is the size and scale of these projects where we have seen the most significant growth. It is now considered normal for wind turbines on Australian projects to be in excess of 5MW, which account for some of the largest onshore turbines in the world. This appears to be showing no signs of slowing down.”*

## Turbine technology

Wind power is not new, but the technology has rapidly evolved in recent years. Turbines are getting larger, more powerful and increasingly complex. A decade ago, the average turbine capacity was 1.5MW. By 2020, the average capacity had increased to 2.75MW and offshore turbines can now generate upwards of 13MW.

Wind turbine silhouettes look deceptively sleek and simple but a wind turbine can have as many as 8,000 integrated components and, relative to its slender physique, is disproportionately expensive to manufacture, install and maintain.

A wind farm’s commercial viability relies on the turbines operating efficiently, reliably and for longer lifespans. A decade ago, turbines had an expected lifecycle of around 20 years. Modern turbines have projected operational longevity of between 25-30 years, with scope to achieve extended service life.

## Maintenance and its challenges

Wind technology presents bespoke environmental challenges. Blades are typically compromised by bird or lightning strikes. Turbine towers can suffer from blade furniture detachment, corrosion, delamination, cracking or instability from seismic movement.

Risk of damage is mitigated by robust maintenance regimes (at least once every 6-12 months) and continuous monitoring by skilled and experienced engineers.

The wind turbine operation and maintenance market in Australia is expected to grow to almost \$900 million by 2028.

Wind farm operators continue to balance tensions between:

- capturing cost savings by extending the period between regular maintenance and the risk of breakdown or catastrophic failure, and
- extending the service life and achieving greater revenue by replacing old turbines with more powerful ones.

This is a typical operational and commercial dynamic in the ownership of any energy asset, but with wind turbines, the issue is heightened because of the components that remain relatively fragile and open to degradation.


## Turbine failures

Turbine failures often present owners and insurers with what look like disproportionate material damage costs. Turbines are regularly in remote locations, which inevitably leads to associated transport and logistical uplift. It can take months to bring a turbine back into service, leading to extended time-based BI losses.

Operators and insurers are often confined to relying heavily on the original turbine manufacturer, which acts as O&M contractor, to assess the root cause and the critical path for reinstatement. This can create natural conflicts of reliance and reliability.




Some early turbine models are also now out of manufacture, which leads to the uncertainty and delay associated with rectification programmes out of the reconditioned market, along with the usual vagaries of warranties being available and honoured.

 184MW is enough energy to power over 100,000 homes each year.

 435MW will help to offset over 500,000 tonnes of carbon emissions each year.

 Murra Warra hosts the largest onshore wind turbine in Australia – a GE Cypress 5.5MW-158 turbine.

 Each blade is over 70m long and weighs roughly 20 tonnes. That is almost double the average length of turbines manufactured in 2010.

 The GE Cypress hub stands at 140m with the tip of the blade soaring 210m above the ground. Ten years ago, the average height was around 80m.

## Uncovering the unknowns

The challenges facing insurers of renewable assets are summed up well by Andrew Hodkinson, Director at LWI:

*“With claims often being at the leading edge of uncovering the challenges in the renewables industry, it is clear that insurers are assisting with the ‘research and development’ aspects of the technologies (as claims reveal shortcomings in design) and also with finding out how much some of the supply chain delays can contribute to increasing business interruption losses. It will take some years for the industry to stabilise in Australia after such a rapid and ongoing adoption of renewables.”*

The highly technical nature of failures and the specialist manufacture of turbines means that insurers rely on a suite of professionals to determine the root cause of problems and mitigate potential losses based on sound engineering and loss experience. Specialist loss adjusters understand the evolving technology, the reconditioned market and real-time issues in the renewables space, and act as a critical friend to operators as they adjust claims effectively.

Insurers capture subrogation opportunities by instructing specialist claims professionals to navigate the complex contractual matrices and determine how contractual obligations meet (or clash with) the breadth of the insurance cover. Having a strong technical support bench in place will allow insurers to ride the tailwind as the market expands and will minimise the risk of being blown off course when the inevitable claims arrive.



It will take some years for the industry to stabilise in Australia after such a rapid and ongoing adoption of renewables.

Andrew Hodkinson, LWI

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## Need to know more?

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