# SUMMER BREAKDOWNS

## AGEING, UNRELIABLE COAL STATIONS ARE FAILING OUR COMMUNITY


RELIABILITY WATCH

Reliability Watch is a collaboration between the peak environmental bodies for Queensland, New South Wales and Victoria that builds upon the previous Gas and Coal Watch project by The Australia Institute.

This report is brought to you by the Queensland Conservation Council, Nature Conservation Council of NSW and Environment Victoria.

QUEENSLAND CONSERVATION COUNCIL

Nature Conservation Council The voice for nature in NSW

environment victoria

# Executive Summary

Australia's coal fired power stations have struggled through another hot summer with frequent breakdowns. Coal in the National Electricity Market (NEM) is ageing, unreliable and needs to be replaced.

Both NSW and Victoria's coal fleet had an average of 25% of their capacity offline at any point from 1 October 2025 to 28 February 2026. Queensland was only marginally better at 24% offline.

**In total during this peak summer period, there were 108 outages at coal-fired power stations across the NEM, including 18 scheduled and 90 unplanned breakdowns.** Gladstone and Callide C in Queensland, Loy Yang A in Victoria and Eraring in NSW each had more than 10 breakdowns in the five months.

As well as unplanned outages, almost all units with scheduled maintenance overran the forecast time that this would take. On average, units were offline for 14 days more than predicted at the beginning of the summer period. Yallourn 2 and Tarong 1 were both offline for more than 60 days more than predicted.

These persistent breakdowns and maintenance overruns show that it is increasingly difficult for power station operators to keep power stations online, exposing customers to higher prices due to increasing risks of supply shortages.

**Rising renewable energy is bringing down prices, and protecting consumers from both high gas prices and continued coal unavailability.**

Over the summer period, renewable energy has contributed around 50% of electricity in the NEM. This is several percent higher than previous year, and has contributed to wholesale prices being lower this summer period than the previous two, despite demand going up.

The systemic maintenance overruns and continued high rates of coal fired power station breakdowns presented here make it clear that our coal-fired power stations are no longer up to the task of providing affordable and reliable energy, and need to be replaced with new clean energy alternatives.

# Coal-fired power stations in the NEM

Australia's National Electricity Market (NEM), which connects the eastern seaboard states, South Australia and Tasmania, was built around coal-fired power stations. In 2004, coal provided 88% of the electricity in the NEM. This has fallen rapidly to 54% in 2025 [1].

There are still 15 operating coal-fired power stations in the National Electricity Market:

- Three brown coal power stations in Victoria
- Four black coal power stations in New South Wales
- Eight black coal power stations in Queensland

These power stations add up to more than 21 GW of capacity in the NEM.

# Availability

Between October 2025 and February 2026, coal-fired power stations were, on average, unavailable 24.5% of the time. This means an average of 5.3 GW of capacity was not available to the market on any given day.

This report uses data submitted by coal-fired power stations to tell the **Australian Energy Market Operator (AEMO)** the amount of capacity they have available to input into the grid every five minutes. This takes into account any scheduled maintenance or unplanned outages. It also reflects any constraints that limit a unit's output below its maximum capacity. This is termed **availability**, reported in megawatts (MW). Availability indicates the maximum potential generation of the unit at that time. The **generation** of the unit, reported in megawatt-hours (MWh) will depend upon demand and price.

Coal-fired power stations require maintenance to be able to continue to function. AEMO's long term forecasting assumes that coal-fired power stations will be unavailable due to planned and unplanned maintenance, including partial breakdowns, around 10% of the time [2].

The summer period, from November to February particularly, should be times that coal-fired power stations avoid scheduling maintenance to be available for periods of high demand, so that availability should be at or better than the forecast 10%. However, only Millmerran, Mt Piper and Loy Yang B achieved above the long term forecasting average of 90% availability. Gladstone had the worst availability, offering on average only 59% of its capacity to the market (Figure 1).

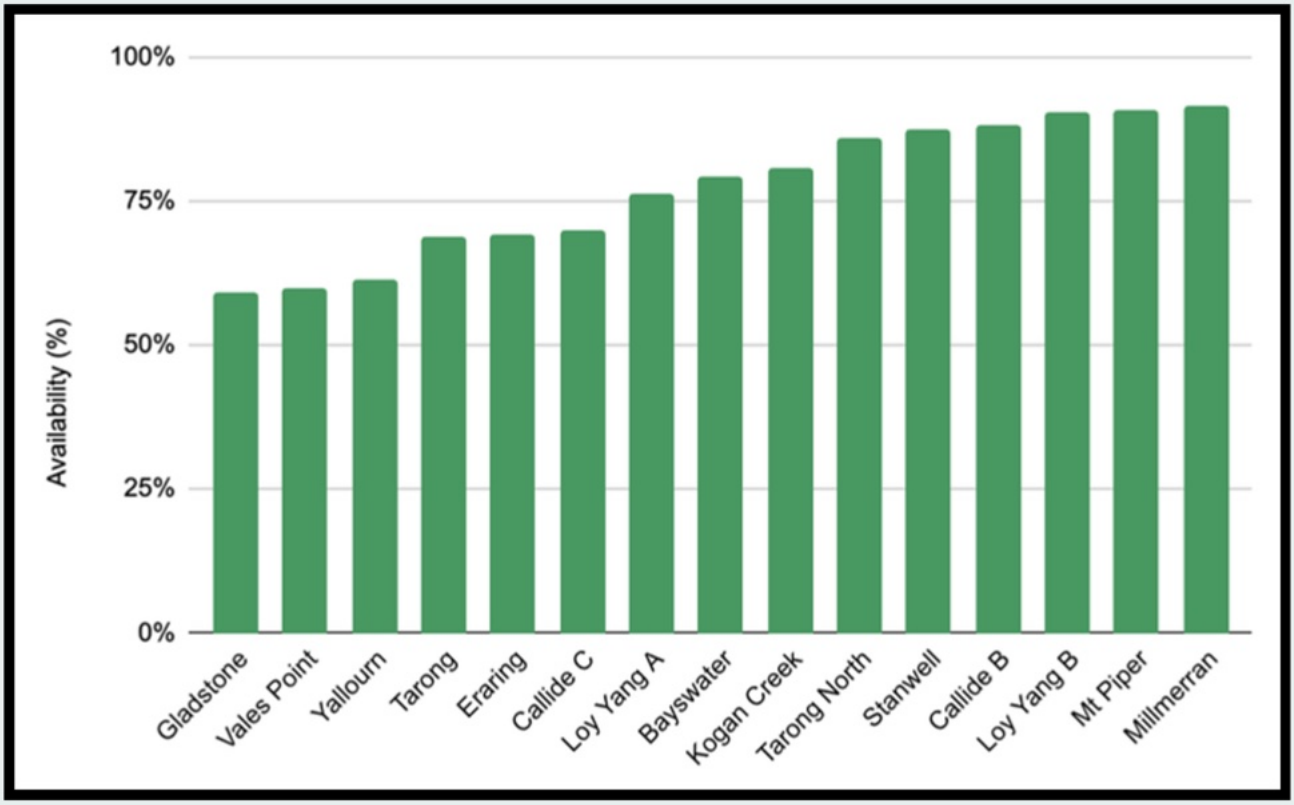


*Figure 1: Availability by power station October 2025 - February 2026*

Looking at availability results by unit instead of station shows that seven units were available less than half the time (Figure 2).

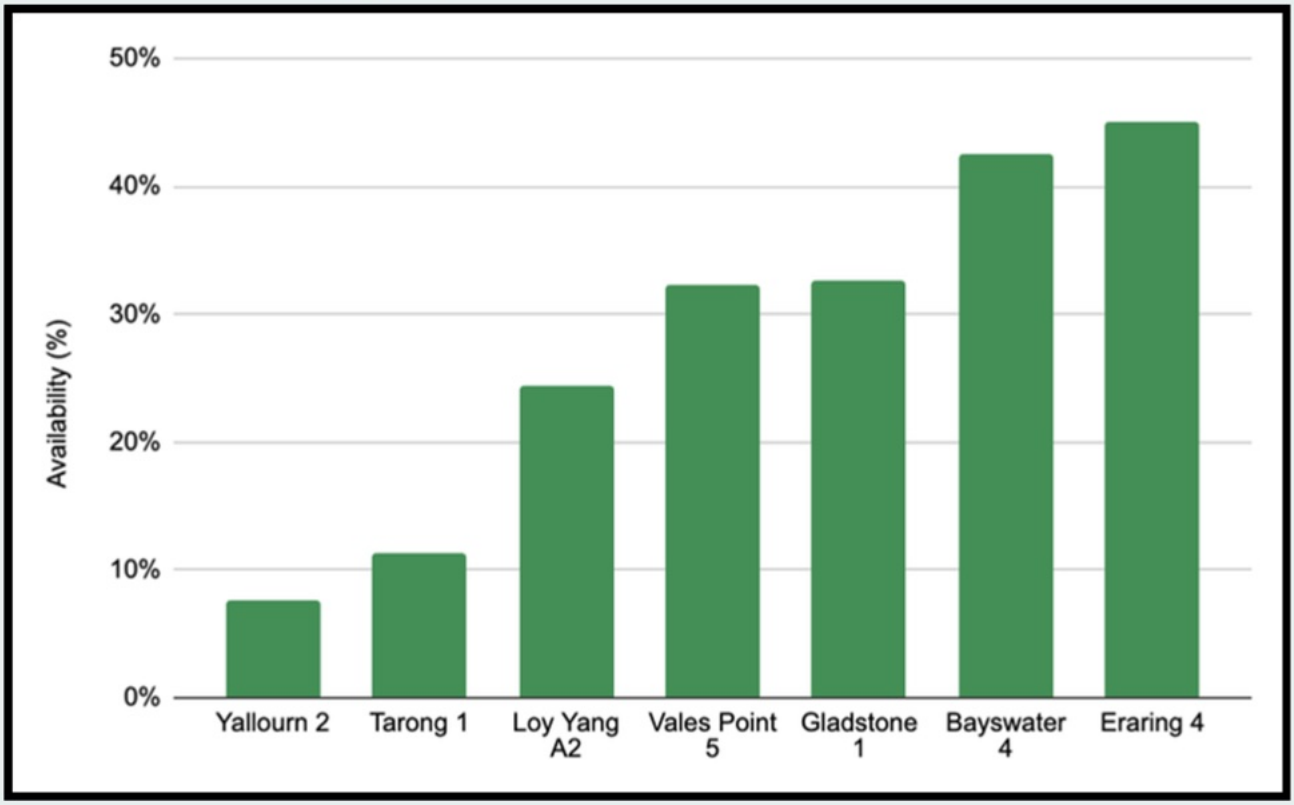


*Figure 2: worst performing coal units October 2025 - February 2026*

Nineteen units across the coal-fired power stations were entirely offline for more than 1000 hours during the period, including all units at Gladstone, three of four Yallourn units and two of four Eraring units (Figure 3).

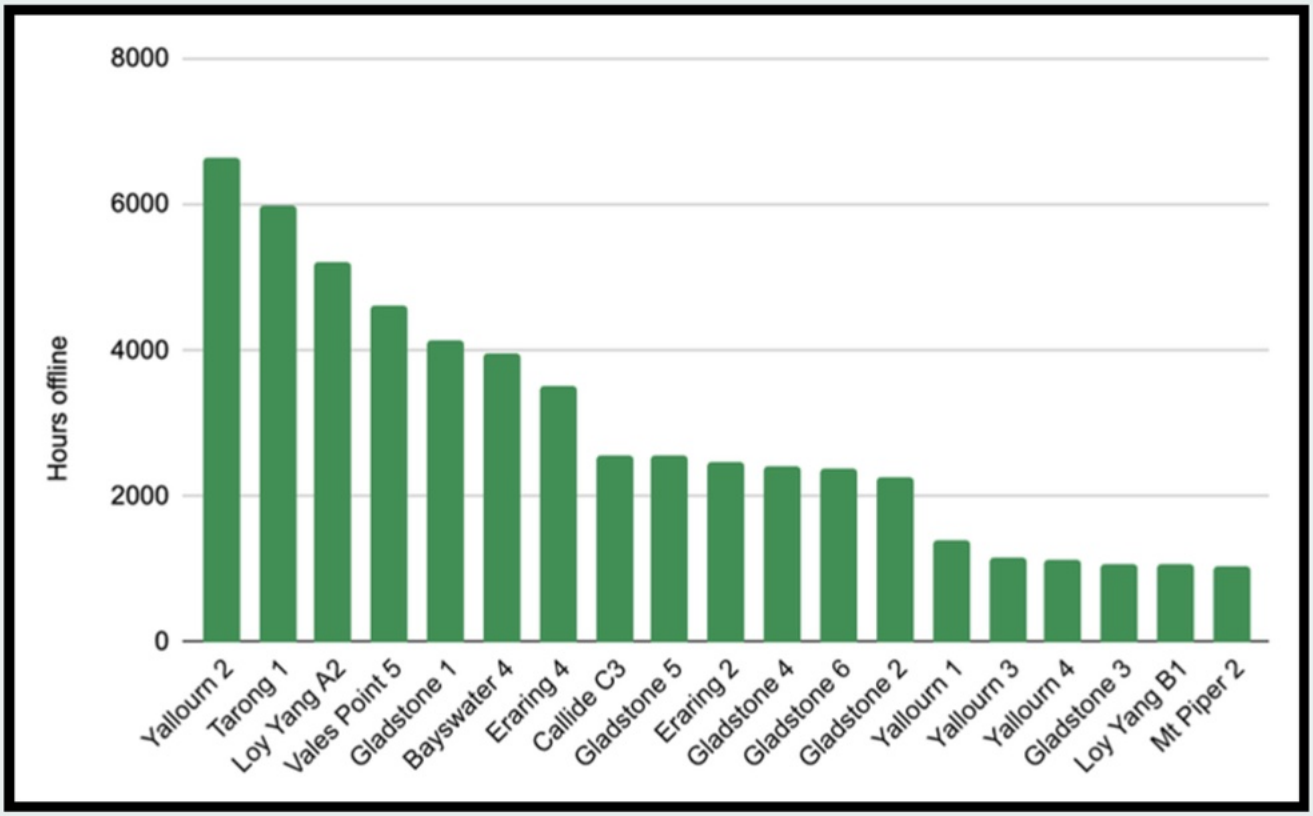


*Figure 3: Coal units offline for more than 1000 hours over October 2025 - February 2026*

## Forecast compared to actual

The generators submit their forecast availability to the Australia Energy Market Operator to create the **Medium Term System Adequacy Projection Assessment (MTPASA).**

At the beginning of October 2025, the coal-fired power stations were forecasting that 11% of their capacity would be unavailable over the period, so they would have 89% availability until the end of February 2026 [3].

In reality, 25% of coal-fired power stations capacity was unavailable over this period. This was due to a combination of derating, where a unit was unable to reach its full capacity, and breakdowns or maintenance overruns, where the unit was completely offline.

There were 15 units scheduled for maintenance of more than seven days over this period. All but two of these overran their maintenance. Yallourn unit 2 and Tarong unit 1 were offline for around twice as long as predicted: 138 days instead of 70 at Yallourn 2 and 114 days instead of 53 at Tarong 1. This overrun at Tarong 1 likely contributed to the cancellation of Tarong 3's planned maintenance. On average, units overran their maintenance predictions by 14 days, or two weeks (Figure 4)

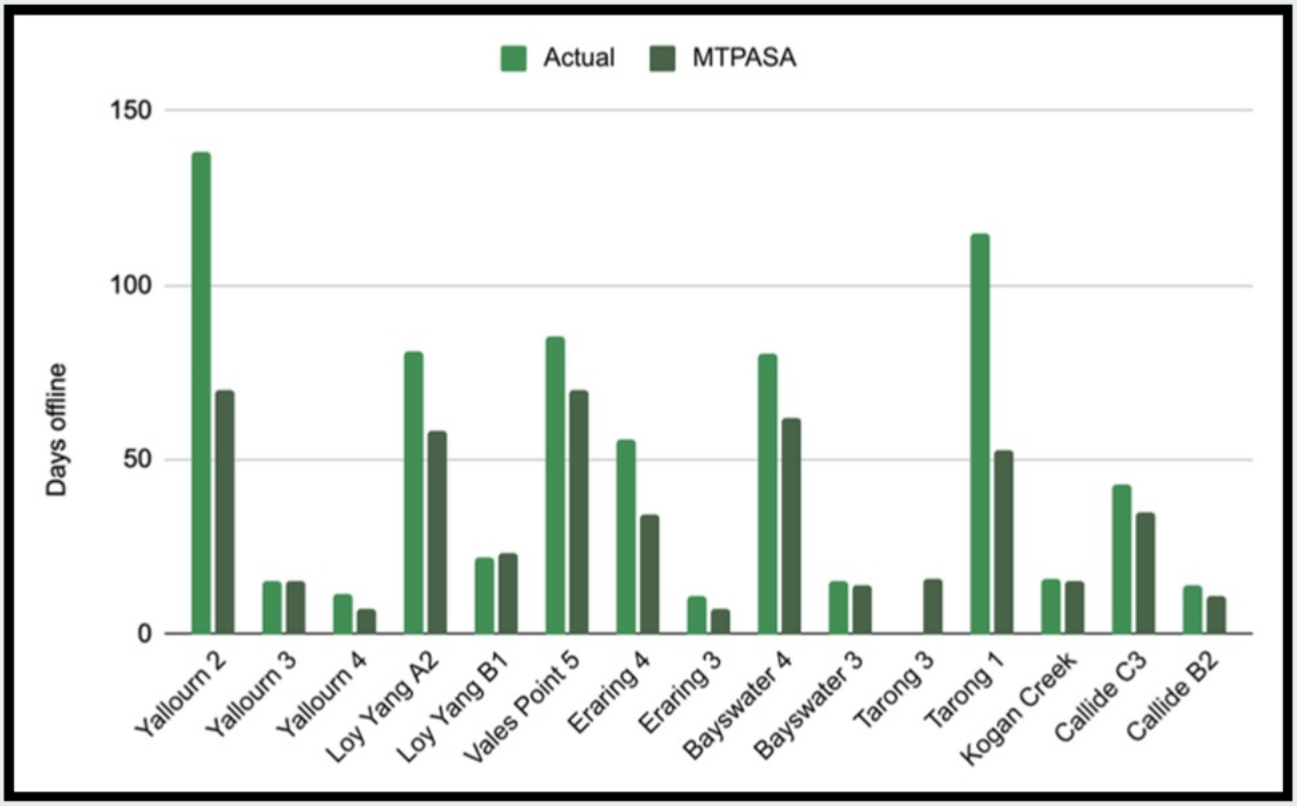


*Figure 4: Planned outages vs actual breakdowns October 2025 and February 2026*

# Breakdowns

To define breakdowns, the availability data submitted to AEMO was analysed to find the periods where coal-fired power stations offered no capacity to the market, by submitting a zero availability bid. This data was then filtered to remove any instances of **two shifting** where some units have begun offering zero availability during the middle of the day. However, this is not yet common.

The data was then compared to the availability submitted at the beginning of October, to remove planned maintenance. This method likely returns a higher number of breakdowns than will be picked up by the Reliability Watch website, which will track in real time when units experience a rapid loss of generation. Slower breakdowns can be picked up in post analysis, as can shut downs planned closer to real time. Breakdowns which are planned less than six months in advance are still included in this analysis, because although maintenance outages may be planned at short notice, they are still disruptive to the system and should be considered forced outages.

At the beginning of October 2025, coal-fired power stations submitted 18 planned maintenance shutdowns across the NEM for the period until the end of February. Instead of these 18 outages expected by AEMO, from October to February there were actually 108 outages (Figure 5). **This is 90 breakdowns in five months.**

**Combined with the analysis of the previous winter months from April - September 2025 this is a total of 209 breakdowns at coal-fired power stations over the year.**

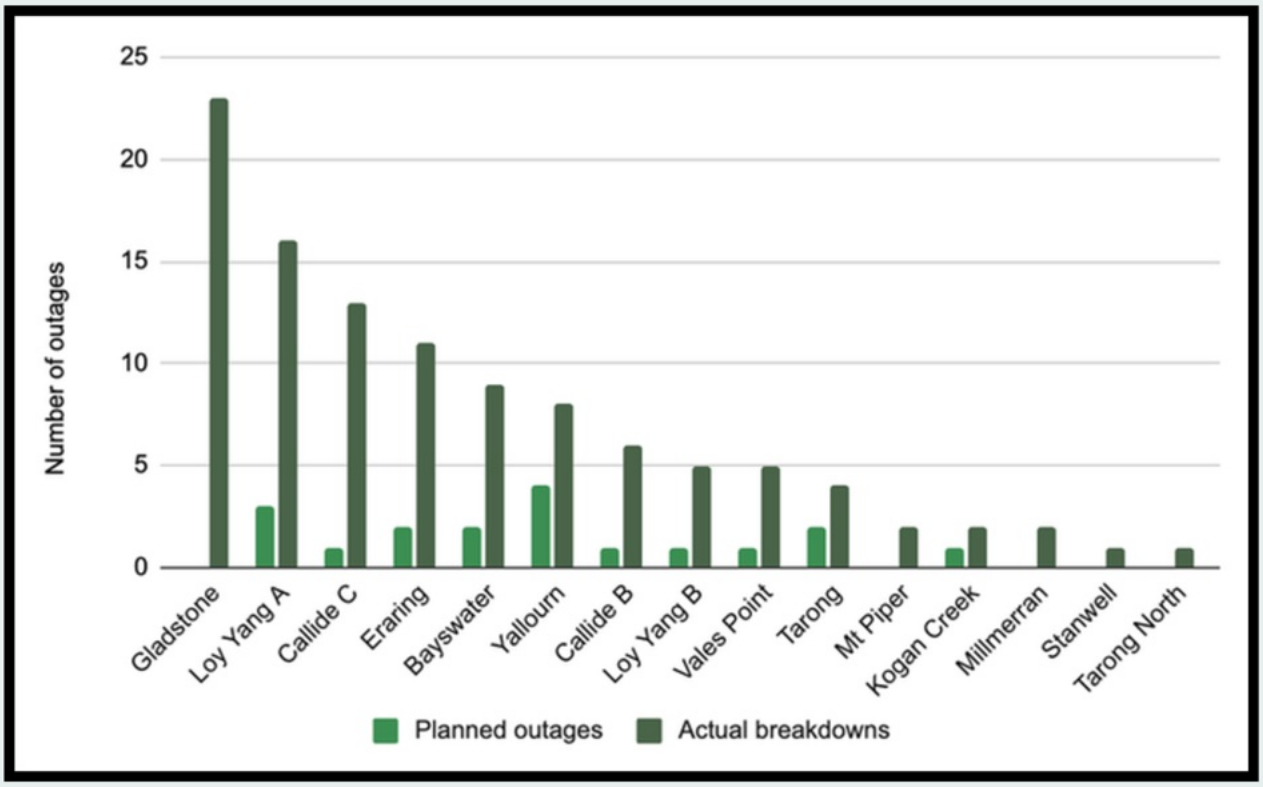


*Figure 5: Planned outages vs actual breakdowns April 2025 - September 2025*

# Appendix A: Coal-Fired Power Stations Background

## Technology

In all coal-fired generators, coal is burnt to create steam. At high pressure, this steam turns a turbine which creates the electricity. The steam is then condensed back to water [4]. Most coal-fired power stations have several individual turbines, or **units**, which can operate independently. Across the 15 coal-fired power stations in the NEM, there are 44 units. Kogan Creek in Queensland is the only coal-fired power station with a single turbine, or unit, and Gladstone has the most, with 6 units.

Australia's coal-fired power stations differ on their fuel and efficiency. Victoria's **brown coal**, or lignite, has low energy density so Victorian coal-fired power stations have the highest carbon emissions intensity for the same electricity output. All coal-fired power stations in NSW, and the older Queensland stations, are **subcritical**, where the coal is burnt in a traditional boiler to create steam. Newer coal-fired power stations in Queensland are **supercritical**. In these stations, the water is pressurised above a critical point so that the process can be more efficient. Figure 7 shows the emissions created, in carbon dioxide equivalent (CO2e) for every kilowatt hour (kWh) of electricity generated across the three categories.

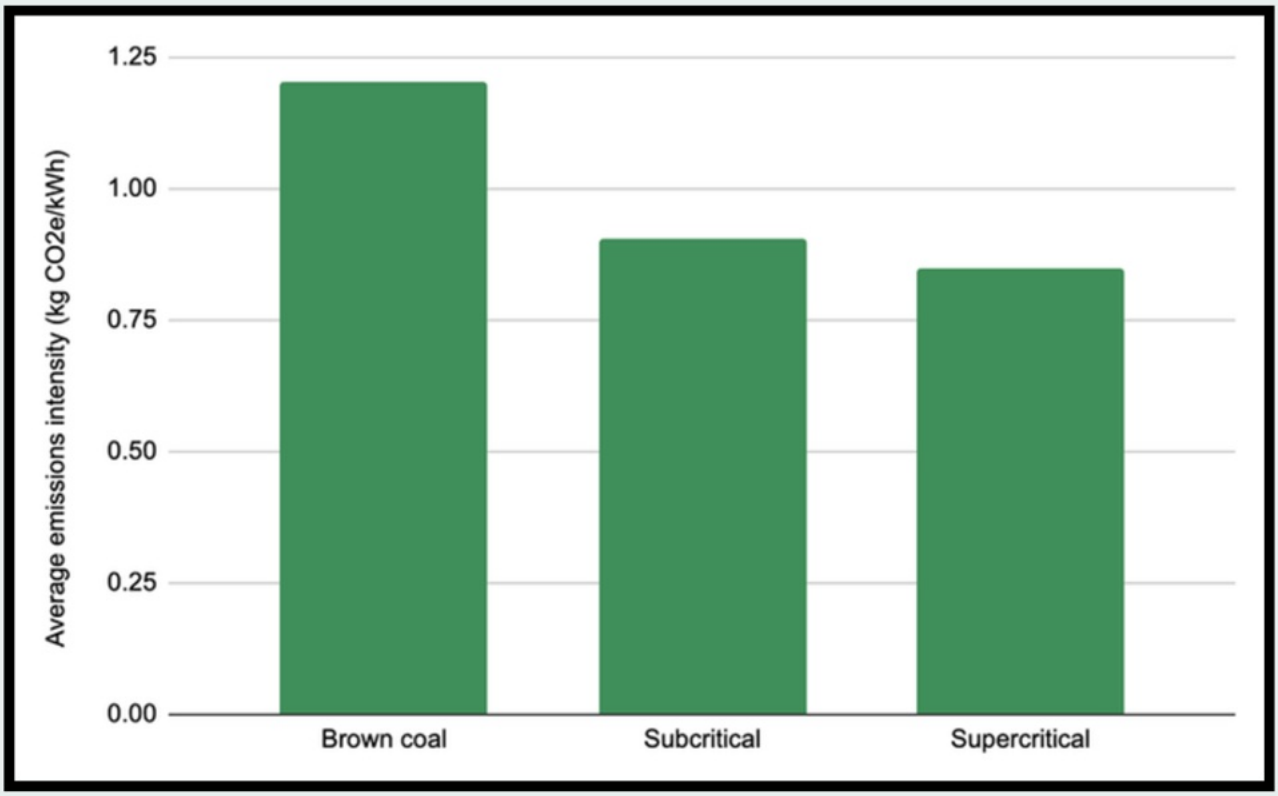


*Figure 6: Emissions intensity of brown coal, subcritical black and supercritical black coal-fired power stations in Qld, NSW and Victoria [5].*

## Ownership

Almost all coal-fired power stations in Australia were built by state government-owned corporations. There are only a handful of exceptions. Millmerran in Queensland was fully privately built. Callide C and Tarong North also in Queensland were originally joint public private partnerships, although Tarong North has been bought back by the Government.

Queensland has retained ownership of most of its power stations. Victoria sold its off in the 1990s and NSW in the 2010s. Victoria's coal-fired power stations are now owned entirely by retailers. EnergyAustralia, AGL and Alinta energy own one power station a piece. AGL, EnergyAustralia and retailer Origin own a power station each in NSW as well.

## Age

The youngest coal-fired power station in the NEM, Kogan Creek in Queensland, was commissioned in 2007.

**The average age of power stations in the NEM is 35 years.**

Since 2007, 12 power stations around the NEM have closed, taking 7.3 GW of capacity out of the system. These coal-fired power stations were retired at an average age of 45 years [6].

Figure 7 shows that many still operating coal-fired power stations are older than stations that have already retired due to old age.

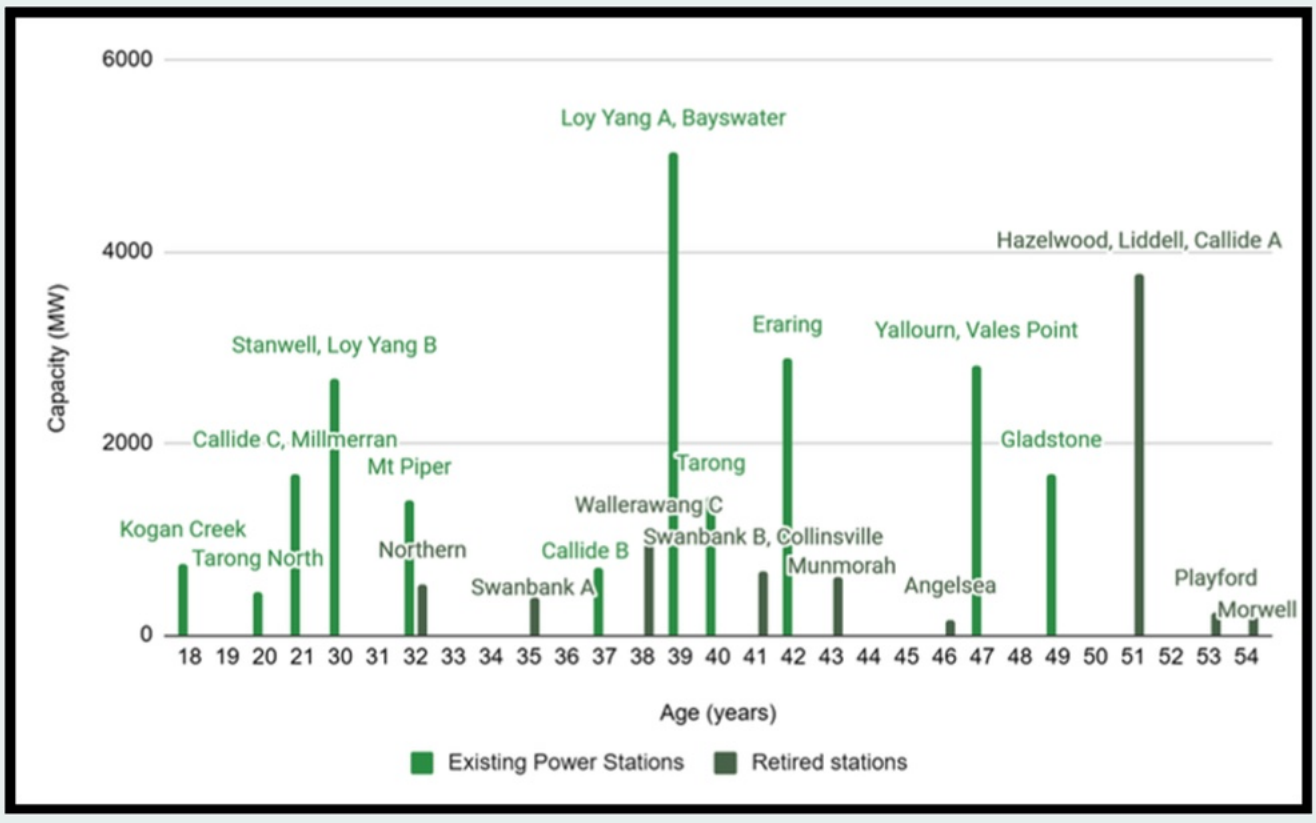


*Figure 7: Coal-fired power stations (existing and retired since 2007).*

# References

[1] OpenElectricity (2025) Energy in the NEM

[2] AEMO (2025) 2025 Inputs, Assumptions and Scenarios Report

[3] Australian Energy Market Operator (2025) *Medium Term Projected Assessment of System Adequacy by Dispatch Unit ID*

[4] Tennessee valley Authority (2025) How a Coal Fired Power Station Works

[5] Clean Energy Regulator (2025) *Corporate Emissions and Energy Data 2023-24*

[6] Note that this analysis doesn't include Redbank Power Station which operated for 14 years in NSW and closed due to economics partly driven by unusual coal supply arrangements.

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