Climate Council of Australia

Submission to: Inquiry into artificial intelligence and data centres

Addressed to: The Senate Environment and Communications References Committee
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About the Climate Council

The Climate Council is Australia's own independent, evidence-based organisation on climate science, impacts and solutions.

We connect decision-makers, the public and the media to catalyse action at scale, elevate climate stories in the news and shape the conversation on climate consequences and action, at home and abroad.

We advocate for climate policies and solutions that can rapidly drive down emissions, based on the most up-to-date climate science and information.

We do this in partnership with our incredible community: thousands of generous, passionate supporters and donors, who have backed us every step of the way since they crowd-funded our beginning as a non-profit organisation in 2013.

To find out more about the Climate Council's work, visit www.climatecouncil.org.au.

Introduction

The Climate Council welcomes the opportunity to make a submission to the Senate Environment and Communications References Committee inquiry into artificial intelligence and data centres. As Australia's leading, independent voice on climate science, impacts and solutions, we hold significant concerns about the impacts that the new wave of data centre development, driven in large part by a surge in demand for artificial intelligence, could have on our shift to renewables, our climate, and our water resources – unless our governments act now.

The data centre boom is occurring during a critical shift from fossil fuels to renewable energy to cut climate pollution and keep communities safer from worsening fires, floods and extreme heat. Climate-fuelled disasters across Australia are already more frequent and intense, and communities are living with the consequences. In New South Wales, the most recent budget showed disaster costs in that state have increased 1000% since the Black Summer bushfires of 2019/20. Unless we accelerate our switch to clean alternatives, and away from coal, oil and gas, events like these will continue to escalate.

Right now, governments are actively supporting data centre and AI infrastructure development, while acknowledging the importance of sustainable growth. While some work is underway, current regulatory and planning frameworks do not yet provide sufficient safeguards to ensure data centre growth does not put our energy or climate targets at risk.

The Climate Council's latest report, *Clouded future: Managing the risks of the data centre boom* sets out the risks that poorly managed data centre development poses for our climate. Our report found that:

- There are already 162 operational data centres, and at least 90 proposed new data centre projects in Australia.
- The data centre industry is already a significant energy user, and demand is expected to triple by 2030. By then, the industry could comprise 6% (12 TWh) of electricity demand in our main grid, around enough to power all the homes in Victoria.
- Data centre energy demand has already nearly doubled in Victoria in the past 12 months, and risen 18% in NSW. If all proposed projects in Australia were to go ahead, their total maximum demand would be more than 21 GW – or more than seven times the capacity of Eraring, Australia's biggest coal-fired power station.
- Water demand from this industry is also surging as Australia's climate is becoming hotter and drier. The industry estimates its water demand will triple by 2030.
- Without intervention, data centre electricity demand will be met by more polluting coal and gas; delaying the retirement of ageing and unreliable coal stations and increasing reliance on expensive fossil gas. By 2035, this could lead to:
    - our national electricity grid being 14% more polluting than it otherwise would be
    - wholesale power prices rising across Australia – as high as 26% in NSW and 23% in Victoria.

Governments and industry have a critical window of opportunity to ensure data centre growth does not derail the progress we are making toward our climate goals.

Industry, governments at all levels, regulators and system operators all have a role to play in mitigating the risks associated with poorly managed data centre growth. While the Australian Government's expectations for data centres are a signal to the industry, strong, enforceable requirements are needed. State governments, regulators and utilities are where key decisions around data centre approvals and connections are made.

Embedding robust, nationally consistent sustainability criteria for data centres into policy and regulatory frameworks will reduce the risks associated with data centre growth, while also providing greater clarity and certainty for investors. Strong policy settings would bring Australia in line with other jurisdictions around the world including the European Union and Singapore.

Data centre operators and their customers have significant financial capacity, and many are already taking steps to source renewable energy and increase water and energy efficiency. They are well-placed to meet strong regulatory requirements.

Our report makes seven key recommendations to apply to all future data centres in Australia, including those already under assessment. Central to protecting Australians from worsening climate harm and power price spikes is a requirement for data centres to support additional renewable energy and firming capacity to match their demand – beyond what would have been built without the industry's demand and support.

Our recommendations are outlined on the following pages.

Importantly, our work considers the intersection of data centre growth with Australia's shift to renewables, climate targets, and water resources. The responsibility to address these issues lies with both data centre operators, and the customers – including global technology and AI companies – that lease these spaces, and are driving the surging demand for new data centre infrastructure. We acknowledge the range of additional environmental, social, ethical, economic and work force concerns relating to data centres and AI, and the importance of taking action to address them alongside managing the climate and energy impacts of data centre infrastructure.

Climate Council recommendations

1. Require data centres and their customers to support additional renewable energy and firming capacity to match their demand

Building on the industry's proactive work to offset its energy use, and ECMC's agreement that data centres should invest in additional renewable generation and firming capacity, data centres in Australia must be required to support the development of new wind, solar and firming capacity. This new capacity must be beyond what would have been built without the industry's demand and support – reflecting both the scale of their electricity demand and their capacity to contribute to system-wide outcomes.

Implementation of this requirement should include:

- Establishing credible mechanisms to demonstrate additionality, for example requiring data centres to provide evidence of pre-financial close Power Purchase Agreements (PPAs) as the primary mechanism. Renewable Energy Guarantee of Origin (REGO) certificates may be used alongside PPAs to ensure ongoing location and time-matching of renewable supply.

- Ensuring investment underpinned by data centres is additional to projects already supported through national, state and territory energy schemes, including the Capacity Investment Scheme.

- Working with stakeholders to develop mechanisms to ensure both data centre operators and their customers are accountable for meeting requirements, in ways that support effective renewable investment. For example, this could be underpinned by a requirement for anchor tenants to provide information to government and utilities as part of grid connection and planning assessment processes.

- Incorporating a reasonable transition period of up to three years for new facilities to scale up to 100% renewable procurement as soon as possible from the commencement of operations. Throughout this transition period, operators and customers could be encouraged to contract PPAs with existing generation and storage, noting a significant volume of existing PPAs are expected to retire in the coming years. This approach would account for practical delivery realities between renewable projects and data centre developments, while ensuring direct renewable electricity procurement and investment, rather than offsetting.

- Safeguards to ensure that at a minimum, any new data centre's energy use is no more emissions-intensive than the grid from day one of operations. This must include rules to prevent data centre operators from building off-grid fossil fuel generation, which would be a material step backwards for our shift to renewables.

2. Make best-practice energy and water efficiency ratings the standard for all data centres

Many data centres already seek to optimise their water and power use. However, there is a clear role for government to reinforce and standardise these efforts by setting consistent, transparent performance benchmarks. This could include, for example, requiring a minimum five-star NABERS Energy rating, alongside a defined Water Usage Effectiveness (WUE) threshold. As part of this, data centres should be expected to maximise the use of alternative water sources – including recycled water and on-site water harvesting – wherever feasible.

Clear outcome-based standards would provide greater certainty for industry, create a level playing field, and build public confidence that data centres are using energy and water resources responsibly. There can be trade-offs between energy and water efficiency, and cooling requirements vary depending on the local climate. Governments should work with industry to develop standards that drive the highest possible efficiency outcomes while allowing data centres to be designed appropriately for the local infrastructure, resources and needs. These benchmarks should be regularly reviewed and progressively strengthened to reflect technological advancements and evolving industry and international best practice.

3. Require data centres to use flexible demand, backed by renewable solutions

Data centres should be integrated as active, flexible participants that enhance grid stability, rather than strain it. Through the ECMC, all Australian jurisdictions except Queensland have agreed that data centres should provide demand flexibility services to avoid additional costs being borne by consumers, and have tasked the AEMC with developing advice on implementation options.

Reliance on fossil diesel backup generators should be minimised as far as possible as part of demand flexibility requirements, for example through co-location with battery storage and adoption of alternative fuels. Necessary policy and reforms to support the development and adoption of low-emissions fuels and battery storage should be considered alongside this.

Where possible, data centres should also be encouraged to manage their workloads in ways that support the grid, for example shifting non time-sensitive workloads to the middle of the day, while performing only essential tasks – or drawing on battery storage – during the evening peak.

4. Ensure data centres pay for the energy and water infrastructure they need to protect households from rising bills

In Australia, data centres are already required to pay for network and water infrastructure upgrades that directly benefit their site. However, where augmentations are required in shared infrastructure, cost recovery is more complex, and the costs may be borne by homes and businesses.

Frameworks must ensure the data centre operators and customers, rather than homes and businesses, absorb these costs. Australian governments are working to review cost recovery arrangements to ensure data centres cover network upgrades and data centre growth. An equivalent review should be undertaken in relation to water infrastructure, ensuring data centre growth does not shift avoidable costs onto households.

While regulatory regimes are reviewed and actioned, water and energy utilities should be encouraged to negotiate agreements with developers that ensure data centres pay for any infrastructure upgrades required.

5. Increase transparency of the magnitude of current and future water consumption, energy use and climate pollution

Reliable and transparent information on the magnitude of both current and future demand is a critical foundation for effectively planning for and reducing impacts.

While Australia's largest data centre operators are required to report on their energy use and climate pollution through the National Greenhouse and Energy Reporting Scheme, operators below the reporting threshold are not captured, there is very little transparency of customer energy and water use and emissions, and information on water use remains a gap.

The significant variation between industry and institutional forecasts shows there is a need for governments at all levels, and industry, to work together to develop a nationally consistent framework that balances commercial sensitivity and security considerations with best practice reporting standards.

ECMC is already working to improve AEMO's visibility of data centre energy demand. The NSW Government has indicated it intends to collaborate with industry to improve approaches for forecasting both water and energy demand, including by aligning assumptions. The data centre industry has also recently published its own estimate of Australia's pipeline capacity to inform policy and planning.

We can build on this momentum to set up a framework for nationally consistent reporting for both data centre operators and customers, including on electricity use, water use, backup generation and climate pollution. As part of this, a consistent approach to forecasting should be developed to allow governments, regulators and utilities to better coordinate and plan for data centre development.

6. Explore options to encourage best-practice regional data centres

Governments should explore options to encourage data centre development in regional Australia where appropriate, particularly in areas with strong renewable energy and water resources, and available network capacity. If done well, this could help reduce network augmentation costs, reduce strain on water resources, ease transmission constraints and unlock additional network capacity while supporting regional development.

Government coordination could identify and proactively promote development in suitable regions. Prioritised planning approvals and streamlined electricity connection processes could be offered for data centres located in suitable regional areas, while still ensuring all environmental, planning and community requirements are fully met. It is essential that any such approach is underpinned by robust frameworks for community and First Nations engagement, transparency, benefit sharing, and environmental protection.

7. A collaborative, coordinated approach to data centre development

Data centre development spans various policy areas including infrastructure and planning, climate change, environment, energy, water and skills, as well as multiple levels of government, regulators and utilities. Effective coordination across these institutions and industry is essential to mitigating the risks of data centre growth, and harnessing the potential benefits — for example, by aligning data centre growth with renewable energy development, network capacity, and water availability.

As part of this, governments should work with stakeholders to address barriers to the adoption of sustainable technologies and practices. This means ensuring that our regulatory settings, infrastructure and workforce can support responsible data centre development at the pace and scale required.

Attachment 1:

Clouded future: Managing the risks of the data centre boom

CLIMATE COUNCIL

CLOUDED FUTURE: MANAGING THE RISKS OF THE DATA CENTRE BOOM

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Thank you for making an impact.

The Climate Council is 100% independent and community-funded. We rely on word-of-mouth and donations from the general public to provide reliable and quality research, socialise it and then campaign for the solutions we need. If you'd like to support more reports like this go to: www.climatecouncil.org.au/donate

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The Climate Council acknowledges the Traditional Owners of the lands on which we live, meet and work. We wish to pay our respects to Elders, past and present, and recognise the continuous connection of Aboriginal and Torres Strait Islander peoples to land, sea and sky. We acknowledge the ongoing leadership of First Nations people here and worldwide in protecting Country, and securing a safe and liveable climate for us all.

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Key Findings

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Australia is in the midst of a critical clean energy switch and data centre boom. Governments must act right now to secure our energy and climate imperatives.

- Australia is rapidly scaling up renewables to phase out fossil fuels, cut climate pollution and keep our communities safer from worsening fires, floods and heat. The disaster toll is already severe with costs up 1000% in NSW since 2019/20.
- Clean energy is not only critical to our safety but also underpins our economic prosperity: employing Australians, boosting energy security, powering new industries and driving down costs.
- At the same time, Australia is emerging as a global data centre investment hotspot: with 162 data centres already built and more than 90 projects in development.
- The data centre industry is already a significant energy user, and demand is expected to triple by 2030. By then, the industry could comprise 6% (12 TWh) of electricity demand in our main grid, around enough to power all the homes in Victoria.

2

A surge in energy and water demand from data centres is underway, with mega projects set to rival our largest industrial users.

- Data centre energy demand has already nearly doubled in Victoria in the past 12 months, and risen 18% in NSW. If all proposed projects in Australia were to go ahead, their total maximum demand would be more than 21 GW – or more than seven times the capacity of Eraring, Australia's biggest coal-fired power station.
- Mega "hyperscale" data centre proposals are set to rival our largest industrial energy users. For example, the proposed 1.2 GW Mamre Road facility in NSW has a maximum capacity 25% greater than the Tomago Aluminium Smelter.
- Water demand from this industry is surging as Australia's climate is becoming hotter and drier. Water utilities are receiving single-site connection requests for up to 40 million litres – 16 Olympic swimming pools worth – per day.
- If managed proactively, data centre demand could contribute to our energy security, with more renewable generation that also delivers lower cost power.

3

Without strong rules, data centre demand will push up power prices for homes and businesses, and worsen climate risks.

- If data centre energy growth is matched with more gas, rather than renewables and storage, wholesale power prices could rise across Australia as high as 26% in NSW and 23% in Victoria by 2035.
- Matching new data centre load with additional, lower-cost renewables and storage would almost entirely avoid dumping extra costs onto households, other industries and businesses.
- Without intervention, data centre electricity demand will be met by more polluting coal and gas; delaying the retirement of ageing and unreliable coal stations and increasing reliance on expensive fossil gas. Our national electricity grid could be 14% more polluting than it otherwise would be in 2035.
- Developers of data centres, and their big tech customers, should fund approaches that lock in the benefits of our national switch to clean energy, avoid unnecessary price hikes and prevent further climate damage.

4

Enforceable rules can ensure the data boom supports a reliable, clean grid that secures Australia's future.

- Given what's at stake, governments must move beyond voluntary signals to enforceable, nationally uniform requirements for data centres and their customers to:
  - Support additional renewable energy and firming capacity, and restrict use of offsets;
  - Maximise energy and water efficiency and avoid drawing on drinking water supplies;
  - Use flexible demand, backed by renewable solutions, to keep our energy system reliable and secure;
  - Pay for the energy and water infrastructure they need; and
  - Make current and future water consumption, energy use and climate pollution more transparent.
- By coordinating planning, promoting best-practice regional data centre development and ensuring renewable energy infrastructure is delivered at the pace and scale required for our entire economy, governments can enable the data centre industry to play a more constructive role.
- Choices made now will determine if the data centre industry – and its global tech customers – act as partners in Australia's climate goals, or become a reason they're derailed.

Introduction

Australia is in the midst of a critical shift from fossil fuels to renewable energy to cut climate pollution and keep communities safer from worsening fires, floods and extreme heat. Climate-fuelled disasters across Australia are already more frequent and intense, and communities are living with the consequences. In New South Wales, the most recent budget showed disaster costs in that state have increased 1000% since the Black Summer bushfires of 2019/20. Unless we accelerate our switch to clean alternatives, and away from coal, oil and gas, events like these will continue to escalate.

We are making strong progress, with renewables and storage now supplying around 45% of electricity in the main grid – nearly double their share six years ago. However, significant work remains ahead of us, and accelerating this shift is essential to meeting climate targets while maintaining a reliable and affordable energy system.

Right now, a new wave of data centre development, driven in large part by a surge in demand for artificial intelligence, presents major challenges for our shift to renewables. While data centres have been in Australia for many years, the scale and pace of new development will shape our energy system for decades to come. Australia has rapidly emerged as a global hub, becoming the second largest data centre investment location in the world in 2024. Without additional renewable generation, storage and system flexibility that matches energy demand, the industry risks extending reliance on coal and gas, pushing up power prices, straining system reliability, and creating a material risk to national and state climate targets.

Data centres can require significant volumes of water, with industry estimates suggesting demand will at least triple by 2030. As climate change intensifies drought and water stress across Australia, unchecked growth could place increasing pressure on already constrained water resources.

With strong and enforceable policy, data centres can drive new clean energy investment and support a more resilient electricity system. Many industry members and their customers — often large, well-capitalised global tech companies — are already taking innovative and proactive steps to procure renewable energy and firming capacity, alongside measures to improve energy and water efficiency. But we cannot rely on voluntary industry action. With at least 90 data centres already in the pipeline, there is no time to wait. Every new data centre in Australia must be subject to strong standards for both its energy and water use.

There's a critical window for Australian governments to tighten up regulation for data centres. Strong, enforceable standards are needed to avoid higher pollution, pushing up power bills or more stress on our water resources.

A NOTE ON SCOPE

The Climate Council is an independent, evidence-based organisation on climate science, impacts and solutions – advocating for climate policies and solutions that can rapidly drive down climate pollution from fossil fuels, based on the most up-to-date climate science and information.

This report considers the intersection of data centre growth with Australia's shift to renewables, climate targets, and water resources in the context of our changing climate. The responsibility to address these issues lies with both data centre operators, and the customers – including global technology and artificial intelligence (AI) companies – that lease these spaces, and are driving the surging demand for new data centre infrastructure.

There are a range of other environmental, social and ethical concerns relating to data centres and AI. While these concerns are not within the scope of this report, we acknowledge the importance of taking action to address them alongside managing the climate and energy impacts of data centre infrastructure.

1. Australia's data centre boom

Australia is already home to more than 160 data centres, located largely in and around our capital cities. These data centres support essential functions in our homes, businesses and governments. We are now rapidly emerging as a global hub for data centre development, propelled by a surge in cloud computing and the rise of artificial intelligence (AI), transforming our digital infrastructure landscape.

HOW MANY DATA CENTRES ARE IN AUSTRALIA?

Australia has long been a leading global destination for data centre investment, supported by our relative regulatory and political stability, skilled workforce, abundant renewable energy potential, proximity to Asia, and availability of land compared to many other jurisdictions (Australian Government 2025). Australia is currently home to at least 162 operational data centres, with around 90 more in the pipeline (Data Centres Australia and DC Byte 2026).

As a data centre global hotspot, Australia must ensure this boom anchors our clean energy future rather than derails it.

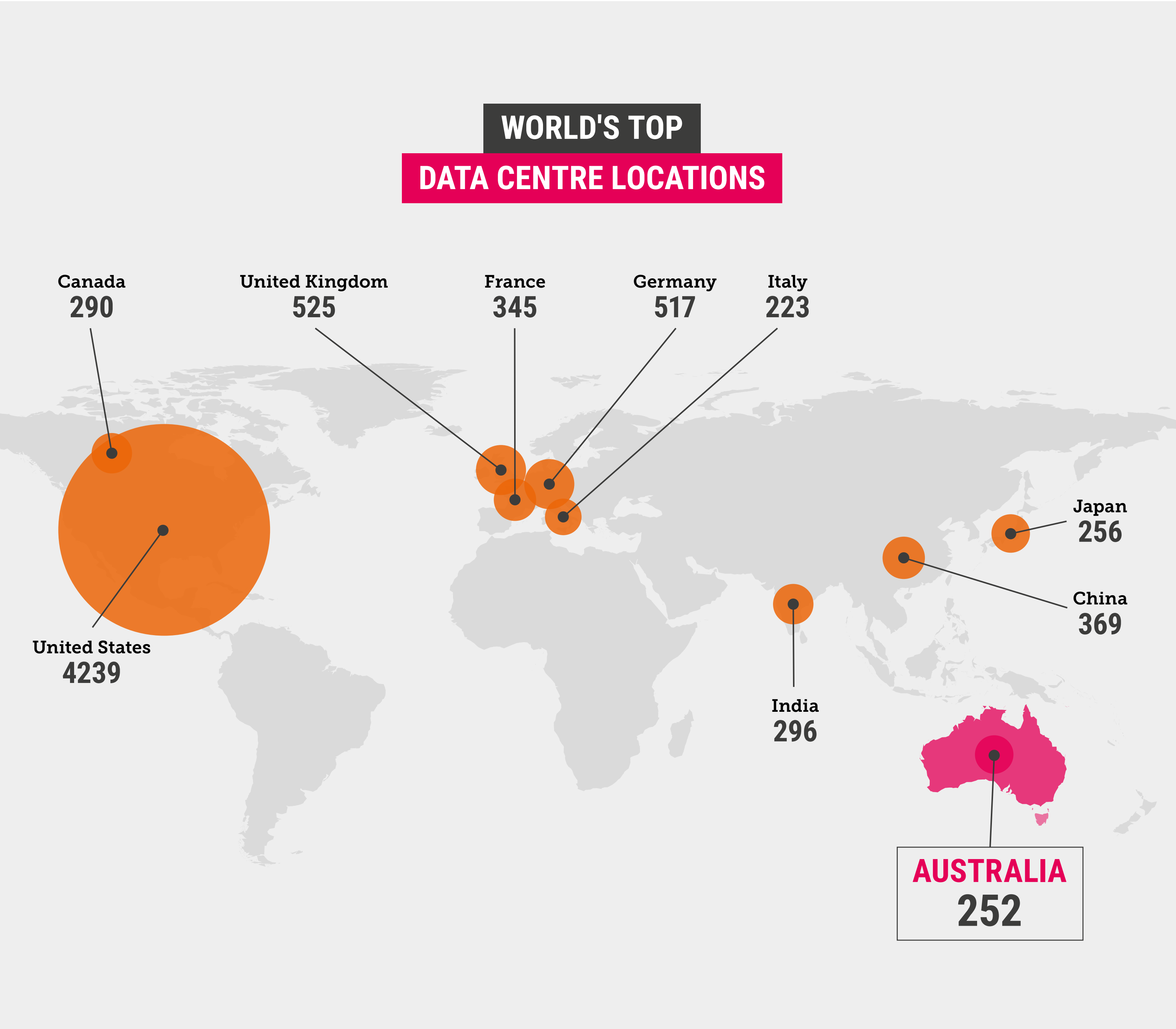


Figure 1: Total operational and proposed data centres as at May 2026. **Sources:** Data Center Map 2026a; Data Centres Australia and DC Byte 2026.

What *is* a data centre?

Data centres are behind many of the modern conveniences we enjoy: sending emails, online shopping, streaming TV shows, cloud storage, navigation apps – the list goes on. Data centres also underpin essential services: from transport and logistics, to hospitals and defence. They are now increasingly being used for training and deploying AI tools.

Data centres run all day, every day, in order to reliably deliver these services. This "IT load" requires large amounts of energy: analysis indicates they consume 10-50 times more energy per square foot than typical commercial office buildings (Alissa *et al* 2025). The IT infrastructure in data centres also generates significant amounts of heat that must be managed to operate effectively, with many using water-based cooling systems.

Types of data centre

There are different types of data centres, with different functions and needs, including:

- **Hyperscale:** Large, centralised facilities designed to meet the needs of large cloud computing, IT and increasingly AI providers. These are either owned and operated directly by technology companies, or developed and managed by a data centre operator, with tech companies often acting as "anchor tenants" that underpin their development.
- **AI factories:** Very large hyperscale facilities designed specifically for training and running AI models. Because AI training doesn't require real-time data delivery to end users, these facilities have more flexibility in where they can be located.
- **Co-location:** Facilities that are developed and managed by a data centre operator, but leased by multiple customers who house their IT equipment within the centre.
- **Traditional data centres (edge and enterprise):** Small data centres, located near users (edge) or operated on-premises by organisations (enterprise) to support IT systems and data processing needs.

What is AI?

Artificial intelligence (AI) refers to computer systems that can perform tasks historically only performed by humans, such as learning, pattern recognition and decision-making. Generative AI – including tools like ChatGPT, Claude and Gemini – is a type of AI that can create new content, including text, images and audio. Individuals, businesses and governments are actively using generative AI, but it is also becoming embedded in our daily lives without us playing an active role, for example via search engines.

There are a range of environmental, social and ethical concerns about the rapid rise in generative AI. At the same time, AI has beneficial applications in some disciplines including scientific and medical research, mining, agriculture and construction.

What is cloud computing?

Today, instead of storing files on our laptops or running software directly on our devices, much of our digital life relies on cloud computing. Cloud computing uses data centres to store data and run applications, which are then delivered to us through our screens. For example, when you open a streaming platform and press play, the movie or show is not stored on your TV or laptop, but in data centres around the world, which then stream the video to your device.

WHERE ARE THEY?

Most of Australia's data centres are located around Sydney and Melbourne, where they can connect easily to users, access strong fibre optic and electricity networks, and draw on a skilled workforce. Siting facilities in cities, near users, reduces the latency – the time it takes for data to travel across a network. Although data moves extremely fast through fibre optic cables, greater distances can still introduce delays that affect the performance of latency-sensitive applications, which account for the majority of data centre workloads (Mandala and Data Centres Australia 2025).

Concentrated data centre development around cities can create challenges with network congestion, land constraints and competing demand with other industries, as well as social licence. Data centres are already looking to expand outside Sydney and Melbourne, to help mitigate these constraints. For example, Perth is increasingly identified by investors as offering "key strategic advantages" including direct access to international subsea cables and proximity to renewable energy generation (Lim 2026).

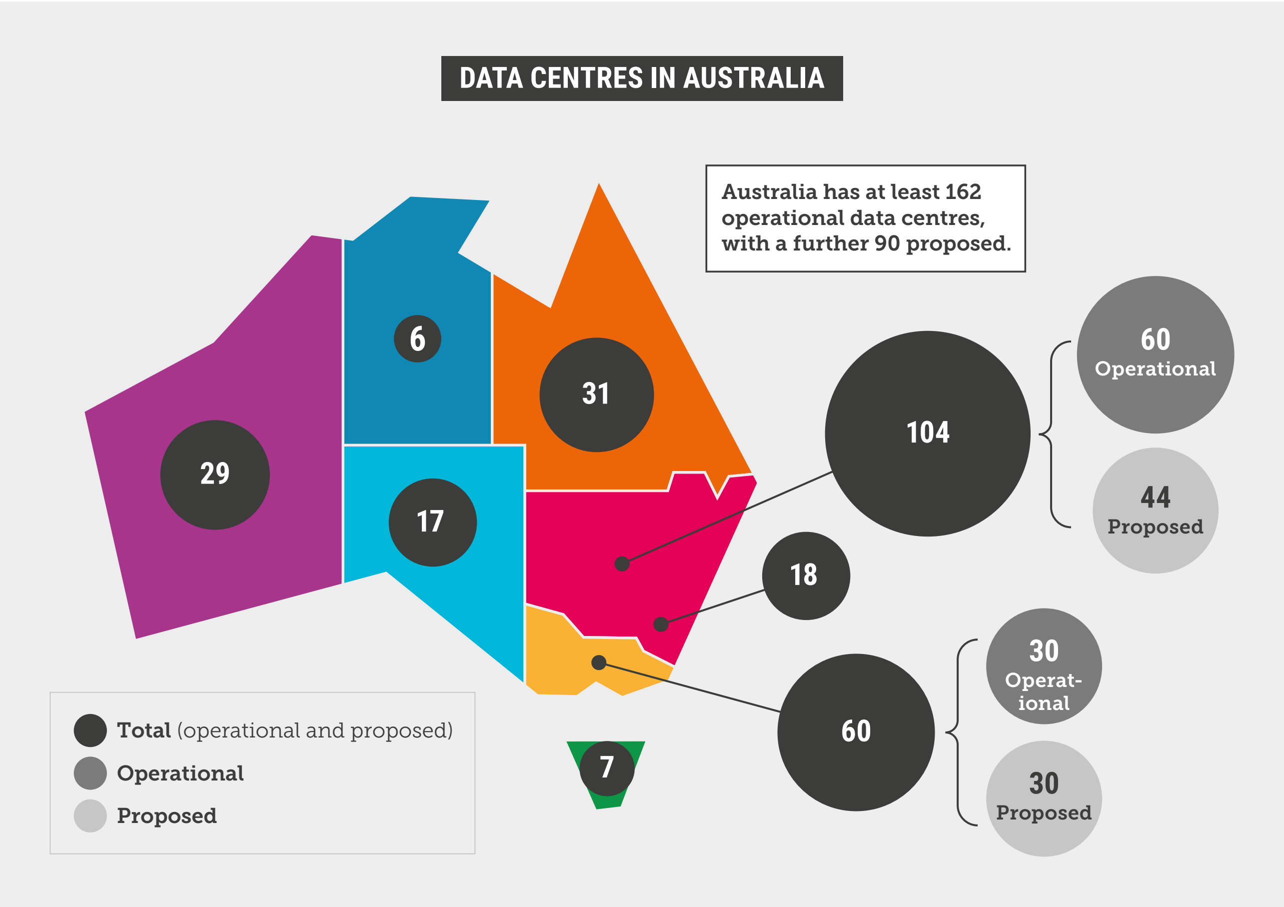


Figure 2: Data centres in Australian states and territories as at May 2026. **Sources:** Data Centres Australia and DC Byte 2026 and Data Center Map 2026b. Due to limitations in publicly available data, a breakdown of operational vs proposed facilities is not provided for WA, NT, SA, ACT, QLD and Tas. The total number of data centres in Australia does not add due to variations in the available data.

WHY IS DEMAND SURGING?

Data centres have been in Australia for many years, supporting existing digital services. Now, cloud computing and the surge in AI are driving a new wave of data centre growth. AI tasks require much more computing power than traditional data centre tasks: training AI systems involves processing huge amounts of data on powerful computers, while running AI services requires fast, continuous computing (Lim 2026).

Globally, AI-based data centre workloads are expected to more than triple between 2025 and 2030, while other uses will drive even further data centre growth. AI is expected to grow from just over half of global data centre demand today, to approximately 70% by 2030 (McKinsey 2025).

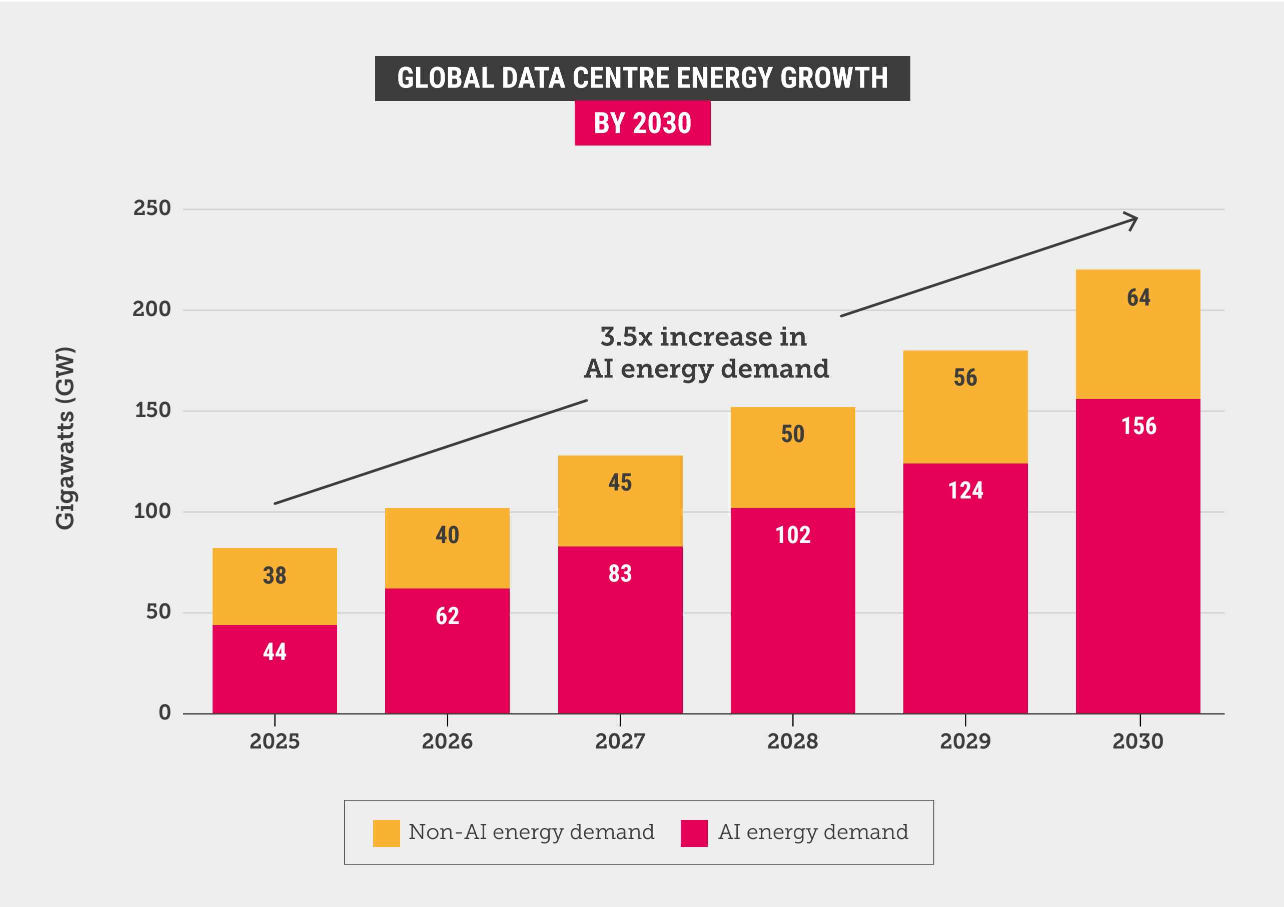


Figure 3: AI is expected to grow from just over half of global data centre demand today, to approximately 70% by 2030.
Source: McKinsey 2025.

AI is driving a large share of new data centre demand in Australia

Like the rest of the world, emerging data centre growth in Australia is driven in large part by AI, as well as cloud computing. There are currently at least 90 new data centres in the pipeline, 74 of which are in NSW and Victoria, with a clear shift toward large facilities with hyperscale and AI workloads (Data Centres Australia and DC Byte 2026).

On top of our existing competitive advantages, the changing global environment around AI is positioning Australia as an increasingly attractive hub for AI-driven data centre development. The US – a major manufacturer of AI chips – is currently developing export controls on AI chips that will restrict shipments of these chips to anywhere in the world without US Government approval. The industry anticipates that as a US ally, Australia will be an approved market, giving Australia an added advantage over other markets (Bennett and Smith 2026).

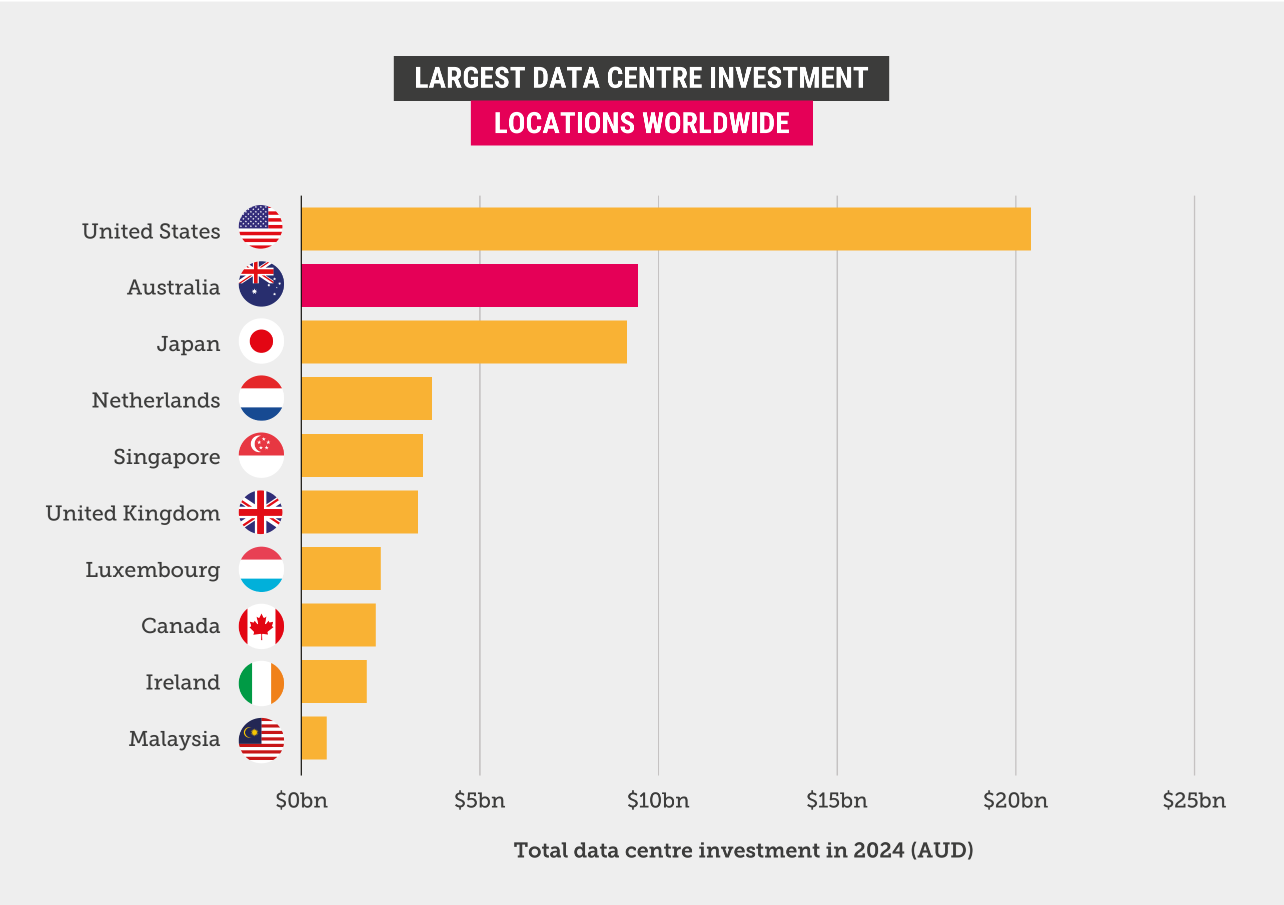


Figure 4: Australia was the second largest data centre investment location in the world in 2024. **Source:** Knight Frank 2025.

In Australia, data centre infrastructure is often developed and operated by a specialist provider, but leased to one or more other customers – increasingly hyperscale cloud and AI firms – who house and operate their own IT equipment in the data centre. These hyperscale customers are driving a significant share of new data centre development, acting as important "anchor tenants" by signing long-term contracts with operators. For example, OpenAI – developer of ChatGPT – has partnered with Australian-based data centre operator NextDC to build new data centre capacity in Australia, starting with a proposed 612 MW "AI factory" in Eastern Creek, Sydney (Craske 2025). OpenAI is the "initial offtaker" for the data centre, underpinning its development (OpenAI 2025).

Other hyperscalers develop and manage their own data centres, or use a combination of self-managed and leased facilities. The details of technology deals in Australia are often commercially confidential. However, several additional major AI and cloud companies have recently announced significant Australian investments or expansions:

- Anthropic – developer of the Claude LLM – will open its Sydney office this year, and has recently signed an agreement with the Australian Government to align with the national Expectations of Data centres and AI Infrastructure Developers (Department of Industry, Science, and Resources 2026).
- Amazon is investing $20 billion in AI data centre infrastructure in Australia, an announcement welcomed by Prime Minister Anthony Albanese (Albanese 2025).
- Microsoft has recently announced $25 billion to expand its AI and cloud computing capacity in Australia, building on a $5 billion commitment in 2023. Microsoft has also affirmed its commitment to the national expectations of data centres (Microsoft 2026).
- Google is considering establishing a $20 billion AI and data centre hub in Australia, but reportedly has reservations due to the tax it would be subject to if it builds a permanent establishment on Australian shores (Kehoe 2026).

These investments underscore the scale of new AI data centre infrastructure headed to Australia, and the urgency of getting policy settings right.

Image 2: Several major AI and cloud companies have recently announced significant Australian investments or expansions: Data centre in Coleraine, Victoria.

HOW MUCH ENERGY WILL DATA CENTRES USE?

In 2024-25, data centres used around four terawatt-hours (TWh), or 2%, of the electricity in Australia's main grid – the National Electricity Market (NEM; AEMO 2025). This is equivalent to the electricity use of more than 700,000 homes. The industry's energy demand is growing rapidly, reportedly almost doubling in Victoria and increasing by 18% in NSW over the past 12 months (Wiggins 2026).

In its latest official forecasts, the Australian Energy Market Operator (AEMO) expects data centre energy demand in the NEM to triple to nearly 12 TWh by 2030. This is equivalent to 6% of the NEM's electricity (AEMO 2025), or around enough to power all the homes in Victoria. By 2049-50, data centre demand is expected to reach more than 34 TWh, or around 12% of the NEM's grid supplied electricity (AEMO 2025).

In Sydney, Wollongong and Newcastle, the share of data centre energy demand is expected to more than double between now and 2030 – from 4% to 11% of NSW's electricity – before reaching 18% in 2050. In Victoria data centre energy demand in Melbourne and Geelong is expected to grow from 2% of the state's electricity today, to 8% by 2030 and 19% by 2050 (Oxford Economics 2025a).

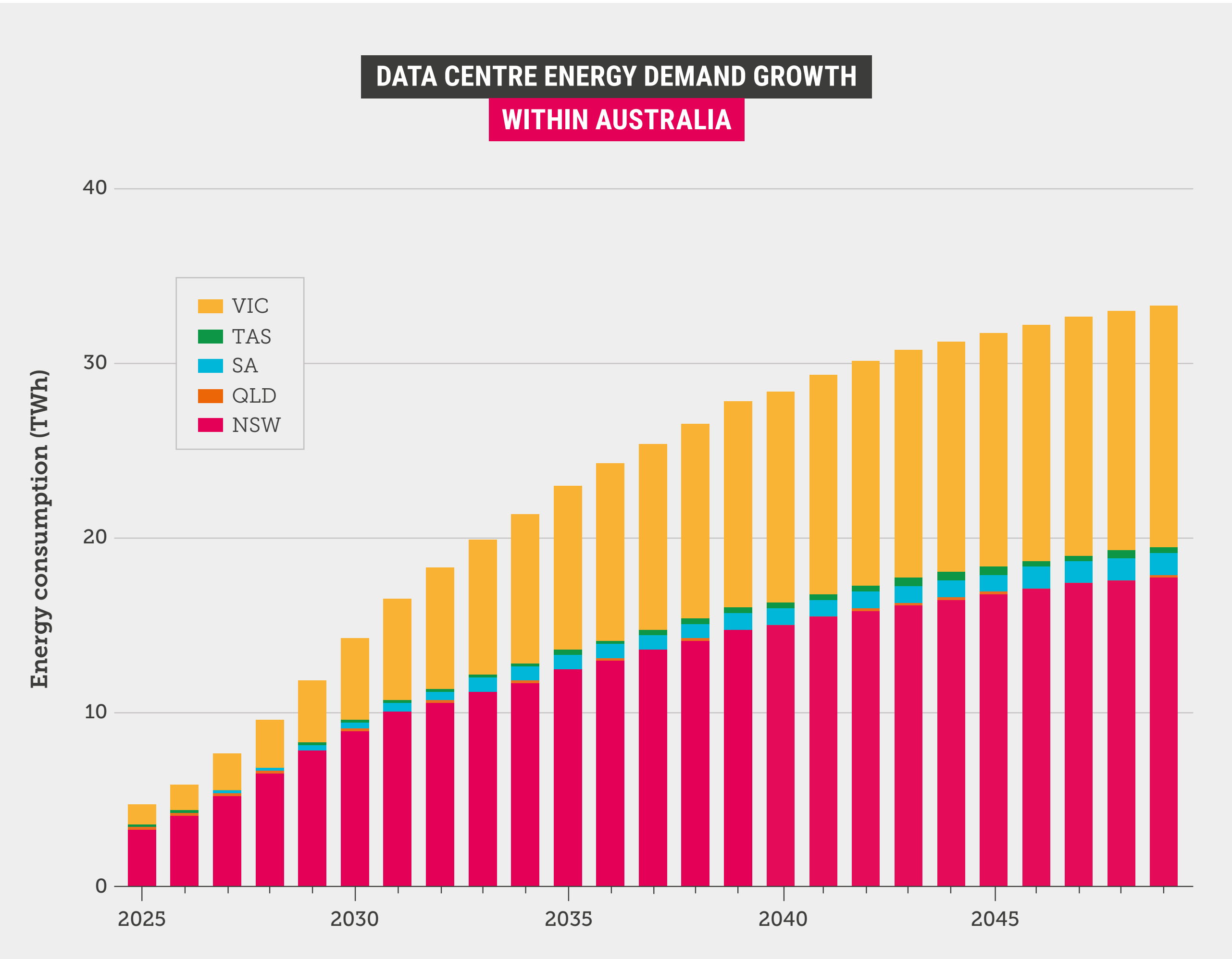


Figure 5: Data centre energy demand in Australia's main grid is expected to triple between 2025 and 2030.
Source: AEMO 2025a (Step Change Scenario).

There is significant uncertainty in Australia's data centre forecasts. Network service providers are receiving large numbers of new connection requests from data centres, representing a "step-change in demand beyond what is currently reflected" in AEMO's forecasts (for example, see Transgrid 2026a; AusGrid 2026). AEMO is reportedly scaling up its data centre forecasts in response (Wiggins 2026).

At the same time, there is evidence that applications are being made for energy and water connections for projects that will never materialise – known as phantom demand – meaning some forecasts may be significantly overinflated (Oxford Economics 2025b). This uncertainty creates challenges in planning for future demand.

Estimating future energy demand in NSW

Australia's data centre industry peak body notes there are 44 data centres (as at 31 March 2026) in the development pipeline in NSW, totalling 11.4 GW. This is equivalent to nearly four times the generating capacity of Eraring, the largest coal station in Australia (2.88 GW), if it is running at full capacity. However, the industry estimates that only 1.2 GW of additional data centre load will come online in Sydney by 2030 due to phantom demand, construction timelines, and ramp-up dynamics (Data Centres Australia and DC Byte 2026). This contrasts with Transgrid's connections pipeline, where at least 6 GW of data centre applications are progressing "at pace" – more than the new capacity that will be unlocked through the first 4.5 GW stage of the Central-West Orana Renewable Energy Zone (REZ) (Transgrid 2026b).

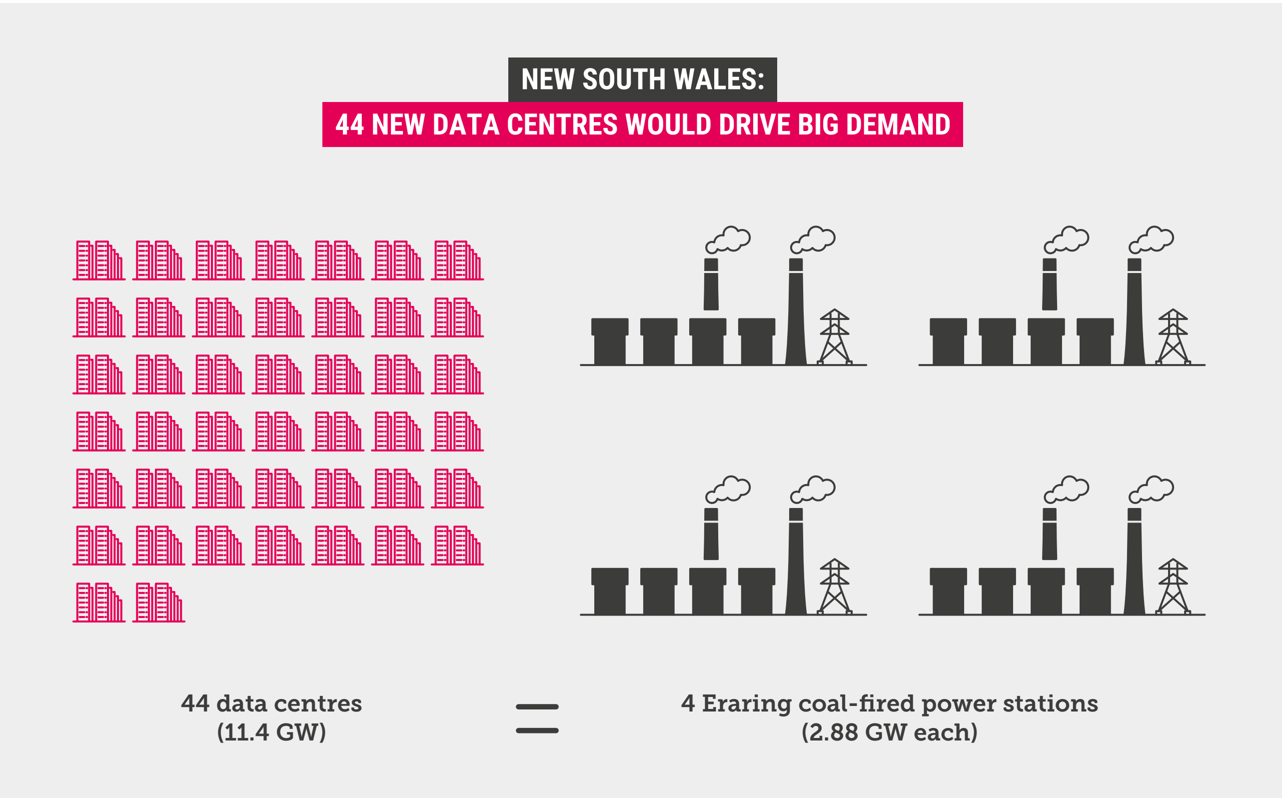


Figure 6: There are 44 data centres in the pipeline in NSW totalling 11.4 GW. The industry claims just a fraction of this will come online by 2030. **Source:** Data Centres Australia and DC Byte 2026.

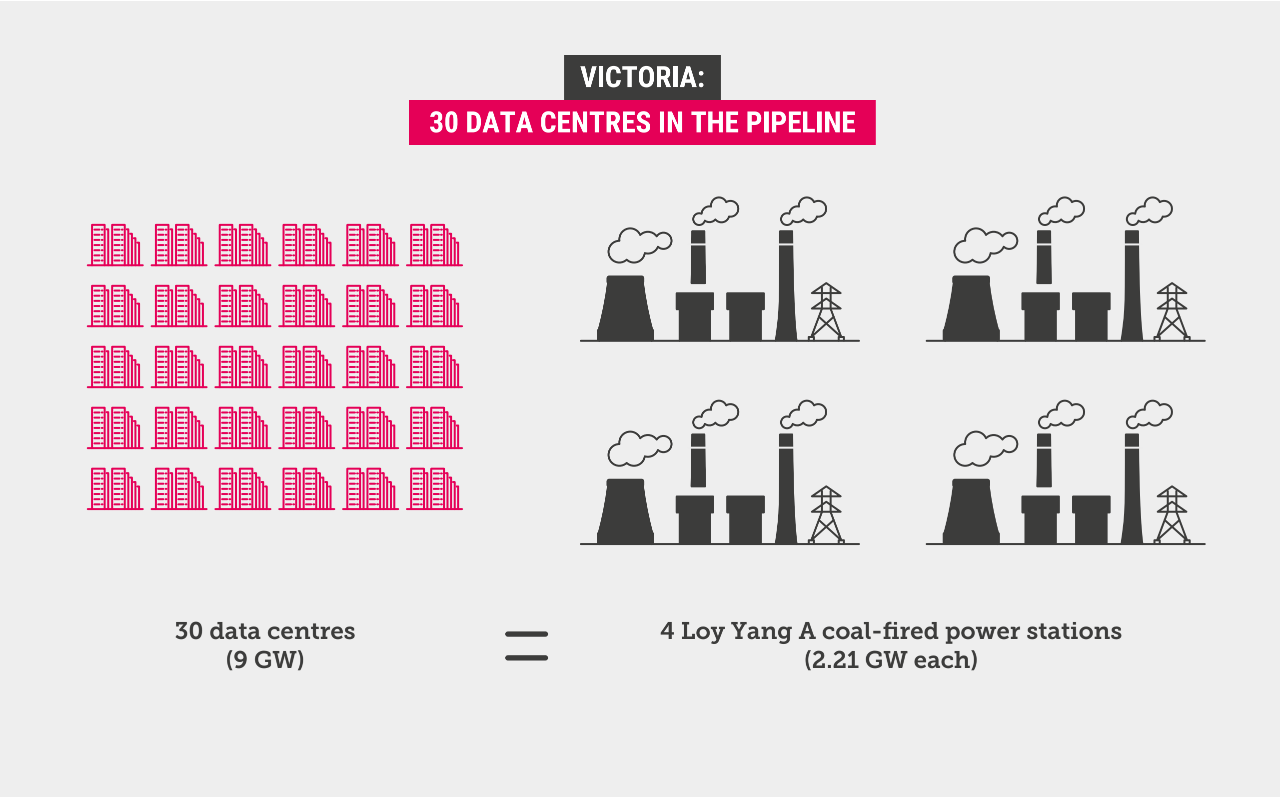


Figure 7: There are 30 data centres in the pipeline in Victoria totalling 9 GW. The industry claims that 0.7 GW will come online between now and 2030. **Source:** Data Centres Australia and DC Byte 2026.

Growing power demand in Victoria

In Victoria, AusNet was aware of more than 10 GW of new data centres in development as at December 2025. If approved, this new demand would push Victoria's total energy demand above its current supply capacity (Victoria Auditor-General's Office 2025). The industry's estimated pipeline capacity is only slightly lower: 30 data centres totalling 9 GW. This is equivalent to the power of four Loy Yang A coal stations running at full capacity (2.21 GW). The industry estimates that just 0.7 GW will come online between now and 2030 (Data Centres Australia and DC Byte 2026).

Data centre energy demand is growing at a pace and scale that will shape our energy system for decades to come.

Huge hyperscale data centres are coming to Australia

Traditional data centres were just a few megawatts in size. Over recent years, significantly larger facilities have rapidly begun emerging across the country. Australia's first hyperscale data centre and one of the largest data centres in Australia today, AirTrunk's SYD1, opened in 2017 with a planned maximum capacity of 80 MW, which has since been expanded to 130 MW (AirTrunk 2025). Last year, the NSW Government approved the development of what was at the time set to be the southern hemisphere's largest data centre – the 504 MW Marsden Park Data Centre.

In March 2026, the NSW Government announced it will provide streamlined assessment support to a data centre double that size: the 1.2 GW Mamre Road Data Centre (NSW Government 2026). If approved, the Mamre Road facility will be one of the biggest data centres in the world – comprising six four-storey buildings, 936 cooling units and 852 diesel back-up generators, and 14.4 million litres of diesel storage. While incorporating design redundancy, the facility's 1.2 GW maximum capacity would surpass the 950 MW Tomago Aluminium Smelter by over 25%, positioning it as Australia's largest single energy load.

Newer hyperscale data centres could rival our nation's largest industrial energy users.

GODZILLA-GROWTH:
NEW DATA CENTRES COULD USE 400X MORE ENERGY THAN EARLY ONES

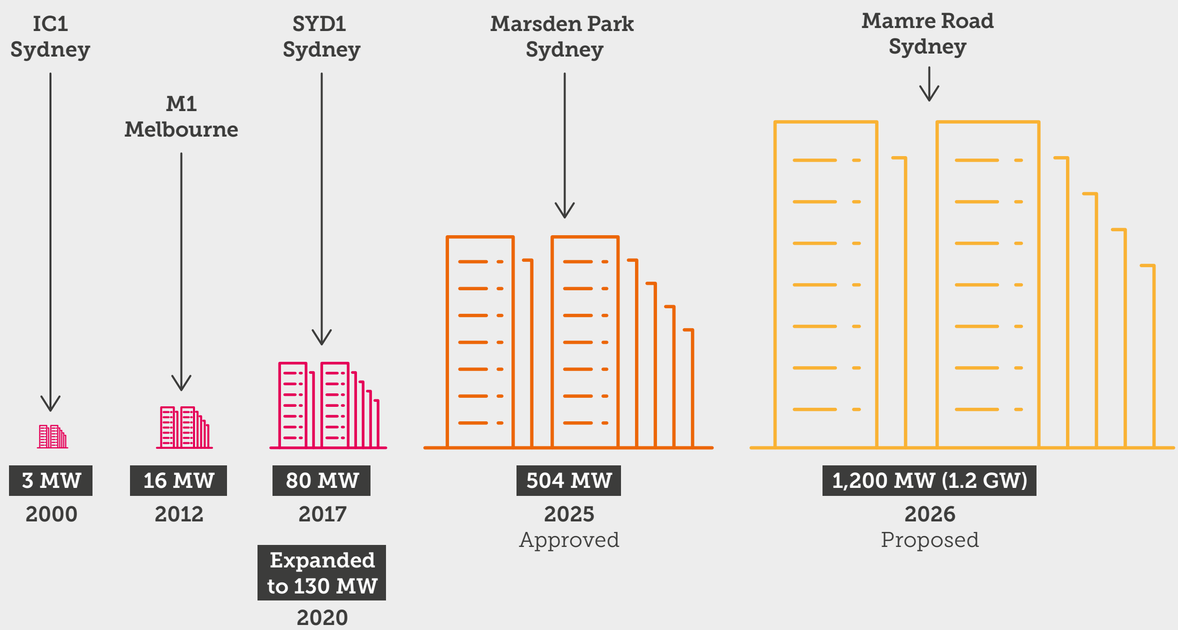


Figure 8: Emerging data centres will use significantly more energy than Australia's existing facilities. Scale represents maximum energy capacity, rather than physical size of facilities.

HOW MUCH WATER WILL DATA CENTRES NEED?

The processes in data centres generate substantial amounts of heat that must be continuously managed for the facility to operate effectively. Cooling systems vary between data centres, and can use water, air or a combination of both. There is generally a trade off between water and energy efficiency (Mandala and Data Centres Australia 2025).

Australia's existing data centres use a relatively small amount of water compared to other major industries (Water Services Association of Australia (WSAA) 2025). The industry estimates that it currently uses less than 0.1% of Australia's total water. In Sydney, this rises to 0.7%, while data centres use 0.2% of Melbourne's water supply (Mandala and Data Centres Australia 2025).

Like energy demand forecasts, estimates of future water use vary widely. Total industry water demand will depend on not just the number and size of new data centres that are built, but also what measures they put in place to reduce their demand.

The industry estimates its total water demand in Australia will more than triple from 5.5 GL to 17 GL over the next five years. By 2030, data centres are projected to account for 1.9% of Sydney's water supply and 0.9% of Melbourne's (Mandala and Data Centres Australia 2025).

Meanwhile, water utilities are receiving connection requests that indicate the industry's demand could be far greater. Sydney Water is receiving applications and enquiries for single data centres to use up to 40 million litres – equivalent to 16 Olympic swimming pools – every day (WSAA 2025). It forecasts the data centre industry could account for 15-20% of Sydney's water supply in 2035 (WSAA 2025). In Victoria, data centre applications waiting for approval by Greater Western Water as of mid-2025 totalled almost 20 GL, which equates to 4% of Melbourne's current annual water consumption (Wong and Chwasta 2025).

The industry notes that while facilities rarely require the maximum water usage, operators must apply for capacity based on worst-case scenarios to ensure adequate supply at all times (Mandala and Data Centres Australia 2025).

Managing our precious water resources in a hotter and drier climate is critical.

Data centre energy and water demand: 2025 vs 2030

	2025	Increase	2030
Australia	2% of electricity in our main grid (3.9 TWh)	3x	6% (12 TWh)
	5.5 GL of water used nationally (0.04%)	3x	17 GL
Sydney	4% of NSW's electricity (2.6 TWh)	3x	11% (7.8 TWh)
	0.7% of Sydney's water (4 GL)	2.5x	1.9% (10.5 GL)
Melbourne	2% of Victoria's electricity (0.8 TWh)	4.5x	8% (3.5 TWh)
	0.2% of Melbourne's water (1 GL)	5x	0.9% (5.1 GL)

Table 1: Growing data centre energy and water demand in Australia, Victoria and NSW. As noted throughout this report, energy and water demand forecasts vary widely depending on source. **Sources:** Oxford Economics 2025a and Mandala and Data Centres Australia 2025.

WHAT ARE GOVERNMENTS DOING ABOUT IT?

Australia's data centre policy landscape is evolving rapidly. Governments are actively supporting data centre and AI infrastructure development, while acknowledging the importance of sustainable growth. While some work is underway, current regulatory and planning frameworks do not yet provide sufficient safeguards to ensure data centre growth does not put our energy or climate targets at risk.

Table 2: Australian data centre policy landscape.

Australian Government	The National AI Plan sets out the Australian Government's plan to attract global AI investment and grow Australia's AI capability and capacity, while sharing the benefits and protecting against the risks of AI. Its March 2026 *Expectations of data centres and AI infrastructure developers* signal that new projects should align with national priorities, including supporting the clean energy transition, managing water use sustainably, and delivering local economic benefits such as jobs and innovation. National energy bodies are also working to embed growing data centre demand in our energy planning, and address risks to grid security (for example, through AEMO's 2025-26 Inputs, Assumptions and Scenarios and the Australian Energy Market Commission's (AEMC) proposed new grid standards for data centre connections).
National Energy and Climate Change Ministers	The Energy and Climate Change Ministerial Council (ECMC) is progressing a suite of work related to data centres, and on 8 May 2026 all Ministers except Queensland's agreed that data centres should: > Invest in additional renewable generation and firming capacity within their operating state to fully offset their electricity demand > Provide demand flexibility services to avoid additional costs being borne by consumers > Transparently report on their energy use and emissions reduction The AEMC will provide advice to ECMC on implementation options. ECMC has also tasked the Australian Energy Regulator (AER) with reviewing its connection charge rules to identify any gaps related to new data centre loads (ECMC 2026).
State and territory governments	Responsibility for approving and managing the climate and environmental impacts of data centres sits largely with state and territory governments – where many decisions about land use, the environment and infrastructure are made. The NSW Government is developing a framework to guide data centre development in the state, while actively supporting 15 new data centres to progress through its planning assessment process (NSW Government 2026). Victoria has developed a Sustainable Data Centre Action Plan to improve government coordination of data centres, aimed at attracting investment while ensuring growth is "well planned, efficient and responsible" (Victorian Government 2026). State-level utilities are already responding to data centre growth on their networks, as regulation and policy frameworks catch up. For example, TransGrid in NSW has started to incorporate requirements into data centre grid connection agreements (TransGrid 2026b).
Local government	The mayors of Australia's capital cities have called on state and federal governments to ensure data centre growth is supported by sustainable infrastructure, aligned with community expectations, minimises environmental impacts, and delivers lasting economic and social benefits (Council of Capital City Lord Mayors 2026). Councils in areas experiencing rapid data centre development are reinforcing this message, calling for stronger, clearer requirements to manage growth. For example, Penrith City Council in Western Sydney has called for a pause on new approvals until energy and water impacts are properly understood (Penrith City Council 2026).

The EU's requirements for sustainable, transparent data centres

In 2023, the European Union (EU) introduced a framework to drive sustainability and transparency in the data centre sector, which is now being progressively implemented. As part of this, the European Commission collects information on data centre electricity and water use, and publishes the data at an aggregated level. Site-specific data is kept confidential, reportedly in response to lobbying from the tech industry (Schmidt and Joyner 2026). The data will underpin future policy measures in the EU, including a rating scheme and minimum performance standards (EU Commission 2026).

Many EU member countries are well advanced in implementing strong national standards. For example, Germany has required at least 50% of the electricity consumed by each data centre to come from renewable sources since 2024. This will rise to 100% from 2027, and is accompanied by legislative requirements to meet energy efficiency targets, effectively use waste heat, together with reporting and transparency requirements (Weiß 2025).

Through the Climate Neutral Data Centers Pact, more than 100 data centre operators and trade associations across Europe have committed to making data centres climate neutral by 2030. This includes meeting strong energy efficiency targets in both new and existing data centres, and matching data centre electricity demand with 100% renewable energy or hourly carbon-free energy (Climate Neutral Data Center 2026).

2. The risks of poorly managed data centre growth

If surging data centre energy demand is not met with an equivalent increase in additional clean energy, Australia faces a critical setback in our shift to renewables. We may need to rely on coal for longer, and increase gas generation. This would not only drive up climate pollution, but also put upward pressure on power prices for homes and businesses. As climate change continues to strain Australia's water availability, unmanaged demand from data centres could place unsustainable pressure on our water resources.

SLOWING AUSTRALIA'S SHIFT TO RENEWABLES

Australia is in the midst of a major energy transformation – one that is essential for a safer climate, and will deliver lasting benefits for communities including downward pressure on energy bills, improved energy security, job creation and regional development. This shift is underpinned by national and state targets and policies to rapidly increase renewable energy and reduce pollution.

The large-scale renewable energy being built in Australia– including that supported through government schemes like the Capacity Investment Scheme primarily intended to replace retiring coal generators and meet increasing demand as our economy electrifies and population grows.

If data centres consume this new renewable energy supply, this will reduce the amount available for our homes, transport systems and industry. This would delay the retirement of our ageing and unreliable coal stations, and increase reliance on harmful polluting gas. This would not only put our climate targets at risk, but also our energy reliabilty and affordability. Our polluting old coal power stations are driving outage risk and electricity price spikes, while expensive and volatile gas prices are the main reason electricity prices are so high (Climate Council 2026). Prolonged reliance on coal and gas would also add fuel to the fire, supercharging climate extremes and their impacts on Australian communities and business.

While the risks to our grid may emerge from poorly managed growth, some in the industry are going further – actively advocating for new gas generation to power data centres, threatening to lock in fossil fuel dependence for decades.

Surging data centre demand is being used to justify increased fossil gas use

While the risks to our grid may emerge from poorly managed growth, some are going further – actively advocating for new gas generation to power data centres, threatening to lock in increased climate pollution for decades. For example, the Beach Energy CEO, and the current BP CEO/former Woodside CEO Meg O'Neill have used growing data centre demand to advocate for increased gas production (MacDonald-Smith 2026; O'Neill 2025). EnergyAustralia has recently used data centre growth as justification for reviving, and expanding, a 2009 proposal to build a new 1.4 GW gas generation facility in Marulan, north of Goulburn in NSW. EnergyAustralia's CEO claims more gas generation is needed to power our growing energy needs, with data centres a key driver (EnergyAustralia 2025; Burfitt 2026). Some politicians and public commentators are also claiming coal, gas and nuclear are essential to allowing Australia to become a global AI hub.

Meanwhile, some data centre operators and executives have also publicly advocated for continued coal and gas, alongside more sustainable firming technologies, to power the growing pipeline of data centres (Cranston and Packham 2025), while others are actively pursuing additional fossil fuel generation. For example, the proposed Southern Highlands Data Campus in NSW would see the installation of a new 673 MW gas-fired power station that would add an estimated two million tonnes, or more, of climate pollution in NSW every year – equivalent to the annual climate pollution of around 800,000 cars.

Figure 9: Some data centre and gas industry executives, and politicians, have advocated for continued coal and increased gas generation to power data centres.

Globally, more than 100 GW of new fossil gas capacity is currently planned as dedicated supply for data centres through on-site generation, most of which is in the United States (International Energy Agency 2026). Major tech companies including Meta, Google, Microsoft, OpenAI, Nvidia, and xAI are significant drivers of this new dedicated gas generation (Cleanview 2026). In the UK, the AI and energy industries have called on the government to consider a range of measures to speed up data centre development, including allowing on-site gas generation as an "interim measure" (Bambridge 2025). Data centres are already looking to build their own on-site gas generation, with UK network operators receiving more than 100 requests for gas connections in the past two years. These requests total more than 15 TWh every year – enough to power London for more than four months (Down 2026).

Australian governments must learn from experiences around the world, and act early and decisively to safeguard against any additional fossil fuel generation.

Why coal, gas and nuclear don't stack up

Australia can either meet growing data centre energy demand with polluting, expensive and unreliable technologies, or with the cheapest and cleanest power available.

- Extending coal will not provide a secure foundation for a new wave of electricity demand from data centres. Our coal fleet is old, increasingly unreliable and already scheduled to retire. Coal outages are a primary driver of blackout risk, and unplanned outages have contributed to some of the worst electricity price spikes in recent years (Baringa 2024).
- Gas is a highly polluting and harmful fossil fuel that has a small and shrinking role to play in Australia's energy mix (Climate Council 2024). It is expensive and volatile, while waiting lists for new gas turbines have blown out five or more years, into the 2030s (CSIRO 2025). More gas generation is far from a quick fix, and would lock in higher power costs and climate pollution for everyone across the system – including data centre operators.
- Developing nuclear energy in Australia would be slow, expensive and risky. Nuclear reactors would take at least 15 years to get up and running in Australia – far longer than data centre development timeframes – and would cost at least twice as much as firmed renewables (Climate Council 2025a; CSIRO 2025).

PUSHING CLIMATE TARGETS OUT OF REACH

The Australian Government has set targets to reduce our greenhouse gas emissions 43% below 2005 levels by 2030; 62-70% below 2005 levels by 2035; and to net zero by 2050. These targets are the Australian Government's contribution to the global effort to limit heating to well below 2ºC above pre-industrial levels, after which climate impacts become especially catastrophic and severe. Each state and territory has also set its own climate targets.

Modelling shows that to contribute our fair share to a safer climate, Australia would need to reach net zero by 2035 (Climate Council 2025b). This highlights the need for stronger policy action to not only meet existing targets, but to exceed them.

Rapidly growing electricity demand from AI and data centres is emerging as a significant challenge to achieving deeper cuts in climate pollution. In its advice to the Australian Government on its 2035 target, the Climate Change Authority (CCA) noted that AI and data centres are driving significant increases in electricity demand, contributing to higher climate pollution and making a more ambitious target harder to meet (CCA 2025).

These concerns are already reflected in the Australian Government's own emissions projections. Under current policies, Australia is projected to fall just shy of our 2030 target, and achieve a 48% reduction by 2035. Much of the emissions reduction expected this decade depends on rapid decarbonisation of the electricity sector, with electricity emissions projected to decline by more than 60% between 2025 and 2030 due to renewable energy policies and targets across federal, state and territory governments (Department of Climate Change, Energy, the Environment and Water (DCCEEW) 2025).

However, beyond 2030, the latest projections show slower progress in cutting electricity sector pollution than previously expected. They explicitly note the role of data centres in slowing the shift: without intervention, their increasing electricity demand will be met by a mix of coal, gas and renewables, rather than renewables alone (DCCEEW 2025). Modelling by Baringa indicates that if data centres are built without additional renewable capacity, NEM climate pollution could be 14% higher than they would otherwise be. These impacts are avoidable if we put the policies in place to ensure data centres are powered by additional renewable and storage (Baringa and CEFC 2025).

The data centre industry's climate pollution is already growing, driven largely by its surging energy consumption, at a time when Australia's climate pollution needs to be falling rapidly.

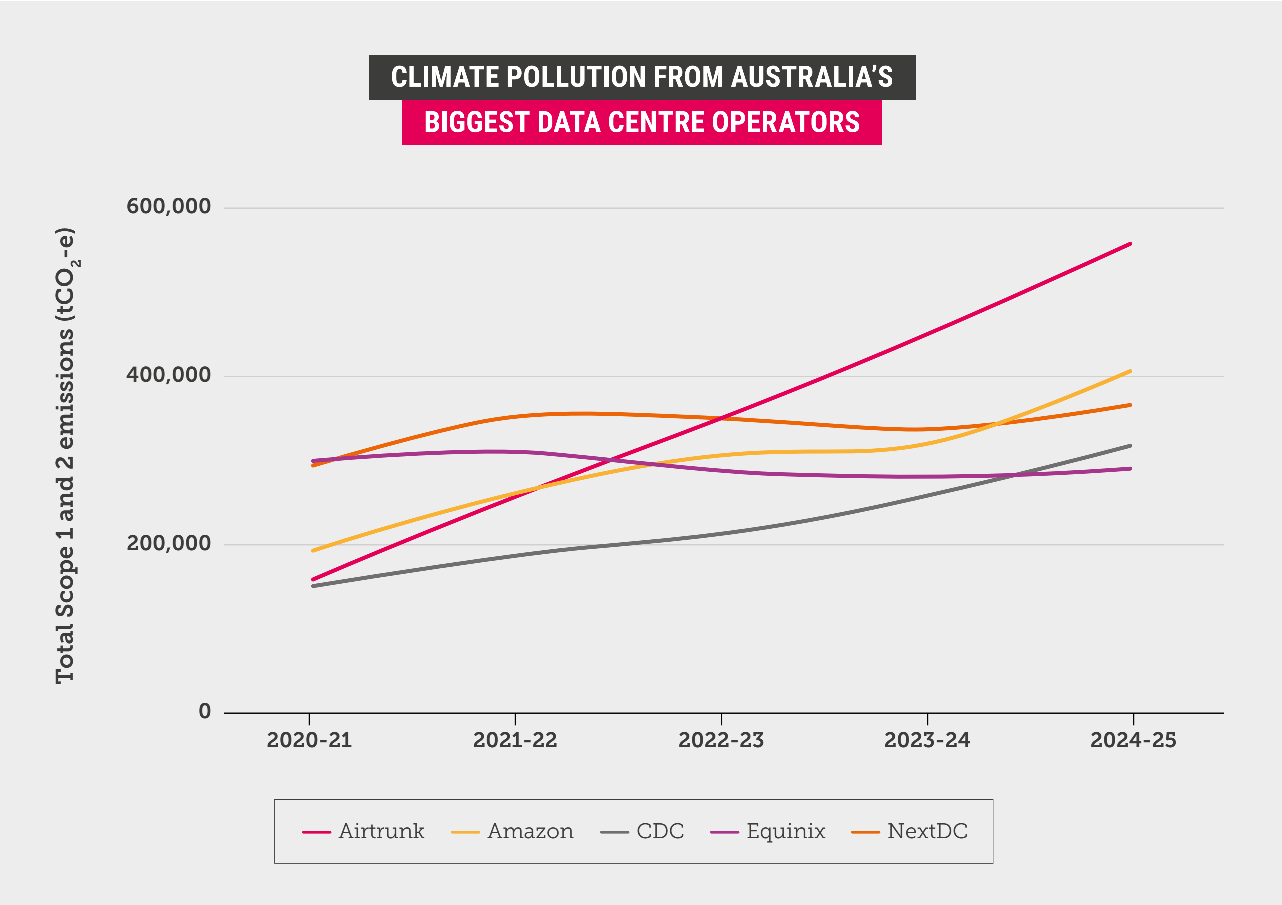
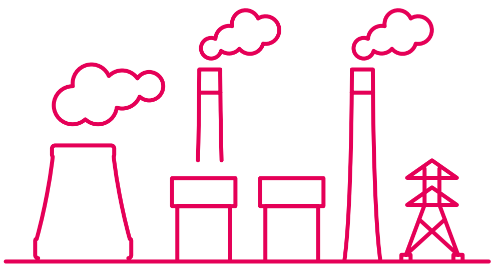


Figure 10: While the data centre boom is still emerging, the latest data shows pollution from data centres is already growing.
Source: Clean Energy Regulator National Greenhouse and Energy Reporting (NGER) data. Airtrunk, CDC, Equinix and NextDC are specialised data centre operators, so their reported emissions also reflect the energy used by the customers that lease their facilities. Amazon both has its own data centres, and leases space from other operators. Amazon's reported climate pollution covers all its Australian operations.

Without intervention, rapid data centre growth will add more climate pollution, worsening the frequency and ferocity of flooding rains and bushfires.



HIGHER POWER PRICES FOR HOMES AND BUSINESSES

If data centre growth is not matched with new renewable generation and storage, 2025 analysis by Baringa and the CEFC shows this could increase wholesale prices by 26% in NSW and 23% in Victoria by 2035, due largely to the increased reliance on gas (Baringa and CEFC 2025). With wholesale prices making up around 40% of a typical residential power bill, this could significantly impact homes and businesses.

The potential impacts are not confined to states with significant data centre development: South Australia and Tasmania would also be impacted despite limited added data centre load in these states, as their generation would be exported to other states to meet demand (Baringa and CEFC 2025).

These impacts can be significantly reduced if we match new data centre load with additional renewable generation, while adding storage to reduce reliance on peaking gas in the evenings would further limit increases and avoid material increases to climate pollution (Baringa and CEFC 2025).

Data centre energy demand will drive up power prices without additional renewables and storage

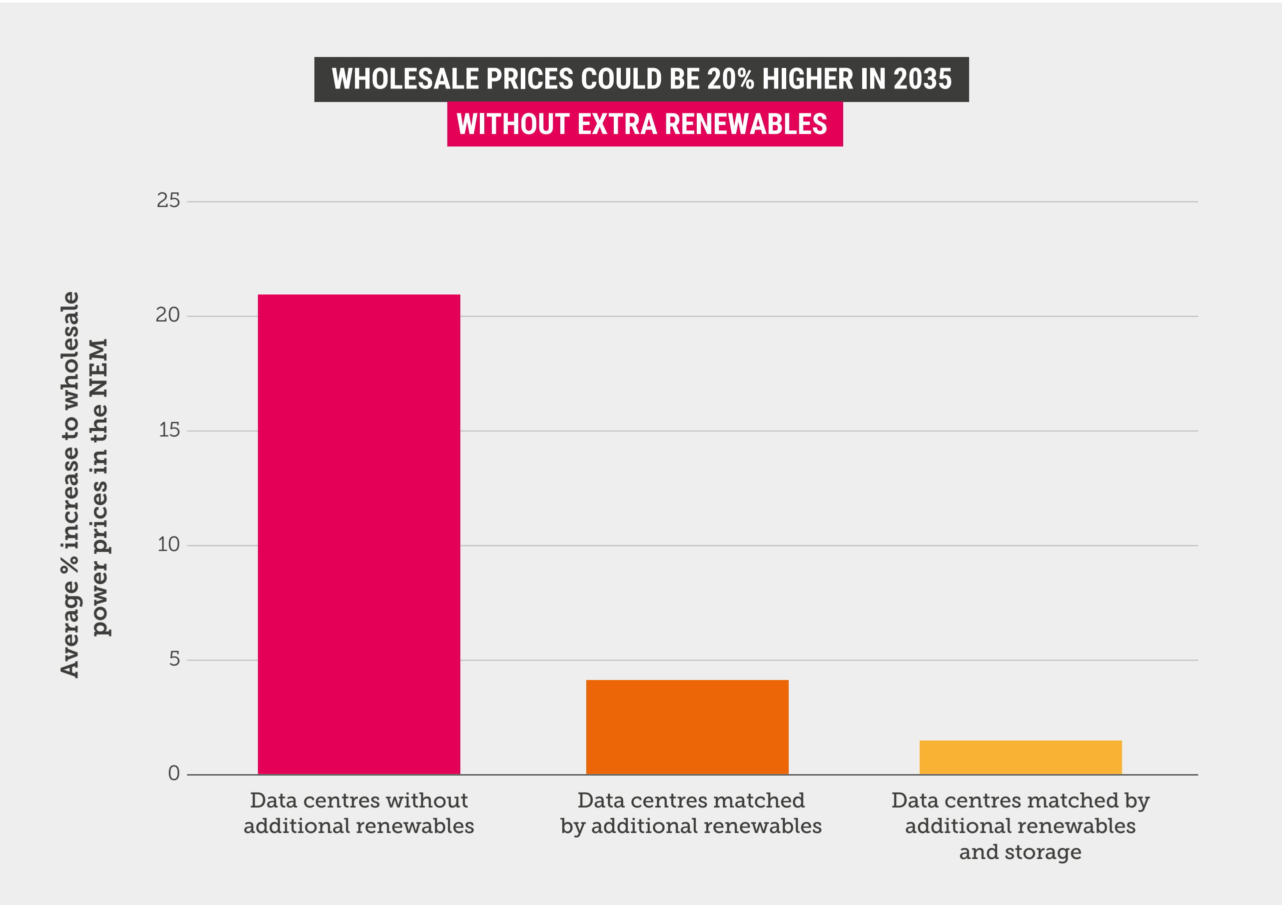


Figure 11: Projected price increases in 2035 compared to the baseline. **Source:** Baringa and CEFC 2025.

Without intervention, surging data centre demand will push up wholesale power prices by as much as 26%.

The United States: a cautionary tale on power prices

The US's experience illustrates how rapid data centre growth can drive up electricity prices if poorly managed. Across the country, Bloomberg analysis found wholesale electricity costs alone have increased by as much as 267% within five years in jurisdictions with significant data centre activity (Bloomberg 2025).

In addition to rising wholesale prices due to higher data centre load, in some parts of the US households and businesses are expected to share the costs of new transmission infrastructure required to connect data centres to the grid. For example, Virginia, which is home to the world's largest concentration of data centres, ratepayers are paying for $570 million in new transmission lines in West Virginia that they receive no benefit from (IEEFA 2026).

It is important to note that the US is home to more than 4,000 data centres, compared to Australia's 162. Australia also has different regulatory settings, including a requirement for data centres to pay for any new network infrastructure needed solely to support their operations.

Many US states are now introducing laws to require data centres to support new generation capacity and contribute to network upgrades, in an effort to protect households and businesses from rising costs (US National Caucus of Environmental Legislators 2025). Governors in impacted states are calling on the grid operator to prioritise energy affordability and reliability by ensuring data centres pay their fair share for the energy and infrastructure they require (Governor of Virginia 2026).

INCREASED PRESSURE ON OUR GRID

Data centres are unique energy users: unlike most commercial or industrial facilities, they must operate continuously. Most data centres can't easily reduce their demand without compromising the real-time services they provide, so they require consistent, uninterrupted energy supply. Their continuous energy demand is made up of both their IT load, as well as the power needed to support their operation, including their cooling systems.

These new large continuous loads bring risks to our grid, but also have the potential to provide benefits if managed proactively. For example, data centres can support grid security at times of minimum system load by raising base grid demand. They can also absorb renewable energy that would otherwise be curtailed, particularly during the middle of the day when solar output is high. Analysis indicates that in NSW alone, up to 1.4 TWh of renewable generation (enough energy to power approximately 3.6 million homes for an entire month) that would otherwise be curtailed by 2030, could instead be utilised by new load such as data centres (Baringa and CEFC 2025).

On the other hand, during peak demand periods, data centre demand could widen the gap between renewable generation and load. In addition, the inverter-based technology used in data centres means that they can suddenly disconnect when there are grid disturbances. If many disconnect at once, this threatens grid stability and increases the risk of outages. For example, in July 2024, 60 data centres in the US state of Virginia disconnected 1.5GW of load from the grid during a disturbance and shifted to backup generation, creating major risks for the state's energy reliability. Similar incidents in Ireland and Texas have prompted some jurisdictions to pause new data centre connections (AEMC 2026). Australia's regulators and network operators are already working to put requirements in place to ensure data centres do not put grid stability at risk. In March 2026, the Australian Energy Market Commission released a draft rule proposing new standards for large data centres connecting to the NEM to require data centres to stay connected to the grid during grid emergencies.

The concentration of data centre development in urban centres also creates challenges for the grid. As data centre connections increase, there are concerns that the transmission and distribution networks supporting these hubs may become increasingly constrained (Baringa and CEFC 2025).

STRAIN ON WATER RESOURCES IN A CHANGING CLIMATE

Australia's climate is characterised by a highly variable watercycle. Drought is a fundamental part of the landscape, but climate change – primarily driven by the burning of coal, oil and gas – is making hot days hotter, droughts more aggressive and heatwaves longer and more frequent. Since the 1970s, southwest Australia has experienced a 16% decline in April to October (cool season) rainfall. Across the same region, May to July rainfall has seen the largest decrease, of around 20% since 1970. In Southeast Australia, there has been a decrease of around 9% in April to October rainfall since 1994 (CSIRO and BoM 2024).

These areas include major population centres of Sydney, Melbourne and Perth where most data centres are located and more are planned to be built. During the 2017 to 2019 Tinderbox Drought, southeast Australia experienced its driest three-year period on record. Towns in NSW nearly ran out of drinking water, and had to rely on emergency measures. Every drought in Australia is now hotter than the last because of climate pollution.

The data centre industry's use of water resources must be managed carefully as rainfall decreases and ongoing supplies become increasingly uncertain.

Table 3: Water resources are under increasing pressure in data centre hotspots Sydney and Melbourne.

Melbourne	Sydney
Between 2023 and 2025, almost all of southern Australia experienced a serious to extreme lack of rain, causing severe to exceptional drought conditions. Melbourne experienced some of the lowest rainfall and inflows on record – similar to the worst years of the Millennium Drought. The city's water storage levels are at less than 70% capacity as at April 2026, 36% below the 30-year average (Melbourne Water 2026). Under a hotter climate, droughts are likely to become longer, more frequent and more intense (Victorian Government 2025).	Over the past 20 years, Greater Sydney has been in drought almost 50% of the time. During the Tinderbox Drought (2017-19), the region experienced one of the worst drought sequences on record. Over the coming years as climate change worsens, more severe droughts will lead to lower dam levels and reduced availability of water, while increasing temperatures will also lead to an increase in water demand (Sydney Water and Water NSW 2025).

Data centres are increasing pressure on water-stressed regions around the world

Data centres in the US are putting increasing pressure on not just the energy system and power bills, but also on water resources and infrastructure. Analysis by Bloomberg has revealed that more than two-thirds of new data centres built since 2022 are located in water-stressed regions – places where people are already struggling to access clean water (Nicoletti, Ma and Bass 2025). Phoenix, Arizona has become one of the fastest-growing data centre hubs in the country, despite its location in the desert Southwest, which is facing a climate change-fueled megadrought now entering its third decade (Climate Adaptation Center 2025).

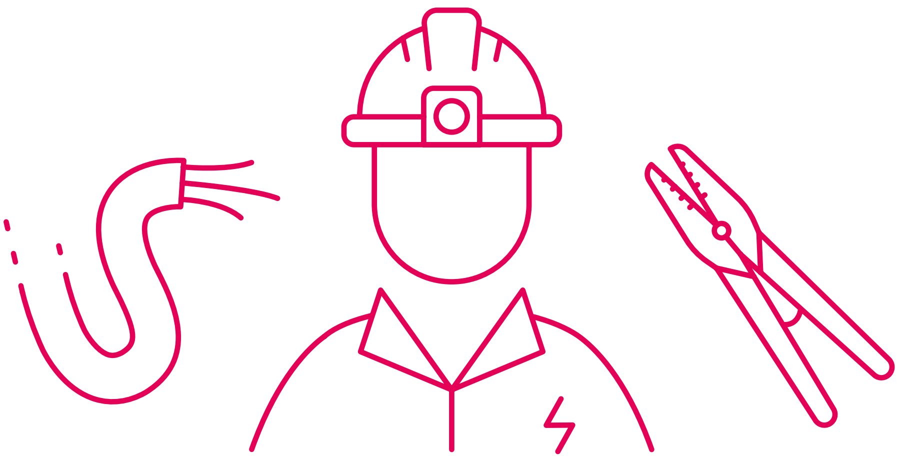
AI-related projects under construction could increase data centre water demand in Arizona by 67%, reaching around 5 billion gallons annually in coming years. While the data centre industry says it is investing in innovative solutions to reduce water use, community opposition and water availability threaten its competitiveness in the state (Woody and Nicolette 2026). In other parts of the world, community concern over water consumption has already stalled proposed projects – including a data centre proposed by Google in drought-stricken Chile (AP News 2024).

BALANCING THE ECONOMIC BENEFITS WITH THE RISKS

Government and industry often emphasise the significant private investment associated with data centres, positioning them as a key driver of economic growth. In reality, the economic benefits for Australia are more complex, and must be balanced with the substantial risks.

Australia remains heavily reliant on imported equipment for data centres, including servers and advanced semiconductors. This means much of the investment flows overseas rather than staying in the local economy. The Australian Bureau of Statistics notes that recent growth in data centre investment has been accompanied by a rise in imports, reducing the net contribution to our economy. Similarly, while data centres create construction and specialised technical jobs, their ongoing employment footprint is relatively small (ABS 2026).

The construction of the 90+ data centres in the pipeline in Australia could also impact the delivery of important infrastructure including new housing and renewable energy. The Electrical Trades Union (ETU) has highlighted that Australia will require tens of thousands of additional electrical workers to meet growing infrastructure needs in the shift to a clean, modern energy system. If data centre development is not accompanied with additional training and upskilling, it risks diverting resources away from important national priorities (ETU 2026).



3. Opportunities to align data centres with our climate and energy goals

To avoid undermining our renewable and climate targets and putting upward pressure on power bills, it is critical that the surging data centre energy demand is met by additional renewable capacity over and above that needed to replace coal. Done well, data centres could help strengthen the grid, avoid putting additional strain on water resources, and create regional economic opportunities.

If data centres and their customers back extra renewables they can support Australia's clean energy shift and shield households from avoidable price increases.

DRIVE NEW RENEWABLE AND STORAGE CAPACITY

Matching data centres with new renewable generation and storage capacity will significantly reduce their impact on electricity prices and climate pollution (Baringa and CEFC 2025). There are three broad options for businesses to secure renewable power in Australia: renewable energy certificates, power purchase agreements (PPAs) and on-site generation and storage.

The industry notes that data centres and their customers already offset 70% of their energy consumption with renewable energy certificates (30%) and PPAs (40%) (Mandala and Data Centres Australia 2025). However, these mechanisms do not necessarily ensure that new generation and storage is built or that clean electricity is supplied at the time and place demand occurs. For example, the 504 MW Marsden Park Data Centre plans to offset 100% of its electricity consumption by 2030 through the purchase and surrender of LGCs, but in practice will source its electricity from the grid (Stantec Australia for CDC Data Centres 2024). This highlights a key challenge for both policy makers and industry operators attempting to meet sustainability targets.

OPTIONS FOR PURCHASING RENEWABLE ENERGY

RENEWABLE ENERGY CERTIFICATES

There are two key types of renewable energy certificates currently available in Australia. Large-scale generation certificates (LGCs) are tradeable certificates, each representing 1 MWh of clean energy. They allow businesses to effectively offset their electricity use with renewable generation, often on an annual basis, but do not necessarily ensure additional generation is built or that clean electricity is supplied at the time and place demand occurs.

Renewable Electricity Guarantee of Origin (REGO) certificates were introduced in 2025. They build on the LGC scheme to provide greater transparency and flexibility, including time and location tracking. REGOs will work alongside the LGC scheme until it is phased out in 2030.

Verdict

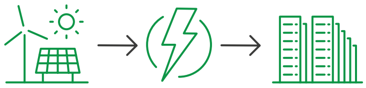
LGCs: Not a solution

Currently, there is a significant oversupply of LGCs and their prices are extremely low. Given this, and the changing energy policy landscape, LGCs are no longer a key driver of renewable investment (Clean Energy Regulator 2025). They are not an effective incentive for the development of the additional generation capacity needed to power data centres.

REGOS: Could help ensure renewable supply is matched with time and location of data centre demand

REGOs could be a mechanism to ensure data centre energy demand is matched around the clock with renewable energy. However, they alone do not ensure new capacity is built, and must be combined with other mechanisms like PPAs to ensure additionality.

POWER PURCHASE AGREEMENTS (PPAs)



A PPA is a multi-year contract to purchase electricity at a fixed price. PPAs are beneficial for large energy users like data centres as they enable them to secure renewable electricity at a set price, shielding them from market volatility. At the same time, PPAs provide financial certainty for renewable projects.

There are a range of different types of PPAs, and they can be used in conjunction with LGCs and REGOs.

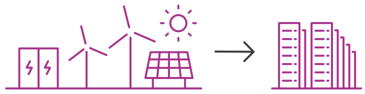
Verdict

Could drive additional renewable capacity with the right requirements in place

PPAs do not necessarily lead to new renewable generation or storage capacity being built. They are often contracts with capacity that was already planned or operational.

However, with greater transparency around PPA terms, PPAs could become a mechanism for data centres to demonstrate that they are directly underwriting new renewable projects that had not yet reached financial close. This could be combined with REGOs to ensure ongoing location- time-matching.

ON-SITE GENERATION AND/OR STORAGE



Installing renewables and storage on-site or nearby data centres can directly provide them with renewable energy, while shielding operators and customers from high electricity prices.

Verdict

Directly provides additional renewable power

On- or near-site generation and storage would allow data centres to directly supply some or all of their own demand.

For example, NextDC's M1 Data Centre in Port Melbourne powered up in 2013, and includes one of Australia's largest rooftop data centre solar systems, large enough to power 88 Australian households every day (City of Melbourne 2015). AirTrunk announced this year that it will build a large-scale battery storage system next to its planned 320+ MW SYD3 data centre in Western Sydney (Wilmot 2026).

However, as data centres are often located in urban centres, space constraints can make on-site generation and storage difficult to implement at scale.

Data centres must deliver new renewable energy supply where and when it is needed

Additionality, location- and time-matching are critical to ensuring that growing electricity demand from data centres supports, rather than undermines, the shift to renewables. Additionality means new data centre energy demand is met with demonstrably new renewable energy generation, rather than energy that would have been built anyway and supplied to other parts of the economy.

Location- and time-matching ensure that electricity use aligns with where and when renewable energy is actually being generated or discharged, reducing the risk that data centre demand increases reliance on fossil fuels during periods of peak demand or low renewable output. Together, these approaches reduce pressure on the grid, and ensure that corporate energy procurement contributes meaningfully to a cleaner, more reliable electricity system.

How the industry can drive new clean energy investment

The ability – and willingness – of many data centre operators and their customers to enter into large, long-term PPAs offers a significant advantage to clean energy investment. With the right settings, PPAs present an opportunity for unlocking new generation capacity, by giving investors the confidence to reach a Final Investment Decision (FID).

In Australia, there is little transparency around PPAs, with the terms of the agreements remaining confidential between the operators, developers and their advisers. Analysis by RACEfor2030 indicates that across the economy in recent years there has been a decline in corporate PPAs underwriting new projects, with most PPAs attached to existing renewable energy generation assets or underwritten by state-owned utilities (RACEfor2030 2024). While there is evidence that some PPA buyers more broadly are seeking to ensure additionality by signing PPAs before financial close, it is unclear how widespread this practice is (Business Renewables Centre Australia 2025). Despite the data centre industry's claims it is supporting new renewable energy development, renewable projects reaching financial close last year hit their lowest level in recent years, while data centre energy demand surged across Australia (Clean Energy Regulator 2026b).

That said, there are instances where data centres have played a material role in enabling new renewable generation. For example, data centre operator Equinix signed a PPA for 20% of the energy from the first stage of Tag Energy's Golden Plains Wind Farm in Victoria, as part of its strategy to power its 17 Australian facilities with 100% clean energy by 2030. TagEnergy has stated the PPA was "material to the project" (Lenaghan 2024).

Additionality should be a core requirement, not an exception. Strengthening transparency around PPAs will give governments a clear and accurate baseline of existing activity. Moving forward, disclosure will be critical for tracking whether PPAs are genuinely driving additional renewable capacity, while enhancing accountability and supporting informed policy design into the future.

Mechanisms to require renewable energy and storage procurement should be carefully designed to ensure that there are no unintended consequences that could undermine the industry's ability to enter into large, long-term agreements.

Aligning renewable supply with data centre timelines

Data centre development timeframes can be quicker than renewable energy projects, creating a risk that the renewable projects supported by data centre developers and customers do not come online until after the data centre has commenced operations. Measures requiring data centres to support additional generation and firming could include a transitional period to account for this mismatch in timeframes.

On average in 2025, solar projects took 21 months to reach commissioning after financial close, while wind projects took 27 months, and battery projects took 22 months (Clean Energy Council 2025). A transitional window of up to three years would therefore reasonably reflect typical renewable project development timelines.

Data centre ramp-up timeframes should also be taken into account: data centres are often built in phases, with customers filling the space and coming online gradually. This means that a data centre's energy demand grows over time (Data Centres Australia 2026c).

At a minimum, any new data centre's energy use must be no more emissions-intensive than the grid from day one of operations. This must include rules to prevent data centre operators from building off-grid fossil fuel generation, which would be a material step backwards for our shift to renewables. Options to encourage PPAs with existing projects could be considered as an interim measure during the three-year window, noting a significant volume of existing PPAs is expected to expire over the coming decade and open up un-contracted renewable capacity (Briggs 2025).

Data centres must directly support the build-out of new renewable energy and storage capacity that matches their demand in real time.

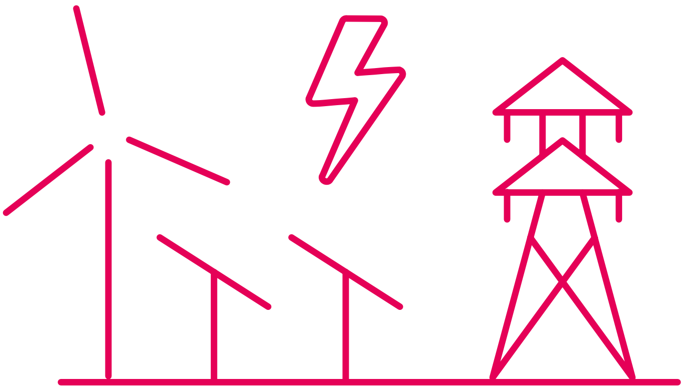
Lessons from Ireland

In Ireland, the share of electricity consumed by data centres – centred in Dublin – surged from 5% of total demand in 2015 to 21% in 2023, and is expected to reach 30% by 2030 (Baringa and CEFC 2025). In response to concerns about the impacts of this growth on Ireland's grid, and the potential for widespread blackouts, an effective moratorium was placed on new data centre connections in 2021. In late 2025, Ireland's independent energy regulator introduced new requirements for data centres connecting to the grid.

Data centres are now required to meet at least 80% of their annual demand with additional renewable electricity (for example, through PPAs with wind and solar projects) within six years of commencing operations.

The 80% benchmark reflects Ireland's current renewable energy target, and may be reviewed if the target is revised.

The six-year 'glide path' is intended to account for the timelines of renewable project development in Ireland (Ireland Commission for Regulation of Utilities 2025). Concerningly, it effectively allows data centres to operate entirely on fossil fuels during their first six years of operation if they choose – which would make them significantly more emissions-intensive than using electricity from Ireland's ~40% renewable grid. Environmental groups are currently challenging this policy in Ireland's high court (Friends of the Irish Environment 2026).



USE WATER AND ENERGY RESPONSIBLY

Proven technologies already exist to significantly reduce data centre water and energy consumption, and many operators are actively improving. There is a commercial imperative for them to reduce their energy and water demand, and in turn, costs.

Building on existing momentum to ensure efficient data centres are the standard will reduce strain on our energy system and water resources.

There is generally a trade off between water and energy efficiency (Mandala and Data Centres Australia 2025). The trade off between energy and water, and the suitability of different measures for different locations, should be carefully considered.

Australia's data centres are already more energy efficient than the global average

Data centres in Australia are already more energy efficient than the global average, with power usage effectiveness (PUE) as low as 1.07 and a median PUE of 1.30 (Mandala and Data Centres Australia 2025).

Australia's National Australian Built Environment Rating System (NABERS) provides certified sustainability ratings to support the efficiency of buildings across Australia – from one to six stars. NABERS for data centres was launched in 2013. NABERS estimates that by improving its rating from three stars (1.88 PUE) to five stars (1.34 PUE) an average data centre can save more than $2.2 million every year (NABERS 2024). Since 1 July 2025, data centres contracted for use by the Australian Government have been required to achieve and maintain a five-star NABERS rating, or equivalent environmental rating such as a PUE of 1.4 or less (Australian Government Department of Finance 2025).

Innovative approaches are emerging to improve the energy efficiency of data centres and better utilise their by-products. In Sweden, a pilot project will use the waste heat from a small half-megawatt data centre to heat a nearby greenhouse. Previously, waste heat from the data centre was released directly into the air. This project will instead use the heat to maintain a stable climate in the greenhouse, even when outdoor temperatures go as low as -30°C, enabling year-round vegetable growth (SystemAir 2026). In other parts of the world with district heating systems, the waste heat from data centres is increasingly used to heat homes and businesses.

Some Australian data centres are also leading innovation in water efficiency

Several data centres in Australia use advanced cooling systems, such as free-air cooling which uses the outside air to cool the data centre, or closed-loop systems which recirculate water (Mandala and Data Centres Australia 2025). When CDC Data Centres was founded in 2007 – the middle of the Millennium Drought – it developed an advanced liquid cooling system to reduce its water use as much as possible. The system does not rely on ongoing water consumption: it is filled once and then the water is recirculated continuously for the life of the data centres. CDC estimates that 5 GL (5 billion litres) is being saved every year across 13 CDC-operated data centres in New Zealand and Australia through this technology (CDC Data Centres).

While data centres are currently largely reliant on drinking water from our existing water networks, recycled water presents a key opportunity for the industry to reduce its use of this essential resource. Some data centres are also investing in on-site water harvesting to reduce their impact on the water network. A range of innovative solutions are emerging around the world. For example, Google's Hamina data centre in Finland uses an innovative cooling system that draws cold seawater from the Gulf of Finland to remove heat from servers via heat exchangers, rather than relying on potable water or energy-intensive chillers (Google 2025a).

ENHANCE OUR GRID, RATHER THAN STRAIN IT

Under the National Electricity Rules, most energy users – including data centres – can be subject to involuntary load shedding during extreme events like bushfires, storms and floods, as well as periods of very high demand and power generator outages. Load shedding involves reducing electricity supply to selected areas, to protect the electricity network from long-term damage and widespread outages (AEMO 2023). Load shedding is only done on rare occasions as an absolute last resort, after alternative options have been exhausted. One alternative is the Reliability and Emergency Reserve Trader (RERT) mechanism. Through the RERT, energy users and generators sign up to support the grid by increasing, reducing or stopping power use for short-term periods when grid events occur. Participants receive financial compensation if they are called on to provide these services (AEMO 2025b). Other large energy users, such as aluminium smelters, commonly provide these services (Australian Aluminium Council 2025).

By participating in voluntary demand flexibility and peak-load management mechanisms, data centres could support grid stability, rather than putting extra pressure on our grid. In NSW, Transgrid has already indicated it intends to clearly reflect expectations for data centres to respond appropriately during periods of peak demand or system stress to support system reliability and security for all consumers in its connection agreements (Transgrid 2026b).

However, data centre operators face significant penalties under their agreements with customers for any "downtime", and have back-up diesel generators to ensure they can maintain uninterrupted operations in case of emergencies. Under current settings, if data centres were to participate in voluntary demand response mechanisms, they would largely be reliant on diesel, with implications for our climate, environment, public health, and energy security. The industry has expressed a willingness to participate in voluntary demand flexibility and peak-load management, but note a range of regulatory reforms are needed to better enable use of backup generation and storage (Data Centres Australia 2026a).

Safe, clean solutions to enable flexible demand

Diesel generators release climate pollution and other harmful pollutants including carbon monoxide, nitrogen oxides and sulphur dioxide. It is estimated that pollution from non-road diesel engines in Australia had a health impact equivalent to 5,387 years of life lost in 2018 alone (DCCEEW 2024).

Policies to require or encourage load flexibility should limit reliance on diesel backup generation and associated pollution. For example, co-locating or contracting with big batteries would allow data centres to draw on stored clean energy rather than diesel generation. Some data centre operators in Australia are already investing in storage, including the Supernode Data Centre in Queensland, which will host one of the largest batteries in the NEM. The 750 MW, 2-4 hour battery will provide secure power supply and support Queensland's grid (Quinbrook 2025).

Renewable diesel and biodiesel are being trialled around the world as a sustainable backup power option, for example at the Vantage Data Centre in Wales. In Australia, AirTrunk has indicated it intends to trial renewable diesel at the 1.2 GW Mamre Road Data Centre in Western Sydney (E-Lab Consulting 2025).

For some data centres, such as AI factories, there are opportunities to load shift by performing non-critical tasks in times of high renewable output. In the US, Google is embedding a range of flexible demand capabilities into its data centre fleet, which enables it to shift or reduce power demand during certain hours or times of the year (Google 2025b). In co-location data centres, the ability to provide this type of load flexibility is often determined by customers rather than operators, as tenants control the computing workloads that drive most electricity demand.

Data centres can become positive actors in the grid: using batteries, clean fuels and smart software to make our system more reliable.

PROTECT AUSTRALIANS FROM INCREASED COSTS

Data centres and other large energy users often require additional network infrastructure to connect them to the grid. In other jurisdictions, such as the US, these costs have historically been borne by consumers. Importantly, in Australia, the National Electricity Rules allocate connection and augmentation costs to data centres if the assets are used exclusively by the data centre. Data Centres Australia, the industry peak, states that data centres will contribute $10.3 billion to energy infrastructure from 2020-2030 (Data Centres Australia 2026b). However, where augmentations are required in the shared network, cost recovery is more complex, and the costs may be borne by homes and businesses (NSW Government 2026).

Similarly, data centre operators currently fund the water pipeline upgrades that directly benefit their site. So far, they have invested $40 million in water infrastructure upgrades across Australia (Mandala and Data Centres Australia 2025). However, data centres may push existing water infrastructure to its limits and require upgrades, and new infrastructure to increase recycled water or increase water desalination treatment capacity may be required (NSW Government 2026). Frameworks must ensure the industry, rather than homes and businesses, absorbs these costs.

On the other hand, some areas have network infrastructure with spare capacity that can support large electricity users like data centres. If data centres use this existing capacity, the network would be used more efficiently, which could help reduce the share of network costs paid by other customers and lower the network component of electricity bills (around 40% of an average household bill) over time (AusGrid, Endeavour Energy and Essential Energy 2026).

ENSURE BIG TECH COMPANIES ARE PULLING THEIR WEIGHT

In Australia, the companies that use data centres are often separate from the specialist operators that develop, own and manage the facilities. The separation between operator and customer creates complexities in the application of energy and sustainability obligations. While operators are responsible for building and managing physical infrastructure, the IT load driven by tenants accounts for the majority of electricity consumption. As a result, PPAs are typically joint arrangements involving both operators and customers. Other important operational factors – including the ability to shift or flex demand in response to grid conditions – are similarly shaped largely by customer needs and workloads (Data Centres Australia 2026b).

Other countries that have adopted energy and sustainability requirements for data centres, such as Ireland and Germany, place responsibility primarily on the operators. In Singapore, a “holistic” approach is taken to the assessment of the sustainability and economic contribution of data centres.

Governments should collaborate with industry to develop mechanisms that ensure both data centre operators and their customers are accountable for meeting requirements. For example, operators may be required to disclose their tenants, where relevant, to governments and utilities as part of planning and grid connection processes, and provide information on how both operator and customer will meet requirements.

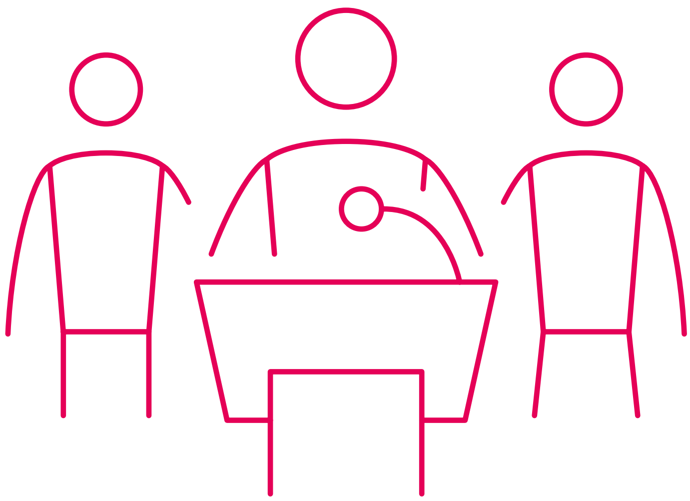
COORDINATED PLANNING

Data centre development spans various policy areas, multiple levels of government, regulators and utilities. Effective coordination across these institutions and industry is essential to mitigating the risks of data centre growth, and harnessing the potential benefits — for example, by aligning data centre growth with renewable energy development and network capacity. Victoria is actively coordinating development through its Sustainable Data Centre Action Plan, designed to improve government coordination of data centres and attract investment while ensuring growth is "well planned, efficient and responsible" (Victorian Government 2026).

Australia's data centre industry states there are a range of barriers requiring action from governments to better enable it to adopt sustainable practices (Data Centres Australia 2026a). For example, action to address delays to the renewable rollout including slow planning and environmental assessment processes in some jurisdictions, workforce availability, and social licence, is needed to enable the industry to access new renewable energy at the pace and scale required.

Similarly, action is needed to enable more efficient approvals of water infrastructure (Mandala and Data Centres Australia 2025), and support the adoption of low-emissions backup systems, for example developing biodiesel supply chains and exploring reforms to support installation of large-scale battery storage (for example, as identified by NextDC).

Governments should work with stakeholders to ensure barriers to the adoption of sustainable technologies and practices are addressed.



Proactive planning through the Western Sydney Data Centre Energy Hub

Western Sydney has become a major hub for large data centres because of its available industrial land, strong fibre connections and proximity to customers. Recognising this, Endeavour Energy is proactively working with the data centre industry and transmission and water utilities to develop a *Data Centre Energy Hub* model.

Through the hub, multiple data centres would connect through shared infrastructure within one precinct, instead of each building separate assets. Each connecting data centre customer would fully fund their share of the assets, while the hub approach is intended to improve network efficiency by spreading fixed costs across more users, helping reduce pressure on electricity bills for existing customers. The hub could also support future clean energy initiatives such as renewable generation, battery storage and flexible demand (AusGrid, Endeavour Energy and Essential Energy 2026).

SUPPORT ECONOMIC DEVELOPMENT IN OUR REGIONS

While there are clear operational and commercial reasons for locating many data centres near cities, there are opportunities to site some data centres in strategic regional locations. Certain functions such as AI training have less stringent latency requirements and can therefore be located further from metropolitan centres without compromising performance (Mandala and Data Centres Australia 2025). This is not about shifting impacts from metropolitan areas into regional communities, but about identifying locations where data centres can support regional economic development, make productive use of existing infrastructure, and integrate with broader energy transition objectives, with low environmental impact and without putting additional strain on water resources.

The electricity network infrastructure in many regional areas has capacity to accommodate additional large loads (AusGrid, Endeavour Energy and Essential Energy 2026). If done well, and in the right locations, such as renewable energy zones (REZs) and former coal station sites in areas with sufficient water resources, data centres could help reduce network augmentation costs, ease transmission constraints, support regional development, and even unlock additional network capacity (Baringa and CEFC 2025).

For example, a $10 billion, 720 MW data centre has been proposed in Hazelwood, Victoria, within the Gippsland REZ. Near the former Hazelwood coal station, the facility would utilise the existing water and energy infrastructure, including using non-potable water – offering new opportunities for the region as it transitions away from coal (Pope 2026). Not all REZs will be suitable sites for data centres. Many parts of Australia are already experiencing growing water stress, and data centre development must not be allowed to worsen local water insecurity.

Energy and water are just two of many important considerations in data centre development. Any mechanisms to encourage regional data centre development must be underpinned by robust frameworks for community engagement, transparency, benefit sharing and environmental protection. Development should avoid areas of high biodiversity value, protect water resources and cultural heritage, and be guided by early and ongoing consultation with local communities and First Nations peoples. Regional communities should share directly in the benefits of development through local employment and procurement, and benefit sharing schemes. If well-coordinated, data centres could enhance the benefits of renewable energy development, including job creation, support for community services and programs, and direct payments to landholders.

Encouraging best-practice data centre development in suitable regions could ease urban grid congestion and boost regional economies.

4. How Australia can get data centres right for our climate

Australian governments and industry have a once-in-a-generation opportunity to develop data centres in ways that support our shift to renewables without negatively impacting power bills, shift to renewables or water security.

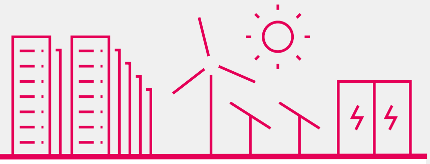
Enforceable, nationally uniform standards will provide certainty for investors while avoiding unnecessary increases in power bills and worsening climate impacts.

Industry, governments at all levels, regulators and system operators all have a role to play in mitigating the risks associated with poorly managed data centre growth. While the Australian Government's expectations for data centres are a signal to the industry, strong, enforceable requirements are needed. State governments, regulators and utilities are where key decisions around data centre approvals and connections are made.

Embedding robust sustainability criteria for data centres into policy and regulatory frameworks will reduce the risks associated with data centre growth, while also providing greater clarity and certainty for investors. Data centre operators and their customers have significant financial capacity, and many are already taking steps to source renewable energy and increase water and energy efficiency. They are well-placed to meet strong requirements.

Strong policy settings would bring Australia in line with other jurisdictions around the world including the European Union and Singapore. For example, in Singapore, new data centres must compete for grid connection rights through a call for applications process. Projects are assessed against criteria including energy efficiency, low-emissions energy, and sustainability best practices, including a requirement to be certified under Singapore's Green Mark scheme (Singapore Government 2025).

Recommendations



With at least 90 new data centres already proposed across Australia, we cannot afford to wait. Seven key requirements must be applied to all future data centres in Australia, including those already under assessment.

1 Require data centres and their customers to support additional renewable energy and firming capacity to match their demand

Building on the industry's proactive work to offset its energy use, and ECMC's agreement that data centres should invest in additional renewable generation and firming capacity, data centres in Australia must be required to support the development of new wind, solar and firming capacity. This new capacity must be beyond what would have been built without the industry's demand and support – reflecting both the scale of their electricity demand and their capacity to contribute to system-wide outcomes.

Implementation of this requirement should include:

- Establishing credible mechanisms to demonstrate additionality, for example requiring data centres to provide evidence of pre-financial close Power Purchase Agreements (PPAs) as the primary mechanism. Renewable Energy Guarantee of Origin (REGO) certificates may be used alongside PPAs to ensure ongoing location and time-matching of renewable supply.
- Ensuring investment underpinned by data centres is additional to projects already supported through national, state and territory energy schemes, including the Capacity Investment Scheme.
- Working with stakeholders to develop mechanisms to ensure both data centre operators and their customers are accountable for meeting requirements, in ways that support effective renewable investment. For example, this could be underpinned by a requirement for anchor tenants to provide information to government and utilities as part of grid connection and planning assessment processes.
- Incorporating a reasonable transition period of up to three years for new facilities to scale up to 100% renewable procurement as soon as possible from the commencement of operations. Throughout this transition period, operators and customers could be encouraged to contract PPAs with existing generation and storage, noting a significant volume of existing PPAs are expected to retire in the coming years. This approach would account for practical delivery realities between renewable projects and data centre developments, while ensuring direct renewable electricity procurement and investment, rather than offsetting.
- Safeguards to ensure that at a minimum, any new data centre's energy use is no more emissions-intensive than the grid from day one of operations. This must include rules to prevent data centre operators from building off-grid fossil fuel generation, which would be a material step backwards for our shift to renewables.

2 Make best-practice energy and water efficiency ratings the standard for all data centres

Many data centres already seek to optimise their water and power use. However, there is a clear role for government to reinforce and standardise these efforts by setting consistent, transparent performance benchmarks. This could include, for example, requiring a minimum five-star NABERS Energy rating, alongside a defined Water Usage Effectiveness (WUE) threshold. As part of this, data centres should be expected to maximise the use of alternative water sources – including recycled water and on-site water harvesting – wherever feasible.

Clear outcome-based standards would provide greater certainty for industry, create a level playing field, and build public confidence that data centres are using energy and water resources responsibly. There can be trade-offs between energy and water efficiency, and cooling requirements vary depending on the local climate. Governments should work with industry to develop standards that drive the highest possible efficiency outcomes while allowing data centres to be designed appropriately for the local infrastructure, resources and needs. These benchmarks should be regularly reviewed and progressively strengthened to reflect technological advancements and evolving industry and international best practice.

3 Require data centres to use flexible demand, backed by renewable solutions

Data centres should be integrated as active, flexible participants that enhance grid stability, rather than strain it. Through the ECMC, all Australian jurisdictions except Queensland have agreed that data centres should provide demand flexibility services to avoid additional costs being borne by consumers, and have tasked the AEMC with developing advice on implementation options (ECMC 2026).

Reliance on fossil diesel backup generators should be minimised as far as possible as part of demand flexibility requirements, for example through co-location with battery storage and adoption of alternative fuels. Necessary policy and reforms to support the development and adoption of low-emissions fuels and battery storage should be considered alongside this.

Where possible, data centres should also be encouraged to manage their workloads in ways that support the grid, for example shifting non time-sensitive workloads to the middle of the day, while performing only essential tasks – or drawing on battery storage – during the evening peak.

4 Ensure data centres pay for the energy and water infrastructure they need to protect households from rising bills

In Australia, data centres are already required to pay for network and water infrastructure upgrades that directly benefit their site. However, where augmentations are required in shared infrastructure, cost recovery is more complex, and the costs may be borne by homes and businesses.

Frameworks must ensure the industry and its customers, rather than homes and businesses, absorb these costs. Australian governments are working to review cost recovery arrangements to ensure data centres cover network upgrades and data centre growth (ECMC 2025). An equivalent review should be undertaken in relation to water infrastructure, ensuring data centre growth does not shift avoidable costs onto households.

While regulatory regimes are reviewed and actioned, water and energy utilities should be encouraged to negotiate agreements with developers that ensure data centres pay for any infrastructure upgrades required.

5 Increase transparency of the magnitude of current and future water consumption, energy use and climate pollution

Reliable and transparent information on the magnitude of both current and future demand is a critical foundation for effectively planning for and reducing impacts.

While Australia's largest data centre operators are required to report on their energy use and climate pollution through the National Greenhouse and Energy Reporting Scheme, operators below the reporting threshold are not captured, there is very little transparency of customer energy and water use and emissions, and information on water use remains a gap.

The significant variation between industry and institutional forecasts shows there is a need for governments at all levels, and industry, to work together to develop a nationally consistent framework that balances commercial sensitivity and security considerations with best practice reporting standards.

ECMC is already working to improve AEMO's visibility of data centre energy demand (ECMC 2025). The NSW Government has indicated it intends to collaborate with industry to improve approaches for forecasting both water and energy demand, including by aligning assumptions (NSW Government 2026). The data centre industry has also recently published its own estimate of Australia's pipeline capacity to inform policy and planning.

We can build on this momentum to set up a framework for nationally consistent reporting for both data centre operators and customers, including on electricity use, water use, backup generation and climate pollution. As part of this, a consistent approach to forecasting should be developed to allow governments, regulators and utilities to better coordinate and plan for data centre development.

6 Explore options to encourage best-practice regional data centres

Governments should explore options to encourage data centre development in regional Australia where appropriate, particularly in areas with strong renewable energy and water resources, and available network capacity. If done well, this could help reduce network augmentation costs, reduce strain on water resources, ease transmission constraints and unlock additional network capacity while supporting regional development.

Government coordination could identify and proactively promote development in suitable regions. Prioritised planning approvals and streamlined electricity connection processes could be offered for data centres located in suitable regional areas, while still ensuring all environmental, planning and community requirements are fully met. It is essential that any such approach is underpinned by robust frameworks for community and First Nations engagement, transparency, benefit sharing, and environmental protection.

7 A collaborative, coordinated approach to data centre development

Data centre development spans various policy areas including infrastructure and planning, climate change, environment, energy, water and skills, as well as multiple levels of government, regulators and utilities. Effective coordination across these institutions and industry is essential to mitigating the risks of data centre growth, and harnessing the potential benefits — for example, by aligning data centre growth with renewable energy development, network capacity, and water availability.

As part of this, governments should work with stakeholders to address barriers to the adoption of sustainable technologies and practices. This means ensuring that our regulatory settings, infrastructure and workforce can support responsible data centre development at the pace and scale required.

Conclusion

Australia faces an important choice in how it manages the rapid growth of data centres. Without aligning new demand with additional renewable generation, storage, and system flexibility, this growth will push up power prices, prolong the use of polluting coal power stations, increase gas generation, and derail the progress we are making towards our climate goals. Similarly, without careful planning, water demand from data centres could add to the pressure on this scarce resource.

These outcomes are not inevitable. Data centre operators and customers have significant capital available to invest in electricity and water infrastructure that will benefit both them and the community. With enforceable policy and coordinated planning, data centres can play a positive role in Australia's shift to renewables – supporting new clean energy investment, improving grid efficiency, and contributing to a more resilient, low-emissions system.

Government and industry have a critical opportunity to shape this trajectory. By acting fast to set and meet strong standards, they can ensure that data centre growth does not undermine Australia's energy and climate targets.

Image 7: A wind-powered data centre in Eemshaven, The Netherlands.

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