

Australia's Data Centre Boom: Are We Building the Storm Before We Build the Rules?



Australia needs data centres.

They underpin cloud computing, banking, telecommunications, government services, healthcare, research, business systems and, increasingly, artificial intelligence.

They will also be important to Australia's sovereign digital capability. Australia cannot sensibly depend entirely on computing infrastructure located overseas.

So, the question is no longer whether Australia should build data centres.

The more important question is:

Do we properly understand the environmental, energy, water, infrastructure and economic consequences before approving a development pipeline that may become difficult to unwind?

That question is becoming more urgent as data-centre proposals expand.

Governments are beginning to respond. However, the policy position, project pipeline and supporting infrastructure requirements are changing quickly. Some claims about future demand, project values and regulatory timing should therefore be treated as estimates or snapshots rather than settled facts.

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Take a look at the maps



Across Australia, data centres are concentrated around major cities.

Sydney is generally identified as Australia's largest data-centre market, followed by Melbourne and other capital-city markets. However, market totals vary according to how operators, facilities, campuses and planned projects are counted. [DataCenterMap](#) lists a particular number of Australian facilities and markets, but that figure should be treated as a commercial directory estimate rather than an official national inventory.

That difference illustrates one of the problems.

For infrastructure that is becoming strategically important to Australia's electricity, water, telecommunications, land-use and national-security systems, Australia does not appear to have a single, publicly accessible national register covering all operational, approved, proposed and under-construction facilities.

A comprehensive register would ideally show:

- what data centres are operating;
- what has been approved;
- what is under construction;
- what is proposed;
- their expected electricity demand;
- their water requirements;
- their land requirements; and
- what additional infrastructure will be required to support them.

Australia is planning for a major new category of electricity demand without a single transparent national picture of the entire development pipeline.

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That should concern us.

The policy discussion has moved significantly

When I previously wrote **“Does Australia Need a National Data Centre Plan?”**, Australia did not have a comprehensive national framework governing where large data centres should be built or how their growing demands on electricity and water should be managed.

Since then, there has been substantial policy movement.

The Federal Government has announced work on artificial-intelligence governance and expectations for datacentre and AI-infrastructure developers. Those announcements have included proposals or expectations concerning additional electricity supply, network costs, grid stability, water efficiency and location.

The precise status of each measure matters. Some are policy expectations, consultation proposals or intended future standards rather than fully enacted, nationally enforceable requirements. They should not be described as completed regulation unless the relevant legislation or instrument has been enacted.

National Cabinet has also recognised that large data centres can create material energy, water and land-use impacts and has supported work towards nationally consistent standards. The timing, legal form and final content of those standards should be checked against the latest official release before publication.

This is important progress.

Australia is no longer debating only whether data centres need special infrastructure rules.

Governments have acknowledged that their impacts require more deliberate management.

But that creates another question:

What happens to projects progressing while national standards and cost-allocation arrangements are still being developed?

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NSW demonstrates the scale of the problem



New South Wales provides a useful illustration, although the figures and policy documents cited in public discussion have changed over time and should be treated as dated snapshots.

The NSW Government has published a data-centre policy framework or related guidance setting out objectives concerning environmental performance, cost recovery, energy and water supply, community infrastructure, local industry, skills and employment.

The broad policy objectives are sensible.

The problem is timing.

NSW Government material has referred to a very large volume of data-centre connection interest, including figures expressed in gigawatts. Those figures should not be interpreted as committed electricity demand. They may include preliminary enquiries, applications, projects at different stages of development or capacity that will never ultimately connect.

Similarly, references to approximately 13 GW being in advanced connection discussions require careful qualification. "Advanced discussions" is not necessarily equivalent to an approved connection, a committed load or a forecast of actual consumption. The comparison with the state's average electricity demand is rhetorically useful, but it compares a potential connection pipeline with actual system demand and should be presented as an indicative comparison rather than a like-for-like measure.

NSW Government pages have also referred to approximately 19 or 20 major data-centre projects with an aggregate announced or estimated value exceeding \$50 billion. These figures appear to represent different snapshots or counting methods. They should not be presented as a single definitive total without identifying the relevant publication date and methodology.

The safer conclusion is:

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NSW has a substantial data-centre development pipeline, but the size of that pipeline depends on how projects, stages, values and connection requests are counted.

Meanwhile, some regulatory mechanisms intended to manage the consequences are still being developed.

The cited consultation closing date for electricity-network connection and cost-recovery reforms should be verified against the current NSW Government consultation page before publication. Consultation dates can change, and a closed consultation should not be described as ongoing.

The same applies to the IPART timetable. IPART has examined developer charges and related water-pricing issues, including the treatment of high-demand users. However, the status and expected timing of any final report should be checked against the latest IPART publication.

So, we have a difficult situation.

The projects are moving.

The investment is moving.

Connection enquiries and applications are moving.

But some of the rules determining who pays for the infrastructure they require may still be under development.

That seems backwards.

This is rapidly becoming an electricity-system issue

A modern hyperscale or AI-oriented data centre can represent a substantial, continuous electricity load.

However, not every data centre has the same demand profile. Electricity use depends on facility size, server density, cooling systems, utilisation, redundancy requirements and the extent to which AI workloads are hosted on site.

AEMO forecasts substantial growth in data-centre electricity consumption in the National Electricity Market. The precise figures cited in earlier versions of this article should be checked against the latest Electricity Statement of Opportunities and its underlying assumptions before publication.

In particular, the figures should be distinguished between:

- electricity consumption in terawatt hours;
- connection capacity in gigawatts;
- maximum demand;
- average demand; and
- the share of total NEM energy supplied.

These are not interchangeable measures.

If the cited AEMO figures are confirmed, they would indicate a significant increase in data centres' share of NEM electricity consumption over the forecast period. If they cannot be confirmed in the final published document, the claim should be softened to:

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AEMO's recent forecasts indicate that data-centre electricity consumption could increase substantially during the next decade, although the outcome will depend on the pace of development, AI workload growth, efficiency improvements and connection constraints.

Think about what else Australia needs to do during approximately the same period.

We need to:

- retire ageing coal generation;
- construct large amounts of renewable generation;
- expand transmission networks;
- build storage and firming;
- electrify transport;
- electrify parts of industry;
- accommodate population growth; and
- maintain reliable and affordable electricity for existing households and businesses.

Into that already challenging transition we may be adding one of the fastest-growing new categories of electricity consumption Australia has seen.

AI might exist in **"the cloud"**.

Its electricity demand most certainly does not.

Then there is water

Electricity gets most of the attention, but water deserves considerably more scrutiny.

Data centres generate heat.

Their water use depends heavily on cooling architecture, facility design, climate, operating conditions and the availability of recycled or alternative water. Some newer cooling technologies can substantially reduce direct water consumption, but lower water use is not the same as zero water use.

Australia is often described as the world's driest inhabited continent. That phrase is widely used, although it is a general geographic description rather than a precise measure of water scarcity in every location.

Many proposed data centres are concentrated near cities experiencing population growth and increasing competition for water. The local impact will depend on the relevant catchment, water source, drought conditions, infrastructure capacity and proposed cooling system.

Federal Government expectations for data-centre and AI-infrastructure developers have included minimising water use, considering drought and local conditions, using non-potable water where practicable and contributing appropriately to required infrastructure. These should be described as government expectations or policy guidance unless and until they become binding requirements.

NSW has also been examining cost recovery for high-demand water users through its developer-charge and water-pricing processes. The precise status of that work should be checked against the latest IPART and NSW Government material.

Again, the principle is encouraging.

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But the underlying question remains:

Should major developments be approved before their long-term water requirements, supply arrangements and infrastructure costs have been clearly determined?

Now put climate risk over the top



This is where the argument becomes bigger than data centres.

Australia's climate is changing.

Infrastructure that might operate satisfactorily under average conditions must increasingly be designed and tested for extreme conditions.

The earlier references to a Bureau of Meteorology report dated **1 September 2026**, and to a spring outlook issued in **August 2026**, cannot be independently verified from the information available here. They are also future-dated relative to the present drafting context. They should not be retained as factual claims unless the relevant Bureau pages and publication dates are checked directly.

The same applies to the statement that El Niño was “firmly established” and likely to strengthen. ENSO classifications and outlooks change over time, and the Bureau’s wording should be quoted or paraphrased only from the current official release.

The broader point does not depend on a particular El Niño event.

What happens during simultaneous periods of:

- extreme heat;
- high electricity demand;
- drought;
- bushfire;
- transmission constraints;

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- water restrictions;
- renewable-generation variability; and
- emergency-service demand?

These are not science-fiction scenarios.

They are interconnected infrastructure risks that should be considered in planning.

Which leads to what I believe should become a fundamental planning principle:

Climate resilience under extreme conditions should be a mandatory test before a large data centre is approved.

Planning based solely on historical averages is no longer sufficient.

What does Australia actually gain?

There is another part of the debate that receives surprisingly little attention.

Economic return.

Announcements about data centres tend to emphasise investment.

A \$3 billion development sounds impressive.

A \$5 billion development sounds even better.

A \$10 billion technology campus attracts headlines.

But **investment value is not the same thing as national economic benefit.**

Australia can benefit from data-centre investment.

Potential benefits include:

- construction activity;
- engineering work;
- technology employment;
- tax revenue;
- digital infrastructure;
- sovereign computing capability;
- cloud availability;
- telecommunications investment;
- research capability; and
- opportunities for Australian technology businesses.

The scale of these benefits should not be assumed. They depend on ownership, financing, procurement, employment, taxation, operating arrangements and the extent to which the facility supports activity that would otherwise occur offshore.

There are Australian-owned operators participating in the sector, but the ownership of individual projects should be checked rather than inferred. Many large developers, investment funds, cloud platforms and AI companies are multinational organisations, and some financial returns may therefore accrue offshore.

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There is nothing inherently wrong with foreign investment.

Australia has benefited enormously from it.

But if Australian communities are providing land, electricity networks, transmission infrastructure, water infrastructure and other scarce resources, governments should calculate the entire equation.

Instead of simply announcing that a project is “worth \$5 billion”, we should ask:

What is the net benefit to Australia?

That assessment should include:

Benefits

- Australian wages and employment;
- taxation;
- local procurement;
- Australian ownership;
- sovereign digital capacity;
- knowledge transfer;
- productivity improvement;
- research capacity; and
- strategic infrastructure.

Costs and resource impacts

- additional generation;
- transmission;
- network augmentation;
- energy storage;
- water infrastructure;
- roads;
- environmental mitigation;
- emergency resilience;
- government incentives;
- community impacts;
- land opportunity costs; and
- long-term resource consumption.

That would give Australians a more meaningful measure of whether a development is genuinely in the national interest.

Location matters more than we acknowledge

There is another question governments should be asking.

Why should developers alone determine where these facilities are concentrated?

Data centres need connectivity, electricity and access to customers. Some also need access to skilled workers and specialised services.

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But very large facilities do not necessarily need to occupy scarce urban land or cluster within already constrained electricity and water networks.

The earlier City of Sydney reference should be checked carefully. The cited meeting page may record a council report, submission or resolution rather than a direct statement by the City of Sydney in the form suggested. The title and date of the relevant document should be confirmed before publication.

The broader planning concern is reasonable: large data centres may consume valuable land while generating relatively few permanent operational jobs compared with their capital value. That is a proposition requiring project-specific evidence, not a universal fact.

A genuinely national approach should identify locations where Australia can deliberately align:

- renewable electricity generation;
- transmission;
- grid capacity;
- energy storage;
- telecommunications;
- recycled or alternative water;
- suitable industrial land;
- climate resilience;
- community impacts; and
- sovereign-security requirements.

Instead of asking only:

“Can this data centre be built here?”

we should also ask:

“Where should Australia’s next generation of data centres be built?”

Those are very different planning questions.

Australia needs a National Data Centre Plan

The Federal Government’s proposed or emerging standards and NSW’s data-centre policy work are significant developments.

They should be acknowledged as such.

But standards alone are not necessarily a national plan.

Before another wave of major projects becomes difficult to change, Australia should consider a coordinated framework requiring:

1. A national data-centre register

A transparent register of operational, approved, under-construction and proposed facilities, including expected power, water and land requirements.

The register should distinguish clearly between confirmed projects, applications, preliminary proposals and commercial announcements.

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2. Cumulative impact assessment

Projects should not be assessed entirely in isolation.

Governments need to understand the combined electricity, water and infrastructure demand created by multiple facilities within the same region.

3. Additional electricity generation and storage

Large new loads should be supported by additional generation, storage and network capacity where appropriate, with transparent arrangements for allocating costs and managing reliability risks.

The phrase “genuinely additional” requires careful definition. A data centre may contract for renewable energy without directly causing new generation to be built, and contractual procurement is not necessarily the same as physical additionality.

4. Water-efficiency and drought-resilience standards

Water consumption, recycling, alternative water sources and infrastructure requirements should be assessed before approval.

5. Climate stress-testing

Approval modelling should include extreme heat, drought, bushfire, flood, storms and grid disruption rather than relying primarily on historical averages.

6. National-interest economic assessment

Governments should measure Australian jobs, taxation, sovereign capability, Australian ownership, local supply-chain participation and long-term domestic economic value — not merely headline project investment.

7. Strategic geographic planning

Australia should identify where large data centres should be located based on national infrastructure, environmental and security objectives rather than merely responding to individual developer proposals.

8. Sovereign capability

Some computing capacity may warrant treatment as strategic national infrastructure.

Australia should assess whether critical government, defence, health, financial, research and national AI capabilities could become excessively dependent on infrastructure or services controlled offshore.

That does not mean all data centres need to be Australian-owned or located in Australia. It means that resilience, control, access and continuity requirements should be identified explicitly.

Perhaps the immediate danger isn't AI

There is considerable debate about whether artificial intelligence itself might eventually become dangerous.

Maybe it will.

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Maybe it won't.

But the more immediate risk is considerably less science-fictional.

It is the possibility that we approve enormous amounts of physical infrastructure because we are excited about an economic and technological opportunity without first calculating the combined consequences for the systems that infrastructure consumes.

Electricity.

Water.

Land.

Transmission.

Community infrastructure.

And environmental resilience.

Australia is entering a period when all those systems may increasingly be tested by population growth, electrification and climate change.

We should not wait until electricity networks are constrained, reservoirs are under pressure, electricity prices are rising or individual communities are fighting developments suburb by suburb before deciding that we need a coordinated national plan.

Australia should embrace AI.

Australia should build data centres.

Australia should develop sovereign computing capability.

But we should do it deliberately.

Before Australia unleashes the AI storm, we should make certain we can control the infrastructure storm that comes with it.

Because once tens of billions of dollars have been invested and gigawatts of new demand have been connected to the grid, changing direction becomes much harder.

Those figures should be used only where they refer to verified, aggregated commitments. If they refer instead to announced projects, proposals or connection enquiries, the wording should say so.

The time to calculate the consequences is before we build — not afterwards.

Related ShapedLogic articles

Does Australia Need a National Data Centre Plan?

An earlier examination of whether Australia needs a coordinated national approach to location, electricity, water, environmental performance and sovereign digital capability.

Australia's Data Centre Boom: The Infrastructure Debate Behind AI and the Cloud

Australia's Data Centre Boom: Are We Building the Storm Before We Build the Rules?

Background on the rapid expansion of Australian data centres and the underlying electricity, water, land and environmental issues.

AI in Australia's Interests: Opportunity, Risk and the Policy Challenge Ahead

A broader discussion of how Australia might capture the economic benefits of AI while protecting Australian interests.

References

The following references require verification against the current official pages before publication. Several dates and titles in the earlier version may be future-dated, approximate or based on changing policy documents.

Australian Energy Market Operator — *Electricity Statement of Opportunities*. Confirm the edition, publication date, forecast years, data-centre assumptions and whether the cited figures refer to energy consumption, demand or connection capacity.

Australian Government — Prime Minister of Australia, *AI in Australia's Interests*. Confirm the title, publication date, URL and whether the data-centre measures described are proposals, expectations or binding requirements.

Australian Government — National Cabinet statement concerning data centres. Confirm the meeting date, statement title, URL and the legal status and timetable of any proposed national standards.

Australian Government — *Expectations of Data Centres and AI Infrastructure Developers*. Confirm the publication date, issuing department, document title and whether the expectations are voluntary or mandatory.

NSW Government — *NSW Data Centre Policy Framework and Guidelines*. Confirm the official title, publication date, issuing agency and whether the document is a framework, guideline, policy or consultation document.

NSW Government — material concerning electricity-network connection and cost-recovery arrangements for data centres. Confirm the consultation title, closing date and current status.

Infrastructure NSW — data-centre policy and guidance. Confirm whether this is the correct source for the six principles and cite the specific document or page.

Independent Pricing and Regulatory Tribunal NSW — review of developer charges and recycled-water prices for metropolitan water businesses. Confirm the current review scope, treatment of data centres and expected reporting timetable.

Bureau of Meteorology — ENSO monitoring and outlook material. Do not retain the September 2026 claims unless the relevant pages and dates are independently verified.

Bureau of Meteorology — seasonal outlook material. Confirm the publication date, forecast period and wording concerning rainfall, temperature and bushfire risk.

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DataCenterMap — *Australia Data Centers*. Treat the facility and market count as a commercial directory snapshot, not an official national statistic. Record the access date because the number may change.

City of Sydney — document concerning sustainable data centres. Confirm the document title, meeting date, author, resolution or recommendation, and whether it supports the claim about land use, permanent employment and planning standards.

Author: John DeBrincat FACS MAICD

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Author's note: The maps accompanying this article use publicly available DataCenterMap listings together with announced and proposed developments. They should be regarded as indicative rather than as a definitive government register. DataCenterMap counts and project announcements may change, and announced project values or connection requests should not be treated as committed investment or electricity demand without further verification. AI tools were used to assist with research, fact-checking, editing and preparation of graphics. All material claims should be checked against the cited primary source before publication.

