

SUBMISSION

Submission to the Department of the Prime Minister and Cabinet

Submission on the Getting it right: Building AI infrastructure that works for Australia consultation paper

9 October 2026

The Australian Academy of Technological Sciences and Engineering (ATSE) is a Learned Academy of independent, non-political experts helping Australians understand and use technology to solve complex problems. Bringing together Australia's leading thinkers in applied science, technology and engineering, ATSE provides impartial, practical and evidence-based advice on how to achieve sustainable solutions and advance prosperity.

Australia has the opportunity to be an AI powerhouse, leveraging its advantages. As mentioned in the consultation paper, Australia has stable institutions, a skilled workforce, an advantageous geographical position and strong international reputation to attract investment to grow the sector. Australia is already disproportionately represented in AI, with AI research intensity 5.8 times what would be expected for our population and Australian AI research cited 6.1 times the global average (Kingston AI Group, 2026). Leveraging this expertise will be vital to building a sector that strengthens the Australian community and economy.

ATSE has long promoted the need for reasonable regulation of the artificial intelligence (AI) and data centre sector. ATSE's [*Made in Australia: Our AI opportunity*](#) action statement and [*Unleashing growth: Australia's AI investment blueprint*](#) report both identify a strong regulatory framework as a core enabler of an Australian AI sector (ATSE, 2025b, 2025a). ATSE has also previously called for data centre planning requirements that minimise the impacts of data centres on communities and utilities (ATSE, 2026a, 2026b). Clear, consistent regulation of the AI and data centre sector based on ESG (environmental, social and governance) principles will help to ensure data centres and AI are using Australian resources fairly. This consultation is therefore welcomed, as an important step in delivering a balanced regulatory system that enables Australia to realise the productivity benefits of AI and data centres while protecting the community from negative impacts.

To support this vital work, ATSE makes the following recommendations:

Recommendation 1: Apply regulatory tiers based on the combined capacity of all facilities within a company's portfolio.

Recommendation 2: Utilise a scaled approach to data centre regulation that considers energy requirements, water consumption, transmission load and criticality, with greater firming, water, engagement and transparency obligations on operators.

Recommendation 3: Require workforce development obligations to create additional training opportunities in nationally recognised university and TAFE qualifications.

Recommendation 4: Require all large-scale data centres to time-match surrendered for the use of Renewable Energy Guarantee of Origin Certificates with their actual energy consumption.

Recommendation 5: Define 'new' renewable capacity using an additionality test, such as long-term offtake contracts or direct investment committed before a project's financial close.

Recommendation 6: Allow an increased Power Use Effectiveness cap only for facilities that use non-potable water or directly invest in water recycling facilities.

Recommendation 7: Adopt a tiered model for frontier model regulation aligned with international regulatory standards.

Recommendation 8: Reserve an independently verifiable share of installed compute for Australian researchers, start-ups, SMEs and public agencies through a national access pool.

Improving thresholds for a tiered system

The implementation of a tiered system for data centre regulation, as outlined in the consultation paper, is broadly supported by ATSE. Data centres that have a larger potential impact on their communities would be subject to greater oversight and regulation. Additionally, ATSE supports combined thresholds for operators of multiple data centres to ensure that regulations cannot be avoided by splitting data centres into multiple, smaller, facilities. The consultation paper proposes assessing multiple facilities owned by the same company together when their combined size reaches 150% of the single facility. Ideally this would be applied across the breadth of the regulatory bands, not just the top band, to minimise clustering just below the thresholds or operators breaking facilities up to avoid increasing their regulatory requirements.

The consultation paper proposes that the tiered model could be based on the Australian Energy Market Commission's draft access standards. This proposed model would put all facilities at or above 100MW (or combination of facilities above 150MW) in the highest regulatory category. The Mamre Road data centre proposed for Sydney would exceed this limit ten times over, requiring around 2.8 million solar panels to power (Cumbo, 2026). ATSE proposes a further tier for large-scale facilities that places higher obligations around firming, water, community engagement and transparency. These obligations should be written to be

technology neutral and placed on any large industry that meets the threshold requirements to ensure standards are evenly consistently with large industries that produce large demands on utilities¹.

While energy consumption should be part of any standards used in a tiered model, a single energy-based standard fails to account for the impact of data centres on water supplies or how the facility is used. ATSE therefore proposes that water impact, transmission load and criticality standards be included are part of a tiered approach to data centre regulation. Water impact could be assessed through total annual expected water consumption weighted against the stress this would cause on local water catchments/supplies. Transmission load would recognise the impact of additional demand on existing transmission infrastructure, supporting facilities collocated with energy infrastructure. Criticality recognises the impact of data centres on Australia's national interest and could be assessed using existing critical infrastructure criteria, such as those provided by the *Security of Critical Infrastructure Act (2018)* or the *Foreign Acquisitions and Takeovers Act (1975)*. Data centres with national interest implications could be required to employed increased security or reporting requirements than other facilities.

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Developing obligations for workforce development

ATSE supports the proposal that the mandatory standards for data centres will require demonstrated support for training workers involved in the construction and operation of data centres. ATSE also supports placing these obligations on frontier AI developers who benefit from Australian-trained, highly skilled workers. Workforce is likely to be a significant constraint on the roll out of AI and data centre infrastructure. Many of skills required for both construction and operation of data centres are already in short supply, and this constraint is likely to grow without significant investment in workforce development. Currently 33% of all technician and trade occupations nationwide are in a persistent shortage (Jobs and Skills Australia, 2025), while there is also a significant shortage of ICT professionals (Mandala, 2024). In total approximately 40% of all roles needed for data centre construction and operation are in shortage (Mandala, 2024). These shortages also fail to consider the growing needs in other sectors, such as the renewable energy rollout, which will only increase demand for many of the same skills required for data centre construction. Model developers will also face workforce constraints, as software engineers, GPU system specialists, model evaluators and data stewards, who are all required to develop frontier models, have skills that can take years to develop.

Workforce obligations would ideally require investments in nationally recognised qualifications through Australia's university or TAFE systems, rather than vendor-specific qualifications. Vendor-specific qualifications often lock workers into one system and can be difficult to translate to other applications. By requiring tertiary qualifications that apply across a range of projects, workers can transfer to related industries once the data centre industry is established. Australia would not be the first to put this kind of obligation in place. Pennsylvania has recently put in place requirements for data centres over 25MW of capacity to provide legally binding workforce training plans that support registered apprenticeships and support a minimum number of employment opportunities (Commonwealth of Pennsylvania, 2026). Frontier model developers would also be well-placed to support a future workforce to undertake postgraduate qualifications and support industry placements for research students.

These investments should focus on expanding the future workforce and widening access to opportunities. Workforce development requirements could include requirements to demonstrate additionality of educational opportunities². This could be achieved by supporting institutions to run additional places than they otherwise would, or by supporting free or low-fee places for students, similar to free TAFE schemes run by the Australian Government. Alternatively, additionality could be achieved by funding scholarships

¹ For example, the Tomago Smelting facility in NSW consumes 950MW of power – around 12% of the state's energy demand and as much as a hyperscale data centre (Rio Tinto, 2026).

² i.e., demonstrate that data centre operators or frontier AI developers have invested in educational places that would not have existed, or supported students who would not have been able to study that course, without that investment.

that enable students who otherwise would not have had the opportunity to participate in education (such as low SES students or students from underrepresented groups). This could be achieved through existing programs, such as the [Elevate: Boosting Diversity in STEM](#) program, delivered by ATSE.

Recommendation 3: Require workforce development obligations to create additional training opportunities in nationally recognised university and TAFE qualifications.

Ensuring additionality in renewable energy

By requiring new data centres to support additional renewable energy generation and storage capacity, data centres can help rather than hinder Australia's net zero ambitions. ATSE broadly agrees with the proposal in the consultation paper for Renewable Energy Guarantee of Origin (REGO) certificates to be surrendered to confirm renewable energy use. REGO certificates are generally time stamped hourly, though longer timestamps are allowed (Clean Energy Regulator, 2026). Requiring data centres to use REGO certificates that are timestamped to their actual consumption, rather than simply requiring enough certificates to cover the facility's total use, would ensure that renewable energy is actually used during peak periods when demands on the network are greatest and renewable generation is often reduced. Time matching should be required for all facilities in the highest regulatory tier (currently proposed as 100MW or 150MW for multiple sites).

REGO certificates confirm that electricity was generated from a renewable source, however they cannot demonstrate that the generation is additional – that is, that it would not have been built without the data centre's demand. Facility details provided on REGO certificates may allow identification of recently commissioned capacity, but this is not the same as additional capacity. This is because a project may have proceeded regardless of data centre demand, for example, with government underwriting or to meet state targets, with the data centre simply purchasing its certificates. If such certificates can meet the obligation, data centre demand may be met by drawing on renewable supply that would otherwise have served other consumers. This is the outcome the obligation is intended to prevent. Studies of certificate-based renewable claims overseas have found little evidence of additional generation (Brander et al., 2018; Gillenwater et al., 2014), although these examined voluntary markets.

ATSE therefore recommends that the definition of new renewable capacity include an additionality test that sits alongside REGO certificates. For example, capacity could qualify where the operator signed a long-term offtake contract before the project reached financial close or invested directly in the project. Capacity already underwritten by government schemes should be excluded to avoid double counting. REGO certificates would then verify time-matched delivery from qualifying projects, rather than being relied on to establish additionality.

Recommendation 4: Require all large-scale data centres to time-match surrendered Renewable Energy Guarantee of Origin Certificates with their actual energy consumption.

Recommendation 5: Define 'new' renewable capacity using an additionality test, such as long-term offtake contracts or direct investment committed before a project's financial close.

Preserving drinking water supplies

Australia's water supplies are precious and diminishing, as climate change reduces the volume and quality of surface and ground water (AdaptNSW, 2026). The consultation paper therefore proposes that facilities that use recycled or non-potable water be allowed to have higher power usage effectiveness (PUE) ratings than facilities that do not. Water and power use in data centres is linked, so allowing facilities to use more power through a higher PUE limit, allows them to use less water.

While this is a logical step to prevent high-quality drinking water from being used for industrial processes, recycled water is increasingly being considered as a supplement to drinking water supplies in Australia. Water Corporation has been replenishing Perth's deep aquifers using recycled water since 2017, with the second stage of the project boosting capacity to 76 million litres per day in 2022 (Water Corporation, 2026; Water Services Association of Australia, n.d.). Similarly, Seqwater plans to use recycled water to replenish Lake Wivenhoe during drought, then reprocess it as drinking water (Seqwater, 2021). Recycled water is particularly critical in times of drought, as it is relatively constant and rainfall independent. As reliance on

recycled water for drinking water increases, incentivising data centres to use recycled water will cause increased competition with demands for drinking water replenishment, particularly in times of drought.

ATSE therefore proposes treating recycled water as drinking water for the purposes of PUE limits, except where data centres have directly invested in developing and operating water recycling facilities³. This could be achieved through acting as co-investors for regional water recycling (partnering with local councils), where there is otherwise insufficient demand to facilitate water recycling facilities⁴. These rules could still allow increased PUE caps for non-potable water. This would encourage data centres to either rely on non-potable water for cooling needs, or to contribute to increasing the volume of wastewater that is recycled, to take advantage of higher PUE limits.

Recommendation 6: Allow an increased Power Use Effectiveness cap only for facilities that use non-potable water or directly invest in water recycling facilities.

Ensuring safety in frontier model development

Previous work by the Department of Industry, Science and Resources (DISR) proposed a tiered model of AI regulation, based on impact assessments of potential risks (DISR, 2023). ATSE continues to support a tiered, risk-based approach to AI regulation. This tiered approach aligns with international partners like the European Union. Their 2025 General-Purpose AI Code of Practice combines systemic risk classification, model evaluation and serious-incident reporting (European Commission, 2026).

Under a tiered model, developers would have increasing obligations as the risks posed by their models increased. This would allow for a mix of obligations including record-keeping, publishing and proactive legal obligations. These obligations could include requiring developers to report defined incidents, disclose material changes to models used in critical settings, maintain logs, support independent testing and cooperate with external incident investigations. It could also include being required to give the Australian AI Safety Institute pre-deployment access to models and data, to ensure safety before deployment. Starting points for the thresholds could be based on the EU's model or be based on the OECD's work to develop a common reporting framework for AI incidents (OECD, 2025).

Aligning Australia's approach with an international-based model would have benefits beyond having a model for our own regulations. Unlike data centres, which are physical infrastructure that are difficult and expensive to move, frontier model training can be conducted anywhere. Aligning Australia's regulatory regime with partners like the EU will both make it simpler for frontier models to move training to Australia and support an international effort to strengthen AI regulation.

Recommendation 7: Adopt a tiered model for frontier model regulation aligned with international regulatory standards.

Reserving compute access for Australian research and innovation

Ensuring that Australian AI models support the Australian community should be a fundamental pillar of any regulatory system. The consultation paper notes the unique position of frontier AI developers to contribute to the Australian research and innovation ecosystem. ATSE would support moves to ensure that AI developers be required to support local researchers and innovators through access to their AI models. Crucially, this should be achieved through explicit reserved-compute requirements over the more commonly used free-token model. For example, OpenAI has a program allowing \$1000 worth of API credits to support research into AI deployment (OpenAI, n.d.). The use of credits has several downsides including the design of such schemes leading to credits expiring, access being determined by private companies, and additional switching costs for researchers trying to move between systems. A more effective approach would be to establish a national pool in which AI companies would be required to allocate a percentage of their available compute for the public good. This would allow a central body to allocate access to models and allow for

³ These recycling facilities should not be considered as a part of the PUE calculation and should be considered as separate facilities, even when co-located with data centres.

⁴ Where this includes stormwater harvesting, this can also have the benefit for improving flood mitigation in these areas.

independent verification that developers are meeting their obligations. This 'compute reservations scheme' would apply to developers who directly own the models, rather than data centre operators.

Recommendation 8: Reserve an independently verifiable share of installed compute for Australian researchers, start-ups, SMEs and public agencies through a national access pool.

ATSE thanks the Department of the Prime Minister and Cabinet for the opportunity to respond to the Getting it right: Building AI infrastructure that works for Australia consultation paper. For further information, please contact academypolicyteam@atse.org.au.

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