

8/05/2026

**Final Submission** to Infrastructure NSW, emailed to [cg@infrastructure.nsw.gov.au](mailto:cg@infrastructure.nsw.gov.au).

**Re: Submission to the NSW Data Centre Consultation Paper**

The Australian Water Association (AWA) welcomes the opportunity to provide this submission in response to the NSW Data Centre Consultation Paper.

As the national, member-based peak body for the Australian water sector, AWA represents over 6,000 professionals and organisations across utilities, government, industry, and academia. Our mission is to promote sustainable water management and advocate for a secure and resilient water future for all Australians.

AWA generally supports the 5 principles presented within the consultation paper and acknowledges the thoroughness of its development. This submission provides some additional commentary and recommendations for consideration, primarily related to Principle 3. However, some elements from different principles are incorporated throughout. A summary of our overall recommendations are presented in Box 1.

**Overall recommendations**

- Specific Water Use Efficiency (WUE) and Power Usage Effectiveness (PUE) targets must be set and regulated by the NSW Government. Fully transparent water reporting must include volumetric demands.
- Long term planning for data centre water demands must rely on recycled water.
- Data centres must quantify urban heat impacts and implement appropriate mitigation measures, such as contributing to government coordinated implementations of water sensitive urban design (WSUD) features.
- Data centres must consider the sustainability nexus between water, energy, and carbon to achieve sustainable, long-term targets.

*Box 1 – Overall recommendations from AWA on INSW Data Centre Consultation Paper*

**1) Specific water efficiency targets and transparent water reporting.**

Australia is the driest inhabited country on this planet. As described in Principle 3 of INSW’s consultation paper, any user of water needs to use it efficiently. AWA recommends mandatory Power Usage Effectiveness (PUE) and Water Usage Efficiency (WUE) targets must be specified

and enforced by governments. Targets should be informed by international benchmarks, and the water sector welcomes collaboration with the government to inform these targets.

AWA questions the necessity for flexibility when determining efficiency targets (as described in Principle 3, Page 8) and seeks clarity on any extenuating site circumstances that INSW would consider necessitating lower efficiency standards. AWA recommends that in addition to baseline efficiency standards, tighter efficiency standards should be mandated in drought-prone, water-scarce areas.

Furthermore, AWA is insistent that water efficiency metrics alone are not sufficient to report on data centre water demands, and mandatory reporting of volumetric quantities are required. Accurate volumetric reporting will be essential for utilities and water planners to understand, and correctly account for, data centre water demand.

## **2) Data centre water demands must be met from recycled water sources.**

INSW identified recycled water use for cooling systems where possible. **AWA recommends that data centres must use recycled water sources to service long-term water demand from data centres.** Recycled water off-sets could be considered where provision of recycled water is not possible. **NSW's water security will be at risk if data centres plan to use potable water for cooling.**

Data centres represent a continuous demand and must plan to use rainfall-independent supplies to service demands, such as recycled water or desalination. The production of recycled water is generally considered to be less costly, and less energy intensive, than desalination (Atkinson et al., 2026). The use of recycled water for cooling offers environmental, economic and social co-benefits, largely through promoting circularity (Chen et al., 2024). The challenge to date for new recycled water schemes has been having a sufficient demand for those schemes, determining who pays, and ensuring sustainability of those schemes. In the example of data centres, this is an excellent opportunity, and the driver that has been potentially needed, to deliver new recycled water schemes from a sector that has the demand and capacity to pay for recycled water and is looking for greater certainty and sustainability for water use. However, to accommodate increased water demands from a growing population, recycled water has already been earmarked to supplement water demands to sustainably service future NSW residents (NSW DPIE, 2022).

AWA supports Principle 2, which requires data centre operations to adopt a **beneficiary-pays principle** and fund all associated infrastructure costs, ensuring expenses are not passed on to NSW residential consumers. To fully realise this principle, INSW must ensure that any costs arising from current data centre activities are not transferred to future customers. For example,

if data centres utilise recycled water supplies that were originally allocated to existing consumers under future demand scenarios, data centre proponents should be required to fund alternative long-term water sources (such as desalination), so that increased servicing costs are not borne by residential customers in the long-term.

Data centres have already demonstrated a willingness to enable significant developments in recycled water infrastructure (Mandala, 2025). Furthermore, increased investment in recycled water infrastructure aligns with Principle 1 through creating infrastructure projects, with the potential to contribute to the further development of alternative treatment processes that are less energy intensive.

Coordinated investment in recycled water schemes, if correctly planned with relevant utilities and government departments, can improve water security across NSW by growing climate resilient water supplies. Data Centres Australia have already identified that excess capacity from upgraded networks can be repurposed for household use (Mandala, 2025); and this should be further developed to repurpose excess recycled water supply from data centres to the benefit of the community and the economy. This can particularly be achieved by repurposing recycled water for greening and irrigating purposes or re-directing recycled water to industry users that would reduce overall potable water demand.

As established, recycled water is a finite resource and has been earmarked to service future demands (DPI, 2022). AWA is concerned about the proposal of lowering operating standards (such as WUE targets) as an incentive to adopt recycled water. If planning controls mandate the use of alternative water supply for data centre operation, then means to incentivise recycled water uptake are not necessary. Furthermore, the use of recycled water will enable a circular economy narrative that will improve the social license of data centres, potentially mitigating public concern about the data centre operation (Mandala, 2022).

### **3) Urban heat considerations.**

Studies have already estimated that land surface temperatures can increase by up to 2 degrees on average after AI data centre operations commence, increasingly referred to as the “data heat island effect” (Marinoni et al., 2026). In Australia, heatwaves have been responsible for more human deaths than any other natural hazard, including bushfires and floods (Argüeso et al., 2015). Under current trends, the cost of cooling Western Sydney households, where several State Significant Development (SSD) data centres are presently in the pipeline, will increase 370% by 2079 (Committee for Sydney 2022).

AWA emphasises that INSW needs to maintain a holistic understanding of all major contributors to extreme heat hazards, including data centres. As proposed in NSW’s recent

Draft Urban Heat Policy, which is part of DPHI's Climate Change & Natural Hazards SEPP, new developments must undertake quantitative modelling to understand the impact of their construction upon local temperatures. AWA recommends that planning controls require data centres to conduct such modelling to determine the effects of their construction and operation, on urban heat. INSW and the NSW Government will need to coordinate the implementation of water sensitive urban design (WSUD) techniques, such as increased canopy cover, and the design of blue-green corridors, to mitigate the impacts of worsening urban heat. To achieve this, integrated land use planning and waterway management is necessary; requiring close collaboration between data centres, water utilities, and the NSW Government. There are opportunities to coordinate the use of recycled water infrastructure to support WSUD initiatives, positioning data centres to contribute to sustainable city design while mitigating their urban heat impacts.

To realise these co-benefits, AWA recommends the introduction of specific triggers within planning controls. Where data centres are proposed in areas already at risk of significant urban heat increases (like Western Sydney), and mandated quantitative modelling demonstrates further heat impacts, proponents should be required to offset these impacts by contributing to urban cooling projects within the local area. AWA highlights that INSW has a significant opportunity to utilise data centre development to achieve urban cooling co-benefits, particularly in Western Sydney.

#### **4) The Sustainability Nexus: Considering water-energy-carbon trade-offs**

Water and energy will influence embodied carbon and lifecycle assessment for data centres (RICS, 2024). AWA acknowledges that INSW has identified the broader environmental concerns regarding embodied carbon, e-waste, and the circular economy opportunities that may be enabled through data centre collaboration. AWA emphasises that the NSW Government should mandate data centre management plans for e-waste. The risk of excessive waste is high due to the frequent replacement of mechanical, electrical and plumbing (MEP) components within data centres, given their estimated service life of between 10-30 years (RICS, 2024). As identified by INSW, data centres can enable e-waste recycling facilities, which the NSW Government can mandate through product stewardship systems.

Data centre operations will require trade-offs between energy and water. Energy-cooling systems are associated with higher carbon emissions compared to water-cooling (Manganelli et al., 2021). The use of water-cooling systems will maximise the amount of energy available to produce compute, which also optimises the economic productivity of data centres.

Meeting water demands through recycled water sources can help alleviate concerns about water scarcity while also reducing pressure on the energy system. This is particularly important given warnings from energy market leaders that there is insufficient generation capacity to meet projected data centre growth. As AGL Chief Executive Damien Nicks has stated, “*We don’t have enough assets built in this market to get anywhere near that sort of data centre growth,*” (Australian Financial Review, 2026).

NSW is uniquely positioned to leverage industry investment from data centres to expand its recycled water network. Such investment can deliver environmental, social and economic co-benefits by supporting a more circular water economy, reducing reliance on potable water supplies, and easing pressure on constrained energy markets. **To avoid losing this opportunity, early, transparent and open collaboration is critical.** INSW may consider the role of the private sector to meet rapid timelines imposed by data centres, in collaboration with utilities.

Strategic consideration of the recommendations presented by AWA have the capacity to leverage data centre investment for improved outcomes across NSW.

AWA welcomes the opportunity to discuss this submission further.

Yours sincerely,



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