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Independent Pricing and Regulatory Tribunal NSW

Via online submission portal

Draft Terms of Reference for IPART review of water pricing framework for data centres

Background

I am an economist and Director with Sapere Research Group (Sapere).¹ I have expertise in regulation and policy and in particular the pricing and regulation of utility services.

Meeting the water demands of data centres

The water and power demands of data centres have received great attention. What may be less well appreciated is the extent to which data centres can be flexible in their energy and water use. Energy consumption can be modified by shifting workloads (e.g. non-latency-sensitive tasks) over time and geographically between data centres. Water consumption can be modified through design and operational decisions that affect the extent to which energy and water is used for cooling.

This flexibility of data centres is particularly relevant in Australia, where the cost and availability of energy and water can vary significantly over time due to the climate-dependent nature of supply and, to an extent, demand.

The social cost of using water (aka the value of water) can change dramatically. When storages are high, the value is extremely low due to the high likelihood that additional water conserved is lost to spillage and, if not spilled, reduced through additional evaporation.² However, during drought the social cost of water reflects the very high cost of imposing restrictions. To illustrate, the value of water saved as reported by Hunter Water varies by a factor of 60 between when storages are very high and very low.³

Water usage prices do not currently reflect the large variability in the value of water. Rather than use financial incentives, there is a strong reliance on restrictions to manage demand during drought. To address the future supply demand imbalance, existing water strategies include significant investment in climate independent supplies (desalination and recycled water). These investments are expensive as

¹ Sapere is an expert advisory consulting firm providing independent economic, forensic accounting and public policy services in Australasia. I make this submission as an individual.

² Conserving water increases water losses from evaporation due to the nature of storages.

³ Hunter Water Corporation 2025 *Five-year Water Conservation Plan*, December 2025 (p. 41) Available at: <https://www.hunterwater.com.au/documents/assets/src/uploads/documents/Other-Reports/Regulatory-Reports/5-Year-Water-Conservation-Plan-December-2025.pdf>

they involve significant fixed capital and operating costs and but are primarily required to address a drought problem.

As reflected in the Draft Terms of Reference, there is a concern that data centres' large demand for water will place a burden on other customers. However, rather than be a burden to existing customers there is an opportunity to ensure both data centres and other customers benefit.

To the extent that data centres have flexibility in their water use, data centres may provide a useful compliment to existing demands for water. With the right incentives, data centres may increase their use of water when storages are high (and the value of water is low) and curb their usage during drought while contributing to the funding of more secure water sources to the benefit of all customers.

Maximising this opportunity will likely require using efficient pricing rather than prescriptive regulation to manage data centre demand. Data-centre owners will be best placed to determine how to optimise their services, infrastructure and operations. Where possible, policy should focus on ensuring that energy and water prices appropriately reflect underlying system costs and scarcity. If those price signals are accurate, operators will have the appropriate incentives to provide flexibility when it is valuable to the broader community.

Refining the Terms of Reference

The draft Terms of Reference allows for consideration of more efficient usage pricing as it requires considering "Incentivising data centres to optimise their use of water with energy consumption implications". However, to ensure that the opportunity is captured it would be helpful to extend the Terms of Reference to include explicit consideration of related matters including:

- how the societal value of water varies with available supply (i.e. before and during drought)
- the extent to which data centres can modify their water consumption and would do so in response to price signals
- the potential societal value, and more generally the pros and cons, of using financial incentives to manage data centre demand over more prescriptive approaches.

I would be happy to elaborate.

Yours sincerely,

Dr Richard Tooth

Director

Sapere Research Group