

Resilient Futures

Water as Strategic Capital:

Why Australia Must Reframe How It Values and Governs Water

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EXECUTIVE SUMMARY

Water as Strategic Non-Renewable Capital

The conditions of 2026 require treating water as strategic capital to be valued, invested in, and governed at a scale commensurate with its systemic importance to the Australian economy, food system, and natural environment.

In January 2026, the United Nations University formally declared the world has entered the era of Global Water Bankruptcy¹, a post-crisis condition where withdrawals persistently exceed renewable limits and where the damage to water-related natural capital is irreversible within human timescales.

The annual economic value of global water and freshwater ecosystems is estimated at approximately US \$58 trillion, equivalent to around 60% of global GDP², with the world's freshwater ecosystems fast declining, posing an ever-growing risk to these values. Recent meta-analyses and valuation studies reaffirm that freshwater systems remain among the world's most economically significant natural assets, representing significant natural-asset value and economic value that conventional accounting standards do not capture. Yet tariff structures continue to treat water as a commoditised, cost-recovery utility rather than a **non-renewable form of strategic capital, whose depletion erodes the foundation of all other productive assets agricultural, industrial, and ecological.**

Australia's pricing framework reflects this undervaluation: industrial-scale consumers of public water systems pay rates calibrated to the cost of delivery, not to the long-run economic value of the resource or the cost of sustaining the ecosystems that produce it. In metropolitan Melbourne, non-residential potable water ranges from AUD \$2.80 to \$3.20 per kilolitre³, in some cases less under negotiated trade-waste or bulk supply arrangements, with no pricing component accounting for resource scarcity, climate-adaptation investment, or system resilience.

This submission identifies that gap as a structural undervaluation: a failure to recognise water as finite capital whose degradation undermines national productivity, food security, and ecological stability. Emerging pressures such as rapid expansion of data centres are likely to intensify this strain.

This submission proposes a reset to this framing - water as the foundational capital that underpins all other forms of value creation, as opposed to water as utility, which can be traced to the results of financial pressures, the governance inadequacy, and the regional equity deficit that this inquiry is addressing. Reforms that fail to correct the underlying valuation framework will yield only procedural improvements within a structurally insolvent system. Treating water as strategic capital; finite, foundational, and irreplaceable is the prerequisite for reform that will lead to a secure, resilient and sustainable water future for Australia.

¹ Madani, K. (2026). *Global Water Bankruptcy: Living Beyond Our Hydrological Means in the Post-Crisis Era*. United Nations University Institute for Water, Environment and Health (UNU-INWEH), Richmond Hill, Ontario, Canada. DOI: 10.53328/INR26KAM001. Published 20 January 2026. <https://unu.edu/inweh/collection/global-water-bankruptcy>

² WWF (2023). *The High Cost of Cheap Water*. World Wildlife Fund, Washington DC, 16 October 2023. The report provides the first annual economic valuation of global water and freshwater ecosystems at US \$58 trillion — equivalent to 60% of global GDP at the time of publication. Reported in: WWF (2024). *Living Planet Report 2024*. World Wildlife Fund, Gland, Switzerland. See also: WWF press release, 'Water Crisis Threatens \$58 Trillion in Economic Value, Food Security and Sustainability', 16 October 2023, <https://www.worldwildlife.org/news/press-releases/water-crisis-threatens-58-trillion-in-economic-value-food-security-and-sustainability>

³ Essential Services Commission Victoria (2025). *Regulator Approves 2025–26 Water Prices for Victorian Water Businesses*, July 2025, <https://www.esc.vic.gov.au/media-centre/regulator-approves-2025-26-water-prices-victorian-water-businesses>. Maximum tariff schedules for Victorian water businesses are published annually by the ESC at: <https://www.esc.vic.gov.au/water/water-prices-tariffs-and-special-drainage/water-tariff-schedules-and-prices>

Six Key Findings

1. Water is systemically undervalued.

The hydrological insolvency and irreversibility as considered by UNU-INWEH, raises the question if Australian pricing frameworks currently reflect the full long-run cost of water, including climate adaptation, supply diversity, resilience infrastructure, and the opportunity cost of industrial-scale consumption from constrained systems. Current tariff structures treat water as a service input rather than a strategic asset, indexing prices to delivery cost rather than the capital value of the resource itself. This disconnect embeds a structural undervaluation that distorts investment signals, underfunds ecosystem maintenance, and externalises resilience costs to future generations.

There is the question of water being priced efficiently as opposed to recognising water as a non-renewable, climate dependent, strategic capital; the foundation of national productivity, food security, and ecological stability.

2. Risk of industrial-scale consumers extracting value without contributing to systems resilience.

Data centres⁴ in Melbourne and Sydney, two of Australia's largest and fastest-growing urban regions will be drawing on public water systems at industrial water tariff rates and at unprecedented scale. These do not reflect the long-run resource value of water or the cost of maintaining supply resilience. Their investors, predominantly powerful global hyper-scalers, will repatriate returns overseas. It is important to note that these data centres will contribute to the Australian economy and jobs by attracting technological investments and advancements.

Whilst emerging closed-loop cooling systems, water-recycling technologies, and site-specific innovation in data-centre design are expected to lessen this burden over time by reducing dependence on potable water and enhancing efficiency, the risk is whether the full value of water, its opportunity costs and systemic implications have been fully considered.

3. The financial architecture is structurally inadequate.

The sector's financial architecture is the mechanism through which undervaluation becomes systemic. Over the past decade, real revenue per property has fallen by 31%, while capital expenditure per property has increased⁵. This divergence shows a system under financial strain, where utilities are investing more to maintain service integrity while earning less in real terms from each customer. Under the *Essential Services Commission Act 2001 (VIC)*, the Commission must promote the long-term interests of Victorian consumers with regard to price, quality and reliability. Its adoption of a pricing approach oriented toward minimum sustainable cost within the PREMO framework acknowledges this imbalance⁶. However, in practice, this approach can limit utilities to short-term affordability objectives rather than long-term capital stewardship and intergenerational equity. The current financial architecture treats sustainability as a ceiling rather than a baseline, recognising the problem without addressing the structural under-recovery of the true cost of water resilience. Pricing frameworks calibrated to delivery cost rather than resource value generate insufficient revenue for the investment required to maintain, adapt and renew the systems that deliver that resource.

When deferred renewal and declining catchment health become unavoidable, the cost to households will be far greater than the investment that would have prevented it.

⁴ Furness, V. and Abnett, K. (2025). 'In Australia, a data centre boom is built on vague water plans', Reuters, 15 September 2025. Republished at: Radio New Zealand, <https://www.rnz.co.nz/news/world/573107/an-australian-data-centre-boom-is-built-on-vague-water-plans>. Reports that NSW approved all 10 data centre applications ruled on since 2021 collectively projecting 9.6 gigalitres of annual potable water consumption without requiring measurable water reduction plans. Sydney Water projections shared with Reuters indicate data centres could account for up to 135 gigalitres annually by 2035, representing up to 25% of the city's available water supply.

⁵ Cawley, R. and Olszak, C. / Ricardo (2025). 'Rethinking Water Service Funding for a Resilient Future.' Panel discussion chaired by Ricardo at Ozwater 2025, published June 2025. <https://www.ricardo.com/en/news-and-insights/industry-insights/rethinking-water-service-funding-for-a-resilient-future>

⁶ Essential Services Commission Act 2001 (Vic), Authorised Version 072 (15 April 2026), Sections 8 and 33; Essential Services Commission (2016), *PREMO Framework Guidelines: Water Price Review Principles*, Melbourne: ESC. See also Essential Services Commission (2023), *Water Performance Report 2013–2023*, Melbourne: ESC.

4. Static measurement systems amid dynamic change

Over the past three decades, Australia's water-measurement and reporting systems have remained largely unchanged, relying on volumetric accounting and cost-recovery metrics established in the 1990s. Despite significant shifts in ecological conditions, population growth, and investment patterns, the underlying measurement architecture continues to treat water as a delivered commodity rather than a dynamic natural-capital asset. While hydrological stress and ecological degradation have intensified, the frameworks for measuring water availability, use, and value have not evolved to reflect these systemic changes. This persistence of legacy measurement systems obscures the true condition of Australia's water capital and limits the capacity for adaptive governance and long-term resilience planning. **Legacy volumetric accounting masks ecological decline and undervalues resilience investments, leaving policymakers without metrics that reflect water's status as finite natural capital. Updating measurement frameworks is essential to align governance with ecological reality.**

5. Regulatory design creates a governance failure.

Current water regulation in Australia is structurally backward-looking. It mandates compliance with historical service and quality standards but does not require strategic whole-system conditions monitoring, the forward-looking function that tracks the state and trajectory of catchments, aquifers, ecosystems, and demand and serviceability under climate stress.

There is no obligation to conduct scenario-based assessment of hydrological risk, no requirement to disclose the condition of water-related natural capital, and no pricing allowance for maintaining that capital. **In effect, the regulatory system accounts for the cost of compliance but not for the value of water-capital or the cost of preserving its renewability. This results in the systemic risk being recognised only when it has already become a crisis.**

6. Regional equity requires collective response.

The structural challenges facing regional water authorities are collective in character. They share exposure to accelerating climate impacts, interdependent infrastructure systems, constrained workforce availability, and the logistical complexity of delivering essential services across vast geographies with limited economies of scale. **Each authority bears the full cost of adapting to fast-moving global, national, and state-level system changes from climate volatility to regulatory reform without the benefit of shared capacity and or limited coordinated investment.** Scarce, high-risk capabilities such as dam safety and water-resource modelling are duplicated across 18 entities, creating systemic exposure rather than operational inefficiency. Shared capability models would reduce risk and improve consistency.

This fragmentation imposes a heavy burden and leads to duplication of effort across regions, diverting resources from resilience and innovation. The corporation-based pricing model allocates state-level obligations through local tariffs, rewarding efficiency but penalising geography.

These conditions demand a networked governance model: one that treats regional authorities not as isolated service providers but as nodes in a collective system capable of pooling intelligence, capital, and adaptive capacity and capability.

SIX RECOMMENDATIONS

Based on the evidence and analysis presented, this submission advances six reforms designed to revalue, reinvest, and re-govern Australia's water system and explained in detail in Parts 1 – 5 of this document.

Recommendation 1: Establish a National Water Value Framework

Recommendation 2: Require a Water Security Contribution from Industrial-Scale Consumers

Recommendation 3: Examine the case for a National Water Resilience Investment Mechanism

Recommendation 4: Establish a Regional Water Investment Adequacy Framework

Recommendation 5: Embed Climate-Exposure Governance and Systemic Foresight in Regulatory Design

Recommendation 6: Establish a National Sector Collaboration and Measurement Framework

PART ONE: THE CONTEXT

The National Water Reform Inquiry 2026 is being conducted against a backdrop fundamentally different from any of its predecessors. This part of our submission establishes the integrated systemic conditions that define that backdrop, one of fast-moving systems colliding and whose amplifying consequences demand a fundamental shift in policy response to address the questions of water equity and resilience.

Global Water Bankruptcy: A New Operating Era

The United Nations University Institute for Water, Environment and Health formally declared that the world has entered the era of Global Water Bankruptcy. The *Global Water Bankruptcy: Living Beyond Our Hydrological Means in the Post-Crisis Era*, report defines water bankruptcy as a post-crisis condition: persistent over-withdrawal from surface and groundwater relative to renewable inflows and safe levels of depletion, combined with irreversible or prohibitively costly loss of water-related natural capital aquifers, wetlands, soils, rivers, lakes and glaciers damaged in ways not realistically reversible on human timescales.

This is a condition already present in many river basins globally, including parts of the Murray-Darling system. Existing frameworks focused on incremental efficiency gains and generic water management guidelines that were designed for a world that no longer exists. The conditions now require frameworks designed for a post-crisis reality.

Australia's Murray-Darling Basin: A Regional Expression

CSIRO's 2025 Murray-Darling Basin Sustainable Yields⁷ assessment findings demonstrate cool-season rainfall, the rainfall that fills storages and recharges groundwater across the southern Basin, is in structural decline. Under all scenarios, the southern Basin faces very likely declines in runoff that are proportionally greater than the rainfall reduction driving them a nonlinear amplification effect confirmed across multiple modelling runs.

These findings describe the operating environment that regional Victorian water utilities / authorities are already managing and will manage for the remainder of their asset lifecycles. Infrastructure designed for the historical mean is already inadequate.

The Cascade: Systems Colliding Simultaneously

The structural challenge facing regional Victorian water authorities is not one problem but a cascade of interacting forces. Climate-driven yield decline, ageing infrastructure requiring capital renewal, demand-side shocks from data centre growth and population pressure, pricing constraints producing a widening investment gap, workforce capability shortages, geopolitical supply chain disruptions, and food security implications from agricultural water stress. These conditions do not operate independently. They interact, amplify one another, and produce consequences that governance frameworks designed for 'one condition at a time' cannot adequately manage.

⁷ Murray-Darling Basin Authority and CSIRO (2025). *The Future of Climate and Water Availability in the Murray-Darling Basin: Sustainable Yields Report*. MDBA Publication No. 23/25. ISBN (online): 978-1-923558-10-6. Murray-Darling Basin Authority, Canberra, November 2025. Available at: <https://www.csiro.au/-/media/Environment/Murray-Darling-Basin/2025-Murray-Darling-Basin-Sustainable-Yields-Report.pdf>. See also: CSIRO, *Murray-Darling Basin Sustainable Yields*, <https://www.csiro.au/en/research/natural-environment/water/Murray-Darling-Basin/Murray-Darling-Basin-Sustainable-Yields>; MDBA, *2025 Insights and Findings*, <https://www.mdba.gov.au/science-and-knowledge/sustainable-yields/2025-insights-and-findings>

The Digital Economy: Impact on Water Security

The Australian Government's March 2026 *Expectations of Data Centres and AI Infrastructure Developers*⁸ marks the first time the Commonwealth has formally positioned sustainable water use as a condition of data centre investment and social licence to operate in Australia. The Expectations are explicit: data centre developments must put the needs of the Australian people first, and meeting the national expectations is described as "the foundation of their social licence to operate in Australia." Expectation 3, dedicated entirely to water requires that operators minimise potable water use, engage proactively with water utilities and communities, cover their share of infrastructure and delivery costs, and provide ongoing transparent reporting on water usage and efficiency.

This is a significant policy statement. It establishes, for the first time at a national level, that water security is not an externality of data centre development. It is a precondition of the social licence through which that development is permitted to proceed.

But the Expectations are not law. They are framed in the language of what operators "should" do. There are no binding requirements, no minimum performance standards, no reporting obligations with regulatory consequence, and no direct linkage to water allocation decisions, planning approvals or pricing frameworks. A data centre developer can acknowledge the Expectations, commit in general terms to sustainable water use, and proceed with planning without any mechanism requiring those commitments to be quantified, tested or enforced.

The Australian Government has declared the national interest and named the social licence condition. What the current water pricing and regulatory framework cannot do and what this inquiry has the opportunity to recommend, is give legal and economic effect to that declaration. **A water pricing framework that charges industrial-scale consumers at delivery cost, with no component for resource scarcity or system resilience, is structurally inconsistent with an Expectations framework that requires those same consumers to "cover their share of infrastructure and delivery costs" and "build resilience into operations to mitigate the impacts of water disruptions, drought and climate change."** This regulatory gap is the reform opportunity this submission identifies.

Food Security: An Under-Recognised National Dimension

Victoria's Goulburn-Murray irrigation system and the regional water authorities that govern catchment health and supply systems across the food bowl are the invisible infrastructure of a national food production zone contributing tens of billions to agricultural output annually. The financial and climate sustainability of these authorities is not a regional utility question. It is a national food security question and it is largely absent from water governance frameworks and from the financial sustainability arguments made in individual pricing submissions.

The Financial Architecture: A Widening Structural Deficit

The widening gap between what the pricing framework delivers and what the infrastructure requires now defines the sector's structural condition. Each pricing period compounds a deficit that is no longer financial alone but ecological and institutional. Water corporations are attempting to maintain and renew a declining natural asset through frameworks designed for fiscal efficiency, not resource resilience. Fragmented governance, eighteen entities managing interconnected catchments

⁸ Department of Industry, Science and Resources (2026). *Expectations of Data Centres and AI Infrastructure Developers*, Australian Government, 23 March 2026. The document states that meeting the national expectations "will be the foundation of their social licence to operate in Australia." Expectation 3 requires sustainable and efficient water use, including covering "their share of infrastructure and delivery costs" and "ongoing transparent reporting about their water usage and efficiency." <https://www.industry.gov.au/publications/expectations-data-centres-and-ai-infrastructure-developers>; see also <https://www.industry.gov.au/NationalDataCentreExpectations>, Ministers Ayres, Bowen and Charlton (2026). 'An Australian approach to AI: Expectations for data centres that deliver for Australians.' Joint media release, 23 March 2026. <https://www.minister.industry.gov.au/ministers/timayres/media-releases/australian-approach-ai-expectations-data-centres-deliver-australians>. The release states: "data centre developments must put the needs of the Australian people first... while strongly supporting Australia's clean energy transition and safeguarding our long-term water security."

independently has produced a system optimised for compliance rather than renewal. As hydrological decline accelerates across the southern Basin, the separation of financial, ecological, and planning responsibilities magnifies systemic risk. Infrastructure renewal delays, affordability constraints, and the absence of coordinated investment planning are converging into a single vulnerability: **the degradation of water capital itself.**

Without reform, the sector faces a cascading failure mode, where under-investment, ecological decline, and institutional fragmentation reinforce one another. Addressing this is not about efficiency gains; it is about redesigning the architecture of stewardship for a resource whose depletion is now measurable and irreversible.

PART TWO: THE VALUE OF WATER

Water is systematically undervalued in Australian policy, pricing and investment frameworks. Until this is corrected, reforms to pricing design, regulatory architecture, and governance will be improvements to an inadequate system, not transformation of it.

The Valuation Gap

Water as an asset is treated, in most policy and pricing frameworks, as if it were free infrastructure, available for extraction, consumption and allocation at the cost of delivery rather than the systemic value of the resource itself, whilst freshwater systems remain among the world's most economically significant natural assets, estimated at US \$58 trillion, equivalent to 60% of global GDP.

The consequences of undervaluing water are systemic and compounding. Pricing frameworks calibrated to delivery-cost rather than resource-value generate chronic under-investment in the adaptation, infrastructure, and renewal required to sustain the ecosystems that deliver water itself. Regulatory models that define “affordability” solely by short-term delivery cost ignore the cost of not investing the accumulating liability represented by deferred asset renewal, declining catchment health, and eroding system resilience. **When that liability inevitably materialises through supply shortfall, asset failure or service degradation, the overall cost to households and communities will far exceed the investment that would have prevented it.**

Undervaluing water does not protect affordability; it distorts it, converting what should be a manageable investment into a future crisis.

The United Kingdom's experience offers a cautionary parallel. Decades of under-pricing water to preserve short-term affordability have left its utilities burdened with £83 billion in debt as at March 2025⁹, with widespread leakage, and chronic under-investment in renewal.

Australia's structural problem is expressed differently as water utilities / authorities are government-owned and the financial stress accumulates as investment deficits rather than corporate debt. However, the dynamic is identical. In NSW alone, local water utilities face an infrastructure replacement gap of \$31 billion against annual revenue of just \$1.7 billion, and some regional water utilities face infrastructure backlogs worth 18 times their annual revenue¹⁰: a ratio that no pricing cycle can close without structural reform of the funding architecture.

The longer the undervaluation persists, the more it embeds structural insolvency into the nation's water capital base.

⁹ Ofwat (2025). *Monitoring Financial Resilience Report 2024–25*. Water Services Regulation Authority, London, November 2025, p. 5. Total borrowings across the water sector in England and Wales totalled £82.7 billion as at 31 March 2025, up from £60.6 billion in March 2022, a 37% increase in three years. Available at: https://www.ofwat.gov.uk/wp-content/uploads/2025/11/The-Monitoring-Financial-Resilience-Report_2024-25.pdf

¹⁰ NSW Productivity and Equality Commission (2024). *Review of Funding Models for Local Water Utilities: Final Report*. NSW Treasury, Sydney, 19 July 2024, <https://www.productivity.nsw.gov.au/local-water-utilities-funding-models-review>. Cited in Ricardo/Ozwater (2025), 'Rethinking Water Service Funding for a Resilient Future', <https://www.ricardo.com/en/news-and-insights/industry-insights/rethinking-water-service-funding-for-a-resilient-future>

Water is Not Comparable to Other Utilities

While other utilities such as electricity and gas can draw on alternative inputs shifting from fossil fuels to renewables, for example fresh water has **no substitute at its source**. The infrastructure that delivers it can be engineered, expanded, and replicated, but the **natural capital that produces it** rainfall, catchments, aquifers, and wetlands cannot be replaced once degraded. **This distinction makes water fundamentally different from other utility systems: it embodies both engineered infrastructure and irreplaceable ecological capital.** A pricing and regulatory framework that treats water as equivalent to a telecommunications service, calibrating charges to efficient delivery cost alone is therefore structurally misaligned with the nature of the asset. The NWA's development of updated water-pricing principles represents the right moment to correct this.

The Industrial-Scale Consumer Problem

Industrial-scale private water consumers including data centres, with 20 GL annual demand projected across Melbourne's west alone will be drawing on public water systems under structural constraint at industrial tariffs that do not reflect the long-run resource value of water or the cost of maintaining supply resilience. While some operators propose investing in recycled-water facilities that could provide shared benefit to other sectors, these initiatives remain site-specific and reactive, not part of a coordinated ecosystem-management strategy. Without a long-term framework for catchment stewardship and hydrological renewal, such investments risk being technological offsets rather than genuine contributions to system resilience.

Global experience shows how hyperscale data-centre expansion can rapidly outstrip local water-system capacity, effectively re-prioritising public resources toward industrial cooling. In **Chile**, Google and Microsoft facilities have drawn on aquifers in water-stressed regions, displacing agricultural allocations.¹¹ In **the Netherlands**, Microsoft and Meta data centres consumed millions of cubic metres of potable water annually until provincial authorities imposed caps and mandated recycled-water use.¹² In **Arizona and Utah**, hyperscale operators have secured long-term groundwater rights in drought-affected basins, triggering state reviews of industrial water-rights transfers.¹³ While closed-loop and recycled-water systems are emerging, from hyperscale facilities in the Netherlands to pilot reuse networks in Singapore and Sydney, they remain exceptions rather than norms.

The challenge is not technological feasibility but scale and governance: innovation is occurring faster than regulation can integrate it. Until pricing, planning and accountability frameworks recognise recycled water as strategic infrastructure, these advances will remain peripheral to the systemic degradation of water capital. It should be noted that the investment behind these facilities predominantly from global hyper-scalers with capital-expenditure programs tracking towards US \$100 billion annually is not yet contributing to the long-run sustainability of the public water infrastructure it depends on.

The Australian Government's March 2026 National Data Centre Expectations explicitly calls for data-centre development to safeguard Australia's long-term water security. Giving effect to that principle requires a specific mechanism within the water-pricing and regulatory framework, not a voluntary expectation.

¹¹ Reuters (2025), "Chile's Data Centres Strain Aquifers Amid Drought," and El Mercurio (2025). [The Fight Over Water, Power, and the Future of AI In Chile's Data Desert - LatinAmerican Post](#)

¹² Datacenter Forum (2021). 'Data centers in the Netherlands could lead to drinking water shortages', 19 March 2021, <https://www.datacenter-forum.com/datacenter-forum/data-centers-in-the-netherlands-could-lead-to-drinking-water-shortages>; Data Center Dynamics (2022). 25052026

¹³ Walton, B., Circle of Blue (2025). 'Data centers a small, but growing factor in Arizona's water budget', Water Desk, 4 April 2025, <https://waterdesk.org/2025/04/data-centers-a-small-but-growing-factor-in-arizonas-water-budget/>; Bittle, J., Grist (2026). 'Arizona's water is drying up. That won't stop its data center rush', 4 March 2026, <https://grist.org/technology/arizona-water-data-centers-semiconductors/>; Larsen, L. and Baird, A., Grist (2026). 'Can you build data centers in a desert without draining the water supply? Utah is finding out', 21 January 2026, <https://grist.org/technology/utah-data-center-water-supply-meta-novva/>.

The Resource Rent Parallel and the Lesson

Australia has a documented history of allowing overseas capital to extract value from Australian natural resources without adequate return to the public systems that underpin that extraction. The petroleum resource rent tax debate, the mining super-profits debate, and the current conversation about whether oil and gas companies are paying their fair share are expressions of the same structural failure: natural resource value captured privately while public systems bear the cost of managing and sustaining the underlying asset.

The data centre industry is at the beginning of this cycle in relation to water. The inquiry has the opportunity to ensure Australia does not repeat the pattern. The question for the inquiry is not whether a tax or levy mechanism is appropriate, that is a fiscal policy question beyond the scope of this submission. The question is whether the water pricing and regulatory framework should require industrial-scale private consumers of public water systems to contribute to the resilience of those systems as a condition of the consumption itself. **This submission proposes a Water Security Contribution framed as a regulatory condition of industrial-scale water consumption as the mechanism for giving effect to that principle.**

Recommendation 1: Establish a National Water Value Framework

The NWA's updated water pricing principles should establish a **National Water Value Framework**, requiring all jurisdictions adopt pricing approaches that capture the **full long-run cost of water supply** including climate adaptation investment, supply diversity measures, infrastructure resilience, interdependent system returns and the opportunity cost of allocation from constrained systems and catchments. **This framework should treat water as non-replaceable strategic capital, not merely as a delivery service, embedding its ecological and economic value into every pricing decision. It should form the foundation for all future water-pricing design, ensuring affordability, security, resilience and renewability are balanced within a single national valuation architecture.**

Recommendation 2: Require a Water Security Contribution from Industrial-Scale Consumers

Any **industrial-scale water consumer** defined as a new facility drawing more than 1 GL per annum from shared public water systems, including but not limited to data centres should, as a condition of development approval and ongoing operation, be required to make a **Water Security Contribution to a dedicated Infrastructure Resilience Fund for the affected water system.**

This obligation should apply only to **new large-scale entrants**, not existing agricultural or food-production users operating under regulated licence frameworks. The distinction is important as established users have contributed to regional economies for decades under allocation regimes already designed for sustainability; new entrants represent **unanticipated demand** on systems built for different consumption profiles.

The contribution rate could be set by the relevant economic regulator, calibrated to consumption volume and benchmarked against the long-run marginal cost of future supply resilience, rather than the short-run delivery cost. This approach would ensure proportionality and transparency while allowing for jurisdictional variation in how resilience costs are defined and recovered. Alternative models such as regional resilience levies or negotiated infrastructure offsets could achieve the same principle: **that new, high-volume industrial entrants contribute directly to the long-term sustainability of the systems they rely on.**

Recommendation 3: Examine the Case for a National Water Resilience Investment Mechanism

The investment deficit in Australian water infrastructure is structural and long-term, and cannot be closed through individual pricing cycles or utility investment cases alone. Australia's National Water Grid Fund (NWGF) already demonstrates that dedicated national investment mechanisms are feasible and politically achievable.

The Commission should **examine the case for a National Water Resilience Investment Mechanism**, either as an extension of, or complement to, the NWGF to mobilise capital for renewal and adaptation at a scale beyond current pricing frameworks. This mechanism could be benchmarked against international models, such as the European Investment Bank's Water Programme, which committed over €15 billion (2025–27) to resilience infrastructure¹⁴. **The inquiry to explore governance and financing options, including eligibility criteria prioritising climate adaptation, supply diversity, and regional resilience; pathways for private-capital co-investment; and alignment with existing state regulatory pricing allowances. This framing keeps the recommendation within scope proposing examination, not prescription while signalling the scale of reform required.**

PART THREE: REGIONAL EQUITY, FOOD SECURITY, AND A FINANCIAL ARCHITECTURE MISALIGNED TO REALITY

Australia's water-sector financial architecture is inadequate to support regional conditions. Treating water as a utility rather than strategic capital has produced a system that widens the gap between what regional utilities can charge and what their infrastructure actually requires, which is the consequence of a framework designed for economic, social and climatic conditions that no longer exist.

The Pricing Tension: Affordability vs. Investment

Affordability and long-run sustainability are not competing objectives within an adequate system; they are **both under-served** by one that generates insufficient revenue, yet still produces price increases regional communities struggle to absorb. Water is non-discretionary; price rises cannot be avoided. **The solution is not to suppress investment but to diversify the funding base, ensuring households do not carry the full burden. The proposed Water Security Contribution from industrial-scale consumers offers one such mechanism.**

The Regional Financial Sustainability Gap

Regional authorities present investment cases individually, yet the deficit is **collective** shared climate exposure, ageing infrastructure, workforce constraints, and food-production dependence. No single ESC submission can articulate the **systemic regional risk** this fragmentation conceals. **The inquiry should address this mismatch: regional financial sustainability must be assessed as a shared resilience challenge, not a series of isolated balance-sheet problems.**

¹⁴ European Commission (2025). *European Water Resilience Strategy*. Brussels, 4 June 2025. The European Investment Bank's new Water Programme, launched in conjunction with the Strategy, committed over €15 billion in planned financing during 2025–2027 for water resilience infrastructure, including traditional infrastructure upgrades, pollution control, and water technology innovation. See also: European Investment Bank, *Securing Safe, Clean Water for All*, <https://www.eib.org/en/projects/topics/energy-natural-resources/water-and-waste-water-management/index>

Nutritional Food Security and Regional Industry Viability

The viability of regional water utilities / authorities underpins the viability of the industries and communities they serve. The Goulburn-Murray irrigation system anchors a food-production zone contributing annually to national output and population health. **Under-investment in these systems is not a local cost issue; it is a national food-security risk.**

Regional water resilience is therefore a precondition for economic and nutritional food security, not a discretionary expenditure within it.

Recommendation 4: Establish a Regional Water Investment Adequacy Framework

The Commission should recommend that the ESC and equivalent state regulators be required to conduct an at-scale **Regional Investment Adequacy Assessment** at each major pricing review cycle. This is a practical, achievable reform: the ESC already conducts comparative analysis across utilities. What is currently missing is the **explicit requirement to aggregate that analyses into a regional investment gap assessment, and to connect it to food security, industry viability, and Commonwealth co-investment decisions.** The assessment to:

- quantify the cumulative infrastructure investment deficit across regional Victorian water authorities as a portfolio;
- identify systemic investment requirements not adequately captured by individual pricing submissions, including climate adaptation, flood resilience, water quality, and supply system renewal;
- explicitly link regional water investment adequacy to food security outcomes and regional industry viability; and
- provide a formal evidence base for state and Commonwealth co-investment decisions, including through the National Water Grid Fund.

Individual pricing determinations should continue, but within a framework that first establishes the regional investment context. It is an elevated function for existing institutions, aligning financial oversight with regional resilience and national food-security imperatives.

PART FOUR: REGULATORY DESIGN FOR A NEW ERA

Australia's water-sector regulatory architecture must evolve from compliance assurance to climate-exposure governance. The inquiry's terms of reference call for frameworks that promote proactive, sustainable asset management and long-term planning. Yet current design still rewards backward-looking compliance assessing whether utilities met past commitments rather than requiring foresight into the structural conditions shaping future performance.

The Status Quo Failure - Compliance-Oriented

Current evaluation methodologies give prominence to utilities on historical delivery: service levels achieved, capital programs executed, and financial performance within parameters. This accountability is necessary but insufficient. It creates governance incentives that prioritise compliance over strategic foresight. Boards and executives focus on meeting past targets because that is what is measured. **The result is governance that is technically compliant, yet strategically behind in responding to emerging systemic risk.**

The Missing Link - Climate-Exposure Governance

Water authorities across Australia already capture climate-risk exposure through adaptation plans, asset-stress modelling, and resilience reporting. However, these insights remain fragmented and descriptive. They identify risks however lack the systemic governance link to drive investment or capability decisions. **Embedding climate-exposure governance within regulatory design would close this gap. It would require water utilities/authorities to demonstrate how climate exposures inform asset planning, workforce capability, and investment prioritisation consistent with the Australian Sustainability Reporting Standards (ASRS) and the ISSB/TCFD frameworks now being adopted nationally.**

The Governance Mechanism - Systemic Foresight Function

To operationalise climate-exposure governance, regulators should require water utilities / authorities above a defined asset threshold to maintain a **Systemic Foresight and Resilience Function** a standing governance practice that connects risk identification to investment and capability decisions. This function would:

- Integrate climate-risk data and other systemic signals into board-level governance and regulatory submissions.
- Distinguish **immediate, emerging, and structural conditions**, providing foresight for risk-appetite review and strategic planning.
- Inform **whole-system investment and capability decisions**, ensuring that asset renewal and workforce planning respond to the conditions that will exist, not those that have passed.
- Feed insights back into future climate-risk disclosures, creating a **closed governance loop** — **identification → monitoring → investment → re-assessment.**

This should not be viewed as a compliance burden; but a governance requirement in the current operating environment. Water utilities in Victoria already produce extensive annual and regulatory reporting. The gap is not the absence of reporting, it is the absence of a regulatory requirement to model and disclose forward-looking structural risk in a form that regulators must take into account in investment determinations.

APRA's Climate Vulnerability Assessment and the AEMC's May 2025 final rule on distribution network resilience both establish this specific logic. It identified that structural risks, risks that do not appear in conventional financial or operational reporting must be explicitly modelled, disclosed, and reflected in investment decisions. No equivalent requirement exists for water utilities.

The proposal in this submission is not to add to the reporting burden. It is to apply, for the first time in the water sector, a principle that Australian regulators have already accepted as appropriate in finance and energy.

The Productivity Case

Embedding climate-exposure governance and systemic foresight improves both resilience and resource efficiency. Water utilities/authorities that detect structural change early make better investment decisions, avoiding stranded assets, identifying shared infrastructure opportunities, and aligning capital programs with the climate that will exist. **It transforms climate-risk reporting from a disclosure exercise into a strategic intelligence system that strengthens national water resilience.**

Recommendation 5: Embed Climate-Exposure Governance and Systemic Foresight in Regulatory Design

The Commission should recommend that the NWA's updated regulatory design principles require water utilities above a defined asset threshold to establish and maintain a formal **Systemic Foresight and Resilience Function**. This function should model conditions affecting long-run service delivery and infrastructure adequacy against forward scenarios; produce outputs that are included as a mandatory component of regulatory pricing submissions and must be taken into account by the relevant economic regulator in assessing proposed capital and operating expenditure; and require board-level attestation that risk appetite has been reviewed in light of the intelligence produced.

This reform aligns water sector governance with the regulatory logic already established in finance, through APRA's Climate Vulnerability Assessment, which required Australia's five largest banks to model and disclose structural climate risks not captured in conventional reporting and in energy, through the AEMC's May 2025 final rule embedding distribution network resilience into the National Electricity Rules and requiring the AER to develop formal Network Resilience Guidelines.

Both precedents establish that requiring regulated entities to model, disclose and act on forward-looking structural risk is appropriate regulatory design. The water sector is currently a major regulated infrastructure sector in Australia without an equivalent requirement. This recommendation closes that gap.

PART FIVE: REGIONAL EQUITY AND COLLECTIVE RESPONSE

Two Sides of the Same Problem

The inquiry's terms of reference call for attention to *regional and equity considerations, including structural challenges faced by regional and remote water utilities/authorities*. This submission argues that **regional equity and sector collaboration are the same systemic problem viewed from opposite directions**. Equity cannot be achieved through isolated funding access; it requires a **collective governance architecture** capable of managing shared exposure, shared infrastructure, and shared capability deficits.

The conditions driving inequity climate-driven yield decline, ageing assets, workforce depletion, and financial fragility will intensify over the next 20–30 years. Decisions deferred now will compound across that horizon. **The governance architecture to manage that trajectory must be built before the gaps become crises.**

Regional Victorian water authorities face parallel structural challenges, climate adaptation, financial sustainability, workforce capability, and digital transformation, yet navigate them largely alone. **Each replicates effort and expertise without the collective weight that only a coherent sector-level response can produce.** In complex conditions, isolation erodes resilience. Shared intelligence, shared capability, and shared strategic response compound strength; parallel individual effort does not. The current regulatory framework provides no mechanism to recognise or reward collaboration.

What Collective Architecture Means in Practice

Collective architecture is **not amalgamation**. It preserves local accountability while building the connective infrastructure that allows the system to function as a system. In practice, this means:

- Shared intelligence: a conditions-analysis platform giving water utilities / authorities access to the strategic picture.

- Shared capability: joint talent pipelines, training frameworks, and mutual-aid arrangements for technical expertise.
- Shared investment framing: a unified regional investment case with sufficient weight to influence regulatory design.
- Shared regulatory positioning: coordinated engagement with inquiries and pricing processes to present the systemic picture rather than fragmented submissions.
- Emerging collaboration: linking foresight to collaboration so the sector can recognise and act on new opportunities in real time.

Equity Through Collective Capacity

Regional and rural water utilities/authorities lack the scale to build the strategic intelligence, technical depth, and digital capability that structural conditions now demand. Collective architecture delivers **equity through capacity**, enabling every authority to access shared intelligence, expertise, and regulatory influence that none could sustain alone. It makes the system more capable than the sum of its parts.

The Workforce Dimension

Skills shortages in dam engineering, treatment systems, and digital transformation are sector-wide and accelerating. Individual recruitment cannot solve a structural capability deficit. A shared capability infrastructure, jointly developed pipelines, training, and mutual-aid frameworks are more efficient and more resilient. Investing collectively in capability rather than replicating gaps across authorities is a direct productivity gain.

Recommendation 6: Establish a National Sector Collaboration and Measurement Framework

The Commission recommends that the **National Water Agreement** include a **Sector Collaboration and Measurement Framework** providing formal architecture for shared intelligence, capability, and investment planning across regional utility clusters.

The framework should:

- Establish funding eligibility for shared intelligence and capability functions within pricing allowances.
- Enable Commonwealth and State co-investment in shared infrastructure.
- Require jurisdictions to develop regional collaboration plans as part of NWA implementation.
- Recognise collective regulatory positioning, including jointly developed conditions intelligence, as a formal input to pricing determinations.

Embed a Collaboration Measurement System (CMS) to evaluate how coordination translates into shared value across the sector. The CMS should measure alignment, coherence, and value creation through indicators such as:

- Coordination index: assessing how effectively decisions and investments align across corporations and regulators.
- Friction and duplication metrics: identifying where governance complexity inflates cost or delays outcomes.

- Shared capability utilisation rate: tracking adoption and performance of centralised functions.
- Collective value score: quantifying how collaboration improves resilience, affordability, and ecological outcomes.

This framework is a collective response to shared structural conditions, not a precursor to amalgamation, it is a design for resilience through collaboration. The measurement system ensures collaboration becomes a strategic performance capability, enabling transparent evaluation of how shared intelligence, coordinated investment and collaboration in capability strengthen the sector's long-term resilience and value delivery.

About This Submission:

This submission is made by Resilient Futures. It draws on the Victorian Water Sector Strategic Intelligence Program (2025)¹⁵ and on Resilient Futures' broader cross-sector conditions intelligence work.

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¹⁵Victorian Water Sector Strategic Intelligence Program (2025). A partnership between Resilient Futures, VicWater, the Infrastructure and Water Network (IWN), and regional water authorities: Lower Murray Water, Colloban Water, Goulburn Valley Water, Wannon Water, Central Highlands Water, Barwon Water, Southern Rural Water.