

SUBMISSION

Submission to the Department of Climate Change, Energy, the Environment and Water

Submission to the National Water Agreement consultation

3 May 2024

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.

Australian Academy of Technological Sciences and Engineering (ATSE) submission to the DCCEEW on the National Water Agreement consultation paper

The ambition of a National Water Agreement (NWA) is to navigate the complex water landscape to secure economic, environmental, health and social outcomes underpinned by secure water supplies of suitable quality. ATSE welcomes the Commonwealth Department of Climate Change, Energy, Environment and Water (the Department) consultation on a future National Water Agreement. ATSE supports the draft objectives' inclusion of themes for water quality, climate change and population growth, transparency in decision-making, and Aboriginal and Torres Strait Islander engagement.

ATSE has engaged with the Productivity Commission on its review of the National Water Initiative (NWI), having provided an [initial submission](#) and a [subsequent submission](#) on its Interim Report. We have mapped these views to the objectives in the Department's Discussion paper and noted strong alignment. ATSE encourages the Department and the Productivity Commission to connect these parallel activities and take note of the ATSE's position in each submission.

ATSE makes the following recommendations:

Recommendation 1: Establish new national leadership for implementing and monitoring the National Water Agreement, via a renewed National Water Initiative, including structures to transparently uphold the principles of the NWA, designing the role of government, governance, and institutions to lead and deliver the objectives and outcomes.

Recommendation 2: Re-establish, evolve and resource a National Water Commission to provide a nationally- recognised body for assertively driving water reform and improving water management.

Recommendation 3: Apply an Environment / Social / Governance (ESG) framework, as the foundation of an agreement that enables and legitimises the participation of industry and communities in water reform and water management, as well as evidence-based monitoring of performance against global commitments.

Recommendation 4: Incorporate an individual objective in an NWA for urban water that recognises its pivotal role in secure, productive, and resilient communities and outlines a vision for urban water reform and better management of urban water resources.

Recommendation 5: Incorporate an objective in an NWA to enhance water security to support a sustainable, productive, and resilient Australia, and commit to developing and transparently publishing science-based indicators of environmental health.

Recommendation 6: Add outcomes for investing in water management technologies and a skilled water management workforce.

Recommendation 7: Prioritise knowledge generation, including through investing in digital technologies, enabling data-driven decisions and investments.

Recommendation 8: Review the consultation timeline and seek feedback from key stakeholders on its appropriateness given the fundamental nature of water to a productive and resilient Australia.

Recommendation 9: Consider ATSE's proposed revised set of objectives for Figure 1.2 of the Discussion Paper.

Instilling national leadership and coordination in the NWA

National leadership, and commitment from all states and territories, will be vital for the implementation of an NWA that seeks to build on the substantial past successes of the National Water Initiative (NWI). The success of the NWI was hindered by insufficient national authority for proactive decision-making and the fragmentation of decision-making and accountability across numerous federal and state bodies. While local implementation is essential, a cohesive national vision can enhance consistency, efficiency, and equitable and fair distribution of water resources.

ATSE proposes strengthening governance arrangements by establishing a cohesive national vision, and consistent definitions, fostering collaboration among all levels of government, and delineating clear roles and responsibilities, including the monitoring of outcomes and identification of areas for improvement. Governance should also enable and legitimise participation of water-reliant industries and communities. ATSE provided a proposed governance structure in our recent Productivity Commission submission on the Interim Report – this is presented below for the Department's consideration.

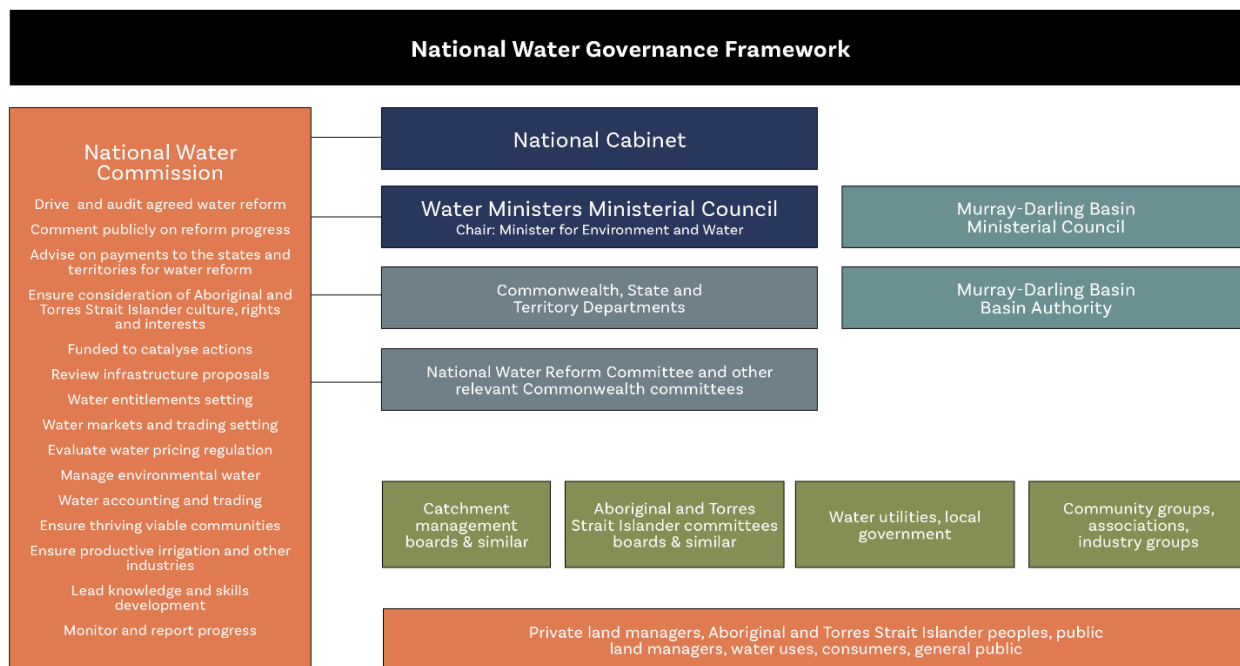


Figure 1: ATSE's proposal for an amended water governance structure.

ATSE recognises the challenge of gaining inter-jurisdictional agreement with all elements of the NWI. Every jurisdiction has its own regulation and government structures, different water ecosystems, varying climate change and population growth trends, variable industry and community expectations and differing priorities. Given this variation across Australia, ATSE proposes that a renewed NWI could agree and commit to foundational principles and standards that would apply in all areas but be complemented by commitments to jurisdiction-relevant reforms and policies. An Environment / Social / Governance (ESG) framework would achieve this as seen in the Global Reporting Initiative (GRI), where foundational standards must be applied in every case, and other disclosures and standards are deemed on a materiality-based assessment.

By adopting an ESG framework, the NWA can holistically address the key aspects of water management. Such a framework would allow for the promotion of sustainable, equitable, fair, and well-governed water resources for the benefit of all Australians, including Aboriginal and Torres Strait Islander peoples and regional, remote, and rural communities. This would align the NWA with global best practices and standards for responsible and ethical water stewardship. Further, it would support the Commonwealth in measuring, monitoring and reporting against its numerous global commitments.

To drive and monitor progress in these activities, ATSE calls for the re-establishment of a National Water Commission (NWC), which - among other things - can strengthen the connection between climate science and water planning through national cohesion. Notably, the Australian Government has committed to establishing a new NWC to drive water reform and future-proof the country's water resources¹, which ATSE whole-heartedly supports.

Recommendation 1: Establish new national leadership for implementation and monitoring of the National Water Agreement, via a renewed National Water Initiative, including structures to transparently uphold the

¹ Department of Climate Change, Energy, the Environment and Water 2023, 'National Water Policy' <https://www.dcceew.gov.au/water/policy/policy> (accessed 18 April 2024)

principles of the NWA, designing the role of government, governance, and institutions to lead and deliver the objectives and outcomes.

Recommendation 2: Re-establish, evolve and resource a National Water Commission to provide a nationally recognised body for assertively driving water reform and improvements in water management.

Recommendation 3: Apply a framework, based on Environment / Social / Governance (ESG), as the foundation of an agreement that enables and legitimises the participation of industry and communities in water reform and water management, as well as monitoring of performance against global commitments.

Emphasising the importance of urban water

The Discussion Paper places an outcome under Objective 1 for urban water, however, this is insufficient to reflect its importance and risks neglect. Urban water security is increasingly important given anticipated population growth and that 80% of the Australian population lives in urban areas. Urban settings are unique in terms of the multi-sectoral interplay in infrastructure planning, investments and related services. The influence of urban water in underpinning urban productivity and liveability are multi-dimensional and complex. ATSE recommends that the framework raises urban water management to an individual objective in the NWA and outlines specific areas for reform directions and priorities to improve national urban water management.

Inadequately accounting for the wide spectrum of urban water challenges was a limitation of the NWI. ATSE considers that an evolved NWA is the best avenue for urban water management recognition as it requires national leadership and coordination across states and territories to harmonise water management definitions, knowledge and practices for secure and resilient urban communities and productivity.

Urban water requires reform in key areas such as governance, diversifying water sources, and hybrid multifunctional water infrastructure to enhance urban water resilience and sustainability. Diversifying water sources and infrastructure would ensure urban water security in the face of climate variability. Water security requires an understanding of variable factors including pollution, energy needs, extreme weather events and potential nature-based solutions that can improve liveability and biodiversity in waterways. An NWA should include robust economic valuation to guide infrastructure planning and foster cross-sectoral co-investments.

Recommendation 4: Incorporate an individual objective in an NWA for urban water that recognises its pivotal role in secure, productive, and resilient communities.

Enhancing water security for sustainable and resilient irrigation, industry infrastructure and natural capital

A crucial aspect of an NWA is striving to achieve water security of appropriate water quality while considering various stressors. The Discussion Paper acknowledges that food security, along with other needs like energy, places evolving demands on water resources. Additionally, water security and good water management for irrigation, agricultural and industrial purposes should be a legitimate and positive focus for an NWA.

Under Objective 1 of the agreement, addressing the challenges and interconnectedness of these sectoral requirements (agriculture, energy and infrastructure usage) is a priority. ATSE suggests a revision to how food security (domestic and export food production) and other sectoral needs are approached, proposing a new objective that recognises and supports sufficient responsible, accountable water availability for agricultural, industrial, irrigation and energy infrastructure use.

Natural capital is fundamental and must be accounted for. Wetlands in Australia provide valuable services such as water storage, water quality improvement, flood protection, and habitat for plants and animals. These wetlands are at risk from direct habitat loss, altered water regimes, pollution, and invasive species due to urban development. Decision-makers are urged to maintain water courses and wetlands as recognised and essential water infrastructure, promote their wise use through Water Sensitive Urban Design, avoid further degradation, and involve local communities and Aboriginal and Torres Strait Islander peoples in their planning and management.

The continued Menindee fish death events, attributed to the hypoxia and the over-allocation of water resources, underscores the importance of proactive water management amidst evolving environmental conditions. The Murray-Darling Basin ecosystems, which support wetland and floodplain wildlife as well as

fish populations, are particularly sensitive to changes in water quantity and quality, due to extensive development and catchment modification.

ATSE recommends that an NWA give due recognition to the role of environmental water management in supporting natural capital. While the draft framework briefly touches on environmental water management within Objectives 1 and 3, explicitly acknowledging the importance of protecting and sustaining fish and wildlife would strengthen water management efforts. This starts with acknowledging that some ecosystems undergo permanent and irreversible changes.

An NWA could play an important part in building public confidence that environmental water is being well deployed. To support this, an NWA should prioritise developing and regularly publishing science-based indicators of environmental health, including the impact of environmental water flows, to strengthen public confidence in the responsible allocation of water resources. This emphasis on transparency and evidence-based practices is crucial for engaging irrigation-dependent communities as active participants in national agreements.

Recommendation 5: Incorporate an objective in an NWA to enhance water security to support a sustainable, productive and resilient Australia, and commit to developing and transparently publishing science-based indicators of environmental health.

Investing in skills and data for NWA implementation

Cultivating and applying the best available knowledge optimises water management outcomes. Improved data and knowledge about water availability, needs, usage, and trends are essential for evidence-based decision-making for efficient resource allocation.

ATSE supports the inclusion of "ensuring evidence-based decision-making" (Objective 4) in the framework. This objective involves applying science and knowledge, using research and sampling data, monitoring, data modelling, data sharing, Traditional Knowledge, and investing in knowledge and research.

ATSE suggests that this objective would benefit from two additional outcomes. Firstly, investing in water management technologies to ensure the generating of reliable and consistent water data thereby facilitating modelling. Secondly, maintaining the necessary skills base for successful implementation.

The implementation of the NWI has historically been hindered by a failure to preserve institutional knowledge and expertise. There is a need for long-term strategy and commitment for water research; a function previously achieved by Land and Water Australia. Investing in training, valuing, and retaining water experts within government bodies and the research sector would facilitate better long-term water management. Expertise in cybersecurity is also required to safeguard water infrastructure and systems against potential attacks.

Recommendation 6: Add outcomes for investing in water management technologies and a skilled water management workforce.

Recommendation 7: Prioritise knowledge generation, accessibly available, including through investing in digital technologies, enabling data-driven decisions and investments.

Take the time it needs to evolve an NWA

ATSE notes the timeframe for consultation on the NWA Discussion Paper and is concerned there may be insufficient time for robust, transparent, and purposeful engagement of all parties. In particular, the stated strong commitment to embodying the involvement of Aboriginal and Torres Strait Islander peoples requires time. A coherent and cohesive national water agenda supported by a well-governed and resourced NWA is fundamental to the productive and secure future of Australia.

ATSE recommends a purposeful and sufficient timetable for evolving the NWI for a future NWA. We look forward to continued engagement.

Recommendation 8: Review the consultation timeline and seek feedback from key stakeholders on its appropriateness given the fundamental nature of water to a productive and resilient Australia.

Establishing clear and focused objectives

ATSE generally supports the tenor of the proposed objectives outlined at Figure 1.2 of the Discussion Paper. Considering our recommendations above, ATSE has drafted a revised set of Objectives for the Department's consideration, included within the appendix to this submission.

Recommendation 9: Consider ATSE's proposed revised set of objectives for Figure 1.2 of the Discussion Paper.

ATSE thanks the Department of Climate Change, Energy, the Environment and Water for the opportunity to respond to the Discussion Paper on a future National Water Agreement. For further information, please contact academypolicyteam@atse.org.au.

Revised Figure 1.2 – National Water Agreement Objectives

#	Proposed	Comments on why
1	The safe and secure supply of sufficient water quality and quantity to sustain resilient and productive natural environments, Culture, industries, and communities.	ATSE generally accepts Objective 1 and suggest evolving to refer to resilience, productivity, and industry.
2	A water management framework underpinned by national and international human rights principles, which recognises and protects Aboriginal and Torres Strait Islander Peoples' Cultural, spiritual, social, environmental, and economic water interests and values.	ATSE generally accepts Objective 2.
3	A water management framework, as the foundation of the NWA, enabling the responsible and accountable participation of irrigators, industry and communities through defined partnerships, as well as evidence-based monitoring of global commitments to facilitate the efficient use of water, and the enhancement of water security to support a sustainable and resilient Australia including food, energy, and natural capital.	ATSE generally accepts Objective 7. We propose it is extended to note industry and community, accountable partnerships, water security for food, energy, and natural capital.
4	A water management framework, that responds to climate change, population growth and other circumstances for environmentally sustainable water planning and management that is interconnected, adaptive and responsive, enabling accountable partnerships with industry, Indigenous Peoples, urban, regional, rural, and remote communities equitably.	ATSE generally accepts Objective 3. We propose it is extended to balance environmental outcomes with industry and community partnerships, as well as Indigenous Peoples and remote, rural and regional.
5	The investment in, resourcing and use of robust and coordinated science, data, digital technologies, and Cultural knowledge that underpins evidence-based decision making for productive water management.	ATSE generally accepts Objective 4 and to elevate investment and resourcing needs. We suggest it is extended to note digital technologies.
6	The investment in major water infrastructure that is effective, equitable and fair, productive, strategic, and transparently governed.	ATSE generally accepts Objective 5. We suggest it is extended to note equity, productivity.
7	The sustaining of industry and community trust and confidence in government, water agencies, water managers and users enabling national coordination, relationships, and leadership.	ATSE generally accepts Objective 7, evolved to encompass industry.
8	The recognition of urban water as pivotal in secure, productive, and resilient communities.	ATSE proposes a new objective given the importance of urban water.
9	Effective mechanisms to drive, monitor, review and adapt the water reform agenda including the re-establishment of a National Water Commission.	ATSE proposes a new objective that underpins the effective implementation of water reform.