23 May 2017

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UTS CRICOS PROVIDER CODE 00099F

National Water Reform Enquiry
Productivity Commission
GPO Box 1428
Canberra City ACT 2601

Dear Commissioners,

RE: Reform of Australia's Water Sector

The Institute for Sustainable Futures (ISF) appreciates the opportunity to respond to the inquiry into the reform of Australia's Water Sector. ISF is internationally recognised for its project-based research that supports change towards sustainable futures. More than ever before, communities expect water supply systems to perform efficiently and be resilient to drought and disruptions. They also expect to live in vibrant, green and cool cities. We need long-term plans, alongside learning and adaptation, to respond to the imminent challenges facing our water infrastructure. Regulatory reform is part of what's required to enable public and private investment in better outcomes. Ultimately, doing infrastructure differently will also require investment in research on infrastructure. Our input into this review is focused on facilitating an investment environment that supports the long-term sustainable delivery of integrated water infrastructure. It is with a view to developing net-positive, sustainable and resilient water management solutions that we make our recommendations.

Sector reform under the umbrella of the National Water Initiative (NWI) has provided substantial efficiency and productivity benefits, and delivered a robust water planning framework. However, there is still more work to be done. Despite the reduced urgency in further reforms with the ending of severe drought across most of the country and the disbanding of the National Water commissions, the challenges and opportunities the water industry faces are still very real.

Our response focuses on the urban water reform agenda and points to recent and relevant examples. In general, our response covers the following key areas:

- The NWI has been a successful tool in driving national water reform, but there is more work to be done. An updated and progressive NWI is critical to continuing to drive the national reform agenda to ensure the Australian Water industry continues to be world leaders in water management.
- There should be a focus on regulatory reform to enable outcomes based integrated water management and a level playing field that does not discriminate between efficient investment by new or existing providers.
- Planning should be adaptive and consider all options equally, without precluding any particular option or locking out their consideration if the context changes.
- The National Water Commission provided invaluable national and multi-jurisdictional leadership on nationally important water issues. To enable continued efficient and coordinated reform, including coordinating a national research agenda, a similar COAG-level committee should be established.

Regards,

Professor Cynthia Mitchell
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ISF submission – Reform of Australia's Water Sector

BENEFITS OF THE NWI AND UNFINISHED BUSINESS

The National Water Initiative has provided the context for significant progress, particularly in the areas of planning, pricing and competition. However, given the substantial ongoing challenges facing the water industry, maintaining a coordinated national reform agenda is critical. The water industry has a key role in supporting liveable cities of the future. The infrastructure we invest in today drives the outcomes of the future. Therefore it is critical that the policy and institution arrangements drive investment in a way that will support this future. This submission focuses on the urban water framework and addresses the following key areas:

- Responding to customer and community's definition of "value"
- A 'One Water' (or whole-of-water) framework that does not preclude any sources of water.
- Price regulation that recognises the long-term economic benefits of modular opportunistic investment, and provides efficient investment signals for all services regardless of provider
- The importance of continuing a national research agenda.

PROVINDING WATER SERVICES THAT ADD "VALUE"

Utility led customer engagement has revealed a desire for water services that go beyond the provision of traditional drinking water and sewerage services. These broader services are often conceptualised as improving 'liveability' and include providing vibrant open spaces; retaining and incorporating water into the landscape; and reducing the impacts of urban heat islands. Although it is widely recognised that the water industry is in a unique position to help fulfil these broader community aspirations, defining and quantifying broader values, and the regulatory and institutional frameworks to allow water businesses to undertake these investments are uncertain. In addition, the separated and fragmented nature of stormwater services from water and wastewater limits integrated water service delivery (see Watson, 2017b). If we are to capitalise on the capacity of urban water industry to deliver these broader outcomes regulatory change will be required. The water sector will need to engage meaningfully with their customers and associated communities to clearly understand and articulate how this value can be defined and, if possible, quantified. A national framework for undertaking such an assessment would assist in systematically and consistently defining broader benefits associated with water infrastructure investment. Such a framework would assist in the assignment of roles and responsibilities in achieving local benefits, who pays for which parts of the service.

URBAN WATER PLANNING (ONE WATER)

Urban water reforms have driven more robust water planning that addresses the supply demand balance, at least cost, including a greater range of options. Plans such as the Sydney Metropolitan Water Plan are transparent, and include scheduled reviews that involve evaluation and public reporting. However, there are still challenges with developing a truly integrated water management approach and ensuring all options are considered.

The current planning, regulatory and institutional frameworks have been developed over a long period of time based on public monopoly supply of standard centralised services. In recent years they have been adjusted and adapted to accommodate integrated options and, in some jurisdictions, allow for direct private competition.

Investment in a more diverse portfolio of solutions is limited in two ways: firstly by siloed institutional arrangements that preference large, just in time, centralized solutions and do not clearly allocate responsibility for broader investment outcomes; and secondly by regulatory and institutional adversity to risk. Further discussion of and recommendations to reduce the policy and regulatory limits can be found in Watson et. al (2017a, 2017b).

The next steps include incorporating all water uses within the One Water planning framework and providing greater cohesiveness and coordination between different reviews that occur within the urban water sector. Work by ISF for WERF recommended a number of key steps for progressing towards a One Water framework (see Mukheibir et. al. 2014, 2015).

Siloed decision making processes and lack of direction limit a 'One Water' approach

Although aspirations to create integrated and water sensitive cities are well documented, there is a lack of direction on who should make decisions that address these sustainability goals and how they should do so. This applies particularly to goals related to public and environmental amenity. There is no consensus on the key objectives for the water industry, how the trade-offs between costs and benefits should be assessed and managed, and who should pay (and how they should pay) for the indirect benefits of urban water services. The lack of clarity on the role of the utility in providing sustainability outcomes may reduce their willingness to invest in alternatives, as they may not be able to recover their costs through existing funding mechanisms.

The compartmentalised knowledge of, and siloed responsibility for, the planning and regulation of the different components of the water cycle (catchment management, water treatment and distribution, wastewater collection and disposal, flood management and urban water quality), also make it difficult to coordinate a whole of water approach (Mukheibir, Howe & Gallet 2014). Urban water planning is undertaken by centralised utilities or government agencies. In most jurisdictions there are no formal processes for identifying opportunities for small systems in advance of centralised investment and communicating this to the market. This situation is exacerbated by the limited institutional and regulatory coordination between stormwater service providers and the water and wastewater utilities. This lack of information limits the ability of private investors to suggest other alternatives, or to plan local recycled water developments to maximise benefits to both their customers and the wider centralised system.

There would be benefit in consistency and clarity from a national level on the efficient regulatory models for promoting a 'One Water' approach, and the role of water utilities in providing and funding broader customer objectives.

Planning and pricing frameworks should facilitate a modular adaptive approach

Research by ISF in collaboration with all four urban utilities in Melbourne has demonstrated that ongoing investment in demand management and integrated water solutions when the opportunity arises, as opposed to demand triggered large-scale investment can provide substantial long term savings whilst improving robustness and resilience of supply (Mukheibir & Mitchell 2014). Rather than relying on large 'once in a generation' infrastructure augmentations, there is an opportunity to encourage opportunistic private investment to achieve the same (or greater) outcomes, leveraging both public and private funds. The question is, how might the regulatory process be constructed to facilitate such outcomes?

To transition to a 'One Water' approach, the institutional environment needs to encourage innovation and support alternative and decentralised approaches to integrated water management. An investment and institutional model that supports an appropriate mix of centralised and decentralised infrastructure would also strengthen the resilience of systems to future shifts in trends and shocks. There would be substantial benefit to a nationally consistent approach to transitioning and delivering a 'One Water' approach.

Efficient investment should be facilitated by acknowledging and explicitly managing the distributional shifts between centralised and decentralised approaches

Fair and consistent assessments of decentralized investment, particularly in relation to centralized extension, augmentation and replacement, has proved to be problematic. One reason for this is that the traditional characterization of impacts into social, environmental, economic and at times technical groupings misses a key aspect in understanding the relative costs, benefits and risks of these systems: their distribution across the wide range of stakeholder groups. Planning frameworks should explicitly account for the significant difference in the impact distribution between conventional urban water services and small-scale, local recycled water systems. This will help practitioners better understand the consequences of varying the impact distribution, particularly when moving from substantially public responsibility and ownership of assets to a mix of public and private responsibility and ownership. (see Watson 2016b) If a greater mix of decentralized and centralized options are adopted, and as utilities are asked by their customers to go further, mechanisms for apportioning responsibilities for new outcomes will be necessary. Having clear national principles for identifying beneficiaries, and negotiating distribution of costs and benefits will assist the efficiency of decision-making process of utilities and regulators alike.

A consistent and appropriate approach to risk to promote efficient regulation and investment

The change in focus from prescriptive end product management to a risk management approach for recycled water[1] (LECG Limited Asia Pacific 2011) has failed to deliver efficient outcomes. While a risk management framework is, in theory, more flexible, research by ISF has shown that differing perceptions of risk have lead to a situation where over-treatment is the norm, which results in unnecessary increases in costs and environmental impacts (ISF 2013a).

[1] Specifically a change from the prescriptive National Water Quality Management Strategy (NWQMS) *Guidelines for Sewerage Systems: Use of Reclaimed Water* (ARMCANZ-ANZECC-NHMRC 2000) to the risk management approach outlined in the Australian Guidelines for Recycled Water (AGRW) 2006

PROVIDING EFFICIENT AND EFFECTIVE PRICE REGULATION

Price reforms under the NWI have achieved substantial gains in cost efficiency and cost reflective pricing. However, the current pricing frameworks are struggling to adapt to include the broader range of water related outcomes expected of the industry and the challenges of direct private sector involvement. Going forward there are opportunities for improvements, particularly refocusing on service outcomes for customers rather than the products themselves and providing clear and efficient investment signals for innovative service delivery.

Price reforms under the NWI have achieved substantial gains in cost efficiency and cost reflective pricing. However, the current pricing frameworks are struggling to adapt to include the broader range of outcomes expected of the water industry and the challenges of direct private sector involvement.

Infrastructure is very, very long-lived. Therefore, our infrastructure investment decisions matter enormously, especially for tomorrow. Livability is now a fundamental objective of water service provision globally and locally and water plays an important role in delivering these outcomes. Creating pricing arrangements that promote innovation and integration for the public and private sector, consistent across the full range of water services is essential.

The current frameworks can create different investment conditions for public and private providers and different levels of risk for different types of service. For example in Sydney the potable water price includes the cost of the desalination plant, but recycled water systems that provide similar climate-independent water security and contribute to resilient cities more broadly do not have access to the same cost sharing arrangements. In addition, the rules for revenue recovery discriminate in several ways between conventional water and wastewater services and integrated alternatives such as recycled water. These rules can substantially increase the revenue risk of alternatives for public utilities (See discussion in Watson et. al. 2017, 2013 and ISF 2013d).

Since the NSW Government established the *Water Industry Competition (WIC) Act* a globally leading water recycling market has emerged. The benefits gained through this market, including increased liveability, system modularity and resilience, and dynamic efficiency, align with international best practice[2] and national and State Government objectives. However, there is still work to be done on creating a stable and viable investment environment.

The challenges in creating an environment that provides efficient private investment signals while continuing to ensure adequate funding for the centralised system are significant. This is evident in the current review of wholesale prices in Sydney. It is important that there is a consistent, equitable and sustainable mechanism that does not stifle private investment where it makes sense. There would be significant benefits from developing a national approach to the appropriate form of private sector participation and regulatory and institutional mechanisms to facilitate this investment.

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[2] IWA Principles for Water Wise Cities 2016 http://www.iwa-network.org/wp-content/uploads/2016/08/IWA_Principles_Water_Wise_Cities.pdf

RESEARCH AGENDA

Ultimately, doing infrastructure differently will also require investment in research on infrastructure. Critical to maintaining Australia's position as world leaders in water management is a targeted, coordinated and adequately funded national research agenda.

The National Water Commission provided invaluable national and multi-jurisdictional leadership on nationally important water issues. Since the National Water Commission was disbanded, water reform has slipped from the national reform agenda. In Australia's recent draft roadmap for major research investment, infrastructure is largely absent. We overlook infrastructure research at our peril. We recommend the re-establishment of a national research agenda, and a central facilitation agency.

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References and useful documents

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** these documents are all available online at http://waterrecyclinginvestment.com*

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