



**Response to**  
**Implementing the National Water Initiative:**  
**2014 triennial assessment of water reform progress in Australia**  
**Public call for submissions**

**by**

**The Australian Academy of Technological Sciences and Engineering**  
**(ATSE)**

**to**

**National Water Commission**  
**Commonwealth of Australia**

**November 2013**

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## **Implementing the National Water Initiative: 2014 triennial assessment of water reform progress in Australia**

The Australian Academy of Technological Sciences and Engineering<sup>1</sup> (ATSE) welcomes the opportunity to respond to the National Water Commission's (NWC) call for submissions to the 2014 triennial assessment of water reform progress in Australia.

### **Introduction**

Now is an important time for consideration of ways to improve the National Water Initiative (NWI) and its implementation. Despite water issues generally receding in public profile due to the relatively greater availability of traditional water resources over the past few years, it is crucial to prepare now for the next period of significant environmental and economic constraints on water resource availability.

### **To what extent has the NWI and subsequent reforms enabled water use to support Australia's economic development, our communities and our environment?**

NWI reforms have helped Australia to better cope with the impact of water shortages. Water trading in the southern Murray-Darling Basin, freed up under the NWI, delivered major economic benefits during the severe and prolonged 'Millennium' drought, as shown in the National Water Commission's 2010 publication *The impacts of water trading in the southern Murray-Darling Basin*<sup>2</sup>.

### **In 2014, as we reach the ten year anniversary of the NWI, does the agreement still provide enduring principles to guide future water reform in Australia?**

ATSE considers that the NWI remains a strong vehicle to achieve further reform of Australia's water sectors, but that there is significant scope to improve its effectiveness. A key weakness of the NWI is in the nature of State Government participation. Due to the voluntary nature of this participation, parochial interests can dominate to the detriment of the overall national reform goals. Systems to encourage greater participation and ownership by the States of the reform process through the NWI could include strategic incentive programs to achieve NWI reforms while offsetting more problematic parochial considerations.

Overall, there needs to be a more committed and less divisive approach to implementation and development of reform through the NWI from all participants. A coordinated and, most importantly, strongly collaborative process of NWI implementation will achieve the most

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<sup>1</sup> ATSE was established in 1975 with the mission to promote the application of scientific and engineering knowledge to the future benefit of Australia. ATSE is one of four learned national Academies, which have complementary roles and work together both nationally and internationally. ATSE has some 800 elected Fellows who are leaders in applied science and engineering across the country. ATSE engages over 120 of its members on water issues through the ATSE Water Forum.

<sup>2</sup> National Water Commission, 2010, *The impacts of water trading in the southern Murray-Darling Basin: an economic, social and environmental assessment*, Commonwealth of Australia.

progress in future water reform in Australia. This approach would be facilitated by a greater level of transparency of the scientific, technical, economic and social bases for decision-making, and the return to the NWC of the capacity to generate and explore options for future water policy initiatives in a consultative manner.

### **Do any emerging issues and challenges indicate a need to adjust the NWI in the future?**

Increasing water trading is a significant emerging issue that requires greater impetus and attention. Commonwealth and State environmental water holders and managers generally seem to not be taking advantage of water trading opportunities, although limited trading has been undertaken by the Victorian Environmental Water Holder. Environmental water managers' decisions have the potential to influence key variables affecting irrigators' productivity, including: the frequency and spatial extent of floods; variability of water prices; and increased spill risk. There is a need for environmental water holders to invest with care, comparing their desired environmental impacts with potential detrimental physical and economic effects on irrigators' production systems and on other stakeholders. The developing landscape and practice of water trading is a crucial area for strategic consideration through the NWI.

Since the NWI was first developed, it has become much more feasible to collect large amounts of data about water resources. The continued availability of those data over the long term is crucial. The outcomes of the National Land and Water Resources Audit, which coordinated and commissioned a range of assessments over the period 1997-2002 encompassing the nation's land, water and biodiversity, were recently withdrawn from the Department of Environment website and are no longer publicly accessible. All assessments were based on the development and agreement of national data quality standards so that continuous assessments of trends could be undertaken from this benchmark, for which continued public access is essential.

Given the more ready availability of data now, compared with the relative paucity of data at the time the NWI was originally drafted, it should be possible for future water reform commitments to be more soundly based in data and evidence, and less subjective or aspirational. Evaluation of data and evidence should be explicitly implemented in NWI decision making processes. This emphasis on data and evidence-based decision making would be facilitated by implementing comprehensive water metering or measurement in areas such as: multiple unit domestic dwellings (e.g. apartment buildings); shared irrigation systems; rural and urban bores; and managed environmental flows.

During the development of the NWI, the important issue of management of the Murray-Darling Basin precluded consideration of many other reform priorities. As issues relating to the MDB have receded in urgency, due both to the breaking of the 'Millennium' drought and successful reform progress, other areas now require greater focus. A priority focus area for the NWI in the future should be urban water reform in general. In recent times there has been an unconstructive focus on short-term cost savings in the urban water sector. Greater emphasis is required to investigate value propositions and innovations for medium- to long-term benefits in the supply and management of urban water resources. For example, the

appropriate consideration of potable reuse<sup>3</sup>, whether direct or indirect, as an alternate water supply option in planning processes needs attention, in particular how to overcome the issue of pre-emptive policy bans in some jurisdictions. Another important issue requiring consideration in regards to urban water reform is the potential privatisation of water utilities and the best means of accommodating decentralised and privately owned elements of water supply and treatment systems, within traditional centralised systems.

To better address emerging issues and challenges relating to water reform through the NWI, there needs to be a greater emphasis on the science and research that underpins evidence based water management and water reform. The National Water Science Strategy and the National Water Knowledge and Research Platform both need significant attention to develop investment strategies which ensure that our better understanding of crucial issues can continue to feed in to the decision making process for future water reform.

In particular, there needs to be an overarching research funding framework with an improved, strategic process for setting national priorities and resource allocations in water research while seeking to break down technical silos in favour of a more integrated, collaborative approach. Current frameworks have resulted in discontinuities and incongruence between research funding and projects due to generally short time horizons. This has the effect of discouraging collaboration, which is crucial to developing the enduring longer term solutions that are essential in this sector. ATSE considers that the independent, objective National Water Commission could play a much expanded role in this regard than at present.

Examples of specific priority areas requiring greater research attention include: an increased understanding of groundwater resources nation-wide, and the sustainable use of these resources; how to better manage water dependent ecosystems and environmental assets; relationships between mining and water resource management initiatives, including potential impacts from coal seam gas exploration and production; and water sensitive urban planning.

### **What are the remaining barriers to implementing agreed water reforms and how can they be overcome?**

There remains an unwillingness among many consumers to pay the true cost of water services, while there is a lack of incentives for industry to make provision of water services more economically efficient. There is limited capacity for water utilities to undertake development and adoption of new technologies, which is exacerbated by the long asset life of many assets still in use, discouraging new investment.

As mentioned above, the voluntary nature of State government participation in reform processes is a serious barrier to national water reform and ATSE urges consideration of case-by-case incentive payments to be made available to state governments if they tackle specific, challenging reforms (as defined by the Commonwealth).

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<sup>3</sup> See: ATSE, 2013, *Drinking Water through Recycling: the benefits and costs of supplying direct to the distribution system*, [www.atse.org.au/water-reports](http://www.atse.org.au/water-reports)

### **Are there more efficient or effective ways, including industry and private sector participation, of achieving the intended water reform outcomes?**

There is great scope for improved innovation from the water industry and private sector in delivering services and products. There appears to have developed a tendency to focus on short-term cost savings in water service delivery at the expense of investment in research and development leading to long-term economic efficiencies in the operation of water utilities and service providers. Further reforms should encourage and enable Australian water industry participants to better capitalise on effective water management, especially through innovative approaches.

Consideration also needs to be given to how to encourage the water industry to pursue more export opportunities to take advantage of Australia's wide range of skills and experience in water resource management. Scope exists for export opportunities in: consultancy services on policy development; policy implementation; legal drafting; infrastructure development; water management software systems (e.g. e-Water CRC programs) and hardware (manufactured fittings, meters, pumps); wastewater treatment systems; wastewater and stormwater recycling systems; managed aquifer recharge; and water quality standards, among others.

One specific initiative that would improve export success for Australian small-to-medium enterprises in this sector would be for utilities to introduce test-bedding arrangements for local products and technologies, and access to Australian validation tests, so that potential exporters could demonstrate that their product was "in use at home" when selling abroad.

### **Are there opportunities to better manage the interface of water policy with other policy realms such as energy and resources, agriculture, and urban planning?**

There is significant potential for better management of the interface of water policy with other areas. The capacities of the NWI to address intersectional issues has decreased recently, with the narrowing of the scientific and technical base of organisations such as the Standing Council for Environment and Water by the removal of non-departmental agencies from the directly subtending bodies, while the capacity of the NWC has also been reduced by narrowing its remit to a purely audit-based role.

Two recent reports have explored intersectional water policy issues in great detail. ATSE's *Sustainable Water Management: Securing Australia's future in a green economy*<sup>4</sup> addresses the role of water in the Australian economy and its interdependencies with the energy, resources and agriculture sectors. Additionally, the Australian Council of Learned Academies report *Engineering Energy: Unconventional Gas Production*<sup>5</sup> considers (Chapter 8) the consequences of unconventional gas production and exploration on water resources, particularly aquifers, and the potential regulatory reforms required.

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<sup>4</sup> ATSE, 2012, *Sustainable Water Management: Securing Australia's future in a green economy*, [www.atse.org.au/water-reports](http://www.atse.org.au/water-reports)  
<sup>5</sup> ACOLA, 2013, *Engineering Energy: Unconventional Gas Production*, <http://www.acola.org.au/index.php/projects/securing-australia-s-future/project-6>

A major barrier to efficient water investment is policy and planning uncertainty. This can lead to waiting for some of the uncertainty to be resolved before investing in new projects, potentially resulting in crisis situations.

The future reform agenda for Australian water management could benefit from a sceptical look at existing regulatory requirements across jurisdictions in areas such as health, environment, land-use, and urban planning as they relate to water resource management and supply security.

### **Concluding remarks**

Overall, the NWI has played an important role in the progress of water reform in Australia, and will continue to do so in the future. There remains significant progress to be made, and a considered reprioritisation of the NWI is necessary. Some key issues requiring attention in water reform include: Northern Australian water issues, particularly ground water resources; urban water issues; water science and better ways of setting the national research agenda; international collaboration; water infrastructure, both urban and rural; and reform of the current crowded, competitive, and sometimes dysfunctional institutional structures across Australia. For the NWI to continue to achieve progress on water reform in Australia, the role of the independent and objective National Water Commission should be expanded.