



Australian Government
Productivity Commission

National Water Reform

Productivity Commission Issues Paper

March 2017

The Commission has released this issues paper to assist individuals and organisations to prepare submissions.

It contains and outlines:

- the scope of the inquiry
- the Commission's procedures
- matters about which the Commission is seeking comment and information
- how to make a submission.

The Issues Paper

The Commission has released this issues paper to assist individuals and organisations to prepare submissions to the inquiry. It contains and outlines:

- the scope of the inquiry
- the Commission's procedures
- matters about which the Commission is seeking comment and information
- how to make a submission.

Participants should not feel that they are restricted to comment only on matters raised in the issues paper. The Commission wishes to receive information and comment on issues which participants consider relevant to the inquiry's terms of reference.

Key inquiry dates

Receipt of terms of reference	1 February 2017
Due date for initial submissions	18 April 2017
Release of draft report	early September 2017
Due date for draft report submissions	October 2017
Draft report public hearings	October 2017
Final report to Government	December 2017

Submissions can be lodged

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The Productivity Commission

The Productivity Commission is the Australian Government's independent research and advisory body on a range of economic, social and environmental issues affecting the welfare of Australians. Its role, expressed most simply, is to help governments make better policies, in the long term interest of the Australian community.

The Commission's independence is underpinned by an Act of Parliament. Its processes and outputs are open to public scrutiny and are driven by concern for the wellbeing of the community as a whole.

Further information on the Productivity Commission can be obtained from the Commission's website (www.pc.gov.au).

Terms of reference

Inquiry into the reform of Australia's water resources sector

I, Scott Morrison, Treasurer, pursuant to Parts 2 and 3 of the *Productivity Commission Act 1998*, hereby request that the Productivity Commission undertake an Inquiry into progress with the reform of Australia's water resources sector. The Inquiry should have a particular emphasis on the progress of all Australian governments in achieving the objectives, outcomes and timelines anticipated under the Intergovernmental Agreement on a National Water Initiative (NWI).

Background

State and Territory governments are primarily responsible for the management of water resources within their jurisdictions. The Commonwealth has played a role in funding the acceleration of reform, leadership and coordination, and management of some transboundary resources where agreed by relevant jurisdictions.

While Australia's water resources are generally regarded as well managed, our need to do so is also greater than most countries. There is scope to further improve the water sectors' effectiveness and efficiency, including through consistent and coordinated regulatory and management arrangements that are aligned with the NWI.

Reform of the water sector has been ongoing over several decades, reflecting the fundamental importance of water to our economy and the significant challenges involved in managing a shared natural resource often impacted by periods of scarcity. A national approach to water reform started in 1994 through the landmark COAG water reform framework and has continued through subsequent initiatives such as the NWI (2004), the *Water Act 2007* (Cwth) and the Murray–Darling Basin Plan (November 2012).

The Inquiry into the reform of Australia's water resources sector will also fulfil the statutory requirement for the first of the Productivity Commission's triennial assessments of progress towards achieving the objectives and outcomes of the NWI required by section 88 of the *Water Act 2007* and should be read in conjunction with that Act. The findings and outcomes of the 2014 Triennial Review of the NWI undertaken by the National Water Commission are also relevant to the inquiry.

Under the *Water Act 2007*, the Productivity Commission is also responsible for five-yearly inquiries into the effectiveness of the implementation of the Murray–Darling Basin Plan and the associated Basin state water resource plans, with the first inquiry to be completed by 31 December 2018.

Scope of the inquiry

The Inquiry should assess progress towards achieving the objectives and outcomes of the NWI. The Commission should draw on published reports, available data sources and information requested from NWI parties. As the NWI was agreed in 2004, the scope of the Inquiry is broader than that explicitly required by legislation. The Inquiry should also examine whether the water reforms agreed in the NWI, along with any other subsequent reforms adopted by COAG, are achieving their intended outcomes.

In undertaking the inquiry, the Commission should assess:

- progress in jurisdictional adoption of NWI principles
- the outcomes to date of the NWI and related water reform efforts, taking account of other drivers of reform
- progress against the recommendations in the National Water Commission's National Reform Assessment 2014, and
- the extent to which the NWI reforms are adequate to support government responses to emerging or changing water management challenges, including in the urban sector.

The Commission should also consider:

- the potential and realised benefits of NWI implementation
- the scope for improving the NWI, addressing current and future challenges
- broader water policy issues and the role of the NWI in improving outcomes, in particular:
 - the interaction of water policy with other policy areas such as energy, agriculture, planning, urban supply
 - whole-of-cycle water management
 - provision to regional, rural and remote communities, and
 - the economically efficient provision of water infrastructure.

The Commission should avoid any duplication between this Inquiry and the subsequent Inquiry into the effectiveness of the implementation of the Basin Plan and the state and territory water resource plans.

The Commission should make recommendations on actions that the parties to the NWI might take to better achieve the NWI objectives and outcomes, and recommendations for future reform priorities.

The prioritisation of areas for future reform efforts should reflect the Commission's view as to those areas where continued efforts are required to improve economic, social and environmental outcomes, maintain the gains achieved to date, or where improved outcomes will be delivered from further development of water resources. In doing so, the

Commission may consider the effectiveness of water reforms adopted by COAG subsequent to the NWI, such as the 2008 *Work Programme on Water* and the 2012 *Next Steps in National Water Reform: Preparation for the Future*.

Process

The Commission should undertake a comprehensive consultation process including establishing a stakeholder working group in accordance with section 89 of the *Water Act 2007*, holding hearings, inviting public submissions and releasing a draft report to the public. The Commission should consult with Commonwealth, state and territory governments, consumer representatives and industry stakeholders, including from the irrigated agriculture, mining and urban water supply sectors.

In conducting the analysis, the Commission should have regard to the submissions and reports of all relevant inquiries and government responses, including reports by the National Water Commission, Infrastructure Australia and the Harper Competition Policy Review. The Commission should also take into account reform initiatives at the jurisdictional level relevant to the scope of the inquiry.

The final report is to be provided to the Government by 31 December 2017.

Scott Morrison

Treasurer

[Received 1 February 2017]

Contents

Terms of reference	iii
1 What is this inquiry about?	1
2 Conduct of the inquiry	3
3 Australia's water policy reform to date	3
4 The Commission's approach	6
5 Water resource management	10
6 Water services	19
7 Achieving reform	26
References	27
Attachment A: Glossary	28
Attachment B: NWC's 2014 recommendations	30
Attachment C: How to make a submission	31

1 What is this inquiry about?

Background

With a variable climate and much arid land, Australia has a lot to lose if we do not continue to lead in water management. To this end, the Australian and State and Territory Governments have implemented significant water reforms since the mid-1980s. These reforms have supported growth in agriculture and other water-intensive industries, returned much needed water to the environment, created water markets for better water use, implemented more efficient pricing and delivered greater choice and improved services for all Australians.

The cornerstone of Australia’s recent water reform efforts is the 2004 National Water Initiative (NWI). The NWI is an intergovernmental agreement between the Australian Government and all State and Territory Governments. The aims of the NWI — which built on the Council of Australian Government’s (COAG’s) 1994 Water Reform Framework — are to establish greater certainty for investment and the environment through clearly specified water access entitlements (perpetual water rights), addressing over-allocated water systems and improving the economic efficiency and environmental sustainability of water management for both rural and urban water systems.

The National Water Commission (NWC) was established as part of the NWI to provide advice to COAG on national water issues and assist with the effective implementation of the NWI. In 2015 some functions of the NWC were transferred to the Productivity Commission (the Commission). Under the *Water Act 2007* (Cwlth), the Commission is now required to undertake inquiries into progress towards achieving the objectives and outcomes of the NWI every three years (National Water Reform inquiries), and inquiries into the effectiveness of the implementation of the Murray–Darling Basin Plan every five years. The timing of the first few inquiries is shown in figure 1. This issues paper relates to the first Commission task — the National Water Reform inquiry.

Figure 1 **Timeline for Productivity Commission water inquiries**



What has the Commission been asked to do?

The Productivity Commission has been asked to assess progress in achieving the objectives and outcomes of the NWI and the need for any future reform. Specifically, the Commission is required to:

- assess the outcomes of the NWI and related water reform efforts
- consider the potential and realised benefits of NWI implementation
- consider the scope for improving the NWI
- assess progress against the recommendations in the NWC’s 2014 National Reform Assessment
- make recommendations on future reform priorities
- consider the interaction of water policy with other policy areas such as energy, agriculture, planning, urban supply.

The NWI focuses on water resource management, as well as on water pricing and governance and information needs for the water sector. However, to meet the terms of reference (including the requirement to consider water reforms agreed to by COAG subsequent to the NWI) the Commission will more closely examine the provision of rural and urban water services, including institutional arrangements and investment frameworks for water infrastructure (dams, channels, pipes, recycling and desalination plants).

While Australia’s water management arrangements are well regarded internationally — indeed some see Australia as the exemplar in water policy — this inquiry provides a timely opportunity to review progress, identify challenges and consider next steps to retain this regard.

In undertaking this inquiry, the Commission will minimise duplication with next year’s inquiry into the effectiveness of the implementation of the Murray–Darling Basin Plan (the Basin Plan). Accordingly, this inquiry will not consider issues like:

- the development of the state and territory water resources plans called for by the Basin Plan
- the Basin Plan’s Environmental Watering Strategy.

Substantive and nationally relevant policy issues, such as water trading, and institutional and management arrangements for held environmental water, will be considered as part of this inquiry.

Water terminology can vary from place to place, which can cause confusion. A glossary at attachment A defines some key terms.

2 Conduct of the inquiry

The inquiry will be undertaken under the *Productivity Commission Act 1998* (Cwlth) and as such the inquiry's draft and final report to government will reflect the views of the Commission. The Commission will consult widely, including through participant visits, submissions, public hearings and issues-based roundtables.

A stakeholder working group has also been established, in accord with s. 89 of the *Water Act 2007*. The purpose of the working group is to provide a consultation forum to exchange information and views on issues relevant to this inquiry. The stakeholder working group first met on 23 February 2017. Membership of the stakeholder working group can be found on the inquiry webpage.

The Commission encourages submissions on issues relevant to the inquiry's terms of reference. As a guide to preparing submissions, this issues paper outlines what the Commission sees as the material and relevant issues; it also contains a number of questions. It is not a requirement that participants answer all the questions nor limit their submissions to the questions raised. Submissions focussing on a particular State or Territory are welcome, as are submissions that take a national perspective.

Initial submissions should be provided to the Commission by **Tuesday 18 April 2017**. Attachment C provides further details on how to make a submission. There will be opportunities to make further submissions following the public release of the draft report in early September. Key dates for the inquiry are set out at the front of this issues paper.

3 Australia's water policy reform to date

Australian Governments have implemented significant water reforms over recent decades. These reforms were needed to address a range of challenges, such as cross-boundary governance issues arising from Australia's federal political structure, highly variable climatic conditions, managing Australia's natural environment, improving water services and achieving financial sustainability. Although Australia's water management arrangements are well developed and highly regarded internationally, Australia faces further reform challenges in coming years, and some reform efforts have been more successful than others.

Up until the first major wave of water reform from the mid-1980s to the early 1990s, Australian Governments unsurprisingly took a primarily development-oriented approach to the management and delivery of water. This was characterised by:

- relatively unconstrained release of water entitlements to develop agriculture and industry
- substantial government investment in rural and urban water infrastructure to satisfy growing water demand

-
- limited emphasis on environmental protection
 - pricing of water services well below their delivery cost or value to the end user.

While successful in stimulating growth in agricultural production and satisfying water demand for Australia’s rapidly growing cities, the ‘development era’ contributed to a range of environmental problems including the temporary closure of the River Murray mouth in 1981, excessive salinity in the River Murray and toxic algal-blooms in river and estuarine water bodies (Australian Water Partnership 2016). Further, continuing allocation of new entitlements eroded the security of existing entitlements and governments incurred significant costs in delivering new infrastructure to meet growing demand for rural and urban water services.

Reflecting these pressures and problems, governments at both the state and national level began to pursue reforms in the mid-1980s. Following various, largely state-based reforms, a comprehensive national approach to reform commenced in 1994 with the COAG’s Water Reform Framework and National Competition Policy agreements.

Further reforms took place during the early 2000s to reinvigorate the 1994 water reform agenda, and to respond to water scarcity issues arising during the Millennium Drought (1997 to 2009). The first of these reforms was the 2004 NWI¹. This was followed by the Australian Government’s 2007 National Plan for Water Security, which led to a range of reforms to the management of the Murray–Darling Basin (MDB), including a process for returning water to the environment. In 2012, further reforms to management of the MDB were agreed through the making of the Basin Plan. Various post-NWI initiatives were also agreed by COAG in 2008, 2009 and 2013, addressing a range of matters including urban water, enhancing water markets and knowledge and capacity building.²

An overview timeline of Australia’s history of water reform and key events is provided in box 1.

More recent reforms have sought to:

- promote efficient water use by allocating water through a clear, rights-based regime that allows water to be transferred between users via water markets
- improve environmental management including through the provision of water for the environment through water planning processes
- promote efficient investment in water infrastructure
- introduce consumption-based and cost-reflective pricing for water services to ensure that water service providers transition to become financially sustainable

¹ Seven parties agreed to the NWI in 2004. All COAG members had agreed to the initiative by 2006.

² The agreements were: COAG’s 2008 Work Program on Water; COAG’s response to the NWC’s 2009 biennial assessment; and COAG’s acceptance of recommendations made by officials on the Standing Council on Environment and Water in 2013.

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- modernise water governance and institutional arrangements to ensure they promote efficiency and transparency.

Box 1 Overview of Australia’s national water reform and key events

- 1863: Inter-colonial conference discusses management of the River Murray
- 1887: South Australian Royal Commission examines the effects of irrigation on river navigation in the River Murray
- 1914–1917: New South Wales, Victoria and South Australia sign the River Murray Waters Agreement and establish the River Murray Commission
- 1970: River Murray Commission publishes detailed study of irrigation and salinity
- 1981: River Murray mouth closes temporarily
- 1987: Murray–Darling Basin Agreement signed
- 1989: River Murray Salinity and Drainage Strategy agreed
- 1992–1996: Commencement of corporatisation and price regulation in urban water
- 1994: COAG agrees to Water Reform Framework and National Competition Policy
- 1995: Initial cap on water diversion from the River Murray
- 1997: Millennium Drought commences (persists until 2009)
- 2004: National Water Initiative
- 2007–2008: *Water Act 2007* (Cwth) passed and Murray–Darling Basin Authority created as a result of the National Plan for Water Security
- 2008–2009: Further water reform agreements by COAG
- 2012: Murray–Darling Basin Plan takes effect
- 2013: COAG agrees next steps in water reform.

Sources: Australian Water Partnership (2016), COAG (2008), MDBA (nd), PIRSA (2013), SCEW (2013).

While difficult to isolate the impact of such a broad reform program from other concurrent economic changes, a range of analyses indicate material economic benefits from reforms that have, in particular, enhanced water markets and urban water supply efficiency. For example, the NWC found that water trading in the MDB increased Australia’s gross domestic product by \$220 million in 2008-09 (NWC 2010). Similarly, the Commission has previously estimated that Australia’s gross domestic product was around 0.35 per cent higher over the 1990s due to improved efficiency in urban water services (PC 2005). If gains of this magnitude have been maintained through to today, this would represent an annual economic gain of over \$5 billion.

INFORMATION REQUEST

- *What have been the key benefits of water sector reform to date?*
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4 The Commission's approach

The Commission has two assessment tasks for this inquiry. One is backward looking — to examine jurisdictions' progress in meeting their commitments in the NWI (the NWI can be accessed via a link on the inquiry website). And the other is forward looking — to assess what future reform initiatives Australia may need to continue to manage our water resources well and ensure efficient provision of water services. Task one sets the 'starting point' for task two — where have we gotten to and where do we need to go. The two assessment tasks are outlined below.

The Commission will build on the work done by the NWC. We will draw on the NWC's last assessment of the NWI (2014b), and track progress since then (both in meeting NWI objectives and outcomes, and with implementing the NWC's recommendations). The NWC also published a broad range of other reports on various water topics, and the Commission will draw on these where needed.

There will be some differences in approach and emphasis between the Commission's inquiry and the way in which the NWC conducted its assessments of progress with implementing the NWI. Some of these reflect the terms of reference, which require the Commission to examine some issues, such as the scope for improving the NWI, which were not part of the NWC's brief. In addition, the Commission, especially in assessing progress to date against the NWI, will focus on what it identifies as the material issues and will go into less detail in other areas. The Commission will not, for example, seek to replicate the NWC's detailed report card on water planning.

In assessing the scope for improving the NWI, the Commission will also consider the best approaches for securing reform. These are discussed further in section 7. In some cases independent action by States and Territories may be appropriate, and in others a national approach may be necessary. The latter approach raises further considerations; for example, the Harper Competition Policy Review found that payments by the Australian Government to State and Territory Governments undertaking reform are warranted under certain circumstances. The Commission anticipates that these issues will likely be raised by some participants.

Assessing progress

In assessing progress with implementing the NWI, the Commission will use the objectives and outcomes from the NWI (box 2). Evidence for this task will be obtained from: public reports; information requested from NWI parties; submissions; and other consultative processes. The Commission will undertake both quantitative and qualitative analysis, using case studies (where relevant) and drawing on some of the indicators developed by the NWC in its 2014 assessment of progress. The main recommendations from this assessment are listed in attachment B.

Box 2 **The eight key elements of the National Water Initiative**

The National Water Initiative sets out agreed outcomes and actions for the following eight key elements:

1. Water Access Entitlements and Planning Framework
2. Water Markets and Trading
3. Best Practice Water Pricing
4. Integrated Management of Water for Environmental and Other Public Benefit Outcomes
5. Water Resource Accounting
6. Urban Water Reform
7. Knowledge and Capacity Building
8. Community Partnerships and Adjustment.

Source: COAG (2004).

INFORMATION REQUEST

The Commission welcomes feedback on:

- *data and information sources that might be useful for assessing progress*
 - *areas where NWI reforms are stalled or delayed and consequences of that (for example, have there been costs incurred due to these delays?)*
 - *other unfinished business of the NWI.*
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Developing future reform priorities

In developing future reform priorities the Commission will look first to what the NWC identified as ‘unfinished business’, and identify what areas are still worth pursuing, noting that not all of these issues may be the priorities they appeared in 2014. This unfinished business includes:

- legislative reform in Western Australia and the Northern Territory
- further unbundling of water rights — separating water rights from land and delivery share components (where beneficial) where this has not already occurred
- greater specificity around the ecological objectives and outcomes of water reform, underpinned by an appropriate monitoring effort
- scheduled water plan reviews based on a transparent process involving evaluation and public reporting
- specific pathways to achieve Indigenous objectives through water planning
- incorporation of all water uses within the one water planning framework.

The Commission will also look to determine whether there are new actions that should be pursued in light of current or likely future challenges affecting the management of water resources — for example, climate change and population growth.

The Commission's focus will be on those areas of reform that deliver the greatest net benefits to the community. In identifying these areas, the Commission will consider not only the costs and benefits of reform, but also the practical application of that reform.

Initial consultation and research suggests that the efficient provision of rural and urban water services is one of the areas least advanced in the NWI and there is scope for improvement. Since the NWI was agreed a large portfolio of environmental water entitlements has been acquired. Further work will need to be done to ensure that this water is managed in a way that maximises environmental outcomes. These are among a number of areas that the Commission will examine in identifying future reform priorities.

In looking to identify future reform priorities, the Commission will need to apply a framework. This framework will have the overall policy goal — *water use in Australia is efficient and sustainable*. Supporting this policy goal is a set of objectives and corresponding assessment criteria. The Commission considers it is important to have a framework to ensure the issues we look at, and the reforms we identify, are consistent with achieving our overall policy goal.

The Commission's preliminary thinking on the framework, its objectives and some of the key considerations are outlined in table 1. Significant progress has been made in property rights; water planning and trade. However, as noted above, further work is to be done in water service delivery and management of environmental water. The Commission's development of the framework at this early stage reflects the maturity of these different reform areas.

The Commission welcomes participant views on any additions or refinements to the framework. The Commission will develop the framework further in preparing its draft report.

Table 1 Preliminary framework — national water reform priorities

Water resource management

Property rights for water are clear and secure

Clear and secure property rights are important to provide entitlement holders with certainty to encourage long term investment. They are crucial to the establishment and functioning of water markets and an important component of sustainable environmental management. Property rights should:

- include all available water sources (as far as practicable)
- be legally recognised
- be explicit — outlining the maximum extraction volume allowed to be taken and the relationship between allowable extraction and water availability in any season
- be separate from land title and tradeable.

Processes for determining allocation and sharing of water are transparent, inclusive, and cost-effective

Water planning processes are important, including because they identify the share of water for consumptive and environmental purposes. Water planning processes should:

- be timely, transparent and open
- be based on best available information
- involve communities and stakeholders
- be adaptive
- manage uncertainty.

Water is able to be traded to its highest value use

Water trading enables water to move to its highest value use within a water system, providing the driver for greater productivity. For individual entitlements holders, it provides a business tool to enable them to respond to changing climatic conditions/circumstances. In order to achieve this:

- trade should be enabled for all water systems where this offers net benefits
- any restrictions on trade need to be appropriate and efficient
- costs and delays of trading should be minimised
- water market participants should have access to timely and accurate information
- trade should be underpinned by adequate measurement, monitoring and water accounting systems.

Environmental management is efficient and effective

Sustainable management of water environments is a critical component of water resource management, underpinning the integrity of property rights and the functioning of water markets. Sustainable management of water environments may entail:

- providing a share of water for the environment and dealing with over-allocated systems where agreed
- ensuring there are appropriate institutional and regulatory arrangements for efficient environmental water use
- integrating catchment management and other complementary resource management activities.

Water services

Rural and urban water services are provided efficiently

Efficient delivery of infrastructure services has a direct effect on the availability and cost of water. It is important that appropriate incentives are in place to ensure that those entities delivering water provide a reliable service, meet relevant standards and plan for the future. Among other things, it is important that:

- the security, quality and cost of water services are balanced in accordance with consumer preferences
 - institutional and regulatory arrangements are adaptive and create clear roles and responsibilities for policy makers, regulators and services providers
 - prices are cost reflective and there are limited cross subsidies in pricing regimes
 - public health and environmental impacts are managed efficiently and in accordance with community expectations and standards
 - water service providers consider integrated water cycle management in their planning.
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INFORMATION REQUEST

The Commission welcomes feedback on:

- the preliminary framework (table 1)
 - priority areas for water reform
 - key contemporary and future drivers of water reform.
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5 Water resource management

Property rights

The NWI seeks to establish clear and secure property rights to water through statutory water entitlements. The NWI envisages water entitlements that are separate from land and defined as a perpetual or open-ended share of the water available for consumption in a given system. It specifies that entitlements should (among other things) be exclusive, tradeable, mortgageable and enforceable and specify the essential characteristics of the water product.

NWI parties also recognised that a number of land use change activities (many of which are undertaken without a water access entitlement) have potential to intercept significant volumes of surface and/or ground water. They therefore agreed to plan for and regulate interception activities to maintain the integrity of water access entitlements and achieve environmental objectives for water systems.

The NWC found that ‘a robust statutory-based entitlements and planning framework is in place in most jurisdictions’ but further work is required in some areas (2014b, p. 40). For example, the NWC noted that, while the *Water Act 1992* (NT) provides for statutory water licences that are a share of the consumptive pool, these licences are only issued at the point of extraction and are usually issued for only 10 years at a time. Similarly, it was flagged that entitlements issued under the *Rights in Water and Irrigation Act 1914* (WA) ‘are restricted to 10 years and water take requires legal access to land’ (2014b, p. 26).

Other issues flagged by the NWC as warranting further attention with respect to property rights for water include:

- the need for further unbundling of entitlements in unregulated surface water — as well as groundwater — systems, subject to an evaluation of cost effectiveness
- in jurisdictions where this is not yet in place, incorporation of all water uses, including that for extractive industries (such as mining), within the one water planning framework.

Areas where further reform may be warranted are discussed below.

Incorporating extractive industries into the planning and entitlement framework

The NWI recognises that the specific circumstances of the mineral and petroleum sectors may require flexible management arrangements. The nature of water extraction by the mining, petroleum and unconventional gas sectors — particularly for mine dewatering and depressurisation of coal seams — can make it difficult to predict takes and manage impacts (NWC 2014b).

In its 2014 assessment of water for mining and unconventional gas, the NWC found varied interpretations of NWI requirements have led to alternative water rights arrangements for extractive industries in some cases (for example, in 2014 water entitlements were not required for petroleum operations in Queensland or for mining and petroleum operations in the Northern Territory) (NWC 2014c). The NWC argued these alternative arrangements risked undermining parallel NWI-consistent arrangements for other sectors by reducing transparency and eroding confidence in the capacity of water entitlement and planning systems to effectively manage water for all users.

Initial consultation suggests some participants remain concerned about the risks of alternative water rights arrangements for extractive industries. Some participants highlighted that there may also be scope to extend the coverage of entitlement regimes to activities that intercept large amounts of water (as occurs for some plantation forestry) where this has not already been done.

Entitlements for alternative water sources

Some participants have questioned whether entitlement frameworks provide sufficient certainty for alternative water sources such as stormwater and managed aquifer recharge, which may be used to supplement surface and groundwater supplies. The Commission welcomes any information on recent developments and thinking in this area.

INFORMATION REQUEST

- *What further actions are needed to achieve clear and secure property rights?*

• *What new water sources should be brought into a water entitlement process and why?*

- *Are current approaches to water rights compliance and enforcement fit-for-purpose?*

Water planning

The NWI identifies water planning as a mechanism to help governments and communities make water management and allocation decisions to balance productive, environmental and social objectives (NWC 2012). The NWI commits States and Territories to water planning that provides for secure ecological outcomes, by describing environmental and other public benefits outcomes for water systems, and defining appropriate water management arrangements to achieve those outcomes. It also requires water planning that provides for resource security outcomes by determining shares in the consumptive pool and the rules to allocate water.

In 2014, the NWC observed ‘broadly NWI-consistent water planning arrangements have been put in place for the main areas of intensive water use across Australia ... While some remaining areas need to be addressed as a matter of priority [for example, in the Darwin rural area], relatively few areas that experience intensive use of water lack adequate water planning arrangements’ (2014b, p. 26).

The NWC also identified that further progress was required in specific areas of planning, including:

- the conduct of scheduled water plan reviews, which should be based on a transparent process involving monitoring, evaluation and public reporting on progress towards achieving water planning outcomes, and community input
- specific pathways to achieve Indigenous objectives through water planning. For example, the NWC noted that while progress had been made incorporating Indigenous social, spiritual and customary objectives into water plans, there had been no material increase in water allocation for Indigenous social, economic or cultural purposes
- the need to integrate water *quality* objectives into water planning arrangements.

Decisions about the allocation and sharing of water to balance present and future needs will inevitably be subject to debate. The NWC has previously observed ‘consensus is not a realistic goal, but a firm commitment to good process with a focus on transparency, ongoing engagement and effective implementation will produce the community confidence in planning that we need’ (NWC 2012, p. 13). A key challenge for planners is ensuring planning processes are sufficiently robust, open and transparent, while avoiding unnecessary costs (including on participants). Potential areas for improving water planning as identified by the NWC (2014b), and through the Commission’s own thinking and early consultations, are described below.

Streamlining planning requirements

The NWI allows States and Territories to take a ‘risk-based’ approach to planning. This approach recognises that not all areas will need to be covered by a formal plan, and that the level of detail, frequency of review and amount of resources devoted can vary between plans. The NWI specifies that decisions about water plans should be based on an

assessment of the level of development of water systems, projected future consumptive demand and the risks of not having a detailed plan.

Despite these provisions, there is a view among some participants that past assessments of water planning have focused too heavily on whether jurisdictions have replicated the ideal water plan content and processes (outlined under the NWI) without questioning whether the benefits of greater alignment with the NWI exceed the costs.

Dynamic and responsive planning arrangements

A number of water plans are scheduled for jurisdiction-led review. These reviews will need to build on the original plans but also be responsive to new issues and opportunities that emerge as entitlement holders become experienced in dealing with their system. Reviews provide the opportunity to move towards more optimised management of the resource.

Accounting for climate change and extreme events

Climate change and extreme weather events present significant challenges for water planning and management. They pose risks to both water availability and water infrastructure. The NWI and NWI policy guidelines for water planning and management provide some principles and approaches that consider climate change and extreme events. For example, the NWI policy guidelines note water plans should be robust to a range of water availability scenarios such that plans operate under ‘normal’ conditions nearly all of the time (90 to 95 per cent of cases) and should include mechanisms for dealing with unprecedented events (COAG 2010). However, a question for this inquiry is whether more needs to be done to ensure water planners are able to effectively manage the potential effects of the long-term impact of climate change (such as a significant decrease in water resources, affecting the consumptive pool and the environment in potentially different ways).

Recognising Indigenous values

Under the NWI, jurisdictions agreed that NWI-consistent water planning frameworks would provide for Indigenous access to water resources through Indigenous representation in water planning processes; water planning arrangements which included Indigenous social, spiritual and customary objectives; and strategies to achieve these (NWC 2014b). The NWC found that, despite some progress, Indigenous participation in water management decisions was patchy and there had been no material increase in water allocation for Indigenous social, economic or cultural purposes (2014b). During early consultation with participants, there was considerable interest in whether there has been progress in addressing these issues, and what else should be done in this area to achieve the objectives of the NWI. For example, some participants note that there is still scope to more clearly define Indigenous rights to water.

Ensuring water planning and entitlement frameworks support new infrastructure investment

There are number of major greenfield infrastructure investments currently under consideration in Australia (for example, some infrastructure proposals in northern Australia). Several participants emphasised the importance of having robust water entitlement and planning frameworks conducive to investor confidence — thereby facilitating investment in major new infrastructure — while managing risks to the supply security of existing water users.

INFORMATION REQUEST

- *What are the key areas of water planning where further progress is required to achieve the objectives and outcomes of the NWI?*
 - *Is there scope to streamline water planning processes to reduce unnecessary costs on planners and participants?*
 - *Are processes for reviewing water plans sufficiently robust, transparent, open, and timely?*
 - *Is there scope to improve how water plans deal with long-term shifts in climate affecting resource availability? Are there recent examples of leading practice?*
 - *Are current water entitlement and planning frameworks conducive to investor confidence, facilitating investment in major new infrastructure (such as in northern Australia), while managing risks to the supply security of existing water users?*
 - *How can the interests and needs of Indigenous people be better accommodated and represented in water planning processes?*
 - *What steps have been taken — or should be taken — to integrate water quality objectives into water planning arrangements?*
-

Water trading

Prior to the reform era, rights to water were generally tied to land such that the only way to transfer water between users was through land purchase. During the 1980s and 1990s steps were taken to unbundle water from land and open up water trading, initially within irrigation districts, but subsequently also between districts (Australian Water Partnership 2016). The NWI built on these initiatives by committing States and Territories to progressively remove barriers to trade to achieve an open trading market.

The NWC (2014b) found that, under the NWI, considerable progress had been made in removing unnecessary barriers to trade, facilitating interstate trade and reducing transaction costs. It reported that water trading had become a vital tool for giving irrigators the flexibility to respond to variable water availability and market factors, particularly for those accessing surface water within the MDB. The NWC also found that further benefits

could be achieved by improving market systems and access to information, and by expanding trade to new water sources.

Water trading has been a pivotal policy development as it allows water to move to its highest value use and gives irrigators (and others) more options for managing drought and changes in commodity prices. Past reforms to facilitate water markets and trading have been successful to the extent that Australia is seen as a world leader in water markets (SCEW 2013). Notwithstanding this progress, there may be further gains to be realised from overcoming remaining barriers to trade in both water access entitlements and water allocations. Some prospective areas for improvement are discussed below.

Enabling wider trade

In some regions there is little or no trade in surface or groundwater because the water planning and entitlement frameworks in place do not support it. For example, trade can be impeded by:

- the absence of water plans and associated trading rules that would be needed to ensure that trade did not harm other water users or the environment
- the existence of ‘bundled’ entitlements, in which the right to access water has not been separated from the right to use it.

While such situations might be regarded as ‘unfinished business’ under the NWI, action is not always warranted. This is because the benefits of putting trade-supportive frameworks in place need to be weighed up against the costs. That said, it is likely that there are areas where trade-enabling reforms would produce net gains.

Making sure that trade restrictions are efficient and transaction costs low

There may be reasons to limit trade within surface and groundwater systems to manage physical or hydrological constraints, or to provide for environmental needs. For example, limits may be needed to address channel capacity constraints or to manage inter-valley transfers. While such rules or restrictions often have a clear purpose, it is important that they operate transparently and efficiently.

Restrictions have also been used in the past to limit the amount of water traded out of a region in an attempt to maintain production levels and employment in particular locations. The Commission, NWC and others have argued against such restrictions, the logic being that, overall, communities benefit from water (and other resources) being traded to its highest value use and that restrictions are not an effective or sustainable way to support local economic activity. Over time some restrictions have been removed, for example, Victoria removed the four per cent limit on entitlement trade out of irrigation areas in July 2014 (NWC 2014b, p. 235). However, the Commission understands that some restrictions remain, including notably on trading water from rural to urban use in some places.

Even where trade rules are appropriate, costs and delays can impede trade. For example, incompatible water registries can make interstate trade more cumbersome than it would otherwise be and this can discourage market participation. Excessive termination fees can also impede trade in water. These fees are payable by irrigators when they terminate (or surrender) access to an irrigation network. While termination fees are warranted in certain circumstances, they can prevent worthwhile trades from occurring by reducing the net proceeds to the seller; or in the alternative, prevent water from being traded to higher value uses.

Improving access to information

For water markets to function well, participants need to have access to timely and reliable information, particularly on trade prices and volumes. The NWC found that, despite some improvements, the availability and quality of water market price and volume data was ‘less than optimal in all water market sectors’ (2014b, p. 41).

COAG attempted to address problems with market information and incompatible water registries through the introduction of a National Water Market System. This system went part of the way to improving market information, but it was never fully implemented.

The efficient provision of information may not necessitate the formation of a national water register or centralised dissemination (as was intended through the National Water Market System). There may be more cost-effective ways of improving market information and addressing problems with incompatible water registries through, for example, adoption of best practice.

INFORMATION REQUEST

- *To what extent has the NWI goal of open water trading markets been achieved?*
 - *Are there worthwhile opportunities to expand trade to new regions and water resources?*
 - *Are there restrictions on trading water that are unwarranted and should be removed or revised?*
 - *Are there actions that governments should take to reduce costs and delays of trading water, including for inter-region and interstate trade?*
 - *How can water market information be made more timely, reliable and accessible in a cost-effective way?*
-

Environmental management

Efficient and sustainable management of Australia’s water resources is critical for achieving good environmental outcomes. However, providing adequate water for the

environment (*planned* and *held* environmental water), and making best use of that water, is only one aspect of environmental management. Policies and regulations covering land and habitat management, river health, urban development, pollution and so on can be just as important for achieving the environmental outcomes that the community values.

Integrated management of water for environmental and other public benefit outcomes (such as recreation, Indigenous and cultural values and tourism) is a key element of the NWI. The NWC found that all jurisdictions have made good progress in establishing an environmental water manager that is accountable for the achievement of environmental and other public benefit outcomes (NWC 2014a). And where water resources are shared between jurisdictions (for example, the Murray–Darling Basin, Lake Eyre and Great Artesian Basin), the NWC found that relevant governments have effectively collaborated to establish joint environmental water management arrangements (NWC 2014a).

In other areas, such as monitoring and reporting on the outcomes of environmental water use, the NWC found scope for improvement. And while the NWC detailed the various approaches jurisdictions are taking to water recovery, it did not make an assessment as to whether jurisdictions are pursuing water recovery measures on the basis of cost-effectiveness (NWC 2014b).

There may be opportunities to achieve environmental and other public benefit outcomes more effectively by addressing the ‘unfinished business’ identified by the NWC, or by making other changes to the arrangements governing environmental water management. Potential areas for reform are discussed below.

Achieving ‘best practice’ arrangements for held environmental water

Where governments (or others) hold entitlements to provide water for the environment, choices need to be made about how, when and where that water is used. These choices can have a significant bearing on the environmental benefits that are achieved, and any costs and risks imposed on landholders, communities and environmental assets and functions.

In practice, multiple parties can have a role in the planning and execution of these decisions. Environmental watering in New South Wales, for example, could involve the Commonwealth Environmental Water Holder, the Murray–Darling Basin Authority, New South Wales Government agencies, river and storage operators, catchment management authorities and so on. This presents potential risks and costs which can only be managed by establishing clear roles and responsibilities, strong accountability mechanisms, and processes that facilitate communication and cooperation amongst agencies and affected parties.

Even with good governance and institutional arrangements, extracting maximum value from held environmental water can be challenging. High-value environmental watering events can be constrained or put off due to operational realities (for example, river height) or potential impacts on landholders (for example, flooding of private land). And obtaining

reliable information beforehand about how the environment will respond to a watering event is difficult.

Finally, governments sometimes face pressure to use held environmental water to achieve social outcomes, such as filling up a lake for recreation, tourism or amenity purposes. While environmental watering events can often deliver supplementary social or community benefits, sometimes this is not possible (or comes at the expense of environmental benefits). For example, an Indigenous community may require cultural flows for customary fishing in an area considered low value from an environmental watering perspective. There may be opportunities to improve planning processes for environmental water use to maximise social and cultural benefits wherever possible without compromising environmental outcomes.

Trade of environmental water

The ability of environmental water holders to trade water is important if they are to make the best use of the water they hold. For example, environmental outcomes might be able to be improved through selling environmental water in one year and buying in the next year to provide water for an area requiring an environmental flow. Trade may also assist in dealing with issues such as delivery constraints and realising value from a residual water portfolio after environmental needs have been met. Environmental water holdings can be significant, and so trading by environmental water holders may have a material impact on water markets.

Better integration between water policy and other resource management activities

Water is one of many factors that can contribute to environmental and other public benefit outcomes. Achieving these outcomes efficiently requires that all of the practical options (for example, land-use changes, habitat restoration and a reduction in sediment run-off) are weighed up, and the least-cost measures implemented. In practice this can be challenging; responsibility for different (and often narrow) aspects of natural resource management rests with different institutions, and no single agency may have the authority, or the incentive, to consider the full range of available measures.

Further, where water is allocated to the environment, achieving the desired outcomes usually relies on actions *outside* of the control of the environmental water manager — the regenerative benefits of watering a wetland, for example, will be reduced if livestock are allowed unrestricted access, or pests and weeds are not adequately controlled. These issues can only be overcome where policies are well integrated across sectors, and the institutions responsible for administering them work together effectively.

Improving environmental reporting arrangements

Periodic review and public reporting of environmental and other public benefit outcomes is critical for: holding environmental water managers to account; identifying the benefits, costs and risks of providing water to the environment (or to support other public benefit outcomes); and making water management practices more effective over time.

While most States and Territories have taken steps to establish and improve monitoring and reporting arrangements, gaps remain. In some cases, the outcomes that governments are seeking to achieve are not clearly identified in water plans, or are not defined in a way that facilitates monitoring and evaluation. And where monitoring and reporting does happen, it can be partial, intermittent and inconsistent (NWC 2014a).

INFORMATION REQUEST

- *What are the guiding principles for 'best practice' management of environmental water? Are the institutional and governance arrangements for held environmental water working well?*
 - *What is the role for governments in promoting trade in environmental water, and acquiring environmental water at least cost to the community?*
 - *How can institutional arrangements be used to ensure agencies with natural resource management responsibilities (including environmental water managers) pursue least-cost approaches to achieving environmental and other public benefit objectives?*
 - *Are the policies that affect the health of water systems sufficiently integrated?*
-

6 Water services

Rural water services

The NWI seeks to achieve a number of objectives in relation to rural water services, including: promoting the efficient and sustainable use of water resources and water infrastructure; ensuring that infrastructure operators are financially viable; providing sufficient revenue for service delivery and facilitating the functioning of water markets. The actions agreed by the jurisdictions to deliver these objectives focus on cost recovery and institutional arrangements.

The NWC found that bulk water suppliers and most of the distribution schemes in the MDB were recovering their operating costs along with an allowance for future infrastructure refurbishment and/or replacement. The available information on cost recovery across the rest of rural Australia (with the exception of Harvey Water and Tasmanian Irrigation) was considered to be poor (NWC 2014b, p. 45).

The extent to which the agreed institutional arrangements had been implemented by the time the NWC undertook its 2014 assessment also varied. At one extreme, the agreed separation of service delivery from government was largely complete by 2011 (NWC 2011). At the other extreme, the agreed performance benchmarking of rural providers was discontinued in 2014 following concern that the costs were outweighing the benefits. In respect to other actions agreed within the NWI:

- the role of the jurisdictions' independent economic regulators varied from setting infrastructure charges to having no role at all
- while there has been progress toward ensuring infrastructure investment was economically viable and ecologically sustainable, there was 'substantial debate about the cost effectiveness and viability of specific investment decisions' (NWC 2014b, p. 46).

In addition to the 'unfinished business' from the NWI, the Commission has identified, through early thinking and consultations, a number of areas where further reform of rural water services may be required. These are discussed in more detail below.

Setting infrastructure charges

The infrastructure underpinning rural water services (such as dams, pressure pumps, channels, pipes and meters) has high capital costs, long useful lives and few (if any) alternative uses. Further, it is usually impractical and/or unviable to duplicate established infrastructure. As a result, the costs of supplying and maintaining infrastructure are typically minimised through supply by a single infrastructure provider. This results in an absence of competitive market discipline in charges levied by providers.

Notwithstanding, governments have typically allowed irrigator-owned infrastructure providers to set their own charges. In doing so, they rely on the irrigators' self-interest to keep charges at an efficient level while still ensuring the network is adequately maintained. This collective self-interest may, however, result in arrangements that have undesirable effects on third parties such as potential new entrants and irrigators in other networks.

The preferred course in the NWI was for publicly-owned rural water services providers to have infrastructure charges set by an independent economic regulator rather than set directly by government itself (as occurs in some jurisdictions). Independent processes can limit the extent of political intervention and therefore provide greater certainty to providers (and ultimately users and investors) through the stability and consistency of decisions over time.

Providers of similar infrastructure services may be subject to different regulatory treatments depending upon their ownership and where they are. This is more the case in off-river irrigation networks that are variously owned by State Governments and irrigator-owned co-operatives. This may lead to a situation where prices for infrastructure services are not cost reflective in some areas.

Ongoing viability of irrigation networks

Irrigators will connect and disconnect from networks for many reasons. Some are driven by factors beyond the control of network operators — for example: commodity prices; water entitlement prices; and, some external network costs (such as electricity). Disconnections result in higher infrastructure charges for the remaining irrigators. Ongoing disconnections may eventually push the cost of the network beyond the financial capacity of the remaining irrigators and it will no longer be viable. As with any private organisation, the risk and consequences of a network's failure reside with the owners (regardless of whether the assets were once under public ownership).

Termination fees are one mechanism available to networks to help manage reduced utilisation of a network. These fees are paid by those users seeking to disconnect from the network and provide a source of funding to support ongoing operations while a network is reconfigured to reflect its changed circumstances. Other mechanisms and alternatives for managing change will depend upon the circumstances of the network.

Making decisions on irrigation water infrastructure

Infrastructure projects should be subject to a robust cost-benefit analysis, and demonstrate a net benefit, before being commissioned. This is an essential prerequisite to avoid excessive prices or significant government subsidies, and to promote investor confidence. Any cost-benefit analysis should consider the possible alternative actions, such as more intensive use of existing infrastructure and water resources (where capacity exists), and whether those actions would bring at least the same outcomes at a lower cost.

A project will be more likely to show a net benefit where it meets the current and forecast needs of users. Engaging with users through consultation and, where possible, collaboration is therefore an important step in this process. Engagement is also important so that users are aware of the likely charges they will bear as users of the infrastructure — assuming full cost recovery, users' preparedness to pay is an important threshold test as to whether a project will deliver a net benefit.

INFORMATION REQUEST

- *Has the NWI been successful in achieving its objectives with respect to rural water services? If not, what actions are required to achieve these objectives?*
 - *Are there any instances where similar rural water service providers should be subject to different regulatory treatments based on the nature of their ownership and/or jurisdiction of operation? If so, when and why are such different approaches warranted?*
 - *What role should independent economic regulators play in the regulation of rural water services?*
 - *How are the needs of rural water service providers (both bulk water and irrigation delivery) and preferences of users balanced in the setting of infrastructure charges? In what ways could these processes be improved?*
 - *How effectively do infrastructure network owners engage with users (both current and prospective) to ensure infrastructure programs address current and future needs?*
 - *Is infrastructure charging sufficiently flexible to cope with changes to the number and composition of customers within networks? If not, how could infrastructure charges be improved? What role have played in this?*
 - *Have termination fees been effective in enabling infrastructure network owners to adjust their networks in response to declining usage?*
 - *What, if any, government oversight should there be of privately owned providers of irrigation services?*
 - *How robust are the cost-benefit analyses applied to irrigation infrastructure projects? Where could they be improved?*
 - *Are there sufficient checks and balances to prevent unviable or unsustainable infrastructure projects from proceeding? If not, what are the areas needing improvement?*
-

Urban water services

Households and businesses in metropolitan and regional towns and cities use a range of urban water services including potable water supply, the collection and treatment of wastewater, supply of recycled water, drainage and stormwater management, and flood mitigation.

Governments have made considerable efforts to increase the efficiency of urban water services over time. Prior to the NWI, significant urban water reform occurred through two 1994 COAG agreements, the Water Reform Framework and the National Competition Policy. The NWI builds on these reforms by seeking to: improve pricing practices and move towards full cost recovery for both metropolitan and regional service providers; increase the use of independent bodies to set or review prices, or to determine price setting

processes; benchmark utility performance; promote water use efficiency and appropriate use of water restrictions; and support the development of ‘water sensitive cities’.

The NWC found that actions articulated within the NWI for urban water reform were largely complete (NWC 2014b). For example, most jurisdictions have made significant progress towards achieving ‘full cost recovery’ as required under the NWI. However the NWC noted that ‘economic regulation of price is not effective in all jurisdictions as governments continue to blur their roles as owner, policy setter and regulator’ (NWC 2014b, p. 45). Further effort may also be required to clarify roles and responsibilities in relation to promoting water sensitive cities. Finally, the NWC found that regional and remote service providers continue to face service quality challenges.

There may be opportunities to improve the efficiency of urban water services by addressing the ‘unfinished business’ identified by the NWC, or by making other changes to the arrangements governing urban water service provision. Potential areas where policy can increase the efficiency of urban water services include:

- governance and structural arrangements, which determine the processes, roles and responsibilities of policy-makers, regulators and service providers
- pricing processes and competition, which affect the efficient supply and use of urban water
- health, safety and environmental regulatory processes, which determine the standards that apply to urban water.

Common to these elements is the emergence of more decentralised ways of delivering urban water services, broadly known as ‘integrated water cycle management’.

The Commission undertook an inquiry into the urban water sector (PC 2011). The Commission’s early thinking on the issues relevant to efficient provision of urban water services are informed to some degree by this inquiry but, just as the NWI’s 2014 conclusions may not represent the priorities of today, so the 2011 inquiry will be more relevant in some ways and less in others. The Commission is interested in the extent to which factors may have changed and any implications for this review.

Addressing governance and structural issues

In Australia, governments regularly take three distinct roles in relation to urban water:

- set high-level policy frameworks for the sector
- establish and implement detailed regulatory frameworks on matters such as pricing and water quality
- act as service providers through government-owned businesses.

This combination of roles can create tension between competing objectives, such as increasing financial (dividend) returns, promoting economic efficiency and maintaining service quality. In the absence of good structural and governance arrangements, these tensions flow through to complicate and compromise decision making by government-owned service providers.

Industry structure can also have efficiency implications. The creation of large urban water utilities with common prices across their service area may result in ‘cross-subsidies’ between areas, that is, areas that are relatively expensive to serve enjoy prices that are below the cost of supplying them while relatively lower cost areas face prices that are higher than the cost of supplying them. Smaller water utilities may face difficulties in attracting sufficiently skilled staff and meeting important service standards such as water quality, due to their small size and revenue base. These issues can be particularly acute in remote areas, including some Indigenous communities.

Price-setting and competition to promote efficiency

Governments, rather than markets, play the dominant role in determining prices for urban water services. They use a spectrum of approaches, often in combination. These include government ownership and/or direct price control, independent economic regulation and price-setting, and price-monitoring.

Recent changes in Victoria have sought to give customers a greater role in determining prices and service quality for water and other utilities. These reforms recognise that consumers of utility services often cannot express their preferences by changing supplier, but that these views can provide important insights on how services can be improved and how much customers are willing to pay to improve them.

While urban water supply is presently dominated by large monopoly businesses, competitive pressure and private participation in the sector is increasing. For example government-owned utilities have increasingly contracted out operation and maintenance activities and private suppliers of recycled water have emerged. Increased competition could potentially improve the efficiency of urban water services and there may be scope for policy to further support this process.

Public health, safety and environmental regulations

Public health, safety (particularly dam safety) and environmental regulations play a large role in determining the nature and cost of urban water services. As a result, the processes by which these regulations are determined have a significant impact on the sector. For significant imposts, the process should demonstrate that the benefits of regulation exceed their costs. This outcome will be more likely if the various regulators and policy-makers involved have clear roles and responsibilities, and the decision-making process is transparent. Once regulations are determined, it is also important that service providers comply with them efficiently.

Integrated water cycle management and demand management can offer benefits

Traditionally, urban water services have relied on large-scale centralised infrastructure such as dams, pipes, pumps and treatment plants. However, households and businesses are increasingly using more decentralised urban water services such as local collection and treatment of wastewater and stormwater for reuse. Proponents argue that these ‘integrated water cycle management’ approaches can reduce the impact of droughts on urban water supply, and improve urban amenity or ‘liveability’. In some cases they will offer water that is lower cost than existing sources, and in other cases they will be higher cost. However, assessments of whether they should be adopted in a given case can be complicated because some of their benefits are difficult to quantify.

Measures to reduce water demand also play an important role in maintaining water supply during periods of drought or low rainfall. While water restrictions are generally accepted by the community as necessary to manage periods of low rainfall (such as during the Millennium Drought), they can impose significant costs on water users (PC 2011). Community awareness campaigns and water use efficiency programs (such as the Water Efficiency Labelling and Standards scheme developed in response to the NWI) can also have the effect of lowering demand for water, potentially delaying the need for new bulk water sources.

INFORMATION REQUEST

- *What policy and institutional arrangements are needed in the urban water sector to improve the efficiency of service provision?*
 - *What approach should be taken to price regulation in the urban water sector? Is there a need for greater consistency in price setting approaches across different jurisdictions? Do current pricing practices promote investor confidence?*
 - *Is there a case to increase the involvement of customers in regulatory decision making, as is commencing in Victoria? If so, what is the best way to do this?*
 - *How can the level of competition in the provision of urban water services be increased?*
 - *Do water and wastewater services delivered to regional and remote communities, including Indigenous communities, comply with relevant public health, safety and environmental regulations? If not, what policy remedies might improve performance?*
 - *Do the processes for determining public health, safety and environmental regulations applying to urban water providers promote cost-effective and targeted regulations? Do the various policy-making and regulatory bodies have clear roles and responsibilities?*
 - *What is the importance of integrated water cycle management? Are roles and responsibilities in relation to this clear?*
 - *How can demand management approaches such as water restrictions and water-use efficiency measures best contribute to the efficiency of urban water services?*
-

7 Achieving reform

The Commission wants to identify policy changes that are needed to deliver ongoing benefits to the community, and will also consider how these changes could be best achieved. In doing this, the Commission will consider whether a national approach is needed for such policy endeavour.

Most worthwhile water policy changes by a State or Territory Government would generate net benefits for the people and businesses within that jurisdiction. As such, independent action by State and Territory Governments is feasible and the benefits (once known) should generate the policy imprimatur. The question is whether a national approach to reform could make achieving reform more likely.

There is a long history of a national approach being taken to at least some aspects of water policy through the NWI and preceding COAG agreements. The terms of reference ask the Commission to consider the scope for improving the NWI to address current and future challenges. Accordingly, the Commission is interested in views on whether a ‘refreshed’ NWI is the best way forward.

INFORMATION REQUEST

- *Should further water reform be pursued through an improved NWI?*
 - *How can policy impetus be best generated?*
-

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Attachment A: Glossary

Environmental outcomes	Maintaining ecosystem function (for example, through periodic inundation of floodplain wetlands); biodiversity, water quality; and river health targets.
Groundwater	Water occurring naturally below ground level (whether in an aquifer or otherwise), or water occurring at a place below ground that has been pumped, diverted or released to that place for the purpose of being stored there, but does not include water held in underground tanks, pipes or other works.
Held environmental water	Where water access entitlements are held and used (usually by governments) for the purpose of achieving environmental outcomes.
Integrated water cycle management	Includes managing groundwater and water-intercepting land use changes; in the urban context, it could include water supply, drainage, water pollution control, groundwater, water recycling and water conservation and land use planning.
Interception	The interception of surface or ground water that would otherwise flow, directly or indirectly, into a watercourse, lake, wetland, aquifer, dam or reservoir.
Other public benefits	Mitigating pollution, public health (for example, limiting noxious algal blooms), Indigenous and cultural values, recreation, fisheries, tourism, navigation and amenity values.
Planned environmental water	Where rules contained in water plans constrain the volume and timing of water extractions, thus ‘leaving water behind’ for the environment. Examples of rules-based provisions include minimum stream flows, caps on the take of water for consumptive use and cease-to-pump rules.
Potable water	Water that is safe to drink or use for food preparation.
Security	The legal status and tenure of a right to access water. This includes the frequency with which water allocated under a water access entitlement is able to be supplied in full.
Surface water	Water that flows over land and in water courses or artificial channels and is able to be captured and stored and supplemented from dams and reservoirs.

Unbundling	The separating of historic water entitlements which bundled water, land, water use, delivery and works approvals, into separate entitlements or licences.
Unregulated systems	Water resources that are not controlled through the use of infrastructure to store and release water. Water allocations are based on seasonal flows, and water can only be accessed once predetermined flow conditions are met. There are commonly a number of restrictions on extraction, for example, maximum daily extraction, extraction timing, and ‘cease to pump’ when there is a minimum passing flow.
Water access entitlement	A perpetual or ongoing entitlement to exclusive access to a share of water from a specified consumptive pool as defined in the relevant water plan.
Water allocation	The specific volume of water allocated to water access entitlements in a given season, defined according to rules established in the relevant water plan.
Water planning processes	A planning process that establishes rules for sharing water between the environmental needs of the river or aquifer and water users, and also between different types of water use such as town supply, rural domestic supply, stock watering, industry and irrigation.
Water resource plan	A document required under the Murray–Darling Basin Plan that describes the allocation of water between uses (including the environment) and how water is to be subsequently re-allocated. Plans might also include conditions on water users to meet a range of environmental and other objectives of water use.
Water system	A system that is hydrologically connected and described at the level desired for management purposes (for example, sub-catchment, catchment, basin or drainage division and/or groundwater management unit, sub-aquifer, aquifer or groundwater basin).

Attachment B: NWC's 2014 recommendations

Table B.1 2014 NWI assessment: NWC's 10 recommendations

<i>Recommendation</i>	<i>Details</i>
Governments should not backtrack on water reform	All Australian Governments should fully embed National Water Initiative principles in water management decision making and maintain progress on reform.
Governments should not 'mark their own scorecards' on water reform	Independent oversight and public reporting of the progress of water reform in achieving economic, social and environmental outcomes should continue.
The Murray–Darling Basin Plan should be implemented in full and independently audited	All Murray–Darling Basin governments should fully implement the Basin Plan and rigorous, regular and independent audits should be undertaken to build trust in its ability to secure enduring outcomes for the Basin and its communities.
Reforms to water rights and markets should be completed and expanded	Entitlement and market reforms should be expanded to enhance market performance and extend productivity gains.
Urban water reform should be accelerated to drive greater efficiency and innovation	A contemporary urban water reform agenda should be developed by governments to improve economic efficiency and encourage innovation through independence of price setting, clearer performance objectives, contestability, and customer engagement.
Water quality objectives should be integrated into decision making	Water quality should be incorporated into water planning to achieve more resilient environmental and economic outcomes.
Water information collection and sharing should be streamlined	The Australian Government should review reporting associated with the National Water Account, the <i>Water Act 2007</i> , the Murray–Darling Basin Plan and the Water Account Australia to ensure efforts are well targeted to stakeholder needs and information is shared and reused among jurisdictions and agencies.
Governments should invest in water infrastructure only after rigorous cost-benefit analysis	All government water infrastructure investment should generate a return for the community and be subject to robust water planning and transparent cost-benefit analysis.
The National Water Initiative principles should underpin resource development decisions	NWI principles, including best practice water pricing, should underpin all new water developments including those in northern Australia.
The National Water Initiative should guide the way water is allocated and managed for all users, including extractive industries	Water for extractive industries needs to be planned and managed by jurisdictions within NWI-consistent regional water frameworks to mitigate potential impacts on other water users and the environment.

Source: NWC (2014b).

Attachment C: How to make a submission

How to prepare a submission

Submissions may range from a short letter outlining your views on a particular topic to a much more substantial document covering a range of issues. Where possible, you should provide evidence, such as relevant data and documentation, to support your views.

Generally

- Each submission, except for any attachment supplied in confidence, will be published on the Commission’s website shortly after receipt, and will remain there indefinitely as a public document.
- The Commission reserves the right to not publish material on its website that is offensive, potentially defamatory, or clearly out of scope for the inquiry or study in question.

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- The Commission may also request a non-confidential summary of the confidential material it is given, or the reasons why a summary cannot be provided.
- Material supplied in confidence should be clearly marked ‘IN CONFIDENCE’ and be in a separate attachment to non-confidential material.
- You are encouraged to contact the Commission for further information and advice before submitting such material.

Privacy

- For privacy reasons, all **personal** details (e.g. home and email address, signatures, phone, mobile and fax numbers) will be removed before they are published on the website. Please do not provide these details unless necessary.
- You may wish to remain anonymous or use a pseudonym. Please note that, if you choose to remain anonymous or use a pseudonym, the Commission may place less weight on your submission.

Technical tips

- The Commission prefers to receive submissions as a Microsoft Word (.docx) file. PDF files are acceptable if produced from a Word document or similar text based software. You may wish to research the Internet on how to make your documents more accessible or for the more technical, follow advice from Web Content Accessibility Guidelines (WCAG) 2.0<<http://www.w3.org/TR/WCAG20/>>.
- Do not send password protected files.
- Track changes, editing marks, hidden text and internal links should be removed from submissions.
- To minimise linking problems, type the full web address (for example, <http://www.referred-website.com/folder/file-name.html>).

How to lodge a submission

Submissions should be lodged using the online form on the Commission's website. Submissions lodged by post should be accompanied by a submission cover sheet.

Online www.pc.gov.au/inquiries/current/water-reform

Post* National Water Reform inquiry
 Productivity Commission
 GPO Box 1428
 Canberra City ACT 2601

Due date for submissions

Please send submissions to the Commission by **18 April 2017**.