



Australian Government
Productivity Commission

National Water Reform

Productivity Commission Issues Paper

May 2020

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 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

The Commission is seeking initial submissions by 21 August. Given the Coronavirus (COVID-19) situation, other key dates (such as the timing of the draft report and further opportunities for engagement) will be advised as the inquiry progresses.

Submissions can be lodged

Online: water.reform.2020@pc.gov.au

By post: National Water Reform 2020
Productivity Commission
Locked Bag 2, Collins St East
Melbourne VIC 8003, Australia

Contacts

Administrative matters: Marianna Olding 03 9653 2194

Other matters: Lou Will 03 9653 2224

Freecall number for regional areas: 1800 020 083

Website: www.pc.gov.au

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

National Water Inquiry

I, the Hon Joshua Frydenberg MP, Treasurer, pursuant to Parts 2 and 3 of the *Productivity Commission Act 1998*, hereby request that the Productivity Commission (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

The Commission conducted its first national water reform Inquiry in 2017. The Commission found that Australia is managing its water resources well, given our dry and highly variable climate, and the importance of water to our economy. However there remains further work to do. Governments need to complete unfinished business from the NWI, including fully implementing entitlement and planning reforms, and respond to the challenges posed by population growth, climate change and changing community expectations.

In April 2019, the Australian Government responded to the Commission's 2017 Inquiry, including a commitment to the Commission's recommendation of renewing the NWI. The Australian Government is now working with state and territory governments to progress this matter.

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, providing leadership and coordination, and management of some transboundary resources where agreed by relevant jurisdictions.

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 fulfil the statutory requirement for the second of the 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 these terms of reference should be read in conjunction with that Act.

Scope of the inquiry

The Inquiry should assess progress towards achieving the objectives and outcomes of the NWI. As the NWI was agreed in 2004, the scope of the Inquiry is broader than that explicitly required by legislation. The Inquiry should also continue to 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, objectives and key outcomes, and where these have not been adopted, the impacts and opportunity costs of not doing so
- the outcomes to date of the NWI and related water reform efforts, taking account of other drivers of reform
- the extent to which the NWI reforms are adequate to support government responses to emerging or changing water management challenges such as climate change, and
- provide any further practical advice on addressing the joint governments' priorities for implementation of a renewed NWI, and
- provide specific practical advice on ways in which the NWI could be improved to support better social, economic and environmental outcomes.

The Commission should also consider:

- the interaction of water policy with other policy areas such as climate, energy, agriculture, forestry, land use planning and urban development
- the policy ramifications of emerging climate change impacts on water resources
- the provision of reliable water services to regional, rural and remote communities
- the principles to be satisfied for any government investment in major water infrastructure projects
- issues identified in the Commission's 2017 Report, and
- international experiences and examples.

In order to enhance transparency, the Commission should also assess the progress of water planning across Australia to improve clarity around the complex and often not well understood water planning processes within each jurisdiction. There should be a focus on policy and legislative processes for water planning in each jurisdiction, rather than detailed on-ground implementation arrangements. The Commission should seek to identify areas of better practice and areas where improvement is required. The Commission should consider the format for reporting this assessment to clearly convey its findings to a broad audience, including those stakeholders seeking to understand the state of water planning in their regional area.

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. In making its recommendations, the Commission should provide specific,

practical advice on ways in which the NWI could be improved, including specific advice to assist governments' progress their commitment to renew the NWI.

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.

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

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, and consumer, environmental, industry and Indigenous stakeholders.

In conducting the analysis, the Commission should have regard to the submissions and reports of all relevant inquiries and government responses. 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 2020.

The Hon Josh Frydenberg MP
Treasurer

[Received 22 May 2020]

Contents

Terms of reference	iii
1 What is this inquiry about?	1
2 Conduct of the inquiry	5
3 The Commission's approach	6
4 Key issues	10
References	26
Attachment A: Glossary	29
Attachment B: History of water reform in Australia	30
Attachment C: How to make a submission	33

1 What is this inquiry about?

Background

The Australian, State and Territory Governments have implemented significant water reforms since the mid-1980s — both independently, and through a national approach. Key milestones were the Council of Australian Government’s (COAG’s) 1994 Water Reform Framework, the 2004 National Water Initiative (NWI), the *Water Act 2007* (Cth) and the 2012 Murray-Darling Basin Plan. (A brief history of national water reform is provided in attachment B).

However, such reforms are not ‘set and forget’; they require ongoing adaptation so that Australia can continue to make the best use of its limited water resources in light of population growth, a changing climate and other emerging challenges. In particular, the last three years, which have included severe drought, bushfires of unprecedented magnitudes, and the COVID-19 pandemic, have stress-tested Australian water systems and management regimes in a range of different ways that offer opportunities to learn. They have identified areas of vulnerability in water management and the development of policy and industry responses can provide guidance for future reform directions.

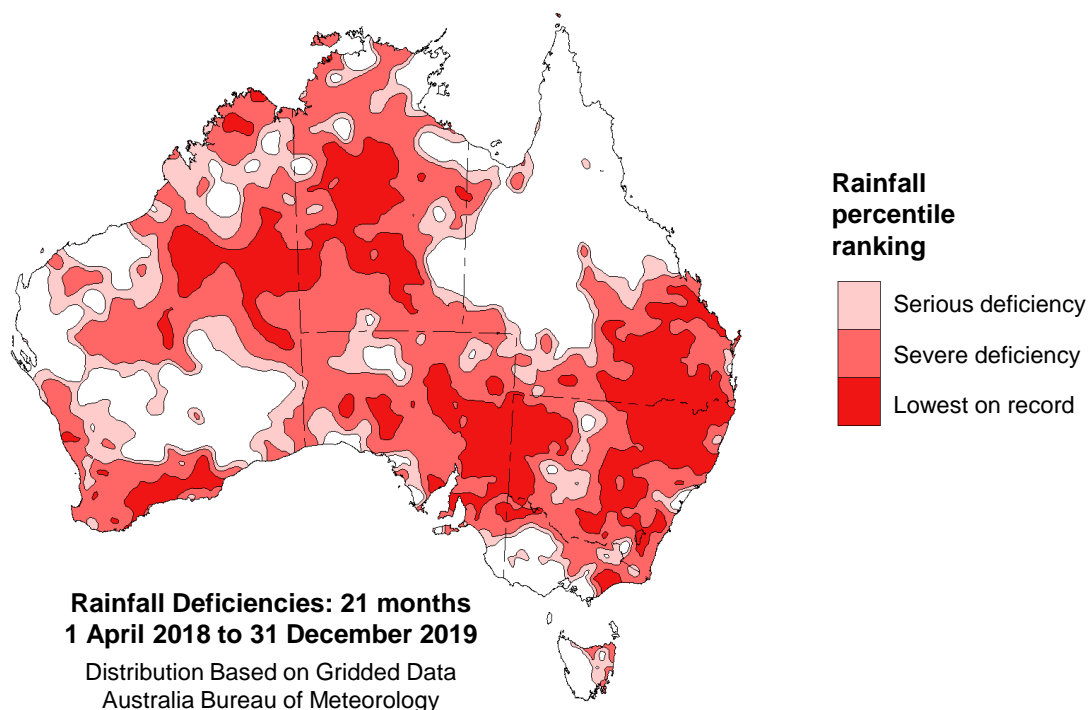
This inquiry concerns the NWI — a 2004 intergovernmental agreement between the Australian Government and all State and Territory Governments. It is the Productivity Commission’s (the Commission’s) second national water reform inquiry, with the first undertaken in 2017.

Inquiry context

Since the Commission’s 2017 inquiry, drought conditions emerged across much of New South Wales and parts of Victoria, Queensland, South Australia and Western Australia. At the end of 2019, communities were facing severe rainfall deficiencies, with many facing their largest deficiencies *on record* (figure 1). This has contributed to falls in agricultural production and reduced incomes in the affected regions (ABARES 2020), and devastating environmental consequences such as the fish kill events in the lower Darling River (Vertessy et al. 2019). It has also forced towns and major cities to introduce water restrictions, with some regional areas having to cart water in as their sources of potable water dried up. Although a wetter start to 2020 has eased the severity of short-term rainfall deficiencies over much of Australia, the severe deficiencies were experienced over an extended period and the impact on water resources is still being felt (BOM 2020b).

Further, allegations of non-compliance with water licence conditions (DNRM (Qld) 2017; Matthews 2017; MDBA 2017) and concerns about the transparency of water management decisions have undermined public confidence in how Australia’s water resources are being managed.

Figure 1 **Australian rainfall deficiencies^a**
1 April 2018 to 31 December 2019



^a Rainfall deficiency defined as the average rainfall for an area minus the rainfall received. 'Lowest on Record' refers to records dating to 1900.

Source: BOM (2020a).

Over the longer term, climate change and population growth present significant risks to the security of Australia's water resources.

Effects of climate change are already in evidence. In the Murray-Darling Basin, 16 of the past 20 years have seen below-average winter rainfall, as well as the eight hottest years since 1910 (Glyde 2020). And annual average streamflow into Perth water storages has more than halved from 338 GL (between 1911–1974) to 134 GL (1975–2017), averaging just 47 GL between 2011 and 2017 (BOM and CSIRO 2018).

Drought conditions are also likely to become more frequent and severe and last longer in some regions. Average winter and spring rainfall in southern Australia is projected to decline by up to 15 per cent by 2030, with time spent in drought likely to increase (CSIRO 2016).

Higher demand from a growing population alongside reductions in supply will increase water scarcity, putting further pressure on all users (including the environment).

Recent shocks have also been a source of pressure for Australia's water systems and Australian communities. The drought, coupled with extreme bushfires, as well as the

COVID-19 pandemic, have further stretched the resources of the agencies responsible for maintaining water supply and water quality, and have exposed a number of communities to severe water restrictions and possible health risks. These challenges have potentially shed light on aspects of water planning and management frameworks that could be enhanced to increase the Australian water sector’s preparedness for extreme and unanticipated events in future, especially in remote and regional communities.

Decisions made today in response to those current and future risks to Australia’s water security will have lasting effects for future generations.

The 2004 National Water Initiative

The NWI was agreed to in 2004, aiming 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.

Independent, regular reviews of progress are a key requirement of the NWI, and were also a characteristic of its predecessor, the 1994 COAG national water reform framework. These reviews were first undertaken by the National Competition Council, and later by the National Water Commission. Under the *Water Act 2007* (Cth), responsibility for reviews was transferred to the Productivity Commission in 2015. Inquiries into progress towards achieving the objectives and outcomes of the NWI are to be held 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 Commission’s first few inquiries is shown in figure 2.

Figure 2 **Timeline for Productivity Commission water inquiries**



This is the Commission’s second inquiry into national water reform, and represents the sixth assessment of progress against the NWI. (The text of the NWI can be accessed via a link on the inquiry website.)

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

Key findings from the previous Commission inquiry

A key finding from the Commission's 2017 inquiry was that the NWI remains nationally relevant and its principles are sound with generally good progress by States and Territories in implementation. However, further work remains to complete implementation, and to respond to emerging challenges posed by population growth, climate change and changing community expectations — all of which have implications for resource scarcity and the trade-offs associated with water use.

In 2017, the Commission recommended that jurisdictions recommit to a renewed NWI. This renewed NWI should:

- maintain the key foundations of water management, and avoid eroding hard-won reforms through backsliding
- revise a number of policy settings, including: better incorporating extractive industries and alternative water sources in entitlement and planning frameworks; improving water planning to take account of climate change; improving the quality and consistency of economic regulation; and better recognising the water needs of Indigenous Australians
- significantly enhance other policy settings relating to:
 - urban water management
 - environmental water management
 - decision-making on building and supporting new infrastructure.

The Australian Government's response expressed support for recommendations where implementation is a matter for relevant States and Territories, and agreed (or agreed in-principle) with all the remaining recommendations. This included committing to a renewed NWI that 'could incorporate enhancements to reflect lessons learnt and changing priorities in water reform' (DAWE 2019b).

Scope of this inquiry

The Australian Government has asked the Commission to assess the progress of the Australian, State and Territory Governments in achieving the objectives and outcomes of the NWI, and evaluate the need for future water reform. Specifically, the Commission will:

- assess the progress of jurisdictions towards adopting the principles set out in the NWI
- consider the outcomes (including benefits and opportunity costs) of reform efforts

-
- consider the extent to which the NWI reforms help address emerging challenges faced by Governments, water providers and water users, such as climate change or changes in economic circumstances
 - make recommendations on future reform priorities, and ways in which the NWI could be improved.

The terms of reference also request the Commission to consider a number of other issues in undertaking the inquiry, including:

- the interaction of water policy with other areas (such as land use planning and urban development)
- the impacts of climate change on water resources
- the provision of reliable water services to regional and remote communities
- the principles to be satisfied for any Government investment in major water infrastructure.

These will form specific areas of focus for the Commission. The Commission also intends to consider issues identified in its 2017 inquiry, which in some cases went beyond the NWI.

Certain matters are excluded from the scope of this inquiry. In undertaking this inquiry, the Commission will:

- avoid duplication between this inquiry and its 2018 inquiry into the effectiveness of the implementation of the Basin Plan and the State and Territory water resource plans (PC 2018). This inquiry will not address Murray-Darling Basin matters, except where they relate to substantive and nationally-relevant policy issues
- avoid (to the extent possible) any duplication between this inquiry and the ACCC's Murray–Darling Basin Water Markets inquiry. Depending on the timing of the ACCC's final report, the Commission may consider its findings where pertinent to assessing progress against the NWI's objectives and outcomes for water markets and trading, and any potential modifications to these as a part of a renewed NWI.

2 Conduct of the inquiry

The inquiry will be undertaken under the *Productivity Commission Act 1998* (Cth) and as such the inquiry's draft and final report to Government will reflect the views of the Commission.

The Australian Government has asked the Commission to undertake broad consultation. This will include participant meetings, public submissions, public forums and roundtables on specific key issues. Due to the COVID-19 pandemic, the Commission anticipates much of its community consultation during the course of this inquiry (including public forums) will take place via telephone or videoconferences. The Commission appreciates that many stakeholders may be directly impacted by the COVID-19 pandemic and that it may dominate

their priorities during this period. The Commission will be exploring alternative methods for ongoing engagement with stakeholders to provide people with realistic options to provide input during the course of the inquiry.

A stakeholder working group will also be established, in accordance with s. 89 of the *Water Act 2007* (Cth). The purpose of the working group is to provide a forum to exchange information and views on issues relevant to this inquiry. Once established, membership of the stakeholder working group will be published on the inquiry webpage.

The Commission encourages submissions on issues relevant to the inquiry's scope. 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 are sought by 21 August 2020. The Commission understands that with the COVID-19 situation, it may be difficult for participants to respond within this timeframe. There is flexibility in this timing, and the Commission will engage with interested parties to understand and allow for other priorities and time constraints. There will also be an opportunity to make submissions following the public release of the draft report. Attachment C provides further details on how to make a submission.

The Australian Government has asked the Commission to complete the inquiry in early 2021.

3 The Commission's approach

The Commission will undertake three key tasks for this inquiry. The first is to examine jurisdictions' progress since the Commission's 2017 inquiry in meeting their commitments under the NWI and the outcomes achieved by the NWI. The second and third tasks are forward looking — to assess the extent to which reforms to the NWI are needed to support government responses to existing, emerging or changing water management challenges; and to provide specific advice to the jurisdictions on ways to improve the NWI.

The Commission will build on the work done in its 2017 National Water Reform inquiry. We will use the 2017 assessment of progress against the NWI as our baseline, and track progress since then (both in meeting NWI objectives and outcomes, and with addressing the Commission's 2017 recommendations and findings).

The Commission will prioritise water management challenges that have arisen or intensified since 2017, and look to assist jurisdictions in their joint efforts to improve the NWI. Reflecting the focus on issues emerging since 2017, particular attention will be given to general trends impacting the water sector (such as climate change, demographic shifts, and current community expectations), as well as extreme events which have posed acute

challenges to the water sector (such as the drought, bushfires and COVID-19). As was the case in 2017, the Commission will focus on what it identifies as material issues.

Evidence to underpin the Commission's work will be obtained from: desktop analysis of public reports; information requested from participants; public submissions; meetings with interested parties; and other consultative processes. The Commission will undertake both quantitative and qualitative analysis of available data, using case studies (where relevant) and drawing on indicators developed in the 2017 assessment.

The remainder of this section provides more detail on the Commission's approach to this inquiry, while the remainder of the paper provides more detail on the key issues the Commission has identified in relation to the three central tasks.

Assessing jurisdictional progress

The Commission will assess the progress of all jurisdictions (the Australian, State and Territory Governments) towards achieving the objectives and outcomes of the NWI (box 1). Using those objectives and outcomes as a frame, the Commission's assessment will primarily focus on changes since the 2017 assessment of progress (as detailed in appendix B of that report). This assessment will include consideration of progress against the Commission's 2017 recommendations where they relate to the current NWI.

Box 1 **Agreed objectives and outcomes of the NWI**

Implementation of the National Water Initiative (NWI) was anticipated to:

... result in a nationally-compatible, market, regulatory and planning based system of managing surface and groundwater resources for rural and urban use that optimises economic, social and environmental outcomes (paragraph 23)

There are ten specific objectives (paragraphs 23(i)-23(x)) underpinning this ambition.

The NWI also establishes agreed outcomes, actions and implementation timelines for eight key elements:

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

NWI schedules also specify principles for regulatory approvals for water use, guidelines for water plans and planning processes, guidelines for water registries, and principles for trading rules.

Source: COAG (2004).

The Commission will assess the progress of all jurisdictions against each of the eight NWI elements, focusing on whether or not the intended outcomes for that element have been achieved (or are at least being pursued), rather than assessing each individual action required by the NWI. Priorities for the assessment of progress are elements:

- where progress against the NWI has slowed or stalled since 2017
- that require ongoing monitoring and assessment (such as best practice pricing)
- where there is a risk of jurisdictions unwinding agreed reforms ('backsliding').

Areas of water management that are not explicit in the actions agreed to in the NWI, but are essential to achieving its outcomes, will also be considered. For example, compliance with water access conditions underpins both the integrity of the entitlement system, and public confidence in water management.

The Commission welcomes views on the implementation of all NWI elements, and submissions are encouraged to raise concerns with progress towards those NWI outcomes that are not covered in this issues paper.

INFORMATION REQUEST 1

The Commission welcomes feedback on:

- *whether the signatories to the NWI are achieving the agreed objectives and outcomes of the agreement*
 - *which elements of the NWI have seen slow progress*
 - *whether there are cases where jurisdictions have moved away from the actions, outcomes and objectives of the NWI*
 - *any other data and information sources that might be useful for assessing progress.*
-

Assessing the adequacy of the NWI to meet current and emerging challenges

As per the terms of reference, the Commission will also assess the adequacy of the NWI to support government responses to current and emerging water management challenges in order to inform future reform directions for the NWI. This inquiry will build on those previous recommendations, taking in account developments since 2017.

Previously, the Commission identified climate change (ongoing and predicted), population growth in major cities, and higher consumer expectations for water use (such as enhanced contribution to liveability) as the major challenges facing the water sector (PC 2017). Since then, the impacts of widespread drought have highlighted challenges in the areas of: water resource scarcity and security, environmental water management, Indigenous water use, and the quality and affordability of urban water services. Extreme unanticipated bushfires in late

2019 and early 2020, as well as the ongoing COVID-19 pandemic, have placed additional pressures on communities and Governments, potentially providing insights into further areas of vulnerability in Australia’s water sector. The Commission has also identified a number of specific barriers facing urban water providers in cost-effectively accommodating population growth and changing community preferences (PC 2020).

These challenges are discussed further in the remainder of this issues paper. The Commission is also interested in hearing if there are other current or emerging water management challenges that it should consider.

INFORMATION REQUEST 2

Is the NWI adequate to help Governments address the identified challenges?

Are there any other current or emerging water management challenges where the NWI could be strengthened?

Future reform directions

The Commission’s 2017 recommendation for a renewed NWI has been committed to by the Australian Government, and the Commission will look to offer practical advice on improving the NWI to support better social, economic and environmental outcomes. In undertaking this task, the Commission will draw on:

- its assessment of jurisdictional progress over the past three years
- the emerging policy issues identified in the previous subsection and discussed further in the next section.

In assessing the scope for improving the NWI and framing its advice on ways of doing so, the Commission will consider the best approaches for securing reform. In some cases, independent action by States and Territories may be appropriate. In others (and noting the emerging interest among jurisdictions to renew the NWI), a coordinated national approach through the revitalisation of the NWI may be most effective.

The Commission will draw from the responses that it receives on these policy questions to determine whether there are new or changed actions that should be pursued. Responses will shape the Commission’s specific advice on potential ways in which the NWI could be improved to ensure that the NWI remains fit-for-purpose in guiding the efforts of all jurisdictions in responding to those water resource management challenges.

The Commission’s focus will be on those reform opportunities that deliver the greatest net benefits to the community. In identifying those opportunities, the Commission will consider not only the costs and benefits of reform, but also practical ways to assist States and Territories to implement those reforms.

The Commission welcomes participant views on the scope of a renewed NWI.

INFORMATION REQUEST 3

The Commission welcomes feedback on the matters that should be considered for inclusion in a renewed NWI.

4 Key issues

The remainder of this issues paper outlines the areas of water management that the Commission has identified as the key issues for its assessment of progress, as well as for ongoing national water reform. Although many overlap with the existing NWI elements, the following also encompasses issues that were not included in the NWI, or were not prominent in the agreement.

Water entitlements and planning

The NWI identifies water planning as a key mechanism to help Governments and communities make water management and allocation decisions to balance productive, environmental and social objectives. It specifies 11 agreed outcomes for water access entitlements and planning,¹ including that: jurisdictions provide a statutory basis for both water access entitlements and for environmental and other public benefit outcomes in water plans; water plans clearly assign risks arising from future changes to the consumptive pool; and water planning arrangements recognise Indigenous needs in relation to water access and management.

The NWI commits States and Territories to water planning that provides a degree of certainty for all water users by providing both:

- secure ecological outcomes — through describing environmental and other public benefit outcomes for water systems, and by defining appropriate water management arrangements to achieve those outcomes
- resource security outcomes — through determining the consumptive pool and the rules for allocating that water between productive uses and other purposes.

Water access entitlements and planning frameworks

Water planning arrangements have been established for the majority of areas of intensive water use across Australia, and by 2017 most jurisdictions had more than 80 per cent of their

¹ The eleven outcomes are detailed in paragraph 25 of the NWI.

water use managed under water plans (PC 2017, pp. 58, 67). Each State and Territory has adopted its own approach to water planning. In most cases, statutory water plans are the main instrument that defines how water is shared between consumptive uses (including agricultural, industrial and household uses) and the environment.

In 2017, the Commission highlighted that Western Australia and the Northern Territory had not yet introduced legislation to create NWI-compliant statutory-based entitlement and planning arrangements. It also recommended a number of revisions to the entitlement and planning framework, namely:

- extractive industries and alternative water sources (such as recycled water) should be better incorporated into the entitlement framework
- modern entitlement and planning frameworks should assess the impact of climate change and integrate water quality management with water quantity management
- the water needs of Indigenous Australians (discussed later in this section) should be more fully recognised in water planning.

The Commission will examine progress towards achieving NWI-compliant water entitlements and plans, as well as progress towards best-practice water planning more generally (including the implementation of its 2017 recommendations). Many jurisdictions implemented new water planning frameworks in the early years following the agreement and after 16 years, it is timely to look at their review processes and how they should evolve.

Community partnerships and adjustment, and knowledge and capacity building

Effective water planning processes are timely, based on the best available information, and adaptive. Allocating and sharing water to balance economic, social and environmental outcomes — now and into the future — is a highly contestable process. For this reason it is essential that planning processes are transparent and open, and involve communities and stakeholders — especially in high-use areas, or where water resources are over-allocated or overused.

The NWI includes outcomes concerning these key underpinning arrangements, including: community involvement in water management, transparency of decision making, and addressing adjustment for water entitlement holders and communities.² There are further outcomes concerning investment in the knowledge base underpinning water resource management.³

In 2017, the Commission found that jurisdictions had delivered improved decision-making through open and timely consultation with stakeholders on water planning, and had taken steps to document water plan outcomes, including whether plan objectives have been achieved. It also concluded there was an ongoing role for research and capacity building to

² NWI paragraphs 93-94.

³ NWI paragraphs 98-100.

support the sustainable management of Australia’s water resources, but coordination between jurisdictions had slowed.

The Commission will consider whether the processes of community consultation are embedded in water management, whether national coordination of research and capacity building has improved, and whether progress against these outcomes is adequate to support water management in responding to the emerging issues discussed further in this section.

Emerging issues in entitlements and planning

The Commission will consider the extent to which the NWI is adequate to support government responses to emerging or changing water management challenges such as climate change, as well as the extent to which it provides adequate planning guidance for the States and Territories to be equipped to weather and recover from extreme unanticipated shocks. The NWI water entitlement and planning framework is a key part of those responses — the Commission highlighted the need to modernise entitlement and planning frameworks in 2017, and the impetus to do so is arguably greater today. The severe drought, bushfires, and the challenges of COVID-19 (discussed in section 1) have revived discussions of how Governments can best prepare for and manage extreme events, and manage the risks from long-term changes in climate.

NWI treatment of these issues

The NWI identifies water access entitlement holders as responsible for bearing the risks of any reductions in water allocations, including the reliability of allocation, resulting from:

- seasonal or long-term changes in climate, and
- periodic natural events such as bushfires and drought (paragraph 48).

It also recognises that changes to water availability due to climate change is an area where there are significant knowledge gaps and capacity building needs to ensure effective management of water resources (paragraph 98).

In 2017 the Australian, State and Territory Governments developed the NWI module, *Considering Climate Change and Extreme Events in Water Planning and Management* to provide guidance to jurisdictions on how to consider and incorporate possible impacts from climate change and extreme events in water planning and management processes.

Managing extreme events

The 2017 NWI guidelines note that water plans should include clear rules or processes to describe how extreme situations will be managed. The guidelines acknowledge that abrupt reductions in water availability may result in a trade-off between economic, social and environmental uses. It is therefore important that the basis of any potential trade-off is clearly

articulated in developing water plans (Australian, State and Territory Governments 2017, p. 33). In particular, in the allocation framework, decision rules and trigger points can be designed to ensure that, in times of extreme water scarcity, critical human needs are met and that the basic requirements of other economic, social, and environmental uses are considered (Australian, State and Territory Governments 2017, p. 33).

Water planning and management frameworks should be designed to be flexible enough to incorporate rules for extreme events into water plans. Suspending water plans is only appropriate in the most extreme circumstances because it creates large disruptions and uncertainty for water users and generally impacts significantly on the environment.

Given that droughts are predicted to be more frequent, longer and more severe, the Commission is seeking comments and information on the effectiveness of current water planning arrangements for managing extreme events such as severe droughts and other unanticipated shocks.

Planning for long-term changes in climate

As noted above, climate change is expected to lead to changes in water availability and reliability, and an increase in the frequency, severity and duration of droughts across much of Australia. Extreme rainfall events are also expected to become more intense. Under the NWI, all entitlement holders (consumptive and environmental) will be impacted by a less reliable water supply. Changes in rainfall variability undermine certainty for all users and impact on their ability to make efficient water use decisions.

Key current questions relate to how climate change should be taken into account in the water planning process, and when/if the balance between consumptive and environmental use should be revisited.

In 2017, the Commission reported that the NWI module relating to climate change provides useful information on regional climate projections, tools that can assist planners to understand the associated risks, and approaches to incorporate possible impacts from climate change and extreme events in water planning and management. However, it provides little guidance on when and how the balance between environmental and consumptive use should be reset (PC 2017, p. 91). The Commission recommended:

State and Territory Governments should develop a process to regularly assess the impact of climate change on water resources. Where this is considered to have been significant and detrimental, they should ensure that the next water plan review fundamentally reassesses the objectives of the plan (including environmental and consumptive) and the consequent balance between environmental and consumptive use of water, to ensure it is suited to a drier climate. (recommendation 3.1)

The Commission will examine whether and how jurisdictions are considering climate change in their water allocation frameworks and water planning processes, and welcomes any information on recent developments and thinking in this area.

INFORMATION REQUEST 4

How effective are water plans at managing extreme events such as severe drought?

Are NWI principles being applied at these times?

What steps have been undertaken — or should be undertaken — to plan for long term changes in climate?

What lessons have recent extreme events (bushfires and COVID-19) provided for planning?

Water markets and trading

The NWI aims to facilitate efficient water markets, among other water trading outcomes. In 2017, the Commission found that many water market reforms had been implemented, and there were only a few outstanding issues — jurisdictions needed to improve the quality of water registers, remove residual barriers to trade, and maintain trade reforms.

As noted in section 1, the southern Murray-Darling Basin water market is currently being reviewed by the ACCC, with a final report expected in November 2020. The southern MDB is by far the largest and most developed water market in Australia. Rather than duplicating that process, the Commission will draw (as required) from the ACCC's conclusions in making its own assessment about water market reforms in the final report. This inquiry, however, will only consider issues relevant nationally, to all water markets, rather than issues specific to the Murray-Darling Basin.

Water accounting and compliance

NWI signatories agreed that:

... the outcome of water resource accounting is to ensure that adequate measurement, monitoring and reporting systems are in place in all jurisdictions, to support public and investor confidence in the amount of water being traded, extracted for consumptive use, and recovered and managed for environmental and other public benefit outcomes. (NWI paragraph 80)

In pursuit of this outcome, the NWI lays out a number of actions to improve water accounting and information, metering and measuring, and reporting. Good progress has been made on many of these aspects, although the Commission concluded in 2017 that jurisdictions should better report on the use of planned environmental water, and improve non-urban metering.

In 2017, prominent media reports highlighted ongoing water use compliance issues in parts of the Murray-Darling Basin. The Commission's 2017 inquiry noted those concerns and they were considered in more detail in its 2018 inquiry into the implementation of the Basin Plan. A number of commitments have been made to improve compliance in the Basin in response to those media reports (PC 2018).

Water use compliance is not an explicit action of the NWI. However, it underpins the integrity of the entitlement system, public and investor confidence in water resource management, and the fundamental objectives sought under the NWI more generally. The Commission is eager for views on how national guidance could be updated or improved to ensure water use is adequately measured and compliance improved.

INFORMATION REQUEST 5

How could the NWI be amended to support best practice monitoring and compliance across jurisdictions?

Environmental water management

A key motivation for water reform since the 1990s has been to ensure water use is sustainable and to balance economic, social and environmental outcomes. The 1994 COAG reforms and the NWI establish the environment as a legitimate water user and provide water for the environment through water plans and other governance arrangements.

The NWI requires ‘statutory provision for environmental and other public benefit outcomes, and improved environmental management practice’⁴ and jurisdictions to ‘complete the return of all currently over-allocated or overused systems to environmentally-sustainable levels of extraction’.⁵ The agreement also called for jurisdictions to establish and equip accountable environmental water managers with the necessary authority and resources to achieve environmental outcomes, and to optimise the cost-effectiveness of measures to provide water for these outcomes.⁶

Defining environmental objectives

The NWI sets out how water should be provided to meet agreed environmental and other public benefit outcomes, as defined within relevant water plans. In general, planning processes first specify the desired environmental outcomes, and then the water required to meet those objectives. This information is used as an input in water planning processes where a decision is made on how water is shared between consumptive uses and the environment and how much (and when) water will be set aside for the environment. Environmental water is primarily provided as planned water (through rules specifying the volume and timing of water flows), but is supplemented in a number of systems with held water entitlements.

⁴ NWI paragraph 23(iii).

⁵ NWI paragraph 23(iv).

⁶ NWI paragraph 78(i)-(iii).

The ultimate objective of environmental water management is the health of environmental systems — not simply a volume of water. Flow targets to protect critical ecosystems and river health need to be managed, not just for the long-term averages, but for the extremes. This includes managing water extraction during critically low flows, protecting the resumption of flows and managing connectivity across the landscape.

In addition to just providing and protecting a share of water for the environment, efficient and effective management of water held for the environment is needed to realise optimal environmental outcomes. More specific information about the environmental sites, assets and water management are frequently outlined in separate watering plans of varying timeframes.

Each jurisdiction has an authority that is charged with managing water for the environment. However, the provision of flows alone will not achieve environmental objectives. Environmental water management needs to be fully integrated with complementary natural resource management to ensure that environmental objectives are fully achieved and that poor water quality, lack of habitat or the presence of invasive species for example, does not undermine the environmental water management outcomes. The Commission found in 2017 that greater integration between environmental water management and complementary waterway management activities would lead to better environmental outcomes.

The Commission will consider whether environmental objectives are appropriately defined, and assess the performance of arrangements to meet agreed environmental outcomes. It will also consider how each jurisdiction is making progress towards integrating environmental water with complementary waterway management activities, works and measures.

Managing environmental water

The NWI requires environmental water managers to have the necessary authority and resources to provide water at the right times and places.⁷ It is estimated that the value of held environmental water will be up to \$5 billion when water recovery is complete (PC 2017). Given the value involved, and the potential effects on the environment, both the acquisition and use of held environmental water is of interest to the community.

Environmental water holders should be equipped to maximise environmental outcomes with the water available. The Commission will consider if there are any impediments to environmental managers achieving this, and assess the scope to remove them. Further, the Commission will also consider if cost savings or improved environmental outcomes could be realised by managing water for the environment through alternative approaches, such as greater and more innovative use of temporary water markets and market-like mechanisms — such as the ‘no-pump’ contracts recently trialled by the Commonwealth Environmental Water Office under a pilot project to enhance flows to the Narran Lakes (CEWO 2020).

⁷ NWI paragraph 78(ii).

Recent dry conditions have also called into question how environmental outcomes are secured in periods of extreme scarcity, such as when water plans are suspended. The Commission will consider how effective decision-making has been during the recent drought, and whether more explicit processes are warranted.

At times, there are also opportunities for environmental water holders — whilst achieving their environmental objectives — to also deliver social or Indigenous and cultural outcomes from environmental water, such as supporting fish breeding at recreational fishing sites — known as shared benefits. The Commission has previously recommended that environmental water holders should contribute to those outcomes where doing so does not compromise environmental objectives. The Commission will consider how environmental water holders are contributing to and reporting on such outcomes. Indigenous water use outcomes are also discussed further later in this section.

In 2017, the Commission recommended that governance arrangements for the management of environmental water, particularly held water, be at arm's length from Government. The Commission will also consider whether there have been any improvements to the governance arrangements for environmental water managers.

Water recovery efforts

In terms of recovering water for environmental outcomes (for example through the purchase of water on the market or through infrastructure investments) the NWI states that the measures adopted should be 'primarily on the basis of cost-effectiveness, and with a view to managing socio-economic impacts'.⁸ In 2017, the Commission found water recovery approaches had not been undertaken primarily on the basis of cost-effectiveness, and investigated this in more detail in its Basin Plan inquiry (PC 2018).

The Commission will consider whether ongoing processes outside of the Murray-Darling Basin meet the NWI principle of cost-effective water recovery.

Monitoring and reporting of environmental outcomes

Monitoring and reporting of outcomes are also essential to build public support and improve delivery of outcomes. In 2017, the Commission identified that further work on monitoring of outcomes, reporting and auditing was required.

The Commission will consider the extent and effectiveness of efforts to monitor and improve delivery of environmental outcomes.

⁸ NWI paragraph 79(ii)(c).

INFORMATION REQUEST 6

Are environmental outcomes specified clearly enough in water plans to guide management actions, monitoring and accountability?

Are institutional and administrative settings effective in supporting these outcomes? Do environmental water managers have the necessary authority, resources and tools to achieve agreed outcomes?

Is environmental water management (including planning for use of held water, delivery of held water, use of markets and compliance with planned environmental water) sufficiently integrated with complementary natural resource planning and management frameworks?

Can environmental outcomes be more cost-effectively achieved with greater and more innovative use of water markets and market-like mechanisms?

Is the monitoring and assessment of environmental outcomes sufficient?

How effective has adaptive management and planning decision-making been during the recent drought?

Do environmental water managers maximise opportunities to achieve social or cultural outcomes alongside environmental watering? How could this be improved?

Indigenous water use

The NWI recognises the water needs of Indigenous Australians and the necessity to consider these needs in water access planning and management.⁹ Paragraphs 52 to 54 of the NWI set out the actions required by jurisdictions to provide for Indigenous access to water resources. These involve:

- the inclusion of Indigenous representation in water planning
- developing water plans that incorporate Indigenous social, spiritual and customary objectives, and strategies for achieving these objectives
- water planning processes that take into account the possible existence of native title rights to water and the allocation of water to native title holders
- accounting for water allocated to native title holders for traditional cultural purposes.

Indigenous access to water resources reflects the need to maintain cultural values and assets, and protect water rights under native title arrangements.

⁹ NWI paragraph 25(ix).

Cultural water outcomes

A key point made in the Commission's 2017 inquiry was that reform priorities should include revising policy settings to address the needs of Indigenous Australians. It found that some States and Territories had progressed consultation with Indigenous communities in water planning processes but this did not extend to explicitly including details of Indigenous cultural values and outcomes in water plans. The final report found all jurisdictions needed to undertake further work in the area.

Water for economic use

A number of jurisdictions have made provisions for Indigenous access to water for economic use and development purposes. The NWI does not explicitly address the need to provide water for the economic development of Indigenous communities.¹⁰

Communities may source water entitlements for consumptive use through standard entitlement frameworks. However, without support they may face barriers to access. In 2017, the Commission noted that any supply of water provided to Indigenous communities for economic development should be from within existing water entitlement frameworks, and that supporting arrangements be provided by jurisdictions to ensure communities can maximise the value of the resource.

While providing communities access to water for economic purposes can encourage employment, income generation and economic development, and ultimately lead to improved financial security and living standards, these outcomes may also be realised through more targeted policies.

The Commission will consider how jurisdictions have improved Indigenous involvement in water planning, the achievement of cultural outcomes, and progress made towards providing water for economic purposes.

INFORMATION REQUEST 7

What progress are States and Territories making on including Indigenous cultural values in water plans, and how are they reporting progress?

How could a refreshed NWI help Indigenous Australians realise their aspirations for access to water, including cultural and economic uses?

¹⁰ Some definitions of cultural water include economic uses of water.

Water services

A range of water services are delivered to metropolitan, regional and rural customers. In metropolitan and regional towns and cities, households and businesses use urban water services including potable water supply, the collection and treatment of wastewater, supply of recycled water, drainage and stormwater management and flood mitigation. Rural water services refer to water for irrigated agriculture and for domestic and stock use (although some service providers do provide both urban and rural water services). This encompasses both bulk water and distribution services.

These water services underpin basic water access for Australian households, as well as productive uses of water (including for agriculture and other industry), each of which supports the economic development and wellbeing of people in regional communities and major cities. To support those outcomes, appropriate incentives should be in place to ensure that the entities delivering water services provide a reliable service, meet relevant standards and plan for the future.

The NWI parties agreed to implement a number of actions for how water services would be delivered to rural, regional and metropolitan customers to meet the NWI objectives. These included water pricing and institutional arrangements that (among other things):

- promote economically efficient and sustainable use of water resources, water infrastructure assets, and government resources devoted to the management of water
- ensure sufficient revenue streams to allow efficient delivery of the required services
- give effect to the principles of user-pays and achieve pricing transparency in respect of water storage and delivery in irrigation systems and cost recovery for water planning and management.¹¹

In addition, the NWI laid out high-level outcomes for urban water reform, including the need to provide healthy, safe and reliable water supplies.¹² However, the NWI provides few specific actions to support this outcome, all of which have largely been implemented.

The Commission has identified a number of issues related to water services that are discussed in more detail in the following sections.

Best practice institutional arrangements

Institutional arrangements for water service provision remain a key pillar of the NWI reforms. Building on the national competition policy reforms of the 1990s, NWI signatories agreed that ‘as far as possible, the roles of water resource management, standard setting and

¹¹ NWI paragraph 64.

¹² NWI paragraph 90.

regulatory enforcement and service provision continue to be separated institutionally¹³ and that independent bodies would ‘set or review prices, or price setting processes, for water storage and delivery by government water service providers, on a case-by-case basis’.¹⁴

There are concerns that some Governments may be winding back this institutional separation for some metropolitan water service providers. For example, Queensland’s independent economic regulator no longer monitors prices for retailer-distributors in the state’s south-east. And there are concerns with the way that some metropolitan utilities are managing the trade-off between short-term affordability and long-term financial sustainability.

The Commission will assess whether States and Territories are maintaining the institutional arrangements agreed to under the NWI, and if the coverage and quality of independent economic regulation meets the Commission’s prior recommendation.

INFORMATION REQUEST 8

Are the institutional arrangements for metropolitan water service providers fit-for-purpose? Is there evidence of inefficient pricing or investment decisions?

Best practice pricing

The specific NWI pricing commitments are different for *metropolitan* providers (urban water providers with more than 50 000 connections; primarily in capital cities or state-wide providers), *regional* providers (urban water providers with fewer than 50 000 connections in regional and remote Australia) and *rural* providers.

Regional providers are present in New South Wales, Victoria, Queensland and Western Australia, while all others are covered by jurisdiction-wide providers.

In 2017, the Commission highlighted ongoing issues for some of the smaller regional water service providers in New South Wales and Queensland, including slow progress towards cost-reflective pricing. Small utilities may charge too little for water in response to affordability concerns, but doing so can limit their ability to plan for and make the investments necessary to provide reliable water services over the long term. To address this, Governments have provided support — but often as poorly-targeted capital grants instead of the transparent community service obligations (CSOs) required under the NWI.

The Commission also pointed to the lack of data about these small providers (those with fewer than 10 000 connections), which made it difficult to benchmark whether smaller providers provided acceptable water service levels at cost-reflective prices.

¹³ NWI paragraph 74.

¹⁴ NWI paragraph 77.

The Commission will again assess whether pricing outcomes are NWI-compliant for regional, remote and rural water services. It will also consider progress against its 2017 recommendations for small regional providers, including whether State Governments are encouraging collaboration between smaller providers to help reduce costs and improve capability.

The NWI also requires metropolitan service providers to achieve a stricter definition of cost-reflective pricing. The Commission will assess whether metropolitan water pricing practices are consistent with the NWI requirements,¹⁵ and with the *NWI Pricing Principles* (NRMMC 2010).

INFORMATION REQUEST 9

How can small regional providers best balance affordability with longer-term service quality? Are there barriers to effective local planning?

Is there scope for greater collaboration between small providers? When might government support be warranted, and how should it be provided?

Safe and reliable water supply

Since 2017, concerns have been raised that healthy, safe and reliable water supplies are not available in all parts of Australia — especially in drought-affected regional areas, and in some remote Indigenous communities. Ongoing water supply challenges for some urban utilities (including some larger metropolitan providers) have raised questions about whether service providers have adequate drought planning and long-term supply processes in place. Recent bushfire and COVID-19 responses might have also shed light on areas of vulnerability. The Commission will consider service quality issues in meeting this outcome of the NWI, along with options to address issues.

INFORMATION REQUEST 10

Do water service providers supply high-quality water services in regional and remote areas? Are there examples of poor water quality, service interruptions, or other issues? Have regional water service providers adequately planned for extreme events?

Are there sources of data that could be used to benchmark smaller providers' water service levels (with fewer than 10 000 connections)?

¹⁵ Specifics are contained in NWI paragraph 66.

Planning for major supply augmentation

It is likely that significant augmentation of urban water supplies will be required in the future as a result of climate change and ongoing population growth. In 2017, the Commission highlighted that improvements in planning and decision-making processes are necessary to ensure that future investment decisions are prudent, cost-effective and supported by the community.

The Commission recommended that that decision-making processes should be consistent with good planning principles. In particular, planning processes should consider all options fully and transparently — including indirect and direct potable reuse, and reuse of stormwater, as well as options at different scales (both centralised and decentralised approaches). The process should also be adaptive in response to new information.

The Commission will consider planning processes for major system augmentation, and welcomes information and recent developments in this area.

Integrated water cycle management

Integrated water cycle management (IWCM) is generally supported by all Governments as the approach required to move to water sensitive cities, a key action for urban water reform in the NWI. The coordinated approach under IWCM allows for potential efficiency gains in achieving water security, public health, environmental and amenity outcomes in the way water services are delivered regardless of source, scale or ownership. This is particularly important in considering how to address the challenges raised in the 2017 inquiry of population growth in major cities and increasing pressures on water supplies from climate change.

In meeting these challenges, there is also a focus on ensuring that cities remain ‘liveable’. Water services can contribute to liveability and amenity outcomes, and can be a key consideration in the design of new urban developments. While developing guidelines around water sensitive urban design was a key action listed under urban water reform¹⁶, gaps remain in providing guidance on how water can best contribute to liveability and amenity outcomes. Infrastructure Australia’s recent audit identified the replacement and upgrading of ageing assets as an opportunity to ‘rethink’ how urban water services are delivered (IA 2019), and the water sector has called on Governments to ‘develop governance principles ... and clearly state the role of urban water utilities to contribute to liveability outcomes’ (WSAA 2019, p. 5).

Using an integrated approach to planning and management of urban water services may enable the water sector to meet these challenges more efficiently and effectively, as it allows a greater range of options to be identified and evaluated at the outset, which can be designed to provide a broader suite of community outcomes, including enhanced urban amenity.

¹⁶ NWI paragraph 92

However, there remain a number of barriers to implementing a more integrated approach. Despite a number of projects over the years demonstrating the potential of integrated water service delivery, some augmentation options and approaches are not considered on an equal footing with traditional approaches. In the Commission’s research paper *Integrated water cycle management — why a good idea seems hard to implement* (PC 2020), impediments were identified across policy, service delivery and regulation to effective and efficient IWCM.

The Commission will examine how jurisdictions are considering the role of water in delivering amenity and liveability outcomes and we welcome any information and recent developments in this area. The Commission is also seeking comments and information on how to overcome barriers to IWCM.

INFORMATION REQUEST 11

What steps have been undertaken to address the priority areas for urban water reform identified in 2017?

Is further guidance on implementing an integrated water cycle management approach for delivering water supply, wastewater and stormwater management services required?

How does jurisdictional urban water service planning interface with urban land-use planning at different scales? Are the roles and responsibilities clearly set out?

Is the role of water in delivering amenity and liveability outcomes clear? How are the trade-offs with other NWI outcomes considered? Is it clear how the level and type of amenity delivered by urban water services will be funded?

Investment in new water infrastructure

At times, Governments have committed to construct new water infrastructure with the ambition of underpinning regional development. The NWI provides limited guidance on how and whether Governments should invest in new or refurbished water infrastructure, continuing from the 2004 COAG water reform agreement.¹⁷

In 2017, the Commission found a number of new infrastructure projects had not met a requirement for transparent benefit-cost analysis prior to government funding being committed. The Commission proposed additional principles in its 2017 inquiry to ensure that any infrastructure funded or financed by Governments is viable and sustainable.

Since 2017, the Australian Government has committed \$3.5 billion to identify and build new water infrastructure. This will be delivered through the National Water Infrastructure Development Fund (\$1.5 billion) and National Water Infrastructure Loan Facility

¹⁷ NWI paragraph 69.

(\$2 billion). The National Water Grid Authority has been established to deliver on this commitment.

In addition, many smaller and regional water service providers are investing in ‘last minute’ supply augmentation in response to unprecedented dry conditions.

The Commission will assess whether those investments are demonstrating that they are ecologically sustainable and economically viable, and will look at whether regional service providers have planned adequately for extreme events.

INFORMATION REQUEST 12

Are there examples of projects that have not met the NWI criteria for new water infrastructure investment?

What principles should inform government funding or financing of new water infrastructure?

Other issues

The Commission welcomes participant views on the initial set of water reform policy issues, any others that should be considered, and the scope of a renewed NWI.

INFORMATION REQUEST 13

Are there any areas for future reform of the NWI that have not been raised in this issues paper that should be investigated for inclusion?

References

- ABARES (Australian Bureau of Agricultural and Resource Economics and Sciences) 2020, *Agricultural overview: March quarter 2020*, <https://www.agriculture.gov.au/abares/research-topics/agricultural-commodities/mar-2020/agriculture-overview> (accessed 4 March 2020).
- Australian, State and Territory Governments 2017, *A Module To Support Water Planners And Managers Consider And Incorporate Possible Impacts From Climate Change And Extreme Events On Water Resources*, <http://www.agriculture.gov.au/SiteCollectionDocuments/water/climate-change.pdf> (accessed 1 September 2017).
- BOM (Bureau of Meteorology) 2020a, *Drought Report - January 2020*, Drought Archive, <http://www.bom.gov.au/climate/drought/archive/20200107.archive.shtml> (accessed 21 May 2020).
- 2020b, *Drought Report - May 2020*, Drought Archive, <http://www.bom.gov.au/climate/drought/archive/20200206.archive.shtml> (accessed 21 May 2020).
- and CSIRO (Bureau of Meteorology and Commonwealth Scientific and Industrial Research Organisation) 2018, *State of the Climate 2018*, Bureau of Meteorology and Commonwealth Scientific and Industrial Research Organisation, Melbourne.
- CEWO (Commonwealth Environmental Water Office) 2020, *Lower Balonne flow 2020 - Update #2*, 6 March, Canberra.
- COAG 2004, *Intergovernmental Agreement on a National Water Initiative*, Council of Australian Governments, Canberra.
- 2008, *COAG work program on water - November 2008 - agreed actions*.
- 2013, *Intergovernmental Agreement on Implementing Water Reform in the Murray Darling Basin*.
- CSIRO (Commonwealth Scientific and Industrial Research Organisation) 2016, *Super-Clusters*, Climate change in Australia - projections for Australia's NRM regions, <https://www.climatechangeinaustralia.gov.au/en/climate-projections/future-climate/regional-climate-change-explorer/super-clusters/> (accessed 21 May 2020).
- DAWE 2019a, *National Carp Control Plan - Department of Agriculture*, <https://www.agriculture.gov.au/pests-diseases-weeds/pest-animals-and-weeds/national-carp-control-plan> (accessed 25 March 2020).
- 2019b, *Australian Government Response to the Productivity Commission Inquiry on National Water Reform*, <https://www.awe.gov.au/about/reporting/obligations/government-responses/response-national-water-reform> (accessed 11 February 2020).
- DNRM (Qld) (Department of Natural Resources and Mines (Qld)) 2017, *Independent Audit of Queensland Non-Urban Water Measurement and Compliance*, <https://www.dnrm.qld.gov.au/water/independent-audit-of-queensland-non-urban-water-measurement-and-compliance> (accessed 22 November 2017).

-
- Doolan, J. 2016, *The Australian water reform journey*, Canberra.
- Glyde, P. 2020, *World Water Day offers opportunity to reflect on our changed climate*, Opinion Piece, 20 March, MDBA, Canberra.
- IA (Infrastructure Australia) 2019, *An Assessment of Australia's Future Infrastructure Needs: The Australian Infrastructure Audit 2019*, June, Sydney.
- Matthews, K. 2017, *Independent Investigation into NSW Water Management and Compliance: Advice on Implementation*, New South Wales.
- MDBA (Murray-Darling Basin Authority) 2017, *Basin-Wide Compliance Review*, Media release, 31 July.
- nd, *A path to water reform: timeline of water resource management in the Murray-Darling Basin*.
- NRMMC 2010, *National Water Initiative Pricing Principles*, Natural Resource Management Ministerial Council.
- NSW DPI 2019, *Fish kills in NSW*, <https://www.dpi.nsw.gov.au/fishing/habitat/threats/fish-kills> (accessed 25 March 2020).
- PC (Productivity Commission) 2011, *Australia's Urban Water Sector Volume 1*, Canberra, Australia.
- 2017, *National Water Reform*, Report no. 87, Canberra.
- 2018, *Murray-Darling Basin Plan: Five-year Assessment*, Report no. 90, Canberra.
- 2020, *Intergrated Urban Water Management: Why a good idea seems hard to implement*, Commission Research Paper, Canberra.
- PIRSA (Primary Industries and Regions South Australia) 2013, *Critical events for the Murray-Darling Basin*, http://www.pir.sa.gov.au/aghistory/left_nav/natural_resources/water_resources_ag_dev/murray-darling_basin/critical_events_for_the_murray_darling_basin (accessed 8 March 2017).
- Readfearn, G. 2020, '*A moment of complete despair*': last population of Macquarie perch all but wiped out in NSW river carnage, *The Guardian*, <https://www.theguardian.com/environment/2020/feb/15/last-population-macquarie-perch-nsw-river-carnage-bushfire-ash-fish-species> (accessed 30 March 2020).
- Sheldon, F. and Hamilton, D. 2019, 'An Ecosystem in Distress: The Need to Protect Flows and Enhance Ecosystem Resilience in the Barwon-Darling River', *ARI Magazine*, no. 3, https://www.griffith.edu.au/__data/assets/pdf_file/0027/953154/FINAL-PDF-ARI-Magazine-October-2019-web-1.pdf (accessed 28 February 2020).
- Vertessy, R., Barma, D., Mitrovic, Sheldon, F. and Bond, N. 2019, *Final Report Independent Panel fish deaths lower Darling*, https://www.mdba.gov.au/sites/default/files/pubs/Final-Report-Independent-Panel-fish-deaths-lower%20Darling_4.pdf (accessed 28 February 2020).
- WSAA 2019, *Blue + Green = Liveability*, 10 September, Water Services Association of Australia, Sydney.

Attachment A: Glossary

Domestic and stock	Water taken for domestic consumption and stock watering purposes
Environmental outcomes	Defined in the NWI as: maintaining ecosystem function (e.g. through periodic inundation of floodplain wetlands); biodiversity, water quality; river health targets.
Held environmental water	Water entitlements held and used (usually by Governments) for the purpose of achieving environmental outcomes (and other public benefit outcomes, where possible).
Indigenous	Aboriginal and/or Torres Strait Islander people of Australia
Integrated water cycle management	Unified management approach for delivering water supply, wastewater and stormwater management services
Metropolitan water service provider	Urban water and/or wastewater service provider in a major city. Also refers to jurisdiction-wide providers.
Other public benefits	Defined in the NWI as: mitigating pollution, public health (e.g. limiting noxious algal blooms), Indigenous and cultural values, recreation, fisheries, tourism, navigation and amenity values.
Planned environmental water	Rules contained in water plans that constrain the volume and timing of extractions, in order to ‘leave water behind’ for the environment. Examples of rules-based provisions include minimum stream flows, cease-to-pump rules and groundwater access rules.
Regional water service provider	Urban water and/or wastewater service provider in a regional area, generally with fewer than 50 000 connection, and. includes small regional providers (fewer than 10 000 connections)
Rural water service provider	Irrigation, stock and domestic, and other industrial water service provider
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 planning processes	A planning process that establishes rules for sharing water between the environmental needs of the river or aquifer and other water uses, including town water supplies, stock and domestic uses, industry and irrigation.
Water recovery for the environment	The acquisition of a water access right for the purpose of achieving an environmental outcome.

Attachment B: History of water reform in Australia

An overview timeline of Australia's history of water reform and key events is provided in box 2.

Box 2 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: Corporatisation and price regulation in the urban water sector begins
- 1994: COAG agrees to Water Reform Framework and National Competition Policy
- 1995: Initial cap on water diversions from Murray-Darling Basin river systems
- 1997: Millennium Drought commences (persists until 2009)
- 2004: National Water Initiative first agreed to
- 2007–2008: *Water Act 2007* (Cth) passed and Murray-Darling Basin Authority created as a result of the National Plan for Water Security. National Water Commission (NWC) undertakes first assessment of national water reform.
- 2008–2009: Further national water reform agreed to by COAG
- 2012: Murray-Darling Basin Plan takes initial effect
- 2013: Intergovernmental Agreement on the Implementing Water Reform comes into effect
- 2015: Responsibility for the assessing national water reform transferred to the Productivity Commission following the abolition of the National Water Commission
- 2017: Productivity Commission undertakes first National Water Reform inquiry
- 2019: Murray-Darling Basin Plan takes full effect

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

Prior to the 1980s, State and Territory Governments took a development-orientated approach to water resource management. Governments focused on expanding irrigated agriculture and investing in water infrastructure to meet the water needs of growing cities and towns. However, the costs of those infrastructure investments were often borne by Governments, rather than recovered from users, and water rights were issued relatively freely without considering the limited nature of water resources (PC 2017, p. 6).

Although this development-orientated approach served Australia well, major issues emerged during the 1970s and 80s. Emerging environmental problems, such as salinity, algal blooms, and poor river and wetland health, were linked to the over-extraction of water (PC 2017, p. 54). There was also a growing awareness that the existing approaches to providing water infrastructure were costly to taxpayers, and water service providers lacked incentives to improve service quality over time (PC 2017, p. 54).

In response to these issues, the Industry Commission conducted an inquiry into water resources and waste water disposal in 1992 (PC 2011, p. 1). Following this, the Council of Australian Governments (COAG) commenced work on a comprehensive national water management framework, resulting in the 1994 COAG Water Reform Framework (PC 2017, p. 6).

The COAG Water Reform Framework aimed to deliver sustainable water resource management through the:

- clarification of water rights
- provision of water for the environment
- development of water trading and markets
- cost-reflective and consumption-based pricing
- separation of service delivery and policy making
- corporatisation of major water utilities.

In 1995, the 1994 COAG Water Reform Framework was brought into the broader National Competition Policy (NCP) reforms, which recognised the importance of water to the Australian economy and the need for microeconomic reform in the area. State and Territory Governments received payments from the Australian Government once they successfully implemented the NCP reforms, providing an incentive for the States and Territories to meet their NCP commitments. The National Competition Council was responsible for assessing reform implementation (PC 2017, p. 55).

By 2004, there was growing evidence that water scarcity and overallocation were continuing to cause environmental problems. In the early years of what later became known as the ‘Millennium Drought’ (1997–2009), State and Territory Governments reviewed the 1994 COAG Water Reform Framework, and concluded that, while progress had been made in a number of key areas, reform was proving more difficult than originally anticipated — particularly in achieving environmental outcomes (Doolan 2016).

Informed by this review, COAG refreshed and extended the national water reform agenda through the National Water Initiative (NWI) and the establishment of the National Water Commission (NWC) in 2004 (COAG 2004, p. 2; PC 2017, p. 6). Unlike the previous 1994 COAG Water Reform Framework, the NWI did not form part of a broader set of reforms, nor did it include incentive payments (PC 2017, p. 55). The initiative aimed to increase the productivity and efficiency of water use in Australia while ensuring the health of rivers,

groundwater systems and other water assets. To achieve its objectives, a number of agreed outcomes and actions were set out (box 1), assessed by the NWC biennially.

In March 2008, COAG agreed to develop a work program on water with actions under four main themes:

- addressing overallocation and achieving environmental outcomes
- enhancing water markets
- urban water reforms
- water information and capacity building

In December 2009, COAG agreed to redouble its efforts to accelerate the pace of reform under the NWI (COAG 2008; PC 2017, p. 55).

Concurrent to water reform directly related to the NWI, further water reform was driven by challenges in the Murray-Darling Basin (MDB). The Australian Government's 2007 *National Plan for Water Security*, introduced at the nadir of the Millennium Drought, led to a range of reforms for the management of the MDB. Emphasising environmental sustainability, the National Plan included a process for returning water to the environment. A Basin Plan was conceptualised for the management of the MDB as part of the National Plan, but it was not passed through the Commonwealth Parliament until November 2012. In June 2013, the Intergovernmental Agreement on Implementing Water Reform in the Murray Darling Basin (IGA) came into effect. The IGA built on the 2008 COAG agreement, aiming to support the Basin Plan between Commonwealth and State Governments (COAG 2013).

Responsibility for assessing water reform progress every three years under the *Water Act 2007* (Cth) was transferred to the Productivity Commission in 2014, which completed its first inquiry into national water reform in December 2017. The inquiry found that prior water reform had been beneficial, having established secure property rights to water, and transparent processes for deciding how water is shared between environmental and consumptive uses. These reforms are prerequisites for water markets and trading, and have led to a greater focus on the environment and more sustainable water use. However, the Productivity Commission also found that the NWI was not adequate to meet emerging challenges posed by population growth, climate change and changing community expectations, and recommended that it be renewed.

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.

Copyright

- Copyright in submissions sent to the Commission resides with the author(s), not with the Commission.
- Do not send us material for which you are not the copyright owner — such as newspaper articles — you should just reference or link to this material in your submission.

In confidence material

- This is a public review and all submissions should be provided as public documents that can be placed on the Commission’s website for others to read and comment on. However, information of a confidential nature or which is submitted in confidence can be treated as such by the Commission, provided the cause for such treatment is shown.
- 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 a submission is published on the website. Please do not provide a 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 the 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

Due to the coronavirus (COVID-19) situation, we strongly prefer to receive submissions electronically. Submissions should be lodged using the online form on the Commission's website.

If you need to lodge by mail, please advise Marianna Olding on 03 9653 2194. Submissions lodged by post should be accompanied by a submission cover sheet. Please note there may be delays in processing submissions lodged by post.

Online* water.reform.2020@pc.gov.au

Post* National Water Reform 2020
Productivity Commission
Locked Bag 2, Collins St East
Melbourne VIC 8003, Australia

* If you do not receive notification of receipt of your submission to the Commission, please contact the Administrative Officer.

Due date for submissions

Initial submissions are sought by 21 August 2020.