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Government investment in major water infrastructure

Supporting Paper I

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GUIDE TO THE SUPPORTING PAPERS (AND DESCRIPTOR)

SP A Water entitlements and planning (*Entitlements and planning*)

SP B Water trading and markets (*Trading*)

SP C Environmental management (*Environment*)

SP D Securing Aboriginal and Torres Strait Islander people's interests in water (*Cultural access*)

SP E Ensuring the integrity of water resource management (*Integrity*)

SP F Urban water services (*Urban*)

SP G Urban water services: regional and remote communities (*Regional*)

SP H Water reform in rural Australia (*Rural*)

SP I Government investment in major water infrastructure (*Infrastructure*)

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Key points

- Under the National Water Initiative (NWI), all jurisdictions agreed that proposals for new and refurbished water infrastructure would be assessed as economically viable and ecologically sustainable prior to any investment occurring, with costs recovered from users in most cases.
 - Failure to abide by these requirements can burden taxpayers with ongoing costs, discourage efficient water use and result in long-lived impacts on communities and the environment.
- The NWI requirements are sound and should be retained, but the agreement says little on how to meet those requirements, or the role of government in funding water infrastructure. Poor project selection and funding decisions still occur — including those made by governments.
- The National Water Grid Authority's investment policy may improve scrutiny of future Australian Government-funded projects, but the policy's project assessment criteria include a broad rationale for government investment that may result in funding for projects that will not maximise national economic benefits.
 - Further, the Authority can only invest in infrastructure that provides water for primary industry. This limitation should be removed to ensure that the most beneficial projects can be funded.
- A renewed NWI should set a higher standard for project selection and funding decisions for major water infrastructure. This should form the basis of a new element that includes:
 - a commitment to all options being on the table, including both infrastructure and non-infrastructure options, where these can meet the investment objective
 - expanded requirements that include a commitment to infrastructure decision-making processes being culturally responsive to the interests of Traditional Owners
 - criteria for how project proposals can demonstrate adherence to the NWI requirements, including conditions for ecologically sustainable, economically viable and culturally responsive infrastructure decision-making processes, as well as principles for cost sharing between users and governments, and water allocation
 - a framework for government investment in major water infrastructure, including project assessment and selection processes, and institutional arrangements.
- Where governments choose to subsidise major water infrastructure in pursuit of broader strategic objectives, such as regional development, additional scrutiny is necessary to ensure water infrastructure is the best means of achieving that objective compared with alternatives.
 - Any investments made in pursuit of regional development must align with high-quality regional strategic planning, and only occur where water infrastructure has been shown to be a critical component of the most effective regional development option compared with alternatives (including those not reliant on new or redeveloped water infrastructure).
- State and Territory Governments have primary responsibility for overseeing major water infrastructure, with a limited (if any) role for the Australian Government. Independent bodies should assess major business cases prior to funding decisions, and publish their findings.

Major water infrastructure (including dams, weirs, distribution networks, desalination plants and water recycling facilities) is essential to delivering water services. But it is costly to build, maintain and ultimately replace, and can have significant (and at times detrimental) environmental and social impacts.

Many of these costs are borne upfront, but the benefits accrue over a long period. These benefits may be difficult to estimate in advance, creating uncertainty over the viability of a proposed development. Yet the substantial costs of infrastructure construction and refurbishment must still be paid for — either by users or taxpayers. How costs are shared between those parties affects both the prices faced by water users and any obligation borne by Australian taxpayers.

A decision to invest in new, expanded or refurbished water infrastructure therefore carries risk, and can have significant financial implications. Moreover, anticipated shifts in the availability and use of water resources — as a result of climate change and demographic factors — compound this uncertainty and create new risks for the viability of future infrastructure developments.

These factors reinforce the need for good decision making — particularly by governments, who must look to maximise the benefits of taxpayer funding and avoid facilitating developments that are not in the best interests of the community, including those which impose unnecessary costs on water users.

This paper includes:

- background information on government investment in water infrastructure under the National Water Initiative (NWI) and related guidance (section 1)
- issues raised about current decision making for major water infrastructure (section 2)
- a framework to guide government investment in major water infrastructure, including the principles to be satisfied — as requested by the inquiry’s terms of reference (section 3)
- the Commission’s view on how major water infrastructure should be included in a renewed NWI (section 4).

1 Background

1.1 The cost of uneconomic water investment motivated reform

For much of the 1900s, governments took a development-oriented approach to water resources by encouraging or directly funding the construction of major water infrastructure.

Some of these investments were not in the best interests of the Australian community. Government subsidisation allowed pricing below cost recovery levels, which spurred yet more proposals to construct unviable water infrastructure. Often, such calls were loudest during and after droughts. But these unviable infrastructure developments left a legacy of large debts, as well as the ongoing costs of maintaining assets. Much of this burden was placed on taxpayers.

The desire to avoid burdening water users and taxpayers with the costs of uneconomic investment decisions was one of the key drivers of national water reform, including the COAG water reforms (1994) and the NWI (2004).

1.2 NWI targets economically viable and ecologically sustainable infrastructure

Jurisdictions agreed that the outcomes of the NWI *Best Practice Water Pricing and Institutional Arrangements* element would include:

- promoting economically efficient and sustainable use of water resources, water infrastructure assets and government resources devoted to the management of water
- giving effect to the principle of user pays
- avoiding perverse or unintended pricing outcomes.¹

To guide investment in water infrastructure, NWI signatories agreed:

... to ensure that proposals for investment in new or refurbished water infrastructure continue to be assessed as economically viable and ecologically sustainable prior to the investment occurring (noting paragraph 66 (v)).²

The *NWI Pricing Principles* provide more detail on how to implement the ‘user pays’ principle — including where assets have been contributed by governments.

For new or replacement assets, [user] charges will be set to achieve full cost recovery of capital expenditures (net of transparent deductions/offsets for contributed assets and developer charges ... and transparent community service obligations). (NRMMC 2010, p. 6)

In other words, the principles allow for two circumstances where the full costs of government-funded water infrastructure are not recovered from water users:

1. where assets have been ‘contributed’ or paid for by a government (or another party, such as a housing developer³) with the intent of lowering water prices, or
2. where a government provides a transparent community service obligation (CSO) to fund a portion of the cost of the infrastructure (*SP G Regional*).

In either case, taxpayers (rather than users) bear a share of the costs of the investment.

¹ NWI paragraph 64.

² NWI paragraph 69. NWI paragraph 66(v) requires that infrastructure costs are recovered through user charges (set at lower bound levels) for all rural systems, with movement towards upper bound pricing where practicable. It also considers that, where subsidies are provided to meet social and public health obligations in areas where full cost recovery is unlikely to be achieved, any government-provided community service obligations (CSOs) should be publicly reported. (Lower and upper bound pricing are discussed more in the *Assessment*.)

³ A developer may still pass on those costs to the final purchaser of the development so the user of the infrastructure ultimately pays.

1.3 Most infrastructure investment is undertaken by service providers ...

Planning for, constructing, maintaining and refurbishing water infrastructure is a core business of corporatised water service providers (such as bulk, irrigation and urban water providers). Their decisions are, ideally, guided by internal assessments of the need for infrastructure in providing an agreed level of service to their customers, and the benefits and costs of alternative options (such as changing the operation of existing infrastructure).

Governments can also invest in infrastructure for the benefit of the environment. These investments are generally small, and include infrastructure that helps deliver water to key environmental sites (for example, channels and regulators) as well as fishways to enable upstream connectivity for native fish (SP C *Environment*).

Investments undertaken by corporatised entities would be expected to be consistent with the NWI requirement for economic viability. For example, user-owned irrigation networks have an incentive to ensure infrastructure decision making aligns with the interests of their users. And in urban areas, water service provider planning processes generally guide infrastructure decision making, with (in many cases) scrutiny from economic regulators. (These processes are discussed in SP F *Urban* and SP G *Regional*.)

Moreover, all infrastructure development proposals are subject to environmental, social, cultural heritage and other government approval processes, including water resource planning. Collectively, these processes help ensure compliance with the NWI requirement for ecological sustainability.

1.4 ... but government enthusiasm for public investment is strong

In addition, Governments have made significant commitments to invest in new or refurbished water infrastructure — particularly to support irrigated agriculture. Up to \$3.5 billion has been made available through the Australian Government’s 10-year National Water Grid Fund (box 1). Water projects are also eligible for concessional finance from the \$5 billion Northern Australia Infrastructure Facility.

The National Water Grid Authority (NWGA) is responsible for the National Water Grid Fund, and investment decisions are now subject to an investment policy framework (NWGA 2020a). Under that framework, eligible projects must involve new or additional infrastructure investment that increases water availability, reliability, efficiency and/or quality. Projects are limited to those that provide water for agriculture or primary industry, and must be brought forward by, or have strong support from, the relevant State or Territory Government (NWGA 2020a, p. 10).

Box 1 Australian Government water infrastructure initiatives

The Australian Government has committed \$3.5 billion to fund new water infrastructure through the development of the National Water Grid. The Grid aims to increase agricultural output, increase the availability and security of water, build resilience to a changing climate and support regional prosperity.

Programs

- Up to \$3.5 billion in water infrastructure funding will be provided through the National Water Grid Fund over ten years.^a As of 15 March 2021, \$1.5 billion has been spent or otherwise committed to projects.
- Water projects are also eligible for concessional finance from the \$5 billion Northern Australia Infrastructure Facility (NAIF).

Institutional arrangements

- The National Water Grid Authority (NWGA) was established in late 2019, following a 2019 election commitment. The NWGA sits within the Department of Infrastructure, Transport, Regional Development and Communications and administers the National Water Grid Fund, with all future commitments subject to its October 2020 *Investment Policy Framework*.
 - The National Water Grid Advisory Body was established in 2020 to provide independent expert advice to the Australian Government on infrastructure policies, projects and investment priorities. A charter guiding its operation was published in 2021.
- The North Queensland Water Infrastructure Authority was established on 12 March 2019 to coordinate the delivery of the Hughenden Irrigation Scheme project and the Hells Gates Dam Scheme with Australian Government funding. It sits within the infrastructure portfolio.
- Since 1 January 2021, Infrastructure Australia, the Australian Government's independent infrastructure advisor, is subject to a Ministerial statement of expectations to evaluate infrastructure project proposals where Australian government funding of more than \$250 million is sought. Prior to 2021, the evaluation threshold was \$100 million.

^a In the 2021-22 Australian Government budget, the National Water Infrastructure Development Fund was renamed to the National Water Grid Fund.

Sources: McCormack (2019, 2020b); NAIF (2021); NQWIA (2020); NWGA (2020a, 2020b, 2021d, 2021b).

Recent crises have led to a greater impetus for investment

Recent events, including drought in eastern Australia, have prompted action to expedite major water infrastructure investments.

- Infrastructure Australia's 2021 *Infrastructure Priority List* identified water security as a key investment theme, and included both 'bulk water supply security' and 'town and city water security' as high priority initiatives (IA 2021, pp. 70, 86).
- In response to drought conditions, the New South Wales Government passed the *Water Supply (Critical Needs) Act 2019*. The Act nominated four critical State significant infrastructure projects for expedited development — the:
 - Wyangala Dam wall raising project (Lachlan River)

-
- Mole River Dam (Border Rivers)
 - Dungowan Dam (Peel Valley)
 - Western Weirs program (Barwon-Darling and Lower Darling Rivers).

Further, inquiry participants have pointed to the need for significant investment in urban water infrastructure to address a significant infrastructure backlog in regional and remote areas, with assets in some areas reaching the end of their operational life and in need of replacement (TasWater, sub. 11, pp. 6–7; Goldenfields Water County Council, sub. 25, pp. 7–8; Urban Utilities, sub. 85, p. 3). Recent drought brought some of this into sharp relief (*SP G Regional*). The scale of renewals needed in some areas would require significant increases in prices, if funded entirely by users: LGAQ (sub. 32, p. 6) viewed that, in Queensland, the ‘capital requirement to maintain service capacity into the medium-term is beyond the fiscal capacity of local governments operating small regional and remote schemes’.

2 Issues with government investment in water infrastructure

As part of its assessment of progress against the NWI, the Commission considered whether jurisdictional frameworks for investment in major water infrastructure were adequate to enable NWI compliance (*Assessment*: section 3.2). And inquiry participants nominated some government-supported projects as non-compliant with the NWI — particularly with respect to economic viability and cost recovery.⁴ The Commission also considered these specific projects in its assessment.

In reviewing major infrastructure proposals since 2017, the Commission’s assessment found that not all projects adhere to the NWI’s requirements (*Assessment*: section 3.2). The business cases for two projects (Rookwood Weir and Stage 2 of the Houghton Pipeline Project) concluded that the benefit–cost ratios are likely to be less than one, indicating that their construction would cost more than the benefits they would generate for the broader community.⁵

Other projects, such as building a new Dungowan Dam and the Wyangala Dam wall raising project (both in New South Wales), have been publicly committed to prior to the development and publication of business cases. As discussed below, this is a failure of process that undermines proper scrutiny of investment decisions, and can result in poor projects being funded by governments.

The Commission’s assessment has concluded, overall, that jurisdictions are only partly achieving their rural infrastructure commitments under the NWI. There is clearly still more to do to ensure that NWI signatories (the Australian, State and Territory Governments) abide

⁴ IWF, sub. 30, pp. 16-17; Smit et. al., sub. 31, p. 3; AFA, sub. 45, pp. 9-10; WWF Australia, sub. 50, pp. 8-10; EDO, sub. 54, p. 16; LBA, sub. 70, pp. 27-28; Mackay Conservation Group, sub. DR150, p. 5.

⁵ Rookwood Weir is co-funded by the Australian and Queensland Governments and Stage 2 of the Houghton Pipeline is funded by the Queensland Government (NWGA 2021c; Townsville City Council 2021).

by the Agreement through their decision-making processes for new and refurbished infrastructure — a finding that reinforces the Commission’s 2017 conclusions (box 2).

Box 2 The Commission’s 2017 assessment: infrastructure

The Commission’s 2017 *National Water Reform* inquiry report concluded that:

Much of the recent direct government investment in water infrastructure has been shown to be inconsistent with jurisdictions’ commitments under the [NWI] to ensure all new and refurbished infrastructure is economically viable and environmentally sustainable. (p. 263)

In assessing progress against the NWI, the Commission concluded that jurisdictions had only partially achieved their commitment against the Agreement.

- For urban water infrastructure, the key shortcoming was the ongoing provision of capital grants to water service providers in regional New South Wales and Queensland.
- For non-urban water infrastructure, the Commission highlighted issues with the transparency of cost–benefit analyses and inconsistent application of the user-pays principle.

The Commission recommended that governments should not provide grant funding for infrastructure, or that part of infrastructure, that is for users’ private benefit. It proposed conditions for public funding or financing in a future NWI (recommendation 8.1).

Source: PC (2017a, pp. 263–287).

As noted above, investment decisions made by water service providers are generally guided by planning processes and those decisions are scrutinised (in most cases) by independent economic regulators. This usually ensures compliance with the NWI requirements for new and refurbished infrastructure (*Assessment*: section 3.2).

However, government investment in major water infrastructure can sit outside these planning frameworks, and scrutiny of these decisions is not as systematic. Further, the *NWI Pricing Principles* allow the costs of assets contributed by governments to be excluded from user charges, which means that government expenditure on new or redeveloped infrastructure may not be fully recovered from users.

This perpetuates the risk of governments investing in uneconomic infrastructure that imposes a range of long-lived legacy costs upon the community.

- Water infrastructure can operate for decades: operators require the capacity to finance the initial investment, adequate funding to operate and maintain it over its operational life, and the means to finance any necessary replacement.
 - These costs are usually borne by users, but if infrastructure is not economically viable, it can impose costs on users that exceed their willingness to pay. This can lead to excessively high water prices for users, or under-subscribed infrastructure.
 - Where full cost recovery from users is not in place, the cost of uneconomic investments can fall on governments (and therefore taxpayers), imposing direct costs (in either servicing public debt, or the second-round economic costs of raising

taxation revenue) and indirect costs (in that public funding is not allocated to more worthwhile uses).

- Major water infrastructure often carries significant environmental costs. For example, it can significantly alter flow regimes and connectivity along rivers and across landscapes, affecting seasonal wetting and drying cycles and impairing fish migration which, in some cases, can affect downstream commercial fisheries (NPFI, sub. DR155, p. 2). These long-lasting impacts can be difficult to ameliorate. It is not in the interests of the Australian community to incur these costs if there are no or limited net benefits from doing so.
- Projects can also impact on Aboriginal and Torres Strait Islander people's cultural heritage and values associated with water and water-dependent ecosystems. For example, constructing a dam can flood sites of cultural significance, and disrupt flow regimes that maintain the condition of cultural sites.

This section outlines concerns with the processes and frameworks that guide how governments invest in major water infrastructure, and considers whether the NWI should be amended to address those issues.

2.1 Inadequate project assessment and selection processes

Rigorous and transparent assessment processes are key to good infrastructure project selection (PC 2017a, p. 267). Inquiry participants have highlighted a number of shortcomings in recent processes.

- Project selection processes do not always identify a clear issue, or consider the full suite of options to address that issue (Smit et. al., sub. 31, p. 3).
 - Non-infrastructure options to improve water availability can include changes to seasonal water allocation policies or trade between sectors. These are often not considered — for example, the commitment to build a new Dungowan Dam was based on a feasibility study (discussed below) that explicitly excluded non-infrastructure options that could improve the security of Tamworth's water supply.
- Business cases are not long-term or comprehensive, and assumptions are not always rigorous or transparent.⁶
 - For example, if assumptions concerning the demand for irrigation water are too optimistic, there is a high risk that the infrastructure will fail to recover upfront and/or ongoing costs from users (WWF Australia, sub. 50, pp. 9–10). If a substantial proportion of entitlements from a new or expanded development remain unsold, this functions as an implicit (and opaque) subsidy to water users (PC 2017a, p. 256).
- Australian, State and Territory government infrastructure priorities are not clear, consistent or aligned, leading to unnecessary duplication (QFF, sub. DR161, p. 5).

⁶ IWF, sub. 30, pp. 16–20, sub. DR120, p. 6, FNQROC, sub. 51, pp. 2-3; Engineers Australia, sub. 63, p. 19; Wentworth Group of Concerned Scientists, sub. 68, p. 5.

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- Some State Government funding commitments (such as for Stage 2 of the Haughton Pipeline) have disregarded the recommendations of Infrastructure Australia’s independent project evaluations.
 - Multiple projects are being proposed in the same catchment without consideration of interdependencies (Business NSW, sub. 36, pp. 5–6; Mackay Conservation Group, sub. DR150, p. 6; NQCC, sub. DR157, p. 6).
 - Economic assessments for water infrastructure are too narrow compared with the well-developed methodologies in other infrastructure sectors. The Far North Queensland Regional Organisation of Councils (sub. 51, p. 3) noted that:

other applications of [Cost–Benefit Analysis] have well established methodologies that capture a fair swath of the external benefits that may accrue from large scale investments, for example roads. Cost Benefit Analysis of dam investment is more limited in its scope.
 - Some participants viewed that decision-making processes have lacked transparency. For example, in a submission to the draft report, the Institute for Water Futures (IWF, sub. 30, p. 16) observed the lack of transparency in the NWGA’s decision making.

There is insufficient publicly available information to assess 21 projects (with a total Australian Government funding commitment of \$1.15 billion) against all NWI criteria.⁷

As of 22 March 2021, the Australian Government had made public commitments to five projects prior to the completion of business cases, including three that were already under contract with the relevant State government (NWGA 2021a). This situation is of particular concern: business cases, a key part of project planning, substantiate whether the infrastructure is in the interests of the Australian community, and they also establish the case (if any) for funding part of the project through a government subsidy, rather than user charges. Governments are unlikely to back down from funding a project they have publicly committed to, which creates a risk that suboptimal projects are funded — even if subsequent analyses show that the projects are not worthwhile (PC 2014, p. 106).

Indeed, it is common for the costs of major water infrastructure projects to increase substantially between early feasibility work and final construction. A project with marginal net economic benefits may result in imposing a net cost on the community if this occurs. As outlined by the IWF (sub. 30, p. 17):

Best-practice processes for public investment are particularly important for construction of new large dams because these projects are highly susceptible to major cost overruns (see Ansar et al. 2014 for a global review). In an Australian context, Petheram et al. (2019) found that the median and mean cost overruns (relative to immediate pre-construction estimates) were 49% and 120% respectively for a sample of 40 historical projects where sufficient data was available.

One example is Dungowan Dam (box 3). The original proposal was based on an indicative cost of \$150 million (PC 2017a, p. 266). The revised cost of the preferred project (incorporating a new dam and pipeline) identified in a subsequent 2017 feasibility study

⁷ As of March 2021, the NWGA now publishes a summary table of project progress, including the status and expected timing of business cases and environmental approvals (NWGA 2021a).

(GHD 2017, p. 56), was \$484 million and it is likely that the costs will again change during the final business case development. Nevertheless, the Australian and New South Wales Governments have publicly committed to the project (although the funding agreement between the governments includes a ‘pause point’ that allows the Australian Government to reassess its funding contributions following the outcomes of the final business case (RRATLC 2021, pp. 47–48)).

Box 3 Poor decision making for Dungowan Dam

In 2016, the Australian and New South Wales Governments committed \$150 million to the construction of a new Dungowan Dam (PC 2017a, p. 266). The rationale for the project was that growth in Tamworth’s urban water demand would affect reliability for general security licences in the Peel system, as well as downstream licences in the Namoi (WaterNSW 2018, p. 26).

A 2017 feasibility study estimated a benefit–cost ratio of 1.06 for constructing a new 22.5 GL dam and pipeline, increasing water availability by 6 GL a year on average with a total project cost of \$484 million (including \$282 million for a new dam) (GHD 2017, pp. i, 13, 56, 68). Most of the estimated benefits were derived from improving Tamworth’s town water security, with increased irrigated agricultural production representing less than 2 per cent of the project benefits (GHD 2017, p. 68).

In 2019, the Australian and New South Wales Governments each committed to provide half of the project cost (McCormack et al. 2019), with a contract signed by the two governments on 22 January 2021 (NWGA 2021d). The contract includes a ‘pause point’ that allows the Australian Government to reassess its funding contributions following the outcomes of the full business case (RRATLC 2021, pp. 47–48), which is expected to be completed in late 2021, alongside environmental impact assessments (WaterNSW 2020).

Discussion

The feasibility study underpinning this funding commitment has three key shortcomings.

- The benefit–cost ratio of 1.06 is marginally viable and contingent on many assumptions (such as the willingness of Tamworth residents to pay to avoid water restrictions).^a Any changes to assumptions, including increases in construction cost, risk the project becoming unviable.
- Non-infrastructure options to improve Tamworth’s water security were explicitly excluded from the analysis (GHD 2017, p. 14). Some of these options may be a considerably more cost-effective means for the New South Wales Government to secure Tamworth’s water needs.
 - For example, Tamworth City Council could purchase equivalent general security entitlements (in long-term annual average terms) for about 2 per cent of the cost of Dungowan Dam.^b

(continued next page)

Box 3 (continued)

- The project scope was narrowly defined. Although the study was prompted by pressure on Tamworth's bulk water supplies during the Millennium Drought, the analysis focused on long-term water supply, rather than ensuring water security during extreme events.
 - The NSW Water Directorate (sub. 37, p. 7) observed that, during the 2017–19 drought, the seasonal water allocation process under the catchment water plan was not as effective as it could have been in protecting town water security, even with the expansion at Chaffey Dam. Indeed, in the year prior to Tamworth's level 5 restrictions, more water was allocated to general security licence holders than for urban water use (WaterNSW 2019).

The justification for the project is to ensure water security for Tamworth while maintaining access for general security irrigators. However, doing so through the proposed dam is likely to be costly relative to the value of that water. The project is estimated to provide an additional 6 GL of water a year (on average) which, based on current market prices for general security entitlements, would cost about \$11 million.^c If the additional water from the project were sold to irrigators at full cost, it would be valued at more than \$60 000/ML.

Moreover, as the proposed project is within a fully-allocated water system, it will result in an implicit (and expensive) transfer of water. Any infrastructure that improves reliability for one user will affect water availability for others. In this case, the feasibility study identified that a larger storage would lead to the Peel water sharing plan cap becoming binding, thereby reducing supplementary access (water extractions during infrequent high-flow events) for Namoi River irrigators (GHD 2017, p. 19).

^a The study assumed that the current pipeline is replaced under the base case, and the estimated project benefit–cost ratio includes the avoided cost of this capital (GHD 2017, pp. 54–55). ^b Based on 75 per cent reliability, a Peel General Security entitlement price of \$1341/ML (the 2018-19 weighted average Peel General Security entitlement price (Aither 2019)), and a maximum potential shortfall of 5.5 GL a year by 2065. ^c Based on 75 per cent reliability and a Peel General Security entitlement price of \$1341/ML.

The creation of a dedicated Australian Government body in 2019 to assess water infrastructure projects suggests that there should now be greater scrutiny of decision making, and many aspects of the NWGA's *Investment Policy Framework* (box 4) — including the requirements for State support and alignment with the NWI — represent potential improvements in project assessment and selection. If implemented, the framework will address some of these shortcomings for future government funding commitments.

But that said, more than \$1.5 billion of the \$3.5 billion made available by the Australian Government has (as of 15 March 2021) already been committed to projects, and many of those commitments preceded the publication of the investment policy: about \$1 billion reflects completed projects or projects under contract with State governments, and a further \$490 million reflects funds committed to projects in the planning stage (NWGA 2021d). The Commission's assessment found that some of those committed projects have unviable or marginal benefit–cost ratios, while others do not yet have completed business cases.

Box 4 Principles of the NWGA Investment Policy Framework

1. Projects should be of demonstrable public benefit and have a national interest element, including through securing the nation's water security, building resilience to future drought, supporting primary industries and promoting regional prosperity, including through the creation of jobs.
2. There must be strong State support including funding contributions, and involvement of the private sector and local government, where appropriate.
3. The investment should provide the highest net benefit of all options available to increase access to water, taking into account economic, social and environmental impacts.
4. Projects should look to address circumstances which cannot be effectively addressed by private proponents, states or territories or other stakeholders alone.
5. Projects should align with the National Water Initiative principles including appropriate cost recovery, and where full cost recovery is not deemed feasible, any subsidies are fully transparent.
6. If providing capital, a consistent, robust analysis of costs and benefits is used and assessment of appropriate funding and financing arrangements is undertaken.
7. Earlier involvement in project identification and development, including through the NWGA's science program, support for business case development, and close collaboration with states and territories and other project proponents.

Source: NWGA (2020a, p. 4).

2.2 The case for rural water infrastructure subsidies is not clear

Government subsidies can be warranted in limited cases ...

In principle, government infrastructure funding can be warranted where projects generate public benefits — for example, where non-users receive economic benefits from the infrastructure (indirect beneficiaries), or where it would be too costly (or inequitable) to identify and charge each individual user. The presence of public benefits may lead to under-provision of otherwise worthwhile infrastructure if investment funding is left solely to the private sector (PC 2014, p. 110). In the case of water infrastructure, public benefits can include flood mitigation and dam safety.

Similarly, a degree of government funding for urban water service provision may be justified on equity grounds to ensure access to a basic essential service in high-cost regional or remote areas (SP G *Regional*). In those cases, a government subsidy for a share of infrastructure costs can be warranted.

... but some government investment frameworks take a broader view

However, the NWGA's *Investment Policy Framework* takes a broader view of the rationale for government investment in major water infrastructure (box 4: principle 1). Reflecting the

objectives of the National Water Grid (box 1), the NWGA (2020a, p. 4) will consider Australian government funding for projects that are:

... of demonstrable public benefit and have a national interest element, including through securing the nation's water security, building resilience to future drought, supporting primary industries and promoting regional prosperity, including through the creation of jobs.

Under their investment principles, the NWGA also considers that Australian government involvement can be justified to 'address circumstances which cannot be effectively addressed by private proponents, states or territories or other stakeholders alone' (box 4: principle 4). Overall, the investment framework looks to underpin a role for the Australian Government in supporting regional development through water infrastructure projects.

Regional development risks being used to justify unviable projects

At times, Governments choose to fund economically unviable water infrastructure in pursuit of broader objectives such as regional development. But unless governments recover funding provided for water infrastructure developed for the benefit of primary industry from users, then this investment equates to subsidising a commercial operation and undermines the NWI user-pays principle. This is the case for both new infrastructure, and redevelopments that aim to improve reliability for existing users. As the Commission noted previously:

Past irrigation infrastructure projects have been justified by private benefits captured by irrigators. The use of government grants to build such infrastructure results in the associated cost being borne by taxpayers even though they (as part of the broader community) receive little of the resultant benefits. (PC 2017a, p. 279)

Although the NWGA framework excludes projects that supply water for the exclusive use of a private business or individual (NWGA 2020a, p. 1), and prioritises investments that 'provide the highest net benefit of all options available to increase access to water, taking into account economic, social and environmental impacts' (box 4: principle 3) — both of which are good practice — the framework does not require a *positive* net benefit. Moreover, the NWGA does not fund solutions that may address the investment objective through non-water infrastructure means, such as inter-sectoral trade, or changes to seasonal water allocation policies.

The NWGA framework may therefore facilitate funding for projects that would not pass a strict economic viability test (based on delivering a positive net benefit), because the framework's national interest test recognises broader outcomes that are not considered as benefits within an economic assessment. This includes secondary impacts (such as job creation) that are not included in a benefit–cost calculation as they represent double-counting (ATAP nd).

Care must be taken when selecting infrastructure projects on the basis of secondary impacts. Any public expenditure in an area creates flow-on economic impacts, which can simply represent a transfer of resources and jobs between regions. Instead, this type of spending should be compared against other means of increasing regional employment, which may be more cost-effective than a water infrastructure investment. The availability of Australian

Government funding through the National Water Grid Fund, alongside its broad public interest test, risks biasing State and Territory priorities towards infrastructure solutions — without assessing other, more cost-effective means to enable regional economic growth or improve water security.

Major water infrastructure is not always an effective form of regional development

A further risk from government funding of major water infrastructure in pursuit of regional development is that the desired outcomes may not materialise. An approach of ‘just adding water’ (without securing demand) assumes that any additional water access or security will necessarily be put to productive use and generate employment — an assumption that is not always borne out even with subsidised water charges.⁸ The Commission’s 2017 analysis suggested that major irrigation infrastructure developments tended to create few ongoing jobs, and often at a high cost (table 1). Some major investment decisions have similarly lacked a demonstrated demand for water prior to the decisions being made — with business cases failing to build the case for irrigation infrastructure being a sound and preferred means to advance regional development.⁹

Overall, this approach perpetuates the risk of public investment in projects that are unlikely to achieve their anticipated objectives (in terms of regional development), despite substantial public cost.

⁸ For example, in 2017 the Commission noted that 85–90 per cent of the water made available by the construction of Paradise Dam had not yet been sold to users (PC 2017a, p. 275). As of May 2020, 80 per cent of the Paradise Dam entitlements remained unsold (SunWater 2020, p. 9).

⁹ For example, the business case for Rookwood Weir (also discussed in *Assessment*: box 3.4), highlighted a ‘potential opportunity’ to expand agricultural production (Building Queensland 2017, p. 14), but this was not determined through a holistic regional development strategy, nor was the weir identified elsewhere as being critical to supporting increased agricultural production. The *Rockhampton Regional Water Security Strategic Assessment* also did not identify robust demand for irrigation water in that region (Queensland Government 2016).

Table 1 Sample of irrigation infrastructure employment outcomes

	Ord Stage 2	Duck	Swan Valley
Jurisdiction	WA	Tas	Tas
Cost to government (\$m)	334 ^a	32	18
Project completion	2014	2018	2018
Number of irrigators holding entitlements	150 ^b	26	15
Ongoing jobs created	61 ^c	50 ^d	16 ^e
Cost per job created ^f (\$m per full-time equivalent)	5.5 ^c	0.6	1.1

^a Funding from the Western Australian Government for irrigation infrastructure works only. A further \$195 million was provided by the Australian Government for supporting social projects and infrastructure.

^b There are approximately 100 surface water and 50 groundwater licences in the Ord River region; data limited to the Stage 2 area were not available. ^c Excludes 10–15 seasonal workers. Cost per job excludes Australian Government funding. ^d Approximate. ^e Estimate; actual data not available. ^f Calculated by dividing the cost to government by the number of jobs created.

Sources: BOM (2018); Minister for Agriculture and Water Resources and Senator for Tasmania (2019); Minister for Agriculture and Water Resources, Minister for Primary Industries and Water (Tas) and Federal Member for Lyons (2016, p. 2); Minister for Primary Industries and Water (Tas) (2018); Public Accounts Committee (2019, p. 3); Tasmanian Irrigation (2018b, 2018a, 2020); Western Australian Auditor General (2016, pp. 7, 23).

2.3 Climate change elevates the need for careful project selection

Planning for long-lived water infrastructure in an increasingly dynamic world is difficult, and with a changing climate, parts of Australia are experiencing more variable patterns of rainfall, streamflow and evaporation (IWF, sub. 30, pp. 12–13; EDO, sub. 54, p. 14; Engineers Australia, sub. 63, p. 19).

This has implications for infrastructure planning.

- The expected yield and reliability of new (and existing) infrastructure assets will change, and estimates may become less reliable because of uncertainty over the magnitude of rainfall or runoff changes. This affects estimates of sustainable extraction from particular catchments (EDO, sub. 54, p. 16), as well as increasing the likely cost of water to users as infrastructure development and operational costs will have to be spread across lower water allocations.
- A drier climate may create a ‘premium’ for water security, and greater value for water source diversification in urban areas (SP F *Urban*). But it may also lead to increasing demands on governments to help communities and industries contend with drier conditions, particularly if there are critical shortages in a water system during drought.
- Economic change, as a result of climate change and other economic drivers, will continue to affect land use patterns in regional Australia. This will create demand risks for fixed

infrastructure, such as irrigation distribution networks where supply costs may be particularly sensitive to reductions in water use.

Each of these factors affects the viability of current and future infrastructure, emphasising the need to ensure that proposals for government-funded water infrastructure are rigorously assessed.

Careful consideration of proposals is unlikely to occur where governments commit funding prior to the development of robust business cases, where project selection and assessment processes are uncoordinated and opaque, or where assumptions underpinning economic analyses or purported regional development outcomes are not published and scrutinised by the wider community or independent expert bodies.

2.4 Should the NWI be amended?

Maintaining the past approach to major infrastructure project selection is likely to impose more unnecessary costs on taxpayers, water users and the environment.

This situation, in part, reflects shortcomings of the NWI and its minimalist requirements for new and refurbished infrastructure. The requirements are sound and, if complied with, would ensure that government investment in major developments only occurs rarely and where clearly justified. But on their own, they are inadequate to ensure that only the most beneficial projects are selected (or funded) by governments. Particularly, the NWI does not:

- provide a framework to ensure only the most worthwhile projects are selected
- specify the circumstances where government subsidies for water infrastructure are justified.

Some improvements are likely to arise through other recent policy tools, including some State-based infrastructure prioritisation publications, as well as the NWGA's 2020 *Investment Policy Framework* which includes NWI compliance as a principle.

However, the questionable merits of some existing commitments indicate that the problems are not yet solved. As noted above, the NWGA's broad public benefit test is not fully consistent with NWI requirements. The risk of suboptimal infrastructure investments has not been fully mitigated.

A clearer standard for infrastructure decision making in a renewed NWI would ensure that a set of criteria, agreed to by the Australian, State and Territory Governments, are embedded as part of longer-term water reform. This would allow for major infrastructure decisions to be held to account against those requirements, while allowing for ongoing independent assessment of implementation of those principles by all governments.

3 A framework for investment in major water infrastructure

The terms of reference ask the Commission to consider the ‘principles to be satisfied for any government investment in major water infrastructure projects’.

The NWI requirements are sound in principle: proposals should be demonstrated as both ecologically sustainable and economically viable prior to investment (although neither term is defined in that agreement), and, in accordance with the NWI pricing commitments, users should ultimately bear the costs of infrastructure. This requirement should continue to guide all investments in water infrastructure — including where governments make significant investments in new or redeveloped infrastructure.¹⁰

Further, this high-level requirement should be expanded to ensure that the development of major water infrastructure is culturally responsive to the interests of Aboriginal and Torres Strait Islander people. As discussed below, for major projects this could include commitments to deep consultation with affected Traditional Owners, and identifying and addressing impacts on cultural heritage.

Yet the Commission’s assessment has highlighted project selection that is inconsistent with the existing NWI — and with public infrastructure funding principles more generally. The issue is not one of principle, but of implementation, in that the minimalist NWI requirements have not been adequate to prevent poor investment decisions.

This section outlines a framework to guide government investment in major water infrastructure, including:

- high-quality and transparent project selection and assessment processes
- clearly-defined criteria to give effect to an expanded NWI infrastructure requirement in project assessment for major water infrastructure
- principles for cost sharing (including government subsidies) and allocating water from developments
- institutional arrangements to underpin the framework.

Section 4 provides the Commission’s overall advice on NWI renewal.

3.1 Project assessment and selection processes

The objective of project selection is to ensure, at a minimum, that any major water infrastructure development is in the public interest; that is, the benefits of the option selected clearly outweigh the cost, and no alternative to address the issue at hand is likely to deliver

¹⁰ One exception where government investment in economically unviable infrastructure may be justified is to provide safe drinking water to a regional or remote community. This case is considered below.

a larger net benefit. This should be based on a robust and transparent assessment of the relative merits of different options (including non-infrastructure options).

In 2019, Infrastructure Australia published a set of principles to guide infrastructure decision-making processes across all sectors (box 5). The principles were developed in response to Infrastructure Australia's concerns over transparency in decision making, projects being developed without fully considering all available options to address the problem, and projects being committed to before a business case or economic assessment had been prepared (IA 2018b, p. 1).

As discussed in section 2, similar issues afflict decision-making processes for major water infrastructure — particularly, long-term planning is not consistently used to identify explicit problems or opportunities, multiple options (including both infrastructure and non-infrastructure solutions) are not always considered, and governments have announced their preferred options prior to business case development on a number of occasions.

Box 5 Infrastructure Australia's decision-making principles

In 2018, Infrastructure Australia published a set of principles to guide infrastructure decision making.

1. Governments should quantify infrastructure problems and opportunities as part of long-term planning processes.
2. Proponents should identify potential infrastructure needs in response to quantified infrastructure problems.
3. Proponents should invest in development studies to scope potential responses. This includes responses that make better use of existing infrastructure, or reform of regulatory and pricing settings.
4. Where an infrastructure need is identified, governments should take steps to ensure potential responses can be delivered efficiently and affordably.
5. Governments should undertake detailed analysis of a potential project through a full business case and should not announce a preferred option or cost profile before undertaking detailed analysis involving multiple options.
6. Proponents should assess the viability of alternative funding sources for each potential project.
7. Project proposals should be independently assessed by an appropriate third party organisation.
8. Governments and proponents should undertake meaningful stakeholder engagement at each stage, from problem identification and option development to project delivery.
9. Governments and proponents should publicly release all information supporting their infrastructure decisions.
10. Governments should commit to, develop and release post-completion reviews.
11. Where projects are funded as part of a broader program, the corresponding decision-making processes should be robust, transparent and prioritise value for money.

Source: IA (2018b).

In general, Infrastructure Australia’s principles would provide a sound basis to underpin water infrastructure project selection processes, and adherence to this decision-making process would help avoid uneconomic investments. Many are already reflected under the NWGA’s *Investment Policy Framework*, although endorsement through a renewed NWI would allow for ongoing independent assessment of implementation of those principles.

At the very least, project proponents should ensure they:

- identify and quantify a clear problem or opportunity, with reference to existing long-term planning
- undertake options assessments and feasibility studies to identify the most promising solutions (which may not require additional water infrastructure, nor government investment — all options should be on the table)
- develop a robust business case to establish whether those options are economically and/or commercially viable (based on criteria discussed below)
- subject the business case to public and/or independent critique (discussed below as part of the criteria for economic viability)
- select the most worthwhile option based on that business case.

Each stage of the decision-making process should be coupled with meaningful stakeholder engagement, including with local governments, communities, natural resource management bodies, Traditional Owners, water service providers and infrastructure advisory bodies. Further, those decisions should be transparent and based on the best available evidence and information.

Importantly, government funding or financing for a project should only be committed following an assessment of all sources of funding (consistent with box 5: principle 6), which occurs after the business case is prepared. (The conditions where government investment may be warranted are discussed below as part of cost-sharing arrangements.)

Post-completion review

A clear evidence base should be developed to support an adaptive approach to improve the quality of business cases and to support effective project selection. As Engineers Australia (sub. 63, p. 19) noted, there is clear value in a public review of the outcomes of major projects. For example, the Infrastructure Australia (2018b, p. 3) model of a post-completion review (box 5: principle 10) focuses on:

- measuring whether the economic case for a project established in its business case is realised over time through performance measures
- whether the project was delivered on time and on budget
- whether unforeseen risks emerged and how they were managed
- extracting lessons to feed into future infrastructure development and delivery processes.

Ensuring post-completion reviews of major water projects would, over time, help project proponents address the risk of overly-optimistic project estimates (such as for water demand, job creation or social benefits) by better refining the assumptions used to underpin those estimates.

3.2 Criteria for major infrastructure development under the NWI

The following considers the necessary criteria to be fulfilled in order for a major water infrastructure project to comply with the expanded NWI requirements — irrespective of whether government funding is sought. The detailed business case for a major project should demonstrate how these criteria are fulfilled, as part of the project selection process and prior to both the commencement of works and any commitment of public funding for construction.

In many cases, the Commission’s suggested criteria simply embeds existing practice under State and Territory project development and approval processes, as well as the NWGA’s *Investment Policy Framework*. But in other cases, these criteria will guide improvement in project assessment and address identified shortcomings in infrastructure decision making (section 2). Any agreed criteria need to be fit for purpose and proportionate to the size of the investment (with major projects requiring more detailed scrutiny).

Ecological sustainability

Ecological sustainability is a fundamental requirement of any major development, and the environmental impacts of a proposed development should be identified as part of the business case (including in the assessment of benefits and costs of the project) to inform the project selection process.

In keeping with current practice, ecological sustainability is also contingent on:

- compliance with high-quality and NWI-consistent entitlement and planning frameworks, which should be in place prior to construction,
- compliance with State, Territory and/or Australian government environmental approval processes (undertaken after project selection).

Ensuring water plans are of high quality

As discussed in *SP A Entitlements and planning*, the NWI’s water planning framework does not adequately account for the long-term impact of climate change on water resource availability and reliability.

To ensure future major developments are ecologically sustainable over the long term, and to provide greater assurance over the reliability characteristics of any consumptive entitlements provided, a high-quality water plan (based on the best available information and best

practice) should be in place *before* infrastructure is constructed. To ensure ecological sustainability of new or redeveloped infrastructure, a high-quality water plan should:

- establish the environmental water provisions necessary to meet agreed environmental outcomes against anticipated regional-scale climate change
- set out the social, economic and cultural outcomes sought from the water plan
- clearly define the expected reliability of water rights, taking into account the likely impacts of climate change on the region
- be developed with robust community engagement to reflect community values. (SP A *Entitlements and planning*).

Where a major development is approved in an area without a water plan in place, the relevant State or Territory government should develop a plan that specifies the agreed environmental outcomes, accounting for the anticipated impact of the water infrastructure, and ensure that the plan is in place before the infrastructure is commissioned.

Where a major development is approved in an area subject to a water plan, all projections of water availability should be made with an understanding of the impact of climate change, as well as the impact that the proposed development will have on existing entitlements and all aspects of current planned environmental flows.

Projects must also comply with relevant State, Territory and/or Australian government environmental approval processes. Although this occurs after project selection, the costs of complying with those approvals should be considered as part of the business case.

Economic viability

As required by the NWI, the economic viability of any new or redeveloped infrastructure should be established during the development of a comprehensive business case. This helps ensure that the full range of options are considered, the option which offers the greatest net benefit to the community is selected, and projects that represent a net cost to the Australian community are avoided.

Cost–benefit analysis (CBA) is the key tool underpinning an economic appraisal. It allows ‘the economic, social and environmental merit of a project proposal to be identified, measured, valued and compared’ (IA 2018a, p. 18). This demonstrates whether a project is in the best interests of the Australian community in aggregate, while also considering the nature and distribution of benefits and costs, and comparing each of those with alternative ways of addressing the policy issue (such as alternative infrastructure projects, or changes to policy or regulatory settings).

The basic principle is that the detailed business case for a major infrastructure development should demonstrate that the expected benefits of the project exceed the likely costs over its full expected lifetime — usually considered as a benefit–cost ratio (BCR) greater than one.

These economic assessments inevitably rely on assumptions, forecasts and projections — each of which embodies a level of uncertainty. Marginally positive BCRs warrant close attention. For example, the Commission has previously found that ‘unless the tendency for optimism bias [overestimated benefits and underestimated costs] is successfully overcome ... a project with a benefit–cost ratio just over one will likely impose net costs’ (PC 2014, p. 93). Such projects should not be considered as economically sound unless supported by appropriate risk and sensitivity analyses that account for the possibility of key assumptions not holding, particularly in regard to demand for water (discussed below).

In general, the quality of water infrastructure businesses cases can be variable. These analyses should be robust. Achieving this requires a few conditions to be met.

Transparent and rigorous economic assessment

Economic assessments must consider long-term benefits and costs for users (including irrigators, communities and Traditional Owners) from improved access to water, relative to a clearly defined base case. Assessments should also consider the benefits and costs for non-users, including downstream communities, the environment, and Aboriginal and Torres Strait Islander people’s cultural heritage and values associated with water.

Many of these benefits and costs are difficult to quantify, and will often be reliant on assumptions. For example, although climate change may create a premium for water security, uncertainty over future rainfall and evaporation creates further uncertainty over the likely benefits and costs of an infrastructure investment. An important way to ensure the assumptions underpinning these estimates are robust is for them to be subject to public or independent scrutiny. For major water infrastructure projects, business cases should be published as a matter of course. This is not currently the case in all jurisdictions (*Assessment*: section 3.2). For example, the Queensland Government publishes business cases for projects funded under Australian Government water infrastructure programs (Queensland Government, pers. comm., 15 September 2020), while the New South Wales Government typically does not (sub. DR138, p. 12).

A common reason that business cases are not published is to protect commercially sensitive information (BHP, sub. 26, p. 5; NSW Government, sub. DR138, p. 12). Failing to publish business cases on the basis of commercial confidentiality should not be the norm. In some instances, sensitive information may simply be redacted from publicly available business cases, if this does not significantly detract from assessing investment merits. In cases of material commercial sensitivity, a qualified independent body should assess the quality of business cases for major projects in-house and publish their findings prior to project approval, as Infrastructure Australia currently does for major Australian Government investments. (This is also considered as part of the institutional arrangements below.)

Validating demand for water infrastructure

As noted above, overly-optimistic estimates of water demand are a key shortcoming of some major water infrastructure projects (PC 2017a, p. 273). This ‘optimism bias’ is a key risk in many infrastructure projects (PC 2014), putting further uncertainty over the viability of some projects: many of the mooted economic benefits may not materialise, and projects with marginally positive net benefits may turn out not to be worthwhile.

Tools exist to help address this bias upfront, and help to ‘de-risk’ investments by demonstrating that the project is worthwhile under a range of scenarios (and limiting the government’s ongoing liability in the event that reality falls materially short of expectations).

In keeping with better practice, sensitivity analysis should be utilised to consider the impacts of alternative scenarios — such as climate change and regional economic change — on demand and supply for water.

It should also become common practice to secure demand for any new or expanded irrigation infrastructure upfront, for example, by auctioning a share of water access entitlements to users prior to construction — as has been done in the Tasmanian Irrigation program (PC 2017a, p. 286). This ensures ‘buy-in’ and provides investor certainty. The Queensland Government has also published guidelines on how to assess the demand for water in business case development, including a customer commitment strategy through the phases of project development (DNRME (Qld) 2020).

Identifying social and distributional impacts

A robust CBA should also consider the wider socioeconomic impacts of major infrastructure, which can be positive or negative (IA 2018a, p. 32), and include distributional effects, such as income losses or gains for different regions or income groups. These impacts are not always considered within the economic costs and benefits that form the benefit–cost ratio — in many cases they represent transfers between sectors of the economy, rather than economic gains or new activity. However, they can be a key area of community concern.

Identifying the anticipated socioeconomic impacts of major water infrastructure can help governments manage negative adjustment pressures resulting from the development if it occurs, especially in shared systems (SP H *Rural*).

Further, some government funding decisions are made in an attempt to influence those distributional outcomes (for example, favouring economic activity in one region over another in order to encourage regional development). Such decisions require a high standard of rigour and transparency to justify the public expenditure — prior examples have shown that, similar to estimates of water uptake, estimates of job creation can undershoot expectations (at times, spectacularly). In this case, the onus is on governments to demonstrate that the project in question is likely to be a cost-effective means of achieving their policy objective (discussed below under cost sharing).

Culturally responsive infrastructure development processes to incorporate the interests of Traditional Owners

In addition to the existing NWI requirement for new and refurbished infrastructure, proponents should be required to account for impacts on Aboriginal and Torres Strait Islander people's heritage and other cultural values associated with water separate from ecological sustainability considerations.

As noted in SP D *Cultural access*: section 4, consideration of impacts on cultural heritage is usually done through compliance with State, Territory and Australian government cultural heritage assessments that occur once a project has been selected, as well as engagement with the relevant Traditional Owners.

However, to better protect the interests of Traditional Owners — and to support the inland waters target under the National Agreement on Closing the Gap — a renewed NWI should ensure that the processes for developing major water infrastructure are culturally responsive. That is, the aspirations and concerns of Traditional Owners are understood, discussed and considered in developing plans for major infrastructure, and project proponents specifically identify and account for impacts on Aboriginal and Torres Strait Islander people's heritage and other cultural values associated with water.

In its draft report, the Commission requested information on how a refreshed NWI could ensure that major water infrastructure investments most effectively promoted the aspirations of Traditional Owners. Feedback on the draft report supported an additional requirement to ensure infrastructure development is culturally responsive.¹¹ However, many participants requested that the requirement for cultural responsiveness stipulate what this would entail, particularly in relation to protecting heritage, sacred sites and culturally important places (NLC, sub. DR134, p. 28; MLDRIN, sub. DR185, p. 6) and requirements for consultation with affected Traditional Owners (LBA, sub. DR133, p. 16; MLDRIN, sub. DR185, p. 7). The Northern Land Council (sub. DR134, p. 29) suggested that:

The NWI refresh [should] promote the requirement to undertake activities that go beyond the minimum level of cultural site protection, and recognise that to promote the aspirations of Aboriginal people, effective and meaningful engagement must occur early and often.

The Commission sees two criteria that could underpin a requirement for culturally responsive water infrastructure development. At a minimum, culturally responsive infrastructure development would:

1. incorporate deep engagement with the Traditional Owners of potentially affected areas (both at the infrastructure site and downstream) as part of business case development
2. comprehensively identify and manage impacts on cultural heritage in affected areas.

¹¹ LBA, sub. DR133, p. 16; NLC, sub. DR134, p. 28; IRN, sub. DR136, pp. 12-13; NSW Government, sub. DR138, pp. 16-17; LGNSW, sub. DR147, p. 10; NQCC, sub. DR157, p. 3; MLDRIN, sub. DR185, pp 6-8; VicWater, sub. DR191, p. 2.

Determination of the specific criteria that should be met by major infrastructure developments and included in a renewed NWI should occur as part of the co-design process led by the national Committee on Aboriginal Water Interests (SP D *Cultural access*). This process could consider existing frameworks for engagement with Indigenous Peoples, the principle of free, prior and informed consent (as set out under the United Nations Declaration on the Rights of Indigenous Peoples), and look to align with (rather than duplicate) State and Territory cultural heritage protection legislation.

In undeveloped systems, there is an opportunity to consider providing consumptive entitlements to Aboriginal and Torres Strait Islander people. These may be provided to compensate for the identified impacts of an infrastructure project, to contribute to the future development of that community and to assist in meeting commitments under the National Agreement on Closing the Gap. Governments should give serious consideration to providing those entitlements in allocating water from new or expanded infrastructure (discussed below).

The addition of a third headline requirement for infrastructure development to be culturally responsive may require governments to make trade-offs when proposing and approving projects. Any such trade-offs must occur transparently as part of the business case and environmental impact statement processes, be based on community input, and not form an excessive barrier to infrastructure development. The reasons for any deviation from criteria included in the NWI should be published.

3.3 Cost sharing between users and governments

Funding and financing arrangements, including any government subsidies, should only be determined after the project has met all other criteria through the development of a business case.

The specific cost sharing arrangements will vary from project to project, but depend in part on upfront economic and financial assessments of economic and commercial viability, and the distribution of benefits and costs from the project.¹² The following should operate as high-level principles for cost sharing.

- Infrastructure investment that is both economically and commercially viable should be undertaken by the relevant water service provider, with full cost recovery from users and generally without government subsidy.
 - The role of government should be limited to project approval, such as environmental, social and cultural heritage impact assessments. Any government expenditure should be recouped from users, except in cases of substantial public benefits.

¹² Economic viability requires a benefit–cost ratio exceeding one, as determined by the business case. Commercial viability is determined by whether infrastructure users are willing (and able) to pay the full costs of infrastructure construction and maintenance — simply put, whether the benefits that accrue to infrastructure users are sufficient for them to fund the project without a subsidy, in which case a commercially-focused service provider would have incentive to develop the infrastructure.

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- Public benefits can include dam safety, flood mitigation and recreational use of dams, but does not extend to regional development or similar strategic investments. (Investment for these purposes is considered below.)
 - Governments should not fund public benefits that are incidental to the operation of the infrastructure, but should contribute where additional expenditure is necessary to realise that public benefit (such as a dam safety upgrade).
 - Major water infrastructure that is not economically viable should not proceed, except where necessary to provide a basic essential service.
 - Some small projects may not pass a strict benefit–cost test, but may be necessary to maintain an essential service in high-cost regional or remote areas. Transparency concerning any government funding is required, and water service provider planning should guide that process. (However, a transparent CSO is generally preferable to infrastructure expenditure; this is discussed in *SP G Regional*.)
 - Where governments choose to subsidise infrastructure in pursuit of a strategic objective, including in support of projects that are not commercially viable, additional scrutiny is required to maximise the effectiveness of that investment, while minimising the costs and risks to taxpayers (discussed below).

Full cost recovery from users should remain the norm

Some major infrastructure developments can provide both private and public benefits, and, consistent with the user-pays principle, the beneficiaries of the investment should bear the cost. For example, the National Farmers Federation (sub. 42, p. 29) suggested that:

Future approaches to water pricing should recognise that there are multiple benefits, including private and public, of water infrastructure that should be reflected in cost sharing arrangements.

The Commission considered this issue at length in its 2017 inquiry. While acknowledging that there are multiple benefits from major infrastructure, the mere existence of an incidental public benefit is not sufficient to justify government funding (PC 2017a, p. 271). Where public benefits are small or not genuinely additional (that is, would have been realised anyway), government funding is essentially a subsidy to commercial operations that undermines the user-pays principle and distorts private decisions. Further, partial funding requires complex assessments of contribution levels and the form of government assistance — a difficult design task that is (particularly) unlikely to be warranted for projects with small public benefits.

Where public benefits are substantial, widely shared and/or it is not cost-effective to recover relevant costs directly from the community, there may be a role for government to fund that part of the infrastructure required to deliver the additional benefits (PC 2017a, p. 272). As for other government infrastructure subsidies, this should occur as a transparent CSO payment to the infrastructure operator.

This, however, should remain the exception rather than the rule, and full cost recovery from users should remain the norm for all new or redeveloped major water infrastructure.

Government infrastructure funding in pursuit of strategic objectives

However, at times, governments choose to fund major water infrastructure in pursuit of broader strategic objectives. These may include:

- regional or industry development, such as enabling irrigated agriculture or job creation in a particular region
- ensuring access to an essential service, such as town water supply
- short-term stimulus in response to an economic shock.

Decisions to invest in pursuit of these strategic objectives are ultimately a matter for governments. But this should not provide a blank cheque to bypass project selection processes, including those that require governments to consider all options for achieving their objective.

Ultimately, governments should look to maximise their chance of successfully achieving their objectives, while minimising the costs and risks to taxpayers. As a principle, they should justify how water infrastructure is the most effective means of achieving that broader policy objective, compared with alternatives. This could be done by demonstrating strategic alignment with relevant long-term planning (as discussed as part of the project selection process above).

Major developments in pursuit of regional development require scrutiny

Decisions made by governments to invest in water infrastructure in pursuit of regional development require additional scrutiny, largely because previous efforts to spur economic development through major water infrastructure have imposed costs, but had mixed success (section 2). The key issues stem from:

- overly-optimistic estimates of demand for water and flow-on impacts of water infrastructure
- a failure to consider alternatives to water infrastructure in spurring regional growth
- a lack of facilitating arrangements in place to maximise the effectiveness of any investment in water infrastructure.

As discussed above, optimism bias in water infrastructure demand can be managed by enforcing pre-commitment on potential users. Further, having high-quality estimates for the employment and other socioeconomic impacts of the infrastructure (developed in a robust business case) will also reduce the scope for optimism bias, as will post-project assessments of how accurate those estimates were. This can contribute to more realistic estimates over time.

A further shortcoming is a propensity to view rural water infrastructure in isolation from other options to promote regional development. All public expenditure will create *some* degree of economic activity — but governments must direct their limited funds to projects that provide the greatest return for public investment over the long term. As highlighted by the Commission in 2017:

... the commitment of government to water infrastructure projects may preclude alternative investments in more effective projects to promote regional development. ... There is little evidence to suggest that the regional development benefits claimed to accrue from the construction of water infrastructure to support irrigated agriculture are greater than those that would accrue from alternative investments. (PC 2017a, p. 277)

The practical reality is that the evidence of job creation from regional infrastructure projects is often weak (PC 2017b, pp. 149–153). Job creation is often job diversion, and people may have many job opportunities at a given time — policy measures that encourage them to work in one job will often entail them giving up another opportunity. In the case of water, the Commission has previously found that few direct jobs are created from major water infrastructure developments (and often at a high cost; table 1).

Further, the success of water infrastructure in supporting regional development is often dependent on facilitating arrangements, such as transport infrastructure and supporting industries. These may not be in place — or considered in infrastructure proposals — and are often a more substantive barrier to regional development than the absence of water infrastructure.

To help address these shortcomings, governments should demonstrate that water infrastructure is likely to be the most effective way to facilitate economic development in an area, and ensure that they consider facilitating arrangements as part of a holistic strategy. As put by the Institute for Water Futures (sub. 30, p. 18):

... project proponents or state/territory government partners should be required to conduct a cost–benefit analysis for the use of Australian government funding for alternative regional growth programs in the specific location, including but not restricted to infrastructure construction.

At a minimum, governments should demonstrate that major water infrastructure forms part of an existing, comprehensive and public regional strategic plan, and that any necessary supporting infrastructure is (or will be) in place to maximise the benefits of the investment. This planning should inform the strategic case for a major water infrastructure investment — rather than an infrastructure commitment pre-empting the development of any strategy. As outlined in the Commission’s 2017 *Transitioning Regional Economies* study (PC 2017b, pp. 166–169), a high-quality regional strategy should:

- be led by the relevant State or Territory Government, and developed at a regional scale with input from local governments and the broader community
- identify the capabilities and attributes of the region
- identify priority actions and processes to facilitate regional economic development

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- this work should consider multiple potential sources of local economic development (rather than focus only on water infrastructure).

As State and Territory Governments are responsible for regional development policy, they are best placed to determine the need for, and feasibility of, major water infrastructure development, and to align any such developments with regional priorities. Strategic frameworks that clearly outline and align infrastructure investment priorities, such as Queensland’s *Bulk Water Opportunities Statement*, provide a good basis for this type of decision making (box 6). Long-term planning of this nature is also consistent with Infrastructure Australia’s decision-making principles (box 5: principle 1).

Box 6 Queensland’s Bulk Water Opportunities Statement

The Queensland Government’s *Bulk Water Opportunities Statement Strategic Framework* outlines the state’s ‘framework for sustainable regional economic development through better use of existing bulk water infrastructure and effective investment in new infrastructure’ (p. 1). It specifies that Queensland’s investment priorities are based on:

- improving the safety and reliability of dams and urban water supplies
- using existing water resources more efficiently
- supporting commercially-viable infrastructure development by bulk water providers
- considering projects that will provide regional economic benefits.

The framework also outlines the Queensland Government’s principles for investment in bulk water supply infrastructure, which include that:

‘[p]rojects should align with the National Water Initiative principles, including appropriate cost recovery. If full cost recovery is not deemed feasible (including capital), any federal, state or local government subsidies should be transparent to the community’ (p. 6).

Source: DNRME (Qld) (2019).

In any case, Australian Government funding for major water infrastructure should not exceed the contribution of the relevant State or Territory Government. This helps ensure buy-in from the relevant government, supports consistency in priorities between levels of governments, and reflects the comparative advantage of State and Territory Governments in aligning any water infrastructure with local planning.

Investments made to deliver essential services must be transparent

As noted above, one justification used for public infrastructure funding is equity — the need to ensure a basic level of essential service in regional and remote communities. While the case for government involvement here is clearer, major water infrastructure is not always the most effective or least-cost instrument to ensure regional urban water security.

Any investment should provide a fit-for-purpose solution that aligns with the relevant service provider’s agreed levels of service, and does not burden smaller providers (or their users)

with significant ongoing maintenance or operational costs. An effective way to do this is to ensure projects align with local long-term planning by the relevant water service provider. For example, as put by the Local Government Association of Queensland (sub. 32, p. 8), ‘projects must demonstrate commitment to long-term water and wastewater service delivery planning, management, and maintenance for the region’. Government investment could be made contingent on an appropriate standard of planning being in place (these issues are considered in *SP G Regional*).

In particular, where investments are not economically viable, governments need to demonstrate (ideally through existing long-term infrastructure or water supply planning) that the investment in question is the most cost-effective option to deliver that essential service.

Major water infrastructure projects are not an effective form of economic stimulus

During major recessions (such as the one Australia has recently experienced), policies that stimulate demand and increase employment rates can provide economic benefits. Such circumstances usually suggest general macroeconomic policies (like reductions in interest rates) and/or the cautious encouragement of the highest-value short-run (‘shovel-ready’) investments to utilise excess labour. Policymakers should not favour particular locations and or infrastructure sectors — they should focus instead on maximising the effectiveness of the investment by targeting those regions and sectors most affected by an economic downturn, or where investment is likely to best support economic recovery.

Where infrastructure investments are adopted as a solution, the usual discipline of CBA should still apply so that there is an explicit awareness of the relative price of job creation for a range of alternative investment proposals. As noted by the Queensland Productivity Commission (QPC) (2020, p. 23):

... infrastructure projects that meet a genuine economic need aid economic recovery and create employment. They can provide an opportunity to improve productivity, social outcomes and future resilience ... This means that robust project selection during crises is essential to promoting ... long-run economic growth and resilience.

The QPC also proposed a set of criteria for ensuring that crisis infrastructure spending will aid recovery, which emphasise the need for infrastructure to address the specific problems emerging during any economic crisis, rather than stimulating industries unaffected by the economic shock (QPC 2020, p. 24). Their criteria point to the need for a clear net benefit from any project, including social benefits (such as improving equity in access to public services) and improved resilience to natural disasters and climate change. Similar principles were developed by Infrastructure Australia (alongside State and Territory infrastructure bodies), which also emphasise the need for intervention to be targeted, and for projects to deliver lasting benefits (IA 2020a).

Considering the long timeframe and large scale of major water infrastructure developments, these investments do not fit the criteria for an effective stimulus response. Many are not ‘shovel-ready’, and do not target the employment sectors or regions most affected by the

recent recession. Further, the long-term ongoing costs of maintaining and replacing major water infrastructure means that a hasty decision made on a major development can create an ongoing impost on users and/or taxpayers if that infrastructure proves to be unviable.

3.4 Water allocation

Where a major project creates additional water rights, State and Territory Governments must decide how those rights are assigned between different users.

The NWI suggests that market-based mechanisms should be used ‘to the extent practicable’, although acknowledges that allocations are a decision for State and Territory Governments.¹³ This remains sound as an approach: market-based approaches encourage efficiency in water use. And market-based mechanisms include the pre-sale of entitlements prior to construction, which has a range of other benefits (such as helping to address optimism bias, discussed above).

However, State and Territory Governments may also choose to allocate some entitlements to particular sectors, including urban providers or Traditional Owners. Although not a market-based approach, this is not necessarily inconsistent with allocating water on the basis of efficiency. As discussed above, governments should consider providing water entitlements to Traditional Owners in less developed systems, including where this contributes to meeting commitments under the National Agreement on Closing the Gap, and closely engage with relevant Traditional Owners in these decisions.

In allocating water from a new development, State and Territory Governments should be transparent on the reasons for their choices.

3.5 Institutional arrangements

Government investment in major water infrastructure often falls outside of the usual institutional arrangements (that is, decisions made by water service providers). Clearer institutional roles and responsibilities for governments should underpin an agreed assessment and selection process (discussed above) to coordinate any government investment. This ensures that risks are identified and managed, accountability is clearly allocated and decisions are made on the basis of the best available information.

State and Territory Governments have primary responsibility for major water infrastructure

State and Territory Governments have primary responsibility for overseeing major water infrastructure developments in their jurisdictions, and for undertaking the approval processes

¹³ NWI paragraphs 70–72.

discussed above. If and when governments invest in major water infrastructure, the State or Territory government should likewise be responsible for assessing and selecting projects. This corresponds with their ownership of bulk water service providers (in many cases), as well as their responsibilities for water resource management, infrastructure development, regional development (as noted above) and most stages of project approval (such as requiring environmental impact assessments).¹⁴

Clear roles and responsibilities concerning infrastructure decisions and cost-sharing arrangements between State and Territory Governments, State-owned service providers and economic regulators are also necessary, consistent with the principle of institutional separation under the NWI (*Report*: chapter 11).

The Australian Government should have limited involvement in project selection

The Commission does not see a national interest argument that justifies a general or ongoing role for the Australian Government in water infrastructure decision making — particularly, with regional development under the purview of State and Territory Governments. An exception may be in shared systems, where the benefits of infrastructure are divided across multiple jurisdictions. And agencies funded by the Australian Government (for example, BOM and CSIRO) can have a role in providing credible information on climate change and water resource availability (SP E *Integrity*).

There are some in-principle arguments for Australian Government funding of some major infrastructure, as Australian Government taxation is generally more efficient than State government revenue raising (PC 2014, p. 286). Any Australian Government funding should only be provided on a case-by-case basis where it aligns to nationally-significant priorities (identified by Infrastructure Australia or a similar independent body), or where State and Territory prioritisation processes identify and select major projects with significant public benefits that accrue outside of that jurisdiction.

Such funding, if warranted, should be sector-blind; that is, Australian Government investment in worthwhile projects should not be limited to providing water for agriculture if there are material net benefits in investing in other sectors, such as in regional urban water projects. Projects that provide water for urban needs, without an irrigated agriculture component, are currently ineligible for funding under the NWGA's *Investment Policy Framework*. This limitation should be removed.

¹⁴ The Australian Government has some responsibilities for major developments under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth), although the Australian Government is negotiating 'approval bilateral agreements' with State and Territory Governments to allow them to make approvals over certain matters of national environmental significance (DAWE 2021).

RECOMMENDATION 14.1: BROADEN THE REMIT OF THE NWGA'S INVESTMENT POLICY

Australian Government investment in major water infrastructure, where it occurs, should neither prioritise a particular sector or class of water user, nor be limited to providing water for primary industry. The National Water Grid Authority should broaden its *Investment Policy Framework* to allow funding for all projects where government involvement may be warranted, including supporting access to essential town water supplies in regional and remote communities.

An independent body should scrutinise significant business cases

Because of the nature of the NWI, it would be impractical for a renewed Agreement to specify a standard of CBA for major water investments. An alternative model to ensure the quality of proposals is to require a qualified independent institution to review the business cases for major water projects and confirm that the analyses are rigorous (or otherwise).

This already occurs for Australian Government investments, where all water infrastructure proposals requesting more than \$250 million of Australian Government funding are evaluated by Infrastructure Australia (box 1). Four projects have been reviewed since 2015,¹⁵ although a number of projects meeting that threshold are yet to be reviewed. Further, the increase in the review threshold from \$100 million to \$250 million will reduce the number of major water projects that are subject to independent scrutiny.

In September 2020, the Australian Government announced the establishment of an independent National Water Grid Advisory Body (McCormack 2020a). The body's charter, published in January 2021, specifies its key roles as being to provide independent expert advice to the Government, on request of the Deputy Prime Minister, and to build public understanding and awareness of NWGA investments (NWGA 2021b, p. 2).

Transparency will be essential to provide public assurance that the Body's advice is genuinely independent of the NWGA and places proper scrutiny on project assessments — particularly in light of the reduced scope of Infrastructure Australia project evaluations.

To ensure business case oversight is (and is seen to be) independent and rigorous, reviewing bodies should make public their reasons for supporting a proposal, rather than just stating support for them. And independent scrutiny should not preclude a requirement (discussed above) to publish feasibility studies and business cases for major projects as a matter of course.

¹⁵ Tasmanian Irrigation Tranche Two (Tas), Myalup-Wellington Water Project (WA), Lower Fitzroy River Infrastructure Project (Rookwood Weir) (Qld) and Haughton Pipeline Project Stage 2 (Qld) (IA 2015, 2017, 2018c, 2020b).

4 NWI renewal

To help minimise the costs of poor infrastructure investments, and to maximise the outcomes of investments that do take place, a renewed NWI should include an element dedicated to new major water infrastructure.

In the first instance, the current high-level requirements for investment in new or refurbished infrastructure are sound and should be retained as guidance for all investment. However, they should be expanded to include an additional requirement that infrastructure development processes are culturally responsive to the interests of Traditional Owners. Jurisdictions should agree to criteria to demonstrate how major investments adhere to those requirements (regardless of who the proponent is) — ensuring that the criteria for demonstrating ‘culturally responsive infrastructure development’ are developed as part of the co-design process for a new element on Aboriginal and Torres Strait Islander people’s water access (SP D *Cultural access*).

The element should also establish an agreed framework to guide government investment in major developments, where it occurs. This framework is not intended to replace the NWGA’s *Investment Policy Framework*, but instead to ensure consistent principles are agreed to by all parties to a renewed NWI, including where the Australian Government is not an investor. Doing so would also enable transparency and accountability in how the framework is implemented by all governments, including through independent review of implementation of the agreement.

NWI RENEWAL ADVICE 14.1: A NEW WATER INFRASTRUCTURE ELEMENT

In renegotiating the National Water Initiative, jurisdictions should develop an element to guide investment in water infrastructure.

The new element should restate the high-level requirements for all infrastructure to be assessed as economically viable and ecologically sustainable prior to the commitment of funding, with cost recovery from users as the norm, and add a further requirement that infrastructure development processes are culturally responsive to the interests of Traditional Owners.

The new element should also include:

- an agreed framework to guide government investment in major water infrastructure, incorporating project selection and assessment processes and clear roles and responsibilities for governments and service providers
- principles for cost sharing (including government subsidies) and allocating water from new developments.

As part of this element, jurisdictions should agree to specific criteria for *how* adherence to the NWI requirements should be demonstrated for major projects, including:

- conditions for ensuring ecologically sustainable, economically viable and culturally responsive infrastructure development
- principles for cost sharing (including any government funding) and water allocation.

Further, the framework should clarify the conditions for where governments subsidise major water infrastructure in pursuit of a strategic objective (such as regional or industry development). The aim should be to ensure that any such investments are likely to be effective in their goal, while minimising the risks and costs of uneconomic investments on users and taxpayers.

NWI RENEWAL ADVICE 14.2: ASSESSMENT CRITERIA FOR WATER INFRASTRUCTURE

As part of the new infrastructure element, jurisdictions should agree to criteria on how major projects can demonstrate adherence with the NWI requirements for infrastructure.

Economic viability should be demonstrated by a positive benefit–cost ratio determined through a transparent and rigorous cost–benefit assessment, with:

- an assessment of a range of options, including non-infrastructure options where these can meet the investment objective, and selection based on the highest (positive) expected net benefit
- transparency supported by publication of business cases as a matter of course (except where commercially-sensitive data limits publication, in which case the business case should be reviewed by a qualified independent body)
- use of entitlement pre-sale to limit optimism bias
- robust estimates of social and distributional impacts.

Ecological sustainability should be demonstrated through environmental and social impact approvals, and compliance with a high-quality and NWI-consistent water plan that:

- establishes the environmental water provisions necessary to meet agreed environmental outcomes under a changing climate
- sets out the social, economic and cultural outcomes sought from the water plan
- clearly defines the expected reliability of water rights, taking into account the likely impacts of climate change
- is developed with robust community engagement to reflect community values.

(continued next page)

NWI RENEWAL ADVICE 14.2: ASSESSMENT CRITERIA FOR WATER INFRASTRUCTURE (continued)

Criteria for culturally responsive infrastructure development should be determined through the co-design process led by the national Committee on Aboriginal Water Interests. At a minimum, culturally responsive infrastructure processes would:

- incorporate deep engagement with the Traditional Owners of affected areas (both at the infrastructure site and downstream) as part of business case development
- comprehensively identify and manage impacts on cultural heritage in affected areas.

Costs should be recovered from users as the norm, with any government funding provided through a transparent subsidy. This should be limited to situations where:

- substantial public benefits associated with water infrastructure impose additional costs that are best borne by governments
- an equity argument exists (for example, to support access to an essential service in high-cost regional town water systems where the cost of supplying a basic level of services is considered unaffordable).

Governments should not subsidise major water infrastructure for strategic objectives, such as regional development, without first demonstrating that the project is the most effective means of addressing that objective. This requires alignment with broader high-quality and long-term strategic regional planning processes.

Jurisdictions should maintain the principle supporting use of market mechanisms for allocating water, although they should consider allocating a share of new entitlements in undeveloped systems to Traditional Owners.

In renegotiating the NWI, jurisdictions should agree to clear institutional roles and responsibilities to coordinate any government investment, if and when it occurs.

NWI RENEWAL ADVICE 14.3: INSTITUTIONAL ARRANGEMENTS

A new water infrastructure element should clarify relevant institutional roles and responsibilities underpinning government investment in major water infrastructure, if and when it occurs.

- State and Territory Governments should have primary responsibility for proposing (and overseeing) government involvement in major water infrastructure developments in their jurisdictions.
- Any Australian Government funding should not exceed the contribution of the relevant State or Territory Government.
- Independent infrastructure advisory bodies should transparently review the business cases of major projects.

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