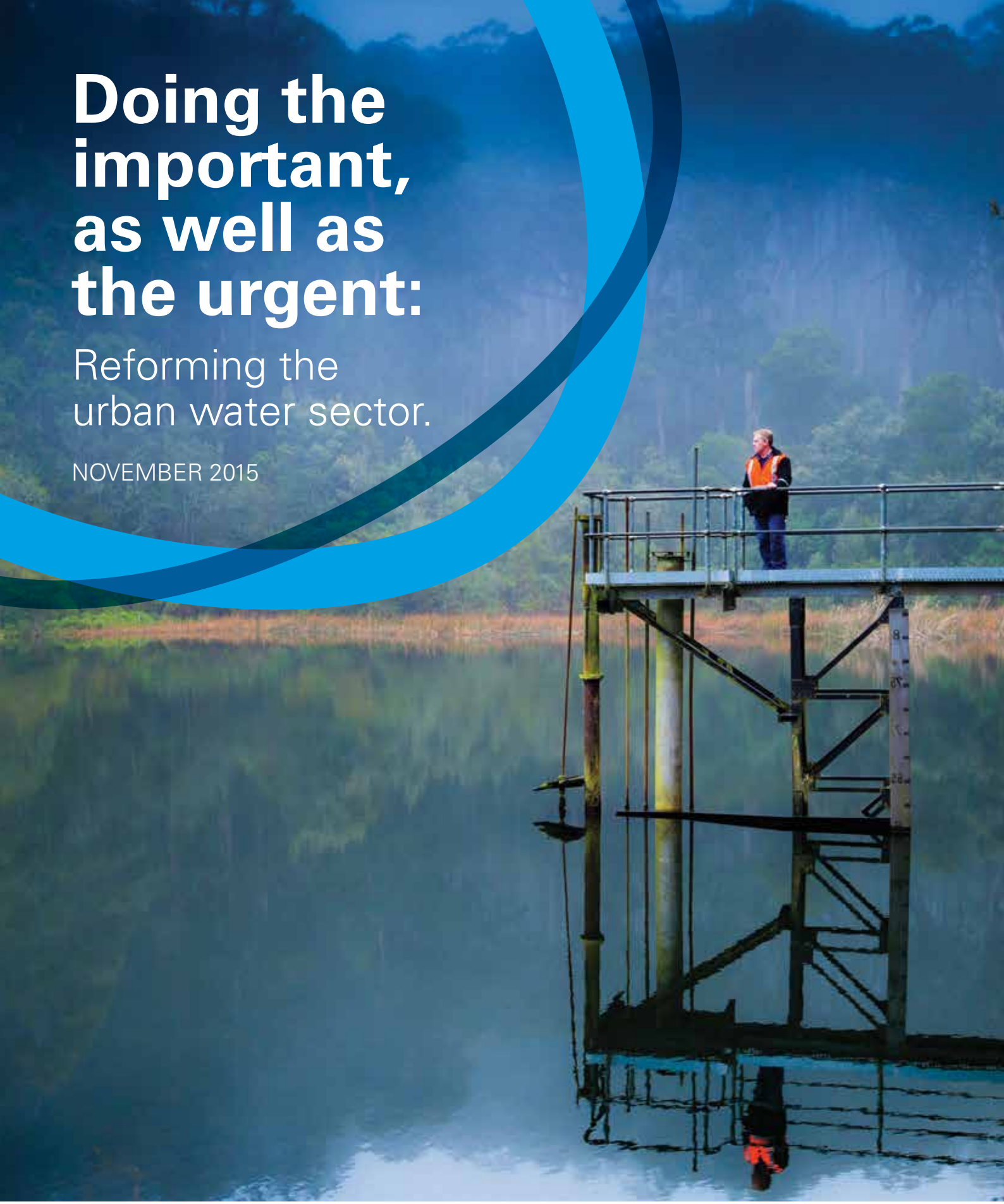
Doing the important, as well as the urgent:

Reforming the urban water sector.

NOVEMBER 2015



INFRASTRUCTURE PARTNERSHIPS AUSTRALIA

BUILDING AUSTRALIA TOGETHER

WATER SERVICES ASSOCIATION OF AUSTRALIA

About IPA

Infrastructure Partnerships Australia (IPA) is the nation's peak infrastructure body—formed in 2005 as a genuine and enduring policy partnership between Australia's governments and industry.

IPA's formation recognises that through innovation and reform, Australia can extract more from the infrastructure it's got, and invest more in the infrastructure we need.

Through our research and deep engagement with policymakers and industry, IPA seeks to capture best practice and advance complex reform options to drive up national economic prosperity and competitiveness.

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About WSAA

The Water Services Association of Australia (WSAA) is the peak industry body that supports the Australian urban water industry. Its members provide water and sewerage services to over 20 million customers in Australia and New Zealand and many of Australia's largest industrial and commercial enterprises.

The Association facilitates collaboration, knowledge sharing, networking and cooperation within the urban water industry. It is proud of the collegiate attitude of its members, which has led to industry-wide approaches to national water issues.

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Foreword

Treasurer,

As you are aware, urban water has a direct and significant impact on national economic performance, societal well-being and the environment.

But despite its importance, urban water policy has rarely sustained the attentions of the community or of policymakers – except when faced with a crisis.

The Water Supply Association of Australia (WSAA) is the peak body for Australia's urban water utilities; and Infrastructure Partnerships Australia (IPA) is the nation's peak infrastructure body.

We have joined together to present a consensus view about the structural and regulatory reforms Australia can undertake now – to avoid urgent and costly decisions that will otherwise be required in the future.

Water services are essential to every aspect of life and commercial activity.

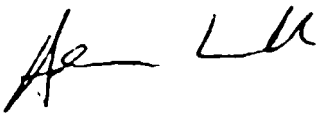
This means that problems will always be fixed – the question is how much it costs future water customers, utilities and taxpayers.

While urban water is owned, operated and regulated by Australia's state and local governments – they face common national challenges.

For this reason, we believe that there is a strong case for renewed national policy leadership – backed with meaningful incentives – to elevate the consensus about the importance of good water policy into an actionable national reform process.

Treasurer, we thank you for your interest in urban water policy – and we look forward to continuing to work with you as you move to rebase and restore national economic productivity.

Yours sincerely,



Adam Lovell
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Executive summary

Australia's urban water is supplied by utilities which provide each aspect of water services, from the dam or desalination plant to the kitchen tap — and also remove wastewater from the premises, providing safe treatment, recycling and disposal.

Australia's urban water sector is well trusted by the community, with a long history of safe, secure water supplies—even when faced with extreme climatic events like the recent Millennium drought.

But the sector is now under increasing pressure—caught amidst growing and changing demands on the one hand, and financial constraints on the other—challenges which it is ill equipped to meet in the longer term, without change.

Together, WSAA and IPA have developed this reform blueprint because we see a strong case for national leadership on urban water policy, gathered around:

1. Better economic regulation;
2. Appropriate opportunities to deploy competition; and
3. Clarifying governance arrangements.

Nationally-led reforms along the lines recommended in this paper would elevate urban water above the urgent decisions made amidst a crisis—allowing instead for an approach based on good governance, long term planning and greater responsiveness to customer preferences.

What is the problem we need to solve?

We can consider that the urban water sector has had three 'eras', which we call:

- The 'development era'—Characterised by major state funded investments in bulk, waste and potable water networks and assets—part of broader 'state building' programmes;
- The 'economic reform era'—By the 1980s, financial and operational pressures and the wider deregulation of the economy forced changes in structure and governance of urban water—in line with wider micro-economic reforms of that period; and
- The 'Millennium drought era'—The first decade of the century saw a return to major supply side investments in recycled industrial water and desalinated potable water; undertaken at significant cost.

Australia's urban water sector emerges from the Millennium drought with a resilient, high quality and diversified water supply. But these urgent investments have seen increases in customer bills—and seen public utilities themselves absorb significant costs.

Together, these factors leave Australia's urban water sector under resourced to effectively meet the community's growing needs and expectations for water services.

Without change, these factors will translate into higher than necessary water bills for customers, an erosion of taxpayer value in public utilities, and missed opportunities for innovation and efficiency.

Understanding the structure of Australia's urban water sector

Australia's urban water sector delivers services to over 20 million Australians, across some 220 urban water utility businesses, owned by state and local governments, which directly employ around 30,000 Australians.

The structure, ownership and governance of the circa 220 urban water utilities varies widely, with equally wide variations in performance.

For example, some utilities are vertically integrated from dam to tap, such as in South Australia and Western Australia, while in others, there have been structural separations between bulk water supply, distribution and retail functions —such as in Sydney and Melbourne.

Moreover, the legal form of these utilities also varies—ranging from state owned corporations on the one hand, through to utilities which are divisions of local governments on the other.

While Australia's urban water sector remains fully publicly owned and operated, this masks the relatively high degree of private sector participation.

The private water industry initially entered water services through traditional partnering and contracting arrangements—but more recently, we've also seen a range of more sophisticated contracting approaches, including the emergence of private water utilities, driven primarily by New South Wales through that State's leading Water Industry Competition Act (WIC Act).

Water assets like dams, desalination plants and particularly distribution and wastewater systems mean that many aspects of the water supply chain are natural monopolies.

This means that economic regulation is critical to control price, protect customers and to signal for appropriate competition whilst also ensuring the long-run sustainability and efficiency of the urban water sector.

But why does urban water need national leadership?

Despite its importance, Australia's urban water sector faces significant unresolved challenges to its operation and long-term financial viability.

A range of major studies have shown that urban water sector performance is increasingly hampered by immature frameworks to support competition, a lack of efficient, independent economic regulation and a failure to use price signals to regulate demand and fund investment.

More specifically, sector performance is being impacted by:

- Fragmented economic regulation which fails to effectively incentivise innovation or promote the primacy of the customer-utility relationship;
- pricing approaches that preclude signalling for actual servicing costs, distorting competition and impeding efficient investment;
- poorly identified and inconsistent linkages between economic and environmental regulation, impeding a sufficient focus on customer needs and preferences;
- utility and broader state balance sheet constraints, impacting public utilities' capacity to maintain and renew assets in time to meet population growth;
- unclear and embryonic frameworks governing competition and third party access, creating barriers to private investment and long-run financial uncertainty for public utilities;
- insufficient consideration—and coordination—in respect to the potential use of stormwater as part of the total urban water cycle; and
- ongoing exposure to pressures from climate variability and extreme events.

Given the scale of the challenges facing the water sector, reform will require Commonwealth leadership, which has been proven as an effective tool during previous periods of reform such as the highly successful National Competition Policy (NCP) and more recently through the National Water Initiative (NWI).

Resolving urban water sector challenges—a new policy approach

Overcoming the challenges in the urban water sector will require much more than business as usual.

Instead, we need deliberate and sustained microeconomic reform to equip water utilities with the financial resources they need to meet growth requirements and properly utilise water resources–tempered by the right regulatory structure to protect customers and economic value.

That's why our report calls for national leadership, through a renewed and expanded national reform programme refining and expanding the NWI. We find that these reforms should be gathered around three principal areas, being:

- New national standards for efficient, independent economic regulation in urban water, for adoption by states and territories;
- development of an urban water 'competition framework'. This should aim to resolve the scope for and benefits of competition in urban water to guide the development of competition policies at a state and territory level; and
- new national standards for best practice governance in urban water. In a more competitive environment, these standards should aim to provide clarity on the roles of utilities, regulators, shareholders, system planners and policy makers. To promote a greater customer focus utilities should have greater independence in return for clear accountability to their customers and shareholders.

This five year reform program should formally commence by no later than 1 July 2016, with implementation by jurisdictions incentivised with the use of Commonwealth-funded reward payments.

The importance of national leadership & funding

Urban water is a state responsibility; but it is also a national economic and social challenge.

Water is constitutionally a state and territory responsibility, however, history has shown that meaningful reform of the urban water sector will require Commonwealth leadership. Indeed, Commonwealth engagement was a key driver of previous periods of major change for the sector, such as the highly successful NCP and more recently through the NWI.

The case for nationally coordinated action is as strong today as it was when Council of Australian Governments (COAG) initiated reforms in 1994 and 2004, with individual states lacking sufficient incentive to undertake reforms which are in the national interest.

Against this background, this report calls on the Commonwealth to re-engage with urban water reform and, specifically, to lead the development and implementation of an enhanced NWI. Critically, it also calls for the Commonwealth to provide meaningful financial incentives to the states and territories for reform implementation—recognising the critical role these payments have played in previous periods of major change.

Recommendations

1. Australia needs national leadership in urban water policy

Urban water services are a key national economic and social service, but operate under substantially different structural and regulatory models across the country—with markedly different levels of efficiency and value.

While urban water is owned, operated and regulated by sovereign states, there is a strong case for renewed national leadership in urban water policy, in the interests of customers, the environment and national economic productivity.

Reflecting earlier policies like the National Water Initiative (NWI), national leadership should see a renewed five year reform programme, based around three priority areas and linked to national reform funding incentives.

The three areas for reform are:

1.1. Economic Regulation

Water utilities have strong natural monopoly aspects across much of the water supply chain – meaning that economic regulation is the most fundamental consideration in controlling price and ensuring the quality of water services.

Economic regulation also sets the 'rules of the game' and effectively determines the degree to which competition can be fostered or develop.

Currently, economic regulation is done differently, in different places, with wide variations in consumer outcomes—pointing to a substantial case for consistent, national application of good economic regulation across urban water markets.

The traits of good, nationally consistent economic regulation in urban water should:

- Include an overall requirement for regulators to act in the long-term interests of customers;
- include strong incentives for water utilities to find efficiencies in operating and capital expenditures;
- consider the long-term viability of water businesses, when making pricing determinations.
- allow for strong and transparent customer engagement in the regulatory process; and
- have in place merit review and appeal mechanisms for water businesses and other stakeholders.

Additionally, the standards should contain a pathway for considering whether the creation of a national economic regulator for urban water is warranted.

1.2. Resolving Competition

Competition beyond traditional contracting out arrangements has developed to some degree, despite an absence of market rules and signals for new entrants.

As with other utility markets, frameworks that promote appropriate and efficient competition offer benefits to customers and the economy, through efficient pricing and innovation.

In concert with the process to refine and implement nationally consistent economic regulation, there should be a specific consideration of where, when and how competition can be best deployed within urban water markets, in the interests of the customer.

As a first step, the new Australian Council for Competition Policy (ACCP), recommended by the Harper Competition Review, should be tasked with developing an 'urban water competition framework', to guide the development of good policy at a state and territory level.

The policy framework should be publicly released for comment in the near term.

1.3. Improved Governance

As we move into an era of greater customer focus, competition and the emergence of new players in the water market, there is a need to revisit governance within the water sector. There needs to be clarity around the roles of utilities, regulators, shareholders, system planners and policy makers. This would benefit existing utilities, new private suppliers and ultimately result in improved outcomes for customers.

Enhanced governance should:

- See a recommitment to the corporatised model, providing additional independence, commercial discipline and enhanced accountability to customers;
- establish a competitively neutral environment between existing and new suppliers;
- ensure that wider policy outcomes, such as Community Service Obligations (CSOs) or environmental management requirements are explicit, and resolve who is best placed to manage them; and
- ensure that the governance model clearly allocates responsibility for security of supply.

2. Urban water reform needs a permanent national champion

There is a practical requirement for a national agency that is charged with leading reform in urban water alongside the states – and which also provides ongoing and public assessments of individual state government progress in water reform.

The ACCP appears to be an appropriate model in this regard - and more broadly, would assist to align urban water reform with the Commonwealth's broader microeconomic reform agenda.

3. Sustaining reform momentum – the role of competition payments

Experience shows that nationally consistent reform across state infrastructure markets is best achieved through incentive payments, such as the National Competition Policy (NCP) Payments to states from the mid-1990s to early 2000s.

For this reason, this paper recommends that the Commonwealth develop a reform incentive framework, with funding for state governments linked to urban water reform milestones.

This recognises the national economic benefit flowing from increased productivity and broader performance improvements in the urban water sector.

The proposed ACCP should be tasked with monitoring reform progress and advising the Commonwealth on competition payment eligibility.

The urban water industry at a glance

The Australian urban water industry provides nearly 2000 gigalitres of drinking water each year—enough to fill **Sydney harbour four times over**

Around 300,000 kms of water and wastewater pipes **—enough to circle the earth six times**

1,500 gigalitres—or three Sydney Harbours of treated wastewater released each year

30,000 people employed directly by the industry

Over **10 million** properties served

Assets of **$160 billion** as at 1 July 2015

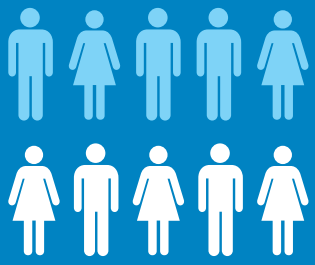
Wastewater comprises **50 per cent** of the costs and revenue of the urban water industry

Directly accounts for **0.75 per cent of Australia's Gross Domestic Product** (GDP)

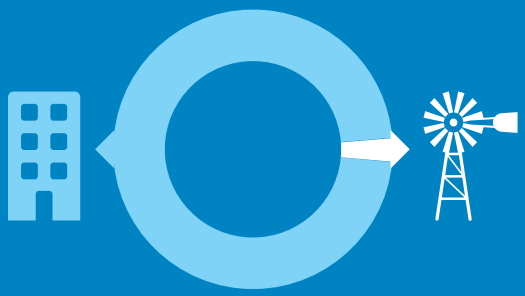
Between **$3.5 and $4.5 billion** in capital expenditure every year

Over **$15 billion** revenue per annum

Half of all water consumers don't realise their water company provides wastewater services

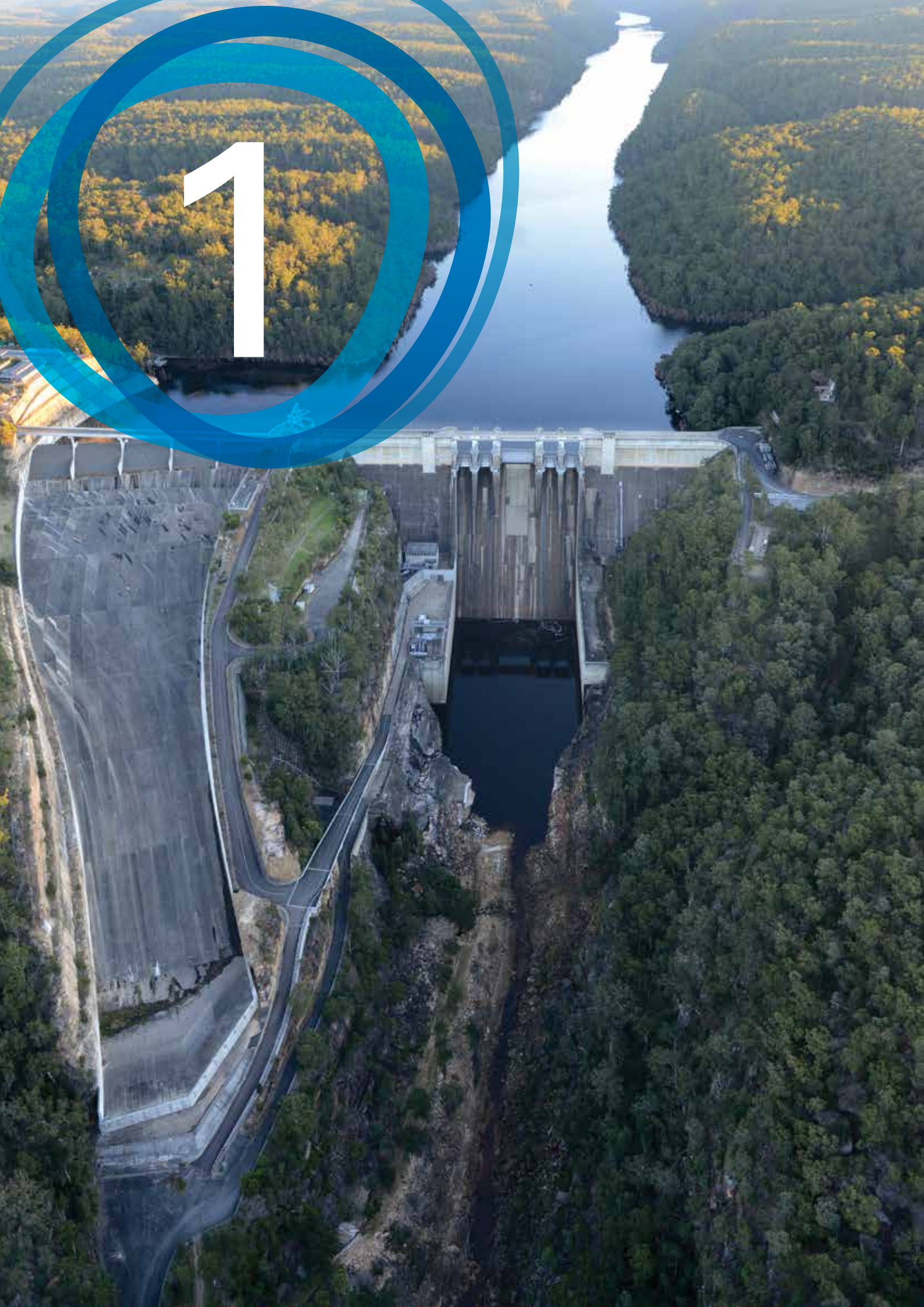


Annual revenue generated by urban water is **30 times more** than rural water.



The average typical **annual household water and wastewater bill** was $1,238 in 2013-14

Source: WSAA, 2015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1 Structure of our report

Why urban water?

Australia has traditionally focused on urban water policy only during public crises, like the Millennium drought or Sydney's water quality and environmental problems throughout the 1980s and 1990s.

A series of reports by Infrastructure Australia, the Productivity Commission and others point to an emerging need for substantial innovation and investment in urban water; a need that on existing settings, we are poorly equipped to meet.

IPA and WSAA have completed this report because it's time to elevate urban water beyond the urgent decisions made amidst a crisis, in favour of the important decisions, such as good structures and proper network planning.

This paper argues for a renewed national process to reform the governance, regulation and market framework for Australia's urban water sector.

A range of recent reports by the Productivity Commission, Infrastructure Australia and the Harper Competition Review, among others, have identified a case for national reform to state and local government owned and operated urban water utilities. Indeed the Harper Competition Review, delivered in early 2015, identified urban water and wastewater as a reform priority. Harper finds the national interest will be served through consistent state reforms to improve economic regulation and competition and argues for a recommitment to the National Water Initiative (NWI).

Australia's history of relatable microeconomic reform in electricity, freight transport and other areas points to a practical requirement for Commonwealth leadership and financial incentives, directly linked to each state and territory's progress in implementing reforms.

Yet since the abolition of the National Water Commission (NWC), Canberra has lacked a specific agency to oversee the nation's interest in urban water.

This paper puts forward a common view across WSAA and IPA about an actionable and practical process to elevate the national debate about, and accelerate reforms to, urban water.

Our report is structured as follows:

- Chapter 2 explains why further change is needed to address the key challenges and opportunities faced by the urban water sector.
- Chapter 3 outlines the current structure of the industry in Australia and illustrates how the public and private sectors are working together to deliver outcomes.
- Chapter 4 summarises how the sector has evolved over time to meet emerging challenges.
- Chapter 5 sets out the next set of reform imperatives including the potential to increase competition and deepen private involvement in the industry.
- Chapter 6 sets out the case for nationally coordinated action, and what form that action should take.

2

2 The case for change

Australia's urban water sector is built on strong foundations, safely serving more than 20 million customers, every day of the year.

But changing requirements mean the current structure of water markets themselves must also change, maximising the water sector's economic, social and environmental contribution.

Getting the market structure right is a win-win-win; customers can expect lower bills and better services; the economy endures lower input costs for water and wastewater services; while the environment enjoys the system-wide benefits of transparent signals for sustainable management and use.

2.1 The importance of water to our cities and towns

Clean, reliable and affordable water and wastewater services are fundamental to life, health outcomes and the economy.

The urban water sector serves more than 20 million Australians, in more than 9 million connected properties.

Urban water also directly employs around 30,000 people across Australia.

Each year, Australia invests between $3.5 billion and $4.5 billion in water and wastewater infrastructure—representing some 8.7 per cent of national infrastructure investment (ABS, 2015).

Infrastructure Australia's recent audit estimated that the urban water sector makes a Direct Economic Contribution of some $10.6 billion across the economy (Infrastructure Australia, 2015).

These figures are impressive in their own right, but to some degree they understate the binary relationship between safe and effective water and wastewater services and economic activity. We can consider that no firm or enterprise can operate without access to safe and reliable water and wastewater.

The demands on urban water utilities are continuing to evolve, in line with changing community expectations and requirements.

This means that the water sector is expected to manage and deliver outcomes beyond solely providing clean water to, and taking wastewater from, the premises.

Urban water utilities play important roles in providing everything from clean beaches and waterways, through to contributing to public health and national economic priorities.

In a range of ways, urban water and wastewater networks are as fundamental as transport systems in shaping the health, wealth and wellbeing of our urban centres.

2.2 We need to be explicit about what we want from the urban water sector

While urban water is rarely a top-of-mind issue, most people would accept that liveable cities, as well as wider economic and social outcomes, rely on the availability of effective water and wastewater systems.

In turn, we know that effective and efficient water and wastewater systems rely on good governance, quality economic regulation, and a clear understanding of where competition can be deployed to deliver consumer benefits.

More broadly, an effective system requires clear lines of responsibility for each component of the supply chain; removing duplication and ambiguity amongst the multitude of players involved in getting water from supply source to premise, whether planning and environmental authorities, regulators, utilities or developers.

Achieving national opportunities through state-executed structural and competition reforms to urban water will logically require a degree of consensus about what is being sought from the urban water sector. As the Productivity Commission's 2011 report on urban water stated, *"without clear objectives for the urban water sector the case for reform cannot be assessed or reform options designed".*

Greater clarity of objectives is therefore a critical step, one that could guide the design of a regulatory and governance structure to deliver on requirements in the most efficient way. The former National Water Commission's (NWC) 2011 statement of objectives for the urban water sector forms a useful template in this regard—noting that this document was developed after extensive consultation with stakeholders. The overarching objective in this document was:

"The Australian urban water sector should provide secure, safe, healthy and reliable water-related services to urban communities in an economically efficient and sustainable manner.

More specifically, the statement identified the need to:

- Understand and meet the long-term interests of all water consumers in the price, quality, safety, reliability and security of supply and wastewater services through the efficient use of—and investment in—systems, assets and resources;
- protect public health and the environment by ensuring that the impacts of the sector's operations and investments are managed cost effectively in accordance with society's expectations and clearly defined obligations; and
- enhance its effective contribution to more liveable, sustainable and economically prosperous cities in circumstances where broader social, public health and environmental costs and benefits are clearly defined and assessed.

But while the NWC's statement of objectives provides a useful template, further work is needed, particularly in respect to ensuring consistency across, and within, jurisdictions. We suggest that clarifying sector objectives is a logical place to start in developing a national reform blueprint—allowing for the design of market and regulatory structures with clear objectives in mind, and guiding states and territories in clarifying the specific responsibilities of public utilities.

2.3 We have an opportunity to act now to drive better practice

There is a high level of community trust for urban water services, reflecting the sector's long track record delivering safe, affordable and reliable services to the community.

But it is important that this trust does not foster complacency about either the scale of the challenge ahead, or the utility of changes now, in the absence of a crisis, to most efficiently and sustainably secure urban water services into the future.

Indeed, Australia's urban water networks emerged from the Millennium drought with enhanced water infrastructure — following major investments into high quality, diversified and sustainable water supply infrastructure.

But the good condition of the sector has come at significant costs to consumers, and to the urban water utilities themselves, meaning that:

- Water price rises have occurred within a context of sharp increases in electricity and other 'costs of living', leading to community sensitivity about bills and prices; and
- only part of the increased infrastructure costs have been paid for through consumer charges, with water utilities absorbing a high degree of the cost through increased borrowings. This sees the urban water sector financially depleted and under-resourced for the task ahead, on current settings.

Figure 1, opposite, describes the range of institutional, environmental, technological, social and financial challenges facing the urban water sector.

Of course, the fundamental requirement for water services means that these problems will eventually be fixed.

But there is a contemporary opportunity—in the absence of immediate or urgent shortfalls—to consider how we drive national better practice to ensure we do so at the best value.

Figure 1: Key challenges and opportunities for the urban water sector

Source: Frontier Economics

2.3.1 Australia's water pressures

Like other infrastructure sectors, urban water is facing a range of pressures defined by growing, changing demand on the one hand, and challenging financial settings on the other. We describe some of these challenges, including:

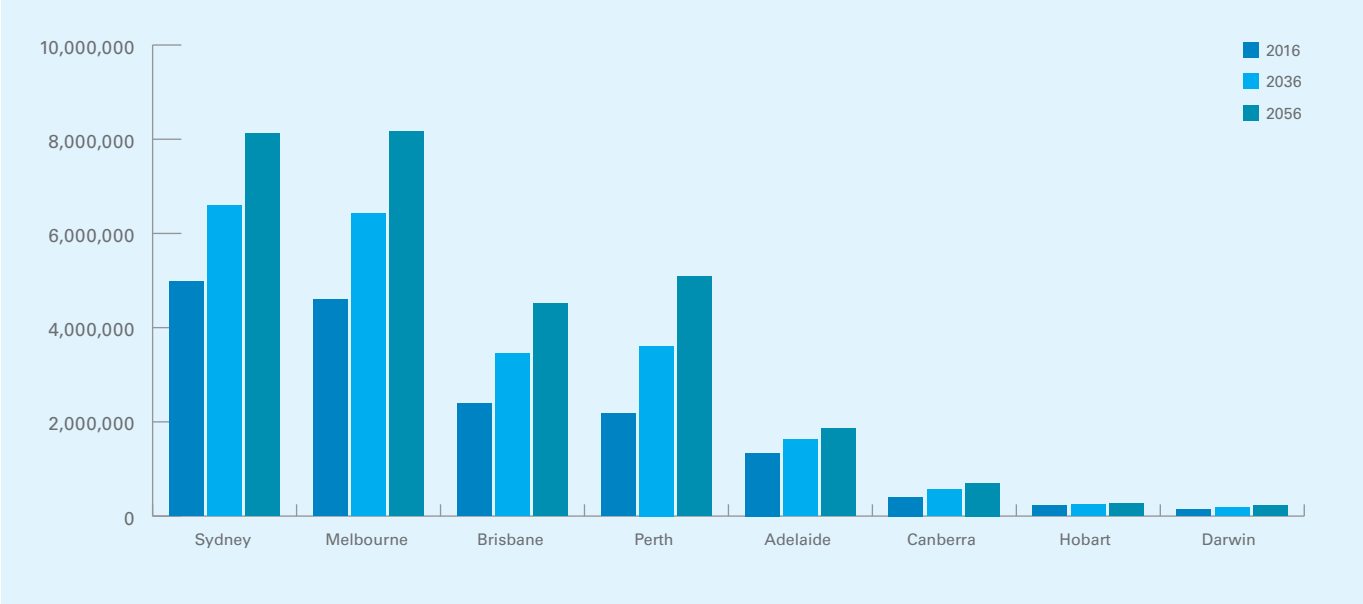
- Population growth;
- climate change;
- growing customer and community expectations;
- consumer price sensitivity; and
- a requirement for increased capital funding for new and renewed infrastructure.

More people means a greater call for water services

Demand for urban water services can be considered as a factor of the size of the population and economy it serves.

With Australia's population expected to grow from circa 25 to nearly 40 million people in just four decades, we can assume a significant requirement across all infrastructure sectors to support growth. Figure 2 overleaf shows that Australia's four largest capital cities will roughly double by 2056.

Figure 2: Projected population of Australian capital cities 2016 to 2056



Source: Australian Bureau of Statistics

For the urban water sector, the challenge will be particularly acute. More people means heightened demand for water and wastewater services—and even higher requirements for effective water security, flood protection and stronger protections for the health of waterways.

More than any other infrastructure type, the capacity of the water sector to meet future demand, whilst keeping downward pressure on prices, is subject to external factors —specifically, rainfall patterns—as well as the inherently high cost of transporting water from source to tap. And while there has been unprecedented investment in diversified supply in recent years, particularly desalination, this has only lessened, not removed, Australia's reliance on rainfall dependent supply.

Customer needs and community expectations are changing

The expectations of water customers will also continue to change and grow, reflecting broader community shifts. For example, customers may seek immediate access to real-time information, allowing them to actively manage the sustainability of their water use—or seek opportunities to actively manage the cost of water bills.

Clearly, this shift from a compliance-based to a consumer engagement-based approach to service design and delivery is welcome. In the absence of opportunities for consumers to express their preferences, governments may make decisions in their multiple roles as policy makers, regulators (setting price, health or environmental targets) and utility providers that are not economically efficient (NWC, 2014). But equally, this shift presents considerable challenges where customer choice is not sufficiently supported by broader policy and regulatory settings.

We can also consider that these expectations will extend beyond the individual customer, with water utilities managing wider economic, public health and environmental objectives well beyond the provision of basic water and wastewater services. As outlined, this is despite utilities facing increasing financial pressures and despite them being best placed to deliver these broader outcomes.

Climate variability makes the task larger still

At a time when the sector's financial resources are already strained, climate variability represents a further significant challenge—driving investment in order to diversify supply and to increase asset and system resilience.

Climate change projections for Australia suggest a hotter, drier climate, rising seas and more intense fires and floods (BOM, 2010). These projections will be critically important to the management of water services across the country because the water cycle is highly sensitive to climate —with impacts extending across all facets of the urban water cycle from water supply, sewerage transfer and treatment infrastructure, to river health, drainage and flood management.

Indeed, the extent of the water sector's higher sensitivity to climate events has been well demonstrated across the past decade, with periods of both extreme rainfall and extreme

temperatures placing pressure on supply (BOM 2011).

The sector is taking steps to reduce its exposure to future events; however, there remains an evident need to address climate vulnerability more systematically (WSAA, 2012). Further, some of the measures currently being implemented primarily address short-term concerns—with longer-term actions often appearing unaffordable or unfeasible given perceived complexity, a lack of scientific information relevant to the urban environment, or a lack of coordination with other authorities related to issues such as resource protection and flooding.

All this needs to be paid for, while keeping bills affordable

Water is an essential service, meaning that investment to meet growing, changing needs must be balanced against affordability and consumer price considerations.

Figure 3 below shows that the urban water sector has been effective in accommodating enlarged investment programmes, while maintaining growth in water bills broadly in line with inflation, as measured by the Consumer Price Index (CPI).

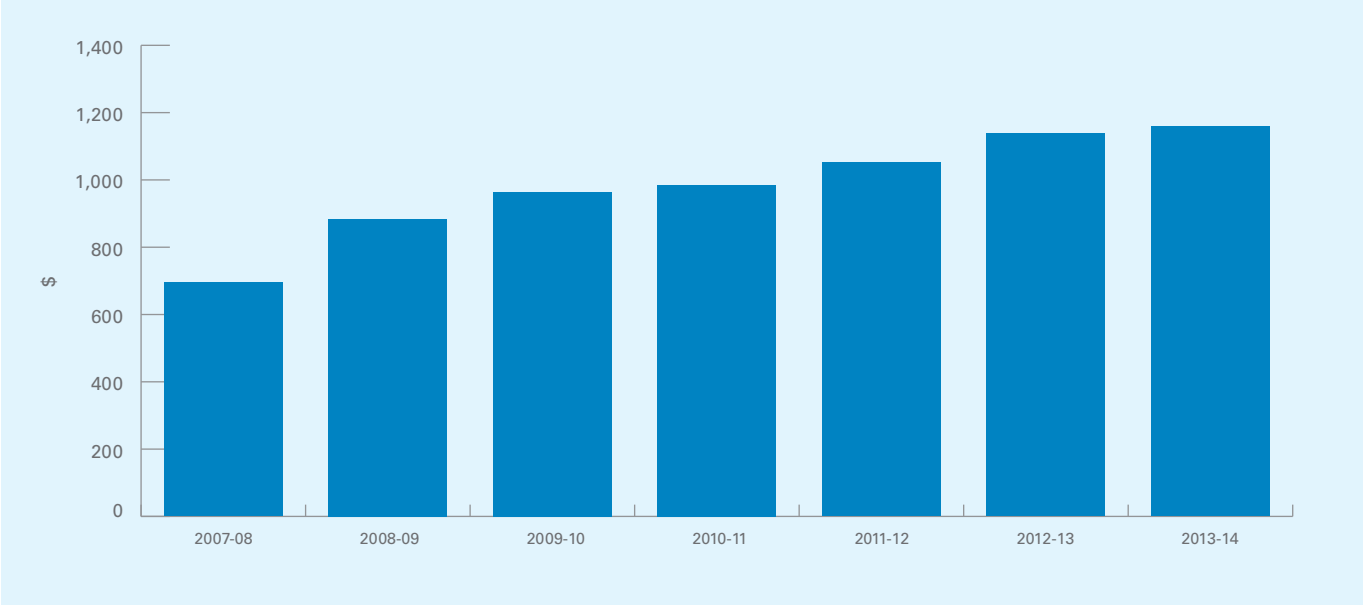
Sustaining urban water infrastructure investment, while containing consumer prices, will require new levels of productivity, innovation and efficiency—in turn, requiring evolved regulation and governance.

Water utilities are under resourced to finance what's needed

Following the millennium drought investments, the urban water sector enjoys significant bulk water capacity, but faces a sustained requirement for investment in other parts of the urban water supply chain as described in Box 1. These include:

- Distribution assets to service new growth areas;
- wastewater treatment assets to meet increasingly stringent environmental and health standards;
- in some regional areas, investments to improve drinking water quality to acceptable standards; and
- managing the potential impacts of climate change —for example the need to augment stormwater infrastructure capacity to cope with more frequent and severe rainfall events; and an ongoing requirement to renew ageing infrastructure, across all networks.

Figure 3: Average typical water bill 2007-08 to 2013-14 (2013-14 constant prices)



Source: National Performance Report 2013-14

Box 1: Future capital investment needs in the Australian water and wastewater sector

While no comprehensive stocktake of future investment needs across the Australian water sector is readily available, we do know:

- Sydney Water is proposing capital investment of $2.8 billion over the period 2016 to 2020. About 89 per cent of the investment is for maintaining existing standards and servicing growth.
- SA Water proposes to invest $1.27 billion of capital over the second regulatory period (in the 4 years to 2020). This includes $675.4 million in water infrastructure, $479.7 million in sewerage infrastructure and $115 million in information technology infrastructure.
- The Victorian Essential Services Commission's (ESC) 2013 price determination final decision for the period 2013-14 to 2017-18 provided for some $5.6 billion of capital investment by the major metropolitan businesses including Melbourne Water ($2.4 billion), City West Water ($678.8 million), South East Water ($1.14 billion), Yarra Valley Water ($1.15 billion) and Western Water ($231.6m).
- A significant proportion of TasWater's infrastructure is ageing and/or is in poor condition and its performance is non-compliant, resulting in public health and environmental outcomes that do not meet contemporary standard.

Source: Regulatory submissions

A report for Infrastructure Australia observed that:

"Consultations suggest that the additional infrastructure that will be needed to support projected growth largely relates to the distribution systems for water and sewerage.

"Additional expenditure is required on an incremental basis to meet the expansion of urban areas, to undertake renewals work and reinforce some existing pipe systems to meet increasing volumes of water demanded.

"Some additional upgrading of water and sewerage treatment plants is also envisaged, again on an incremental basis.

"Several jurisdictions reported that replacement and maintenance expenditures will be the major driver of capital expenditure for the foreseeable future. This is consistent with the focus on the distribution element of the supply chain. In several cases the amount of projected renewals expenditure is significant, raising concerns about its financeability and the implications for affordability.

This investment will be needed at a time when the utilities themselves are carrying considerable levels of debt; and when shareholding state governments are also fiscally constrained and face difficult choices between less visible water infrastructure investment and higher profile transport, health and education priorities.

As discussed above, the utilities themselves are in a weakened financial position and are poorly equipped to absorb the investment task.

In late 2013, WSAA undertook a financial stocktake of the urban water industry, as summarised in Box 2. The analysis finds that on current settings:

- Utilities' financial ratios, commonly used by credit rating agencies, are declining over time, and are expected to decline further over the next four years;
- the ratios for some utilities are at levels which, if not addressed, could limit their ability to make investment and operational decisions in the best interests of consumers; and
- in aggregate, the urban water industry is not well placed to deal with significant downside shocks.

Overall, profitability in the sector is not high. Retained cash flow covers only around 50 per cent of the capital expenditure of utilities. This means that the urban utilities will need to increase borrowings and debt, to fund capital expenditure.

While average debt levels in the industry are still manageable, there are practical limits to borrowing—with some utilities already at a point where additional borrowings can only be sustained through higher consumer prices.

Box 2: Financial pressures growing in urban water

The ratios used by credit rating agencies, such as Moody's and Standard & Poor's, provide a good basis to consider the relative financial strength, across Australia's water utilities.

These measures assess an enterprise's ability to generate sufficient cash to service its debt.

Two important measures are the level of cash flow, measured by funds from operation (FFO), to interest payments (FFO to interest) and to the total level of debt (FFO to debt).

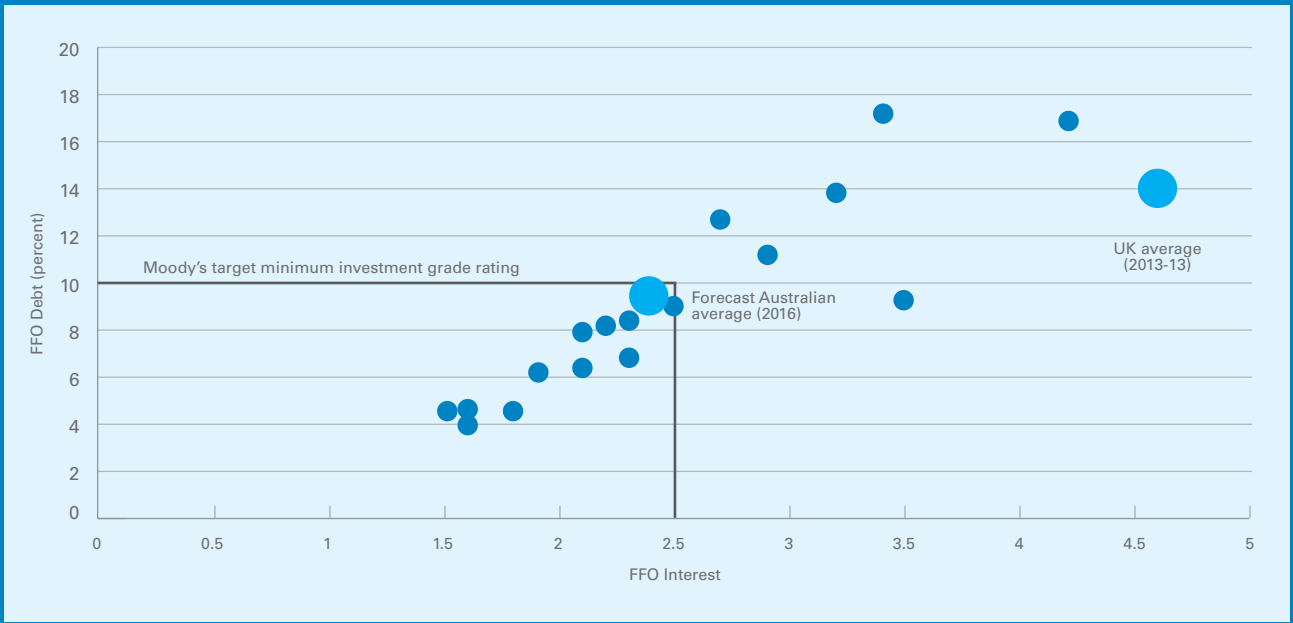
FFO to interest measures the amount of 'headroom' available for a company to service its debts given cash flows and taking into account the cost of maintaining a stable asset base. Moody's target range for an investment grade rating of Baa is between 2.5 to 4.5 for the FFO to interest ratio (a minimum of 2.5 is marked on the chart). Ofwat (the UK economic water regulator) sets a target of 3 for the FFO to interest ratio.

FFO to debt is a measure of a company's dynamic leverage. Moody's target range for an investment grade rating of Baa is between 10 per cent and 15 per cent for FFO to debt (the minimum of 10 per cent is marked on the chart). Ofwat sets a target of 13 per cent for the FFO to debt of UK water utilities.

In the chart below each point is an unspecified urban water utility.

The graph shows that the average for Australian water businesses is well below that of the UK. In its last price determination, Ofwat set target levels for companies well above the Moody's minimum and UK firms are meeting or exceeding these benchmarks.

While the Australian average meets the 'ideal' target level identified by Moody's, the analysis shows that a number of water businesses in Australia have little financial room to move if they are to maintain an investment grade credit rating.



Source: WSAA Working Paper - Financial stock take of urban water utilities December 2013 (available on request)

An independent analysis undertaken for Infrastructure Australia by ACIL Allen Consulting concluded in similar terms that:

"These results suggest there will be a continued period of rising prices coupled with ongoing pressure on funding for at least some of the water businesses. Yet the current emphasis on affordability of water and sewerage services indicates a limited appetite for the ongoing price rises required to ensure that all within the industry operate on a financially sustainable basis.

"Should such rises be resisted by government and/or regulators on affordability grounds, there will be a risk that the water businesses will begin to struggle to finance the required expansion of capacity without further injection of government funding.

2.3.2 The opportunities

It is apparent that the structures that have served us well in the past century will be unable to meet what's needed in the next 100 years. Efficiently meeting the community's long-term urban water needs will need much more than a 'business as usual' approach, and will need the sophistication to contemplate:

- Opportunities to utilise new water sources;
- the effective harnessing of emerging technologies; and
- better deployment of private finance, competitive structures and signals for private funding, as appropriate.

Utilising new water sources and enhancing liveability

The ability to draw on new water sources generates opportunities to deliver Integrated Water Cycle Management (IWCM) and promote liveable communities and regions through more integrated urban planning. At present, opportunities to improve liveability are foregone due to unclear roles and responsibilities between policy makers and corporatised water utilities.

Harnessing emerging technologies

Potential technological advances include:

- Developments in wastewater treatment which offer scope for future cost efficiencies, including: Nano-technology and advanced microbiological processes in treatment systems; improvements in nutrient capture from wastewater; and improvements in energy efficiency and energy capture;
- the uptake of digital/smart technology, which will likely prove critical to better meeting customers' needs; and
- big data analytics, which could help to improve the management and operation of urban water systems.

Water assets are very valuable—the right structures will encourage private investment and may provide appropriate opportunities for asset recycling

With the right structures, private investment into public infrastructure like urban water can be an effective way of driving price and design competition, in turn driving down costs for consumers. Private firms have access to global expertise in technologies and bring strong commercial discipline and customer focus. Indeed, Australia has already observed these opportunities in part through the private financing of assets such as desalination, and water and wastewater treatment.

Urban water infrastructure is also very valuable, with Australia's governments owning and operating some $100 billion in urban water infrastructure assets (Infrastructure Australia, 2012).

Discovering good structures to govern, regulate and control urban water may allow discrete or system-wide opportunities for motivated states to recycle existing taxpayer money out of water businesses.

2.4 Why is further reform needed?

With the water security crisis over for the time being, Australia has a logical opportunity to position the urban water sector so that it can better meet the challenges ahead, at the least cost to the community.

Efficiency and water security will continue to be fundamental drivers, alongside new priorities and requirements, such as increased customer and community engagement and wider environmental and social outcomes.

While the urban water sector enjoys a dynamic mix of public and private water businesses, the market is unlikely to meet what is needed in the absence of substantial changes to governance and regulatory approaches.

A number of reviews over recent years have identified aspects of the current institutional arrangements for the urban water sector, which may impede the ongoing delivery of safe, reliable, and efficient water and related services.

These include works by the Productivity Commission, the National Water Commission, the Harper Competition Review, several State Commissions of Audit and other reviews including, most recently, an audit by Infrastructure Australia (see Box 3). These reviews have all pointed to a need to change current policy and regulatory settings, with a focus on:

- A lack of consistent independent economic regulation;
- a lack of transparency and clarity in governance arrangements; and
- an absence of robust frameworks to guide greater competition and increased private sector involvement.

Box 3: Infrastructure Australia Audit—key findings on urban water

Infrastructure Australia found that there were gaps in service quality in some sectors. For the urban water sector, it found that:

- Economic regulation of the sector is fragmented and may not effectively protect the long-term interests of consumers: Objectives are often not clearly specified; links between economic, health and environmental regulation are not well identified; and existing economic regulation does not provide the consistency, certainty and transparency necessary to support further private involvement in the sector.
- There is a need for more transparent and competitive pricing of water supply and wastewater treatment services, across urban and regional areas. In encouraging greater competition, careful consideration of the appropriate market structure(s) is required.
- Water quality in urban areas is good, but in parts of regional Australia it does not meet relevant drinking water standards. There is evidence of a significant maintenance backlog for water, sewerage and drainage assets in NSW and Queensland and these pressures are greatest when population growth is expected to remain constant or fall.
- Future climate variability could lead to a need for further water infrastructure to augment supplies.
- A number of urban water utilities have increased their borrowings over recent years, with consequential impacts on their commercial performance and their ability to take on additional debt.
- Underinvestment in maintenance of some water assets, and ageing infrastructure, will require an increased focus on maintenance and renewal.

Source: Infrastructure Australia Audit Report 2015

2.4.1 Lack of consistent independent economic regulation

Independent economic regulation of utilities was one of the key aspects of the competition policy frameworks and reforms, which began in the 1990s.

The National Water Initiative (NWI) recommitted Australia's governments to ensuring independent regulation to set or review price determinations for the urban water sector.

However, the NWI has not maintained its reform momentum. Given that water utilities are state-owned and state-operated, the case for independent economic regulation is a strong one —because it ensures a degree of independent oversight and helps ameliorate the inherent conflict where government is at once the shareholder, rule setter, operator and retailer.

A range of potential conflicts between governments' various roles in water is outlined in Box 4 below.

Box 4: Conflicts between ownership of and regulation of urban water businesses

As the ACT's economic regulator for utility services, the Independent Competition and Regulatory Commission's (ICRC) role includes setting the maximum prices that may be charged by the ACT-Government owned ACTEW (now Icon Water) for the provision of water and sewerage services.

In 2013 the ICRC undertook a review of prices charged by ACTEW. The price review process was strongly contested and was the subject of an ACT Auditor General's review, which found that:

There are conflicts in the roles of the Treasurer in the setting of water and sewerage prices in the ACT. The Treasurer is a voting shareholder of ACTEW and is also the Minister responsible for water and sewerage price setting policy. As part of the 2013 water and sewerage price setting process, the Treasurer set the terms of reference for the investigation and provided submissions to the ICRC on behalf of the ACT Government. While there are practices that mitigate the risk of adverse effects due to conflicts in roles, such conflicts remain. Given the importance of the roles it would be prudent to further mitigate (and if possible) eliminate the conflicts in roles.

Public concerns have been raised about water pricing outcomes in South Australia where the Government retains ultimate control over these decisions. For many years the SA Government constrained the role of that State's price regulator, the Essential Services Commission of South Australia (ESCOSA) to one of undertaking an ex-post review of how prices were set in a 'transparency statement'. While ESCOSA now has a greater role in reviewing SA Water's capital expenditure and operating expenditure in advance, the State Government retains control over prices.

The SA Council of Social Services (SACOSS) has also expressed concern about conflicts in government-ownership given its concurrent pricing powers. SACOSS Executive Director, Ross Womersley, has stated:

That's still the key issue sitting behind water reform and the conflict in government. So much of what we pay for is about a pseudo tax rather than about payment for the services. Until we manage to extract water pricing from the Government's need for income, or revenue, it's going to be very difficult to engage in reform.

The 2014 Queensland Commission of Audit also observed that:

There has been a tendency for governments to use price regulation as a mechanism to protect consumers from 'price shocks', where prices or price increases are considered to be excessive. This type of government intervention may provide some temporary or short-term price relief for consumers.

However, it creates regulatory uncertainty and inconsistency for existing and potential industry participants, which can discourage investment. Over time, it is unsustainable to have a situation in which prices do not reflect the actual cost to deliver services.

The (former) National Water Commission has also observed that in Western Australia the independent economic regulator's assessments are advisory only, with government making pricing decisions. It noted that it is likely that such decisions, when taken by governments, will consider matters relevant to their multiple roles, potentially distorting pricing decisions.

Source: ACT Auditor General's report, Adelaide Advertiser, Queensland Commission of Audit 2013, National Water Commission (2014)

A 2014 WSAA report considered this issue, finding that independent economic regulation has not yet been fully or consistently implemented across Australia; and that current arrangements do not yet reflect best practice. Challenges cited by the report included a continuing absence of independent economic regulation in some jurisdictions, unclear or conflicting remits given to regulators, and inadequate rights of review of regulatory decisions.

Table 1 below outlines the key elements of best practice economic regulation for urban water.

Table 1: Key elements of best practice economic regulation for urban water

Element	Rationale
Establishing regulation which is independent from Governments	This is necessary to ensure regulators are free from undue influence that could compromise regulatory outcomes. It is also important that regulators can determine prices rather than just recommend.
Setting clear objectives for regulators to act in the long-term interests of customers	Lack of clarity in objectives leads to inconsistency in decision making and lack of accountability.
Establishing incentives for productivity and innovation	Productivity and innovation are necessary for utilities to drive further efficiency gains. In addition, future efficiency and innovation will be driven in part by greater private involvement in the water industry and by adopting new business models.
Assessment of financial viability to protect the long-term interests of customers	The sector needs to be financially sustainable to maintain service levels over the longer term. Regulators need to incorporate financial viability metrics into the price determination process.
Allow for strong and transparent customer engagement within the regulatory framework	Utilities need to better understand customer needs and what drives customer value. It is critical that this understanding can be taken into account within the regulatory process.
Merits review and appeal mechanisms for utilities and other stakeholders	These are essential to ensure accountability of regulators for their decisions and are a precondition for further private involvement.

Some jurisdictions meet most elements of a best practice model, but no jurisdiction meets them all. For example, of the eight regulatory jurisdictions in Australia:

- Only four have clear objectives;
- none have well developed incentives for productivity and innovation;
- only two have (recently) begun to consider financial viability of utilities; and
- only two jurisdictions have merits appeal processes.

A survey undertaken for the 2014 Australian Water Association (AWA)-Deloitte State of the Water Sector Report found that effectiveness of regulation was rated highest in those jurisdictions (NSW, Victoria and the ACT) where formal and well-established economic regulatory arrangements are in place.

The current economic regulation frameworks undermine the certainty needed for long-term planning and do not guarantee a financially sustainable price path for utilities. The average credit rating metrics for Australian water businesses are well below those in the UK, and some water business in Australia have little financial room to move if they are to maintain an investment grade credit rating.

The current arrangements are also not sufficiently robust to support more extensive private sector involvement.

2.4.2 Dated governance arrangements

Perhaps the most common theme emerging from the succession of independent reviews of the water sector in recent years has been a finding that there are poor governance arrangements. For example, the Productivity Commission (2011) found that:

"Conflicting objectives and unclear roles and responsibilities of governments, water utilities and regulators have led to inefficient allocation of water resources, misdirected investment, undue reliance on water restrictions and costly water conservation programs."

The National Water Commission in its final assessment of urban water reform identified the critical policy priorities that would enable the sector to meet customer and community expectations in the future. Improved governance also featured in its assessment.

It found that:

- Governments are yet to fully achieve the agreed separation of policy, regulation and service delivery functions as outlined in the 1994 COAG Water Reform Framework;
- major metropolitan utilities' capacity to manage operation and investment decisions is being undermined by a shifting policy environment and political interventions; and
- a lack of institutional alignment across the urban water cycle is creating a barrier to integrated water management.

It further commented that:

"Today, major metropolitan utilities operate under a corporatised governance structure that is intended to provide flexibility and accountability for operational and investment decisions. This is underpinned through accountability mechanisms, including varying degrees of independent regulation and, in many cases, scrutiny of utility boards under the Corporations Act 2001 (Commonwealth). Governments, however, continue to intervene in regulatory and operational decisions, often under the guise of their role as equity shareholders, to the extent that the operating mandate of utilities is unclear."

2.4.3 Lack of robust frameworks limits competition and private investment in water

The urban water sector has been very effective in using traditional forms of private sector involvement, such as outsourcing and other contracting models; but evolving private participation to the next level will require careful consideration of pro-competition models to signal for participation.

Current regulatory, competition and governance frameworks are a barrier to both the public and private sectors maximising productivity gains for customers. New players want to enter the industry but the frameworks are not in place which will allow them to do so while also ensuring positive outcomes for customers.

Even on existing settings, new service providers have entered the market to provide water and wastewater services. Examples include dedicated micro utilities within new developments.

This shows that participation by new entrants has occurred despite, rather than through, good regulatory settings. Careful consideration needs to be given to a systemised approach to engage the private sector in a way that is sustainable, and delivers consumer benefits.

2.5 Why reform now?

This paper evidences a broad agreement across the public and private water industry that the current approach to urban water is not delivering the best outcomes for the consumer.

These costs are currently being absorbed by consumers and by the water utilities themselves—but unaddressed, it will mean higher bills and lower quality services and bodes poorly for environmental and liability outcomes in the future.

Right now, while the sector is out of 'supply crisis' mode, is the best time to begin a real community discussion about the best long-term shape and structure of Australia's urban water sector—setting the stage for a much more efficient and consumer centric approach to meet Australia's urban water challenge.


KUBOTA

3

3 Australia's modern urban water sector

What is the current state of the industry?

The past quarter century has seen considerable change and modernisation across the urban water sector.

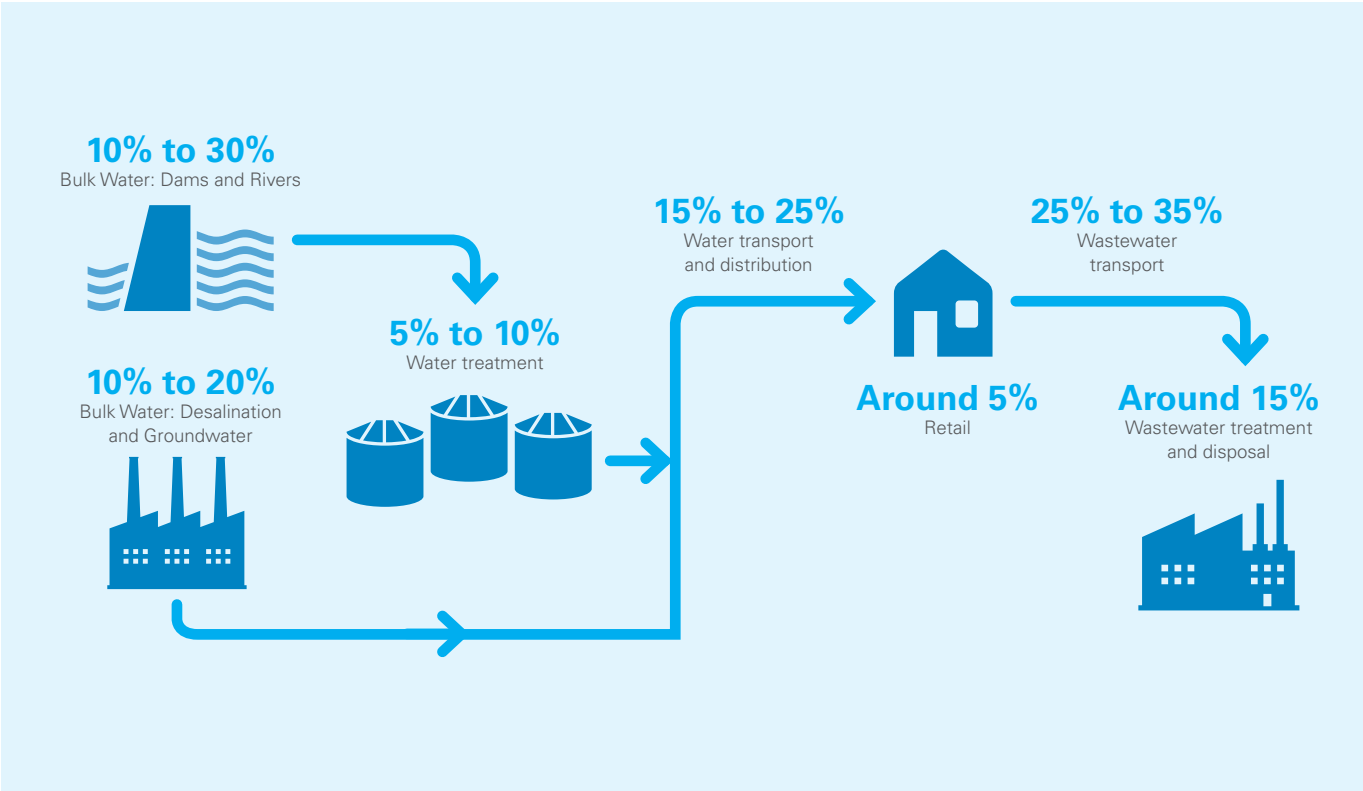
While urban water markets remain defined by large public utilities, these utilities have used increasingly sophisticated models to increase private sector participation, innovation and efficiency within public water markets.

In particular the last decade has seen an increasing use of privately financed delivery models, and has seen embryonic competition begin to emerge.

3.1 The urban water supply chain

While urban water is important, the scope and cost of the water supply chain are not always well understood. Figure 4 sets out a typical urban water supply chain and describes the costs at each stage of the chain.

Figure 4: Urban water cost structure[1]



Source: WSAA

1 Percentage of total costs — includes capital and operating costs.

Large, iconic bulk water assets, like dams or desalination plants, tend to dominate the water infrastructure debate, but represent less than 30 per cent of total costs.

In some ways, urban water should be considered a transport business, given that bringing water to, and wastewater from, the premises represents around half of water costs.

Wastewater is often a forgotten end of the water market, with a WSAA survey finding half of all Australian urban water consumers are unaware that their water supplier also provides wastewater services.

While unlikely to sustain the public imagination and focus, it is in fact the wastewater sector that holds the most significant opportunities to improve outcomes and costs.

3.2 Industry structure

The urban water industry comprises some 220 utilities, but circa 69 per cent of the population are served by the seven largest urban utilities—with the remainder serving just 7.8 million customers (BOM, 2013-14).

These utilities are all publicly owned, but Figure 5 shows the wide variation in the way water utilities are arranged and structured.

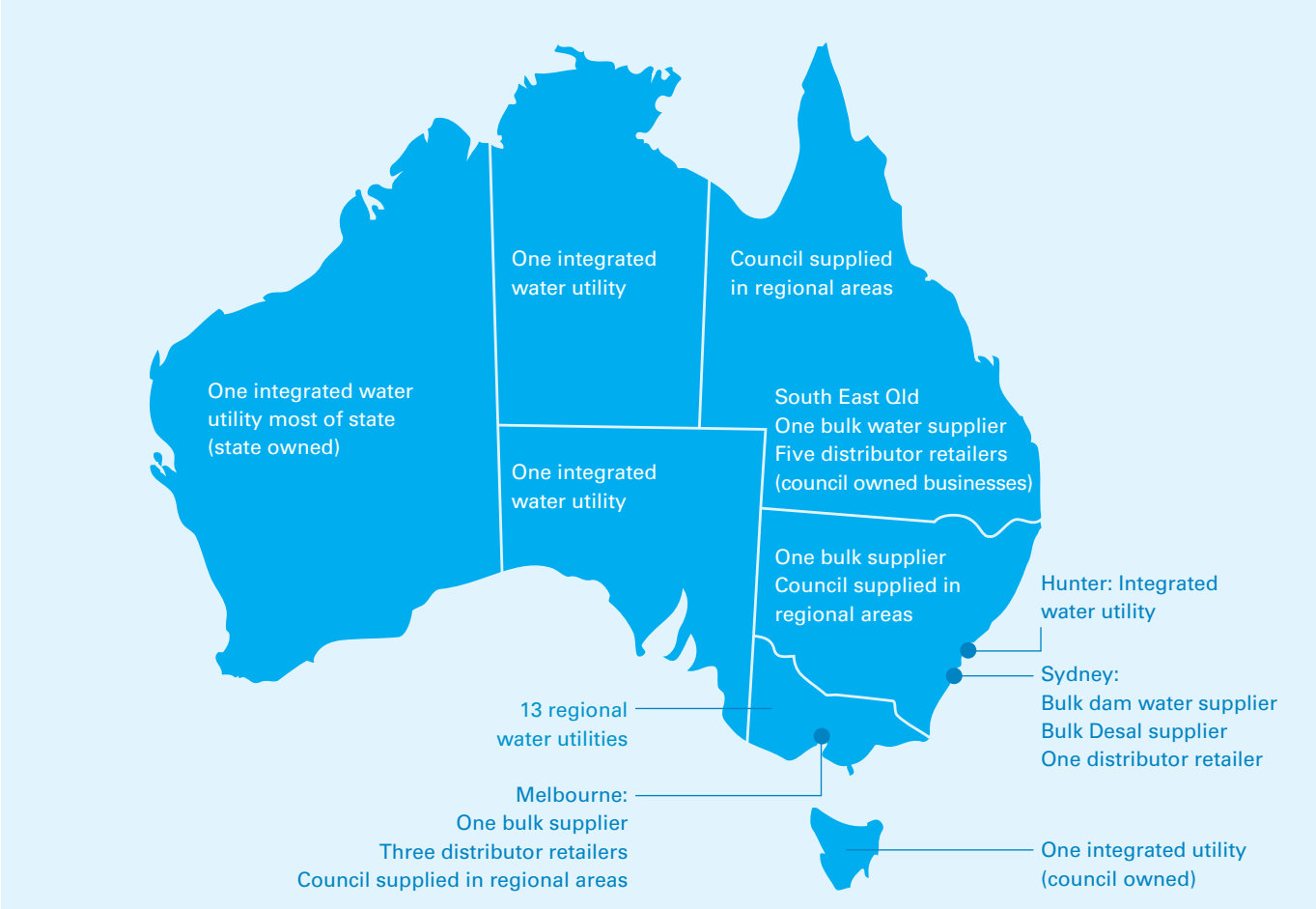
In some states, urban water is vertically integrated from dam to tap—for example in South Australia and Western Australia.

In other places, there have been structural separations between bulk water supply and retail and distribution functions, such as in Melbourne, Sydney and South East Queensland (see Table 2).

The legal form of these public utilities is also different across locations; ranging from companies structured as state-owned corporations through to smaller utilities which operate as divisions within local government authorities.

Where utilities have been corporatised, it has provided a much more commercial focus, and provided for better division between the policymaking role of the government shareholder, and the commercial decision making of a public utility company.

Figure 5: Urban water public utility structure in Australia



Source: WSAA

Table 2: Key features of urban water utilities across Australia

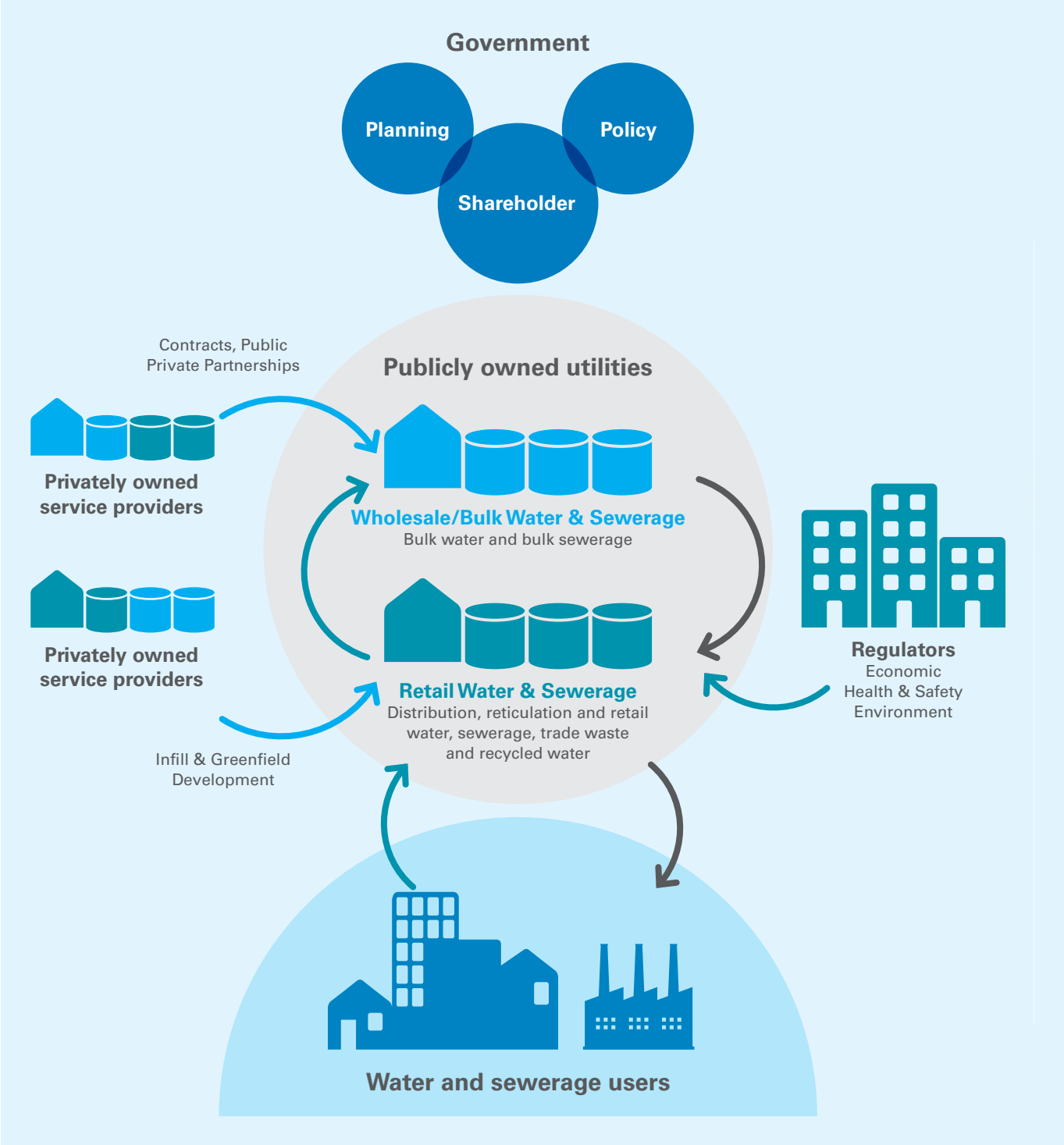
State	Regulator	Utility	Service	Ownership
ACT	Independent Competition and Regulatory Commission	Icon Water	Integrated	Government Owned
NSW	Independent Pricing and Regulatory Tribunal	Sydney Water	Distributor and Retailer	Government Owned
		Hunter Water	Integrated	Government Owned
		WaterNSW	Bulk Water/Integrated	Government Owned
		105 Regional Urban Utilities	Varied	Varied
NT	Utilities Commission	Power and Water Corporation	Integrated	Government Owned
SA	Essential Services Commission of South Australia	SA Water	Integrated	Government Owned
TAS	Tasmanian Economic Regulator	TasWater	Integrated	Council Owned
QLD	Queensland Competition Authority	Seqwater	Bulk Water	Government Owned
		Queensland Urban Utilities	Distributor and Retailer	Local Council Owned
		Unitywater	Distributor and Retailer	Local Council Owned
		Gold Coast Council	Distributor and Retailer	Local Council
		Logan Council	Distributor and Retailer	Local Council
		Redland Council	Distributor and Retailer	Local Council
		81 Regional Urban Utilities	Varied	Local Council
VIC	Essential Services Commission	Melbourne Water	Bulk Water	Government Owned
		City West Water	Retailer	Government Owned
		South East Water	Retailer	Government Owned
		Yarra Valley Water	Retailer	Government Owned
		13 Regional Urban Utilities		
WA	Economic Regulation Authority	Water Corporation	Integrated	Government Owned
		Aqwest	Integrated	Government Owned
		Busselton Water	Integrated	Government Owned

Source: WSAA/BOM

But the urban water sector encompasses more than the government-owned water businesses, which directly supply services to end customers. As shown in Figure 6, behind the scenes there are multiple parties who undertake various roles, including:

- The private sector provision of inputs, services, and finance;
- government—ownership, policy and planning; and
- regulators—economic, environmental and public health regulation.

Figure 6: Roles in the Australian urban water sector



Source: Frontier Economics

3.3 The current scope of private sector competition, investment and innovation

While the urban water sector is defined by publicly owned utilities, this hides the considerable existing degree of private sector participation, through various traditional and more sophisticated contracting approaches, shown in Figure 7 below.

Outsourcing of services, build-own-operate (BOO) contracts, Public Private Partnerships (PPPs), and joint ventures are now well established in Australian water markets. Sales of assets and direct service provision by private suppliers are less common. The types of private involvement are described below.

Outsourcing of services

Outsourced contracting models have been well utilised by the public water utilities, used to provide efficient services across a wide spectrum of services.

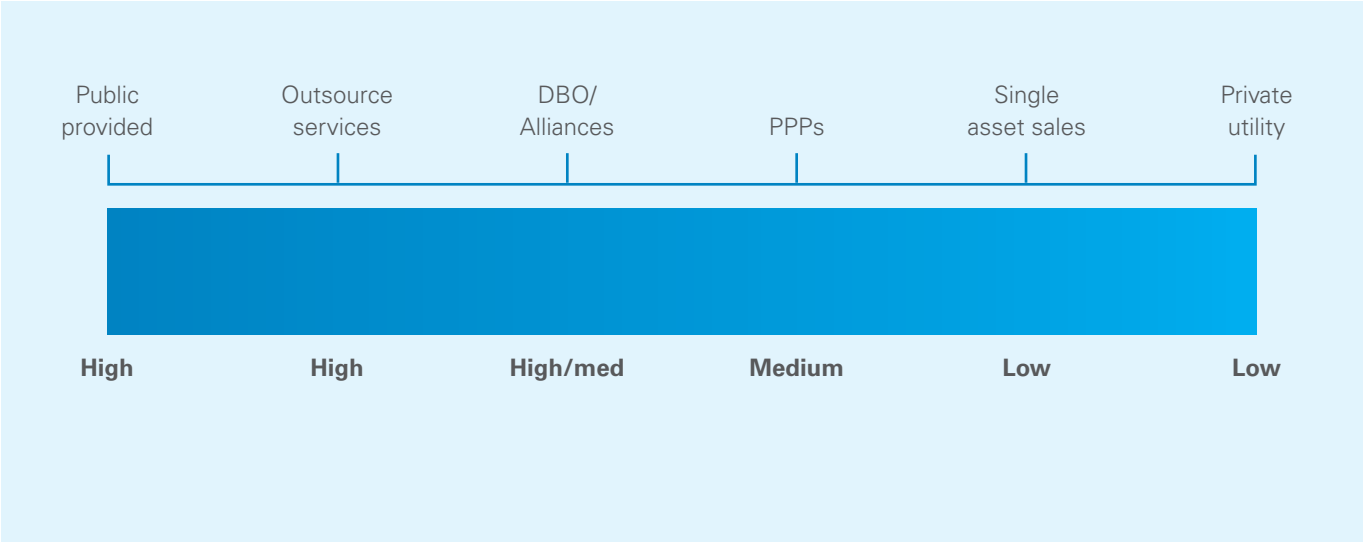
Examples of outsourced services include mechanical, electrical and civil maintenance and construction, legal and scientific services, concept and detailed design, project management, construction, IT, meter reading/replacement, hydraulic modelling, fleet management, corporate audit, pollution response, land management practices, billing services, biosolid transportation and disposal; and miscellaneous services such as cleaning and security.

A recent example saw Hunter Water Corporation outsource an Operate and Maintain contract for 25 of its water and wastewater treatment plants in the Hunter Region in NSW.

This $279 million (AUD) contract, awarded after a 12 month international tender process, is the largest ever awarded by Hunter Water and marks the first time operation and maintenance of its plants has been taken to tender.

Under the eight year contract, Veolia will operate and maintain the plants which supply potable water and wastewater treatment services to over half a million people across six local government areas in New South Wales. The engagement of a global operator will allow for the implementation of best-practice technologies, whilst also helping to ease cost pressures for local families and businesses.

Figure 7: The public private spectrum (with scale of usage)



Source: WSAA

Design/Build/Operate (DBO)/Alliances

Beginning from the 1980s, Australia's water utilities have used an evolving range of more sophisticated contracting types, which have used private investment structures to transfer project and operating risks to private providers.

Indeed, the build-own-operate (BOO) and build-own-operate-transfer (BOOT) contracts that began in the 1980s represent some of the earliest PPP models in the world, and delivered substantial cost savings to the public utility clients. Box 5 presents several useful examples of these models.

More recently, utilities have also deployed alliance and similar partnership models, designed to more efficiently allocate risk and gain share between the public utility client and the contractor.

One example is the Allwater joint venture with SA Water to manage and operate Adelaide's water and wastewater systems, which entails collaboration on strategy and sharing skills, while the assets remain in government ownership and billing is managed by SA Water (see Box 6).

Another example is the Alliance Services Agreement between City West Water (CWW) and Programmed Facility Management (PFM) which is outlined in Box 7 (overleaf).

Box 5: BOO/BOOT arrangements for treatment plants

TRILITY designed, built and financed ten major water treatment plants along the Murray River for SA water during the mid-nineties. These treatment plants are spread along 305 km and supply water to communities from Renmark to Tailem Bend with some of the treated water being pumped as far as the York Peninsula. These treatment plants resulted in a visible change in water quality and today continue to boost economic growth in the region. Financing for these plants was raised entirely by the private sector at a time when the State Government was under pressure to not increase debt.

Other examples include: the Prospect Water Treatment Plant (New South Wales); the Yan Yean Water Treatment Plant (Victoria); the Illawarra and Woronora Water Treatment Plant (New South Wales); the Ballarat North Water Reclamation Plant (Victoria); and the AQUA 2000 project (Victoria).

Source: TRILITY

Source: The Swan Reach Treatment Plant in South Australia – photo courtesy of TRILITY

Box 6: Adelaide Services Alliance

In October 2010-11 SA Water undertook an exhaustive procurement process to select a successful proponent to partner with in a 10-year services alliance contract to operate and maintain its metropolitan Adelaide water, wastewater and recycled water systems. In February 2011, Allwater, a joint venture between Transfield Services and SUEZ was announced as the successful proponent, and the Adelaide Services Alliance was formed. The new arrangements commenced at the expiry of the previous management services contract in mid-2011. The outsourced alliance option with revised scope was chosen on the basis it would provide:

- Best value customer service through a one stop-shop for all general, billing and service queries and priority based field service response to faults;
- joint management of operations to ensure alignment of commercial and performance goals and utilisation of strengths from each partner organisation;
- flexibility to manage future business directions and priorities, such as economic regulation and other water industry reforms; and
- improved asset management through the separation of maintenance and capital works delivery, to encourage optimal life cycling costing.

One of the objectives of the alliance model was to combine local SA Water knowledge with the international expertise of the Alliance partners to find smart, tailored solutions to improving the quality and efficiency of the service delivered to SA Water's metropolitan customers. Adelaide is often faced with poor raw water quality and the alliance model has enabled Allwater to draw on the expertise of its international parent companies to come to Adelaide to assist local operators to optimise the existing water treatment plants. Such actions have seen reduction in turbidity levels at all plants and in some cases chemical dose rates as well, thus improving water quality for customers and lowering operating costs.

One of the key drivers in changing its contract model was to provide flexibility to readily adapt to changes in the business environment. The contract was written with this in mind by providing broad authority to the Alliance Leadership Team to vary the contract in the event of service change needs, new legislation or regulatory requirements.

The vision for the future is to see spontaneous collaboration between Allwater and SA Water beyond the scope of usual 'business' collaboration. Just some of the opportunities include energy management, maintenance optimisation and service provision across the boundary with SA Water's regional operations group. One such avenue for collaboration is through Suez's worldwide InnoTech program.

For customers, the drivers will continue to be affordability and service provision. SA Water is developing its digital strategy, which will revolutionise customer engagement, as well as jointly developing with Allwater a new work management system for their field workforces.

Allwater has also provided input into SA Water's next Regulatory Business Plan, as well as assisting with business development opportunities in the water maintenance and biosolids space.

Source: Adelaide Services Alliance, Annelise Avril, Mark Gobbie Allwater, Adelaide, SA, Australia. SA Water, Adelaide, SA, Australia, Paper presented at OzWater 2015

Box 7: City West Water (CWW)—Alliance Services Agreement

The Alliance Services Agreement (ASA) comprises all of CWW's responsive maintenance, and a portion of its preventative maintenance, for its water supply and sewerage networks. It includes civil, mechanical and electrical works. The ASA lists maintenance job types and corresponding at-cost unit rates as well as an allowance for overheads and profit. Targets are set for efficiency and quality of service, with a financial reward/penalty attached. The ASA has a rolling term, which is extended annually by agreement. The alliance is managed by a Joint Leadership Team (JLT) comprising the Managing Director and relevant General Manager from each business.

The ASA is effectively a transparent reimbursable contract with an incentive component added. Each year unit prices for various maintenance job types are adjusted depending on price movements in the market (for example petrol price increases or labour cost increases) with the outcome being approved by the JLT.

Through the use of annual efficiency targets cost increases have been kept at or below CPI. Benchmarking studies carried out by the WSAA have shown that CWW's maintenance costs were "low" while its service delivery was "medium", comparing favourably with water utilities throughout Australia.

The alliance between CWW and PFM has serviced both organisations well and its long-term nature has resulted in benefits to both organisations. The way in which work is undertaken today is greatly different from when the Alliance first commenced. This is largely the result of the invention and deployment of initiatives of personnel from both organisations working collaboratively over the life of the ASA. Costs have been contained at or below standard industry inflation measures and the outcomes of changes in legislation, regulations and community expectation absorbed with no increases. Health and safety, which is a major focal area in the alliance has been well attended to with good results.

This reflection on the history of the outsourced maintenance work and the effectiveness of the alliance and its long-term nature reveals an excellent record, both in terms of the results delivered and the efficiency gained.

Source: Long Term Private Sector Alliance In A Regulated Water Industry Matthew Giesemann, Michael Waymark. City West Water, Footscray, VIC, Paper presented to OzWater 2015.

Box 8: Privatisation of the Sydney Desalination Plant

Sydney's Desalination Plant (SDP) is a key component of Sydney's water supply security and will help guarantee water supply even in years of drought. It is able to produce an average of 250 million litres per day of drinking water for up to 1.5 million people and is equivalent to 15 per cent of Sydney's total drinking water supplies. The SDP will operate at full capacity to supply Sydney Water's network when total dam storage level falls below 70 per cent and will continue to do so until the total dam storage level reaches 80 per cent.

The SDP was designed and constructed under government ownership, then privatised through a long-term lease in 2012, removing $2.3 billion from the Sydney Water and State Government balance sheet. It is now jointly owned by the Ontario Teachers' Pension Plan Board and Hastings Funds Management Limited and is operated by Veolia Water Australia. It operates under a licence issued by the Independent Pricing and Regulatory Tribunal (IPART) under the NSW Water Industry Competition Act.

The SDP has been deemed a monopoly supplier of non-rainfall dependent water. Consequently, the prices it charges to Sydney Water are determined every five years by IPART. The SPD's current Determination expires in 2017 and provides for charges, which vary depending on the plant's modes of operation. At times when the plant is operating, the owners are able to levy a charge comprising a water usage charge (volumetric charge including variable network costs component) ($/ML); a water service charge (fixed daily charge including fixed and variable network costs component) ($/day); and a pipeline charge from the 'Date of Operation' ($/day). During a 'Shutdown Period' a daily shutdown charge (including fixed and variable network costs component) ($/day applies).

Source: SDP

Public private partnerships

More recently, most jurisdictions have used the discipline of firm capital and operating prices and the full risk transfer that is provided through modern PPP contracts.

PPPs are used as a risk mitigation and allocation tool—and are an effective way to force a design and price competition, with the additional incentives created through private equity investors—overseen by the discipline of private sector debt.

Single asset sales

To date there has been very little transfer of water industry assets to the private sector. The most notable exception is the privatisation of the Sydney Desalination Plant (SDP) (see Box 8).

Private utilities

A degree of 'disruptive' competition is also beginning to emerge between public monopolies, and private 'micro utilities' servicing developments on the urban fringe of major cities—and high density developments closer to the CBDs of major cities.

In NSW, under the Water Industry Competition Act 2006 (NSW) (WICA) framework, there has been increased private interest in developing, owning and operating the water and wastewater infrastructure for entire communities.

As a result of the regime under WICA, a number of companies are now providing alternative water services to Sydney Water, Hunter Water and local councils.

Currently there are 14 WICA licensed businesses listed with both network operator and/or retail supplier licences. However, to date, private sector schemes have been relatively small and/or have served developments beyond the urban fringe (and beyond the immediate servicing plans of the large incumbent public water utility).

The majority of WICA licensed businesses provide services for housing estates and on-site reuse for high density residential apartment buildings.

These developments represent the green shoots of competition in the water industry. As discussed in section 5.4, if competition is to serve the interests of customers, then there needs to be a greater understanding of where entry can occur across the value chain and the 'market rules' necessary to encourage innovation while balancing the interests of existing suppliers.

3.4 Government as shareholder and planner

Government continues to play a dominant role in the urban water industry in Australia, although the nature and extent of government involvement varies over time and by circumstances.

Direct intervention tends to be greater during times of crisis.

Australia's constitution sees states responsible for **water sector policy**, and, acting through their government departments, states are responsible for the function of developing and implementing high-level strategic frameworks providing a policy context for the water industry.

Water resource management and planning functions are predominantly undertaken by the relevant state government departments.

State governments also undertake **long-term investment planning** for meeting future water supply needs.

State governments and their water authorities have historically sought to balance supply and demand, through central planning which considers long-term supply and demand forecasts and seeks to determine the optimal investment strategy to achieve a given level of security of supply.

Historically, this meant picking where and when to build the next dam—but the loss of suitable dam sites, greater concerns about environmental effects, changing rainfall patterns and the development of alternative bulk water sources has made infrastructure planning more layered.

Supply-demand planning now involves assessing a diverse range of both supply-side options (e.g. desalination, recycled water, inter-regional transfers) and demand-side measures (e.g. public education programs, voluntary and then mandatory water use restrictions, water efficiency measures and inclining block tariffs).

3.5 Regulation of the sector

In addition to management of the water resource itself, a number of aspects of the extraction and supply of water and the disposal and/or re-use of wastewater are subject to regulation in order to ensure the efficient, safe, reliable, environmentally sound and equitable provision of water services. In particular, regulatory bodies undertake environmental, health and economic regulation of the sector.

Environmental regulation in the water sector lies principally with environmental protection authorities (EPAs) across different states. In the water sector, one of their key roles is the establishment, monitoring and enforcement of discharge standards for sewerage treatment plants (STPs). Environmental agencies can also play a role in approval processes for wastewater treatment plants and for the implementation of recycled water schemes and associated infrastructure, management of odours and biosolids, and development of guidelines for the environmentally sound use of recycled water.

Water quality as it relates to **public health** is typically the responsibility of state and territory Departments of Health. These agencies set, monitor and enforce compliance with drinking water standards, issue guidelines, promote public awareness of drinking water quality issues and have defined roles in incident management and emergency response.

Economic regulation aims to reproduce the disciplines otherwise provided by competition, to ensure that monopoly businesses do not earn monopoly profits or provide sub-standard services, but do enable them to cover the efficient costs of operating and maintaining the network assets. In the context of utility industries such as water, regulatory functions typically entail:

- Determination or oversight of the prices and service levels provided by monopoly suppliers;
- licensing of suppliers as a means of monitoring and enforcing compliance with these services/prices; and
- overseeing competition in contestable elements of these industries (e.g. via regulation of third party access to essential facilities).

There has been increasing involvement of independent regulators in the industry in recent years, although independent economic regulation has not yet been established in all states.


WATER

4

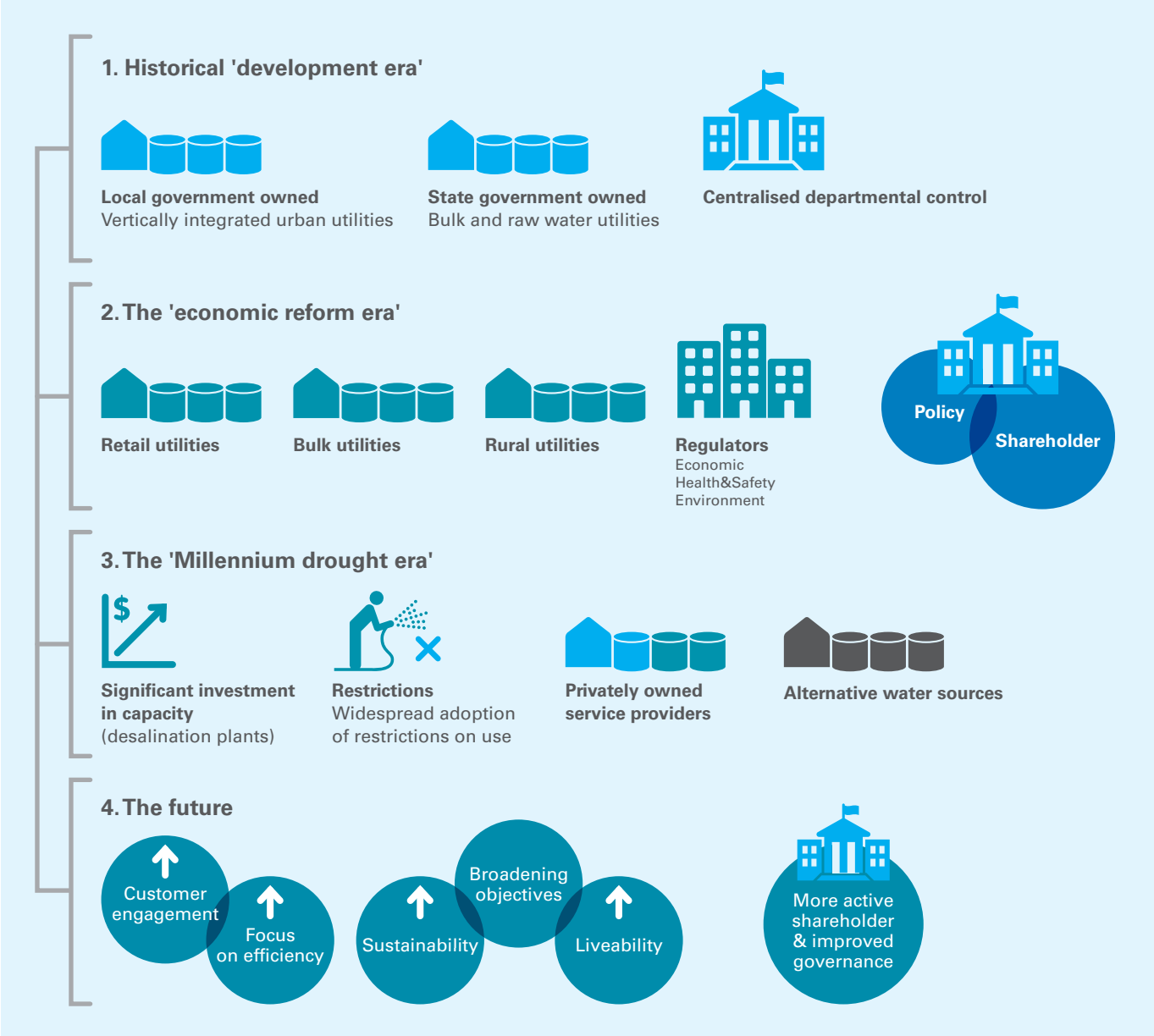
4 The three eras of urban water

Figure 8 shows the three eras in Australia's urban water sector, each reflecting changing community needs and public sector priorities.

We describe these periods as:

- The 'development era': Saw major public investments into urban water infrastructure, reflecting broader economic and social development programmes across the states;
- The 'economic reform era': Saw changes in structure and governance of urban water, in line with broader micro-economic reforms across national infrastructure markets.
- The Millennium drought age: The first decade of the 21st century saw a return to major supply-side investment, responding to the millennium drought.

Figure 8: The eras in Australia's urban water sector



Source: Frontier Economics

4.1 The 'development era'

Urban water requirements have always shaped Australia's development.

Sydney's original location in Botany Bay was abandoned in favour of the famous Harbour, because of the reliable waters offered by Circular Quay's Tank Stream.

Melbourne's location was determined by the Yarra; Adelaide's by the Torrens and so on.

As with modern water policy, wastewater won comparatively little early focus or investment, despite its importance.

Historical accounts refer to "Smellbourne" and Sydney's open sewers, with the Yarra and Tank Stream serving as drains and sewers, as well as the source of fresh water.

The shape of Australia's contemporary urban water sector still reflects the institutions established to counter the water supply threat, posed by growing populations and poor resource management.

In the major cities, large integrated public utility suppliers were established, with strong powers to plan and augment supply sources, in line with population growth; and to develop effective wastewater services to avoid further typhoid and other public health scandals.

The costs of these systems were recovered through property taxation charges, with water infrastructure forming a key plank of state development programmes across the balance of the 19th and 20th centuries.

These public water authorities typically managed the full spectrum of the water supply chain—spanning from dam to tap; and from drain to outfall.

Reflecting previous breakdowns in public health, there was a complete and deliberate separation between the aspects of the water cycle, which saw:

- Potable water transported from large, distant catchments and treated, before being distributed to consumers through the pipe network;
- wastewater transported through the sewer network and given 'basic' treatment before being released into the environment—a 'once-through' system; and
- stormwater viewed as a flood mitigation issue, with stormwater seen as a waste product rather than a potential water source.

With some exceptions, water supply was generally solely reliant on dam storage.

This means that increasing demand for water was solved simply through building new dams—and releasing more effluent into the environment.

The development era was very successful in meeting water security, public health and wider state development objectives, with virtually no water quality or supply restrictions across this period.

By the mid 1980s however, the system was under pressure, as under-pricing drove overuse, in turn forcing ever more costly investments in dams and networks. As with electricity, gas and transport, urban water utilities were blamed for 'gold plating' infrastructure—and at the same time, again faced growing community concern about the state of catchments, waterways and the marine environment.

4.2 The 'economic reform era'

By the 1980s a range of direct and indirect pressures was forcing a national focus on reforms to economic infrastructure markets, including urban water, electricity and gas markets, responding to the need to increase national economic competitiveness.

Alongside economic efficiency, urban water reforms have also broadened expectations on urban water utilities to deliver and manage wider outcomes, like the protection and conservation of catchments, waterways and the marine environment.

The 1994 *Strategic framework for water reform* marked the first national water reform agreement—with its key aspects reflected in the 1994 National Competition Policy framework.

This document was important for urban water markets, because it agreed a national approach to reform water tariffs, based on full cost recovery and consumption-based pricing. The policy also sought to reduce the degree of cross subsidisation and to make remaining subsidies explicit.

This framework also provided for a significant overhaul to the 'development era' utilities, forcing new separations between water resource management, regulatory and service delivery functions within urban water.

This structural separation recognised the inherent conflict where a single public authority was concurrently the operator, regulator and shareholder—and price setting authority.

While the eventual structural, institutional and pricing reforms implemented by the states varied, they generally included:

- Cost reflective pricing and full user funding;
- corporatisation of water utilities;
- independent regulation; and
- use of modern delivery models, like contracting out, to drive price competition and efficiency at an asset level.

Independent regulation of other aspects of urban water authorities' activities also developed during this period, such as new standards for effluent discharge and improved public health regulation through drinking water quality standards.

The reform period saw industry remain publicly owned, but within a substantially changed market structure, with new disciplines around investment and operational decisions. One aspect of the reform period was a focus on efficient scale—with Victoria axing hundreds of local authorities in favour of 15 regional authorities.

This period also saw varying degrees of disaggregation within water markets.

For example, Melbourne's Metropolitan Board of Works (MMBW) was split into a wholesaler and three retail businesses. Meanwhile in Sydney, the 1998 cryptosporidium scare drove formal separation between the Sydney Catchment Authority's role supplying bulk water and managing the catchments—and Sydney Water's treatment, distribution and retail functions.

Unlike other utility sectors, institutional reform in urban water did not extend to full deregulation or privatisation of the businesses themselves—but has seen a substantial growth in the private water industry through contracting models.

An increasing range of activities was contracted out to the private sector, particularly by the larger urban authorities. In 1995 SA Water contracted out to United Water the operation, maintenance and management of the entire Adelaide water supply and wastewater system under a 15-year contract.

The private sector became more involved in the industry via a range of more extensive contractual arrangements. For example, BOO/BOOT schemes for water and wastewater treatment plants became more widespread.

Overall, there is strong evidence of significant benefits from the pricing and institutional reforms undertaken during this period, which included:

- The introduction of consumption-based charging in most metropolitan and regional urban areas in the 1990s consistently resulted in reductions in residential water consumption (per property);
- there was a decline in real operating costs per property for water and wastewater services in many urban areas from the late 1980s to early 2000s (although in some cases costs subsequently increased due to new investment). While this was due to a number of factors, the introduction of pricing and institutional reforms is likely to have played an important role;
- independent economic regulation of urban and rural water services has provided increased scrutiny of water businesses' expenditure, resulting in cost savings to customers;
- where in place, the introduction of customer protection frameworks is ensuring access and better outcomes for disadvantaged customers. These frameworks are most effective in jurisdictions with strong independent economic regulation, such as Victoria and New South Wales; and
- the movement to recovery of full efficient costs means that many water businesses (particularly metropolitan urban water businesses) are now better placed to fund major new investments from their customers than they would have otherwise been.

Beyond these achievements, a growing recognition of the need for further reform spawned the 2004 National Water Initiative (NWI).

This agreement sought to reanimate the National Competition Policy type reforms in the urban water sector —and also signalled a greater Commonwealth Government role in water policy.

While much of the focus of the NWI was on rural water issues, for urban water the NWI largely focused on completing already agreed reforms.

Specific NWI urban reform actions include demand management, innovation and capacity building to create water sensitive Australian cities and metropolitan pricing reform.

4.3 The 'Millennium drought era'

The NWI's consideration of urban water policy appears to be a secondary issue, behind rural water; but the growing impact of the Millennium drought and the increasing public focus on climate change and storage levels soon served to substantially increase the political and community focus on urban water supply.

At the time, there were growing fears that the changed rainfall patterns may represent a permanent change, rather than a drought event. In this scenario, the risks of almost total reliance on a single supply source—dams—was suddenly brought into stark relief.

Initial responses to the drought largely focussed on water conservation and demand management.

However, as the crisis deepened, states committed billions of dollars to augment and diversify the sources of their urban water supplies.

Desalination plants were constructed in Melbourne, Sydney, Adelaide, Perth and the Gold Coast. Over the period 2007-08 to 2012-13 annual capital expenditure by water and sewage businesses peaked at over $8 billion in 2008-09 but then fell to just over $3 billion (2012-13).

As noted by the NWC, despite the duration and severity of the drought, the responses by governments and the water industry ensured that no city ran out of water (although there were several close calls). Major rainfalls during 2010 signalled the end of the water crisis across the eastern seaboard, although Western Australia was not afforded such relief, and drought has now returned to parts of New South Wales and Queensland.

4.4 Unfinished business

In its final report, the NWC found that the severe supply challenges faced during the millennium drought and the crisis-based responses from governments raised serious questions about whether decision-making processes, policy settings and institutional arrangements were delivering the most efficient and effective outcomes for the community.

The NWC found that while state government commitments through the NWI have largely been implemented, progress in some key areas, such as pricing and institutional reforms has been 'patchy'. Notwithstanding further reform efforts and reviews by governments and industry, the NWC expressed concerns that:

"... despite these efforts, many opportunities to integrate policy and regulatory instruments across economic, environmental and public health have been missed, and some reviews have yet to be completed within reasonable timeframes. Further, some government interventions in water policy and management have been inconsistent with enduring principles of good water management articulated in the NWI and predecessor reform documents. New policy pressures, such as the significant fiscal pressure faced by governments, are also introducing additional facets to future reform discussions."

Arguably, the lack of attention given to urban water reform post-drought reflects a widespread view that the crisis is over, and thus, there is little need for further reform.

In addition, water reform efforts were largely focused on water management in the Murray-Darling Basin and the agreement to, and implementation of, the Murray-Darling Basin Plan and related inter-jurisdictional initiatives.

5

5 Beyond the Millennium drought

We find three reforms are necessary to sustain safe, efficient and reliable urban water services, which are:

1. Modern, independent economic regulation to drive efficiency and customer focus;
2. strengthened governance arrangements in urban water; and
3. better deployment of competition, harnessing the disciplines of private finance to drive consumer value.

5.1 Reform priorities

The nascent challenges in urban water markets are well understood by the water industry, and are also visible to varying degrees to policymakers and other stakeholders.

That solutions have not already been found reflects in part the community's limited visibility of the problem (no crisis); but also reflects a lack of agreement about the precise approach needed to best resolve these emerging challenges.

While a spectrum of national policy reviews have remarked on a lack of urban water reform, compared to other utility sectors; there has been comparatively little detailed work to define what 'reform' means, in an urban water context.

Water is heavy, expensive to treat and distribute, and must be collected and treated, after use; meaning that the structures are different to those found in other utility sectors.

Moreover, while urban water utilities face the same fundamental problems, the individual symptoms vary widely across different utilities, reflecting differing scale, location and growth outlook—and wide variations in current network conditions.

In seeking to better position the sector to address the emerging challenges and opportunities, we have identified three reform priorities to evolve urban water beyond the Millennium drought. These are:

1. Establish more efficient, independent regulatory frameworks;
2. improve governance arrangements in the sector; and
3. clarify the scope for and nature of greater competition and private sector involvement.

5.2 Independent economic regulation —and a clear objective to act in the customer's interest

As discussed in chapter three, economic regulation aims to foster effective competition, or synthesise its disciplines, where market competition is absent.

In water, economic regulation is an important way to control price and ensure service quality is maintained reflecting the monopolistic nature of key aspects in the urban water supply chain.

Regulation also dictates the degree to which private investment and competition can develop, because it sets the rules and revenues within an urban water market.

While all Australian states have adopted independent economic regulation, in execution this has occurred with varying degrees of clarity and effectiveness.

We can consider that consistent, national reform is needed to:

- Provide an explicit objective for regulators to act in the long-term interests of customers;
- establish strong incentives for productivity and innovation;
- include an assessment of financial viability and sustainability of water businesses;
- ensure transparent customer engagement; and
- provide for appropriate merit reviews and appropriate appeal mechanisms for utilities and other industry stakeholders.

Effective, independent price regulation would also allow long-standing issues to be considered and resolved, like the efficacy and equity of postage stamp pricing; and fairer ways to share the cost of water infrastructure for new developments between other water users, developers and (often, first home) buyers.

Effective regulation is the keystone to aligning the interests of the customer, the water business itself and the wider community and ensuring long-term planning to meet long-term needs. This requires that all aspects of the broader regulatory framework including economic regulation, environmental regulation and drinking water quality regulation are focused on achieving outcomes at lowest cost in an integrated manner. Box 9 below outlines Sydney Water's plans to manage wastewater overflows in a cost-effective manner and provides a good example of efforts towards more effective regulation.

5.3 Improved corporate governance

The legal structure of the water utilities is in itself important because it dictates the degree of sensitivity that these businesses have to improved economic regulation and in turn, the degree of transparency and efficiency delivered by urban water services.

This demands a national recommitment to complete the corporatisation of water utilities.

Corporatisation improves the disciplines facing water utilities (as outlined in Table 3), because designation as a government trading entity requires qualifications including:

- Clear and non-conflicting corporate objectives;
- managerial responsibility, authority and autonomy from executive government;
- effective performance monitoring by the owner-government; and
- effective rewards and sanctions related to performance.

Box 9: More cost-effective regulation of wastewater overflows—Sydney Water

Sydney Water has been working to develop revised licence requirements for wet weather overflow in its Environment Protection Licences (EPLs). The current 'frequency targets' generally require large containment solutions, which may not provide the best environmental and community outcomes. A 2012 estimate indicated that containment and system upgrades to meet frequency targets might cost about $5.5 billion (2011–12 constant prices). This would increase wastewater bills by about 20 per cent over the long term.

Sydney Water plans to submit a proposal to the EPA in December 2015 with alternative licence requirements that:

- Uses a risk-based approach to assess the potential impact to waterway ecosystem health, public health and aesthetics;
- maximises environmental and community benefits; and
- drives more cost-effective solutions.

Sydney Water's alternative approach - if implemented - would achieve the same or better outcomes for the community at lower cost to water customers.

Source: Sydney Water 2015, Our plan for the future: Sydney Water's prices for 2016–20, 30 June 2015

Table 3: Key elements available through corporatisation

Area	Characteristic
Clear and Non-Conflicting Objectives	• Improved performance requires that each enterprise has a clear understanding of the objectives which its owning government wishes pursued. Where conflicts among commercial, social and regulatory objectives exist, it is important that the enterprise has clear guidance on any trade-offs that may be necessary. • Clarity is not sufficient in itself; also required is that commercial objectives be given a key role. In this regard, maximisation of the value of the government's investment in the enterprise (or at least its rate of return on that investment) should be a prime objective for each enterprise. • The provision of social policy related services, often referred to as community service obligations, should be the product of explicit contracts between the enterprise and the government. Ideally the provision of such services should be open to competitive tender as a means of minimising the costs of providing non-commercial services. The fee paid to an enterprise for delivery of these services should be fully funded and identified in the normal budget process. • Any policy or regulatory function traditionally undertaken by the enterprise should be removed to separate specialist agencies subject to direct ministerial accountability. • To avoid subjecting Ministers to conflicting objectives, ministerial responsibility for the commercial success of an enterprise should be separated from the responsibility for associated regulatory functions and responsibility for negotiating the delivery and funding of community service obligations.
Managerial Responsibility. Authority and Autonomy	• To ensure that an enterprise's Board is suitably qualified to oversee the pursuit of commercial objectives, Directors should be appointed solely for the contribution they can make on account of their business management experience, their knowledge and skills. Directors should not be appointed to represent interests other than the commercial objectives of the owner (that is, the government). The appropriate government Ministers, not the board, should set social or regulatory objectives. • In order for an enterprise to maximise its efficiency in a commercial environment, its Board and management should have the authority to make the major decisions affecting the performance of the enterprise. These decisions would cover such things as the terms and conditions of employment, the determination of the enterprise's structure, determining where inputs should be obtained and, importantly, implementing the investment and borrowings program of the enterprise. • In doing so, the only constraints imposed by the government as owner should be through defining the "core" activities to which the enterprise is expected to limit its activities, the overall dividend policy the enterprise is to pursue, the target rate of return expected on the government's investment and the broad limits of the enterprise's new capital expenditure and associated borrowing programs (i.e. debt/equity structure). • In all other respects of the enterprise's conduct and organisation, the government as owner should operate at arm's length from the Board and management of the enterprise in order that managers are fully accountable for their performance.

Continued overleaf

Table 4: Key elements available through corporatisation (continued)

Area	Characteristic
Effective Performance Monitoring by the Owner-Government	• Providing the Board and management with the flexibility they need to manage the day-to-day operations of the enterprise in order to achieve commercial goals ensures that they can be held personally accountable for the performance of the enterprise. • Because government enterprises are subject to much less performance assessment by the equity and debt markets than their private sector equivalents, governments need to establish independent and objective performance monitoring arrangements sufficient to ensure that the Board and management are held accountable for an enterprise's performance. • Monitoring should focus primarily on the commercial performance of the enterprise. The monitoring arrangements should clearly specify the enterprise's information disclosure and reporting requirements and the performance targets against which outcomes will be judged. • The basis for the monitoring process should be corporate and business plans, which would be agreed to between the monitors and the enterprise following extensive consultations. The corporate plan should state the long-term (3 to 5 years) corporate objectives of the enterprise, while the business plan should provide forward estimates of income and expenditure statements, the balance sheet and source and applications of funds statements for the year ahead. • Given the specialist expertise required by monitors, a central monitoring unit reporting to the shareholding Ministers should be charged with the task of assessing the performance of all a government's enterprises. Such a unit should also provide advice to the shareholding Ministers on an enterprise's proposed core industry activities, rate of return, dividends and capital structure. The performance of such a unit should itself be subject to periodic assessment.
Effective Rewards and Sanctions Related to Performance	• Strict performance monitoring processes are not an end in themselves, but a basis for incentive systems aimed at encouraging and rewarding good performance and discouraging and penalising bad performance by Directors and management. • The appropriate rewards and sanctions must be pre-defined against agreed performance targets, understood and strongly applied if they are to motivate the Board and management to maximise the performance of the enterprise. • The reward structure needs to cover such things as salary, non-cash rewards (i.e. fringe benefits), bonus schemes, profit sharing arrangements and the like, and needs to be firmly tied to any disparity between an enterprise's actual and target performance. • Sanctions may include tightening the reporting and oversight requirements, reducing the range of industry activities the enterprise may engage in, removing discretion over investment and borrowing decisions, salary reviews, loss or reduction of non-salary remuneration components and, ultimately, the termination of employment. Prior to the exercise of this final sanction, however, the other sanctions need to be exercised in a graduated way in response to inadequate enterprise performance.

Source: NSW Treasury 1991 Characteristics of a Fully Corporatised Government Trading Enterprise and Checklist for National Stocktake of GTE Reforms

5.4 The next evolution is to harness competition and private investment to benefit consumers

5.4.1 Resolving the long-term structure of water markets

The development of well-articulated, competitive markets in other utility sectors has delivered national productivity and efficiency benefits—and significant individual consumer benefits, through improved utility services, at substantially better value for money.

The National Water Commission described the traits of a good market structure in water—saying:

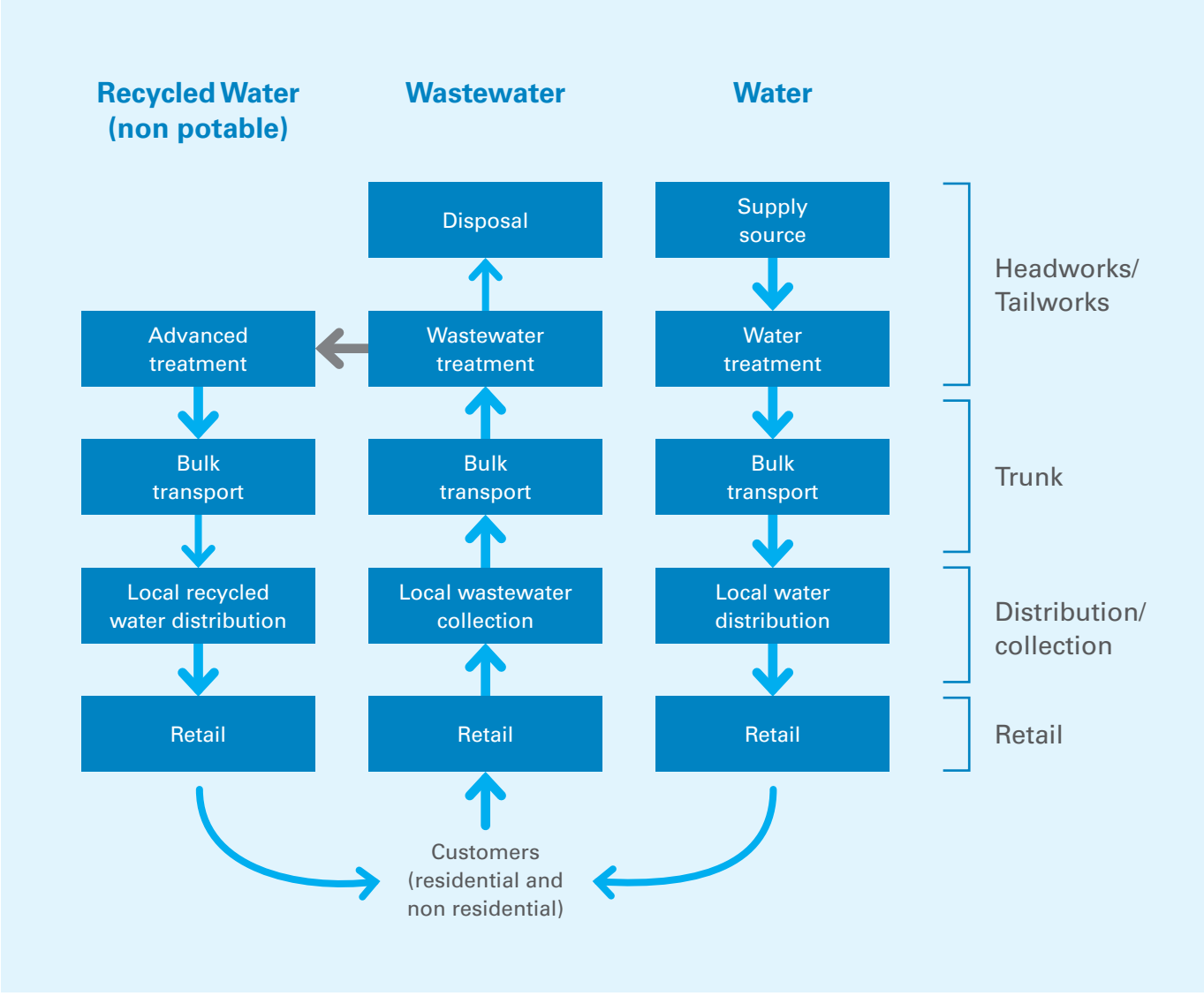
"To give service providers the incentive and freedom to innovate, government and regulators need to reconsider how they go about their business and how the sector is governed, including being more open to moving away from the government-owned monopoly water business model."

While the benefits of competition are well understood, there is much work to be done to consider and resolve how to apply the disciplines of competition within the urban water sector.

Figure 9, below, describes a 'typical' urban water utility's supply chain—with many of the key aspects having strong natural monopoly-type characteristics.

This points to the need for a structured process across each water utility, to consider where competition and investment can best be deployed.

Figure 9: Water and wastewater supply chain



Source: Frontier Economics

The process of resolving the long-term structure of each urban water utility will need to allow for individual variations and local requirements.

For example, competition in bulk supply might be conceivable in systems where there are multiple independent supply sources (e.g. Melbourne), but may be less so in systems dominated by a single supply source.

In resolving the long-term structure of each urban water market, a range of key issues need to be addressed.

For one, the natural monopoly aspects of water and wastewater distribution and collection means that these aspects might be more suitable to concession or similar models, where a contest is run for the right to operate a monopoly, regulated service for a period of time.

But some other aspects of the water supply chain—such as bulk water supply (dams and desalination etc) and potentially, retail services, may lend themselves to 'in market' competition.

These utility-by-utility assessments of the scope for competition would usefully draw on experience from other countries, including the UK (discussed in Box 10, below).

But ultimately, these competition reviews must seek to apply global better practice principles, to the particular circumstances in each urban water system in Australia.

Box 10: Competitive reforms in the UK water sector

Scotland was the first country in the world to offer non-household customers choice in their water supplier. Since 1 April 2008, all 130,000 businesses, public sector, charitable and not-for-profit organisations in Scotland have been presented with a variety of suppliers to choose from. Competition has not yet been extended to household customers.

The *Water Services (Scotland) Act 2005* established the framework for competition and required the separation of Scottish Water's wholesale services from its retail function. Under these arrangements, the network of water and sewerage pipes in Scotland continues to be wholly owned by Scottish Water. It acts as the wholesaler in the market, selling water and sewerage services to the water companies, known as suppliers. Having bought their wholesale services from Scottish Water, the suppliers then bundle these services with other value-adding offerings and sell them to customers. Currently there are 16 licensed suppliers. A Central Market Agency (CMA) was set up to administer the new market.

According to the Water Industry Commission for Scotland, business water rates are now competitive, and the introduction of competition in the water industry in Scotland has brought wider choice and more tailored services, and is leading to lower prices.

The UK is now developing a seamless Anglo-Scottish retail water market. The *Water Act 2014* will allow 1.2 million businesses and other non-household customers of providers based mainly or wholly in England to choose their supplier of water and wastewater retail services from April 2017. A survey conducted by Ofwat with the Consumer Council for Water found that generally there is a high level of support for competition with over two thirds of businesses (69 per cent) thinking the principle of competition in the water industry is a good thing. According to Ofwat, the new market will be the largest retail water market in the world and is expected to deliver around £200 million of overall benefit to the UK economy.

Competitive reforms are now also being introduced for other parts of the supply chain, in particular upstream. The Water Act also provides that:

- New businesses can enter the water sector and provide new sources of water or sewerage treatment services;
- a national water supply network will be established to make it easier for water companies to buy and sell water from each other; and
- owners of small-scale water storage can sell excess water into the public supply.

The upstream reforms will make it easier for new players to enter the water sector who might offer new water sources, water efficiency goods and services or innovative ways for dealing with wastewater and sewage sludge. This will both increase the scope for innovation and entry into the sector and increase the incentives on incumbent water companies to identify the most environmentally and economically efficient options for meeting future resource requirements. These reforms will also make it easier for water companies to trade water with each other, increasing flexibility in the system, particularly during periods of drought.

Source: Water Industry Commission for Scotland, Ofwat

It is important that these long-term, utility-by-utility assessments of efficient market structures are not seen as a commitment to any particular changes by contemporary governments. Rather, they should be seen as an assessment of the best long-term utility structure—and provide a basis to ensure that incremental changes reflect long-term strategy.

This is important, given the increasing fiscal constraints facing state governments and the corollary pressure this creates to find 'recyclable' assets.

The complexity and interdependence of water and wastewater networks make this particularly important. For example, an individual asset (say a wastewater plant) may be politically easy to privatise.

A long-term view of the best pro-competitive market structure would allow the immediate benefit of funding relief to be assessed through a developed understanding of the best long-run structure of urban water to meet consumer needs.

The historic lack of reform to water sees a largely 'blank canvas' meaning that if we resolve how and where to apply competition and the most effective structure and ownership up front, we can avoid past costly mistakes, such as the vertical integration of Telstra at privatisation; an error which constrained competition and ultimately triggered the decision to develop the National Broadband Network (NBN).

As it currently stands, New South Wales is the only jurisdiction, which has implemented a state-based access and associated licensing regime to support the emergence of new suppliers and technologies for the provision of water and wastewater services.

Such a regime has been in operation in NSW under the Water Industry Competition Act since 2008, and has recently been refined. The experience with this model is outlined in Box 11 and provides key learnings for other jurisdictions.

The emergence of non-government water and sewerage service providers also requires effective regulatory frameworks to protect customers and the environment.

There is a strong case that a licensing regime should be adopted as the form of regulation for alternative providers of water and related services.

5.4.2 We need to develop frameworks that employ competition toward customer value and efficiency

While the private water industry already plays a significant role in the urban water sector, current settings see competitive supply limited to traditional outsourcing and contracting arrangements—limiting the gains from innovation and competition that have emerged in other, more reformed utility markets.

But this hegemony is under pressure, with a range of private water utilities entering urban water markets, sometimes without developed frameworks or clear consideration of how the entry of new providers can be best deployed.

These include decentralised systems and private 'micro' utilities, among others.

The lack of developed frameworks and policies sees pressures on both sides. Private water companies are sometimes frustrated at the road blocks to market entry —while public utilities are frustrated that where they do enter, private utilities are logically seeking to 'cherry pick' the most profitable and lowest risk segments of the market —potentially eroding the capacity of the incumbent utilities to cross subsidise through 'postage stamp' pricing.

Another concern is the absence of essential service type regulation, to provide for customers in the event that a private company becomes insolvent or stops trading—the so called 'supplier of last resort' (SOLR).

Considering the opportunities to increase competition and efficiency must logically contemplate how the additional discipline and benefit of private equity and debt can be used to drive long-term customer benefits.

Creating structures which signal for investment must balance two competing objectives, which are:

- Protecting the long-term interests of customers and the community; and
- providing sufficient revenues to signal for investment.

Experience elsewhere suggests that it is possible to meet both of these conditions. The most notable example is the privatisation and regulation of the water industry in the UK, which is described in Box 12.

Box 11: WICA regime in NSW

The Water Industry Competition Act (WICA) establishes an access regime for the storage and transportation of water and sewage using existing significant water and sewerage networks in the areas covered by Sydney and Hunter Water. An access seeker who is seeking access to an infrastructure service covered by a coverage declaration or access undertaking must apply to the service provider for an access agreement. If an access seeker and a service provider are unable to agree on the terms on which access is to be provided, either party may refer the matter to IPART for arbitration.

As part of the WICA regime, a new regulatory framework was introduced to ensure appropriate obligations are placed on new suppliers to protect consumers and the public interest in relation to a range of factors, including: security of supply; ensuring water quality; protection of public health; environmental matters; and allocating responsibilities for managing emergencies and national security matters. Under the licensing regime overseen by IPART:

- Private operators require a network operator's licence to construct, maintain or operate water industry infrastructure; and
- a retail supplier's licence is required for the commercial supply of drinking water, recycled water or the provision of wastewater services by means of any water infrastructure.

It is important to note that the licensing regime is complementary to, but distinct from, the access regime. That is, it is possible for a new entrant to be licensed to operate infrastructure and/or provide retail services without necessarily requiring access to the incumbent utility's infrastructure services (e.g. through operation of a standalone wastewater treatment/recycled water supply system). Indeed, to date, new entry has been under such business models. Prices of services provided by public utilities in NSW to WICA licensees are therefore being determined through commercially negotiated agreements rather than under the third party access regime.

The potential scope of competition has expanded since amendments to the WIC Act in 2014. Previously, WICA licensees were required to obtain sufficient water other than from a public utility such as Hunter Water—reflecting a desire during the drought to promote investment in new sources of water. This came to be seen as a potential barrier to entry and inhibited, for example, a WIC licensee from providing a potable water supply together with recycled water to a development. Related amendments limited the right of WICA licensees to provide retail services only in connection with a scheme approved under the WIC Act, so that they could not simply purchase water from a public utility and on-sell it without providing any investment in physical infrastructure.

These changes gave effect to the NSW Government's intent to promote competition to service new Greenfield or infill developments ('competition for the market'), rather than full retail contestability across a public utility's entire region ('competition in the market'). The Government's concerns with retail contestability were that it might provide incentives to sell more water, thereby compromising water security. The amendments do however allow for 'competition in the market' to service industrial and larger commercial customers. The Government has indicated that more analysis and consultation would be required before a decision could be made to move to a full retail contestability model.

IPART has recently flagged its intention to address "wholesale pricing" for services provided to WICA licensees as part of its 2015 review of periodic prices, due to take effect from 1 July 2016.

Source: IPART

Box 12: Experience with privatisation of the UK water sector

In 1989 in England and Wales privatisation was pursued for the ten publicly owned water and sewerage authorities because of concerns about chronic under-investment and high levels of inefficiency. An independent regulator was established to set prices for these privatised businesses. One of the government's key objectives appears to have been achieved, as in the six years after privatisation, the water companies invested £17 billion, compared with £9.3 billion in the six years before privatisation

More than £116 billion has been invested over the last 25 years. The industry has invested, on average, half of its sales revenue in new assets and companies currently invest around £80 million a week in maintaining and improving assets and services.

After an initial period of major investment, the resulting efficiency gains have led to relatively stable prices, notwithstanding significant ongoing investment. Ofwat has noted that in the 25 years since privatisation, companies have exploited cost efficiency gains by reducing operating costs through reducing staffing levels or increasing the efficiency of their contracting models.

These cost savings have not led to reduced service standards— compliance with key service indicators has improved markedly since privatisation:

- Properties at risk of low pressure are now 0.01 per cent (compared to 1.33 per cent at privatisation);
- properties subject to unplanned interruptions of 12 hours or more are now 0.06 per cent (compared to 0.33 per cent at privatisation);
- billing contacts not responded to within 10 days are now 0.44 per cent (compared to 21.78 per cent at privatisation); and
- written complaints not responded to within 10 days are now 0.62 per cent (compared to 21.42 per cent at privatisation).

Recent years have seen a strong focus on customer engagement.

These outcomes have occurred while water quality and environmental outcomes have been protected through regulation by Department for Environment Food & Rural Affairs (DEFRA). As noted by Ofwat:

"At privatisation the UK as a whole was seen as the 'dirty man of Europe' for the poor quality of its natural environment. Inland and bathing water quality were extremely low. In some waters, widespread pollution affected even the most resilient eco-systems. Over the past twenty years the companies have successfully employed a range of expertise to improve services to consumers and the environment."

Only 78 per cent of bathing waters in England and Wales met the minimum standards in 1990 and this has risen to 99 per cent. Only 55 per cent of rivers were rated either good or excellent in 1990, and by 2007 this had risen to 72 per cent.

Source: Ofwat

Evolving Australia's urban water sector to better harness the benefits of competition and private investment is clearly possible; all water and sewerage businesses in England and Wales are privately owned; with the two largest owned by consortiums that include Australian superannuation investors. Anglian Water is discussed in the case study below (see Box 13).

The reforms recommended in this paper are necessary regardless of considerations of ownership. Any decisions to privatise all or some of urban markets are decisions for future state governments. But putting in place good regulation governance protections now—ones which will improve customer outcomes under public operation—and protect consumers in the future, is a prerequisite should states ever decide that they need to release money from water businesses to fund other priorities.

Box 13: Anglian Water

IFM part-owns Anglian Water in the U.K. Anglian Water is the largest water and sewerage company in England and Wales, covering 20 per cent of the UK's land area. It employs 11,000 direct and indirect staff. The company supplies 4.3 million customers with drinking water, and collects used water from 6 million customers from across East England. It supplies circa 1.2 billion litres of drinking water every day to 1.96 million households, and 125,503 businesses and operates and maintains 37,876km of water mains, 138 water treatment works and 1,124 wastewater treatment works. Its key recent achievements include:

Operational:

- Industry leader on customer service, securing first place in Ofwat's Service Incentive Mechanism (SIM) league table;
- lowest level of leakage—10 per cent below Ofwat target;
- maintained high level of water quality compliance at 99.96 per cent;
- 0.16 accidents per 100,000 hours worked;
- introduced timed appointments for home visits; and
- has a strong social media presence.

Environmental:

- Significant progress made on carbon reduction with amount of embodied carbon in new assets reduced by 39 per cent since beginning of its Asset Management Plan (AMP);
- generated 52GWh of renewable energy in 2013;
- reduced energy bills by an additional £1.6 million; and
- achieved 100 per cent beach bathing water compliance for the 11th year running.

Financial:

- Year-to-date revenue and earnings before interest, tax, depreciation and amortisation (EBITDA) in line with budget;
- operating cost efficiencies will allow absorption of unfunded costs of £50 million over the AMP; and
- reinvested £229.4 million of savings generated through capital expenditure efficiencies back into the business.

Anglian Water has pledged to hold increases in average household bills to no more than 50 per cent of inflation between 2015 and 2020, whilst still spending circa £5 billion on asset maintenance and improvements.

Anglian Water was seen as an attractive investment for IFM because it operated within an established regulatory framework that rewards efficient performance, had a substantial capital expenditure program that lead to sustained residual capital volume growth, and its management had a strong relationship with the regulator.

Source: IFM Investors

6

6 Making it happen

We consider that national government leadership will be the key to unlock water utility reform.

Australia's economic history suggests that national policy leadership—backed by financial incentives for reforming states—is a proven way to drive national good practice and better regulation, across utility markets which are owned, operated and regulated by sovereign states.

For this reason, this chapter considers the case for national government leadership and commitment to urban water reform; and makes suggestions around the institutional framework that could monitor implementation and oversee reform incentive payments.

6.1 Why does Commonwealth leadership matter?

It is appropriate to ask why Commonwealth leadership is needed in urban water markets. After all, water is constitutionally a state issue and unlike gas or electricity, its physical characteristics mean water utilities do not operate in an interconnected national market, with cross-border trades.

Indeed, some argue a benefit exists in allowing different structures and approaches to evolve, tailored to different utilities, across different jurisdictions—maximising the potential for 'competitive federalism' and allowing for variations across each urban water utility.

But these arguments neglect urban water's national economic and environmental significance—and neglect the benefit of consistently good reform to address the common structural, governance and financial challenges facing all utilities.

Arguments against national leadership also neglect the practical reality that step change institutional reforms in water have only ever occurred within a context of national incentives and national frameworks—like the 1994 National Competition Policy framework.

As the owners, operators and regulators, states are also poorly placed to consider independent regulation and structural separation alone.

Indeed good national reform along the lines outlined in this paper is precisely about providing each individual utility and local customers with the right framework—and adequate financial resources—to accommodate the task ahead and to avoid Australia's tradition of solving water challenges only once they are an acute problem—with costly solutions.

6.2 Renewing and expanding the National Water Initiative (NWI)

The broad scope of the Harper Competition Review necessarily saw its consideration of water limited in scope, with a dominant focus only on pricing—meaning that deeper analysis is needed to resolve a good process of nationally led, state executed reform to urban water utilities.

We consider that COAG should commit to an expanded NWI—with a substantial focus on urban water sector productivity.

An expanded COAG process would:

- Assist the community to better understand the challenges facing urban water—and the structures needed to address these challenges;
- provide for nationally consistent economic regulation, across each urban water sector;
- provide a clear basis and framework to facilitate appropriate competition and investment, within a developed market structure;
- through good regulation, provide the settings for sustainable and Integrated Water Cycle Management (IWCM), including capturing the opportunities from storm water;
- provide a better basis to integrate water and wastewater network planning with land use planning, bringing down future costs across all jurisdictions;
- ensure urban water policy is considered by COAG within any broader 'cities' agenda; and
- engage the community on the case for, and process to, place urban water on a sustainable footing.

The urban water component of a new NWI should be framed around the following three areas:

1. Economic regulation

The enhanced NWI should set out national standards for efficient economic regulation in urban water, for adoption by states and territories. As a minimum, the standards should require jurisdictions to put in place economic regulation, which is independent of government. The standards should also require states and territories to:

- Set the overall objective for regulators to act in the long-term interests of customers;
- include incentives for productivity and innovation in the regulatory framework;
- include a financial viability test in the regulatory framework to protect the long-term interests of customers;
- build strong and transparent customer engagement into the regulatory process; and
- have in place merit review and appeal mechanisms for water businesses and other stakeholders.

Financial payments to the states should be linked to meeting each of the standards.

There should be a pathway to considering whether the additional step of creating a national economic regulator is warranted.

2. Improved governance

An enhanced NWI should contain new national standards for best practice governance in urban water. Enhanced governance should:

- See a recommitment to the corporatised model, providing additional independence, commercial discipline and enhanced accountability to customers;
- Establish a competitively neutral environment between existing and new suppliers;
- Ensure that wider policy outcomes, such as Community Service Obligations (CSOs) or environmental management requirements are explicit, and resolve who is best placed to manage them; and
- Ensure that the governance model clearly allocates responsibility for security of supply.

3. Resolving competition

In concert with the process to refine and implement nationally consistent economic regulation, an enhanced NWI should specifically consider where, when and how competition can be best deployed within urban water market, in the interests of the consumer.

As a first step, the new Australian Council for Competition Policy (ACCP), recommended by the Harper Competition Review, should be tasked with developing an 'urban water competition framework', to guide the development of good policy at a state and territory level.

The policy framework should be publicly released for comment in the near term.

6.3 National urban water policy needs a home

An enhanced NWI would be an important outcome; but experience suggests that good policy alone would be unlikely to unleash substantial reform pressures across the urban water sector.

Rather, urban water reform will require both an independent, national institutional home—and a responsible minister.

Experience of the National Competition Policy reform process suggests that successful reform will be best achieved where:

- All jurisdictions commit to the objectives and form of reformed policy - and commit to implementation;
- each jurisdiction's reform progress is independently assessed, holding jurisdictions to account; and
- the benefits of reform are well-argued and, where possible, measured.

Assuming a renewed NWI (discussed in section 6.2 above) is developed and jurisdictions are committed, the fact remains that since the removal of the NWC, there is no dedicated and independent water agency to house the NWI —or measure jurisdictions' progress.

We therefore recommend that the to-be-formed ACCP (as described in Box 14) is a logical agency to play this role—given its broader remit in driving competition policy.

Assuming that wider competition policy will be enabled by a process of competition policy-type incentive payments, this would ensure that urban water market reforms are central in any forthcoming economy-wide productivity reform agenda.

Box 14: The proposed Australian Council for Competition Policy (ACCP)

The Harper Competition Review emphasised that all Australian governments must have confidence in the governance arrangements for a new round of competition policy reform to succeed, stating:

"The Panel believes that reinvigorating competition policy requires leadership from an institution specifically constituted for the purpose. Leadership encompasses advocacy for competition policy, driving implementation of the decisions made and conducting independent, transparent reviews of progress."

In this context, the Review Panel proposed that a new national competition body—the Australian Council for Competition Policy (ACCP)—be established with a mandate to provide leadership and drive implementation of the evolving competition policy agenda. According to the Panel the ACCP's role would encompass:

- Advocacy, education and promotion of collaboration in competition policy;
- independent monitoring of progress in implementing agreed reforms and publicly reporting on progress annually;
- identifying potential areas of competition reform across all levels of government;
- making recommendations to governments on specific market design issues, regulatory reforms, procurement policies and proposed privatisations;
- undertaking research into competition policy developments in Australia and overseas; and
- ex post evaluation of certain merger decisions.

It also suggested that the ACCP should be accountable to, and funded by, all participating jurisdictions, with a five member board consisting of two state and territory nominated members and two members selected by the Australian Government, plus a Chair.

Source: Final Report, Harper Competition Review, 2015

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