



# SA Water Regulatory Determination 2020: Guidance Paper 4



## Prudent and efficient expenditure

November 2018

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## Related reading

This Guidance Paper should be read in conjunction with the Framework and Approach paper and other Guidance Papers released by the Commission for SA Water Regulatory Determination 2020. Those papers and other information about SA Water Regulatory Determination 2020, are available on the Commission's website:

<https://www.escosa.sa.gov.au/industry/water/retail-pricing/sa-water-regulatory-determination-2020>

## Timing for this review and upcoming consultation opportunities

While the Commission remains responsible for making the final regulatory determination, which will require SA Water to provide the water and sewerage retail services valued by customers for the lowest sustainable cost, the review process will involve multiple opportunities for stakeholders to be involved prior to that final determination.

Input from a diverse range of stakeholders is important, as it helps the Commission to make better informed and more inclusive decisions. The Commission will therefore draw on the full range of evidence provided by all stakeholders in making the final determination.

The timing of the key stages in SA Water Regulatory Determination 2020 are illustrated below, with the Commission's key consultation stages shown in green.

SAW RD20 review timeline



SA Water Regulatory Determination 2020 (SAW RD20) will set maximum revenues and minimum service standards for SA Water's drinking water and sewerage services, as well as setting pricing requirements for other miscellaneous retail services, to apply from 1 July 2020 to 30 June 2024.

SAW RD20 will challenge SA Water to:

- ▶ provide water and sewerage services at the lowest sustainable price for the quality and reliability levels valued by customers, and
- ▶ have in place sound long-term asset management, operating and financing strategies, which support the provision of those services for customers of today and tomorrow.

Those intended outcomes are consistent with the Commission's primary objective of protecting the long-term interests of consumers with respect to the price, quality and reliability of essential services.

## Purpose of this document

In July 2018, the Essential Services Commission (**Commission**) established its framework and approach for SA Water Regulatory Determination 2020 (**SAW RD20**), which is intended to deliver the lowest sustainable prices for the services that SA Water's customers value.<sup>1</sup>

This is the fourth of a series of Guidance papers released by the Commission to explain the requirements, methodology and process that will apply to SAW RD20.

This Guidance Paper:

- ▶ explains why it is important that SA Water's expenditure is prudent and efficient
- ▶ describes how the Commission has reviewed SA Water's expenditure proposals in the past
- ▶ provides a summary of trends in SA Water's actual expenditure since the Commission's regulation in 2013-14, and a comparison of SA Water's expenditure to that of its peers
- ▶ outlines the issues that need to be considered and resolved for SAW RD20, including providing guidance on the evidence SA Water will need to provide to support its expenditure proposals for initiatives, programs and projects.

The methodologies and processes discussed in this paper should be taken into account by SA Water as it develops its business plan for 2020-2024. It should be read in conjunction with Guidance Paper 2 – SA Water's revenues and prices, Guidance Paper 3 – Service standards and Guidance Paper 5 – The cost of holding and using assets.

The paper includes a series of appendices, which provide supporting detail and context:

- ▶ Appendix 1: Trends in SA Water's actual expenditure, 2013-14 to 2017-18
- ▶ Appendix 2: How SA Water compares with its peers, 2013-14 to 2016-17
- ▶ Appendix 3: Business case summary template for the Negotiation Forum
- ▶ Appendix 4: Trends in key input costs, 2012 to 2018

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<sup>1</sup> SA Water Regulatory Determination 2020, Framework and approach, July 2018, available <https://www.escosa.sa.gov.au/projects-and-publications/projects/water/sa-water-regulatory-determination-2020-framework-and-approach>

## Why is prudent and efficient expenditure important?

In setting regulated revenues that recover the lowest sustainable costs of providing retail services, the Commission will be assessing whether or not SA Water's proposed expenditure for the 2020-2024 regulatory period is *prudent* and *efficient*.

Broadly speaking, expenditure on an activity will be considered *prudent* where there is a clear justification for that activity. This will be informed by an assessment of whether the expenditure is driven by:

- ▶ a legislative or regulatory obligation, which SA Water must comply with
- ▶ an expectation that the activity will deliver benefits to consumers that outweigh the costs, or
- ▶ a clear expectation from customers that an outcome should be achieved, and that they are willing to pay for that outcome.

Expenditure is likely to be considered *efficient* where it represents the lowest sustainable (or 'long-term') cost of achieving the intended outcome.

In setting SA Water's maximum revenues under SAW RD20, the Commission will review whether or not SA Water's proposed expenditure is efficient, including where it may be driven by regulatory obligations. The Commission will set revenues to recover efficient costs only, as this will help deliver the lowest sustainable prices to SA Water's customers.

The Commission's approach to setting maximum revenues provides SA Water with an incentive to find ways to become more efficient over time by incurring costs that are below those set under the determination, as it is able to retain the benefits of any cost savings until the commencement of the following regulatory period. From that time, those cost savings are delivered to customers through lower prices, as the new revenue determination will use those lower costs as the starting point for setting future expenditure amounts. The process for setting the maximum revenues is discussed further in Guidance Paper 2 – SA Water's revenues and prices.

A rigorous investment planning, prioritisation and appraisal process, where future expenditure plans are thoroughly scrutinised, is more likely to lead to prudent and efficient investment decisions across the business. SA Water needs to have, and to convince stakeholders that it has, such a process. It is also important for customers and other stakeholders to have the opportunity to have meaningful input into this process. The Commission expects to see evidence that SA Water has made genuine efforts to understand what its diverse customer base expects, and how SA Water has responded to what it has heard in prioritising the various initiatives, programs and projects it ultimately proposes in its draft business plan.

SA Water is expected to continually monitor and evaluate the effectiveness of its planning and prioritisation processes throughout the 2020-2024 regulatory period. This will include being able to provide evidence that it has responded to the challenges that arise in delivering the outcomes that customers value and regulators expect.

Establishing a clear line of sight between the proposed expenditure and the expected service outcomes will make it easier for customers and other stakeholders to monitor and evaluate whether:

- ▶ the proposed initiatives, programs and projects have a clearly identified driver, an expected service outcome and a robust system for monitoring, evaluating and reporting on achievement of the intended outcomes throughout the regulatory period, and
- ▶ any expenditure reductions are sustainable and the result of ongoing efficiencies or prudent short-term deferrals of expenditure that are unlikely to increase the total cost of delivering the necessary service outcomes in the future.

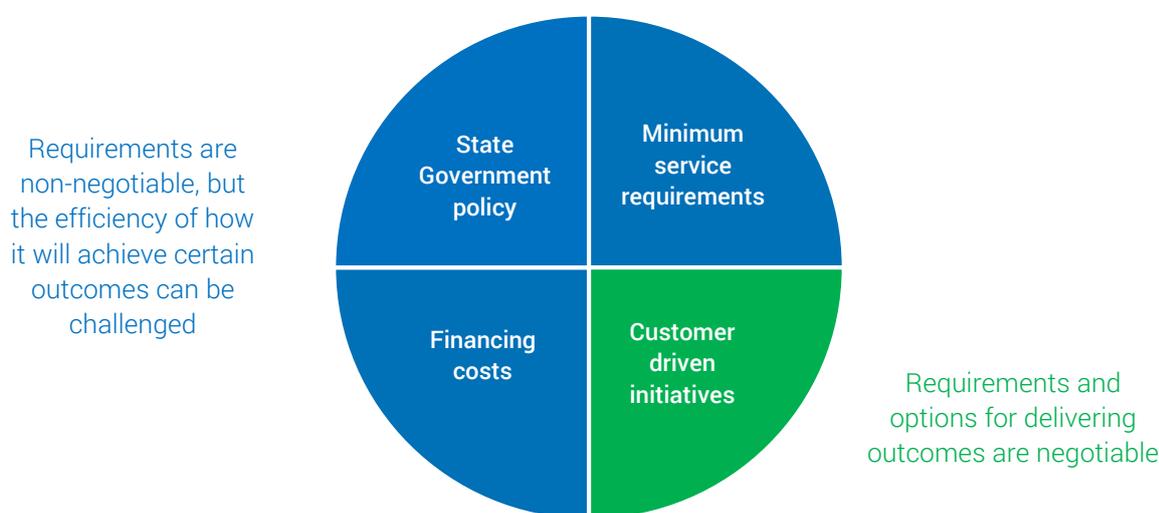
Evidence of an open and inclusive planning process, coupled with a robust service delivery monitoring and evaluation process, will provide customers and other stakeholders with a level of confidence that SA Water is seeking to ensure it is investing in the areas of most importance to its customers, and spending customers' money as efficiently and effectively as possible. It will also help SA Water to explain to customers how it has sought to deliver on its various regulatory requirements for the lowest sustainable cost.

## What is the current regulatory approach?

### The maximum revenue allowance must allow SA Water to efficiently meet its minimum regulatory obligations

There are various drivers for SA Water's expenditure. SA Water has to comply with SA Government policy, meet the minimum regulatory outcomes set by various regulators, and meet the costs of financing its investments.

Figure 1: High-level drivers of expenditure



Around 60 percent of SA Water's total costs are related to the cost of funding and using its regulated assets. Reductions in the cost of financing assets are likely to be significant in the 2020-2024 regulatory period. Further discussion on the likely direction of SA Water's cost of financing is included in Guidance Paper 5 – The cost of holding and using assets.

Some of the requirements for retail services are set by regulators. This includes requirements around economic, environmental, public health, social, and technical regulation outcomes that SA Water must achieve. Meeting all of these requirements constitutes the 'basic' or 'minimum' service SA Water must provide. The Commission has convened a Regulators Working Group to provide a forum for the various regulators to coordinate their efforts for achieving positive outcomes for the South Australian community through their combined regulation of SA Water.<sup>2</sup> An indication of the future cost drivers for meeting regulatory outcomes in the 2020-2024 regulatory period is provided later in this paper. The Regulators Working Group will continue to work together throughout the 2020-2024 regulatory period to jointly monitor, evaluate and publicly report on SA Water's performance in meeting regulatory requirements.

SAW RD20 will also consider whether the Commission's current minimum customer service standards should be amended, and the trade-offs between costs and service standards will be clearly articulated in its final determination (discussed further in Guidance Paper 3 – Service standards).

<sup>2</sup> Further details on the Regulators Working Group is available at <https://www.escosa.sa.gov.au/industry/water/retail-pricing/sa-water-regulatory-determination-2020/regulators-working-group>

SA Water may propose initiatives, programs and projects that respond to the needs, wants and values of its customers, beyond any minimum regulatory requirements. These types of customer-driven initiatives currently represent a reasonably small proportion of SA Water’s total expenditure. However, it is important that SA Water can provide evidence that demonstrates the extent to which it has tested the need for it to undertake such initiatives through genuine and thorough customer engagement, as the costs of those initiatives will be borne by the wider customer base.

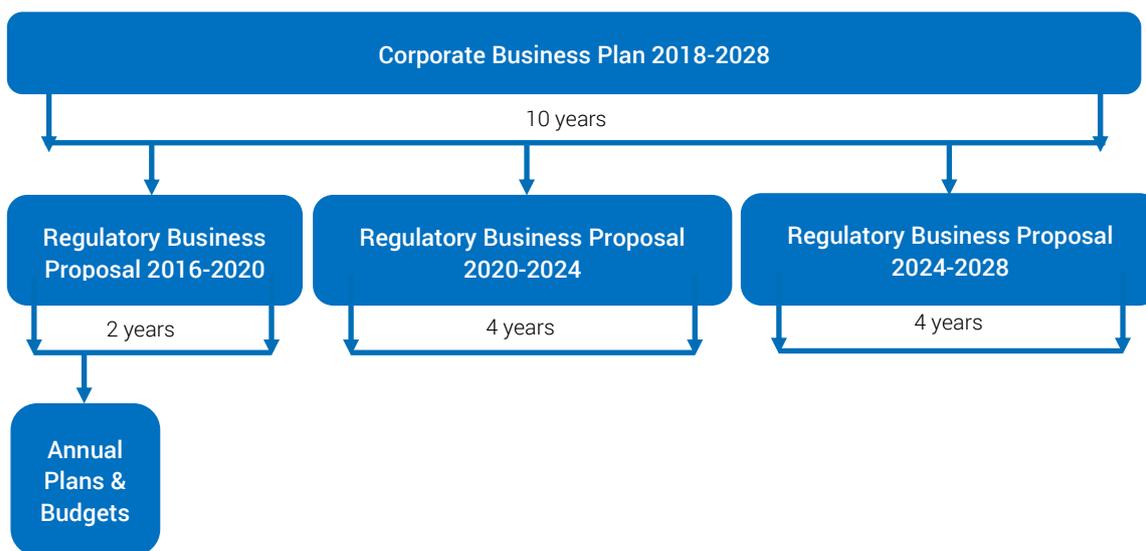
### How does SAW RD20 fit into SA Water’s long-term planning processes?

The Commission’s SAW RD20 process is part of SA Water’s broader long-term planning processes, illustrated in Figure 2.

SA Water develops its corporate strategy and business plan on a 10-year horizon. Its most recent strategic plan focuses on the period 2018-2028. The regulatory business proposal for SAW RD20 has a four-year time horizon. This means SA Water’s corporate plan covers the two remaining years of the current regulatory period (2016-2020), the next four year regulatory period (2020-2024) and the following four year regulatory period (2024-2028).

As with all long-term planning processes, there will be more certainty around the initiatives, programs and projects in the earlier years of a plan than in the latter years. Annually, SA Water undertakes an internal planning and budgeting process. These processes provide an additional level of scrutiny as the requirements and costs of proposed initiatives, programs and projects become clearer.

Figure 2: SA Water’s long-term planning processes



### SAW RD20 provides an external assessment of the cycle of continuous improvement in SA Water’s long-term investment planning, prioritisation and appraisal processes

In determining the maximum amount of revenue SA Water can recover from its customers, the Commission seeks to determine the lowest sustainable costs of providing retail services, in line with all minimum regulatory and service requirements, over that four year period.

However, the Commission’s regulatory framework does not dictate how SA Water performs its long-term business planning. Nor does it seek to act as the final stage of budget approval for SA Water. SA Water operates in a dynamic environment where requirements and priorities will change. SA Water is responsible for making the day to day management decisions about its operations and where it needs to invest. SA Water is accountable to its customers, and the South Australian community, for the way it delivers its retail services.

SA Water's delivery of water and sewerage services is heavily dependent on an efficient and effective asset management system across the organisation. As an asset intensive business, SA Water needs to have an asset management system that helps it to optimise its investment decisions by making judgements about how to balance levels of service, risks and lifecycle costs for a diverse portfolio of water and sewerage assets.

The Commission's regulatory determination process serves as a regular external assessment of the cycle of continuous improvement in SA Water's asset management system. The Commission reviews SA Water's expenditure and investment planning, prioritisation and appraisal processes. Evidence of sound and robust governance, systems and processes provides a level of comfort that the actual investment decisions SA Water makes during a regulatory period, to respond to changing needs and priorities, will be more likely to be prudent and efficient.

The Commission also assesses how SA Water has applied its planning processes to its expenditure proposals for the next four-year period. It seeks to understand the lowest sustainable costs of providing retail services by looking at a sample of the proposed initiatives, programs and projects from across the entire business—water services, sewerage services, metropolitan services, regional services, treatment plants, storage structure, pipes and internal IT services—to identify whether there is a clear justification for the expenditure (the *prudent* test) and evidence that the proposed solution will be delivered efficiently (the *efficient* test).

While the Commission makes a point in time assessment about whether or not SA Water has developed prudent and efficient expenditure plans, it is also important to monitor and evaluate how SA Water is applying its governance and planning processes to its actual expenditure decisions over time. Ongoing monitoring and evaluation of SA Water's actual expenditure and service delivery outcomes allows issues to be identified and for adjustments to be made to the process failures that may have contributed to those issues.

## How has SA Water performed to date?

### Embedding an effective asset management system across the organisation

SA Water has been working to implement an asset management system that aligns with the Institute of Asset Management (IAM) Framework.<sup>3</sup> The IAM Framework draws on ISO55000<sup>4</sup>, which is an international standard covering the management of assets of any kind. The ISO55000 standard defines asset management as:

*...the coordinated activity of an organisation to realise value from assets where an asset is 'an item, thing or entity that has potential or actual value to an organisation' and 'realisation of value will normally involve a balancing of costs, risks, opportunities and performance benefits' and the term activity has a broad meaning, and can include the approach, the planning, the plans and their implementation.*

The IAM Framework primarily deals with the management of physical assets; how they are created, operated, maintained and replaced. However, drawing on the above definition, an asset management system extends beyond the need to simply understand the condition of its physical assets. It states that good asset management provides a clear connection between an organisation's strategic plan and the asset management activities delivered by staff. This is known as 'alignment' or 'line of sight' and enables all staff to understand how they contribute to achieving success.<sup>5</sup>

SA Water's asset management system is still evolving, and will continue to do so, as it is based on a philosophy of continuous improvement. The more SA Water learns about the way its assets work together to deliver the services its customers value, the more it can refine those systems.

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<sup>3</sup> The Institute of Asset Management is an international professional body for asset management professionals. The IAM develops asset management knowledge and best practice and generates awareness of the benefits of the asset management discipline for the individual, organisations and wider society. The IAM has over 22,000 members in 158 different countries. <https://theiam.org/>

<sup>4</sup> International Organisation for Standardisation, ISO55000, available <https://www.iso.org/standard/55088.html>

<sup>5</sup> Institute of Asset Management, 'An anatomy', available <https://theiam.org/knowledge/Knowledge-Base/the-anatomy/>

The next stage in the evolution of its asset management practice is to focus more on analysing and understanding the interconnected systems of assets required to deliver particular service outcomes.

For example, to deliver safe, clean drinking water to a household, SA Water must source raw water, treat that water to the appropriate standard, store the treated water until it is required by a customer, and then transport it to a customer's premises through a series of underground pipes, to be reliably available when they turn on their taps. To safely dispose of the waste water, it must transport the sewage from a customer's premises through another set of underground pipes to a wastewater treatment plant, treat the sewage to an appropriate standard, and then dispose of the waste in an environmentally appropriate manner.

Any number of issues can arise in the process of providing drinking water and disposing of sewage. Plant can malfunction or breakdown. Pipes can burst or leak. From an end use customer's perspective, they may turn on the tap to find cloudy water. Or their waste may drain away slowly. They may be caught in traffic when the pipes under the roads burst. Or they may receive an unexpectedly high bill that needs to be checked, verified and then paid over a longer period of time.

SA Water needs an understanding of the combinations of physical, IT and customer service systems it operates to address these issues. The IAM Framework provides SA Water with a series of tools to help it to better understand where in an overall asset system investment it will add most value to customers and its business. Collecting more meaningful data at a system level will also help it to make investment decisions that balance costs, risks, opportunities and performance benefits across its business.

## Trends in SA Water's expenditure since 2013-14

### Actual expenditure will vary from the forecasts used to determine the maximum revenue cap

The Commission has made two separate determinations since it commenced regulation of SA Water in 2013. Both determinations have set two separate maximum revenue caps: one for delivering drinking water retail services and one for delivering sewerage retail services. Further details are provided in Guidance Paper 2 – Revenue regulation and pricing principles.

To set the maximum revenue caps, the Commission assessed the prudent and efficient costs of providing retail services, which included an assessment of SA Water's forecast expenditure requirements. However, as the regulatory determinations are point in time assessments, SA Water's actual expenditure was expected to vary from the forecasts used to determine the maximum revenue caps.

Some variation between the forecast and actual expenditure can be explained. SA Water reprioritises its actual expenditure throughout a regulatory period to respond to changing circumstances. SA Water may need to respond to unexpected events, such as a drought or other extreme weather conditions, an unforeseeable decline in the performance of a group of assets, or changes in key input costs that it cannot directly control. It may also need to respond to changes in legislation or regulatory requirements.

Other variations may result from changes in the way SA Water manages its business, be that a change in the way it manages its assets or other business processes or policy decisions.

Actual expenditure may be below previously forecast levels as a result of:

- ▶ improved business practices allowing more efficient operations
- ▶ a rebalancing of the operating and capital expenditure required to manage assets to deliver the same, or better, service outcomes in different ways, such as increasing maintenance operations for existing assets prior to pursuing an asset refurbishment or replacement decision
- ▶ a reprioritisation or deferral of previously planned investments, resulting from changes in demand, operating conditions or a better understanding of the actual operations of asset systems

- delays in the commencement of scheduled works resulting from the issues that arise through the detailed design phase of a project, coordination issues or other contracting or market conditions that impact on the availability of the required resources.

However, a decline in actual expenditure could also be evidence of unsustainable business practices or asset management and investment strategies. SA Water has many long lived assets and, consequently, the impact of any under-investment may not become apparent in the level of service provided for some years. The Commission requires SA Water to report annually on its actual expenditure, and to provide detailed explanations of the reasons for material variations from the amounts allowed in SA Water’s regulatory determinations. Analysing the drivers of expenditure variations over time can assist with identifying ongoing efficiency improvements, and unsustainable business practices or asset investment and management strategies.

### How is SA Water tracking against the maximum revenue allowances?

#### Capital expenditure

Since 2013-14, annual capital expenditure on drinking water services and sewerage services has been below the annual capital expenditure amounts incorporated into its regulatory determinations. However, in 2017-18, SA Water spent more than the amount forecast under SAW RD16, and is expecting to exceed those forecasts in the two remaining years of the current regulatory period. This is illustrated in Figure 3 and Table 1. Further information on the key drivers of capital expenditure is provided in Appendix 1.

During the current regulatory period, SA Water’s customers will not pay for any capital expenditure above the amounts incorporated into SAW RD16, as SA Water’s revenues are fixed until 1 July 2020. As discussed later in this paper, the Commission will review SA Water’s final actual capital expenditure as part of SAW RD20 so that only include prudent and efficient capital expenditure is included in SA Water’s regulated asset base. This ensure that SA Water’s customers do not pay for past inefficient capital expenditure.

Figure 3: Actual and forecast capital expenditure vs regulatory determinations, 2013-14 to 2019-20

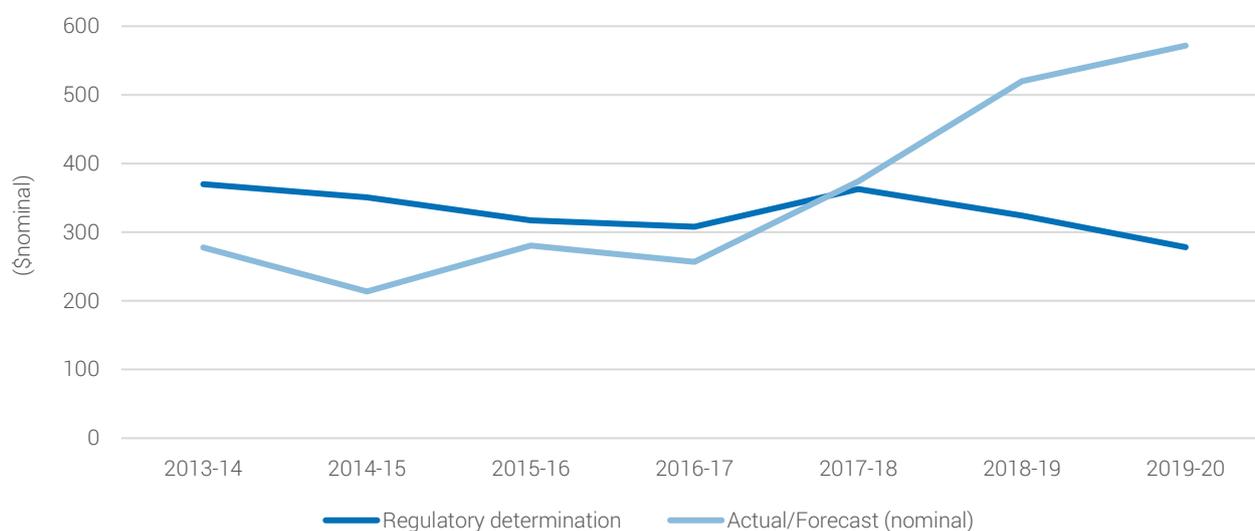


Table 1: SA Water’s capital expenditure vs. regulatory determinations

\$million (nominal)	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Regulatory determination	370.0	350.5	317.1	308.0	362.6	324.1	278.1
Actual/Forecast	277.8	213.6	280.5	256.8	374.0	519.9	571.8
Under/(over)spend	92.2	136.9	36.4	51.2	(11.4)	(195.8)	(293.7)

The forecast additional \$505 million is being driven by the following large projects that were not anticipated at the time of assessing the capital expenditure requirements for the current regulatory period:

- ▶ Project Zero – SA Water is investing an additional \$390 million in solar electricity generation and electricity storage across 2018-19 and 2019-20, with the aim of reducing its annual electricity costs (currently around \$60 million operating expenditure per annum) to nil net cost by mid-2020. The project covers over 70 SA Water sites, including water and sewerage treatment plants, pumping stations, and the Adelaide Desalination Plant.
- ▶ Northern Adelaide Irrigation Scheme (**NAIS**) – SA Water is investing an additional \$155.6 million (\$131 million in the SAW RD16 period) to deliver recycled water from the Bolivar sewerage treatment plant to greenhouses and other food production processes north of the Gawler River.<sup>6</sup> The total cost of this project will be offset through partial funding from the National Water Infrastructure Development Fund<sup>7</sup> (\$45.6 million) and further revenue to be collected from new recycled water customers.
- ▶ Additional Water Mains Relays – SA Water is investing an additional \$50 million to replace 100km of water mains across metropolitan Adelaide to reduce the number of properties experiencing three or more interruptions to their water supply in a 12-month period. This program will also include an additional \$3.2 million to install additional shut-off valves in the network, to reduce the number of customers affected when water supply needs to be turned off to undertake repairs.

SA Water has advised that it is working to improve the efficiency of its capital works processes and reprioritise investments in order to minimise the impact of these additional projects and reduce its forecast additional capital expenditure to approximately \$450 million.

SA Water is also assessing the options for starting construction of a desalination plant on the Eyre Peninsula in 2019, at a cost of approximately \$75-100 million. This project has not been included in the above forecasts, as it is still early in the planning phase.

In the longer term, the 2018-19 SA Government budget papers<sup>8</sup> forecast SA Water's capital expenditure to return to levels of approximately \$400 million per annum for the 2020-21 and 2021-22 years, reflecting the completion of the major projects identified above.

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<sup>6</sup> This project was the subject of a Direction from the Minister for Water in August 2017, pursuant to Section 6 of the Public Corporations Act 1993, instructing SA Water to provide the infrastructure necessary to supply 12GL of water annually.

<sup>7</sup> The National Water Infrastructure Development Fund is administered by the Commonwealth Government Department of Infrastructure, Regional Development and Cities. Further information is available at <https://infrastructure.gov.au/infrastructure/water-infrastructure/nwi-development-fund/>

<sup>8</sup> SA Government, 2018-19 Budget Statement, September 2018, p.84, table 5.4, available [https://cdn.service.sa.gov.au/statebudget/201819/2018-19\\_budget\\_statement.pdf?q=623504](https://cdn.service.sa.gov.au/statebudget/201819/2018-19_budget_statement.pdf?q=623504)

## Operating expenditure

Since 2013-14, annual operating expenditure on drinking water services and sewerage services has been below the annual amounts forecast in the regulatory determinations, as shown in Figure 4 and Table 2. Further information on actual operating expenditure is provided in Appendix 1.

Figure 4: Actual operating expenditure vs regulatory determinations, 2013-14 to 2017-18

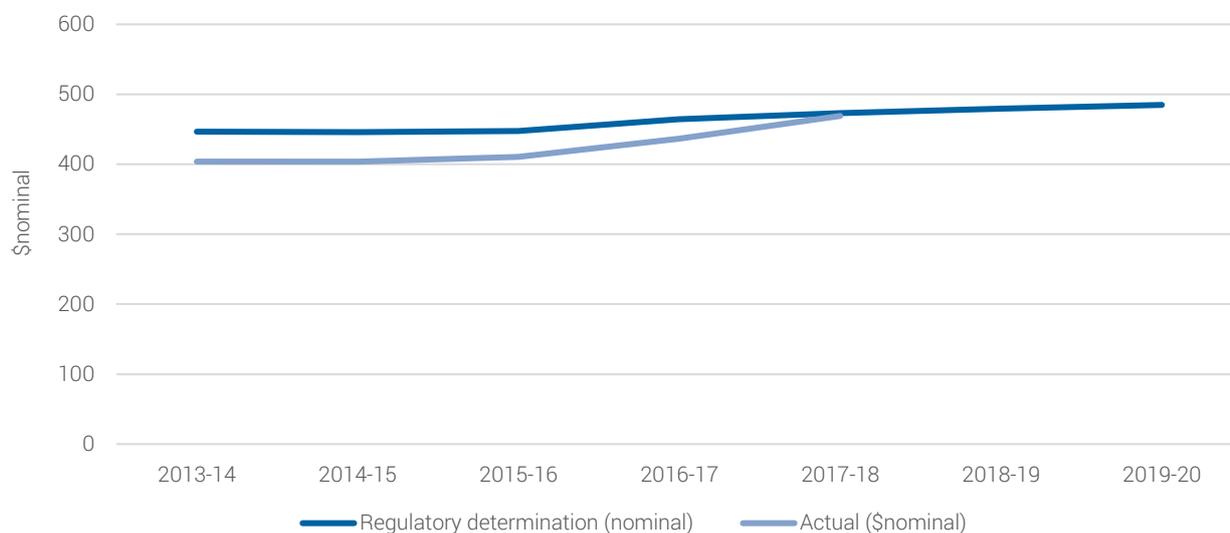


Table 2: Operating expenditure vs. regulatory determinations

\$million (nominal)	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Regulatory determination	446.8	445.9	447.7	464.5	473.2	479.3	484.8
Actual	403.8	403.8	410.6	436.7	469.0	n/a	n/a
Under/(over)spend	43.0	42.1	37.1	27.8	4.2	-	-

SA Water has provided the Commission with its operating expenditure budget for 2018-19, which is based on holding overall operating costs at 2017-18 levels. This means that SA Water is trying to find efficiencies across its operations that are at least equal to the level of inflation, currently around two percent.

Thereafter, the significant effects of Project Zero in reducing SA Water's annual electricity costs (currently around \$60 million per annum), should result in a reduction in operating expenditure in 2019-20, with the full effects of nil net electricity costs forecast to be realised, through lower costs for customers, from 2020-21 onwards.

The Commission notes that the South Australian Government's State Budget for 2018-19 includes SA Water delivering operating expenditure savings of approximately \$18.5 million in that year (relative to 2017-18 estimated operating expenditure), which is expected to be maintained in 2019-20.<sup>9</sup> The forecast expenditure savings flow through to increased profits (as revenues are fixed under SAW RD16), which translate into higher than expected dividends to the SA Government in 2018-19 and 2019-20. Those expenditure savings are expected to be passed through to customers from 1 July 2020 through lower revenues under SAW RD20. The decrease in the forecast dividend in 2020-21 reflects that expected reduction in revenue.

<sup>9</sup> South Australian Government, State Budget 2018-19 – Budget Paper 5: Budget measures statement, page 173-174, available at [https://cdn.service.sa.gov.au/statebudget/201819/2018-19\\_budget\\_measures\\_statement.pdf?q=674661](https://cdn.service.sa.gov.au/statebudget/201819/2018-19_budget_measures_statement.pdf?q=674661).

## How does SA Water compare to its peers?

South Australia is a signatory to the Intergovernmental Agreement on a National Water Initiative.<sup>10</sup> The Bureau of Meteorology produces annual National Performance Reports on Australia's water industry on behalf of State and Territory Governments to monitor and report on commitments made under this Agreement.<sup>11</sup> These reports include data on trends in pricing and service quality for 84 Australian water utilities.

SA Water's performance can be compared with other major Australian water utilities with more than 100,000 connections (of which there are 14 including SA Water).<sup>12</sup> However, in making comparisons between the water utilities, it is important to realise that there will be some differences in the operating and physical environments of each business that may contribute towards some of the differences in results. This includes factors like:

- ▶ the number of properties connected to the networks
- ▶ the volumes and quality of water treated and delivered and sewage collected and treated
- ▶ the length of the network and the density of customers connected to that network
- ▶ boundary definition (between the network and the customer's premises)
- ▶ age and type of existing infrastructure.
- ▶ soil type and geology, and
- ▶ the topography of the area serviced.

With these differences in mind, comparisons between businesses over time can still be helpful for understanding SA Water's performance relative to its peers. Over the 2013-14 to 2016-17 period, relative to its peer group, SA Water:

- ▶ experienced a low level of growth in its water services, when measured by the increase in the number of water connections, growth in the length of water mains in its network and a small decline in the volume of water delivered
- ▶ experienced a low level of growth in its sewerage services, when measured by the increase in the number of sewerage connections and growth in the length of sewerage mains and channels (while noting that it experienced an increase in the volume of sewage collected)
- ▶ reported the highest decrease in water operating costs per property (reducing from \$512 in 2013-14 to \$426 in 2016-17; compared with the highest rate of \$867 per property for Queensland Urban Utilities)
- ▶ reported the fourth highest increase its sewerage operating costs per property (noting that SA Water had the lowest sewerage operating costs per property in 2016-17 at \$224, while Tasmanian Water and Sewerage Corporation had the highest at \$576 per property)
- ▶ reported an eight percent reduction in its water capital expenditure per connection over the period 2013-14 to 2016-17, which was the sixth highest reduction reported in its peer group (which equated to a five percent reduction in its water capital expenditure on a per kilometre basis), and

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<sup>10</sup> The National Water Initiative Agreement is available at <https://www.pc.gov.au/inquiries/completed/water-reform/national-water-initiative-agreement-2004.pdf>. Further information on the National Water Initiative is available at <http://www.agriculture.gov.au/water/policy/nwi>

<sup>11</sup> The National Performance Reports and detailed data sets are available at <http://www.bom.gov.au/water/npr/>

<sup>12</sup> Some of the members of SA Water's peer group have not reported data against each indicator. In these instances, the utility has been removed from the comparisons reducing the peer group from 14 to 13.

- ▶ reported a seven percent reduction in its sewerage capital expenditure per connection over the period 2013-14 to 2016-17, which was the eighth highest reduction reported in its peer group (which equated to a five percent reduction in its sewerage capital expenditure on a per kilometre basis).

Further data and discussion of these comparisons is provided in Appendix 2.

However, where the characteristics of SA Water and other water utilities are markedly different, it is likely to be more helpful to consider trends in SA Water's own historical performance, rather than its performance against its peer group.

## What needs to be considered for SAW RD20?

### Was SA Water's actual expenditure during SAW RD16 prudent and efficient?

As explained above, SA Water's actual expenditure within a regulatory period is likely to vary from the forecasts used to determine the maximum revenue cap.

In addition to reviewing SA Water's proposed expenditure plans prior to the commencement of a regulatory period, in previous regulatory determinations, the Commission has also reviewed SA Water's actual expenditure during the previous regulatory period to assess whether the changes in previously forecast projects or programs were prudent and efficient.<sup>13</sup> This is called an 'ex-post' review.

Ex-post reviews are designed to incentivise prudent and efficient behaviour within a regulatory period, after the initial ex-ante assessment of planned expenditure has been conducted.

There are two main reasons for conducting an ex-post review:

- ▶ to promote efficient capital expenditure by SA Water, and
- ▶ to ensure that customers do not pay for inefficient expenditure in the long term through its inclusion in the Regulatory Asset Base.

Given that the forecast level of expenditure in SAW RD16 is likely to exceed the maximum revenue cap, an ex-post review is likely to be required.

SA Water should be able to explain why it considered various initiatives, projects or programs that were not previously proposed to be prudent and efficient investment decisions. It should also be able to explicitly highlight where an initiative, project or program that was previously proposed to be undertaken in SAW RD16, and then subsequently deferred, is again being proposed in SAW RD20.

### SA Water must test and prioritise its expenditure proposals before it submits its draft business plan to the Commission

SA Water needs to rigorously test its future expenditure plans with stakeholders, including its customers, the South Australian Consumer Experts Panel and the Regulators Working Group. The Commission expects to see evidence that SA Water has made genuine efforts to understand what its diverse customer base expects, and how SA Water has responded to what it has heard in prioritising the various initiatives, programs and projects it ultimately proposes in its draft business plan in October 2019.

SA Water will need to be able to demonstrate how an initiative, program or project is:

- ▶ prudent – meaning it needs to be done and it needs to be done during the 2020-2024 period, and
- ▶ efficient – if it is prudent, the plans for delivering the initiative, program or project are efficient.

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<sup>13</sup> SA Water Regulatory Determination 2016, June 2016, available <https://www.escosa.sa.gov.au/ArticleDocuments/334/20160606-Water-SAWaterRegulatoryDetermination2016FinalReport.pdf.aspx?Embed=Y>

It should be able to identify a clear driver for its proposed expenditure (and the outcome that it expects to achieve), the evidence it has considered, the options it has assessed, and why it has chosen its preferred option. Presenting the intended outcomes of the expenditure is important as it will provide a basis for assessing the success of SA Water's proposal during the next regulatory period.

In addition to testing its proposals with the Consumer Experts Panel, Regulatory Working Group and other stakeholders, SA Water will need to test its draft expenditure proposals in the Negotiation Forum, from February 2019 to June 2019.

The Negotiation Forum will consider a broad cross section of SA Water's proposed initiatives, programs and projects. This should include:

- ▶ water and sewerage services
- ▶ Adelaide metropolitan and regional operations
- ▶ operations and maintenance for current services versus proposed enhancements or improvements to services
- ▶ an understanding of the age profile and condition of the physical asset stock, and the asset systems and networks that will be affected
- ▶ expectations about growth and demand, and how proposals are responding to those expectations
- ▶ customer-driven initiatives, including evidence of the diversity of views, preferences, priorities and willingness to pay among customers
- ▶ regulatory outcomes that need to be achieved in the next period and longer term requirements, and
- ▶ overall efficiency targets, including the basis of how they have been determined.

SA Water will need to provide succinct, yet comprehensive, business cases that will allow the Customer Negotiation Committee to provide an informed view on the proposals. Presenting key information on the proposed initiatives, programs and projects in a standardised format will assist the Customer Negotiation Committee to assess of SA Water's expenditure proposals. The Commission has developed a business case summary, in consultation with SA Water and the Independent Chairperson of the Customer Negotiation Committee, to assist with this task. The summary template is provided in Appendix 3.

The template is provided so that all stakeholders can see the level of detail the Commission expects SA Water to provide in the Negotiation Forum. However, some of the information in these templates may be provided on a confidential basis to assist with the negotiation process, and so will not be publicly released. While the detailed information may not be publicly released, SA Water will be expected to provide sufficient information about key initiatives, programs and projects to its wider stakeholders to allow for meaningful conversations about prioritising the expenditure proposals in its 2020-2024 business plan.

Stakeholders will also have the opportunity to comment on the Commission's draft determination, which will respond to SA Water's draft business plan, in February 2020.

## Trends in the price of key cost inputs for SA Water need to be understood

The Commission expects SA Water to manage its key cost inputs to ensure that only prudent and efficient costs are passed through to its customers.

The trends in the price of six key input costs for SA Water have been considered by assessing the changes in Producer Price Indexes, compiled by the Australian Bureau of Statistics<sup>14</sup>:

- ▶ plant
- ▶ electrical equipment
- ▶ pipes
- ▶ concrete and aggregate
- ▶ basic chemicals, and
- ▶ construction.

The price of these six key input groups have increased broadly in line with the Consumer Price Index since 2016. There are some exceptions, including the price of basic chemicals, electric cable and wiring, and steel and plastic pipes. Appendix 4 provides further details on the longer-term trends in these key inputs. However, further information on SA Water's specific material requirements for various programs and projects will be needed to evaluate whether the changes in Producer Price Indexes will translate into actual cost impacts for SA Water.

In addition to the above key cost inputs, SA Water's approach to managing its electricity costs is also an import consideration. Since 2016, SA Water has sought to manage the costs of its electricity needs by increasing its internal capabilities for managing its electricity portfolio. As noted above, SA Water is aiming to manage, and ultimately reduce, its future electricity costs through its investments under Project Zero.

Labour is a major component of SA Water's operating expenditure. However, it is important to make the distinction between labour costs and labour prices. Three components contribute to its labour costs: wages (the price of labour including associated on costs such as superannuation, leave and personal injuries insurance), the number of people employed, and productivity. SA Water's total labour costs are a function of all of these factors and, therefore, any of them can be adjusted to ensure that total labour costs are held within the limits of the Consumer Price Index.

## Changes to regulatory requirements that may materially affect costs need to be understood

There is a range of possible changes to the regulatory requirements SA Water must meet over the course of the 2020-2024 regulatory period. As noted above, the Commission has convened a Regulators Working Group to provide a forum for the economic, environmental, public health, social, and technical regulators to coordinate their efforts for achieving positive outcomes for the South Australian community through their combined regulation of SA Water.

A key part of this work is gaining a better understanding of any changes to regulatory requirements that may materially affect SA Water's costs. At this point in time, known changes to regulatory requirements that will apply from 1 July 2020 are as follows:

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<sup>14</sup> For source data and explanatory notes, see Australian Bureau of Statistics 2018, 6427.0 – Producer Price Indexes, Australia, June 2018, <http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/6427.0Explanatory%20Notes1Jun%202018?OpenDocument>

- ▶ Changes from a five year rolling entitlement to an approach based on annual permitted take for SA Water’s River Murray water (Metropolitan Adelaide) entitlements as a result of Murray Darling Basin Plan implementation (from July 2019).<sup>15</sup>
- ▶ Requirements for upgrades of regional wastewater treatment plants to reduce their impact on the receiving environment. The Environment Protection Authority is continuing to engage with SA Water on the prioritisation of the upgrades to its regional wastewater treatment plants to meet compliance outcomes and reduce environmental impact during SAW RD20 and SAW RD24.

Further changes may arise from:

- ▶ A review of the Water Industry Act 2012 and Water Industry Regulations 2012, now underway. A report to Parliament with review findings is due in April 2019.<sup>16</sup>
- ▶ Introduction of the Landscapes SA Act, which will replace the Natural Resources Management Act 2004. The Act will be introduced to Parliament in early-mid 2019.<sup>17</sup> One proposed amendment is a cap on water levies. If implemented, levies SA Water pays on its water licences will not rise above the Consumer Price Index, without approval.
- ▶ Changes to Schedule 1 of the Environment Protection Act 1993, which lists prescribed activities of environmental significance.
- ▶ Changes to nutrient and sediment load targets for wastewater treatment plant discharges to the environment. Development and implementation of Environmental Improvement Programs (**EIPs**) form part of SA Water’s licence conditions for wastewater treatment plants. Current EIPs for metropolitan wastewater treatment plants include combined 2030 targets for nutrient and sediment loads in treated wastewater discharged to the Gulf of St Vincent. These targets may be tightened in light of recent research. As a result, SA Water may need to invest in management actions and interventions to reduce nutrient and sediment loads.
- ▶ Emerging chemical issues. Work on issues related to management of per-and-polyfluoroalkyl substances (**PFAS**) may impact how SA Water is required to manage trade waste, treated effluent, recycled water use and bio solids.
- ▶ Changes resulting from review of the service standards that apply to SA Water, and the broader review of the Water Retail Code – Major Retailers. Guidance Paper 3 – Service standards, provides more details on this part of the SAW RD20 review.

SA Water’s expenditure proposals should be able to demonstrate how it has assessed the options for meeting its regulatory requirements at the lowest possible cost. At present, the combined cost impact of the potential changes set out above is unknown. However, in cases of increased regulatory obligations, it may still be possible for SA Water to reduce its overall costs, if it can find more efficient ways to achieve the regulatory outcomes required.

The Commission will continue to work with SA Water and the Regulators Working Group to refine the regulatory outcomes that SA Water will be expected to meet in SAW RD20 and beyond.

<sup>15</sup> The Murray-Darling Basin Plan was developed as a requirement of the Commonwealth Water Act 2007. It determines how much water can be taken each year for urban, industrial and agricultural use. See: [www.mdba.gov.au/basin-plan](http://www.mdba.gov.au/basin-plan) and <https://www.environment.sa.gov.au/managing-natural-resources/river-murray/basin-plan>

<sup>16</sup> The Department for Environment and Water is planning to release a discussion paper canvassing opportunities for improvements to the Water Industry Act in November or December 2018.

<sup>17</sup> The Department for Environment and Water released a discussion paper for the review in July 2018 called Managing our landscapes – conversations for change, see: [https://s3-ap-southeast-2.amazonaws.com/assets.yoursay.sa.gov.au/production/2018/07/23/23/50/44/4dec3f71-18d1-4372-855b-a40396f3586f/95304%20Landscapes%20Discussion%20Paper%20FIN%20WEB6%20\(002\).pdf](https://s3-ap-southeast-2.amazonaws.com/assets.yoursay.sa.gov.au/production/2018/07/23/23/50/44/4dec3f71-18d1-4372-855b-a40396f3586f/95304%20Landscapes%20Discussion%20Paper%20FIN%20WEB6%20(002).pdf)

## Has SA Water set itself a challenging enough efficiency target?

The Commission expects SA Water to be able to continue to find significant ongoing efficiencies over the 2020-2024 regulatory period.

SA Water will identify particular initiatives, programs and projects where it expects to achieve efficiencies in its operations, processes and service delivery. However, these specific initiatives will not capture some of the additional efficiencies SA Water will be able to achieve over the 2020-2024 regulatory period. Additional efficiencies will result from the ongoing processes of innovation in its practices and the application of new technologies to automate, coordinate or otherwise streamline existing processes.

The source and impact of these general ongoing efficiencies may be difficult to identify in advance. However, as set out above, SA Water has consistently managed to spend less than its expenditure forecasts.

In part, this has been due to its ability to continue to find more efficient ways to deliver its services, beyond what it initially planned.

To provide focus across the business to continually try to find better ways of delivering services for less, SA Water should propose a general efficiency target in its 2020-2024 business plan. This target should be set with a consideration of at least:

- ▶ its current performance relative to its peers, and
- ▶ the efficiencies it has been able to achieve in previous regulatory periods.

# Appendix 1: Trends in SA Water’s actual expenditure, 2013-14 to 2017-18

## Capital expenditure analysis

### Water and Sewerage split of capital expenditure

Figure 5 and Table 3 provide actual and forecast net capital expenditure (ie with capital contributions from government and customers removed) across the 2013-14 to 2019-20 period, split between water and sewerage.

Figure 5: Overall capital expenditure split between drinking water and sewerage, 2013-14 to 2019-20

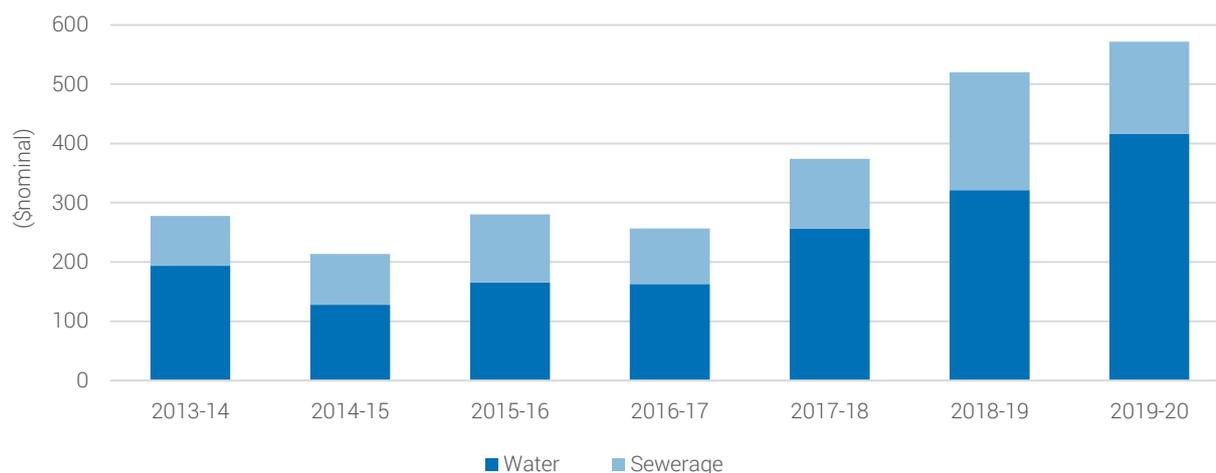


Table 3: Capital expenditure split between drinking water and sewerage

\$million (nominal)	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Water	193.8	127.7	165.6	162.8	256.6	321.2	416.3
Sewerage	84.0	85.9	114.8	94.0	117.4	198.7	155.5
Net Capital Expenditure	277.8	213.6	280.5	256.8	374.0	519.9	571.8

Investment on drinking water assets increases materially in the later years, driven primarily by Project Zero costs, while investment in sewerage assets shows a similar trend, driven primarily by the costs of the Northern Adelaide Irrigation Scheme.

### Key drivers of capital expenditure

Total capital expenditure has increased by around 35 percent over the period 2013-14 to 2017-18, with further increases forecast for the 2018-19 and 2019-20 years. The key investment drivers for capital expenditure are:

- ▶ asset renewals – including pipe networks, major and minor plant, structures and mechanical & electrical equipment,
- ▶ external obligations – including water quality management, water resource sustainability, environmental compliance, safety and service reliability management.
- ▶ system growth
- ▶ drought response (Adelaide Desalination Plant proving costs in 2013-14 and 2014-15), and
- ▶ corporate costs.

Figure 6 and Table 4 provide a breakdown of actual and forecast capital expenditure by each of these key investment drivers over the period 2013-14 to 2019-20.

Figure 6: Net capital expenditure breakdown by investment driver, 2013-14 to 2019-20

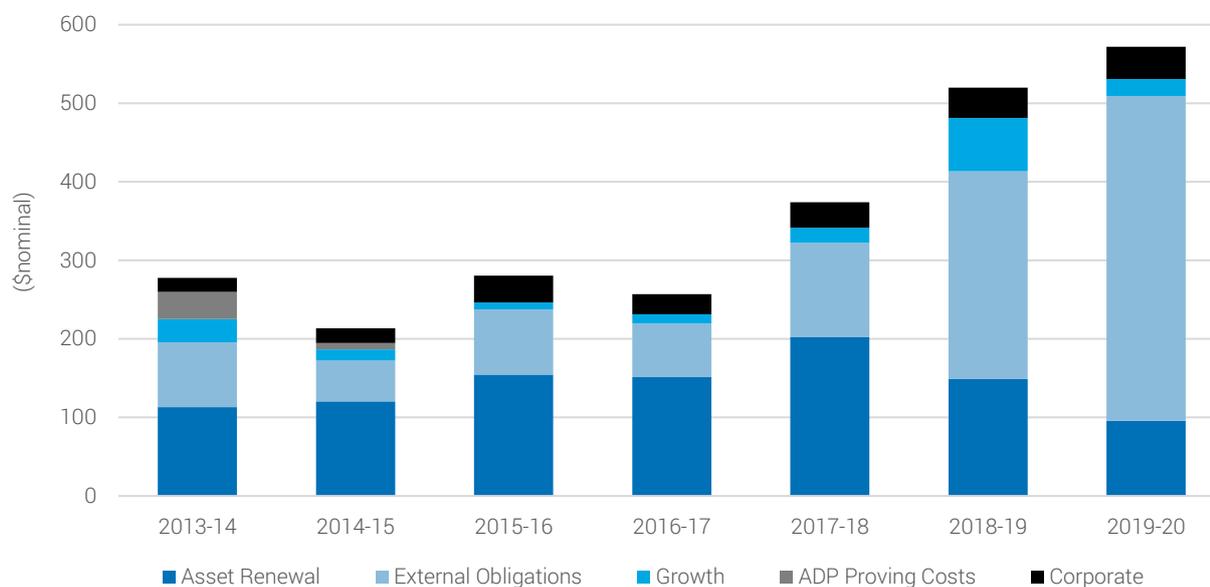


Table 4: Net capital expenditure breakdown by investment driver

\$million (nominal)	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Asset Renewal	112.9	120.5	154.7	151.3	201.9	148.9	95.7
External Obligations	82.6	51.7	82.9	68.1	120.5	264.3	413.6
Growth	29.9	14.5	9.0	11.8	19.1	68.2	21.5
ADP Proving costs	34.2	8.2	0.0	0.0	0.0	0.0	0.0
Corporate	18.2	18.7	33.9	25.5	32.4	38.5	41.0
<b>Net Capital Expenditure</b>	<b>277.8</b>	<b>213.6</b>	<b>280.5</b>	<b>256.8</b>	<b>374.0</b>	<b>519.9</b>	<b>571.8</b>

### Asset Renewals

Major projects driving the profile of Asset Renewal expenditure are as follows:

- ▶ additional metropolitan water mains renewals, at a cost of \$58.2m across 2016-17 and 2017-18
- ▶ further tank structure renewals and repairs across a range of sites, at a cost of \$57.9m across the 2016-17 to 2019-20 period
- ▶ Glenelg wastewater treatment plant inlet screens renewal, at a cost of \$24.0m across the 2014-15 to 2016-17 period
- ▶ mechanical and electrical works at Bolivar wastewater treatment plant, at a cost of \$23.9m across the 2017-18 to 2019-20 period
- ▶ structure renewals at Glenelg wastewater treatment plant, at a cost of \$22.5m across the 2017-18 to 2019-20 period, and
- ▶ Hope Valley reservoir tank structure renewal, at a cost of \$20.6m across 2016-17 and 2017-18.

## External Obligations

Major projects driving the profile of External Obligations expenditure are as follows:

- ▶ Project Zero, at a cost of \$389.9m, across 2018-19 and 2019-20
- ▶ Kangaroo Creek Dam Safety Upgrades, at a cost of \$117.6m, across the 2015-16 to 2019-20 period
- ▶ Northern Adelaide Irrigation Scheme, at a net cost of \$62.3m, across the 2017-18 to 2019-20 period, and
- ▶ Completion of construction works at Adelaide Desalination Plant, in 2013-14 and 2014-15, at a cost of \$29.7m.

## Growth

The profile of Growth expenditure is primarily driven by expenditure on the relocation of Murray Bridge WWTP, at a cost of \$53.3m, across 2018-19 and 2019-20

### Adelaide Desalination Plant proving costs

This was the costs of running the Adelaide Desalination Plant during its first two years of operation, to test and prove reliability.

### Corporate

These costs are comprised of various IT programs and the purchase of plant.

## Operating expenditure analysis

### Water and Sewerage split of operating expenditure

Figure 7 and Table 5 provide actual operating expenditure across the 2013-14 to 2017-18 period, split between water and sewerage.

Figure 7: Operating expenditure split between water and sewerage, 2013-14 to 2017-18

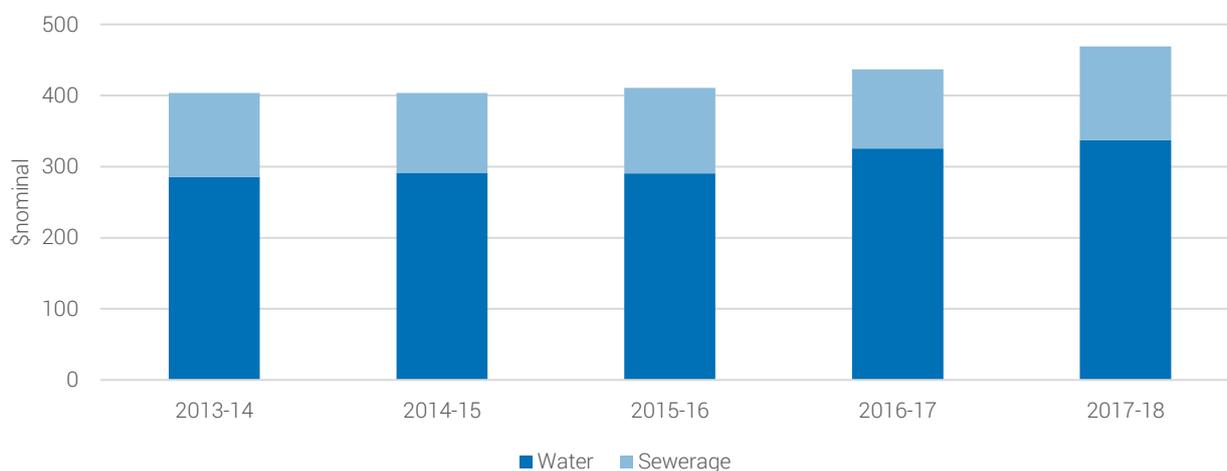


Table 5: Operating expenditure split between water and sewerage

\$million (nominal)	2013-14	2014-15	2015-16	2016-17	2017-18
Water	285.3	291.6	290.3	325.6	337.2
Sewerage	118.5	112.2	120.4	111.1	131.9
Operating Expenditure	403.8	403.8	410.6	436.7	469.0

As can be seen above, water consistently comprises approximately 72 percent of operating expenditure, with Sewerage comprising the remaining 28 percent.

### Key drivers of operating expenditure

Figure 8 and Table 6 provide actual operating expenditure across the 2013-14 to 2017-18 period, split by expenditure area.

Figure 8: Operating expenditure analysis, 2013-14 to 2017-18

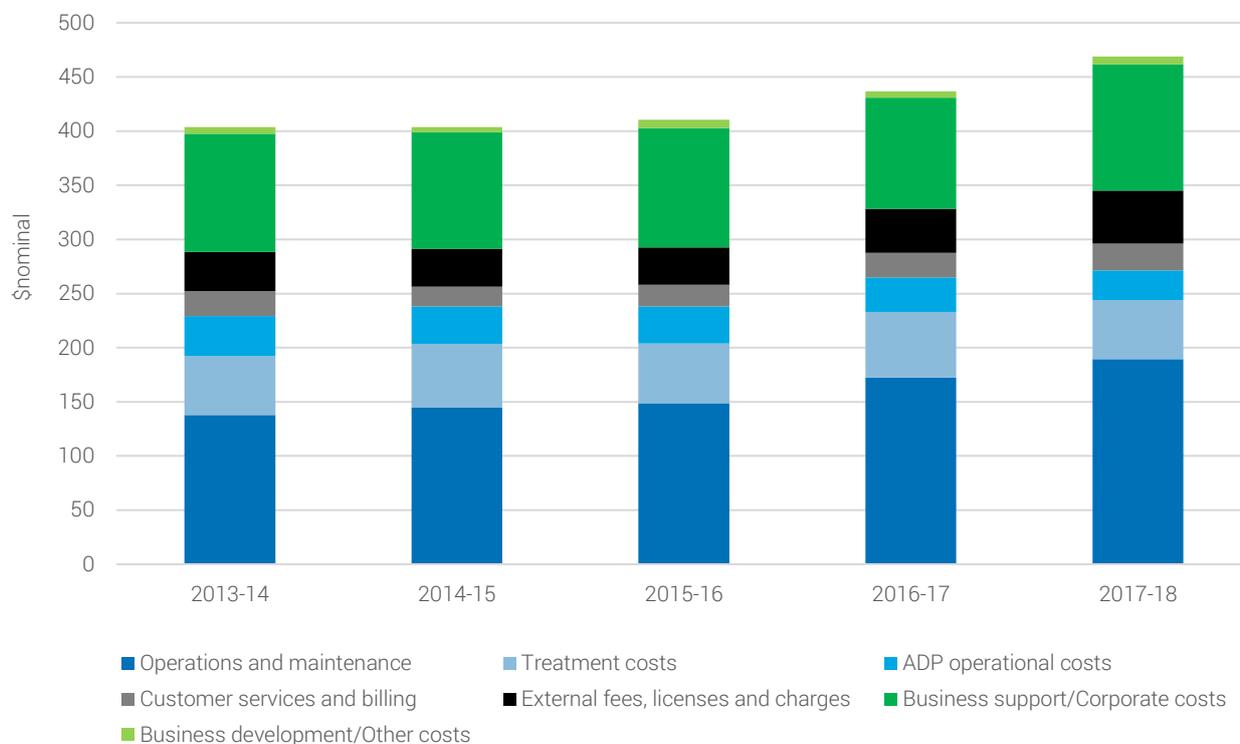


Table 6: Operating expenditure analysis

\$million (nominal)	2013-14	2014-15	2015-16	2016-17	2017-18
Operations and maintenance	137.8	144.6	148.8	172.5	189.4
Treatment costs	54.7	59.0	55.1	60.5	54.7
ADP operational costs	36.6	34.5	34.1	32.0	27.2
Customer services and billing	23.2	18.4	20.1	22.5	24.9
External fees, licences and charges	36.0	35.1	34.4	40.8	49.1
Business support/corporate costs	109.1	107.6	110.4	102.6	116.4
Business development and other	6.4	4.7	7.6	5.8	7.5
<b>Total operating expenditure</b>	<b>403.8</b>	<b>403.8</b>	<b>410.6</b>	<b>436.7</b>	<b>469.0</b>

Material movements in operating expenditure between years can be explained as follows:

#### Operations and Maintenance

These costs have increased annually across the 2013-14 to 2017-18 period. SA Water has advised that these costs are influenced by external factors, such as weather and environmental conditions, which drive varying requirements for expenditure between years in areas such as water pumping, levels of breakdown repairs, and general maintenance.

**External Fees, licences and charges**

From 2015-16 to 2016-17, costs increased by \$6.4m, with a further increase in the following year of \$8.3m. These additional costs were primarily driven by higher licence fees collected under the Water Industry Act 2012. This increase was due to the commencement of recovery of the costs of the Office of the Technical Regulator from 2016-17, and the inclusion of a further charge from 2016-17, to recover Office of Technical Regulator costs for the 2013-14 to 2015-16 period.

**Business Support/Corporate costs**

From 2015-16 to 2016-17, these costs reduced by \$7.8m, then increased the following year by \$13.8m. This was primarily driven by the creation of a provision for doubtful debt, related to a single large customer, of \$6m in 2015-16, which then reversed in 2016-17.

## Appendix 2: How SA Water compares with its peers, 2013-14 to 2016-17

### Customer demand/growth trends

An understanding of the rate of growth or levels of demand for services can assist with making assessments about the potential future expenditure requirements to meet the changing needs each business faces. Using the National Performance Reporting data, growth can be considered by looking at the changes in customer numbers, volumes of water supplied/sewage collected, and length of pipes in the physical network.

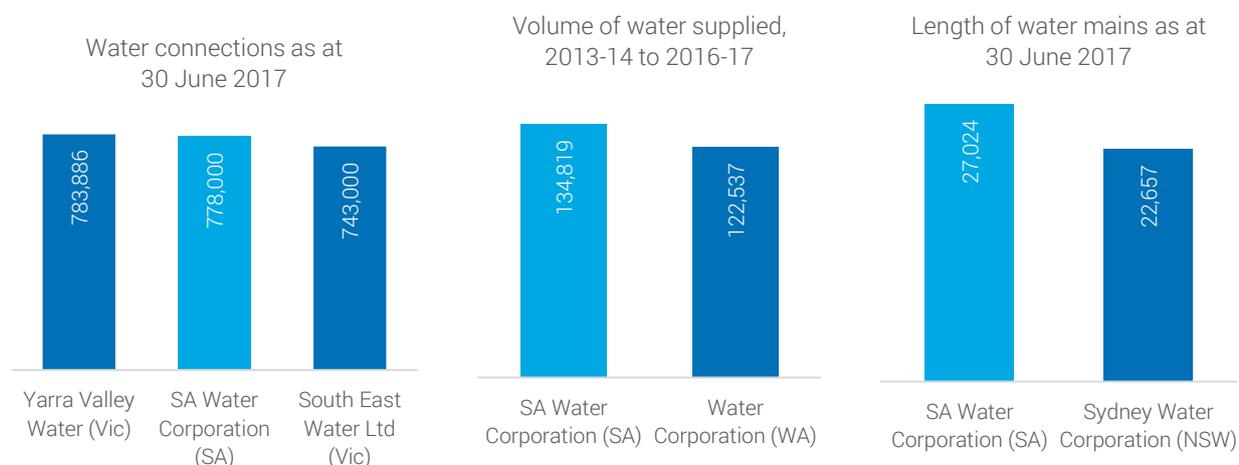
However, there are some limitations with using these metrics as measures of growth. For example, growth in customer connections will not necessarily translate into an increase in the length of the network, as new customer connections may result from urban infill developments or greenfield developments at the edges of the existing networks. Similarly, growth in customer connections will not necessarily translate into large increases in the volumes of water delivered or the volumes of sewage that needs to be treated, as the average consumption per customer may decrease as water efficient equipment improves or additional opportunities to reuse wastewater arise.

There is a large variation on each of these measures for the businesses in SA Water's peer group.

### Water services

Figure 9 provides a summary of the water businesses that were most similar to SA Water in terms of the three broad measures of growth available in the National Performance Report data.

Figure 9: Water businesses most similar to SA Water based on connections, volume of water supplied and length of mains



The water businesses with characteristics most similar to SA Water were Yarra Valley Water (Vic), South East Water (Vic), Water Corporation (WA) and Sydney Water Corporation (NSW). Relative to these other businesses, SA Water's water services:

- ▶ experienced a low level of growth in water connections, which was also low relative to Yarra Valley Water (Vic) and South East Water (Vic) (around three percent versus around six percent) – Figure 10
- ▶ experienced a small decline in the volume of water delivered (around a three percent decline for SA Water versus an 11 percent increase for Water Corporation (WA)) – Figure 11
- ▶ experienced low levels of growth in the length of water mains in its network (0.1 percent for SA Water and two percent for Sydney Water Corporation (NSW)) – Figure 12.

Figure 10: Trend in the growth of water networks by the total number of properties connected, 2013-14 to 2017-18

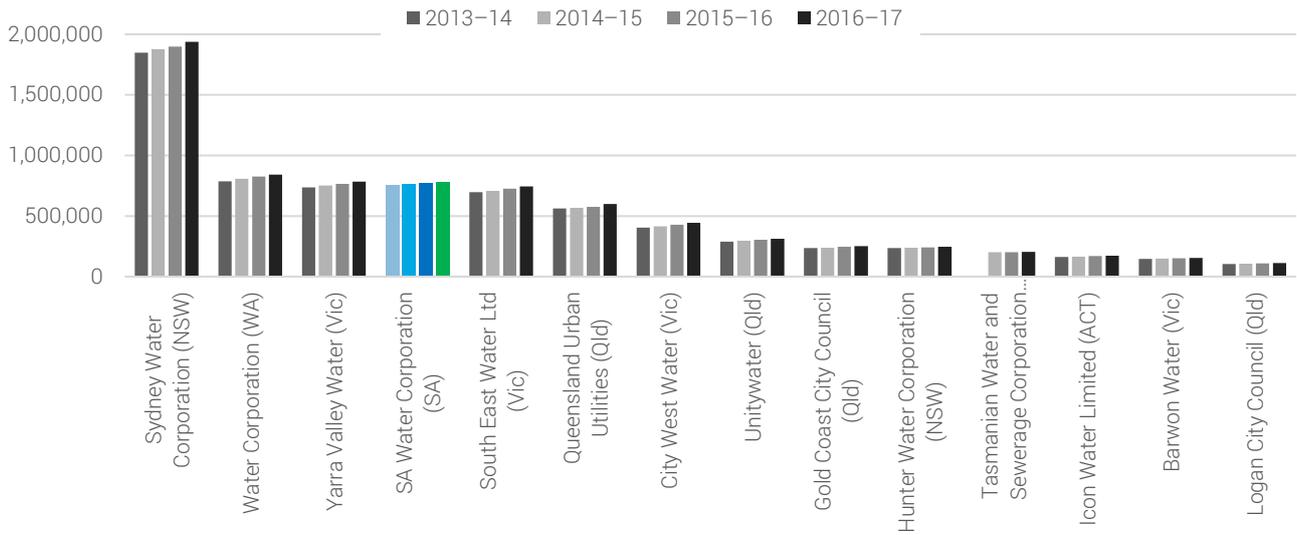


Figure 11: Trend in the volume of water supplied (ML), 2013-14 to 2017-18

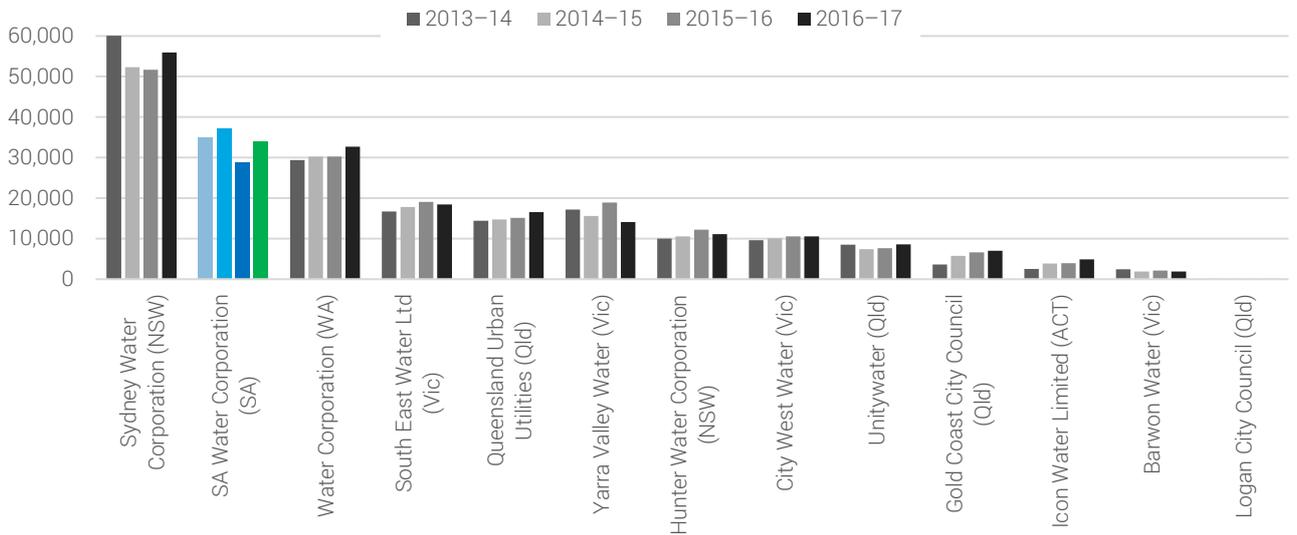
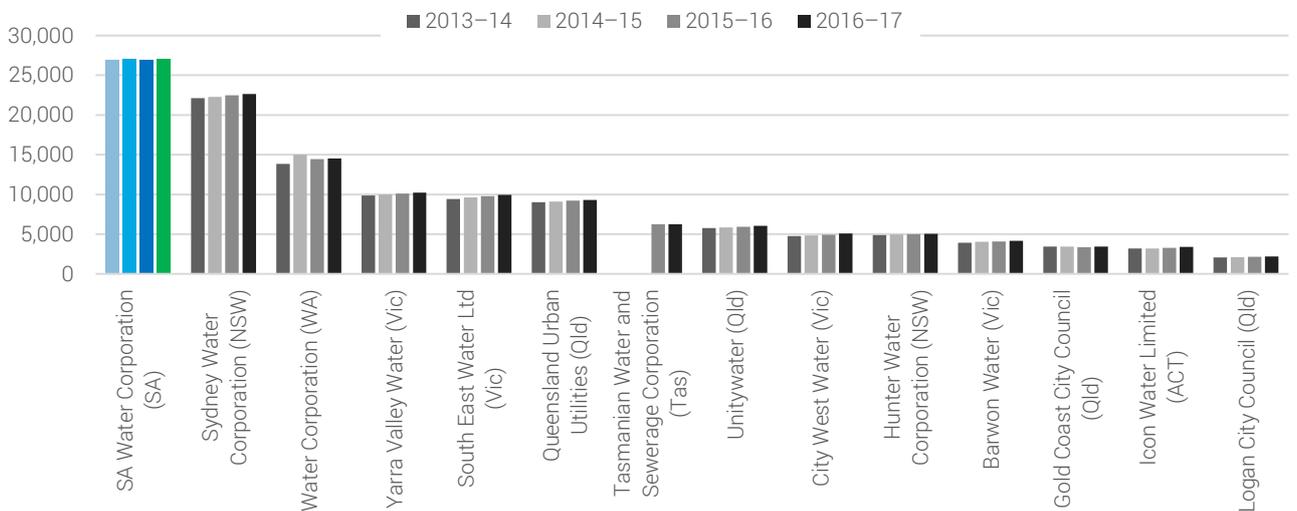


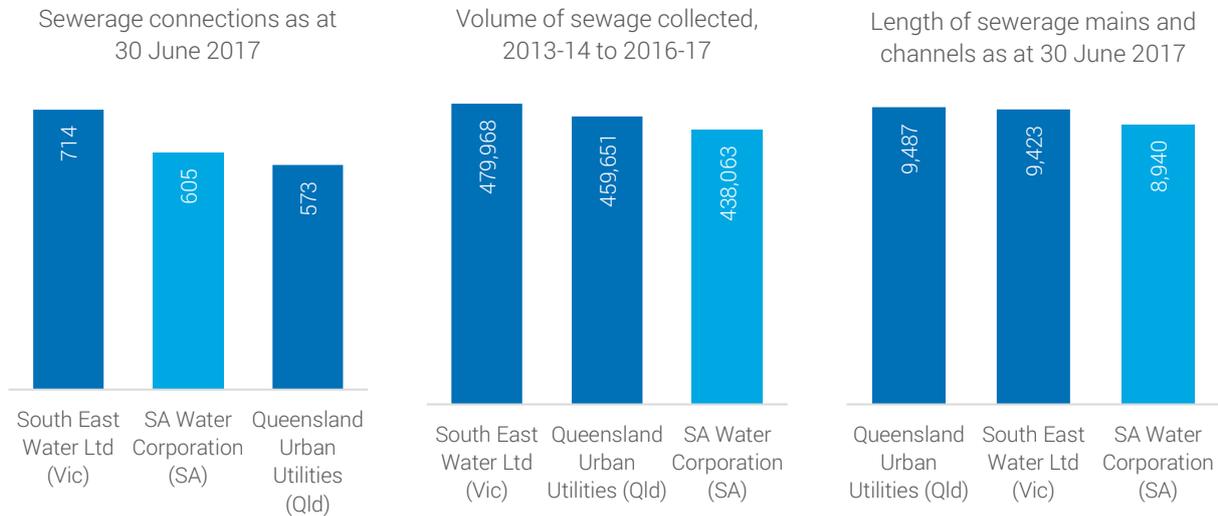
Figure 12: Trend in the growth of water networks by the total length of water mains (kms), 2013-14 to 2017-18



## Sewerage services

Figure 13 provides a summary of the sewerage businesses that were most similar to SA Water in terms of the three broad measures of growth available in the National Performance Report data.

Figure 13: Sewerage businesses most similar to SA Water based on connections, volume of sewage collected and length of mains



The sewerage businesses with characteristics most similar to SA Water were Queensland Urban Utilities and South East Water (Vic) on each of the three measures over the period 2013-14 to 2016-17. Relative to these two businesses, SA Water's sewerage services:

- ▶ experienced a lower level of growth in sewerage connections than each of these businesses (around three percent growth versus around seven to eight percent) – Figure 14
- ▶ experienced an increase in the volume of sewage collected, with the highest increase experienced by SA Water (a 14 percent increase versus around 9-11 percent for the other businesses) – Figure 15
- ▶ experienced a similar rate of growth in the length of its sewerage mains and channels to Queensland Urban Utilities (at two to three percent respectively) while South East Water (Vic) experienced a higher growth rate (eight percent) – Figure 16.

Figure 14: Trend in the number of properties connected to sewerage networks (000s), 2013-14 to 2017-18

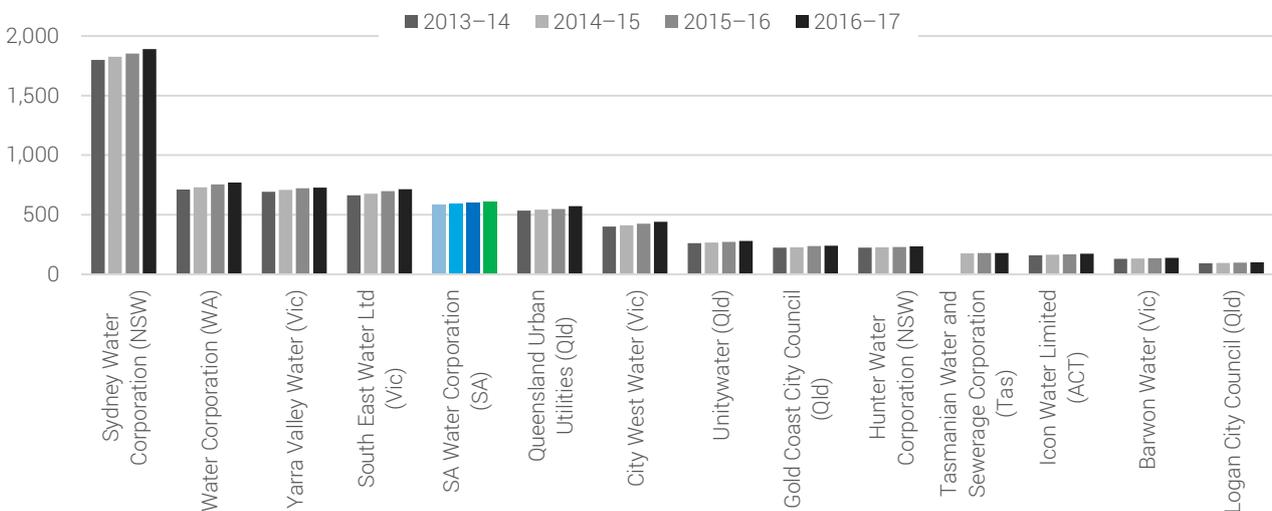


Figure 15: Trend in the volume of wastewater (ML), 2013-14 to 2017-18

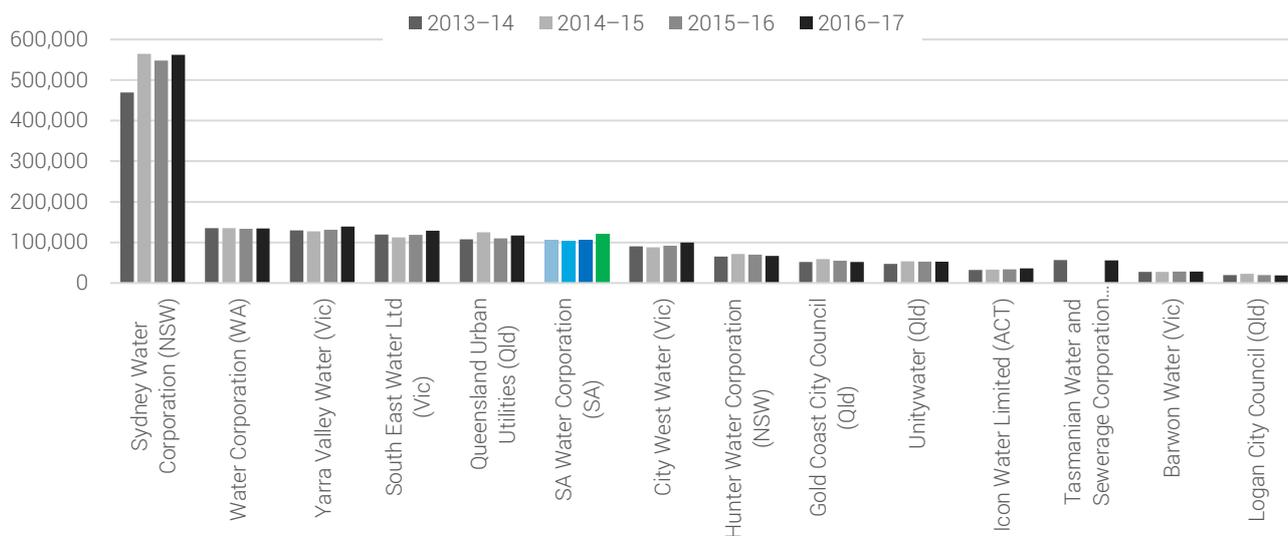
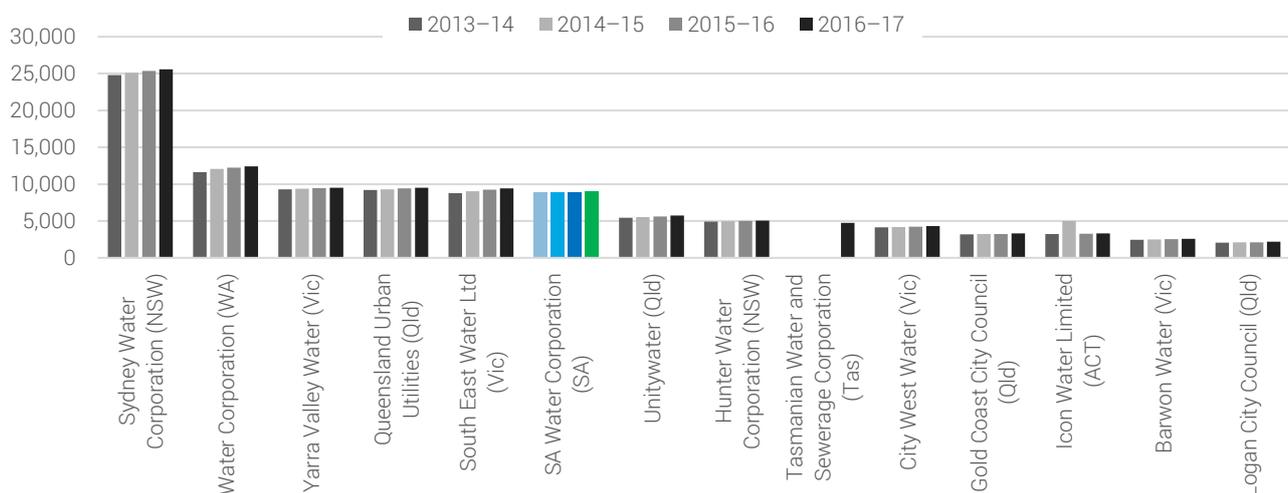


Figure 16: Trend in the growth of water networks by the total length of water mains (kms), 2013-14 to 2017-18



## Expenditure trends

### Operating costs

SA Water's operating expenditure has been reasonably steady since 2013-14. The National Performance Report data allows for operating expenditure to be considered on a per connections basis. Comparing operating expenditure on a per property basis adjusts for differences in the size of the businesses in the peer group. Using this measure, the higher the number of properties, the lower the expenditure per connection (for a given operating expenditure amount), as there are more customers to share the costs.

SA Water reduced its water operating costs per property from \$512 in 2013-14 to \$426 in 2016-17, which was the highest decrease in water operating costs reported in its peer group. Queensland Urban Utilities had the highest water operating costs per property in 2016-17, at \$867 per property (Figure 10).

SA Water increased its sewerage operating costs per property by three percent over the period 2013-14 to 2016-17, which was the fourth highest increase in sewerage operating costs reported in its peer group. However, SA Water had the lowest sewerage operating costs per property in 2016-17 at \$224, while Tasmanian Water and Sewerage Corporation had the highest at \$576 per property (Figure 18).

Figure 17: Trend in water operating cost as \$/property connection, 2013-14 to 2016-17

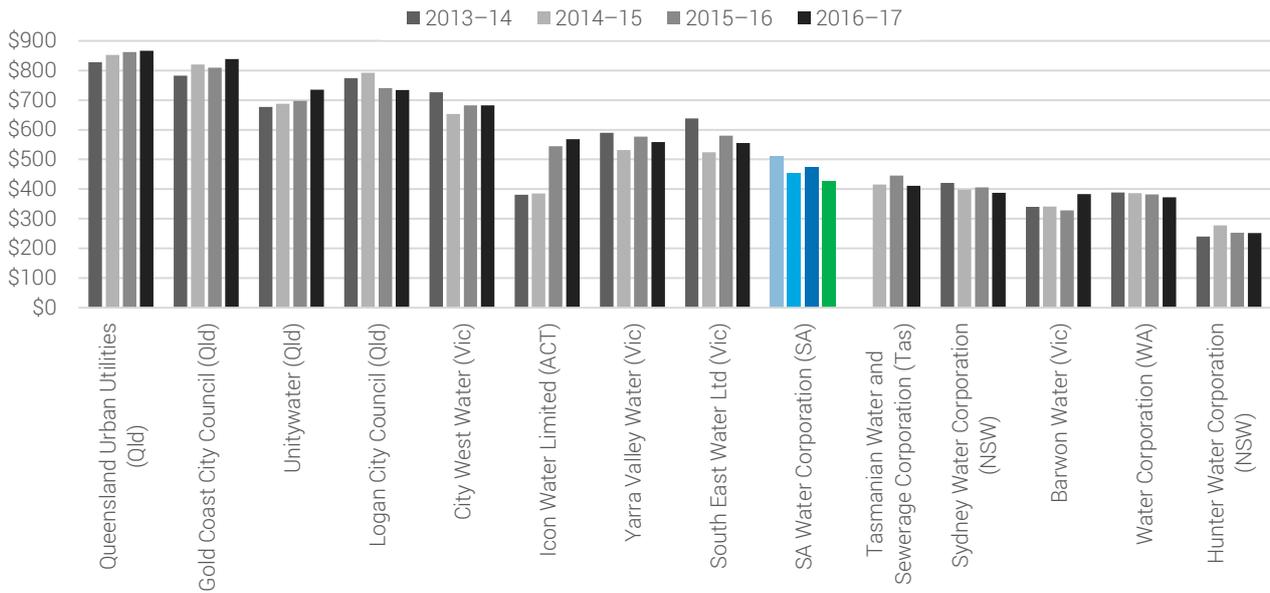
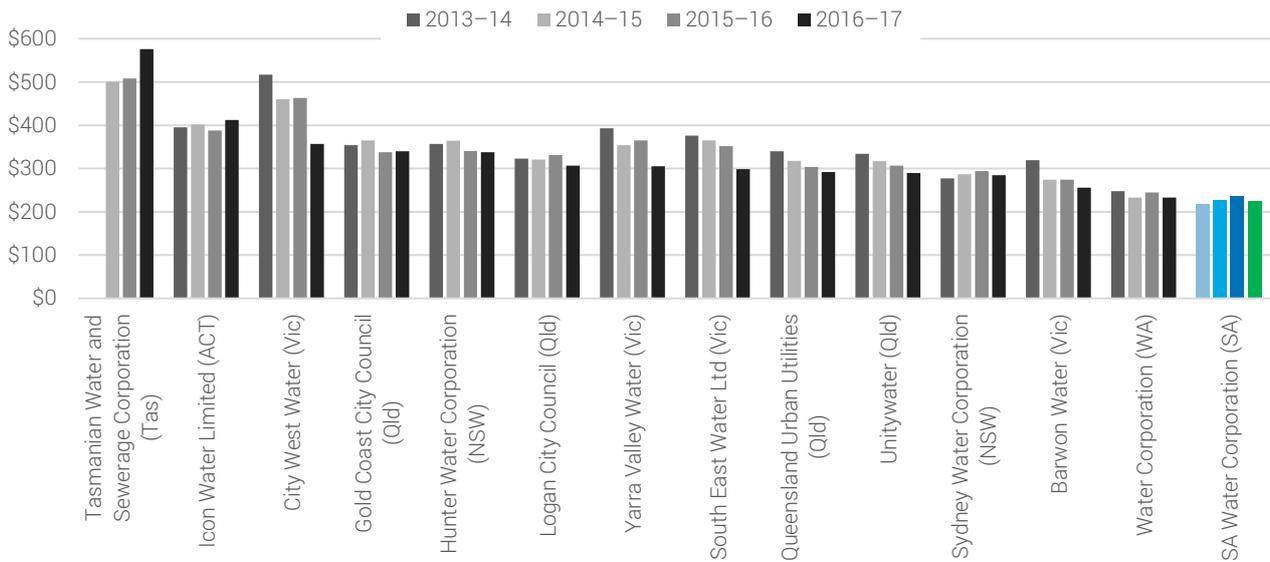


Figure 18: Trend in sewerage operating costs as \$/property connection, 2013-14 to 2016-17



### Capital expenditure

The National Performance Report also presents benchmarking information on water utilities' capital costs per connection. Similar to operating expenditure, the higher the number of connected properties, the lower the capital cost per connection (for a given capital expenditure amount), as there are more customers to share the costs.

However, it is more difficult to make meaningful comparisons between the peer group when considering the trends in capital expenditure, as it is likely to vary between years, depending on the levels of growth in customer numbers, extensions or augmentations of the network and the replacement and refurbishment of existing assets.

The National Performance Reporting data cannot easily be adjusted to account for the differences in the timing of the investment and replacement cycles of the businesses in SA Water's peer group. Consideration has been given to any differences in the peer group using the following measures:

- ▶ total expenditure over the four years
- ▶ average expenditure per connection in each year
- ▶ average expenditure per kilometre of network
- ▶ variations in the expenditure profiles between years, and
- ▶ the percentage change in expenditure over the four year period.

Figure 19 illustrates water capital expenditure per connection while Figure 20 illustrates water capital expenditure per kilometre of network. These measures show that the higher the customer base, the lower the cost per customer, as there are more customers to share the costs. Similarly, that the longer the network, the lower the cost per kilometre.

When considered on a dollars per connection basis, SA Water had the fifth highest total water capital expenditure in its peer group over this four year period at \$805 per connection. Its expenditure profile was reasonably steady for an average of \$201 per year per connection. This represented an eight percent reduction in SA Water’s water capital expenditure per connection over the period 2013-14 to 2016-17, which was the sixth highest reduction reported in its peer group. When considered on a dollars per kilometre of water mains basis, SA Water had the fourth lowest water capital expenditure in its peer group at a total of \$23 per kilometre over the period. Its expenditure profile was reasonably steady for an average of \$6 per year per kilometre. This represented a five percent reduction in SA Water’s water capital expenditure per kilometre over the period 2013-14 to 2016-17, which was towards the lower end of the reductions reported in its peer group.

Barwon Water (Vic) reported the highest water capital expenditure at \$1,340 per connection over the four years 2013-14 to 2016-17. Its expenditure varied over the four years, starting with a high of \$499 per connection in 2013-14 reducing by 26 percent to \$369 per connection in 2016-17. South East Water (Vic) had the lowest total water capital expenditure over the four year period at \$227 per connection. It had less variation in its expenditure over the four years, but reported a 31 percent reduction from \$67 per connection in 2013-14 to \$46 per connection in 2016-17.

Figure 19: Capital expenditure for water services (\$/connection), 2013-14 to 2016-17

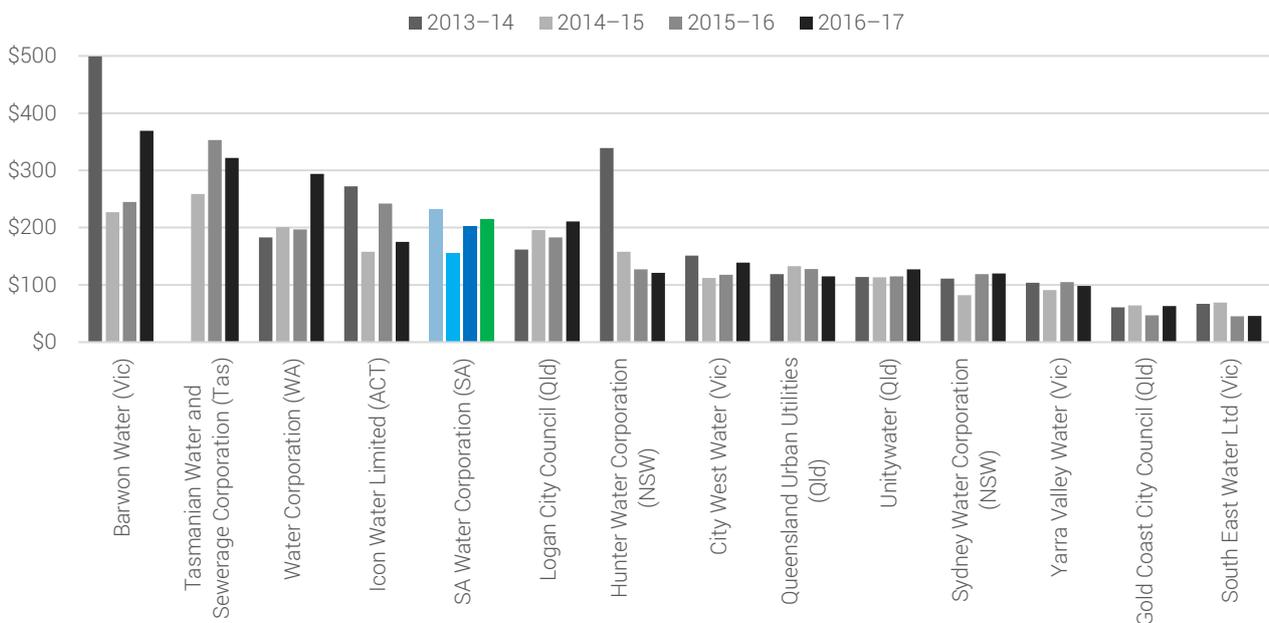


Figure 20: Capital expenditure for water services (\$/km of water mains), 2013-14 to 2016-17

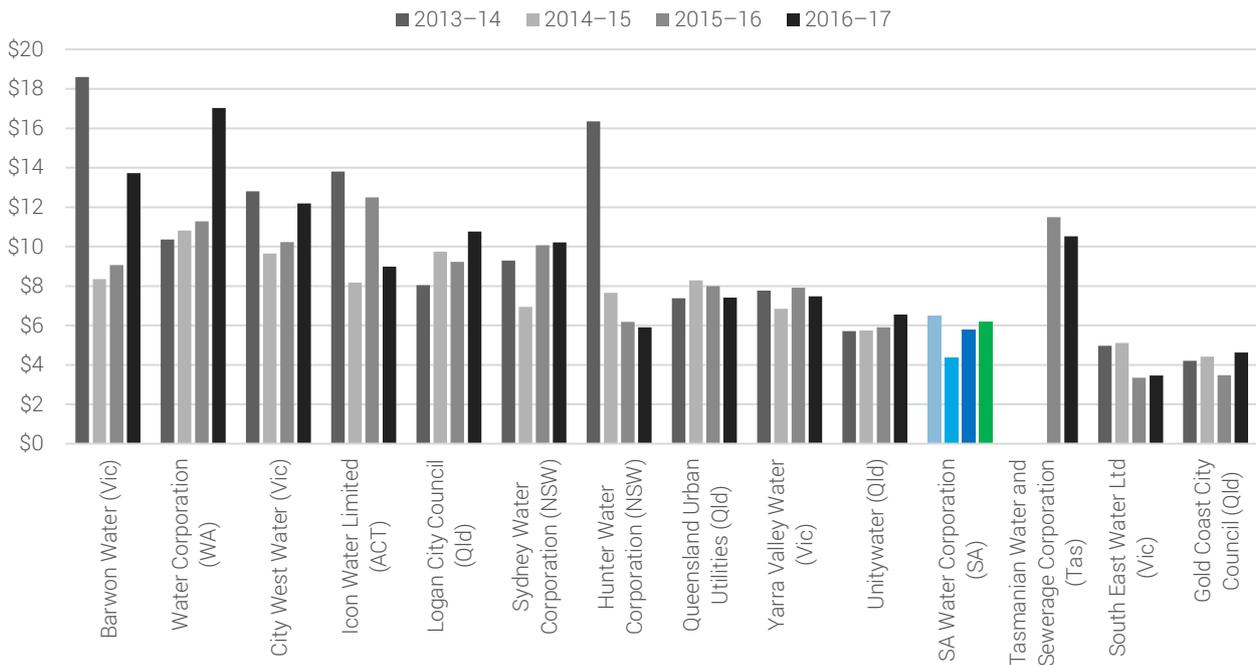


Figure 21 illustrates sewerage capital expenditure per connection while Figure 22 illustrates sewerage capital expenditure per kilometre of network.

When considered on a dollars per connection basis, SA Water had the third lowest total sewerage capital expenditure over the four year period at \$720 per connection. Its expenditure profile was reasonably steady for an average of \$180 per year per connection. This represented a seven percent reduction in SA Water’s sewerage capital expenditure per connection over the period 2013-14 to 2016-17, which was the eighth highest reduction reported in its peer group.

When considered on a dollars per kilometre of sewerage mains and channels basis, SA Water had similar expenditure to Barwon Water (Vic) and Gold Coast City Council (Qld) at \$48 per kilometre over the period. Its expenditure profile was reasonably steady for an average of \$12 per year per kilometre. This represented a five percent reduction in SA Water’s sewerage capital expenditure per kilometre over the period 2013-14 to 2016-17, which was the equal lowest reduction reported in its peer group.

Logan City Council (Qld) had the highest total sewerage capital expenditure at \$1,713 per connection over the four years 2013-14 to 2016-17. Its expenditure was the highest per connection in each year, but represented a 25 percent reduction over the four year period. City West Water (Vic) had the lowest total sewerage capital expenditure over the four years at \$222 per connection. Its expenditure reduced by 13 percent over the period, but was reasonably steady over the four years at an average of \$56 per connection per year.

Figure 21: Capital expenditure for sewerage services (\$/connection), 2013-14 to 2016-17

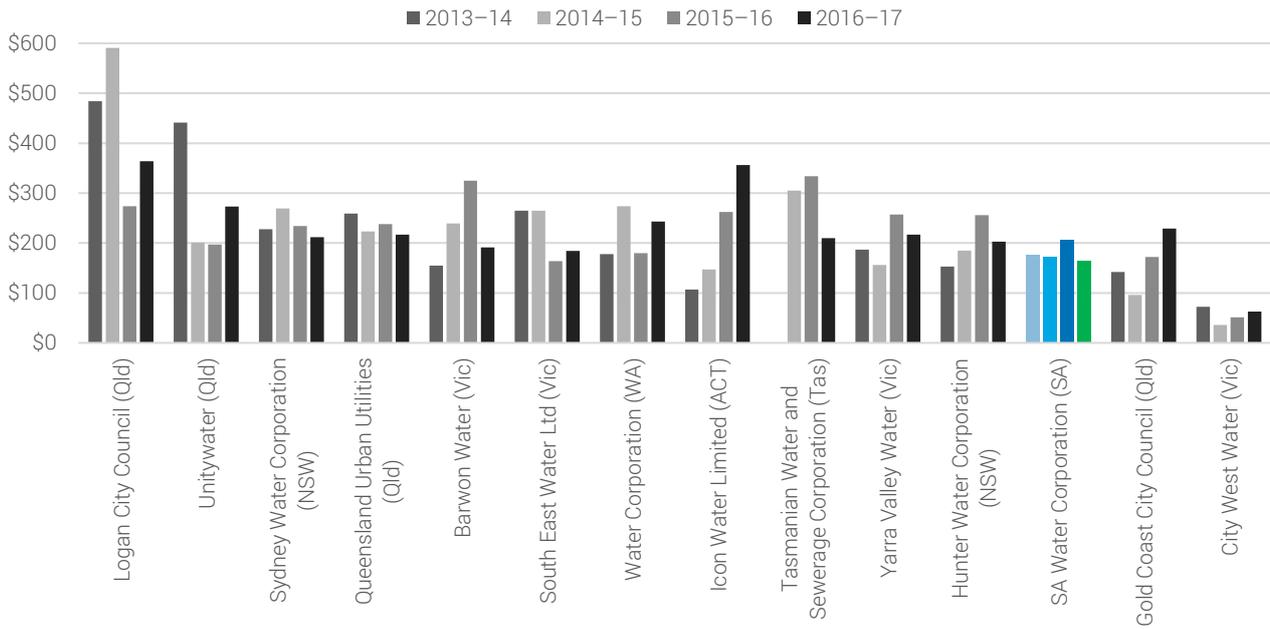
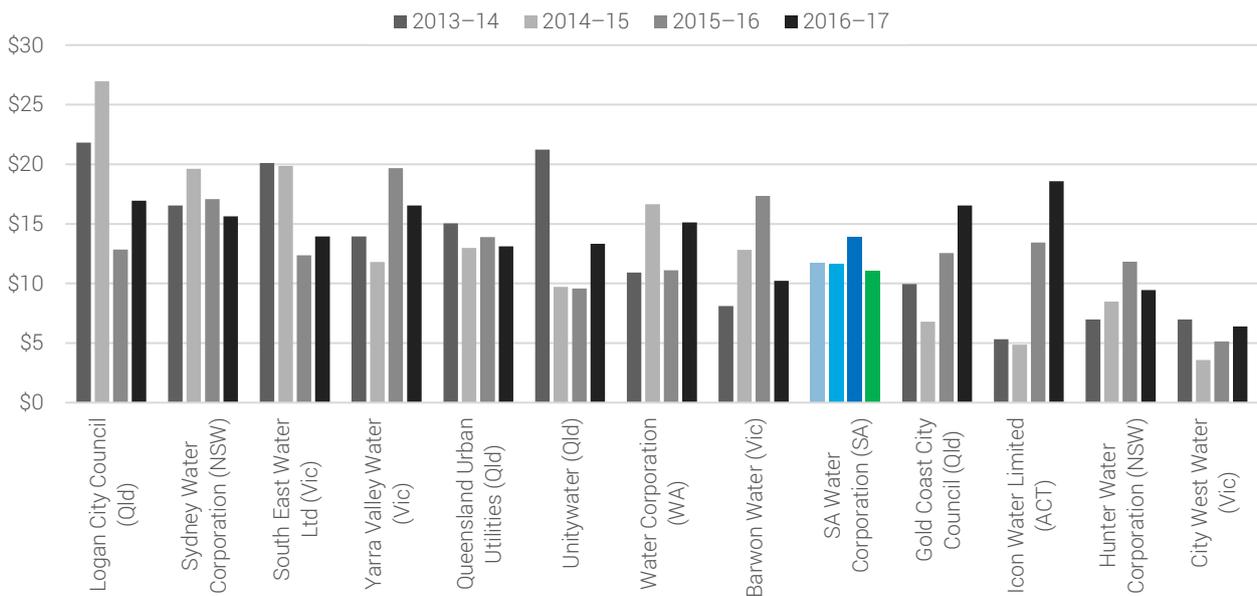


Figure 22: Capital expenditure for sewerage services (\$/km of water mains), 2013-14 to 2016-17



## Appendix 3: Business case summary template for the Negotiation Forum

This business case summary template has been prepared, in consultation with SA Water and the Independent Chairperson of the Customer Negotiation Committee, to assist the Negotiation Forum to assess the proposed initiatives, programs and projects by presenting key information in a standardised format.

Some initiatives, programs or projects may only require a small change in business processes or a small investment to deliver service outcomes valued by customers. These initiatives may also be discussed in the Negotiation Forum but may not require the same level of detail to be provided.

<b>Service/s</b>	<input type="checkbox"/> Water <input type="checkbox"/> Sewerage <input type="checkbox"/> Excluded services																		
<b>Amount</b>	_____ percentage of total expenditure _____ estimated residential bill impact _____ estimated medium sized business bill impact																		
<b>Internal approval stage</b>	<input type="checkbox"/> Remainder of 2016-2020 regulatory period <input type="checkbox"/> 2020-2024 regulatory period <input type="checkbox"/> Beyond 2024																		
<b>Summary of the problem to be solved and the objectives of the proposal</b>	<input type="checkbox"/> Initial <input type="checkbox"/> Seeking internal budget approval <input type="checkbox"/> Seeking approval from Capital Works Committee <input type="checkbox"/> Pre-feasibility <input type="checkbox"/> Pilot/trial <input type="checkbox"/> Pre-market approach <input type="checkbox"/> Full financial approval <i>[Include a brief explanation of where the initiative, program or project is in the internal approval cycle.. This will allow the 'firmness' of the expenditure being proposed to be understood].</i>																		
<b>Key drivers of the need for this initiative</b>	<table border="1"> <thead> <tr> <th>Strategic element measure(s)</th> <th>Current performance</th> <th>2020-2024 target</th> <th>2028 target</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> <i>[Include a brief explanation of how the proposed initiative, program or project aligns with one (or more) of the Strategic Element Measure/s. It should include discussion on the primary need or driver for the expenditure. Is it required to meet an economic, environmental, public health, social or technical regulatory requirement? Has the Government provided a direction under section 6 of the Water Industry Act 2012? Is it responding to feedback from customers? etc.]</i>							Strategic element measure(s)	Current performance	2020-2024 target	2028 target								
Strategic element measure(s)	Current performance	2020-2024 target	2028 target																

Summary of options analysis	Brief description of option	Pros	Cons														
	Include the <b>base case</b> – How is this issue currently dealt with? Or is it a new issue that needs to be addressed?																
<p>[Each option should include a summary of how the following have been considered:</p> <ul style="list-style-type: none"> <li>any key assumptions or evidence used to support the option</li> <li>things that are excluded from the scope or other related initiatives, programs or projects</li> <li>the importance/urgency of the initiative, with reference to the changes in risks/opportunities and who is impacted by these changes</li> <li>the financial implications for the option and how the lowest life cycle cost has been considered</li> <li>the estimated benefits and when these benefits should be realised</li> <li>any other material issues that are relevant to the preferred option</li> </ul> <p>The preferred option should be identified and explained (where this has been identified).]</p>																	
Summary of assessment of risks and opportunities	<input type="checkbox"/> Customer impact <input type="checkbox"/> Financial or compliance <input type="checkbox"/> Environmental <input type="checkbox"/> People <input type="checkbox"/> Reputation																
	<p>N.B. Example only:</p> <table border="1"> <thead> <tr> <th></th> <th colspan="2">Current risk rating and treatment</th> <th colspan="2">Risk rating after proposed treatment</th> </tr> </thead> <tbody> <tr> <td>Likelihood</td> <td>Likely (36)</td> <td>Actively manage (61) [Insert a summary of how the risk or opportunity is currently managed].</td> <td>Likely (36)</td> <td>Broadly acceptable (56) [Insert a summary of how the program, project or initiative will change the way the risk or opportunity is managed].</td> </tr> <tr> <td>Consequence</td> <td>Moderate (25)</td> <td></td> <td>Minor upper (20)</td> <td></td> </tr> </tbody> </table> <p>[Include a brief explanation of what the key risks (or opportunities) that the program, project or initiative will manage (or take advantage of).]</p>				Current risk rating and treatment		Risk rating after proposed treatment		Likelihood	Likely (36)	Actively manage (61) [Insert a summary of how the risk or opportunity is currently managed].	Likely (36)	Broadly acceptable (56) [Insert a summary of how the program, project or initiative will change the way the risk or opportunity is managed].	Consequence	Moderate (25)		Minor upper (20)
	Current risk rating and treatment		Risk rating after proposed treatment														
Likelihood	Likely (36)	Actively manage (61) [Insert a summary of how the risk or opportunity is currently managed].	Likely (36)	Broadly acceptable (56) [Insert a summary of how the program, project or initiative will change the way the risk or opportunity is managed].													
Consequence	Moderate (25)		Minor upper (20)														
Summary of how the outcomes will be measured and evaluated	<p>[Include a summary of how performance will be measured internally and how it will be reported on externally. Is this something customers will want to be informed about? Explain how this provides a feedback loop to inform the future targets associated with the Strategic Element Measures].</p>																
Supporting reports or other materials (where relevant)																	
Links to other programs, projects or initiatives (where relevant)																	

## Explanatory notes

A brief explanation of how the information to be provided in each section of the template should assist in the assessment process follows.

### Service/s

This is a simple explanation about whether the initiative, program or project will impact the water retail service, sewerage retail service, or both. Some initiatives, programs or projects may have an impact on water or sewerage retail services and excluded retail services. The expected benefits and allocation of costs between customers of water and sewerage retail services and excluded services should be identified. This information is important as it allows for an understanding of the impact of the proposal across the business and the allocation of costs between drinking water and sewerage customers and excluded services customers.

However, initiatives, programs or projects that are only relevant to excluded retail services will be subject to a separate consultation process. Further details on this part of the SAW RD20 review are included in Guidance Paper 2 – SA Water’s revenues and prices and Guidance Paper 3 – Service standards.

### Amount

Some initiatives, programs or projects may require significant expenditure that extends across several four-year regulatory periods. It is important to understand whether the initiative, program or project being considered is already incurring expenditure or is likely to require ongoing expenditure beyond the 2020-2024 regulatory period. This information is important as it provides an indication of how long it may take for customers to see the outcomes from the expenditure and how long customers will be paying for the investment.

In some instances, the timing of when the overall expenditure will be required can be adjusted to either bring forward or delay some of the costs. For example, some initiatives, programs or projects may only require a small initial investment to allow SA Water to explore a wider range of options in the future or defer the need for more substantial expenditure in the short or medium term.

It is also important for SA Water to be able to demonstrate where (and how) an initiative, program or project has assessed the trade-off between operating and capital expenditure. For example, SA Water may propose:

- ▶ a rebalancing of the operating and capital expenditure required to manage assets to deliver the same, or better, service outcomes in different ways, such as increasing maintenance operations for existing assets prior to pursuing an asset refurbishment or replacement decision, or
- ▶ a reprioritisation or deferral of previously planned investments, resulting from changes in demand, operating conditions or a better understanding of the actual operations of asset systems.

The ongoing operating expenditure requirements for a capital solution should also be clearly identified, including whether the initiative, program or project is expected to result in operational efficiencies or require additional levels of ongoing expenditure.

It can be difficult to understand what a proposed expenditure of \$10m may mean for end use customers. It is important for these large amounts to also be expressed in terms that can be more easily understood. Providing an estimate of the percentage of total proposed expenditure will assist with assessing how important or ‘material’ the initiative, program or project is when considered with all other proposed expenditure. The residential and medium sized business bill impacts will help to further understand how the total amount of an investment translates into the impact customers will see on their bills.

## Internal approval stage

As the SAW RD20 review process takes a point in time measure of SA Water's proposed future expenditure requirements, it will capture initiatives, programs and projects at various stages of planning.

In general terms, the earlier in the planning process, the less firm the proposed budget will be. It is likely that the proposed budget will include some additional expenditure to allow for unexpected events to be accommodated. For example, the budget may include estimates for costs that have not been competitively tested, or project delivery may be relying on previously unused technologies or methodologies. Including an amount for such contingencies may mean that the final costs will be lower, although in some cases, it could equally mean that the final costs will be higher.

This information is important as it will show how thoroughly planned out the initiative, program or project is, and thus how accurate the proposed expenditure is likely to be.

## Summary of the problem to be solved and the objectives of the proposal

For each investment proposal, SA Water should be able to answer the following three questions in simple terms:

- ▶ What is the problem?
- ▶ How will the proposed initiative, program or project assist in solving that problem?
- ▶ How will it measure the success, or otherwise, of the proposed initiative, program or project in achieving the intended outcomes?

This section should include a summary of the background for this issue. Why has the problem arisen? What outcomes are currently being achieved in this area? What are the high-level or long-term data trends, or future projections, that suggest this is an issue that needs to be addressed?

It also needs to be able to explain how the proposal is seeking to address this issue. Is it part of a wider solution? What is in scope and what is out of scope? Does the proposal rely on any important assumptions that will need to be verified? How will the success of delivering against the proposal be judged?

This information will assist with the assessment of whether or not the proposed expenditure is prudent.

## Key drivers of the need for this initiative

SA Water has expressed its ambition to be a customer-led organisation that delivers 'world class water services for a better life'.<sup>18</sup> It has developed a series of performance indicators, or 'Strategic Element Measures', to assist it to monitor how it is performing against its long-term strategic goals. The Strategic Element Measures have been designed to provide the crucial alignment or 'line of sight' between expenditure and performance that underpins the ongoing monitoring and evaluation cycle in SA Water's asset management system.

SA Water needs to be able to explain the purpose and indicators of success for its Strategic Element Measures and how the proposed expenditure will assist it in achieving success against a measure (or measures). Wherever possible, SA Water should include the performance targets for both the 2020-2024 regulatory period and beyond to 2028, relative to its current performance.

## Summary of options analysis

It is important to show that various options to achieve the identified objectives have been considered. This includes starting with a clear understanding and explanation of how this issue is currently being managed as the 'base case' against which the other options have been assessed.

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<sup>18</sup> <https://www.sawater.com.au/about-us/about-sa-water/our-strategy>

The template requires a simple characterisation of the high level benefits or opportunities to be realised (the 'pros') and the expected costs or risks that may arise from implementing the option (the 'cons').

SA Water's asset management system includes a decision making process that evaluates and analyses options for the creation of new assets, increasing the capability of new assets, or the replacement of existing assets at the end of their useful life.<sup>19</sup> This includes a process that requires calculations to be performed that consider the required period that the asset will be required to function, the expenditure required over the life of that asset, and the benefits (or value to be delivered) from the effective functioning of that asset. This is known as 'life cycle costing'.

While it is accepted that optimising investments using a life cycle decision making approach is not an exact science, the IAM Framework provides some guidance on both life cycle cost and value optimisation techniques that can be used to balance the costs and benefits of various options.

This section should be able to demonstrate how SA Water has attempted to identify the solution, or solutions, with the best life cycle costing for the benefits expected to be delivered. SA Water also needs to be able to demonstrate how it has considered and accounted for uncertainty around the need, scope or expected outcomes of an initiative, program or project.

This description should assist with assessing whether the preferred option is prudent and that the preferred option is an efficient way to address the previously identified issues.

### **Summary of assessment of risks and opportunities**

SA Water needs to be able to show that its decisions are evidence-based and have considered the various risks (and opportunities) around the proposed investment.

It is important to show where the current risks lie and how the management of those risks may change if the proposed investment does, or does not, occur. Some expenditure will vastly change the consequences of something happening, but will not be able to change the likelihood that it will occur in the first place. The reverse is also true. Some initiatives, programs or projects may shift the responsibility for managing the risks from customers to SA Water, or vice versa. SA Water's proposals should consider who is best placed to manage those risks.

For example, SA Water may be prepared to accept a higher risk that an asset may fail if that failure would not be critical to the delivery of services to customers. However, SA Water will also need to be able to show that it has assessed the impact of this decision on the risk of increased environmental overflows from an asset failure.

This simple characterisation of the change in the current risks (and opportunities) will help to assess how necessary or urgent the proposed expenditure is, which will ultimately assist with assessing whether the proposed expenditure is prudent.

### **Summary of how the outcomes will be measured and evaluated**

The template requires SA Water to identify the problem it is trying to solve and the objectives to be achieved through the proposed initiative. A crucial step in the continuous improvement cycle embedded in SA Water's asset management system is the combination of monitoring and auditing, of processes and outcomes, to confirm that the assets, systems and processes are operating as intended.

This section should focus on how SA Water is planning to measure and evaluate what has actually happened; the 'outcomes' resulting from the successful implementation of the proposal. Wherever possible, the outcomes should be able to be measured against the Strategic Element Measures. Where a relevant Strategic Element Measure (or measures) cannot be identified, how will SA Water be monitoring and assessing the success (or otherwise) of the initiative?

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<sup>19</sup> Institute of Asset Management, 'An anatomy', available <https://theiam.org/knowledge/Knowledge-Base/the-anatomy/> pp. 43-49.

SA Water should also provide an indication of how it is intending to report back to its customers on its performance in achieving the outcomes they have said they want and value.

#### **Supporting reports or other materials (where relevant)**

As the template will only provide a summary of the investment proposal, it may be important to make other reports, data or materials available to provide further background or verify the evidence that has been relied upon in developing the summary document.

#### **Links to other programs, projects or initiatives**

The investment summaries should also seek to identify any important links between individual proposals. Does this proposal rely on another proposal being approved? Would benefits still be realised if only this proposal was accepted? Or will it not be required if another proposal is not accepted?

## Appendix 4: Trends in key input costs, 2012 to 2018

This section illustrates changes in the price of key input groups, relative to the Consumer Price Index (CPI). Change in the price of each key input group is represented by selected Producer Price Indexes (PPIs), compiled by the Australian Bureau of Statistics (ABS).<sup>20</sup>

Figure 23: Price growth, plant, 2012-2018

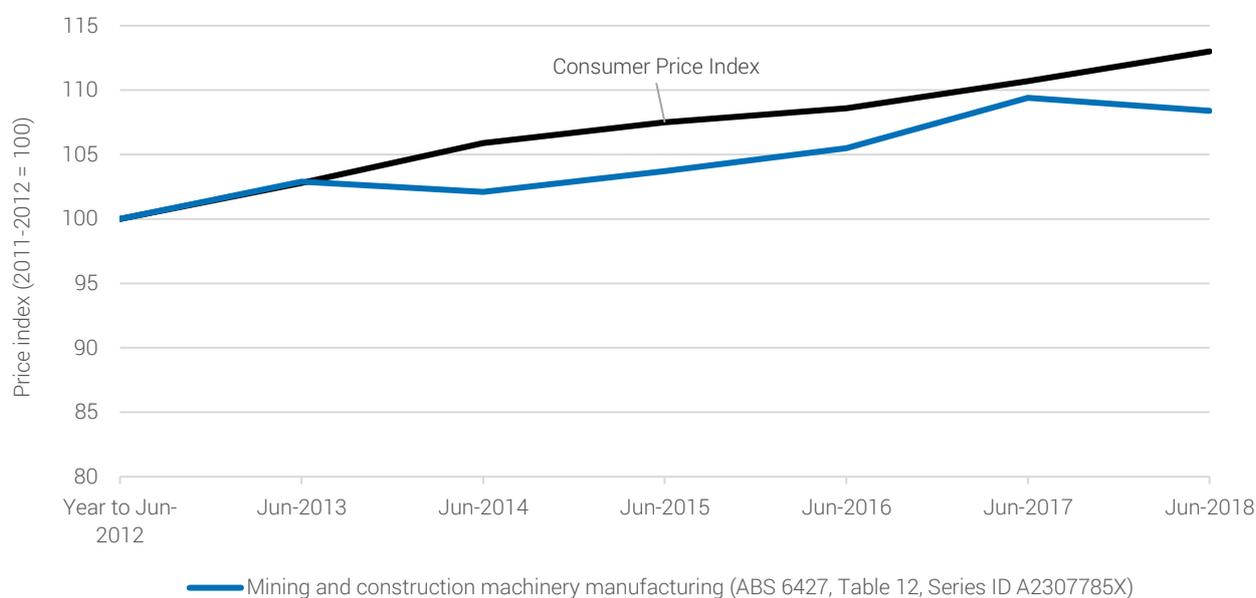
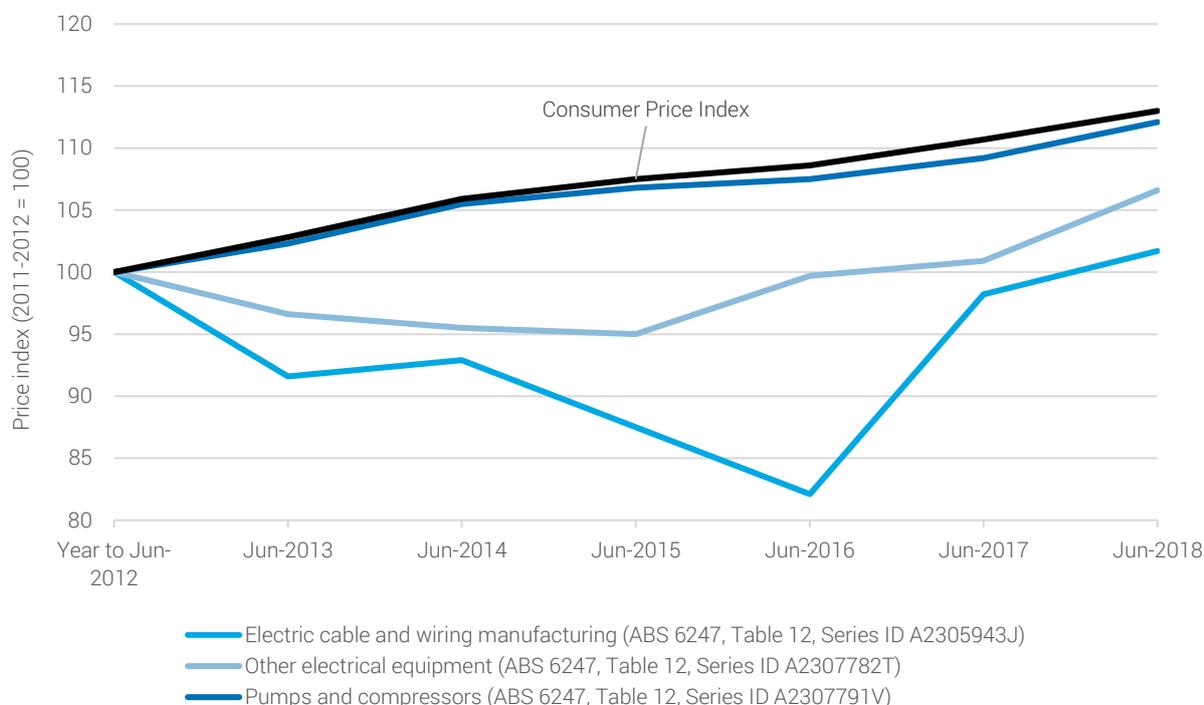


Figure 24: Price growth, electrical equipment, 2012 - 2018



<sup>20</sup> For source data and explanatory notes, see Australian Bureau of Statistics 2018, 6427.0 – Producer Price Indexes, Australia, June 2018, <http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/6427.0Explanatory%20Notes1Jun%202018?OpenDocument>

Figure 25: Price growth, steel and plastic pipes, 2012 - 2018

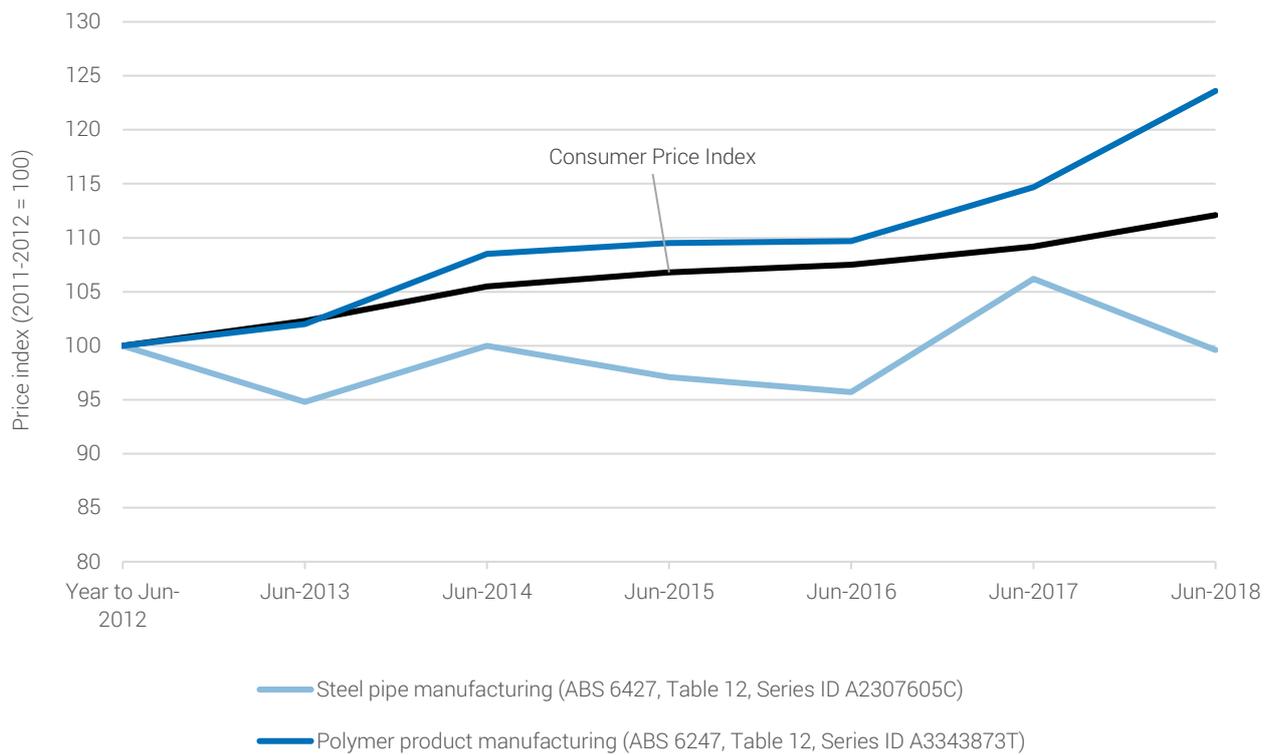


Figure 26: Price growth, basic chemicals, 2012 - 2018

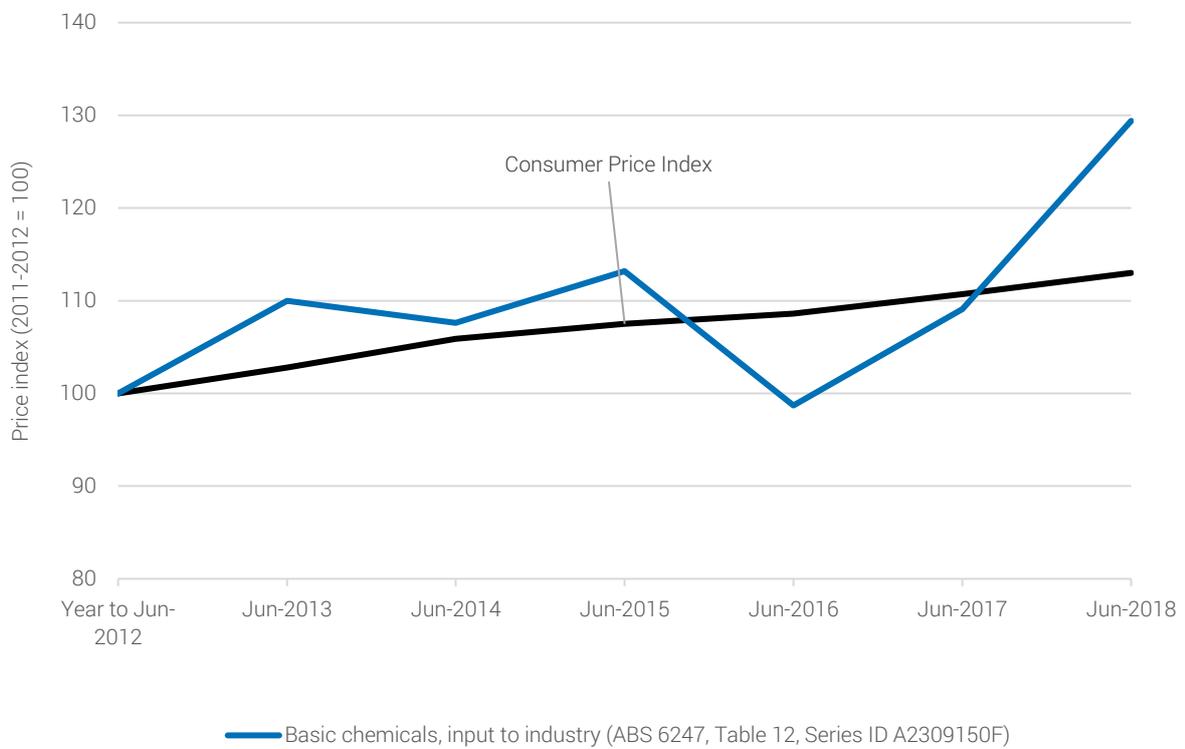


Figure 27: Price growth, concrete, sand and aggregate and steel 2012 – 2018

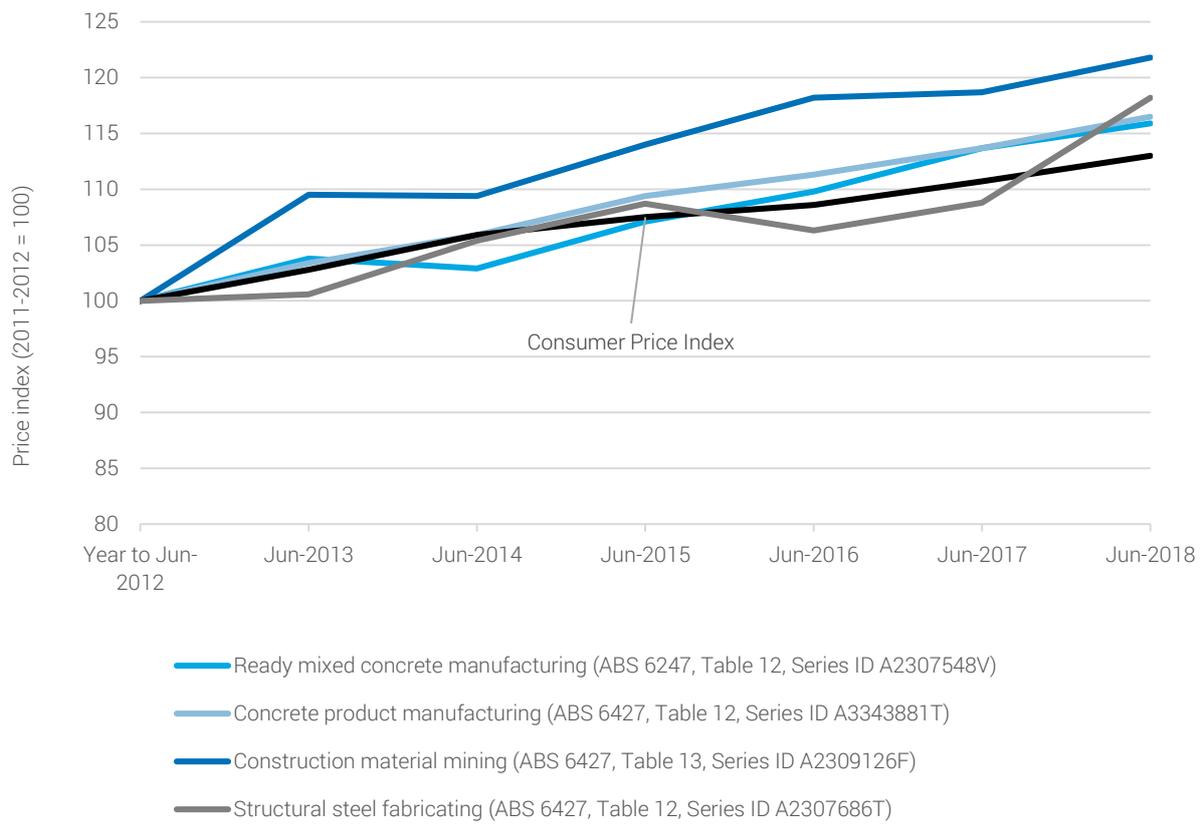


Figure 28: Price growth, construction, 2012 - 2018

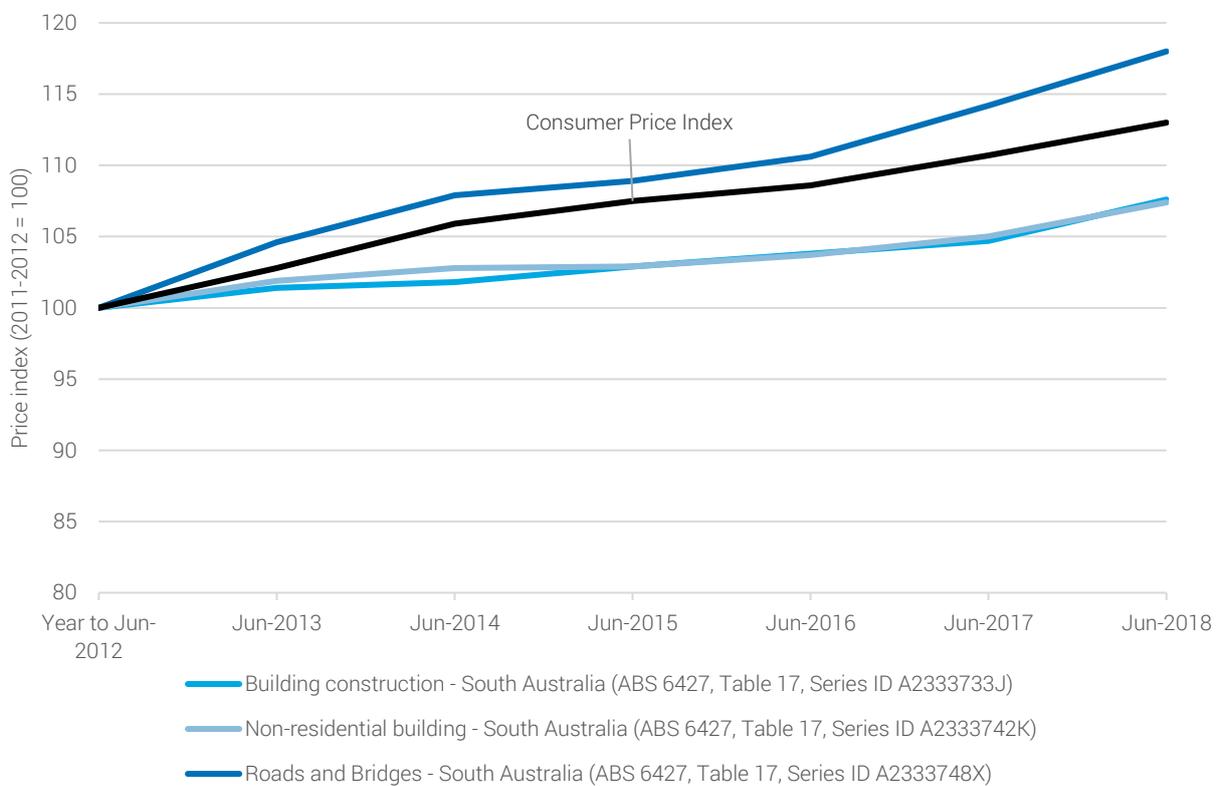


Figure 29: Electricity price growth, as CPI component and input to industry (PPI), 2012 - 2018

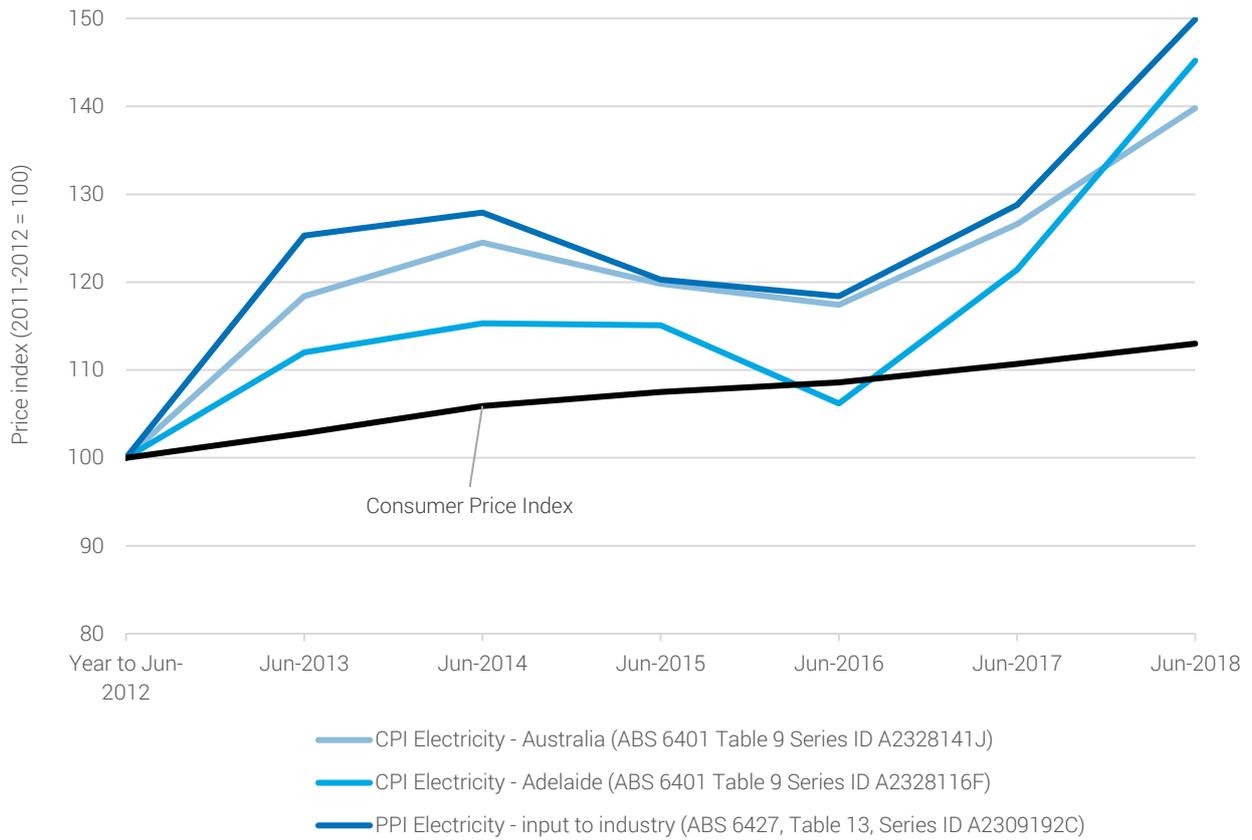
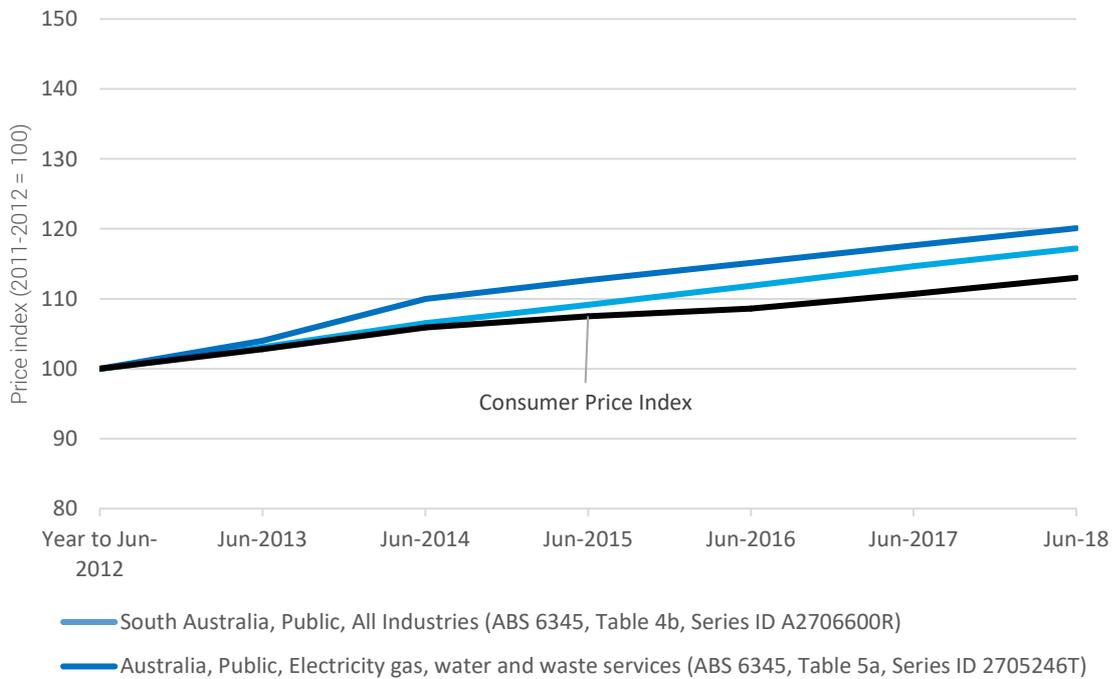


Figure 30: Price growth, wages, 2012 - 2018



Note: Original data is indexed to 2008-2009. Data has been adjusted so it is indexed to 2011-12, to match CPI and PPI data.