Scope for future efficiencies

Report

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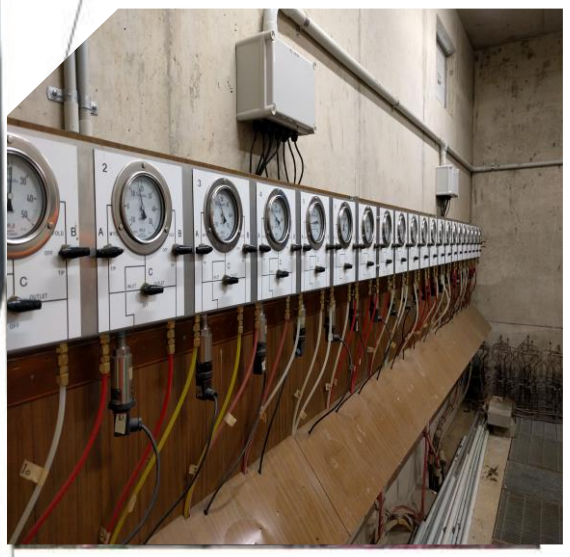

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1 Introduction

1.1 Background

The South Australian Water Corporation (SA Water) provides water and wastewater services to approximately 1.7 million people via over 700,000 connection points across both metropolitan Adelaide and country South Australia. SA Water provides water and sewerage services to most of the state of South Australia with only a few exceptions. SA Water is wholly owned by the Government of South Australia and established by the *South Australian Water Corporation Act 1994*.

As a natural monopoly, SA Water is subject to economic regulation by the Essential Services Commission of South Australia (the Commission). The Commission is established under the *Essential Services Commission Act 2002* with the primary objective of "protection of the long term interests of South Australian consumers with respect to the price, quality, and reliability of essential services". Under the Water Industry Act 2012, the Commission has regulatory functions which include regulation of retail services in the water sector.

SA Water is currently subject to a determination made by the Commission for maximum revenue and minimum service standards for drinking water services for the period from 1 July 2020 until 30 June 2024. The next regulatory determination (RD24) will cover the period 1 July 2024 to 30 June 2028. The Commission has published a number of guidance papers that define its expectations for the information to be provided by SA Water to be considered in the Determination.

1.2 Regulatory requirements relating to future requirements

To inform the RD24 Determination, SA Water is to prepare a Regulatory Business Plan. A fundamental requirement is that the Regulatory Business Plan include expenditure to deliver SA Water's service requirements that is prudent and efficient and SA Water is to justify why expenditure meets these criteria[1]. The third guidance paper[2] prepared by the Commission expands on this requirement and states that expenditure will be considered efficient where "…*it represents the lowest sustainable (or 'long-term') cost of achieving the intended outcome"*.

The paper further states that the Commission will identify efficient expenditure by:

- establishing an efficient base year for operating expenditure, which is normalised to exclude any one-off or abnormal costs/revenues (this was 2018-19 for SAWRD20 and is likely to be 2021-22 for SAWRD24)
- scrutinise a representative sample of operating and capital expenditure proposals to review the specific expenditure areas as well as SA Water's overall approach, and
- identify areas for potential efficiency gains.

Further, the Commission expects SA Water to propose expenditure in its Regulatory Business Plan that is net of efficiency and productivity gains and provide information on the basis for the expected efficiency gains. The Commission will then assess SA Water's expected efficiency gains against benchmarks and the historical level of efficiency gains achieved by SA Water to form a view on whether the efficiency gains included by SA Water are appropriate or not.

1.3 Objective

The purpose of this paper is to provide advice to SA Water on the scope for the business to achieve expenditure efficiencies in the RD24 period.

[1] Essential Services Commission of South Australia, *SA Water Regulatory Determination 2024: Guidance paper 1: The Regulatory Business Plan,* December 2021
[2] Essential Services Commission of South Australia, *SA Water Regulatory Determination 2024: Guidance paper 3: Assessing the Regulatory Business Plan,* December 2021

1.4 Scope

To inform the potential scope for future efficiencies that SA Water may achieve in the RD24 period, this report considers:

- The efficiencies achieved by SA Water since the start of economic regulation in 2013
- Available information on SA Water's performance in delivering service
- Trends in and the impact of multifactor productivity on SA Water's potential efficiencies
- Analysis of efficiencies applied to other large water utility services recently and the response from their regulators
- Other salient considerations.

2 Efficiency framework

As water utilities are monopoly businesses, economic regulators have a role in ensuring that only efficient costs are included in customer bills. The model used by most regulators in Australia is based on the economic concept of a production possibility frontier. For a firm with a given set of inputs (labour, capital etc.), the maximum output of goods that it can produce in different combinations is used to establish the production possibility frontier. This is known as the efficient frontier because the firm cannot produce more of its outputs for its given inputs.

This concept gives rise to two different ways in which water utilities can generate efficiencies:

- *Catch-up efficiency* is the productivity gains that may be realised when a firm (X) moves from its current position to the efficient frontier. Firm Y is already on the efficient frontier.
- *Continuing efficiency* occurs when the production possibility frontier shifts outwards due to efficiencies gained through innovation and new technologies.

Figure 2-1 graphically represent the production possibility frontier and indicate how catch-up efficiencies and continuing efficiencies may be gained.

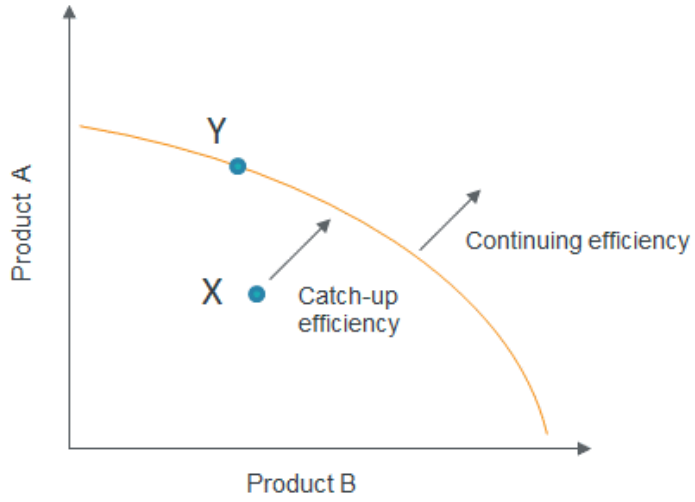

Figure 2-1 Production possibility frontier

This is a conceptual model; it isn't necessary to identify a company at the efficient frontier to understand that many firms have the ability to increase productivity through adopting better technologies, systems and processes that are already in use and thereby move towards the efficient frontier. Similarly, the concept of continuing efficiency can be seen as the long-term increase in productivity across industries. For a water utility, the axes showing the output (product) combinations can be considered as the level of service provided by the business. There are many and varied services provided by a water utility so efficiency analysis is not straightforward but this does not undermine the relevance of the key concepts of catch-up and continuing efficiency.

3 Scope for efficiencies

3.1 Overview

To assess the potential scope for efficiencies that may be realised by SA Water in the RD24 period, analysis of relevant indicators of cost and performance has been undertaken. This analysis is presented in the following sections along with discussion on the application of the findings to SA Water.

3.2 Customer bills and affordability

Figure 3-1 shows the movement in the total typical bill for water and wastewater for the major urban water utilities between 2010/11 and 2020/21. The thick green line represents SA water and the dotted red line represent the median from the sample examined in the study.

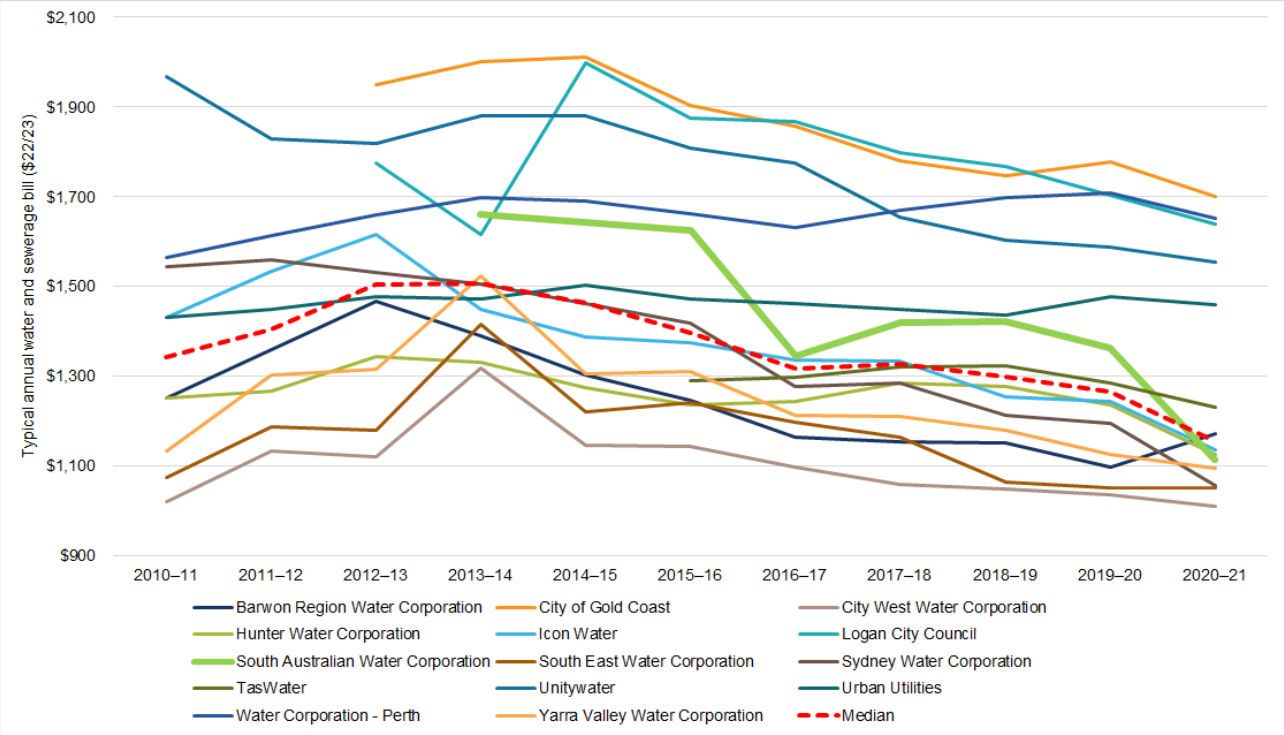

Figure 3-1 Total typical annul water and wastewater bill for major urban utilities 2010-11 to 2020-21 (Real $22/23)

Source: National Performance Report, 2020/21

While there is an overall decreasing trend for almost all utilities, SA Water's performance in reducing the total typical bill is notable with bills starting at a level amongst the highest of the peer group to now reducing to a level $39 per annum lower than the median and only $5 per annum above the lowest (best performing) quartile. The overall decreasing trend can be in part attributed to a reducing cost of capital over this period as the cost of capital in recent years has been at historically low levels[3].

Between 2013/14 and 2020/21, SA Water has shown the greatest reduction (by $546) in its water and wastewater bills per year comparatively, which is one third of the 2013/14 level of bills. This is a substantial reduction that is underscored by the level of SA Water's reduction being $235 better than the median reduction for the major urban utilities. The change for all water utilities included in the analysis is shown in Table 3-1.

[3] This report was prepared largely in 2022 at which time the Reserve Bank of Australia began lifting its cash rate target from historically low levels of 0.1% to over 3.5% by March 2023. The pace of the increase in the cash rate target are unprecedented and are not yet observed in the data provided. With all else being equal, the increase in the cash rate target will lead to a higher cost of capital for all water utilities.

Table 3-1 Change in typical water and wastewater bills for major urban utilities 2013/14 to 2020/21

Change 2013/14 to 2020/21 ($22/23)	Variance ($)	Variance (%)
South Australian Water Corporation	-$546	-33%
Sydney Water Corporation	-$450	-30%
Yarra Valley Water Corporation	-$428	-28%
South East Water Corporation	-$365	-26%
Unitywater	-$326	-17%
Icon Water	-$313	-22%
City West Water Corporation	-$310	-24%
Median	-$310	-21%
City of Gold Coast	-$298	-15%
Average	-$269	-17%
Barwon Region Water Corporation	-$219	-16%
Hunter Water Corporation	-$203	-15%
Water Corporation - Perth	-$47	-3%
Urban Utilities	-$13	-1%
Logan City Council	$25	2%

The reductions in bills for customers in South Australia have been achieved despite SA Water facing environmental factors that make it more difficult to deliver efficient services compared with its peers, all else being equal. These factors include:

> Having a relatively large asset base per customer compared with other major utilities. This can be seen in Figure 3-2 which shows that SA Water has the largest length of water mains to support per connected property at 33.2km per 1,000 properties. This is double the median for major utilities of 16.7 km of water mains per 1,000 properties.

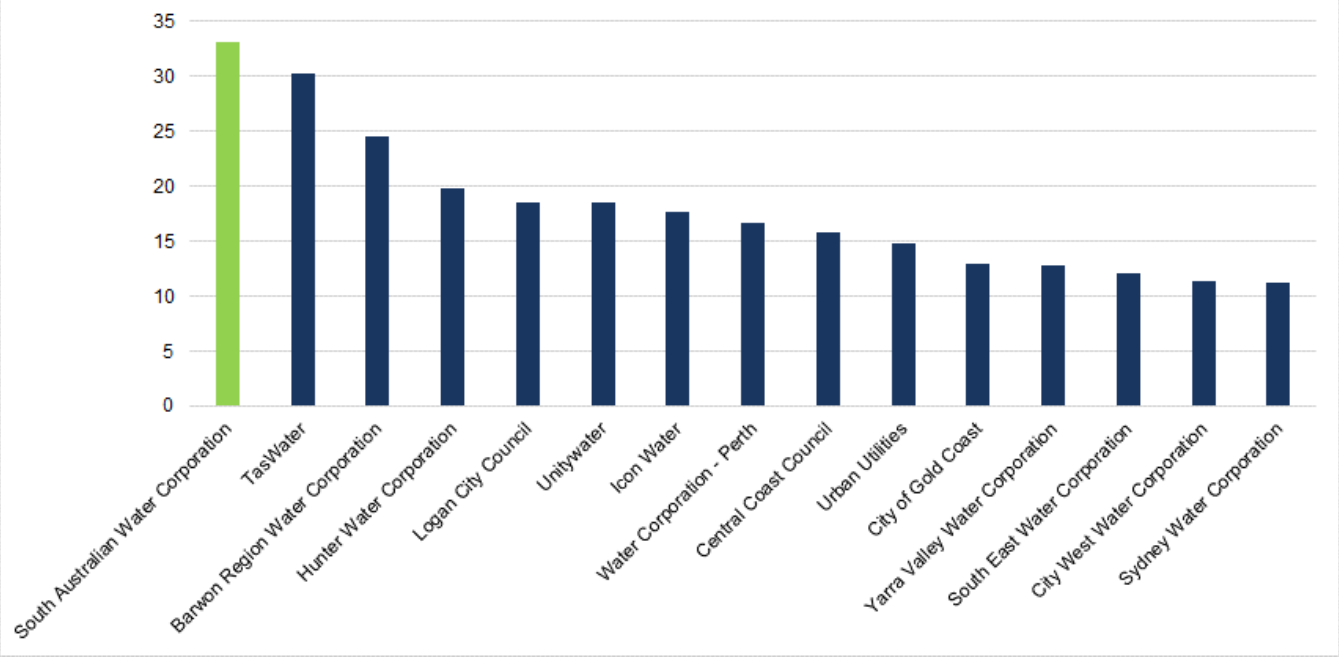

Figure 3-2 Length of water mains per 1,000 connected properties (2020/21)

- Having a very low density of customers within its operating area. SA Water is one of three state-wide service providers in Australia along with Water Corporation (Western Australia) and TasWater (Tasmania). While the customer density over the operating area in Adelaide is reasonably high, SA Water also has to service a wide regional area with towns spread out over wide distances. SA Water also services remote communities across the state.
- Having to source a relatively large proportion of bulk water from higher cost sources compared with its peers. For SA Water, a major proportion of water in each year is sourced from the River Murray which is required to be transferred through large pipelines over long distances (Mannum to Adelaide – 87km and Murray Bridge to Onkaparinga – 50km). This water is also of relatively lower quality and therefore requires greater treatment than for example the surface water sources that supply Melbourne and Sydney.
- Table 3-2 shows the proportion of water sourced by SA Water across the state from different sources over the period 2013/14 to 2020/21. This analysis shows that on average for this period, 59% of water has been sourced from the River Murray and therefore requiring transfer over the long distances of the Mannum to Adelaide and Murray Bridge to Onkaparinga pipelines. As noted, this River Murray water is lower quality than surface water and therefore, will lead to higher costs of treatment compared to other businesses that source a greater proportion of water from surface water storages (e.g. water utilities in Melbourne and Sydney).

Table 3-2 Proportion of water sourced by SA Water from different sources 2013/14 to 2020/21

	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	Avg.
River Murray (%)	36	50	83	33	49	83	66	73	59
Surface water (%)	30	34	8	59	44	10	n	20	29
Ground water (%)	6	5	6	6	5	5	5	5	5
Sea water (%)[1]	29	10	3	2	2	2	17	2	8
Total water state-wide (ML)	213,926	218,979	227,830	202,789	224,615	239,670	232,797	235,502	

Notes to table:

1. The proportion of water sourced from sea water in 2013/14 and 2014/15 is inflated due to proving of the Adelaide Desalination Plant. If the Adelaide Desalination Plant was not being proved, it is likely that the proportion of water sourced from the River Murray would have been higher in these years.
2. The proportion of water sourced from sea water in 2019/20 is inflated due to the Water for Fodder program. If the Water for Fodder program was not in place, it is likely that the proportion of water sourced from the River Murray would have been higher in these years.

While the reduction in bills has been a good outcome for customers in South Australia, there are significant factors that are putting upward pressure on future bills. These include:

- SA Water having implemented significant improvement opportunities since the beginning of regulation meaning that it is much closer to the efficiency frontier than at the beginning of regulation. Therefore, there is likely much less scope for catch-up efficiency in future (this is also discussed in Section 3.6)
- An asset base that has aged over the comparison period therefore, has increased need for investment to renew assets and sustain services.
- Increasing cost of capital.

To underline what has been achieved by SA Water in reducing customer bills since the start of regulation, analysis has been undertaken to compare the movement of the level of customer bills with the movement in cost for other measures of living costs faced by customers and is presented following.

Figure 3-3 compares the change in the level of energy bills for South Australia (as measured by the Market Offer for South Australia as published by the Australian Energy Markey Commission4). Since 2015/16, energy prices have increased, initially by 20% above the starting point and sustaining this increase to 2019/20. Energy prices in 2020/21 showed a decline. However, this has been overshadowed by the recent (June 2022) failure of the national energy market where very high spot prices due to supply shortfalls led to suspension of the market. The impact on customer bills will not be known for some time after the claims for compensation from generators are processed by the market operator. While energy prices have increased in real terms over this period and are currently troubled by substantial uncertainty over future increases, water and wastewater bills have shown consistent and sustained reductions in real terms.

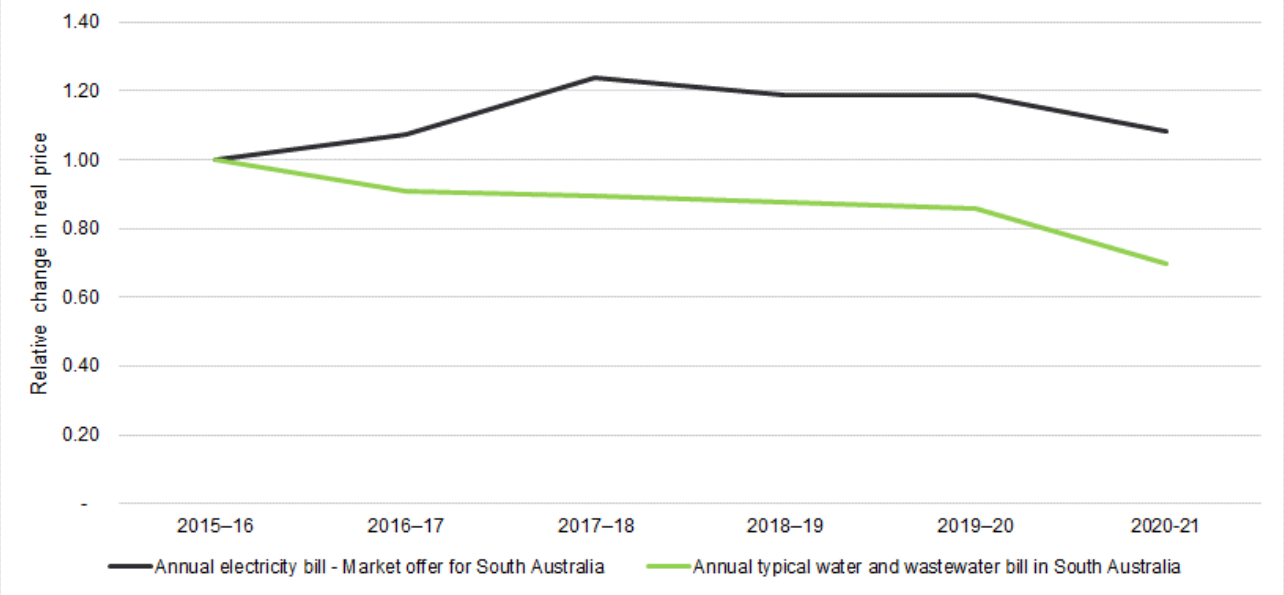

Figure 3-3 Change in price of Market Offer electricity bill in South Australia with water and sewerage bills in South Australia 2015/16 to 2020/21

Figure 3-4 compares the movement in fuel prices[5] in Adelaide with water and wastewater bills. Fuel prices have shown declines in real terms over 2014/15 and 2015/16 greater than that observed for water and wastewater bills. However, for the next three years, declines in water and wastewater bills exceeded those seen for petrol. When the Covid-19 pandemic hit in 2020, fuel prices initially declined but in the last twelve months, have seen substantial increase that have taken them 19% above the level of fuel prices in 2013/14. This analysis highlights that initial real declines in the price of fuel have not been able to be sustained and that the level of volatility in the last year is substantial which in turn impacts consumers budgets which have limited capacity to adjust to such increases in short periods of time. These two trends (increases in real terms and volatility) are in stark contrast to what has been observed for water and wastewater bills where there has been sustained decreases in the level of bills and little or no volatility – just incremental decreases in real terms.

[4] The data is compiled from the annual residential electricity price trends report published by the Australian Energy Market Commission. The Market Offer is determined by multiplying the consumption of a 'representative' consumer's consumption by the average of the lowest representative offer provided by each market retailer weighted by market share.

[5] As reported in the Australian Competition and Consumer Commission's annual and quarterly price monitoring reports. The reported price is for Regular Unleaded Petrol in Adelaide.

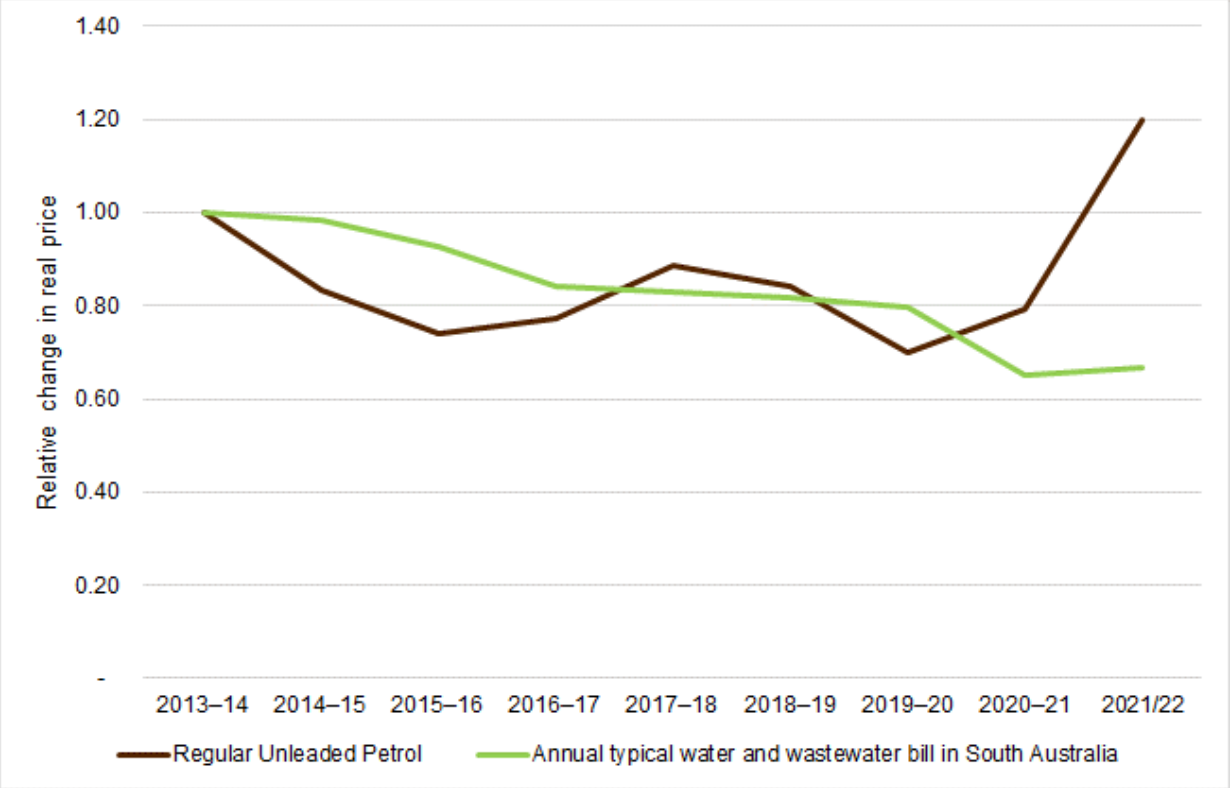

Figure 3-4 Change in price of Adelaide Regular Unleaded Petrol price compared with water and sewerage bills in South Australia 2013/14 to 2020/21

A measure of affordability of water and wastewater bills is the proportion of income needed to pay for the bill. The appropriate measure is household incomes as water and wastewater bills are applied to households. Figure 3-5 shows the level of gross annual household income for the lowest and second quintile in real terms over the period 2013/14 to 2019/20 along with the proportion of gross annual income that the typical water and wastewater bill for South Australia comprises over this time. There is a decreasing trend in the proportion of household income needed to pay for water and wastewater bills for the lowest income households over time driven by the decrease in bills. However, this masks a significant challenge for affordability: real income levels for the lowest income households have declined in real terms over this period. This is a societal challenge outside the control of SA Water, but nonetheless, one that needs to be considered in SA Water's pricing policies.

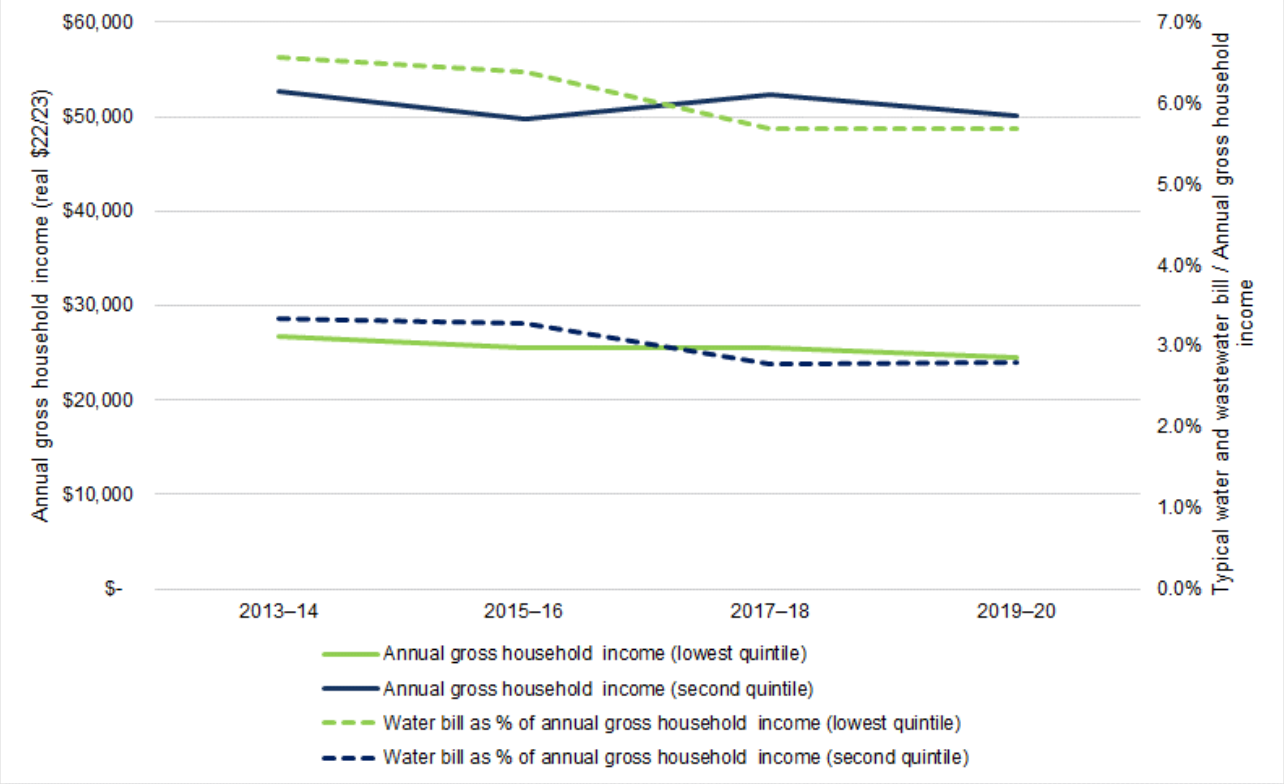

Figure 3-5 Water and wastewater bills as a proportion of annual gross household incomes

A comparison was made between the movement in two major components of cost of living – food and non-alcoholic beverages and housing, against the movement in water and wastewater bills. These two categories are also components of the consumer price index prepared by the Australian Bureau of Statistics. Figure 3-6 shows this trend over the period 2013/14 to 2020/21. In this time, the cost of food and housing have increased by around 10%. This is another demonstration of the substantial achievement made by SA Water in reducing water and wastewater bills over this period.

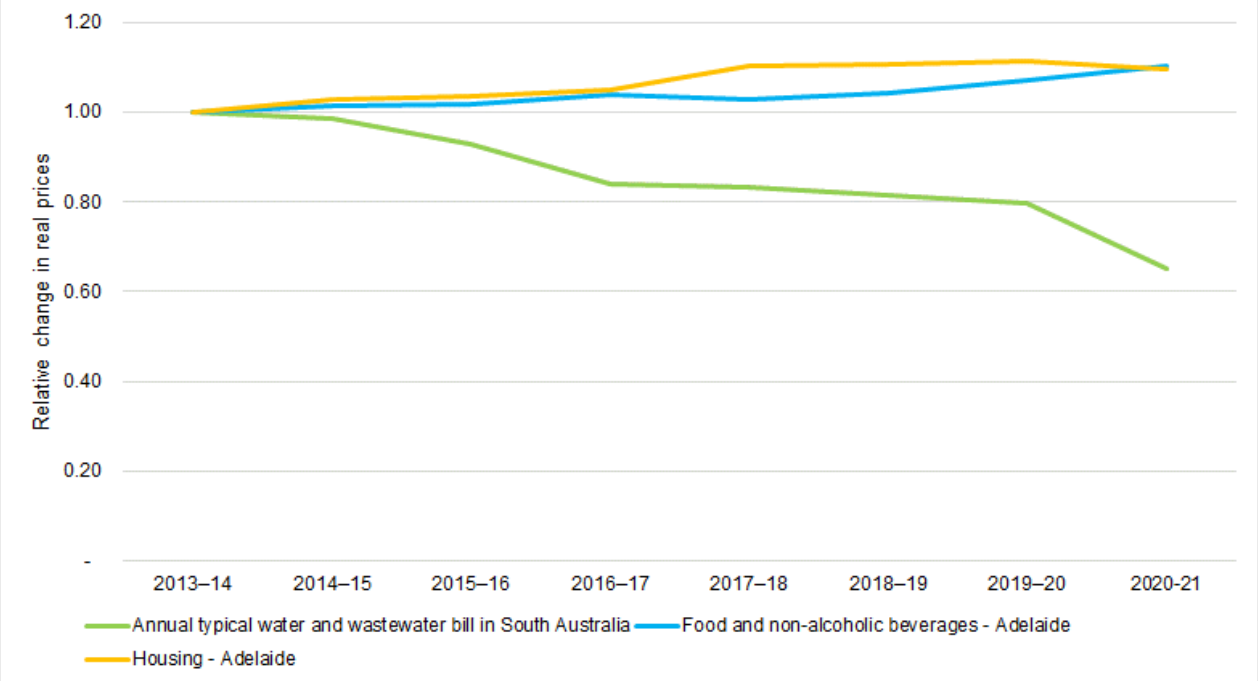

Figure 3-6 Change in price of food and non-alcoholic beverages and housing for Adelaide compared with water and sewerage bills in South Australia 2013/14 to 2020/21

Figure 3-7 compares the change in price of a Big Mac compared with the change in price of SA Water customer bills over the period 2013/14 to 202/21. In this time, the cost of a Big Mac has increased by 20% while water and wastewater bills have declined by 33%.

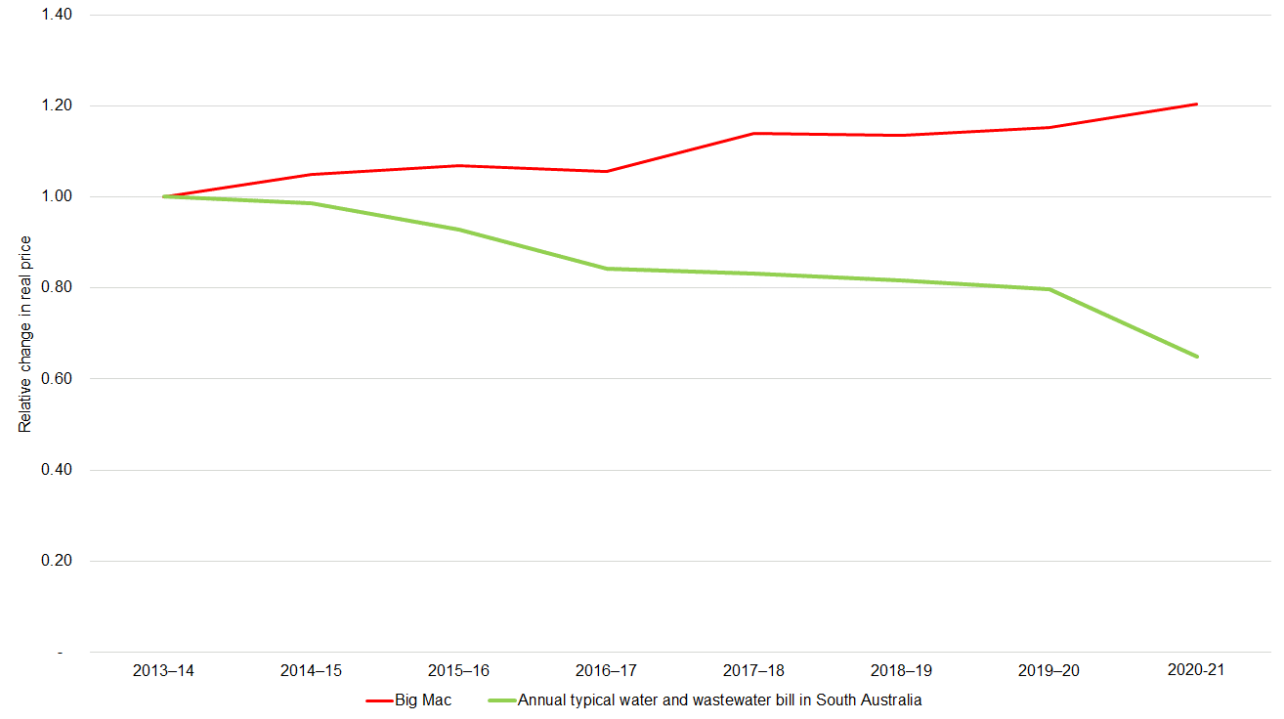

Figure 3-7 Change in price of a Big Mac compared with water and sewerage bills in South Australia 2013/14 to 2020/21

3.3 Service and performance

As noted in Section 2, a challenge in assessing the efficiency of water utility costs is that service provided is multifaceted. Measures of the level of service are also measured in different ways to make comparisons between service providers and for an aggregate level of service extremely difficult. Broadly, the service expected to be provided by water utilities comprises:

- Supplying water that is safe to drink and palatable
- Providing a water supply service with minimal interruptions
- Providing a sewerage service with minimal interruptions
- Minimising harm to the environment, particularly due to the treatment of sewage.

One measure of service that does have a reasonably consistent data set for major utilities is unplanned interruptions. Figure 3-8 shows the level of unplanned interruptions for major water utilities. For SA Water, the level of unplanned interruptions has varied around a level of 150 per 1,000 customers per year over the period 2013/14 to 2020/21. This analysis suggests that SA Water has provided a reasonably consistent level of service as measured by this one indicator, while at the same time materially reducing bills.

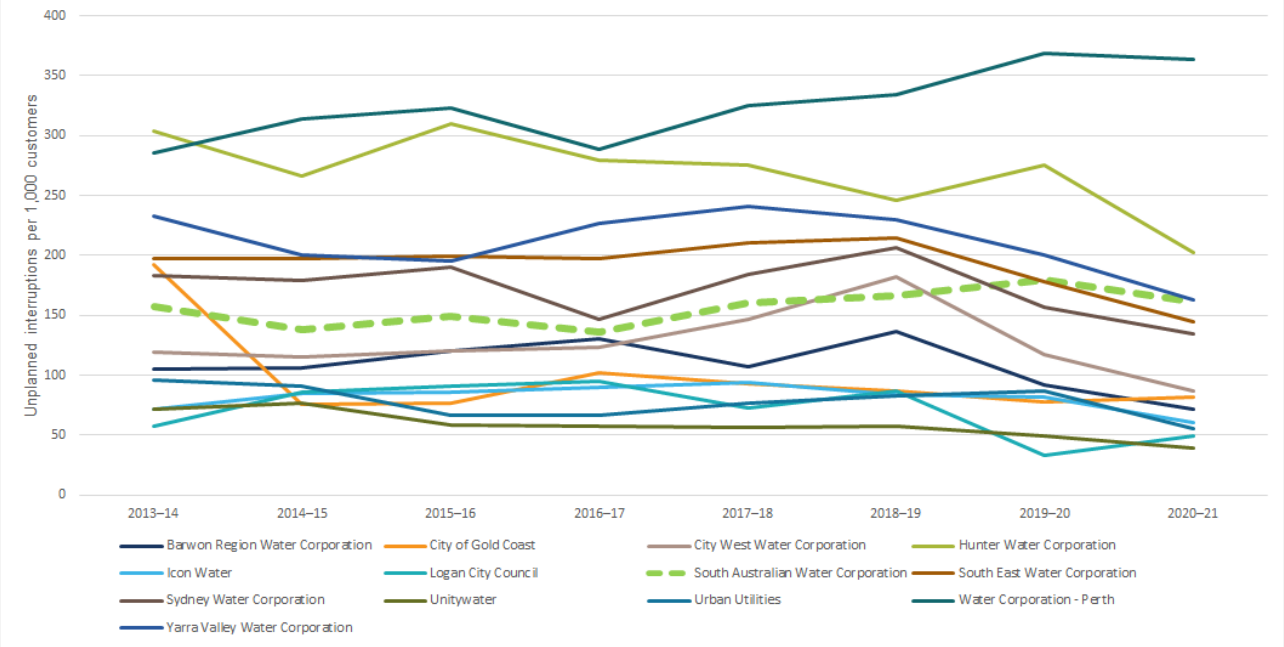

Figure 3-8 Unplanned interruptions / 1,000 customers

3.4 Complaints and customer satisfaction

Given the difficulty in making like-for-like comparisons in the level of service provided by water utilities, an alternative approach is to consider customer complaints and customer satisfactions. These measures go past the level of service and will capture how customers feel about the service provided to them. Figure 3-9 shows the level of customer complaints per 1,000 customers for major urban water utilities for the period 2010/11 to 2020/21. This figure shows that the level of customer complaints varies widely between utilities – by a factor of around six between the lowest and highest. One utility has shown an increasing trend over this period but all other utilities, including SA Water have shown flat or small decreases. This provides further evidence that the observed reductions in bills for SA Water's customers has not been achieved at the expense of a reduction in service.

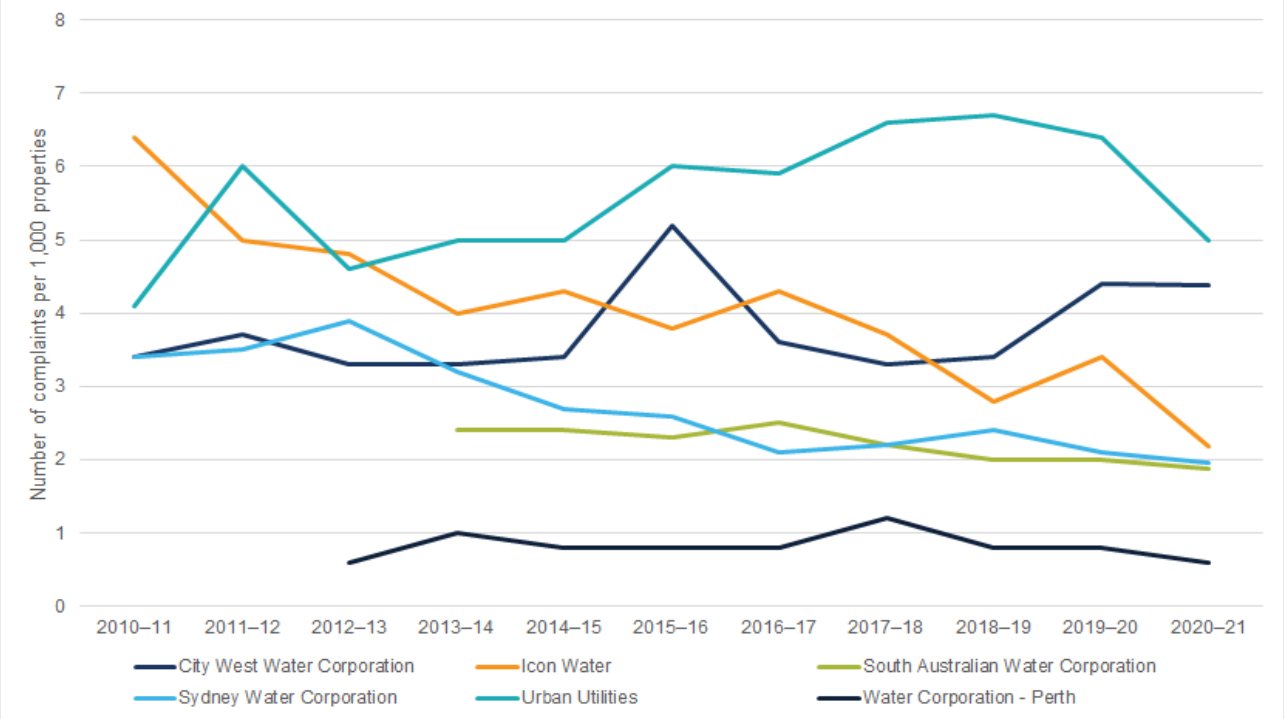

Figure 3-9 Customer complaints per 1,000 for major water utilities 2010/11 to 2020/21

3.5 Multifactor productivity

As discussed in Section 2, an important part of the regulatory framework applied to Australian water utilities is the concept of continuing efficiency. This is the productivity increase expected to be able to be achieved in the wider economy through innovation and technology improvements. Some earlier estimates of continuing efficiency used in the regulation of Australian water utilities were derived from those applied to the water sector in England and Wales.

However, in its recent regulatory reviews of water utility expenditure, IPART has used a long term (40 year) average of multi-factor productivity to estimate the level of continuing efficiency that water utilities should be able to achieve in future. This methodology was also adopted by ESCOSA in its most recent regulatory review of SA Water.

The longer term estimate of continuing efficiency applied by IPART is 0.7% per annum and this has been applied by it recently in its review of Central Coast Council's water and sewerage prices.

However, multifactor productivity data trends published by the Productivity Commission show that in recent years and driven by the Covid-19 pandemic, multifactor productivity has turned negative as shown in the figures below.

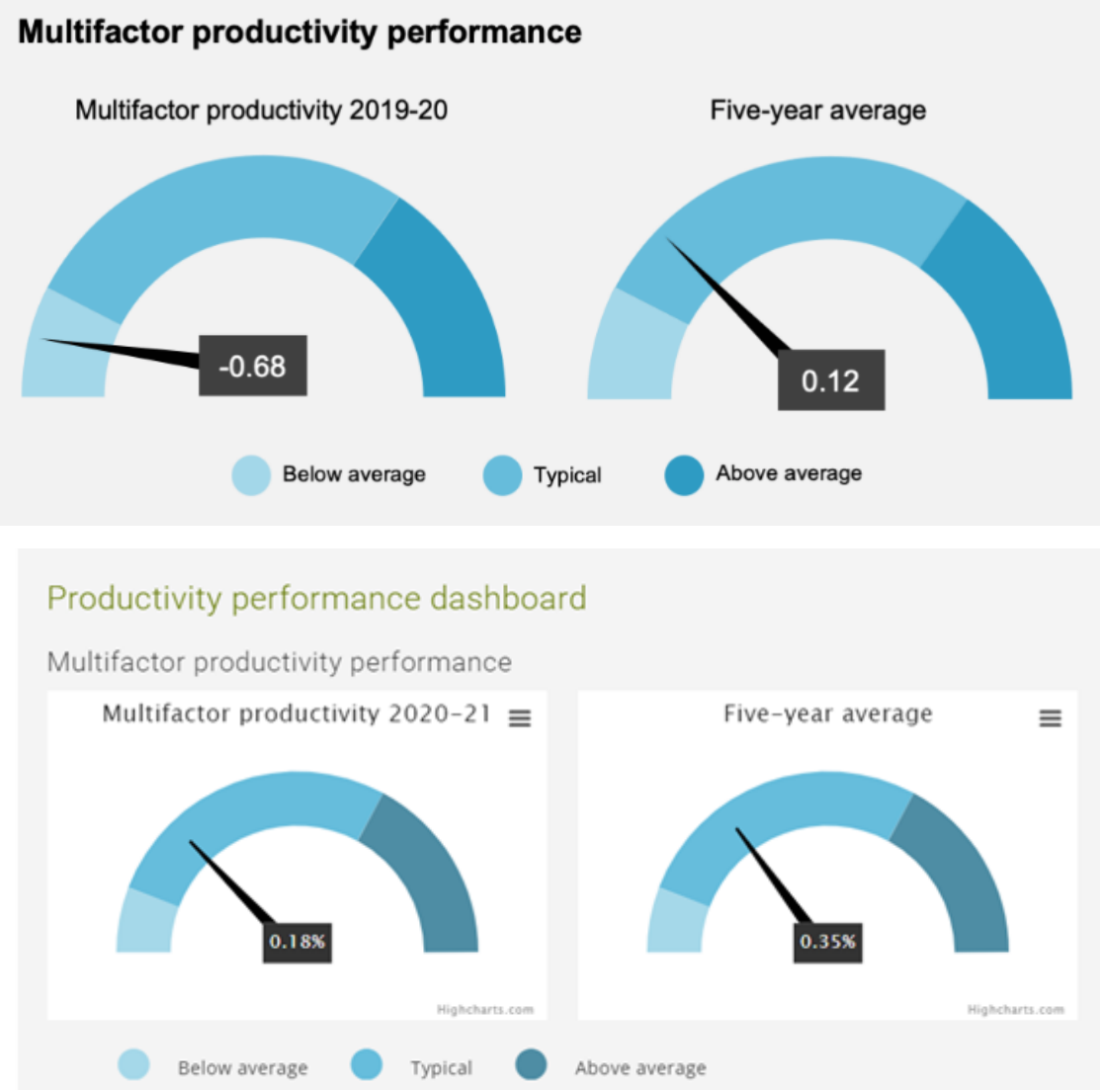

Figure 3-10 Recent multifactor productivity trends in Australia

While IPART looks at productivity achieved by market sector participants, productivity varies across different industries. The Australian Bureau of Statistics publishes industry specific measures of multi-factor productivity growth including for the electricity, gas and water industry. Figure 3-11 shows the movement in

multi-factor productivity for the market sector and the electricity, gas and water industry from 2003/04 to 2020/21. This figure shows the productivity for water utilities (as part of the electricity, gas and water industry) generally lags that for market sector industries but also, has shown a steadily declining (and increasingly negative) trend since a peak in 2015/16. This declining trend highlights the difficulty faced by SA Water to achieve efficiencies when the broader industry is achieving reducing productivity gains.

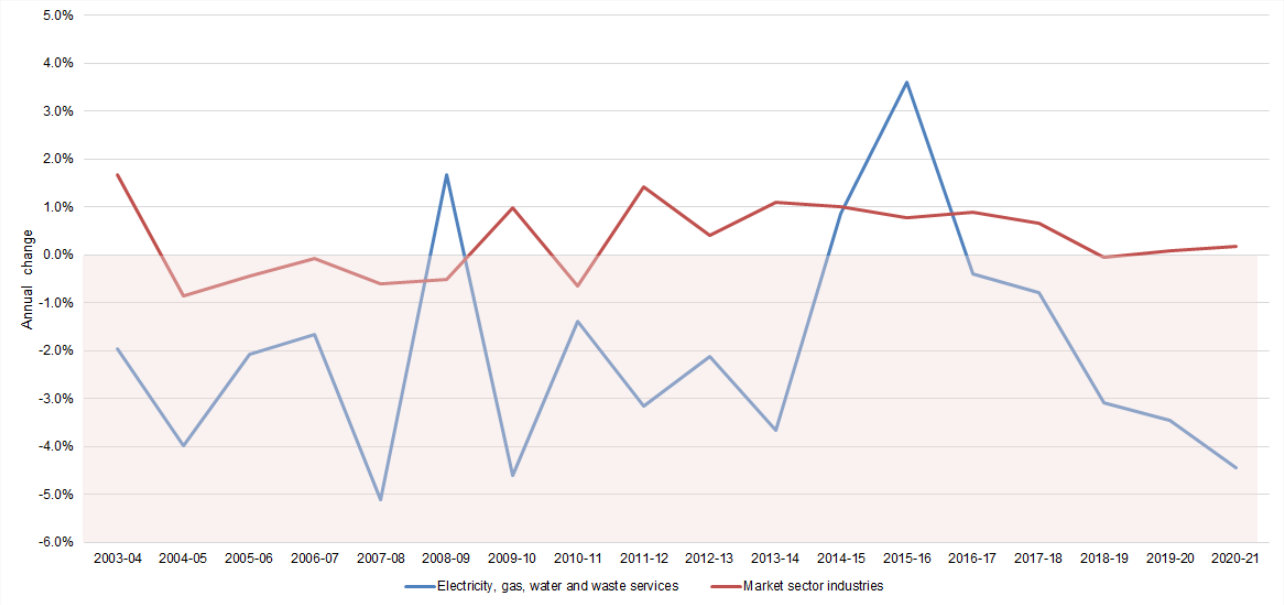

Figure 3-11 Annual change in multi-factor productivity for market sector industries and Electricity, gas and water services since 2003/04

3.6 Operating expenditure levels

Considering the catch-up efficiency that SA Water has been able to achieve, Figure 3-12 shows the trend in operating expenditure per customer on a real basis. This figure shows that per customer operating expenditure has decreased by a total of $112 per customer over the eight-year period, equating to a 2.04% per annum real reduction.

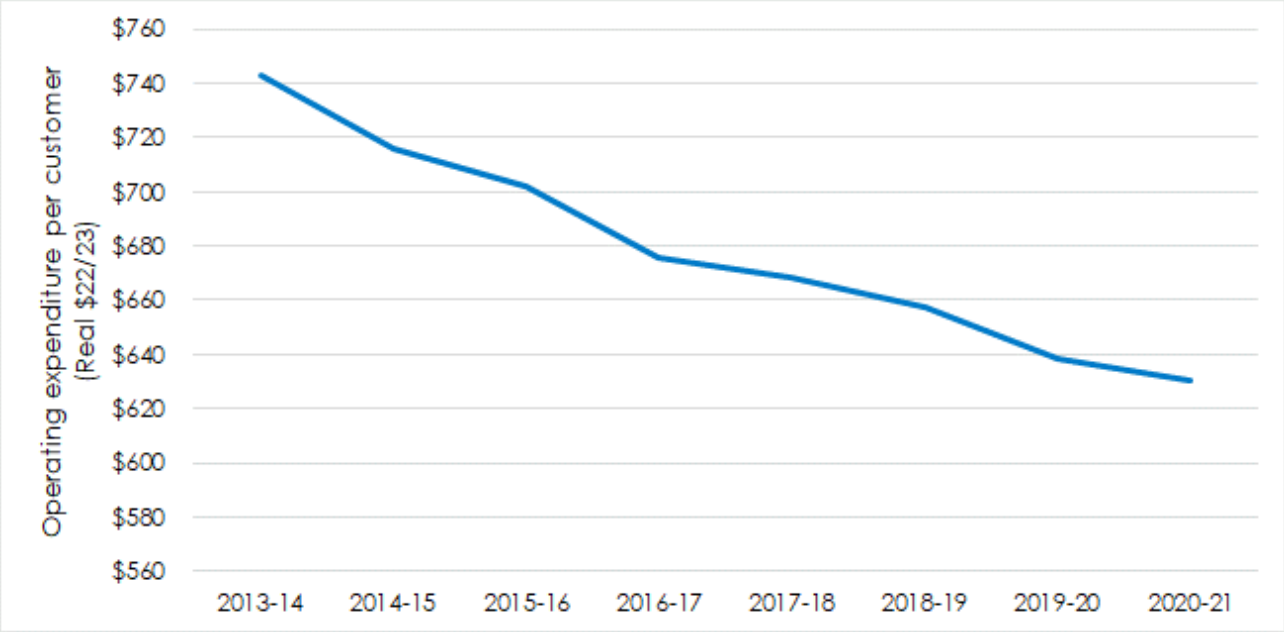

Figure 3-12 SA Water Operating expenditure per customer 2013/14 to 2023/24

SA Water has been able to achieve this reduction despite operating costs outside of its control increasing markedly, most notably government fees and charges which have increased from $53 per customer in

2013/14 to $77 per customer in 2020/21 as shown in Figure 3-13. The level of increase in these fees and charges is around 5% per annum in sharp contrast to the reductions that SA Water has achieved.

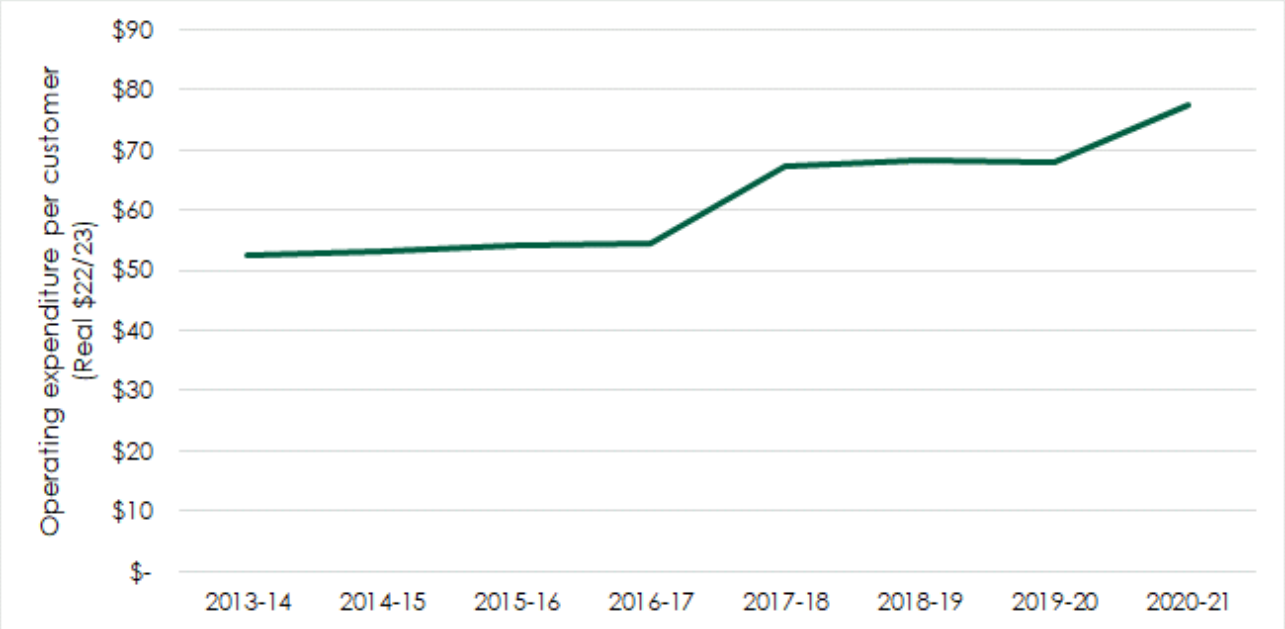

Figure 3-13 Government fees and charges per customer 2013/14 to 2020/21

3.7 Operating expenditure efficiency achieved in regulatory determinations

To consider the extent to which SA Water may be able to achieve catch-up efficiency in the future, the level of efficiency achieved by SA Water since it was first subject to regulation in 2013/14 was examined, and similarly for Sydney Water and Hunter Water. To determine the level of efficiency achieved, the level of operating expenditure forecast by the businesses over these periods has been comparted with the level of operating expenditure considered efficient through the regulatory process and the level of expenditure actually incurred. This analysis is shown in Figure 3-14 for Sydney Water, Figure 3-15 for SA Water and Figure 3-16 for Hunter Water.

The analysis of Sydney Water and SA Water efficiencies showed similar trends: significant outperformances by the water utility in the first determination period before convergence in the second period. The expenditure by Sydney Water in the second period has exceeded the Determination which can be in part explained by the drought, floods and bushfires that occurred during this time. For Hunter Water, in the first regulatory period, actual expenditure was broadly in line with that allowed as efficient in its determination, but in the second regulatory period, actual expenditure has materially exceeded the determination level.

These three examples are consistent with Cardno's broader experience gained in regulatory reviews across Australia. For less mature businesses, there are significant opportunities for efficiency savings to be realised through the regulatory process where business plans are subject to scrutiny that they would unlikely to be otherwise. For Sydney Water, it outperformed its own estimates in the first regulatory period by $682 million while SA Water outperformed its own estimates between 2013/14 and 2019/20 by $313 million (both $22/23).

This analysis shows that that efficiency gains (as measured by the difference between operating expenditure proposed by the utility and that actually incurred) have been harder to achieve as time has progressed. In the regulatory period from 2016/17 to 2019/20 Sydney Water has exceeded both its own forecasts and the operating expenditure included in its Determination. SA Water has achieved actual operating expenditure of 1.0% per annum below that determined as efficient for the period 2018/19 to 2019/20 and in 2019/20 its actual expenditure exceeded the level determined as efficient. Hunter Water has exceeded the determined efficient level by 0.5% per annum in the second regulatory period.

There is a strong disincentive for the operating expenditure of regulated business to exceed that level that has been determined as efficient as these costs in most instances cannot be recovered from customers and are a loss to the business. Therefore, this trend of regulated businesses being unable to outperform their

regulated levels of operating expenditure demonstrates that they are finding it increasingly difficult to achieve efficiencies.

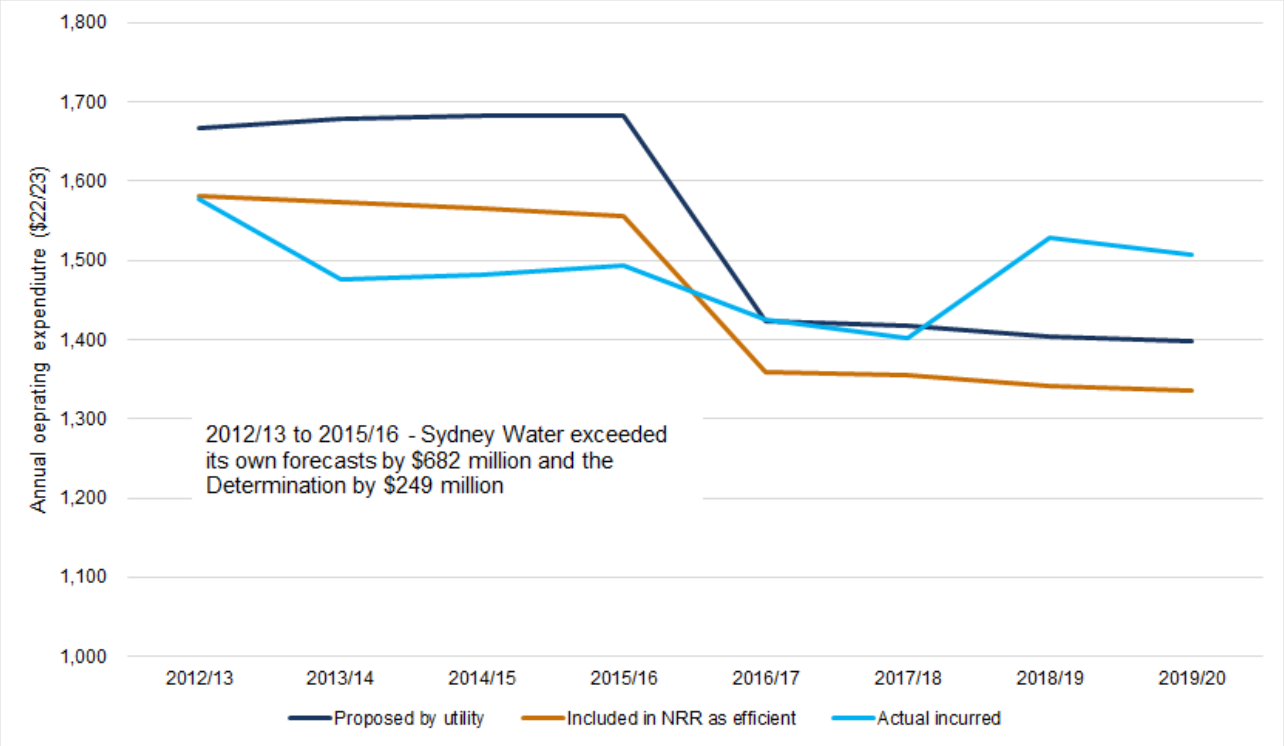

Figure 3-14 Operating expenditure efficiency achieved by Sydney Water 2012/13 to 2019/20

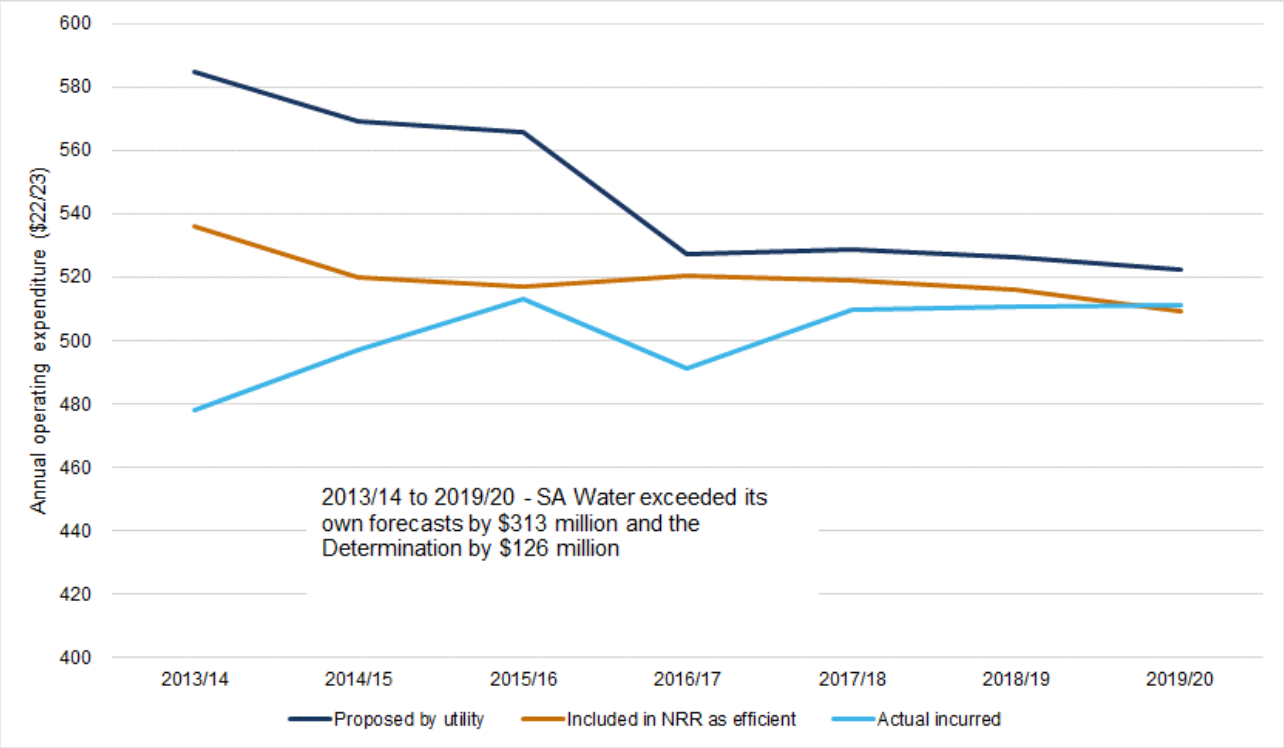

Figure 3-15 Operating expenditure efficiency achieved by SA Water 2013/14 to 2019/20

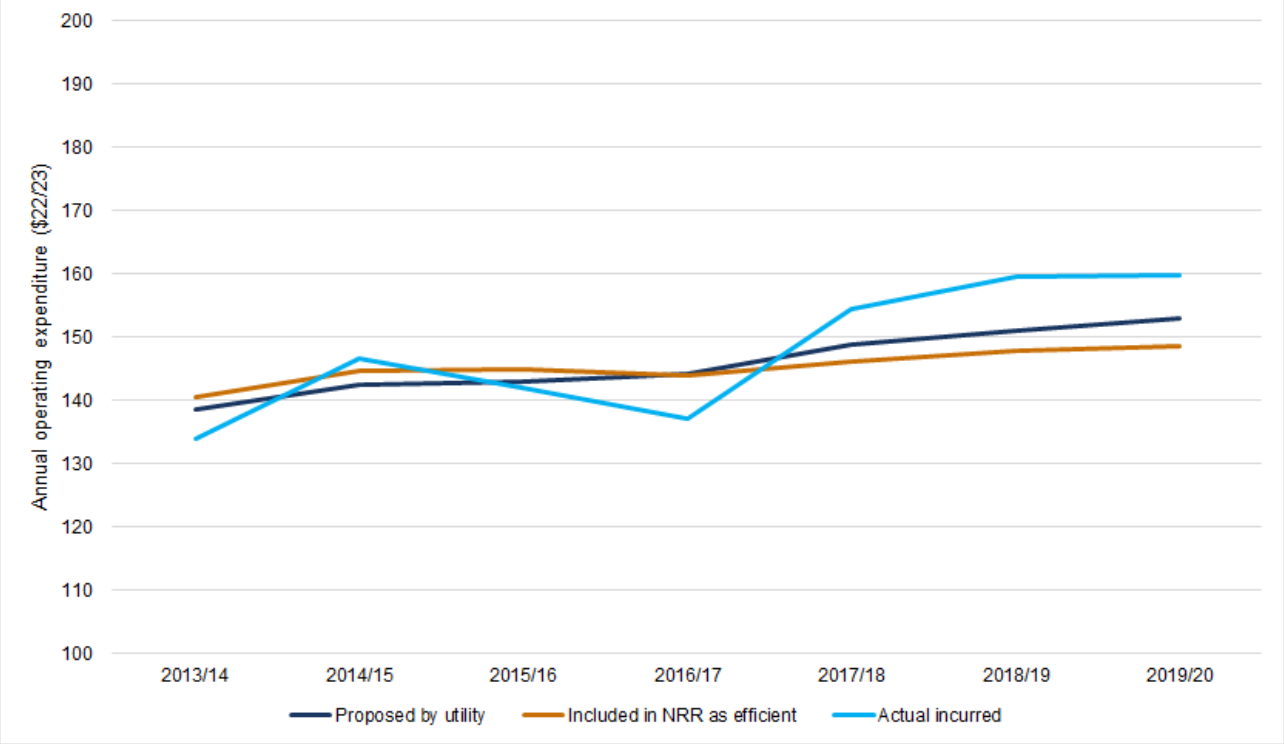

Figure 3-16 Operating expenditure efficiency achieved by Hunter Water 2013/14 to 2019/20

4 Other considerations

4.1 Lessons from regulation in the Scottish Water industry

In 2021, The Water Industry Commission for Scotland, (WICS) Scotland's economic regulator, provided advice to the New Zealand government on how efficiency gains may be generated in their water and sewerage sector and what the magnitude of those efficiency gains might be. This advice was based on the efficiency gains that have been achieved by Scotland's water services over the last 20+ years. This advice was reviewed to understand how it might apply to SA Water.

WICS was engaged to provide the advice as it was considered Scotland was comparable to New Zealand in regard to population, geography and demographics. In 1999, economic regulation was introduced in Scotland at a time when the water industry in Scotland was performing very poorly from an efficiency standpoint. Since then, using industry accepted modelling, Scotland's water industry has become one of the leaders in efficiency as compared to other water providers in the United Kingdom.

Comparing efficiency gains between various service providers is challenging as it is difficult to make like for like comparisons. Comparing costs is not sufficient as it does not capture levels of service, water quality improvements and environmental considerations. However, it is still useful exercise as it identifies the trends and potentials for efficiency gains once a utility is subjected to robust economic regulation.

WICS found that the water utility's serviced population was the number one indicator of the potential for efficiency gains. WICS has identified that water companies needed to service more than 800,000 people to achieve the efficiency levels of the industry leaders in the United Kingdom. For the utilities servicing fewer than 800,000 people, they were only able to achieve 10 to 50% of the efficiency gains of the leading water companies.

From 2002, Scottish Water reduced its investment unit costs by 45% (with nearly 40% of that occurring in the first 10 years) and its operating costs by 50%. After the initial large gains achieved in the first 10 years, both investment unit costs and operating costs tapered off to 0.5-2% per annum.

SA Water has been operating in a regulated environment for an extended period during which it has achieved significant reductions in both capital and operating costs, which are similar to those gained by Scottish Water. SA water's efficiency gains have slowed down after 10 years, which is also similar in trend to the reduction in efficiency gains experienced by Scottish Water after 10 years of operation. The magnitude of SA Water's efficiency gains may not be at the same level as those achieved by Scottish Water, due to differences in the size of the serviced populations. SA Water services nearly 1.4 million people spread over a large area that is not comparable to anywhere in the United Kingdom, which likely contributes to lower potential efficiency gains.

4.2 Efficiency targets applied to other large utilities

In assessing the potential efficiency gains SA Water may be able to achieve in the upcoming regulatory period, it is useful to consider the efficiency targets applied to other water utilities by economic regulators. While each business faces different operating circumstances, underlying cost structures and varying levels of maturity, these efficiency targets are useful comparators of the expected efficiency gains possible in the wider water industry. Table 4-1 provides a summary of the efficiency gain assumptions applied in recent regulatory decisions. Care needs to be taken in interpreting this table because different regulators apply different efficiency models – some include catch-up and continuing efficiency and some do not.

Table 4-1 Summary of efficiency assumptions applied in recent regulatory decisions for Australian water utilities[6]

Regulator and utility	Year	Reference	Productivity growth rate
ERA – Water Corporation	2017	The efficient costs and tariffs of the Water Corporation, Aqwest and Busselton Water, Final Report	0.75% p.a.
ESC - South Gippsland Water	2020	South Gippsland Water final decision	1.0% p.a.
ESC - Western Water	2020	Western Water final decision	2.0% p.a.
ESCOSA - SA Water	2020	SA Water Regulatory Determination 2020, Final Determination: Statement of Reasons	0.5% p.a.
ICRC - Icon Water	2018	Regulated water and sewerage services prices 2018-23, Final Report	1.75% p.a.
IPART – Sydney Water	2020	Review of prices for Sydney Water, Final Report	0.8% p.a.
IPART - WaterNSW	2020	Review of prices for Water NSW Greater Sydney, Final Report	0.8% p.a.
OTTER - TasWater	2018	2018 Water and sewerage price determination investigation final report	1.5% p.a.
QCA - GAWB	2020	Gladstone Area Water Board price monitoring 2020–25 Part A: Overview, Final Report	1.0% p.a.
QCA - Sun Water	2020	Rural irrigation price review 2020-24, Part B: Sunwater, Final Report	0.2% p.a.

[6] The data in this table is sourced from the report Estimation of Seqwater's productivity growth rate, Frontier Economics, 2021. Available at: attachment-9-frontier-economics-estimation-of-seqwaters-productivity-growth-rate-productivity-stc2.pdf (qca.org.au)

5 Conclusions

The preceding analysis has shown that:

- Bills for SA Water's customers have substantially reduced since the commencement of economic regulation – by one third in real terms. However, there are significant headwinds to any future increases including an increasing cost of capital and the extent of catch-up efficiency that SA Water has already demonstrably achieved.
- SA Water has made substantial reductions in operating expenditure per customer – around 2% per annum in real terms since the commencement of economic regulation 10 years ago which has realised reductions of around $112 per customer in real terms.
- While water bills for South Australians and SA Water's operating expenditures have decreased in real terms, almost every other cost of living measure has increased in real terms and most have increased substantially more. These include the cost of:
  - Food
  - Housing
  - Energy
  - Petrol
  - and the international pricing benchmark – the Big Mac.
- At the same time as achieving substantial bill and operating expenditure reductions, there has been no discernible reductions to the service provided to customers and no change to customer satisfaction (as measured by complaints)
- Decreases in customer bills and operating expenditure per connection has been achieved despite significant constraints in SA Water's operating environment which include:
  - Large asset base per customer
  - Expansive operating area per customer
  - High-cost bulk water source compared with other jurisdictions (for both transfer costs and treatment costs)
- There is an observed trend for regulated utilities that operating expenditure efficiency is becoming increasingly harder to achieve. This is likely due to maturing business processes and the effectiveness of regulation. This is evident in data for Sydney Water, SA Water and Hunter Water. This evidence is supported by the experience of the Scottish water industry
- While multi-factor productivity has been used to estimate the potential for continuing efficiency gains by IPART and ESCOSA, any multifactor productivity gains need to be weighed up against
  - The evidence that efficiency is increasingly difficult to achieve
  - Multi-factor productivity in the utility sector generally has consistently been negative – any positive productivity gains represent substantial outperformance against the industry.
- The overall picture of the above is that it is unreasonable to expect that efficiency would be achieved at the same level as previously seen for SA Water. The available evidence demonstrates that a real limit to catch-up efficiency has been reached for SA Water and any continuing efficiency will be sought but challenging.