February 2023

Coliban Water: Review of expenditure forecasts

2023 Water Price Review

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Glossary

Term	Definition
DEECA	Department of Energy, Environment and Climate Action
DELWP	Department of Environment, Land, Water and Planning
EA	Enterprise Agreement
ESC	Essential Services Commission
FTE	Full time equivalent
FTI Consulting	FTI Consulting (Australia) Pty Ltd
GL	Gigalitre
kWh	Kilowatt
ML	Megalitre
PEER	Public Entity Executive Remuneration
PREMO	Performance, Risk, Engagement, Management and Outcome
PS4	Price Submission for the fourth regulatory period (2017-18 to 2022-23)
PS5	Price Submission for the fifth regulatory period (2023-24 to 2027-28)
PV	Photovoltaic
RBA	Reserve Bank of Australia
SaaS	Software as a Service
Schneider	Schneider Electric Energy and Sustainability Services
SGC	Superannuation Guarantee Charge
WIRO	Water Industry Regulatory Order
WPI	Wage Price Index
WRP	Water Reclamation Plant
WSAA	Water Services Association of Australia

Executive Summary

FTI Consulting has been engaged by the Essential Services Commission (the Commission) to undertake an independent expert review of the Victorian water businesses' forecast (controllable) operating and capital expenditure for the 1 July 2023 to 30 June 2028 (PS5) regulatory period.

The Commission is required to assess the water businesses' proposals against a legal framework set out in the *Water Industry Regulatory Order 2014* and the Commission's PREMO pricing framework. We have assessed Coliban Water's forecast operating and capital expenditure based on the guidelines contained in the Commission's 2*023 Water Price Review: Guidance Paper.*

This report sets out our views as to whether Coliban Water's forecasts of capital and operating expenditure over the regulatory period can be reasonably assessed to be prudent and efficient.

Forecast operating expenditure

Coliban Water's baseline 2021-22 controllable operating expenditure is $75.96 million. This is $9.3 million (or 14 per cent) above the benchmark allowance approved by the Commission in the last price review. It has proposed a step change increasing its operating expenditure baseline by $19.1 million across the PS5 regulatory period.

Coliban Water has forecast an average growth factor for operating expenditure of 1.9 per cent per year and an efficiency factor of 1.4 per cent per year over the PS5 regulatory period.

Based on Coliban Water's PS5 submission, discussions with the business and the further information it provided, the adjusted controllable operating expenditure in 2021-22 is mostly consistent with a prudent business operating efficiently.

This reflects our view that:

- the key drivers of the overspend against the baseline appear reasonable, and the baseline does not appear to include any items that are non-recurring
- most of the proposed step changes are reasonable and supported by a sound rationale.

We recommend one adjustment to Coliban Water's proposed step changes related to its Resilient and Composable driver. This adjustment has the effect of reducing Coliban

Water's forecast controllable operating expenditure by $4.47 million over the PS5 regulatory period.

Table 1: Recommended adjustments - controllable operating expenditure ($ 1 January 2023, millions)

	2023-24	2024-25	2025-26	2026-27	2027-28
Forecast controllable operating expenditure	**81.59**	**81.00**	**81.31**	**81.35**	**80.88**
Recommended adjustments:					
End of term reviews	1.14	0.81	1.39	1.07	0.06
Adjusted total operating expenditure	**80.45**	**80.19**	**79.92**	**80.28**	**80.82**

Forecast capital expenditure

Coliban Water has forecast capital expenditure of $507.5 million for the PS5 regulatory period. This is:

- 87 per cent more than its actual capital expenditure (including 2022-23 forecast) over the PS4 regulatory period
- 109 per cent more than the forecast capital expenditure outlook for the PS5 regulatory period that it included in its PS4 submission.

Coliban Water's PS5 submission provides a detailed breakdown of its forecast capital expenditure for the PS5 regulatory period. The further information provided to us by Coliban Water and a half day workshop conducted at its Bendigo offices on 1 December 2022 provides a good level of confidence that the proposed capital expenditure program is, overall, consistent with the actions of a prudent business operating efficiently.

However, based on our review, we recommend adjustments to the forecast capital expenditure for the one capital program set out in Table 2 to address uncertainties in the timing of growth and climate variability drivers late in the PS5 regulatory period in relation to the need to purchase additional water shares to underpin an acceptable level of ongoing water resource reliability.

With this adjustment included, our view is that the resulting forecast capital expenditure is justified, robust and capable of being delivered by Coliban Water in the PS5 regulatory period.

Table 2: Recommended adjustments - capital expenditure ($ 1 January 2023, millions)

Project	2023-24	2024-25	2025-26	2026-27	2027-28	Total PS5	PS6
Major Program - Purchase Water Shares							
Forecast capital expenditure	1.05	0.0	0.0	5.78	5.78	12.61	24.97
Recommended adjusted capital expenditure	1.05	0.0	0.0	5.78	0.0	6.83	30.75
Total adjustment:	**0.00**	**0.00**	**0.00**	**0.00**	**-5.78**	**5.78**	**+5.78**

1 INTRODUCTION

1.1 Purpose of this report

The Essential Services Commission (the Commission) is reviewing submissions from 14 Victorian water businesses setting out their proposed prices and key service outcomes to apply to water and sewerage services commencing on 1 July 2023 through to 30 June 2028 (referred to in this report as the PS5 regulatory period).[1] Each of the Victorian water businesses, including Coliban Water, submitted their proposals to the Commission for assessment on 30 September 2022.

FTI Consulting has been engaged to undertake an independent expert review of the water businesses' operating and capital expenditure forecasts for the PS5 regulatory period. The scope of our review of operating expenditure is limited to controllable operating expenditure.

This report sets out our independent expert view of the prudency and efficiency of Coliban Water's capital and operating expenditure forecasts for the PS5 regulatory period, in accordance with the requirements of the regulatory framework.

1.2 Context and challenges facing Victorian water businesses

The environment faced by most Victorian water business over the last few years has been significantly more challenging than envisaged in 2018 when the Commission approved the expenditure forecasts used to set water prices for the 1 July 2018 to 30 June 2023 (PS4) regulatory period.

The COVID-19 pandemic has been one of the unforeseen events that has impacted the Victorian water businesses' expenditure in several ways, including:

- requiring additional water and wastewater monitoring and treatment
- increasing customer hardship due to cost-of-living pressures
- disrupting business operations, including the ability to carry out maintenance activities and higher rates of staff absenteeism
- changing work practices, including social distancing and hygiene requirements as well as transitioning to enable staff to work from home

[1] This includes 13 water businesses providing urban water and sewerage services include Barwon Water, Central Highlands Water, Coliban Water, East Gippsland Water, Gippsland Water, Goulburn Valley Water, GWMWater, Lower Murray Water, South East Water, South Gippsland Water, Wannon Water, Westernport Water and Yarra Valley Water and two businesses providing rural services including Lower Murray Water and Southern Rural Water.

- disrupting supply chains, putting pressure on the availability and cost of inputs
- increasing migration from Melbourne to regional areas.[2]

These impacts have affected each water business's actual and forecast expenditure in different ways. Some water businesses have faced new costs or cost pressures, while others have enjoyed cost savings.

The effects of the COVID-19 pandemic continue to be felt nearly three years later. Some of these impacts are moderating as Victoria (and the rest of the country) adapts to a new phase of living with the pandemic. However, there is the potential for other more permanent changes, including changes to work practices and greater migration of people from major cities to regional areas. At the time of this review, the longer-term implications remain unclear.

There are other events and changes that were unforeseen (or at least unable to be fully anticipated) as part of the Commission's previous water price review. These include:

- the continued impacts of climate change on the frequency and severity of major weather events, including drought, bushfires, and floods
- the continued evolution in climate change and environmental policy, including emission reduction strategies and targets, and associated compliance and reporting obligations
- a continued hardening of the insurance market, which also (at least partly) reflects the impacts of major climate-related events domestically and globally
- a ramping up of the need to do more to mitigate cyber security risks, including mandated obligations.

These issues and challenges ***do not*** imply or support a premise that:

- water businesses should continue to increase their operating and capital expenditure, and hence water and sewerage prices
- there should be lower expectations in terms of the need to drive efficiency savings in the longer term for the benefit of customers
- businesses should avoid responsibility for managing the risk of cost increases and/or passing more of those risks on to customers.

It further underlines the importance of scrutinising increases in expenditure, as well as proposed step changes, to ensure that they remain consistent with the actions of a prudent

[2] For example, refer: https://population.gov.au/sites/population.gov.au/files/2021-09/the-impacts-of-covid-on-migration-between-cities-and-regions.pdf, accessed 1 December 2022.

business operating efficiently, including in how it responds to the uncertainties and challenges in its operating environment. It also does not alter the standards that should be reasonably expected of businesses in supporting and justifying any increases in expenditure for the next regulatory period, including being able to provide adequate supporting documentation (such as Board-approved policies or strategies and business cases).

1.3 Water industry regulatory framework

The water businesses' proposals are being assessed against a legal framework set out in the *Water Industry Regulatory Order 2014* (WIRO)[3] and the Commission's PREMO framework for approving prices.[4]

The Commission's regulatory framework places an emphasis on efficient delivery of services. Assessing the prudency and efficiency of a water business's expenditure forecasts is fundamental to achieving this objective.

In 2018, the Commission introduced a new approach called PREMO to regulate the prices charged to Victorian water businesses. As Figure 1.1 describes, the PREMO approach contains both new and conventional elements related to price, risk, engagement, management, and outcomes. PREMO provides water businesses with incentives to put forward their best offer to customers and deliver the outcomes its customers value most and to deliver these as efficiently as possible.

[3] The Water Industry Regulatory Order 2014 (WIRO) sits within the broader context of the *Water Industry Act 1994* (Vic) and the *Essential Services Commission Act 2001* (Vic).

[4] Essential Services Commission 2016, Water Pricing Framework and Approach: Implementing PREMO from 2018, October.

Figure 1.1: The Commission's PREMO framework

More conventional elements of PREMO include the retention of the building block approach, which provides reasonable certainty that prudent and efficient costs can be recovered. This includes an expenditure review to determine whether a water business's proposed capital and operating expenditure forecasts are consistent with the requirements of the regulatory framework.

Under the PREMO framework, each submission is expected to reflect the water business's best offer to its customer base. Submissions may be fast tracked through the assessment process based on several factors. Some water business proposals may require a more detailed review of their proposed expenditure while others may only require a review of some elements of their proposed expenditure (for example, specific items where expenditure is increasing).

The *2023 Water Price Review: Guidance Paper* (the Guidance Paper) explains the Commission's methodology and approach to assessing water businesses' price submissions and making a price determination and sets out the information each business is required to provide in its price submission.[5] The Guidance Paper also identifies the governing criteria for each component of the building block methodology, including forecast operating and capital expenditure.

This review is the second review under PREMO for these businesses. The Commission also expects price submissions to demonstrate how water businesses are building on their previous proposals to deliver value to their customers.

[5] Essential Services Commission 2021, 2023 Water Price Review: Guidance paper, 26 October.

1.4 Methodology and approach

The scope of our assessments is limited to examining water business's forecast controllable operating expenditure and capital expenditure over the PS5 regulatory period. It does not include examining decisions about whether to fast track a water business's PS5 submission, nor does it involve assessing other elements of the PREMO framework such as past performance or engagement.

Our methodology for assessing Coliban Water's capital and operating expenditure forecasts for the next regulatory period is consistent with the Commission's Guidance Paper. In summary, the scope of our review includes:

- for forecast operating expenditure, our assessment focuses on controllable expenditure only. We have assessed proposals using the base-step-trend approach as set out in the Commission's Guidance Paper and is consistent with the basis on which each water business has submitted information as part of their price review model templates
- for forecast capital expenditure, our assessment focuses on the top 10 major projects and major capital expenditure programs that comprise a significant proportion of the water business's total capital expenditure forecast.

Further detail about our assessment framework as it has been applied is set out in Section 3 (Operating expenditure assessment) and Section 4 (Capital expenditure assessment).

Our process has involved several steps:

- an initial review of PS5 price submissions, financial model templates and associated documentation
- comparison of each of the water business's proposed capital and operating expenditure proposals, including assumptions adopted in relation to growth trends, efficiency factors, and comparison of actual and proposed expenditure
- a Stage 1 (preliminary) assessment workshop undertaken with Commission staff identifying the key issues to be explored in our more detailed review
- visits and/or online discussions with each of the water businesses on key issues related to their proposal
- further review and analysis of further information or explanations provided.

1.5 Structure of this report

The structure of this report is as follows:

- Chapter 2 provides a high-level summary of the Coliban Water's expenditure proposals
- Chapter 3 sets out our assessment of Coliban Water's operating expenditure proposals
- Chapter 4 sets out our assessment of Coliban Water's capital expenditure proposals.

Consistent with the Commission's guidance paper and the price review model completed by businesses, all forecasts and actuals are expressed in dollars as at 1 January 2023.

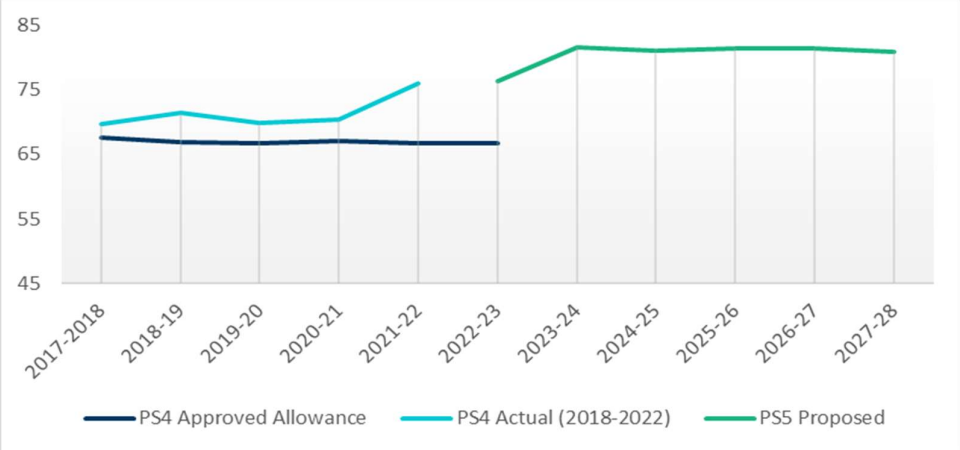
2 SUMMARY OF EXPENDITURE PROPOSAL

2.1 Forecast controllable operating expenditure

For the current PS4 regulatory period, the Commission approved a total controllable operating expenditure benchmark allowance for Coliban Water of $333.99 million ($ 1 January 2023).

For the first four years of the PS4 regulatory period, Coliban Water's actual operating expenditure was $287.54 million (7.6 per cent) more than the benchmark allowance approved by the Commission for those four years.

Figure 2.1: Coliban Water's actual and forecast controllable operating expenditure by year ($ 1 January 2023)



Source: Coliban Water, 5 October 2022; CW_2023 Price Review Model - 2022-09-29, Essential Services Commission 2018- Coliban Water Determination Price Review Model: 1 July 2018 – 30 June 2023.

Coliban Water's baseline 2021-22 controllable operating expenditure is $75.96 million, which is $9.3 million (or 14 per cent) more than the benchmark allowance approved by the Commission in the last price review.

Coliban Water has proposed a step change increase to the baseline of $19.1 million across the PS5 regulatory period, as outlined in Table 2.1.

Table 2.1: Coliban Water's proposed step changes

Proposed step change	Value ($ millions)
Big Water Build	5.0
Resilient & Composable	7.8
Customer Experience	3.7
Digital Transformation	2.6

Source: Coliban Water, CW_2023 Price Review Model - 2022-09-29, 5 October 2022.

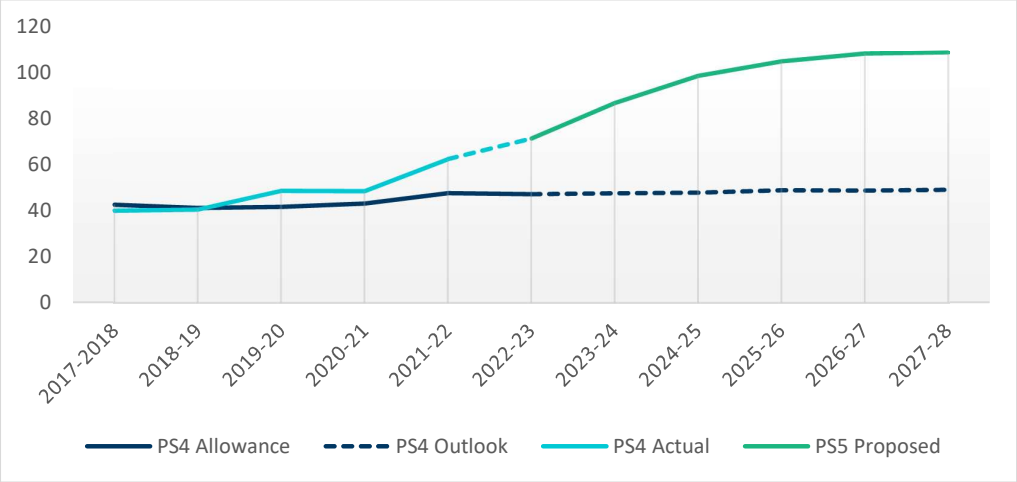
Coliban Water has forecast an average growth factor for operating expenditure of 1.9 per cent per year and an efficiency factor of 1.4 per cent per year over the PS5 regulatory period.

2.2 Forecast capital expenditure

Coliban Water has forecast capital expenditure of $507.5 million for the PS5 regulatory period. As shown in Figure 2.2, this is:

- 87 per cent more than its actual capital expenditure (including 2022-23 forecast) over the PS4 regulatory period
- 109 per cent more than the forecast capital expenditure outlook for the PS5 regulatory period that it included in its PS4 submission.

Figure 2.2: Coliban Water's actual and forecast capital expenditure by year ($ 1 January 2023, millions)



'PS4 Approved Allowance' relates to the approved capital expenditure allowance for 2017-18 to 2022-23, and its 2018 forecast for 2023-24 to 2027-28.

Source: Coliban Water, CW_2023 Price Review Model - 2022-09-29, 3 October 2022; Essential Services Commission 2018, Coliban Water Determination Price Review Model: 1 July 2018 – 30 June 2023, 29 May.

The key drivers, projects and programs are:

- Improvement/compliance (66.1 per cent of the program)
- Growth (20.7 per cent of the program)
- Renewals (13.3 percent of the program)
- Ten major projects, which appear to be very well defined and appropriately costed ($205.0 million) – including four sewerage water reclamation plant (WRP) upgrade projects and two sewerage network upgrade projects (total forecast cost for these six projects is $139.1 million)
- 35 capital program allocations across service, asset and driver categories ($230.0 million)
- capital expenditure adjustments for:
    - Water supply Build-Own-Operate-Transfer (BOOT) schemes ($24.6 million capitalised across the PS5 regulatory period)
    - Sewerage BOOT schemes ($20.75 million capitalised across the PS5 regulatory period)

- biosolids (treatment lagoon desludging) management ($11.59 million capitalised across the PS5 regulatory period to
- noting that these capital expenditure adjustments appear to be appropriate and are consistent with the treatment of these expenditures in the PS4 regulatory period under the Commission's determination.

Coliban Water's top 10 capital expenditure projects, shown in Table 2.2, account for around 40.4 per cent of its proposed capital expenditure for the PS5 regulatory period.

Table 2.2: Coliban Water's top 10 capital expenditure projects ($ 1 January 2023, millions)

Major capital expenditure project	Proposed cost ($ million)
Bendigo WRP Sludge Handling Upgrade	52.70
West Bendigo Sewer Growth and Compliance	25.16
Bendigo Trunk and Outfall Sewer Growth & Compliance Upgrade	26.30
Castlemaine WRP Upgrades	25.26
Trentham (Drinking) Water Treatment Plant (WTP) Capacity Upgrade	15.75
Bendigo WRP Upgrades and Tertiary Filter Expansion	14.60
Goornong Treated Water Supply Upgrade	13.61
Bendigo WRP Recycled Water Factory Upgrade	11.43
Bendigo, Castlemaine and Kyneton WTP Water Quality Upgrades	11.25
Cohuna WRP Capacity Increase	8.92

Source: Coliban Water, 2023-28 Price Submission and associated Financial Model, 30 September 2022.

Overall, these projects and programs appear to be very well linked to and supported by relevant strategies, customer outcomes and engagement results. However, our review recommends adjustments to reduce forecast capital expenditures in the PS5 period (as outlined in section 4.3 of this report) for the Purchase Water Shares major program. This recommendation is made to address uncertainties in the timing of growth and climate variability drivers late in the PS5 regulatory period in relation to the need to purchase additional water shares to underpin an acceptable level of ongoing water resource reliability.

3 OPERATING EXPENDITURE ASSESSMENT

3.1 Overview of assessment approach

The Commission's Guidance Paper notes the requirement that forecast operating expenditure is:

> *… operating expenditure which would be incurred by a prudent service provider acting efficiently to achieve the lowest cost of delivering on service outcomes over the regulatory period, taking into account a long-term planning horizon (prudent and efficient forecast operating expenditure).*[6]

The Commission has asked us to provide an independent expert view on whether Gippsland Water's controllable operating expenditure is prudent and efficient having regard to the base-step-trend approach and assessment criteria set out in its Guidance Paper.

We have assessed whether forecast operating expenditure is consistent with the actions of a prudent business acting efficiently, including if:

- the established 2021-22 controllable operating expenditure baseline has been appropriately adjusted for any one-off expenditure items and efficiency commitments
- operating costs reflect reasonable cost efficiency/productivity assumptions applied to the 2021-22 baseline operating expenditure, having regard to industry trends
- changes in operating costs are consistent with the timing of major capital projects
- operating costs can fulfil the business's obligations and meet customer service expectations as efficiently as possible
- any forecast divergence from historical trends in operating expenditure can be readily explained, for example, by changes in obligations imposed by government, including technical, regulatory and customer service expectations.

Each business's growth and efficiency factors will reflect their business and operating environment, and as discussed in section 1, over the PS4 regulatory period some businesses have experienced materially higher than expected growth.

In assessing proposed increases in expenditure, including step changes, we have had regard to each business's approach to allowing for growth and efficiency, and the resulting net

[6] Essential Services Commission 2022, 2023 Water Price Review: Guidance Paper, August Amendment, p.28.

growth factor for the PS5 regulatory period. For example, some businesses have proposed more ambitious efficiency targets (resulting in negative net growth in expenditure over the PS5 regulatory period) and/or have sought to recognise economies of scale in allowing for growth.

This is relevant to considering the business's ability to absorb cost increases, including proposed step changes, which has required us to apply judgement in assessing the reasonableness of the business's proposals.

3.2 Key operating expenditure drivers across water businesses

There are several drivers of increased operating expenditure over the current PS4 regulatory period and/or forecast for the PS5 regulatory period that are common across water businesses, as summarised in Table 3.1.

Appendix A presents more detailed analysis and cross-industry metrics for electricity, labour and IT costs, using information submitted by the businesses in their respective Price Review Models. We have not sought to directly benchmark these costs across the water businesses as the requirements of each business vary. However, such comparisons do further assist in identifying those businesses that might be looking at more material increases in expenditure. It also provides some context to assessing these costs for each business. A summary of the key implications of this analysis for our assessment approach is provided below.

Table 3.1: Common operating expenditure issues

Expenditure category	What we have examined
Electricity	The application of the Schneider Electric (Schneider) electricity price forecasts. Schneider was commissioned by Intelligent Water Networks to prepare an electricity price forecast that could be consistently applied by all of the water businesses. The approach to meeting the Victorian water sector's commitment to the State Government to source 100 per cent of their energy requirements from renewables by 2025, recognising that each business's approach will reflect its own circumstances and operating environment (this can also include capital projects).
Labour	The rationale for any material growth in employee numbers. Remuneration increases, having regard to each organisation's Enterprise Agreement (EA) as well as conditions in labour markets, with several regional businesses citing challenges in attracting and maintaining people with the right skills. Some businesses have also referred to the Victorian Government's 2022 Public Entity Executive Remuneration (PEER) review of executive remuneration.
IT	Software as a Service (Saas), with all businesses either having transitioned, or are in the process of transitioning, to cloud-based services. This has also resulted in expenditure that would have been classified as capital expenditure now treated as operating expenditure. Cyber security, which is an important issue for all water businesses as well as utilities and other corporations more generally. This includes compliance with new obligations.

Electricity costs

The information submitted by each of the businesses indicates that most are applying the 75th percentile of Schneider's long-term forecast of the electricity spot price. In its report, Schneider assumes that the water businesses are most likely to enter a contract rather than remain exposed to spot prices and that contract price will be around the 75th percentile of its forecast.[7]

[7] Schneider Electric 2022, Electricity Price Forecast, Covering financial year 23 to 2028, Base Case, 23 March, p.17.

This conclusion reflects the likelihood that generators will require a 'premium' above their expected spot price to enter a contract because:

- A premium will be required for the generator to be willing to forgo opportunities to sell that capacity if prices rise above the expected spot price (recognising that the generator is also benefiting if prices fall).
- If it is 'caught short' in terms of its ability to deliver the contracted capacity, it may need to go into the market to procure the shortfall at the prevailing spot price and is therefore exposed to short-term price increases.

Given this, we consider that relying on the 75th percentile of the Schneider forecasts appears reasonable.

We have reviewed each business's proposed energy expenditure within the context of its total forecast controllable operating expenditure proposal. Some businesses have proposed step changes for green power costs, which we have assessed on its own merits.

IT expenditure

As with other costs, we have not sought to directly benchmark IT operating expenditure across the businesses. This is because the needs of each business are likely to vary due several factors, including its size, customer base, the nature and scope of its operations and the age and maturity of its IT architecture and systems. Some businesses may also need to undertake capital expenditure.

We have assessed proposed increases for IT expenditure as proposed by each business on their own merits. We have used this context to satisfy ourselves that the level of IT expenditure for each business is reasonable and justified, particularly for those businesses that appear higher on the comparative metrics.

For businesses that have proposed material increases in IT expenditure which have contributed to increases in baseline expenditure and/or step changes, we have sought to assess whether:

- it appears reasonable for the business to be incurring this expenditure, having regard to necessity/risk as well as the expected benefits
- it is supported by appropriate evidence, such as an IT strategy or business plan
- the evidence aligns with the forecasts proposed in the business's Price Review Model.

Labour costs

As for IT expenditure, we have used the information in Appendix A as context when assessing each business's proposed operating expenditure. For most businesses identifying

increases in labour costs, this has tended to be a combination of increases in staffing as well as remuneration.

For businesses that have proposed material increases in labour-related expenditure (either as reflected in a baseline uplift and/or step change), we have reviewed the rationale for the proposed increase and sought further supporting information where relevant. This included material increases in FTE numbers and/or increases in remuneration. Where increases have also been attributed to the Superannuation Guarantee Charge (SGC), we have confirmed with the business that this reflects an increase in total remuneration payable.

The following sections summarise our assessment of Coliban Water's forecast controllable operating expenditure for the PS5 regulatory period.

3.3 Assessment of the baseline

After adjusting for non-recurring items, Coliban Water's adjusted controllable operating expenditure in 2021-22 was $75.96 million. This is $9.3 million (or 14 per cent) more than the $66.64 million benchmark allowance approved by the Commission as part of the last price review.

Our approach to assessing the reasonableness of the baseline expenditure involves considering whether:

- any overspend against the benchmark allowance is consistent with what is required by a prudent business operating efficiently
- the expenditure includes any items that are non-recurring

We requested an explanation regarding the overspend against the Commission's benchmark allowance. Coliban Water's PS5 submission explained that the overspend in its baseline operating expenditure against the benchmark allowance is attributed to the following key drivers:

- **Asset & Climate Resilience $3.0 million:** increase in operations and maintenance activities due to major asset failures, and proactively repairing high risk assets before they fail
- **Transformation foundations $1.4 million:** uplifting capability and resourcing through a mix of consultant agencies and recruitment from 2021-22 to support strategic resource planning, business analysis, change management and digital and cyber specialists
- **Cloud transition $2.2 million:** in 2018-19, Coliban Water revised its accounting policy to now treat this as operating expenditure rather than capital expenditure.

Coliban Water spent $2.2m developing and installing cloud-based Information Technology in 2021-22. Up until 2017-18, expenditure on this item was treated as capital expenditure for accounting purposes. In 2018-19, Coliban Water applied a revised accounting policy resulting in this expenditure now being treated as operating expenditure. Coliban Water's approved 2018 ESC Final Decision and Determination assumed this expenditure as capital expenditure in-line with historical categorisation in accordance with accounting rules of the day.

The adjustment in this section relates solely to categories of expenditure assumed for capitalisation in the 2018 Final Decision. Moving forward, operating expenditure incurred from the development of new cloud IT services is proposed to be operating expenditure (in line with accounting rules) and therefore a baseline adjustment is required to enact this changed accounting rule.

- **Labour vacancy $0.8 million**: Coliban Water has included a baseline adjustment for positions that were vacant during the 2021-22 year that will be filled during the PS5 regulatory period.
- **Various $0.8 million**: Cyber Security, Catchment water quality (Environmental), Pumping

After reviewing Coliban Water's PS5 submission explanations and the further information provided[i], we consider that there is a clear rationale for the cost increases, and they are consistent with a prudent business operating efficiently. We can also confirm that these costs are recurrent.

We therefore do not propose to make any further adjustments to Coliban Water's proposed baseline operating expenditure, and it does not appear to include any items that are non-recurring.

3.4 Assessment of the step changes

Coliban Water proposed a step change increase to its baseline 2021-22 operating expenditure of $19.1 million for the PS5 regulatory period. Coliban Water's PS5 submission provided little detail regarding the proposed step changes which prompted a request for additional information to support these costs.

Table 3.2: Coliban Water's proposed step changes ($ 1 January 2023, millions)

Key step changes	Value $ millions	Explanation
Big Water Build	5.00	Increasing proactive maintenance and monitoring of sewer mains to comply with EPA regulations. Increased condition assessments, environmental compliance monitoring and maintenance. Water quality monitoring will be increased. This includes sampling of the catchment, potable water, non-potable water, reclaimed water, recycled water, soil, groundwater, water bodies (where reclaimed water is discharged), biosolids and trade waste.
Resilient & Composable	7.80	**End of term review** – most of this step change is attributable to the renegotiation of a number of long-term delivery contracts that end between 2026-27 and 2028-29. Coliban Water has allocated resourcing to manage these end of term arrangements to ensure successful implementation of the preferred approach and achieve value for money. The total operational cost of these outsourcing contracts is approximately $200 million for PS5 regulatory period. **Transformation foundations** – Coliban of the Future is a transformational program aimed at uplifting core capabilities, embedding best practices, enhancing the customer and employee experience and integrating the business through process improvement, digital transformation and enhanced culture and governance. The program will drive future operational efficiencies, mitigate strategic risks, build social licence and attract and retain talented people to equip Coliban Water for the future. **Superannuation increase** - The superannuation guarantee is the minimum rate employers need to pay into employee super funds. Starting from 10% in 2021–22, superannuation rates will increase to 12% by 2026.
Customer Experience	3.70	Direct support for customers experiencing vulnerability by expanding its assistance program to support customers experiencing vulnerability as recommended by the Deliberative Panel and broader customer engagement program.
Digital Transformation	2.60	**Cyber security** - compliance with regulatory frameworks Changing their Security Operations Centre to align with the Water Sector Cyber Security Operations Centre.

		Platform renewals - Execution of Digital Strategy to improve organisational processes.
Total	**19.10**	

Source: Coliban Water, CW_2023 Price Review Model - 2022-09-29 – 5 October 2022.

We have focused our assessment on step change increases only on the basis that these increases are likely to be reflected in the baseline controllable operating expenditure in the next regulatory period. We assessed the reasonableness of those step change increases by examining whether the proposed step changes meet one or more of the following criteria:

- comply with new, or changed, legislative or regulatory obligations
- achieve an outcome or implement an initiative that is endorsed by customers or broadly meets accepted changes in community expectations
- recategorise expenditure between capital and operating expenditure, where the business can demonstrate that it is necessary or appropriate to do so
- reflect the incremental operating expenditure associated with a new prudent and efficient capital project
- cannot be mitigated or otherwise absorbed by an efficient business operating within its approved budget (including the growth allowance).

We met with key staff Coliban Water, who provided additional information regarding the proposed step changes. Coliban Water also provided additional written documentation to support the step changes. Our assessment of the step changes is outlined below.

3.4.1 Big Water Build – $5 million

The information provided by Coliban Water regarding this step change clearly outlines the requirement to increase proactive maintenance and monitoring of sewer mains following the collapse of a concrete sewer main in a residential backyard. A reduction of condition assessments, environmental compliance monitoring and maintenance over the PS4 regulatory period has required this uplift to maintain customer services and minimise increased costs associated with asset repairs.

As a result, we are of the view that this proposed step change meets the criteria outlined above, specifically that costs are sufficiently material that they are not able to be met by an efficient business operating within its approved budget (including the growth allowance) or can be otherwise mitigated.

3.4.2 Resilient and composable – 7.8 million

End of term contract review – Coliban Water has proposed a step change of $4.4 million over the PS5 regulatory period to review and renegotiate five contracts that expire over the PS5 regulatory period. The information provided by Coliban Water regarding this step change clearly outlines a series of categories for this spend. However, it does not clearly articulate sufficient detail regarding how these costs were estimated, nor does it provide the required detail around what activities will be undertaken.

Coliban Water has already incurred costs of $0.94 million against this initiative in its 2021-22 controllable operating expenditure baseline year which will be included in forecast operating costs for the PS5 period. We recognise that resources are required for these contract reviews. However, considering that an allowance of $0.94 million has already been included in controllable operating expenditure, we believe that the justification for such a large step change has not been made by Coliban Water.

As a result, we are of the view that this proposed step change does not meet the criteria outlined above and we recommend an adjustment to operating expenditure allowance to remove the $4.40 million over the PS5 regulatory period.

Transformation foundations – Coliban Water has proposed a step change of $1.6 million over the PS5 regulatory period to provide additional corporate resourcing to undertake workforce planning, value stream analysis through business analytics and change management to assist in navigating through the transformation to Coliban of the Future. Coliban Water's baseline increase includes $1.4 million of operating expenditure towards the Transformation foundations which is sufficiently itemised and explained. Coliban Water has proposed additional expenditure in 2023-24 and 2024-25 of $1.1 million and $0.5 million respectively. The information provided by Coliban Water clearly outlines the reasons for undertaking this initiative to implement Horizon 2 of the transformation. The roles that Coliban Water will recruit for this expenditure are based on short term contracts and have been sufficiently explained and itemised.

As a result, we are of the view that this proposed step change meets the criteria outlined above, specifically that costs are sufficiently material that they are not able to be met by an efficient business operating within its approved budget (including the growth allowance) or can be otherwise mitigated.

Superannuation increase – Coliban Water have proposed a step change of $1.80 million to account for the superannuation guarantee minimum rate for employers increasing from 10% in 2021–22 to 12% by 2026. A review of the information provided by Coliban Water regarding this step change provides sufficient justification for the increased. As a result, we

are of the view that this proposed step change meets the criteria outlined above, specifically that costs comply with new, or changed, legislative or regulatory obligations.

3.4.3 Customer experience – $3.7 million

Coliban Water provided documents supporting this step change to expand its assistance program to provide direct support to customers experiencing vulnerability, as recommended by the Deliberative Panel and broader customer engagement program. Expanding customer assistance programs for vulnerable customers has been noted across several water businesses and appears directly linked to the increased expenditure proposed over the PS5 regulatory period.

The information provided by Coliban Water provides sufficient justification for this proposed expenditure, especially considering its proposed Big Water Build and the impact that this initiative will have on customer bills. As a result, we are of the view that this proposed step change meets the criteria outlined above, specifically that it will achieve an outcome or implement an initiative that is endorsed by customers or broadly meets accepted changes in community expectations.

3.4.4 Digital transformation – $2.6 million

Coliban Water has justified this spend to achieve compliance with regulatory frameworks such as three Security of Critical Infrastructure Acts and the Victorian Protective Data Security Framework. Coliban Water has also provided information to justify renewing legacy platforms to execute its Digital Strategy to improve organisational processes. The uplift in digital transformation is a common spend across water businesses and the proposed expenditure is considered reasonable when compared to cyber security and platform renewals uplift by other water businesses we have reviewed.

As a result, we are of the view that this proposed step change meets the criteria outlined above, specifically that costs are sufficiently material that they are not able to be met by an efficient business operating within its approved budget (including the growth allowance) or can be otherwise mitigated.

3.4.5 Summary of our assessment

Based on Coliban Water's PS5 submission and the further information provided to us, and having regard to our step change criteria, we consider that most of the proposed step changes are reasonable.

We have also considered these within the context of Coliban Water's proposed net annual growth in expenditure over the PS5 regulatory period.

We recommend one adjustment to Coliban Water's proposed step changes related to its Resilient and Composable driver – End of Term Contract Reviews. This adjustment has the effect of reducing Coliban Water's forecast controllable operating expenditure by $4.4 million over the PS5 regulatory period.

3.5 Forecast growth and efficiency factors

Coliban Water is forecasting average growth in operating expenditure of 1.90 per cent per year and an efficiency factor of 1.4 per cent per year over the PS5 regulatory period. This results in a net increase in operating expenditure over the PS5 regulatory period of 0.5 per cent per year. When comparing this net result against other water businesses, Coliban Water is tenth out of 13 urban water businesses subject to this review (see Table 3.3).

Table 3.3: Net average increase in operating expenditure per year by business

Water business	Net average annual increase
South East Water	-0.9%
GWMWater	-0.8%
Wannon Water	-0.3%
Gippsland Water	-0.2%
Yarra Valley Water	-0.2%
Lower Murray Water (Urban)	0.0%
Barwon Water	0.1%
South Gippsland Water	0.2%
Westernport Water	0.5%
Coliban Water	**0.5%**
East Gippsland Water	0.7%
Goulburn Valley Water	1.1%
Central Highlands Water	1.2%

Source: Calculated from pricing models submitted by water businesses.

3.6 Summary of controllable operating expenditure assessment

Based on Coliban Water's PS5 submission, discussions with the business and the further information it provided, most of Coliban Water's forecast controllable operating expenditure is consistent with a prudent business operating efficiently.

This reflects our view that:

- the key drivers of the overspend against the baseline appear reasonable, and the baseline does not appear to include any items that are non-recurring
- most of the proposed step changes are reasonable and supported by a sound rationale.

This is considered within the context of its proposed net baseline growth in operating expenditure of 0.5 per cent per year.

We recommend one adjustment to Coliban Water's proposed step changes related to its Resilient and Composable driver. This adjustment has the effect of reducing Coliban Water's forecast controllable operating expenditure by $4.4 million over the PS5 regulatory period.

Table 3.4: Recommended adjustments – controllable operating expenditure ($ 1 January 2023, millions)

	2023-24	2024-25	2025-26	2026-27	2027-28
Forecast controllable operating expenditure	**81.59**	**81.00**	**81.31**	**81.35**	**80.88**
Recommended adjustments:					
End of term reviews	1.14	0.81	1.39	1.07	0.06
Adjusted total operating expenditure	**80.45**	**80.19**	**79.92**	**80.28**	**80.82**

4 CAPITAL EXPENDITURE ASSESSMENT

4.1 Overview of assessment approach

The Commission's Guidance Paper states that forecast capital expenditure is:

> *…. capital expenditure that would be incurred by a prudent service provider acting efficiently to achieve the lowest cost of delivering service outcomes, taking into account a long-term planning horizon (prudent and efficient forecast capital expenditure).*[8]

We have assessed Coliban Water's proposed capital expenditure program against the criteria set out in Figure 4.1.

Figure 4.1: Capital expenditure assessment criteria

Having regard to these criteria, we have also considered whether any adjustments to the proposed expenditure forecast would be considered appropriate, material and justified.

We have assessed Coliban Water's forecast capital expenditure for the PS5 regulatory period focusing primarily on a review of asset management, capital planning and prioritisation frameworks and processes and how they have been applied. We have also reviewed key supporting documentation for:

- all top 10 major capital projects
- the (sewerage) water reclamation plant (WRP) renewals major program
- the water main renewals major program

[8] Essential Services Commission, 2023 Water Price Review: Guidance Paper, August 2022 Amendment, p.33.

- the sewer network renewals major program
- the purchase water shares major program.

Coliban Water's PS5 submission supporting its proposed capital expenditure program was comprehensive and provided good context and justification in relation to the forecast expenditure increase and associated drivers. However, to further test the justification for the substantial increase in capital expenditure forecasts for the PS5 regulatory period compared to PS4 regulatory period forecasts, we requested additional information related to the following issues:

- justification of the increased expenditure trend for the PS5 regulatory period, particularly relating to environmental improvement/compliance drivers
- background related to the proposed completion of the digital metering deployment program.

Coliban Water provided comprehensive responses addressing all the additional information requested. This included existing detailed documents setting out the capital planning processes used to develop the program, relevant supporting papers and reports, relevant WRP master plans, detailed project business case and other supporting documents and program delivery plans. Appendix B contains a list of all documents provided by Coliban Water reviewed as part of our assessment of its proposed capital expenditure program.

Our assessment is based on a review of the information contained in Coliban Water's PS5 submission and responses to additional information requests reflecting the above criteria. We also conducted a half day workshop session with Coliban Water on 1 December 2022 at its Bendigo office to explore this information and additional related queries in more detail.

4.2 Assessment of overall capital program

Coliban Water is on track to deliver significantly more capital expenditure for the PS4 regulatory period than the benchmark allowance approved by the Commission as part of the last review. Most of this increase is to address revised environmental compliance risks for sewerage management. Coliban Water has also forecast a significant further increase in capital expenditure for the PS5 regulatory period. This is driven again by the need address the significant environmental compliance challenge in sewerage management across its systems because of updated and more robust and transparent risk assessments undertaken to meet its General Environmental Duty under the *Environment Protection Authority (EPA) Act (2017)* (the EPA Act).

4.2.1 Link to customer outcomes and obligations

The key drivers, projects and programs appear to be very well linked to and supported by relevant strategies, obligations, customer outcomes and engagement results and include:

- Improvement/compliance (66.1 per cent of the total capital expenditure program)
- Growth (20.7 per cent of the total capital expenditure program)
- Renewals (13.3 percent of the total capital expenditure program)
- 10 major projects, which appear to be very well defined and appropriately costed ($205.0 million) – including four sewerage water reclamation plant (WRP) upgrades and two sewerage network upgrades which together are estimated to require forecast capital expenditure of $139.1 million
- 35 capital program allocations across service, asset and driver categories ($230.0 million)
- capital expenditure adjustments as outlined in section 2.2 of this report ($56.9 million).

Coliban Water's supporting master plan, business case and program delivery plan documents reviewed provide strong justification for the projects and programs that underpin the overall capital expenditure program and forecast. They also provide insight into how each element of Coliban Water's program supports its five outcomes:

- water quality and reliability – trusted supply of high-quality water to customers
- be easy to deal with – providing services matched to meet the needs of customers now and into the future
- enhance the environment – reduction of negative environmental impacts and achieving a socially responsible and sustainable business for future generations
- regional prosperity – investments supporting the economic prosperity of the service region
- fair price – supporting customers in need.

4.2.2 Comparison of forecast and actual capital expenditure – PS4

Coliban Water's actual capital expenditure for the PS4 regulatory period (including forecast for 2022-23) is expected to be $271.5 million. This is $51 million (or 23 per cent) more than the benchmark allowance approved by the Commission in the last price review. This increased capital expenditure was required to address a significant reassessment of Coliban Water's environmental compliance obligation risk profile, particularly at its sewage treatment WRPs. These obligations relate to Coliban Water's General Environmental Duty to proactively manage risk to the environment from its operations, focusing particularly on preventing environmental impacts rather than rectifying them once they have occurred.

EPA Victoria reinforced these obligations in correspondence to Coliban Water following its 2021 conviction for breaches arising from Kyneton WRP's non-compliant discharges to the environment in 2019.

A key driver contributing to this unacceptably high environmental risk profile has been the deferral of capital works for asset renewals and capacity upgrades over the past decade. This approach was taken in the context of a key strategic focus on paying down debt and reduction of customer prices as the main priority, following significant capital investments made to bolster water resource security for the Coliban region (including construction of the Goldfields Superpipe). As a result of this deferral of capital expenditure, many critical assets are now in poor condition, have insufficient capacity and are operating at or beyond the limits of their design lives.

Although Coliban Water has been managing the associated service capacity risks through optimising ongoing maintenance and operational approaches as far as possible, whilst relying on asset capacity and condition from past investments, this is no longer sustainable. This is particularly the case in relation to unacceptable current and emerging future environmental compliance risks associated with major WRPs and sewer networks. These risks have been highlighted during the PS4 regulatory period by the compliance breaches at Kyneton WRP and also by the Peg Leg Road Sewer collapse (with total reactive repair costs for the latter exceeding $1.3 million).

Coliban Water's increased capital expenditure on environmental compliance during the PS4 regulatory period includes $11.4 million to increase the scope of the proposed Kyneton WRP major upgrade to better address these environmental compliance requirements. The increased compliance expenditure across the PS4 regulatory period was slightly offset by $6 million in reprioritised growth works. This includes approximately $4 million in deferred expenditure arising from the decision to delay completion of the major Western Bendigo Water Network Augmentation project given reduced customer complaints. This decision enabled Coliban Water to reprioritise this expenditure in favour of addressing higher risk environmental compliance needs.

Coliban Water's delivery performance for the $72.5 million 10 major PS4 projects has been reasonable overall:

- two projects have been completed
- five projects are in progress, with three of these on track for completion by June 2023 and the other two (including the completion of the digital metering deployment program in Bendigo) carrying over into the PS5 regulatory period
- two projects involving works for the Bendigo and Castlemaine WRPs have been deferred and incorporated into the PS5 major projects program

- one project has been deferred beyond the PS5 regulatory period through putting altered operational arrangements in place to provide a more cost-effective solution.

Overall, we consider that the documents and information provided by Coliban Water provide good support and reasonable explanations for the increased spend in the PS4 regulatory period.

4.2.3 Forecast capital expenditure – PS5

Coliban Water's capital expenditure forecast for the PS5 regulatory period is $507.5 million. This is:

- 87 per cent more than its actual capital expenditure (including 2022-23 forecast) over the PS4 regulatory period
- 109 per cent more than the forecast capital expenditure outlook for the PS5 regulatory period that it included in its PS4 submission.

The main driver for this increased expenditure is that Coliban Water has developed a better understanding over the PS4 regulatory period of its environmental obligation risks associated with managing its sewerage transfer and treatment assets. Following Coliban Water's breach of the EPA Act, it has undertaken a robust and systematic reassessment of compliance risk across all its sewerage systems.

As noted in section 4.2.2 in relation to increased capital expenditure during the PS4 period, Coliban Water also has a major legacy challenge associated with ageing assets, including several large WRPs, that are operating beyond their design life and capacity. Coliban Water's water distribution and sewer transfer networks also need extensive renewal, noting that some networks are currently serviced by pipes over one hundred years old. This asset capacity and condition risk is therefore also a key driver for the proposed increased capital expenditure into the PS5 regulatory period. As such, Coliban Water has increased forecast renewals expenditure by around 42 per cent to address these asset condition and ageing asset profile issues. As for the environmental compliance risk, this is well supported by updated robust and systematic risk assessment processes. Forecast growth expenditure has also increased by around 57 per cent to address growth and related asset service capacity needs.

Coliban Water's forecast capital expenditure is also projected to increase further into the PS6 regulatory period driven by:

- renewals expenditure forecast to increase by around 64 per cent
- growth expenditure forecast to increase by around 23 per cent

- compliance expenditure forecast to remain relatively steady.

The phasing of forecast capital expenditure over the PS5 and PS6 regulatory periods reflects the outcomes of Coliban Water's expenditure prioritisation process. This process used an integrated 10-year outlook to ensure that the full range of service capability risks is being appropriately managed in the short, medium and long term.

Coliban Water's PS5 regulatory period forecasts exclude capital expenditure associated with the following projects estimated provisionally to require more than $100 million:

- Coliban Southern Interconnector Pipeline to connect Castlemaine to the Bendigo supply system to better manage water resource reliability risks
- a potential new WRP to service the Bendigo Regional Employment Precinct
- rural water supply system modernisation works to reduce water losses and improve service to customers, noting that $2 million has been included in forecast capital expenditure for the PS5 regulatory period to progress investigations and project development
- potential additional upgrade requirements for the Kyneton WRP if the current EPA licence variation process for the plant is not successful.

Based on Coliban Water's PS5 submission, further information provided and workshop discussions with Coliban Water on 1 December 2022, we consider that there is very strong justification for the capital expenditure projects and programs proposed for the PS5 regulatory period. The justifications put forward are reasonable and supported by good capital planning processes and good documentation, including detailed master plans, project business case and program delivery plan documents.

Nevertheless, we have recommended adjustments to the profile of forecast capital expenditure related to the purchase of additional water shares as discussed in Section 4.3.2.

4.2.4 Underlying processes for developing the program

Coliban Water's PS5 submission sets out its underlying asset management and capital planning processes, including risk assessment and prioritisation processes, which appear robust and appropriate. This is further evidenced through additional documents that Coliban Water has provided to us for our review including the following:

- Strategic Asset Management Plan
- Asset Management Policy
- Asset Management Improvement Plan
- Capital Prioritisation Process

- Project Delivery Manual
- Risk Management Framework.

Our review has established that Coliban Water has applied these frameworks and processes rigorously to develop the PS5 capital expenditure program, as evidenced through the detailed project business cases and supporting documents and program delivery plans.

Coliban Water has clearly linked its proposed capital programs, projects and associated expenditures to risk based assessments of needs. It has refined its proposed capital program by applying a prioritisation process across its capital program which incorporates an appropriate risk sharing between Coliban Water and its customers and between different expenditure drivers.

Together these factors provide a high level of confidence that the forecast capital expenditure is justified, prudent and appropriate.

4.2.5 Reliability of cost estimation

Coliban Water's approaches to estimating costs to be included in project and program budgets appear to be sound and appropriate:

- for projects greater than $5 million (40 per cent of the total capital program), it has used risk-based cost estimation methodologies based on Monte-Carlo simulation modelling techniques to derive P5, P50 and P95 cost estimates, and relied on P50 cost estimates to develop project budget forecasts.
- for projects less than $5 million and capital programs comprising multiple projects, it has estimated costs using a simplified method to approximate the risk-based cost estimates produced through Monte-Carlo simulation.

These cost estimation processes use historical data from Coliban Water's cost estimating database and include appropriate contingency allowances based on discrete probability distribution modelling techniques that consider both likelihood and consequence of potential events with uncertain potential cost impacts. Program cost estimates for water and sewer main renewals which have existing contracts in place draw on unit rates from those contracts, while other routine programs draw on recent historical costs.

Based on our review, we consider that Coliban Water's approaches to cost estimation provide a reasonable and appropriate basis for developing the budget estimates for its capital program for the PS5 regulatory period.

4.2.6 Deliverability of capital program

Coliban Water has adopted a two-stage approach to assess and enhance its capacity to deliver the larger capital programs over the PS5 and PS6 regulatory periods.

The first stage of this process considered alternative expenditure trajectory and program scenarios in relation to:

- capability and capacity to deliver the capital program, internally and market based
- capability and capacity to support the delivery of the capital program, internally and market based
- ability to make sound, consistent and timely decisions
- ability for external agencies to make timely approvals
- adequacy of internal systems and processes to deliver and support the capital program
- political, economic and physical environment.

This enabled Coliban Water to select a capital expenditure trajectory and program design to optimally balance delivery risk with infrastructure needs. The trajectory selected proposed increasing works extending beyond the PS5 regulatory period. This should provide a higher level of certainty that proposed capital works are capable of being delivered in the PS5 regulatory period.

The second stage involved a detailed assessment of the delivery risk for each project and program, considering:

- size, type and complexity of the projects and programs
- procurement approach
- lead time activities including permits, approvals and land purchases
- current stage of each project
- current contract status for each project and program.

Coliban Water factored the outcomes of this risk assessment into its final prioritisation of projects, programs and the overall portfolio design. This optimised delivery program trajectory is the basis for the proposed capital program outlined in Coliban Water's PS5 submission.

Coliban Water is addressing the key delivery risks associated with delivering this prioritised capital program (including market capability, capacity and risk appetite, as well as delays to approvals processes and global supply chain risks) by:

- using three key workstreams to deliver projects and programs:

    - the major initiatives workstream covers delivery of the Bendigo and Castlemaine WRP upgrades
    - core asset renewal, process improvement and routine works programs delivered through a suite of Provision of Service contracts
    - strategic partnering through flexible and scalable contract models, directed at programs that bundle projects of a like type
- tendering for resources to support required across all major initiatives, core programs and bundled programs, covering the key service areas identified as essential for successful program delivery
- preparing for a significant increase in internal resources across the PS5 regulatory period to appropriately support the program
- implementing the outcomes of a recent review of Coliban Water's Portfolio Management Office to enhance portfolio, program and project management capability
- implementing an organisation-wide culture program focused on driving change in habits, behaviours and ways of working and on accountabilities and leadership settings to drive a high-performance capital delivery function within the business
- implementing an efficient and robust Program and Project Management System to better support delivery capability, noting that options for a new Portfolio Management Office digital solution are currently being assessed and are expected to be implemented by late 2023.

In summary, Coliban Water has made good progress towards implementing delivery program enhancement initiatives, providing a good level of confidence that robust arrangements will be ready and in place to support implementation of its increased capital program for the PS5 regulatory period.

We do note, however, that Coliban Water has flagged the potential for the following uncertain capital projects currently not included in its PS5 regulatory period forecast to be triggered for commencement during the PS5 period by uncertain or unforeseen event drivers (see section 14.3.1 of Coliban Water's PS5 Price Submission document):

- Coliban Southern Interconnector
- New Water Reclamation Plant in Western Bendigo
- Rural Modernisation
- Additional Kyenton Water Reclamation Plant Upgrades.

In the event that any of these uncertain projects were to be triggered during the PS5 regulatory period, it would be expected that the overall deliverability of Coliban Water's capital program would likely be significantly impacted. In this context, and given the current

level of uncertainty in relation to both justification and scope for these projects, our view is that any of these projects that might be triggered in the PS5 period would require further review of prudence and efficiency and an assessment of whether it would be reasonable for the additional costs to be passed through to customers.

4.3 Assessment of major projects and major programs

4.3.1 Major projects

Coliban Water's capital program for the PS5 regulatory period includes 10 major projects with a forecast total capital expenditure of $205 million (40.4 per cent of total capital expenditure). These projects are outlined in Coliban Water's PS5 submission and in more detail in specific project business cases provided to us for further review.

We reviewed project business cases and related supporting documentation for all ten major projects, including masterplan documents for the Bendigo and Castlemaine WRPs, which provide further context for the four major projects relating to the Bendigo WRP and Castlemaine WRP upgrades. The following sections briefly outline each of the ten major projects and our related assessments, as well as a summary of our overall assessment.

Water Reclamation Plant (WRP) Upgrade Projects

As discussed in sections 4.2.2 and 4.2.3, ageing assets and associated capacity and environmental compliance risks are significantly impacting key Coliban Water WRPs. Risk assessments have identified four WRPs that are currently non-compliant with environmental obligations, or where ongoing environmental compliance cannot be maintained over the coming years. These plants are located in Bendigo, Castlemaine, Cohuna and Kyneton. A $19 million investment program at the Kyneton WRP has been a key focus through the PS4 regulatory period and is now nearing completion. For the PS5 regulatory period, three interrelated major projects are proposed to address emerging compliance issues at the Bendigo WRP, with major projects also proposed for the Castelmaine WRP and the Cohuna WRP.

The Castlemaine and Bendigo WRPs in particular are currently operating under significant capacity constraints, with the Bendigo plant breaching EPA licence requirements in 2021 and 2022. The Castlemaine plant is regularly exceeding EPA licence water quality limits and frequently impacting the local community with odour emissions, and will reach the limits of its process capacity by 2028. Urgent upgrades are therefore required at these plants to ensure that environmental regulatory obligations will be met. The Cohuna WRP has been subject to four EPA Victoria enforcement actions issued between 2013 and 2017, focused on impacts of leakage from treatment lagoons and to concerns regarding integrity and

stability of lagoon embankments. Upgrade works on two of the plant's lagoons are now complete, with the next stage of works planned for the PS5 regulatory period focused on addressing leakage from the remaining two lagoons and increasing plant capacity.

Bendigo WRP Upgrades and Tertiary Filter Expansion - $14.6 million

The Bendigo WRP receives and treats sewage from the city of Bendigo and nearby suburbs. The capacity and condition of key treatment elements at the plant do not meet current operational requirements, in particular relating to non-compliance with EPA licences due to:

- insufficient capacity of the tertiary filtration system to cater for expected growth and manage wet weather events
- insufficient capacity of the effluent ultra violet disinfection system and outfall capacity to ensure compliance, particularly during wet weather events
- inlet works which are deteriorating, constricting flow and likely to cause significant odour if not addressed.

Other needs include renewal of assets that have reached the end of their life (including 24 surface aerators) and insufficient capacity to cater for future inflow growth.

Investigations have considered alternative options including upgrading the existing plant, building a second plant to operate in parallel with the existing plant and decommissioning the existing plant and building a new plant. The preferred option chosen is to upgrade the existing plant, which showed the best NPV outcome as well outperforming the other options based on a multi criteria assessment. The project also aligns with the overall Bendigo WRP Masterplan and is integrated with the Bendigo WRP Sludge Handling upgrade and Recycled Water Factory upgrade projects, as well as with the Bendigo Trunk and Outfall Sewer upgrade project.

Our review indicates that the project need and justification are strong and well supported, and that the proposed timing is appropriate. Based on the business case and supporting documentation reviewed, our view is also that the proposed scope and associated cost estimate are appropriate as the basis for the budget cost estimate included in the capital expenditure forecast.

Bendigo WRP Sludge Handling Upgrade - $52.7 million

This project is part of the overall integrated series of upgrade projects for the Bendigo WRP, with its key focus being on addressing the currently undersized and inefficient solids and sludge handling processes. The project will replace the existing solids handling infrastructure at the plant, providing critical capacity for ongoing compliant operation of the plant as well as accommodating growth in the Bendigo region over a 25 year planning horizon.

By addressing current solids handling capacity issues, the works will also address risks associated with meeting required quality standards for recycled water that would limit the reuse options available and hence the risk of EPA licence breaches. The works will also reduce the risk of offensive odour impacts on the local community and associated EPA licence requirements.

Our review indicates that the project need and justification are strong and well supported, and that the proposed timing is appropriate. Based on the business case and supporting documentation reviewed, our view is also that the proposed scope and associated cost estimate are appropriate as the basis for the budget cost estimate included in the capital expenditure forecast.

Bendigo WRP Recycled Water Factory Upgrade - $11.4 million

This project is also part of the overall integrated series of upgrade projects for the Bendigo WRP, with its key focus being on increasing the reliability of Class A recycled water production at the Bendigo Recycled Water Factory (RWF). This facility is located at the Bendigo WRP site and supplies recycled water to a number of end users, including the City of Greater Bendigo for parks, gardens and sporting facilities, rural water supply channels and dual pipe customers in mandated areas.

Coliban Water has developed an adaptive planning approach to guide achievement of a reliable Class A recycled water supply for this facility. In alignment with reaching critical decision points contained in this plan, option assessment work has confirmed the preferred solution to reconfigure the RWF as a standalone facility capable of producing 9.9 ML per day of recycled water through a process train consisting of ultrafiltration (UF), ultraviolet (UV) disinfection and chlorination.

Implementing these works will help mitigate overall compliance risks at the Bendigo WRP by reducing the volume of treated water discharged to the Bendigo Creek, therefore comprising a key element in meeting the EPA licence requirements for the Bendigo WRP. Maximising the production of recycled water will also offset the use of potable water to irrigate public and private open space.

Our review indicates that the project need and justification are strong and well supported, and that the proposed timing is appropriate. Based on the business case and supporting documentation reviewed, our view is also that the proposed scope and associated cost estimate are appropriate as the basis for the budget cost estimate included in the capital expenditure forecast.

Castlemaine WRP Upgrades - $25.3 million

Coliban Water's Masterplan for the Castlemaine WRP, which was revised in 2022, highlights that the plant's capacity has now been reached and that major works to upgrade the plant are required as a matter of priority. The median flow to the WRP exceeded the design flow

in 2021 and, without a major upgrade, the WRP is expected to exceed its treatment capacity in 2028. Not addressing this risk would then likely result in non-compliant effluent being discharged to Campbells Creek.

An options assessment and associated multi criteria assessment and risk assessment were completed in May 2022, with a preferred option proposed involving installation of a membrane bioreactor (MBR) process to separate solids and provide high quality disinfected recycled water for discharge to Campbells Creek. This option was further revised in August 2022, following advice received from the EPA that reductions in the effluent nutrient levels would be required for licensed environmental discharges at the Kyneton WRP to the Campaspe River. As such, the preferred option for the Castlemaine WRP upgrade also incorporates works to reduce nutrient levels in the treated effluent produced by the plant. The proposed works will increase the treatment plant capacity and enhance the plant performance. Investigations to date have identified a scope of works including modifying and augmenting the existing infrastructure, upgrading the plant inlet works, upgrading pump, valve and service water and chemical dosing systems, and installation of a MBR process.

Our review indicates that the project need and justification are strong and well supported, and that the proposed timing is appropriate. Whilst noting that the proposed project concept and scope will be further developed during the design phase of the project (to optimise the ultimate solution delivered), our view is that the current scope concept and associated cost estimate are appropriate as the basis for the budget cost estimate included in the capital expenditure forecast.

Cohuna WRP Capacity Increase - $8.9 million

The Cohuna WRP comprises four lagoons arranged in series. The plant is intended to function as an evaporation plant and, as such, there is neither an effluent irrigation system nor a regulated discharge of effluent to the environment. In addition to the leakage from the lagoon system that has been a subject of the EPA Victoria enforcement actions referred to above, the surface area of the lagoons has also been determined to be inadequate to evaporate the current inflow volume. In June 2020, following completion of a detailed groundwater investigation, Coliban Water advised EPA Victoria of a non-compliance at the site with respect to leakage from the storage lagoons impacting upon a neighbouring property in the form of groundwater mounding.

A comprehensive assessment of ten alternative options for addressing these compliance issues has been undertaken by Coliban Water, with the preferred option confirmed to repair liners in the existing lagoons and to construct additional evaporation lagoons. The scope of works for this option includes:

- reducing waste wash water inflows from the Cohuna water treatment plant (WTP) (currently comprising around 20 per cent of inflows to the WRP)

- acquiring neighbouring land for construction of additional lagoons
- relining of lagoons 3 and 4 to eliminate uncontrolled discharge
- construction of additional evaporation and storage capacity (lagoons).

The proposed solution is designed to minimise flows to, and subsequent leakage from, the Cohuna WRP, to return Cohuna WTP waste flows to Gunbower Creek for environmental benefit and to provide a staged solution that minimises the financial impacts.

Our review indicates that the project need and justification are strong and well supported, and that the proposed timing is appropriate. Based on the business case and supporting documentation reviewed, our view is also that the proposed scope and associated cost estimate are appropriate as the basis for the budget cost estimate included in the capital expenditure forecast.

Trunk Sewer Upgrade Projects

Modelling carried out for Coliban Water's sewerage network as well as operational observations have confirmed that spills from Bendigo's sewers to the environment occur during moderate rainfall events, and that without augmentation, spills are projected to grow over time. The Bendigo Sewer Augmentation Plan (June 2021) found that the current network will require upgrading to handle proposed development flows (growth) and also to rectify existing deficiencies in capacity. These existing capacity deficiencies result in sewage spilling to the environment in some parts of the Bendigo system regularly during moderate rainfall intensity events, more frequently than the EPA containment standard defined as 18.1 per cent annual exceedance probability (AEP). These spills impact waterway health and expose the community to associated health hazards.

Coliban Water has prioritised expenditure for two major projects to address existing capacity deficiencies for five key trunk sewer systems in the Bendigo network. These projects are briefly outlined as follows.

West Bendigo Sewer Growth and Compliance - $25.2 million

This project relates to improvements to three important trunk sewers that comprise the Bendigo West Sewer - Eaglehawk, Maiden Gully and Marong. The proposed works are to address the current lack of capacity of these sewer sections to contain high sewage flows caused by rainfall (wet weather inflow and infiltration). The primary driver for these upgrades, as outlined above, is to ensure the sewers are compliant with EPA wet weather flow containment standards.

The alternative options for upgrading the Bendigo West Outfall sewers were considered in parallel with the assessments and analysis of alternative options for the Bendigo WRP, and the outcomes included in the Bendigo WRP Masterplan. In particular, various options to augment the Bendigo WRP, combined with the construction of a second WRP in Marong, were assessed to ensure the best system wide outcome could be achieved overall. The

overall assessment (which included multi criteria (MCA) and NPV assessments) concluded that the preferred option is to upgrade the existing Bendigo WRP to receive all flows. This is primarily due to the significantly lower NPV of this option associated with less treatment costs. Potential MCA benefits of the other options, including re-use options, were not considered significant enough to justify the additional associated expenditure. The scope of the various section upgrades for the Bendigo West Outfall system have therefore been based on the transfer of all sewage to the existing Bendigo WRP site. Further, more detailed option assessment work has also been carried out by Coliban Water to develop specific scope concepts and to prioritise staging of works across the three sewer sections. In this context, it is noted that works to upgrade the Eaglehawk and Maiden Gully sections are scheduled for completion during the PS5 regulatory period, and that the Marong section will be progressed to the procurement stage during this period, with works to be delivered in the PS6 regulatory period. This staging is appropriately reflected in the capital expenditure forecasts for this project, with $9.9 million carried over into the PS6 period.

Our review indicates that the project need and justification are strong and well supported, and that the proposed timing, including staging of works over the PS5 and PS6 periods, is appropriate. Based on the business case and supporting documentation reviewed, our view is also that the proposed scopes and associated cost estimates are appropriate as the basis for the budget cost estimate included in the capital expenditure forecast.

Bendigo Trunk & Outfall Sewer Growth and Compliance Upgrade - $26.3 million

This project relates to improvements to two key trunk sewers in the Bendigo system - Bendigo Outfall and Long Gully. The proposed works are to address the current lack of capacity of these sewer sections to contain wet weather flows within the EPA wet weather flow containment standards. The solutions to improve these two systems were considered individually and thus had varying option combinations for assessment. Option assessments with supporting MCAs were completed for a number of sewer augmentation priorities. The outcome of these assessments was that delivering the Bendigo Outfall and Long Gully upgrades together was the preferred solution. The preferred solutions for infrastructure upgrades include new cross connections, new outfall sewer pipes, and new operational configurations.

The option assessments have, appropriately, considered integration with the Bendigo WRP works program and the associated Bendigo WRP Masterplan. The proposed upgrade to the inlet works of the Bendigo WRP will need to be delivered in advance of the delivery of the Bendigo Outfall and Long Gully sewer upgrades. Whilst this dependent timing has been reflected in the staging of forecast expenditure, it is also noted that the Bendigo WRP inlet works and the Bendigo Outfall Sewer should be designed together to optimise the integration of these assets. As for the West Bendigo Sewer upgrades project, works have been scheduled across the PS5 and PS 6 regulatory periods ($26.3 million in the PS5 period and a projected $20.7 million in the PS6 period).

Our review indicates that the project need and justification are strong and well supported, and that the proposed timing, including staging of works over the PS5 and PS6 periods, is appropriate. Based on the business case and supporting documentation reviewed, our view is also that the proposed scopes and associated cost estimates are appropriate as the basis for the budget cost estimate included in the capital expenditure forecast.

Potable Water Upgrade Projects

Trentham Water Treatment Plant (WTP) Capacity Upgrade - $15.8 million

The Trentham Water Treatment Plant (WTP) can reliably produce up to 0.78 ML of drinking water per day (over a 24-hour runtime). It is supplied with raw water from two reservoirs fed with surface water from a natural spring and supplemented with groundwater from a shallow aquifer bore.

Drinking water demands for Trentham are expected to more than double by 2048, and the plant currently does not have sufficient capacity to produce treated water to meet peak day demand requirements. This was highlighted in 2019 when customer water demand exceeded the WTP treatment capacity for an extended period, requiring the WTP to run at full capacity for six consecutive days. During this incident, water was also trucked from the Kyneton WTP to ensure adequate supply was maintained.

The raw water supply for the WTP is also currently under stress. With the impacts of climate change, seasonal variability and decreasing yields from the existing groundwater spring supplying the raw water reservoirs, current projections indicate that a shortfall in managing peak day capacity will occur by 2025. Consequently, there is an immediate need to source an additional water supply to avoid service reliability issues for customers.

Coliban Water undertook extensive assessment of alternative options, supported by NPV and MCA analysis as well as risk assessments. The preferred solution option identified includes construction of additional deep groundwater bores at Trentham to address the raw water supply issues, and construction of a new WTP at Trentham sized to treat existing sources of ground and surface water as well the new groundwater supply. Implementing this solution will require sourcing additional groundwater supplies and acquiring associated groundwater extraction licences. Groundwater exploration is scheduled to commence in 2022-23. The final location of an additional groundwater source may affect the final location of the new WTP and associated system operational arrangements. As such, there is still further work required to refine works scope and plant location. Despite this current uncertainty, our view is that the project and proposed timing are appropriate, and the current scope concept and associated costings provide an appropriate basis for the forecast capital expenditure.

Goornong Treated Water Supply Upgrade - $13.6 million

The Goornong WTP was constructed in 1990 and provides drinking water to the township of Goornong. The current population of this town is around 350, with significant growth forecast in the future. The recently completed Goornong WTP Masterplan (2022) has identified that the plant is projected to exceed its capacity within a five-year planning horizon. In addition, the plant does not currently meet required water quality treatment targets (failing to meet pathogen log reduction requirements) and is carrying significant asset condition risk associated with ageing infrastructure and under investment in renewals over previous periods.

Four alternative options for addressing these issues were assessed as part of the Goornong WTP Masterplan review. These included continuing to operate the existing plant (with raw water sourced from the Campaspe River) with upgrades required to address water quality issues, converting Goornong's supply to a new supply pipeline from Bendigo, and constructing a new WTP for Goornong (supplied either from the Campaspe River or from a new groundwater source). The preferred option proposed is to construct a new pipeline from Bendigo to Goornong. Given the existing asset condition and compliance risks at the Goornong WTP and the impending plant capacity deficiencies, the proposed works are scheduled for delivery over the coming three years. The scope of works comprises:

- decommissioning the existing Goornong WTP and raw water basin
- construction of a new pipeline connection from Huntly in Bendigo to Goornong
- retaining the existing treated high lift pumps stations, high level storage and clean water storages
- providing booster chlorination at Goornong.

Additional storage may also be required, but these requirements still require further assessment.

Our review indicates that the project need and justification are strong and well supported, and that the proposed timing is appropriate. Whilst noting that the potential need for additional storage is still subject to further analysis as the project planning and design work progresses, our view is that the current scope concept and associated cost estimate (which excludes provision for additional storage) are appropriate as the basis for the budget cost estimate included in the capital expenditure forecast.

Bendigo, Castlemaine and Kyneton WTP Water Quality Upgrades - $11.3 million

Coliban Water's Southern Storage Water Supply System (comprising Upper Coliban, Lauriston and Malmsbury Reservoirs) supplies drinking water to Castlemaine and Kyneton (as the sole source for their WTPs) and provides most of the source water for Bendigo. The Bendigo WTP also receives water from Lake Eppalock and the Warranga Channel. Coliban Water is obliged to manage its drinking water supplies in accordance with the requirements

of Victoria's *Safe Drinking Water Act 2003* (the Act). The primary obligation the Act places on Coliban Water is the preparation of a risk management plan for the operation and maintenance of the drinking water it supplies to the public.

As part of fulfilling these obligations, an independent risk assessment for source water from the Southern Storages Water Supply System, commissioned by Coliban Water, has identified that additional treatment barriers are necessary at the Bendigo, Castlemaine and Kyneton WTPs to mitigate the change in the microbial risk profile due to the current lack of catchment protection and to the introduction of on-water recreation at the Upper Coliban, Lauriston and Malmsbury Reservoirs. This risk assessment followed Coliban Water's agreement with the Victorian Department of Health and Human Services to implement a treatment regime for these supplies based on the Heath-Based Targets (HBTs) for drinking water safety methodology. The underlying rationale for this was that this methodology represents current good practice with respect to microbial HBT prior to the commencement of the on-water recreation.

The scope of works for this project includes the installation of additional UV treatment facilities for the three WTPs, which will provide the additional treatment barrier required to meet the targets. An additional chlorine contact facility is also required at the Bendigo WTP.

These WTP upgrades will be achieved through a modification to the existing AQUA2000 contract with Bendigo Water Service (BWS – operator of the WTPs), whilst preserving the current risk allocation principles of the contract. The details of the required technical solutions are currently being identified with BWS.

The approach adopted by Coliban Water is to directly fund the project at the three WTPs, following a best value assessment process. BWS will deliver the works, as the most appropriate provider to manage the risk and in accordance with the existing obligations of the service contract. Coliban Water will have oversight of the procurement of subcontractors and equipment to ensure value for money is achieved. Agreement has been reached for augmentation works to begin by 1 July 2023.

Our review indicates that the project need and justification for the three WTP sites are strong and well supported, and that the proposed timing is appropriate. Whilst noting that the technical details and associated detailed scope for the works are still being developed with BWS, our view is that the current overall scope concepts and associated cost estimates are appropriate as the basis for the budget cost estimate included in the capital expenditure forecast.

Overall Assessment of Major Projects

The sample business cases and supporting documentation sighted are very detailed, well focused and provide strong justification for the major projects and associated expenditures. Forecast expenditures appear to be appropriately targeted based on sound risk assessment approaches. Our view is that the forecast capital expenditures for all ten major projects are well justified.

The proposed capital program appropriately balances the need to address environmental compliance risks in the context of growth, renewals and other improvement and compliance needs. It also appears to appropriately address these competing needs in a timely manner considering an outlook of emerging needs over a 10-year planning horizon into the PS6 regulatory period.

In summary, our review confirms the appropriateness and robustness of Coliban Water's proposed major projects and provides good insight into the strong underlying basis for the broader capital program. In particular, the projects are:

- appropriate in relation to key drivers and obligations
- strongly linked to customer service needs and demonstrated customer preferences
- supported by robust analysis and assessment
- costed appropriately.

This provides a high level of confidence that the major projects and the associated expenditure forecasts are appropriate. As such, we do not recommend any adjustments to the forecast capital expenditures for Coliban Water's major projects.

4.3.2 Major programs

Core program delivery plans provided by Coliban Water for the following major programs were reviewed:

- Major Program – WRP Renewals ($20.4 million)
- Major Program – Water Main Renewals ($15.6 million)
- Major Program – Sewer Network Renewals ($12.1 million)
- Major Program – Purchase Water Shares ($12.6 million).

Coliban Water provided detailed, well focused supporting documents for all four programs that provide strong justification for the proposed program objectives and associated expenditures. In particular, the proposed expenditure forecasts for the WRP, water main and sewer network renewals programs appear to be well prioritised and appropriately targeted based on assessed levels of asset and service risk.

From our review, it appears that these three programs have been developed based on strong, detailed analysis and assessment of needs and benefits and are:

- appropriate in relation to key drivers and obligations
- strongly linked to customer service needs and demonstrated customer preferences
- supported by robust analysis and assessment, including the application of appropriate risk-based assessment and prioritisation
- costed appropriately.

On this basis, we do not recommend any adjustments to the capital expenditure forecasts for the WRP, water main and sewer network renewals programs.

However, we do recommend that an adjustment to the forecast expenditure for the 2027-28 year for the purchase water shares program. This program involves purchasing additional permanent water share entitlements to address emerging reductions in water resource reliability as population increases in the Coliban supply region and climate change and variability reduce existing water resource availability over time.

Coliban Water's analysis of needs and water resource reliability risk shows that most of its water supply systems could continue to satisfy level of service objectives beyond 2070 with projected growth under a medium climate change risk. However, it also shows that it would need to augment water resources in the short to medium term for the following systems:

- the Murray water supply system (around 2024)
- the Trentham water supply system (also around 2024)
- the Coliban water supply system (around 2037).

The proposed timing of Coliban Water's water share purchases is based appropriately on an assessment of water security risk. Given the Murray systems present the most urgent risk as it currently has a theoretical shortfall of water to meet the level of service, Coliban Water proposes to prioritise the purchase of water shares for this system in 2023-24 and to purchase further water shares across all systems in 2026-27 and 2027-28, including the Murray system.

Overall, Coliban Water's proposed approach to water share purchases is appropriate and justified as the most efficient way to address these emerging water resource reliability challenges. However, given the uncertainty in relation to growth and climate conditions, it is likely that the need to purchase additional water shares in 2027-28 may shift out beyond the PS5 regulatory period. It should be noted that Coliban Water estimates that water supply for the Coliban supply system will also need to be augmented around 2037.

We therefore recommend that Coliban Water's forecast 2027-28 capital expenditure for purchasing water shares be deferred to the PS6 regulatory period (as shown in Section 4.4, Table 4.2). Water share purchases to address the closer timing of augmentation needs expected for the Murray and Trentham water supply systems can still be met with the planned purchases in 2023-24 and 2026-27.

4.4 Summary of capital expenditure assessment

Overall, Coliban Water's PS5 submission provides a detailed and comprehensive breakdown of its forecast capital expenditure for the PS5 regulatory period. Our review of this submission, further supporting information provided and workshop discussions with Coliban Water provide a high level of confidence that most of the proposed capital expenditure program is consistent with the actions of a prudent business operating efficiently.

However, we have made one recommended adjustment to the forecast capital expenditure for the Purchase Water Shares program as set out in Table 4.2. This reflects our view that, given the uncertainty in relation to growth and climate conditions, it is likely that the need to purchase additional water shares in 2027-28 may shift out beyond the PS5 regulatory period noting that Coliban Water estimates that water supply for the Coliban supply system will also need to be augmented around 2037.

Table 4.2: Recommended capital expenditure forecast adjustments ($ 1 January 2023, millions)

Project	2023-24	2024-25	2025-26	2026-27	2027-28	Total PS5	PS6
Major Program - Purchase Water Shares							
Forecast capital expenditure	1.05	0.0	0.0	5.78	5.78	12.61	24.97
Recommended adjusted capital expenditure	1.05	0.0	0.0	5.78	0.0	6.83	30.75
Total adjustment:	**0.00**	**0.00**	**0.00**	**0.00**	**-5.78**	**5.78**	**+5.78**

With this adjustment included, our view is that the resulting forecast capital expenditure is justified, robust and capable of being delivered by Coliban Water in the PS5 regulatory period.

APPENDIX A: CROSS-INDUSTRY OPERATING EXPENDITURE ISSUES

Overview

There are several drivers of increased operating expenditure over the current PS4 regulatory period and/or forecast for the PS5 regulatory period that are common across water businesses. While the base-step-trend methodology does not involve a 'bottom up' or category-by-category assessment of expenditure, we consider it important to ensure that we have regard to the key drivers and trends in baseline increases and/or proposed step changes in assessing each business's proposal.

This appendix reviews some of those expenditure drivers in more detail, including in relation to:

- energy
- IT
- labour.

It also presents some comparative data submitted to the Commission by each of the water businesses as part of their respective Price Review Models. Section 3.2 of this report outlines the implications of this analysis for our approach.

Energy expenditure

Background

Energy costs have been increasing in recent years. This has been driven by several factors, including increases in the wholesale price of electricity, the impact of the Ukraine war on global energy prices, increasing network costs and the costs associated with the transition to renewable energy. This has impacted actual energy costs for the water businesses over the current PS4 regulatory period. The uncertainty and volatility in the electricity market has also made it more challenging for water businesses to forecast electricity costs for the PS5 regulatory period. The Victorian water businesses have also all committed to sourcing their energy requirements from 100 per cent renewable sources by 2025.

The Schneider report

The Intelligent Water Network is a collaboration between the Victorian water businesses, VicWater and the Department of Energy, Environment and Climate Action (DEECA, formerly the Department of Environment, Land, Planning and Water (DELWP)). The Intelligent Water Network engaged Schneider Electric Energy and Sustainability Services (Schneider) to

provide forecast electricity prices for the PS5 regulatory period. Victorian Government Purchasing Board reforms have mandated use of the State Purchase Contracts for electricity (large and small market) managed by the Department of Treasury and Finance and Schneider. We understand that some water businesses are already using these contracts while others are in the process of transitioning to these new contracts.

The Schneider report, finalised in March 2022, addressed the following key assumptions:

- energy commodity rates (peak and off-peak)
- Large-scale Generation Certificates
- Small-scale Technology Certificates
- Victorian Energy Efficiency Certificates
- network forecast charges
- market operator charges.

It appears that all the water businesses have used the Schneider report as the basis for their forecast electricity costs for the PS5 regulatory period. We have undertaken a high level review of the Schneider report and the methodology and assumptions used (including data sources) appear reasonable. We have also examined how it has been applied by each business.

Industry emissions reduction target

Under the Water for Victoria Plan, the Victorian water sector has committed to achieving net zero emissions by 2035. The sector has also committed to sourcing 100 per cent of its electricity needs from renewables by 2025. The Statement of Obligations (Emission Reduction) made pursuant to the *Water Industry Act 1994* requires all Victorian water businesses to:

- prioritise the implementation of actions that avoid or reduce emissions resulting from its operations
- achieve emission reductions efficiently, making full use of the time available to do so.[9]

In pursuing these reductions, Section 3.2 of the Statement of Obligations (Emission Reduction) encourages water businesses to:

- pursue actions and targets at the lowest possible cost, seeking to minimise any impact on water customer bills

[9] Statement of Obligations (Emission Reduction), Section 3.1.

- have regard to any price impacts on their vulnerable customers.

Five yearly targets have been set under the Statement of Obligations on the transition to net zero by 2035. This means that a business that has committed to achieving an annual emissions target in a target year (for example, by 1 July 2030) must ensure that it keeps its emissions at or below that level in all subsequent years leading up to their next five-yearly emissions target (for example, 1 July 2035). The requirement to source 100 per cent of their electricity from renewable sources applies from 2025 onwards.

Table A1 shows the baseline level of emissions for each water business and the reductions required by the 2024-25 financial year. It shows that the reductions required by each business vary materially depending on their current baseline.

Table A1: Victorian water businesses emission reduction targets

Business	Emissions baseline	Annual reportable emissions 2024-25 (tonnes CO2 e)	% reduction from baseline
Barwon Water	42,986	15,926	-63
Central Highlands Water	18,351	14,738	-19.6
Coliban Water	33,604	29,304	-12.8
East Gippsland Water	8,272	6,496	-21.5
Gippsland Water	42,021	32,080	-23.7
Goulburn Valley Water	49,575	37,416	-24.5
Grampians Wimmera Mallee Water	20,017	16,244	-18.8
Lower Murray Water	44,188	24,708	-44.1
South East Water	41,744	23,016	-44.9
South Gippsland Water	7,663	6,480	-15.4
Southern Rural Water	1,559	0	
Wannon Water	31,626	18,976	-40
Westernport Water	6,062	5,598	-7.7
Yarra Valley Water	32,004	11,664	-63.6

Source: https://www.water.vic.gov.au/climate-change/reduced-emissions-in-the-water-sector/net-zero-emissions-by-2050

The businesses must then transition over the following five years to their next target (for the 2029-30 financial year). All businesses are required to achieve net zero by 2034-35, although some businesses are forecasting to achieve net zero by 2029-30.

It is evident from water business PS5 submissions and discussions with the business that different initiatives are being employed to achieve the 2025 target including one or more of the following:

- direct capital investment in 'behind the meter' renewable capacity (for example, installing solar photovoltaic (PV) at water treatment plants)
- purchasing energy generated from renewable sources (greenpower), which can involve an additional cost compared to conventional sources
- purchasing offsets, such as Large Generation Certificates.

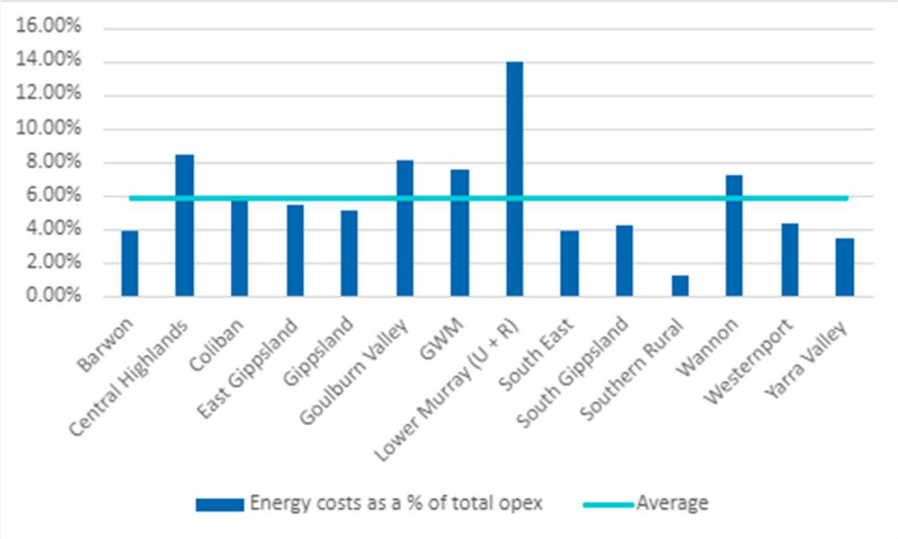
The most appropriate strategy depends on the needs and circumstances of the business, including the feasibility (and cost) of direct action measures such as solar PV.

Some businesses have proposed step changes in operating expenditure for additional costs associated with the above initiatives.

Cross-sector expenditure trends

Overall, proposed electricity expenditure for PS5 accounts for a relatively small proportion of controllable operating expenditure, averaging around 6 per cent, as shown below.

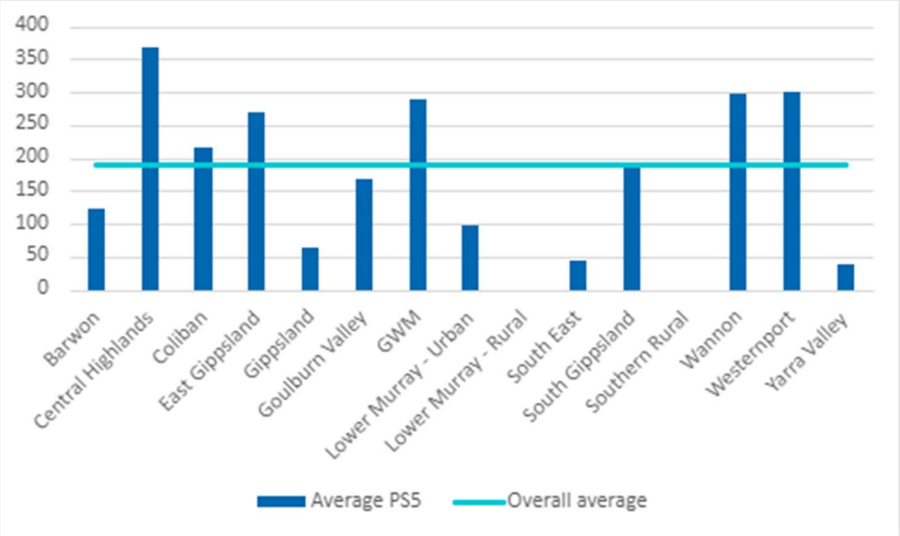
Figure A1: PS5 forecast total energy expenditure as a percentage of total controllable operating expenditure (%)



Source: Victorian water businesses, 2023 Price Review Models.

For the urban businesses, Figure A2 shows electricity expenditure per volume of water delivered (in ML).

Figure A2: PS5 forecast energy costs per volume of water delivered ($ per ML, 1 January 2023)

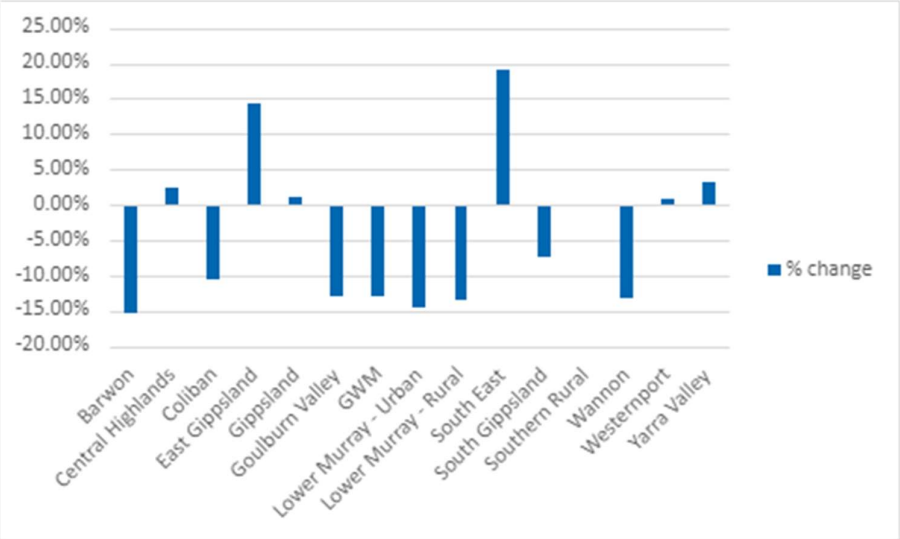


Source: Victorian water businesses, 2023 Price Review Models.

As noted above, energy costs have been increasing over the current PS4 regulatory period. However, most businesses are forecasting a decline in energy costs in the PS5 regulatory period for several reasons, including efficiency initiatives and targets. Figure A3 shows the change between total actual PS4 energy expenditure[10] and proposed PS5 energy expenditure for each business.

[10] Note that the water businesses' Price Review Models submitted to the Commission for this PS5 review include updated forecasts for financial year 2022-23.

Figure A3: Total energy expenditure: total proposed for PS5 regulatory period less total actual for PS4 regulatory period (%)



Source: Victorian water businesses, 2023 Price Review Models. Note PS4 actuals include an updated forecast for the 2022-23 financial year.

IT expenditure

Background

Several businesses have experienced increases in IT-related operating expenditure in the PS4 regulatory period, which have impacted the 2021-22 baseline, and/or are proposing step changes for IT expenditure in the PS5 regulatory period. This is reflected in three main categories:

- Cloud-based services
- cyber security
- other IT expenditure.

Cloud-based services

Consistent with trends in other businesses and industries, most of the water businesses are either in the process of transitioning, or have transitioned, to Cloud-based services (also referred to as Software as a Service (SaaS)). Rather than each business having all its own hardware and software infrastructure on-site, this is a software distribution model where key applications are centrally hosted via a third-party provider. Services are then delivered via the Cloud and the third-party provider manages all hardware and software

requirements. Users then contract and pay for services based on a licence or subscription fee model.

Several water businesses source key applications from Technology One. In 2021 Technology One announced that it will commence transitioning all on-premises customers to its SaaS platform. Based on its timetable, it will cease providing on-premises support services to customers on 1 October 2024.[11]

A key implication of the change to this different service delivery model is that expenditure formerly categorised as capital expenditure will now be characterised as operating expenditure (i.e. relevant licence and subscription fees). Holding all else constant, this will be reflected in a reduction in capital expenditure and an uplift in operating expenditure (noting that this is not a 'dollar for dollar' substitution and that the profile for capital expenditure will have depended on the investment needs of the business). In terms of the impact on operating expenditure, this is evidenced by several businesses either attributing SaaS costs as a driver of the baseline uplift or proposing as a step change.

Additional costs may be incurred in the process of transitioning to Cloud-based services. In this regard, we understand that the Commission has advised the water businesses that it will consider capitalising transition-related expenditure where appropriate. Where proposed, this is considered as part of the review of each business's capital expenditure.

Cyber security

The need to upgrade cyber security has accelerated over the PS4 regulatory period and is also now receiving increased scrutiny from government agencies, customers and the wider community. Activities range from ensuring that water assets and operations remain resilient to cyber attacks through to protecting customer data.

Victorian water businesses are required to comply with several requirements and standards including:

- the Victorian Protective Data Security Framework established pursuant to the *Privacy and Data Protection Act 2014,* which sets out mandatory standards for Victorian public sector agencies and bodies
- Victoria's Cyber Security Strategy 2021
- the Victorian Critical Infrastructure Resilience Framework, with water one of the eight critical infrastructure sectors. This has driven the requirement for a Water Sector Resilience Plan. Cyber security is one of several risks identified under that

[11] https://technologyonecorp.com/saas/pathway-to-saas# {Accessed 13 December 2022}.

framework, which also extends to climate-related risks, pandemics and key supply chain disruptions. DEECA now leads the Water Sector Resilience Network, which aims to collaborate on matters relating to resilience by sharing information and experiences

- implementation of the recommendations of the Victorian Auditor-General's Office performance audit of Security of Water Infrastructure Control Systems.[12]

Cyber security initiatives can be expected to continue to develop and evolve over the PS5 regulatory period.

Other IT-related expenditure

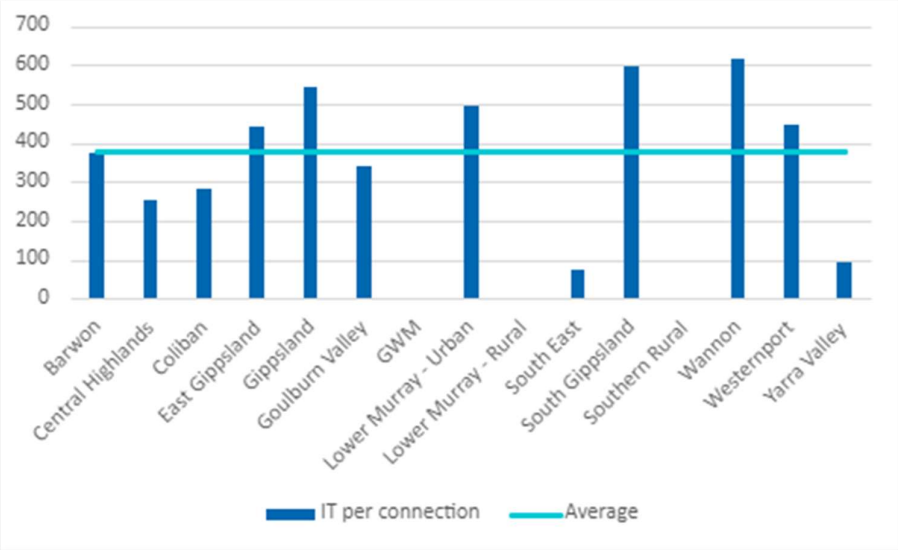
Depending on the functionality and maturity of each water business's current IT-architecture, other business-specific expenditure may be incurred in reviewing and upgrading this capability.

Cross-sector expenditure trends

As part of the Commission's Price Review Model, water businesses are required to report on total IT expenditure. For urban networks, this includes metrics such as IT expenditure per average water connection. Figure A4 shows that most of the water businesses with a higher average expenditure per water connection are smaller organisations, suggesting the presence of economies of scale.

[12] Victorian Auditor-General's Office 2019, *Security of Water Infrastructure Control Systems*, 9 May.

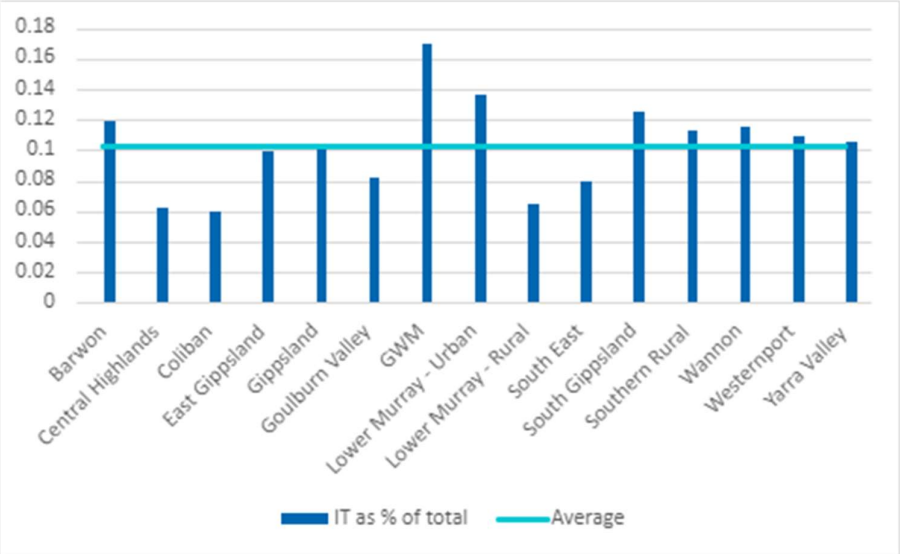
Figure A4: PS5 forecast: ICT operating expenditure per water connections ($ per average number of water connections, 1 January 2023)



Source: Victorian water businesses, 2023 Price Review Models.

Figure A5 shows total forecast PS5 IT operating expenditure as a percentage of total controllable operating expenditure. This includes the rural businesses.

Figure A5: PS5 forecast: ICT operating expenditure as a percentage of total controllable operating expenditure (%)



Source: Victorian water businesses, 2023 Price Review Models.

Labour costs

Background

Labour costs tend to account for the largest proportion of operating expenditure for the water businesses. On average across the businesses, labour costs account for just under 50 per cent of total forecast controllable operating expenditure for the PS5 regulatory period as shown below.

Labour costs are a function of employee numbers (measured in terms of FTEs)[13] and the costs of remuneration (including salaries, wages and other employee-related expenses).

Labour force

The size of each organisation's labour force varies according to their business and operating environment, including their geographical location and service area (which, amongst other things, will influence the size and dispersion of field staff).

Some businesses supplement internal labour resources with external contractors – this can be a temporary response to labour shortages, a need for specialist expertise that does not

[13] Full-time equivalent employees.

reside in-house and/or decisions to outsource certain activities. The optimal balance between internal and external labour will be a management decision for the business.

Remuneration

A key driver of remuneration is the water business's Enterprise Agreement (EA), which typically have four-year terms. Each water business is likely to have an EA expiring and a new EA commencing during the PS5 regulatory period. As a result, each water business needs to forecast the impact of any anticipated change in EA terms.

Some common themes that have emerged in terms of labour costs over the PS4 regulatory period.

- First, Victorian public sector entities must ensure that executive remuneration complies with any determinations and guidelines issued by the Victorian Independent Remuneration Tribunal. They must also continue to comply with the requirements of the Public Entity Executive Remuneration Policy (PEER).[14] The Premier typically announces an annual adjustment guideline rate for adjustments to executive remuneration. For 2021-22 and 2022-23, that rate was 1.5 per cent. Several businesses refer to the application of this rate in their PS5 submissions.
- Second, several of the regional water businesses have commented on challenges in attracting and retaining staff. This appears to have become a more significant problem for some businesses as the labour market tightens following the economic recovery from the COVID-19 pandemic. Some businesses have cited the need to offer higher salaries (including above the EA rate) to attract and retain staff. This appears to have underpinned increases in baseline expenditure as well as step changes for the PS5 regulatory period. Changes have also occurred in terms of employee expectations and practices around flexible working.

These challenges appear to be consistent with overall labour market trends in recent years, as well as the outlook. This reflects a material shift relative to the subdued outlook for wages that prevailed at the time of the last price review, as summarised below.

[14] Refer: https://vpsc.vic.gov.au/executive-employment/victorian-public-entity-executive-employment/public-entity-executive-handbook/4-remuneration/ {accessed 14 December 2022}.

Labour market conditions and wage growth pressures

When the Commission made its determinations for the water businesses in 2018, Victoria had been experiencing a period of subdued wages growth, consistent with the experience of most other advanced economies.[15] The forecasts underpinning the 2018-19 State Budget was for wages to grow by 2.5 per cent in 2018-19 and 2.75 per cent in 2019-20.[16]

Actual growth in the Victorian Wage Price Index (WPI) was 2.6 per cent to 30 June 2019. It then contracted as COVID-19 impacted the economy, falling to 1.5 per cent for the year ended 30 June 2021 and then recovering to 2.3 per cent to 30 June 2022.[9] In terms of industry trends, for Australia, the annual change in total hourly rates of pay for the Electricity, Gas, Water and Waste Services sector was 2.9 per cent to 30 June 2022, compared to 3.2 per cent for all industries.

The most recent 2022-23 Victorian State Budget forecast was for an increase in the WPI of 2.75 per cent in 2022-23. It is then expected to increase further to 3.00 per cent per year to 2025-26 as the economy expands and labour market conditions remain tight.[17] The Reserve Bank of Australia (RBA) is forecasting stronger growth in the WPI for Australia, increasing to 3.7 per cent by 30 June 2023 and then rising to 3.9 per cent by December 2024.[18]

This presents a mixed picture of wages growth over the current PS4 regulatory period, which was significantly impacted by the COVID-19 pandemic. The current outlook is more bullish, driven largely by the tight labour market and high inflation, with spare labour market capacity at record lows.[19] In its November 2022 Statement on Monetary Policy, the RBA also observed that job mobility is higher than the years preceding the pandemic and is now around the levels observed prior to the Global Financial Crisis. It also noted the considerable uncertainty associated with the current economic outlook.

Overall, this highlights the current wage growth pressures that many of the water businesses has observed. The data doesn't enable any insights into the trends in regional labour markets in Victoria or specific pressures that might emerge for the skillsets required

15 State of Victoria 2018, Strategy and Outlook 2018-19 Budget Paper No. 2, Department of Treasury and Finance, p.23.

16 State of Victoria 2018, Strategy and Outlook 2018-19 Budget Paper No. 2, Department of Treasury and Finance, p.22.

17 State of Victoria 2022, Strategy and Outlook 2022-23 Budget Paper No. 2, Department of Treasury and Finance, p.32.

18 Reserve Bank of Australia 2022, Statement on Monetary Policy, November.

19 Reserve Bank of Australia 2022, Statement on Monetary Policy, November.

by the water businesses. The duration and extent of these wage growth pressures is also highly uncertain.

Superannuation Guarantee Charge

The compulsory Superannuation Guarantee Charge (SGC) has been progressively increasing to a rate of 12 per cent by 1 July 2025. This has been identified by some businesses as contributing to increases in labour costs.

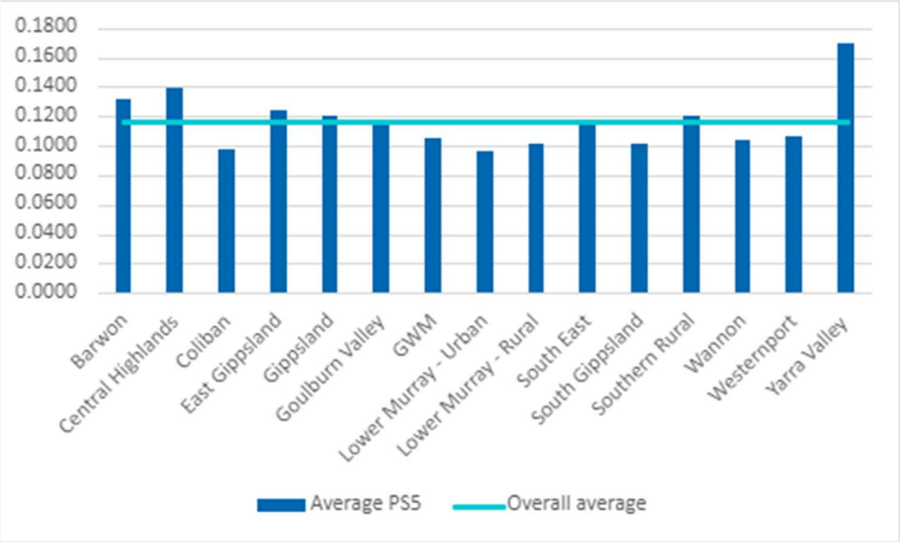
The extent to which this will result in an increase in labour costs for employers depends on the nature of the employment arrangement. For example, for salaried workers whose salary package is inclusive of superannuation, the increase in the SGC may be offset by a reduction in take-home pay, which would result in no net change in costs to the employer. In other cases, where employees are on a 'salary plus superannuation' arrangement, it will result in an increase in total remuneration for the employee, which will increase the cost to the employer.

The impact of this will therefore vary between businesses and potentially within businesses given employees may be subject to different types of arrangements.

Cross-sector expenditure trends

Businesses are required to report several metrics on labour costs in the Commission's Price Review Model, including FTEs and unit labour costs. Key metrics are summarised below.

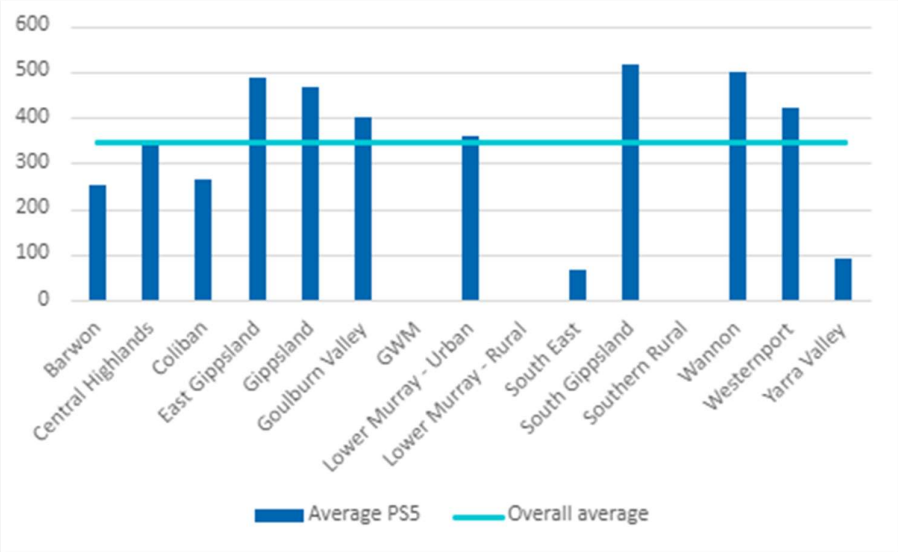
Figure A6 shows average unit cost per FTE as forecast for the PS5 regulatory period, as reported by the businesses. Figure A6: PS5 forecast average unit cost per FTE ($ million per FTE, 1 January 2023)



Source: Victorian water businesses, 2023 Price Review Models.

Based on forecast labour costs for the water businesses for the PS5 regulatory period, Figure A7 shows the average labour cost per water connection (based on the average of the forecast number of connections over the period). It shows that most of the water businesses with a higher average expenditure per water connection are smaller organisations, suggesting the presence of economies of scale.

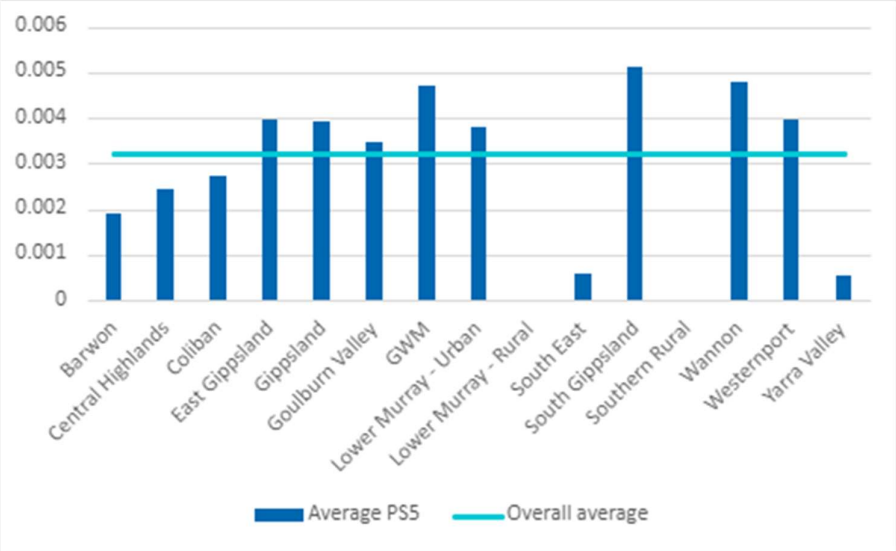
Figure A7: PS5 forecast: Average labour cost per water connection ($ per average number of water connections, 1 January 2023)



Source: Victorian water businesses, 2023 Price Review Models.

As expected, this shows material scale economies for the larger businesses. This is similarly evidenced based on the average number of FTEs per water connection (see Figure A8).

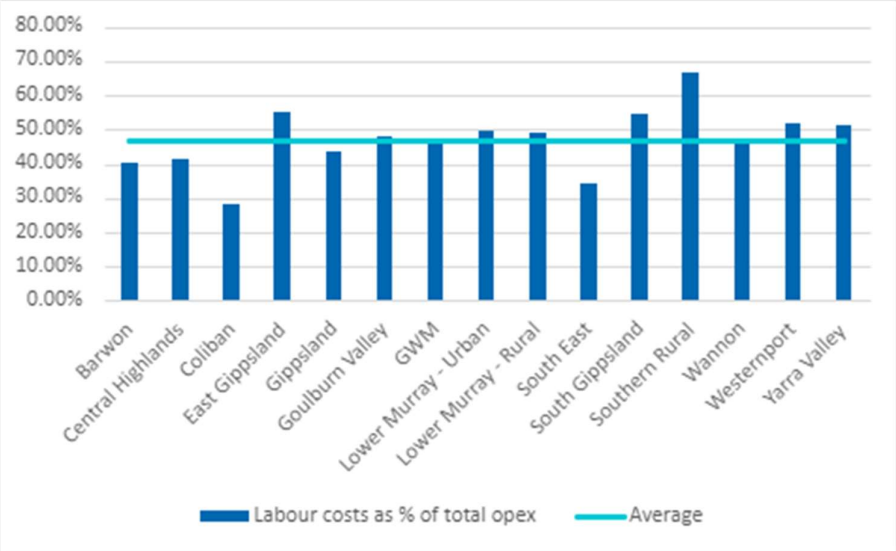
Figure A8: PS5 forecast average number of FTEs per water connection



Source: Victorian water businesses, 2023 Price Review Models.

Figure A9 shows forecast labour costs as a percentage of total controllable operating expenditure for each of the water businesses over the PS5 regulatory period.

Figure A9: PS5 forecast labour costs as a percentage of total controllable operating expenditure (%)



Source: Victorian water businesses, 2023 Price Review Models.

APPENDIX B: LIST OF DOCUMENTS REVIEWED FOR ASSESSMENT OF COLIBAN WATER'S FORECAST CAPITAL EXPENDITURE

- Coliban Water – Asset Management Policy (August 2022)
- Coliban Water – Strategic Asset Management Plan (September 2022)
- Coliban Water – Asset Management Improvement Plan (May 2022)
- Coliban Water – Risk Management Framework (October 2022)
- Coliban Water – Capex Prioritisation Process (May 2022)
- Coliban Water – Project Management Manual (September 2022)
- Coliban Water – Cost Estimating Guidelines (October 2022)
- Coliban Water – Procurement Policy Statement (30 June 2022)
- Coliban Water – Procurement Document Map (October 2022)
- Coliban Water – Capital Expenditure Background Document (September 2022)
- Coliban Water – 5-Year Core Program Delivery Plan (PS23), Water Reclamation Plant Renewals and Optimisation (15 August 2022)
- Coliban Water – 5-Year Core Program Delivery Plan (PS23), Water Main Renewals (12 August 2022)
- Coliban Water – 5-Year Core Program Delivery Plan (PS23), Sewer Main Renewals (12 August 2022)
- Coliban Water – 5-Year Core Program Delivery Plan (PS23), Purchase Water Shares (10 August 2022)
- Coliban Region Water Corporation – Bendigo WRP 2021 Masterplan, GHD (June 2021)
- Coliban Region Water Corporation – Castlemaine WRP 2020 Masterplan, GHD (November 2020)
- Coliban Water – Bendigo WRP Upgrade Business Case (30 June 2022)
- Coliban Water – Bendigo WRP Sludge Handling Upgrade Business Case (September 2022)
- Coliban Water – Bendigo WRP Recycled Water Factory Upgrade Business Case (18 July 2022)
- Coliban Water – Castlemaine WRP Upgrade Business Case (30 August 2022)
- Coliban Water – Cohuna WRP Upgrades, Containment and Compliance Business Case (September 2022)
- Coliban Water – Bendigo Sewer Outfall and Long Gully Business Case (30 June 2022)

- Coliban Water – West Bendigo Sewer Augmentation and Compliance Business Case (8 September2022)
- Coliban Water – Trentham WTP Capacity Business Case (30 August 2022)
- Coliban Water – Goornong Treated Water Supply Upgrade Business Case (14 July 2022)
- Coliban Water – Bendigo, Castlemaine and Kyneton WTP Water Quality (Health Based Targets) Upgrades Business Case (28 August 2022)