

**Barwon Water – expenditure
review for 2018 water price review**
Report for the Essential Services
Commission – FINAL REPORT

February 2018

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Executive Summary

The Essential Services Commission (ESC) is currently conducting a review of the proposed prices to be charged by Victoria’s water businesses for the period 1 July 2018 to 30 June 2023. Deloitte has been engaged by the ESC to review the expenditure forecasts made by the metropolitan businesses and regional urban water businesses. In undertaking this review, Deloitte’s key responsibilities are to:

- Assess the appropriateness of the expenditure forecasts in relation to the key objectives of the review
- Provide independent advice to the ESC regarding the appropriateness of the forecasts
- Where Deloitte’s advice indicates that a proposed expenditure level is not appropriate, propose to the ESC a revised expenditure level.

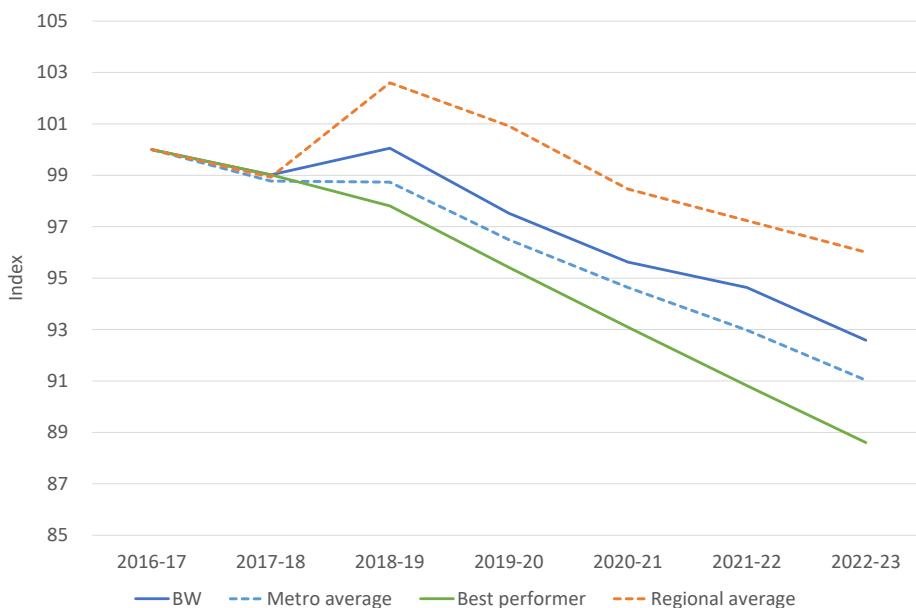
Operating expenditure (opex)

The key features of Barwon Water’s opex forecast include:

- A baseline 2016-17 of \$88.5m, which is significantly less than the benchmark set by the ESC in 2013 (\$98.5m)
- A forecast customer growth rate of 1.6% per annum
- A cost efficiency improvement rate that averages 2.3% per annum
- \$22.7m of additional expenditure above the baseline
- An improvement in controllable opex per connection of 1.3% per annum for RP4, after factoring in the additional expenditure.

The chart below shows that Barwon Water is forecasting opex increases that are above the average for metropolitan businesses. When compared to regional businesses, Barwon Water is below the average for regional businesses.

Figure 0-1 Change in controllable opex per connection – index



We have recommended a reduction of **\$9.86m** to Barwon Water’s RP4 forecast controllable opex, with the cuts relating to labour (\$7.90m) and electricity (\$1.96m). The key reasons for these recommendations are outlined in Chapter 3.

Capital expenditure (capex)

Barwon Water's proposed capex is decreasing by 13.5% for the RP4 period over that delivered in RP3. Key aspects of the capex forecast include:

- A reduction in overall renewals expenditure of 11.7%
- A larger proportion of much smaller major projects than in previous years with only one of the top 10 major projects greater than \$10m
- Programs of work are separately reported and not identified in the top 10 capital projects.

We have assessed Barwon Water's capital program and believe it to be well supported. As a result, we have not recommended any reductions to Barwon Water's RP4 forecast capex program.

The key reasons for these recommendations are outlined in Chapter 4.

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1 Introduction

1.1 Introduction

The Essential Services Commission (ESC) is currently conducting a review of the proposed prices to be charged by Victoria's water businesses for the period 1 July 2018 to 30 June 2023, referred to in this document as 'the next regulatory period' or fourth price submission period (RP4).

The businesses have submitted price submissions to the ESC for the RP4 period. The price submissions include forecasts of operating expenditure (opex), capital expenditure (capex) and demand, proposed service standards and prices.

1.2 PREMO framework

In RP4, the ESC is applying a new regulatory framework Performance, Risk, Engagement, Management and Outcomes (PREMO) for the first time. PREMO aims to put customer engagement at the centre of water corporation's proposals whereby service levels and expenditure must reflect outcomes that customers' value. The standard expectation here is that water corporations engage early and then re-test proposals in pricing submissions.

PREMO also provides a range of incentives on a number of levels to encourage businesses to:

- Reveal their efficient costs (and knowledge of efficiency opportunities), by rewarding businesses for both setting and achieving ambitious targets
- Avoid making ambit expenditure claims, as higher financial rewards are available for more ambitious proposals
- Prepare submissions of a high standard, to open the door for a fast-tracked regulatory process (and receive recognition for having done so).

The PREMO model incentivises businesses to self-select appropriate targets for operating parameters that make up the building block calculation. The ESC incentivises and rewards based on the relationship between the quality of the proposal and the return on equity – businesses have the flexibility to prepare their own combinations of service levels and expenditure, as long as these are fundamentally driven by delivering outcomes of value to customers.

The ESC's model also includes a fast-track process whereby the higher quality proposals are not subjected to a detailed review of expenditure (and other key items) but are instead fast-tracked to an early draft decision. In addition, of the businesses that were not fast-tracked, there is further differentiation on those businesses that only require a review on some elements of the proposal (e.g. specific items where expenditure is increasing) and those businesses that require a detailed review.

The expectations of water business proposals are further detailed in the ESC's guidance paper *2018 Water Price Review Guidance Paper November 2016 ('the Guidance Paper')*.

1.3 Scope of review

Deloitte has been engaged by the ESC to review the expenditure forecasts made by the metropolitan businesses and regional urban water businesses. In undertaking this review, Deloitte's key responsibilities are to:

- Assess the appropriateness of the expenditure forecasts in relation to the key objectives of the review
- Provide independent advice to the ESC regarding the appropriateness of the forecasts
- Where Deloitte's advice indicates that a proposed expenditure level is not appropriate, propose to the ESC a revised expenditure level.

In relation to opex, we have been asked to provide advice on whether the businesses are fulfilling their obligations and meeting customer service expectations as cost efficiently as possible and that forecast divergences can be readily explained. Although we have not been asked to review pricing outcomes,

which may be influenced by a number of factors in addition to expenditure, we have had regard to the factors outlined in the Commission’s guidance for the level of PREMO rating that has been proposed by Barwon Water. Benchmarking has been mainly undertaken on the basis of changes from the baseline expenditure identified by businesses as prudent and efficient.

In reviewing capex, we have focussed on the major projects that comprise a significant proportion of the total capex.

1.4 Overview of approach

1.4.1 Operating expenditure

Our approach to assessing opex for each business can be summarised as follows:

1. Determine an appropriate baseline year (2016-17) by examining the actual expenditure incurred by water businesses in 2016-17 and considering: 1) how it compares to the benchmark established by the ESC in the 2013 price review and 2) removing any abnormal items (that are not already accounted for)
2. Benchmark the overall opex package against peers in particular opex changes from the baseline and opex per connection. This benchmarking has regard to the net effect of efficiency targets, growth rates and adjustments for new opex initiatives.
3. Identify any individual items that are resulting in an increase in forecast expenditure from the 2016-17 baseline and assess the prudence and efficiency of these items. Any proposed expenditure that is above the baseline needs to be fully explained and justified. The types of expenditure that could be considered reasonable in terms of being above the baseline include:
 - a. New obligations from regulators or government (such as changes to the Statement of Obligations, taxes, etc.)
 - b. Customer preferences – where customers are willing to pay more for improved outcomes
 - c. Significant increases in costs that cannot be managed by the business.In assessing prudence and efficiency for each business, we have also benchmarked individual expenditure items with other water businesses where possible.
4. Identify cuts consistent with prudent and efficient expenditure.

A more detailed explanation of our approach to opex is set out in Section 3.1.

1.4.2 Capital expenditure

In forming a view as to whether capex meets the requirements in the WIRO, and consistent with advice in the ESC’s Guidance Paper, we have had regard to the following questions:

1. Does proposed capex reflect obligations imposed by Government (including technical regulators) or customers’ service expectations?
2. Are proposed new major capital works consistent with efficient long-term expenditure on infrastructure services?
3. Does the business have appropriate asset planning procedures?
4. Does the business have appropriate asset management systems in place?
5. Does the business have appropriate project management procedures in place to enable effective delivery of capital works?
6. Has a risk-based approach been adopted to develop the capex program? Is there clear evidence that projects are prioritised?
7. Are major projects consistent with long-term strategies and planning?
8. Is the timing for the proposed new capex reasonable?
9. Are individual project cost forecasts reasonable and do not include undue contingencies or provisions, and reflect current efficient rates for undertaking capex in the Victorian water sector?
10. Is the capex program deliverable in the timeframes proposed?

With respect to individual capex projects or programs, the ESC has requested that there be a focus on two items in particular – renewals expenditure and digital metering.

- **Renewals expenditure.** There are significant increases in renewals expenditure for some businesses (these businesses have also proposed a price rise). In some cases, this is linked to customer consultation, but for the most part this increase suggests that there are potential issues in asset management and planning. For these specific businesses, the focus of the expenditure review will be on decision making and decision-making tools.
- **Digital metering.** There are a number of proposals to roll out digital meters. Each proposal was reviewed in detail, particularly where businesses have proposed to undertake full rollouts. Each business case should have a sound basis and have undertaken adequate pilots or trials (e.g. non-residential or new developments first) to better understand costs and benefits.

In arriving at recommendations for reductions for each individual business' capital program, we have had regard to the following:

- Comparison of overall historical capex with that proposed for RP4. Where proposed capex exceeds historical projections, justification for these increases should be provided, namely in a requirement to meet new or expanded obligations or customer requests/engagement which has resulted in new service standards.
- Review of four of the Top 10 project business cases to provide an overview of the business case and project development process. It is expected that the business cases should also link to customer outcomes and service levels to justify the decision-making process and selection of individual projects. Further, where individual projects are not able to demonstrate suitable business cases, reductions to those projects will be recommended.
- A review of particular capex programs where increases above historical expenditure is proposed. Where this is not based on meeting new obligations, customer expectations, or rectifying declining performance of assets (evidenced by increased events such as spills, bursts and leaks), renewals programs will be proposed to be reduced to historical levels. Further, benchmarking of renewals programs will be used to review underlying costs for these programs across the businesses.

1.5 Process for review

Our review of opex and capex has involved the following key steps.

- Initial planning and workshop with the ESC
- An initial review of price submissions, financial model templates and associated documentation
- Benchmarking of water business submissions in relation to overall opex and capex and individual expenditure items
- A further workshop with ESC staff to identify and discuss key issues for the focus of the review
- Preparation of queries/areas for discussion which was subsequently provided to each water business prior to site visits
- A site visit of each water business with the key objective to discuss queries and gather information as required. Barwon Water's site visit was undertaken on 12 December 2017
- Detailed review and analysis of supporting information provided
- A Draft Report was prepared and provided to Barwon Water for comment.
- A Final Report (this report) provided to the ESC to inform the draft price determinations.

Through the process review, water businesses have been given some key opportunities to provide information to support their expenditure proposals. This included:

- Subsequent to final pricing submissions, and prior to our site visits, we wrote to each business identifying additional supporting information required
- During our site visits, businesses had the opportunity to present and provide information
- Following our site visits, there was the opportunity to provide further information on expenditure
- All businesses were provided with draft versions of our reports and recommendations and provided with 10 business days to provide further supporting information.

1.6 Structure of this report

This report describes our approach and sets out our findings from the review of Barwon Water’s price submission. It is structured as follows:

- Chapter 2 briefly summarises Barwon Water’s price submission with respect to expenditure forecasts and outlines key drivers of expenditure such as government obligations, service standards and demand forecasts
- Chapter 3 provides our analysis, conclusions and recommendations on key issues with respect to Barwon Water’s opex forecast
- Chapter 4 provides our analysis, conclusions and recommendations on key issues with respect to Barwon Water’s capex forecast.

Note that unless stated otherwise, all dollar figures shown in this report exclude the impact of inflation and are expressed in \$2017-18.

2 Summary of Barwon Water's forecast

This chapter provides a summary of Barwon Water's forecast expenditure including key underpinning assumptions such as efficiency, growth, service standards and demand.

2.1 PREMO rating

Barwon Water has rated its submission as 'Advanced' under the ESC's PREMO framework.

2.2 Key drivers of expenditure

2.2.1 Community expectations and service standards

Barwon Water is forecasting an improvement in some of its services, predominantly those that are customer facing (eBilling, first call resolution, SMS notifications and overall satisfaction).

2.2.2 Demand for services

Demand for services is increasing. This is as a result of customer growth which is 1.6% per annum over RP4 (based on *Victoria in Future 2016* population forecasts).

New capex is being proposed to meet increasing demand from customer growth and, as a result, there is new opex associated with this.

2.2.3 New obligations

Barwon Water has not identified any new obligations from regulators or government that require additional funding for this regulatory period.

2.2.4 Other drivers

In addition to the above, Barwon Water has identified the following as drivers of increased opex:

- Market forces impacting electricity tariffs
- Additional staff to enable greater customer engagement, improved business efficiency and strategic initiatives.
- The 2016 Enterprise Agreement, which includes wage increases above assumed CPI
- IT licence fees are forecast to be \$1m greater than expected from 2017-18.

2.3 Operating expenditure

2.3.1 Overview

The key features of Barwon Water's opex forecast include:

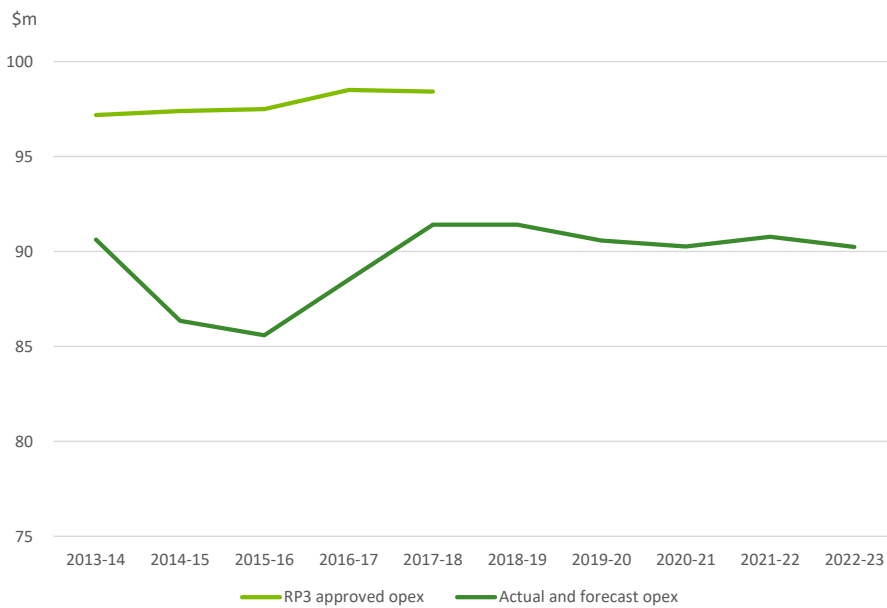
- Baseline controllable opex in 2016-17 of \$88.5m, which is significantly less than the benchmark set by the ESC in 2013 (\$98.5m)
- A forecast customer growth rate of 1.6% per annum
- A cost efficiency improvement rate that averages 2.3% per annum
- \$22.7m of additional expenditure above the baseline
- An improvement in controllable opex per connection of 1.3% per annum for RP4, after factoring in the additional expenditure.

2.3.2 Controllable opex forecast

The chart below shows Barwon Water’s total controllable opex across RP3 and RP4. After recording declining opex in the early years of RP3, there is a clear increase in opex from 2015-16 to 2017-18.

Barwon Water’s opex increase in RP4 is the net effect of a 0.7% efficiency rate (combined cost efficiency improvement rate of 2.3% and a customer growth rate of 1.6%) and \$22.7m of opex above the baseline (total for the 5 years). This results in an improvement in controllable opex per connection of 1.3% per annum.

Figure 2-1 Controllable opex – Barwon Water (\$2017-18)



2.4 Capital expenditure

2.4.1 Overview

Barwon Water proposed capex is a decrease of 8.7% for the RP4 period over the RP3 forecast and a decrease of 13.5% over the actual RP3 expenditure delivered. Key aspects of the capex forecast include:

- High expenditure in the first two years of the period continuing the expenditure levels delivered in RP3 with a 27% drop in expenditure to the final three years.
- Barwon Water have forecast a large increase in renewals expenditure. Renewals represents greater than 51% of the capex program.

2.4.2 Capex forecast

Barwon Water’s actual and forecast water and sewerage capex is shown in Figure 2-2. Total net capex for RP4 is forecast to be \$328.6m which represents an almost 8.7% reduction on RP3 forecast expenditure and a 13.5% reduction over the RP3 actual gross expenditure of \$380.12m. The key drivers of capex are renewals and growth related expenditure.

Figure 2-2 Capex forecast – Barwon Water (\$2017-18)



3 Assessment of opex

This chapter assesses Barwon Water’s forecast opex.

3.1 Overview of approach

With respect to opex forecasts, the ESC’s Guidance Paper outlines that a prudent and efficient opex forecast would have the following characteristics:

- Baseline year expenditure is reflective of efficient operating costs and is used as a basis to forecast expenditure
- Forecast opex incorporates expectations for a reasonable rate of improvement in cost efficiency
- Expenditure requirements above the baseline year (adjusted for growth and efficiency improvements) are fully explained and justified.

Under the approach adopted by the ESC, opex is disaggregated into four separate elements. The elements are:

- **Baseline expenditure** – operating expenditure incurred in 2016-17, adjusted upwards or downwards to reflect any specific factors that mean that expenditure 2016-17 is not representative.
- An adjustment for **customer growth** – the ESC generally considers that increases in opex in line with customer growth are reasonable. This is a conservative assumption, and arguably generous to the water businesses, as many costs of operating water and sewerage systems are fixed or would be expected to grow at a lower rate than customer growth.
- An **efficiency improvement factor** – reflecting general productivity improvements across the economy, the ESC expects water businesses to achieve year-on-year productivity improvements. Businesses are free to propose their own individual improvements.
- **Cost increases** – for example those arising from new obligations imposed by regulators or government, major increases in costs which it is not reasonable to expect the business to absorb or manage within the ebb and flows of expenditure from year to year, or new initiatives that customers seek and are willing to pay for.

Our task is primarily to review both the baseline expenditure and the cost increases, and then to consider these in the context of the net impact of all the above factors. For example, we are more likely to consider an opex forecast to be reasonable for a business with a low efficiency improvement factor, but an intention to absorb additional expenditure items within its overall expenditure budget, rather than a business with a higher efficiency factor but cost increases for a large range of items that are not being required by regulators or sought by customers.

The concept of baseline expenditure is that it is the level of expenditure necessary to provide a defined level of service. Implicit is the assumption that the actual activities undertaken by a business from year to year to deliver services will change and there will be a number of once-off areas of expenditure in any one year that are not required every year. For example, a business may prepare a sewerage strategy in one year, prepare a water supply demand strategy in another, and do a number of once-off repairs in another year. That is, there will be a number of minor inclusions and exclusions from year to year associated with the normal ebb and flow of work requirements and changes in the industry and wider business environment. Given this, and the additional allowance provided for customer growth, it is therefore not the case that businesses should simply be able to recover increases in all opex line items. An efficient business would be expected to absorb many of these increases within their baseline and growth allowance.

The box below provides a hypothetical and simplified example of the above. Data is only shown for a single year, but the same principle applies across all five years of the RP4 period. Under the example

below, and all other things being equal, we would be more likely to recommend reductions to Business A's expenditure, despite it having a nominally higher efficiency factor.

Figure 3-1 Example of adjustments to baseline expenditure in ESC template

	Business A	Business B
Customer growth (%)	2.0%	1.0%
Proposed efficiency factor (%)	3.0%	1.5%
Growth-efficiency factor (%)	-1.0%	-0.5%
Cost increases (\$m)	4	0.3

	Business A (\$m)	Business B (\$m)
2016-17 Expenditure	100.0	100.0
2016-17 Adjustments	1.0	-2.0
Baseline expenditure	<u>101.0</u>	<u>98.0</u>
Growth-efficiency adjustment	-1.0	-0.5
Growth adjusted expenditure	<u>100.0</u>	<u>97.5</u>
Cost increases	4.0	0.3
Proposed expenditure	<u>104.0</u>	<u>97.8</u>
Change compared to baseline	3.0	-0.2

The tools and approaches we have applied to consider each of the elements and the overall proposed opex package include:

- Benchmarking – of both the level of costs, and changes in costs, against historic and peer expenditure
- Comparing business forecasts to independent forecasts of changes in key expenditure items (for example labour and energy)
- Reflecting government and regulator policies and requirements
- Considering information on current service levels, customer preferences and willingness to pay
- Reviewing individual items of expenditure on a case-by-case basis.

Generally, we note that from an opex perspective, cost pressures on water businesses at this time are weak. Many cost increases that were anticipated at the commencement of RP3 largely did not eventuate. Increases to energy costs aside, inflation is currently weak, wages growth across the economy is at historically low levels, and there are few if any material changes in regulatory obligations that will increase costs. Only a small number of businesses have major capital works that will materially increase operating costs.

While we have examined the costs proposed by each business on its merits, we do hold the view that the current environment provides a strong opportunity for businesses to tightly control their costs and achieve (growth-adjusted) efficiencies. There are a range of systemic opex issues that are material for all businesses. Regardless of whether there are cost increases for these items, they have been reviewed for each business:

- **Labour costs.** Given labour costs are a significant component of opex, each businesses labour forecast has been reviewed, in particular how EBAs have been treated, Victorian Government wages policy, salary progressions, vacancy rates and other expectations from the government.
- **Energy costs.** Energy costs are expected to increase for all businesses particularly in the first year or two of RP4, however the magnitude of the increase is presently uncertain. Given this inherent uncertainty, our review provides indicative adjustments only. Final adjustments will be made by the ESC between its draft and final reports based on actual contract quotes.
- **Emission reduction programs.** Businesses have been asked by the Victorian government to reduce emissions from energy use via various means and most have proposed to do so. We have reviewed these proposals and checked that reductions in energy use are accounted for

(capex and opex must be aligned), appropriate feed in tariffs are used, and any Government funding support is reflected.

- **Savings in RP3.** A number of businesses appear to have made temporary savings in RP3, but have not maintained them through the end of RP3, and are not forecasting to maintain them for RP4. We have identified where this is the case.

3.2 Errors and adjustments to the submitted template

The ESC provided an amended financial template that corrected an error in Barwon Water’s financial model that treated finance lease costs for a biosolids plant as non-controllable opex. This was included in controllable opex. This amendment resulted in changes to controllable and non-controllable opex only, with no change to total prescribed opex. The quantum of this amendment was an increase of \$5.23m in controllable opex for 2016-17 (baseline year), decreasing over RP4 to an increase of \$3.92m in 2022-23.

3.3 Assessment of baseline expenditure

As outlined above, the first step in our approach to assessing baseline expenditure is to define efficient expenditure in the base year of 2016-17.

Barwon Water’s actual controllable opex was \$88.94m in 2016-17. Barwon Water has reduced this by \$0.43m to reflect reductions in rental payments due to cessation in rental of Malop and Mercer Street properties. This results in a baseline of \$88.51m for 2016-17.

In its 2013 price review, the ESC set a benchmark of \$98.5m. Barwon Water’s baseline expenditure is significantly lower than this benchmark, and has been achieved by introducing efficiency measures as part of the government’s water rebate program – which saw between \$50 and \$90 returned to residential customers in the first bill of each year between 2014-15 to 2017-18.

We have assessed Barwon Water’s 2016-17 baseline and we believe that it reflects an efficient baseline and therefore consider no further adjustment is necessary.

3.4 Benchmarking opex to other water businesses

A key component of our methodology is to benchmark the opex outcomes of the water businesses. Figure 3-2 below compares the metropolitan water businesses change in controllable opex per connection over RP4.

This figure below shows that Barwon Water (BW in the chart) is forecasting opex increases that are above the average for metropolitan businesses. When compared to regional businesses, Barwon Water is below the regional average.

Table 3-1 compares all of the Victorian water businesses and shows that Barwon Water is forecasting an improvement in controllable opex per connection of 1.3% per annum for RP4, which results in costs per connection being 7.4% lower in 2022-23 than in 2016-17.

Figure 3-2 Change in controllable opex per connection – index

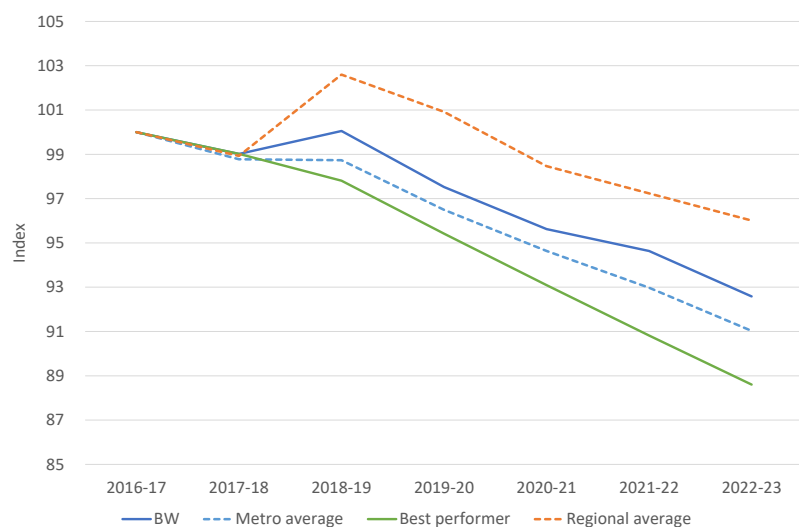


Table 3-1 Comparison of Victorian water businesses change in controllable opex

Water business	Efficiency target	Growth rate (% per annum)	Forecast variations to baseline	Reduction in controllable opex per connection
	(avg. % per annum)		(total RP4 \$m)	(avg. % per annum)
Westernport	2.7%	1.9%	0.00	2.6%
Yarra Valley	2.5%	1.7%	8.61	2.2%
South East	2.3%	2.3%	9.58	1.8%
Goulburn Valley	3.1%	1.3%	10.12	1.5%
Barwon	2.3%	1.6%	22.67	1.3%
Lower Murray – urban	1.0%	1.1%	0.26	1.2%
City West	2.0%	2.6%	20.66	1.1%
Coliban	1.5%	1.7%	8.55	1.0%
North East	1.2%	1.2%	6.24	0.9%
East Gippsland	1.2%	1.3%	1.91	0.9%
GWMWater – urban	1.5%	0.5%	8.73	0.8%
Central Highlands	1.6%	1.6%	12.71	0.6%
South Gippsland	1.5%	1.5%	7.03	0.0%
Gippsland	1.0%	1.2%	16.78	-0.2%
Wannon	1.0%	0.8%	25.41	-1.8%

Note: GVM forecast variations are adjusted for its \$2.3m p.a. efficiency dividend

3.5 Individual opex items

The previous section identified the changes to opex above baseline expenditure. Barwon Water has identified \$22.7m of expenditure in RP4 above the baseline. Key items to be reviewed as part of that increase include:

- Labour - \$7.9m
- Electricity - \$5.0m
- Gas costs associated with biosolids - \$6.2m
- Customer preferences - \$6.9m

These items will be explored further in this section.

3.5.1 Labour

Barwon Water has forecast labour cost increases above the baseline of \$7.9m over RP4. Barwon Water has outlined that the reason for this additional expenditure is because its enterprise agreement includes increases that are above inflation for the next three years.

A comparison of Barwon Water’s labour forecast to other water businesses shows that Barwon Water is forecasting the sixth highest labour increase of all the water businesses for RP4 (as a % of total controllable opex). Barwon Water’s forecast variation represents 1.7% of its total controllable opex.

Table 3-2 Comparison of labour forecast for RP4 of the Victorian water businesses

Water business	Forecast variations to baseline opex (total RP4 \$m)	Total controllable opex (total RP4 \$m)	Labour variations as a % of total controllable opex
Wannon	11.85	201.8	5.9%
Gippsland	10.59	364.2	2.9%
Goulburn Valley	5.90	220.2	2.7%
North East	3.62	196.6	1.8%
GWMWater	2.85	161.1	1.8%
Barwon	7.90	453.3	1.7%
Central Highlands	3.80	266.0	1.4%
East Gippsland	0.32	90.4	0.4%
South Gippsland	0.12	95.8	0.1%
City West	-	534.7	0.0%
South East	-	622.6	0.0%
Yarra Valley	-	674.4	0.0%
Coliban	-	301.3	0.0%
Westernport	-	66.5	0.0%
Lower Murray – urban	- 0.37	103.2	-0.4%

As outlined above, proposed expenditure should only be added to the baseline where the water business can demonstrate that it is required (e.g. new obligation, customer preference or cost that cannot be managed). All Victorian water businesses are owned by the State Government and are subject to the same wages policy, which is overseen by DELWP and DTF. We would therefore expect to see a similar application of this wages policy across all water businesses.

We note that for most if not all water businesses, wage increases established under current EBAs (which are typically in the range of 2.5% to 3.25%) are well above inflation, and are also higher than average growth in wages across the economy. While commentators (including Deloitte Access Economics’ own forecasts) expect wages growth to slowly increase over time, most businesses forecasts of wages growth are higher than those projected for the broader economy for the next few years.

We accept that water businesses are legally obliged to comply with wage increases set out in EBAs. At the same time, our view is that passing through to customer prices wage increases which, it appears, will for several years be well above wage increases in the broader economy, is unlikely to be prudent and efficient. We also consider that pass through of these costs to customers would be inconsistent with the PREMO framework, which requires businesses to demonstrate that they have actively sought to reprioritise expenditure to mitigate the cost and price impacts of any new obligations. There are a range of factors that we consider could mitigate EBA increases, for example:

- EBAs don’t necessarily cover all staff in the business
- Businesses have options for delivering services that can reduce the cost impact of EBAs, such as contracting or outsourcing
- We understand that EBAs often have provisions that require increases above inflation to be accompanied by improvements in productivity.

We also note that most businesses have effectively ‘absorbed’ their above-CPI wage increases within their overall opex forecasts through productivity increases or other cost reductions, meaning that these increases are not passed on to customers. We believe this is a prudent and efficient approach and accordingly we have generally recommended reductions in opex forecasts for those businesses that have proposed wage-driven variations above their growth-adjusted baseline.

3.5.2 Electricity and carbon neutrality program

Barwon Water has forecast expenditure for electricity to increase by a total of \$5.02m in RP4 compared to the 2016-17 baseline. This reflects an increase in each year of the period, with the highest annual increases forecast for 2018/19 and 2019/20 respectively.

Overall, this variation reflects an increase of 1.1% of total proposed controllable opex, with Barwon Water one of six water businesses to propose a variation to the baseline of 1% of controllable opex or larger. The table below presents a comparison of Barwon Water’s forecast energy variations relative to the baseline to the other water businesses over RP4.

Table 3-3 Comparison of energy forecast for RP4 of the Victorian water businesses

Water business	Energy costs as a % of 2016-17 controllable opex (\$m)	Forecast variations to baseline opex (total RP4 \$m)	Total controllable opex (total RP4 \$m)	Energy variations as a % of total controllable opex
Wannon	7.6%	5.1	201.8	2.5%
Central Highlands	7.4%	5.5	266.0	2.1%
Coliban	6.6%	5.5	301.3	1.8%
Gippsland	4.7%	6.2	364.2	1.7%
Lower Murray – urban	8.3%	1.6	103.2	1.6%

Water business	Energy costs as a % of 2016-17 controllable opex (\$m)	Forecast variations to baseline opex (total RP4 \$m)	Total controllable opex (total RP4 \$m)	Energy variations as a % of total controllable opex
Barwon	4.7%	5.0	453.3	1.1%
Goulburn Valley	9.6%	1.7	220.2	0.8%
North East	10.1%	1.3	196.6	0.7%
City West	1.5%	3.0	534.7	0.6%
GWMWater	7.9%	0.8	161.1	0.5%
South Gippsland	4.5%	0.2	95.8	0.2%
East Gippsland	5.1%	0.1	90.4	0.1%
South East	3.3%	-	622.6	0.0%
Yarra Valley	4.0%	-	674.4	0.0%
Westernport	4.2%	-	66.5	0.0%

Some key aspects of the electricity forecast are outlined below.

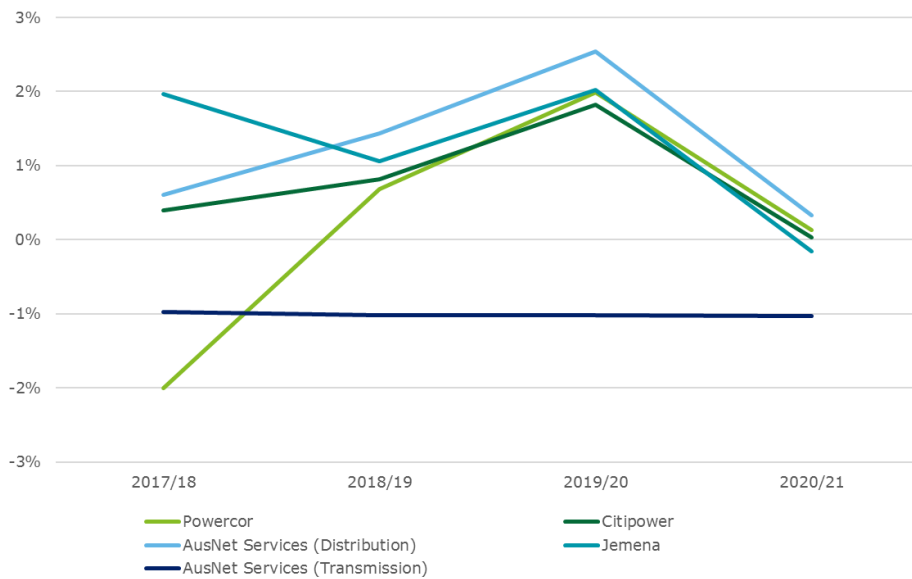
- Barwon Water’s current contract to purchase electricity expires on 30 June 2018 and is currently uncontracted beyond that point.
- Barwon Water’s retail electricity price forecast is based on a report prepared by Savvy Plus Consulting that included a tailored retail electricity price forecast.¹ This report provides a forecast of electricity prices and cost based on forecast consumption. Consumption and cost for each site is forecast separately and added to provide a total, along with adjustments for new and closing sites. This report uses the wholesale price forecast from a report prepared by Jacobs for the Australian Energy Market Operator in May 2016, *Retail electricity price history and projections – Public*. However, the Jacobs report was published before significant changes in the Victorian electricity market, including the closure of the Hazelwood Power Station in March 2017, so adjustments were made to reflect contemporary market conditions.
- Retail electricity prices are forecast to reach a peak in 2018-19, before declining somewhat each year to 2020-21 (although still significantly above 2016-17 levels), and rising again in the last two years of RP4. This is driven largely by forecast wholesale electricity price movements.
- A fourth treatment tank at the Black Rock Water Reclamation Plant is planned to be brought online in 2019-20, and Barwon Water has sought additional opex to cover the associated electricity consumption. This is included in the net variation sought by Barwon Water.
- Barwon Water has proposed a number of renewable energy projects over RP4, with a total value of \$15.4m over the forecast period. This is part of Barwon Water’s Climate Change Mitigation Plan, with a target of 100% renewable energy by 2025. These projects are forecast to reduce electricity consumption by up to 5,428 MWh per annum by 2022-23.
- Six out of the 15 Victorian water businesses that provided submissions proposed either zero or negligible increases in energy costs above the baseline.

Electricity prices in Victoria have risen significantly over the last year, driven largely by increases in wholesale electricity prices. There is considerable uncertainty around how prices will change over RP4, due to a range of factors including policy uncertainty, fuel prices including coal and natural gas, and the potential entry and exit of generation capacity. This makes it difficult to accurately forecast electricity prices for the purposes of the price submission.

¹ Savvy Plus Consulting, *Electricity cost forecast 2016/17 to 2022/23*, May 2017

In Victoria, transmission network services are provided by AusNet Services, and distribution network services are provided by one of the five distribution network service providers (DNSPs, AusNet Services, CitiPower, Powercor, Jemena and United Energy) in different parts of the state. Network prices are determined by the Australian Energy Regulator (AER). The AER made final decisions on revenue allowances for the five DNSPs in May 2016 for the 2016-20 period², and made a final decision for AusNet Services (transmission) in April 2017 for the 2017-22 period. The annual change in smoothed revenue allowances for each of the network businesses is presented in Figure 3-3 below.

Figure 3-3 Annual change in expected revenue (smoothed, real \$2017-18)



Source: Deloitte analysis of AER decisions

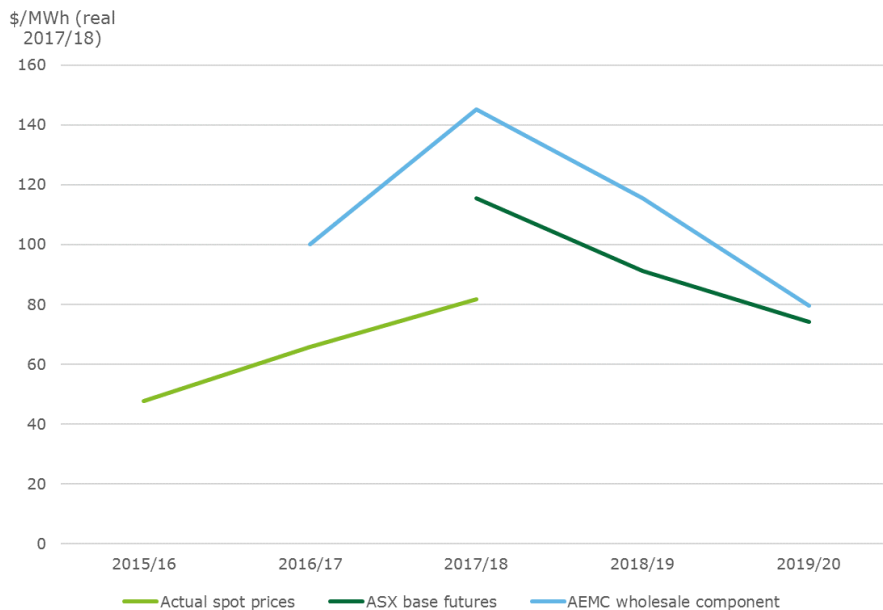
Overall, the revenue allowances for the network business is relatively flat, with small real increases for most of the DNSPs, and a small real decrease for AusNet Services Transmission. Barwon Water is in the Powercor distribution network, which has small real revenue increases from 2017-18 onwards (slightly greater than 1% average). The change in price for particular customer types may differ from this overall trend, however it is broadly in line with Gippsland Water’s forecasts.

Wholesale prices are harder to forecast accurately, with a wide range of forecasts produced by different bodies over the past year. The Australian Energy Market Commission (AEMC) recently published a wholesale electricity price forecast (including spot prices, hedging, ancillary services and market fees) in its annual report on residential electricity price trends, based on analysis prepared by Frontier Economics.³ It forecasts wholesale prices to peak in 2017-18, before decreasing, falling below the real 2016-17 price by 2019-20. This forecast movement in wholesale electricity prices is broadly in line with the price of Victorian ASX base energy futures which are approximately \$115 for the remainder of 2017-18, decreasing to \$74.2 by 2019-20. These values are presented in Figure 3-4, along with actual average spot prices up to December 31 2018.

² The AER made a mathematical error in the inflation calculation in these decisions. It has proposed to revoke the decisions and substitute new determinations correcting the error by March 1 2018. We don’t expect this to have a material impact on electricity prices.

³ AEMC, 18 December 2017, *Final Report 2017 Residential Electricity Price Trends*

Figure 3-4 Wholesale electricity prices and electricity futures in Victoria



Source: Deloitte analysis of: AEMO data collected through NEOExpress, AEMC 2017 Residential Electricity Price Trends data, and ASX energy futures data accessed 17-01-2018

However, some publicly available reports provide quite different outlooks from the AEMC report. A September 2017 report prepared for the Australian Energy Market Operator (AEMO) by Jacobs forecast wholesale market prices to continue to increase to a peak in 2019-20, with retail prices following a similar trajectory.⁴ This is an update to the report referred to in the SavvyPlus report. The divergence of views on wholesale costs reflects the overall uncertainty in the market, as well as quickly changing market conditions and expectations. In our analysis, we have placed more weight on the AEMC outlook as this is the more recent analysis.

In reviewing Barwon Water’s proposal, we have considered the evidence provided by Barwon Water and recent forecasts of network and wholesale price movements. We consider that its proposed price variation for 2018-19 and 2019-20 (which are in the order of 30% on 2016-17 prices based on reported consumption and expenditure at existing sites) are reasonable, and our preliminary recommendation is that these are approved, subject to updated actual contract prices before the final decision.

We do not consider there is strong evidence to support a continued price increase beyond 2019-20 that could not be managed. Barwon Water has proposed a substantial capital program to reduce electricity expenditure, the majority of which is forecast to be online by 2020-21. We note that the savings from this are included in the proposed variation. Therefore in considering electricity prices and consumption together, we recommend that no net variation should be approved from 2020-21 to the end of RP4. However, as noted earlier, Barwon Water proposed a variation for increased expenditure on electricity for the fourth tank at the Black Rock Water Reclamation Plant, of approximately \$0.12 per annum. We consider that the large step change in costs associated with the tank is reasonably considered additional to the growth allowance, and therefore we recommend that this variation is approved.

Overall, our recommendation is that the variation for years 2020-21 onwards be reduced to the amount for Black Rock Water Reclamation Plant only, approximately \$0.12m per annum. This results in a reduction of \$2.0m over RP4 from Barwon Water’s proposal. These adjustments are outlined in Table 3-4. We note that the ESC intends to make a decision on allowable energy cost increases using

⁴ Jacobs, 21 September 2017, *Retail electricity price history and projected trends*

updated contract offers post the finalisation of our reports. Therefore, our recommendations are indicative only.

3.5.3 Increases in gas costs

Barwon Water has included a forecast increase of \$6.2m over RP4 for higher gas prices associated with its biosolids operations. Barwon Water sought tenders for new gas prices in March 2017, which resulted in significantly higher quoted prices from only one supplier. Barwon Water sought further advice which suggested that these price increases were reasonable given the state of the gas market. A re-tender was issued in late April 2017, with prices offered in May. Barwon Water accepted the re-tendered price which has resulted in this significant cost increase.

Based on the evidence provided by Barwon Water, we believe that this cost increase has been sufficiently justified due to the magnitude of the increase and the means by which Barwon Water sought to contract the price.

3.5.4 Customer preferences

Barwon Water have proposed \$6.9m above baseline expenditure for customer preferences. These were the subject of consultation with customers in the lead up to the price submission. The customer preferences included the following:

- Increasing assistance to vulnerable customers - \$2.5m
- Expansion of the water efficiency program - \$2.5m
- Protecting the environment through river restoration - \$0.56m
- The creation of a sewer incident scheme - \$0.88m
- Encouraging greater use of recycled water - \$0.5m

Barwon Water has consulted thoroughly with its customers on these initiatives, over many iterations, with the sufficient level of information provided to ensure an informed recommendation is made. We therefore consider this additional expenditure to be appropriate and recommend no change.

3.5.5 Barwon Water response to Deloitte draft report

Barwon Water provided a response to our draft report regarding its proposed cost efficiency factor, which was 2.3% in its submission. Barwon Water contend that its overall controllable opex forecast represents its best offer to customers. It argues that had it not included the additional costs relating to labour and electricity above the baseline, it would have offered a lower efficiency improvement rate of 1.5%.

As this matter effectively relates to a change in Barwon Water's submission it is best resolved by the ESC in finalising its draft decision.

3.6 Recommended changes to forecast opex

The table below summarises the changes to opex above baseline expenditure. We have recommended a reduction of \$9.86m to Barwon Water’s RP4 forecast controllable opex as per the table below.

Table 3-4 Barwon Water forecast controllable opex and recommended adjustments

Opex item	Actual Price submission forecast					Total	
	Baseline 2016-17	2018-19	2019-20	2020-21	2021-22	2022-23	RP4
Proposed controllable operating expenditure (\$m, original proposal)	83.28	86.54	85.91	85.83	86.58	86.32	431.18
Corrections to template	5.23	4.88	4.67	4.44	4.19	3.92	22.10
Proposed controllable operating expenditure (\$m, revised template)	88.51	91.42	90.58	90.27	90.78	90.24	453.28
Recommended adjustments							
Labour		-1.28	-1.49	-1.71	-1.71	-1.71	-7.90
Electricity				-0.56	-0.69	-0.72	-1.96
Total recommended adjustments		-1.28	-1.49	-2.26	-2.40	-2.43	-9.86
Recommended operating expenditure		90.14	89.08	88.01	88.38	87.81	443.42

Notes: Controllable opex excludes licence fees, environmental contribution and bulk water costs.

4 Assessment of capex

This chapter of the report sets out our assessment of Barwon Water’s capex proposal for RP4 including:

- Our approach to the assessment of capex
- An overall assessment of capital planning and asset management approach
- A summary of major projects with a significant impact on the capex proposal (top four by total expenditure) and assessment of each project
- A summary of our recommendations.

4.1 Our approach to the assessment of capex

Our approach to assessing capital expenditure is set out in Section 1.4.2., while this section provides some specific detail on the requirements of the ESC Guidance Paper. In relation to capital expenditure, the Guidance Paper includes the following instructions to businesses:

- Avoid including speculative capital expenditure. That is, where projects are not fully scoped, costed or internally approved (for example, though an approved business case) businesses should consider including only development costs, development costs with a notional allowance for construction, or not at all (relying instead on adjustments for uncertain and unforeseen events)
- Include only capital expenditure that 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**). Prudent and efficient capital expenditure has the following characteristics:
 - is based on a P50 cost estimate
 - has an optimised contingency allowance
 - for renewals, is based on a reasonable rate of improvement in cost efficiency
 - has the risk of project delays and cost overruns managed through contractual arrangements
- Identify expenditure by major service category and by cost driver – renewals, growth and improvements/compliance – including current and forecast expenditure
- Identify expenditure by either major projects (top 10), capital programs (ongoing work) or other capital expenditure (smaller projects or programs)
- Provide supporting information for projects / programs including:
 - Project name, scope, and major service and asset category
 - Justification for project including cost driver
 - Start and completion dates (for projects)
 - Total capital cost itemising government and customer contributions by each year
 - Historical annual costs and explanations for increases / decreases in average annual expenditure (for programs)
 - Objectives of project as aligned with customer outcomes
 - Business case outlining options considered and approach to identifying optimal solution
 - Risk assessment approach
 - Incentive / penalty arrangements (for projects)
 - Tendering arrangement (for projects)
 - List of projects included in program for next regulatory period with business cases and options analyses (for programs)
- Justify the total forecast capital expenditure with reference to the characteristics of prudent expenditure identified above, taking into account forecast demand, benchmarking, and the substitution possibilities between capital expenditure and operating expenditure.

We have applied these specific requirements to our assessment of each businesses’ forecast capital expenditure.

4.2 Overall assessment of capital planning and asset management

4.2.1 Previous Review of Expenditure 2012-13

Barwon Water's key capital planning systems and processes were reviewed as part of the assessment of expenditure forecasts for regional urban businesses in 2012-13 for RP3. This assessment looked at high level, generic issues that might have impacted on the prudence, efficiency and deliverability of proposed expenditure. The 2012-13 review highlighted:

- Barwon Water's capital program is contained within the Capital Works Investment Plan (CWIP) which is a rolling 10 year program of works
- Projects can be added to the CWIP at any time through the TechOne interface. A Project Justification form must be attached which describes the project and assesses the associated risks
- Descriptions of options assessments in the Project Justification form are brief and typically reference consultant's reports
- The quality of options assessments are variable depending on the project and each project needs to be assessed separately.
- Barwon Water's asset management systems are reasonably robust with FOCUS (a works database) used for water mains replacement management and SIMS (Sewer Infrastructure Management System) used to manage sewer main replacements.
- Key recommendations from the last asset management audit included the development of an overall Asset Management Strategy, development of an Asset Maintenance Strategy and Plan, and further development of the Asset Management Systems.

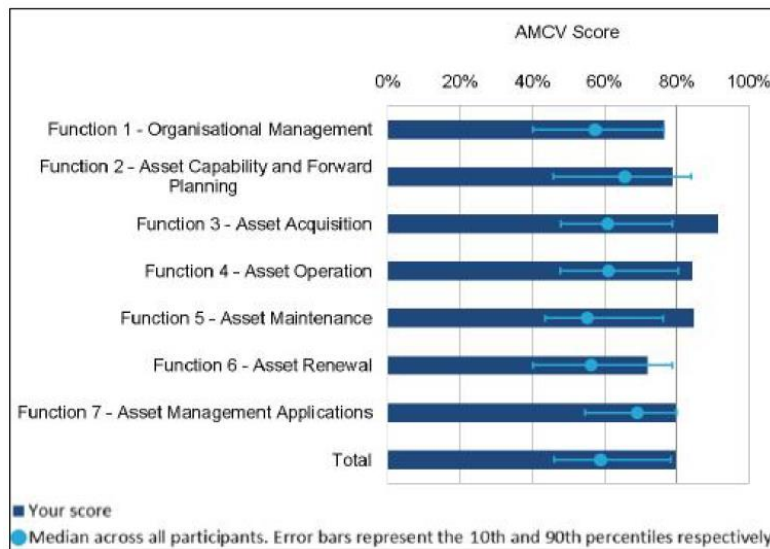
4.2.2 Improvements over 2012-13 to 2017-18

For this current review, we requested Barwon Water provide details on any improvements made to capital planning systems and processes since the 2012-13 review. In response, Barwon Water identified the following improvements:

1. Project prioritisation – key improvements since the 2013 price review include:
 - a) Business case review undertaken by Inside Infrastructure for all major projects. This included assessment of strategic alignment, quality of options and scoping, risk, financial robustness, deliverability and prudence and efficiency. There were four major projects identified as being 'uncertain' through this process and these were excluded from Barwon Water's capex forecast in the Pricing Submission. This is documented in "*Barwon Water PS18 Review of Top 16 CAPEX Projects: Prudence and Efficiency Report*" Inside Infrastructure 2017.
 - b) Uncertain projects excluded from capex forecast (see comments above)
 - c) Alignment of plan to customer outcomes identified and agreed through an extensive customer engagement program
2. Project costing and risk assessment – risk based cost estimating approach (utilising Monte Carlo simulation) was utilised for all major projects and programs.
 - a) Capex forecasts for the Pricing Submission for all major projects were based on the P50 cost estimate outputs from the Monte Carlo simulation.
 - b) A review of Barwon Water's standard cost estimating tools and templates was also completed by CMP (in association with quantity surveyor MBM). This included review of appropriateness of allowances for project overheads and review of contingency allowances utilised for smaller projects to ensure that estimates adopted for the pricing submission do not include conservative contingency allowances. This review identified that BW's adopted contingency allowances are low compared to what CMP would recommend.
3. Asset management
 - a) asset management plans were developed for all key asset categories to provide robust justification of the appropriateness of the level of investment required in the Pricing Period to meet the level of service outcomes and informed the key CAPEX program investments proposed. The scope and coverage of these asset management plans has increased significantly from previous pricing periods.

- b) Barwon Water participated in the Water Services Association Australia (WSAA) international asset management process benchmarking project in 2016, along with 42 other businesses. Barwon Water’s asset management processes benchmarked very favourably compared to the other participating organisations as shown in Figure 4-1 below:

Figure 4-1 Barwon Water’s Asset Management Benchmarking Performance AMCV 2016



Source: Barwon Water 00.0.0 ESC Review – Barwon Water responses (14 December 2017) MAIN.docx

4.2.3 Comments

Barwon Water continue to make progress improving their capital planning systems and processes. This is evidenced in the incremental achievements made since the 2012-13 review process and in Barwon Water’s performance in the AMCV benchmarking process.

Overall, Barwon Water’s capital planning approach and processes are generally in line with or better than the 90th percentile performing businesses while in asset capability and forward planning of assets and asset renewal Barwon Water still scores well above the median business.

4.3 Major projects

Table 4-1 provides an overview of the top ten projects (as identified by Barwon Water in their Price Review Template), showing the primary driver and forecast expenditure over RP4. The table also identifies the proposed capital allocations for large programs of work (defined as being over \$2m in total expenditure over the five year regulatory period) and minor programs of work (being under \$2m in expenditure over the five year period). The criteria for defining the major and minor programs of work have been developed by Deloitte based on Barwon Water’s regulatory submission.

The projects / programs selected for more detailed review and commentary can be found in Sections 4.3 and 4.6.

Table 4-1 Barwon Water forecast capex for Top 10 Projects

Capex item	Primary Driver	Water Plan forecast expenditure					Total RP4	% of total
		2018-19	2019-20	2020-21	2021-22	2022-23		
Colac Pipeline Upgrade	Renewals	0.31	3.06	0.45	2.27	0.23	6.32	11.0%

Capex item	Primary Driver	Water Plan forecast expenditure					Total RP4	% of total
		2018-19	2019-20	2020-21	2021-22	2022-23		
Colac WTP Clear Water Storage Upgrade	Improvement / Compliance	3.06	3.00	0.00	0.00	0.00	6.07	10.5%
Forrest WTP Upgrade	Renewals	0.00	0.00	0.66	3.59	0.23	4.48	7.8%
Gellibrand WTP Upgrade	Renewals	0.00	0.78	4.09	0.26	0.00	5.14	8.9%
Black Rock Renewable Energy Project Stg2	Improvement / Compliance	0.49	4.45	0.00	0.00	0.00	4.94	8.6%
BRWRP Effluent Storage	Growth	0.00	0.00	0.00	0.58	4.48	5.05	8.8%
Colac WRP Sludge dewatering upgrade	Growth	0.26	3.96	0.00	0.00	0.00	4.21	7.3%
Telemetry RTU PLC HMI Hardware & Software	Renewals	0.00	0.00	2.04	2.50	0.00	4.54	7.9%
Property Realisation (Scenic Rd Highton)	Renewals	1.13	6.65	5.11	0.00	0.00	12.89	22.4%
Property Realisation Thornhill Rd Highton	Renewals	3.87	0.00	0.00	0.00	0.00	3.87	6.7%
Subtotal - Top 10 Projects		9.13	21.91	12.36	9.19	4.94	57.52	17.5%
Other large projects/ programs (>\$2m)		45.81	33.04	28.86	25.97	30.54	164.22	50.0%
Other minor projects/ programs (<\$2m)		31.11	24.12	16.35	15.26	20.06	106.89	32.5%
Total		86.04	79.07	57.57	50.42	55.53	328.63	
Top 10 proportion of annual expenditure		10.6%	27.7%	21.5%	18.2%	8.9%	17.5%	

4.4 Renewals expenditure

Renewals is a significant program for Barwon Water with expenditure representing over 51% of the total capex for RP4. The renewals program is driven by the age, condition and performance of the assets. Network reliability performance has remained steady during the current regulatory period and while sewer performance has deteriorated a little, Barwon Water stated in its RP4 Submission that this deterioration does not indicate a requirement to increase capital expenditure for renewals.

Renewal expenditure forecasts are undertaken using a portfolio approach with the key portfolios representing the key asset classes:

- Linear networks small diameter – water and sewer reticulation pipes – run to failure strategy
- Linear assets large diameter – major water and sewer mains and rising mains – avoid failure strategy
- Mechanical and electrical assets – pumping stations and electrical switchboards – avoid failure strategy
- Treatment facilities – water treatment and wastewater reclamation plants – with asset dependent strategies consistent with the above three classes

Barwon Water’s water mains renewal program continues to be forecast using the well-established CSIRO developed Pipeline Assets Risk Management System (PARMS) while sewer mains renewals are forecast based on the internally developed Sewer Infrastructure Management System (SIMS).

The key renewals program expenditure is increasing from historical levels with Barwon Water's pricing submission identifying the various capital programs, their historical and forecast expenditure, and providing brief reasons as to why these programs differ from the historical expenditure.

Overall, renewals expenditure delivered in RP3 (\$191.1m) was significantly higher than originally forecast (\$154.4m) with the proposed expenditure for RP4 (\$168.7m) representing a decrease on what was actually delivered.

4.4.1 Analysis

Barwon Water is proposing an increased renewals program in RP4 over what was originally forecast for the current regulatory period and what was originally forecast for the RP4 period. In preparing its RP3 pricing submission, Barwon Water stated that the significant investment in renewals made in the 2008-2013 regulatory period had led to a lower renewal expenditure required for the RP3 period (\$154.4m) and was also forecast to result in a further reduction of 28% for renewals expenditure in the 2018 period (to \$110.9m).

In contrast to this original expectation, Barwon Water delivered a renewals program in RP3 (\$191.1m) which was almost 24% higher than the RP3 forecast (\$154.4m) and are now proposing a renewal program for RP4 (\$168.7m) which is almost 10% higher than the RP3 forecast (\$154.4m) and over 52% higher than the original 28% reduced RP4 forecast (\$110.9m). As a result, the proposed RP4 renewals expenditure can now be stated to be an 11.7% reduction on previous expenditure.

The only major renewals project identified by Barwon Water which would not have been expected at the commencement of RP3 is the refurbishment of the Ryrie Street office complex however no total expenditure related to this project was provided by Barwon Water.

Barwon Water's proposed expenditure on water reticulation mains of \$15.5m is a 25% reduction compared to expenditure in the current period while proposed expenditure on sewer mains remains relatively consistent with the expenditure in the current period.

4.4.2 Recommendation

Barwon Water's renewals program approach is quite sound and while we had some concerns over the unexpected increase in renewals expenditure during RP3, we understand that the refurbishment of the Ryrie Street head office is likely to have significantly contributed to this overspend. Overall, Barwon Water has appropriately demonstrated the proposed expenditure program for renewals and has explained how the program components differ from historical levels of expenditure. We therefore have no recommendations to make in regards to this program of works.

4.5 Property Realisation Projects

Barwon Water is currently undertaking a program of property realisation projects whereby surplus or redundant operational / non-operational assets are being decommissioned and the land on which they are located is being re-developed by Barwon Water suitable for sale on the residential property market. The overall project is designed to be at least cost neutral, however the project is expected to generate \$35m in net revenue (following expenses) and will reduce ongoing maintenance costs associated with assets not-in-use and surplus land parcels.

The project requires Barwon Water to undertake works including removal and disposal of redundant assets, planning and capital works required to rezone of land suitable for residential development, and subdivision and services infrastructure works suitable for sale of lots for residential development. To date, Barwon Water has sold 19 parcels of land with another 14 properties under active investigation.

4.5.1 Analysis

While this type of project is far from core business for a water utility, the efficient management of assets, including land owned, is core business. Our overall analysis of this project relates to whether the projects are making a profit for the business that will benefit customers. It is our understanding that the revenue generated by these projects is being used to offset the cost of refurbishing the Ryrie Street head office. Barwon Water has also stated that they negotiated an agreement with Treasury to quarantine the profits from these projects from being considered in shareholder dividend calculations, on the provision that the funds were to be used to offset the cost of the office refurbishment.

The treatment of the revenue generated is beyond the scope of this review, and we understand that the ESC is undertaking discussions with Barwon Water on this program of works.

4.5.2 Recommendation

We have no recommendations to make on this program of works.

4.6 Uncertain Projects

Barwon Water has highlighted a large allocation of expenditure which has not been included in the capital program as the projects are currently deemed to be uncertain. The allocation of expenditure is equivalent to around 20% of the proposed total capital program. We have reviewed this large allocation of expenditure to determine if any of the projects deemed to be uncertain were more or less likely to be added to the RP4 program during the regulatory period. The addition of a large proportion of these projects would have a significant impact on the capital expenditure.

The projects making up the uncertain projects allocation are:

- Northern and western growth area servicing – two major areas identified in the Regional Growth Plan as requiring significant capital expenditure (in the order of \$20m) for water and wastewater services. The framework planning process for these two areas is underway through the City of Greater Geelong with early investigations work being undertaken with key stakeholders. A settlement strategy is being developed after which further information regarding development timing would be available. Barwon Water consider that the likelihood of this project going ahead in the RP4 period is higher than was anticipated when the Pricing Submission was developed.
- Transition to digital meters – Barwon Water recently completed a 100 connection trial in the Colac area and is assessing the outcomes of this trial. Overall, Barwon Water continues to monitor developments in this area and are likely to act should a positive or price neutral business case be demonstrated. Community support for digital meters is relatively high. Barwon Water believes that the likelihood of this project going ahead in RP4 is unchanged.
- Forrest Wastewater upgrade – an onsite wastewater management investigation and system audit is currently underway and is expected to report by mid-2018. An options development process is required once the requirement for capital works is identified. Barwon Water consider that the likelihood of work being required within RP4 is higher now, given current investigations have identified that wastewater is not being appropriately managed on site.
- Inefficient pattern of development – Barwon Water’s growth related capital expenditure is defined using an efficient rollout of development as defined by Barwon Water and documented in Infrastructure Sequencing Plans. Current indications are that the pattern of actual development, as controlled by developers, is likely to deviate from the Plans and actual capital expenditure required for servicing developments will be higher than forecast under the Plans. Barwon Water has stated that the likelihood of this is unchanged from when the Pricing Submission was prepared.
- Renewable energy programs – Barwon Water is currently involved in two key projects:
 - IWN Stage 1 large scale renewable energy project – a large allocation of capital expenditure was originally included in the 10 year capital program however this has been removed due to uncertainty over the delivery model and particularly whether the outcomes of the project might be delivered through a Power Purchase Agreement (opex). Barwon Water now believe that it is unlikely to require capital expenditure for this stage.
 - G21 renewable energy project – the G21-4Zero project is a collaboration between a number of stakeholders within Barwon Water’s region including seven local councils, Deakin University and Barwon Health. The objectives of the project are to achieve set emissions targets through various means including renewable energy generation. Barwon Water are currently leading a pre-feasibility study of large scale renewable energy generation however there remains a high degree of uncertainty around the works required, the costs and the delivery method.

4.6.1 Analysis

Our analysis of Barwon Water’s uncertain projects allowance has identified that some of the projects are more likely to occur than was anticipated during preparation of the RP4 Pricing Submission however the degree of uncertainty is still such that the projects should not be included in the current capital program.

4.6.2 Recommendation

The degree of uncertainty around these projects remains sufficiently high enough such that we consider they shouldn't be included in the capital program at this stage.

4.7 Summary of recommendations

We have assessed Barwon Water's proposed expenditure for RP4 and have determined that no cuts are required to ensure expenditure is prudent and efficient.

Table 4-2 Barwon Water forecast capex

Capex item		RP4 forecast					Total RP4
		2018-19	2019-20	2020-21	2021-22	2022-23	
Renewals (Water and Sewer Mains + Other)	Proposed	37.37	35.49	39.12	30.78	25.98	168.74
	Recommended	37.37	35.49	39.12	30.78	25.98	168.74
	Net change	0.00	0.00	0.00	0.00	0.00	0.00
Property Realisation (Scenic Rd Highton)	Proposed	1.13	6.65	5.11	0.00	0.00	12.89
	Recommended	1.13	6.65	5.11	0.00	0.00	12.89
	Net change	0.00	0.00	0.00	0.00	0.00	0.00
Property Realisation Thornhill Rd Highton	Proposed	3.87	0.00	0.00	0.00	0.00	3.87
	Recommended	3.87	0.00	0.00	0.00	0.00	3.87
	Net change	0.00	0.00	0.00	0.00	0.00	0.00
Other capital expenditure	Proposed	43.66	36.93	13.34	19.64	29.55	143.12
	Recommended	43.66	36.93	13.34	19.64	29.55	143.12
	Net change	0.00	0.00	0.00	0.00	0.00	0.00
Total proposed		86.04	79.07	57.57	50.42	55.53	328.63
Recommended capital expenditure		86.04	79.07	57.57	50.42	55.53	328.63
Recommended adjustments from proposed		0.00	0.00	0.00	0.00	0.00	0.00

Limitation of our work

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