Queensland Competition Authority

Draft report

Rural irrigation price review 2020–24
Part C: Seqwater

August 2019

Level 27, 145 Ann Street, Brisbane Q 4000
GPO Box 2257, Brisbane Q 4001
Tel (07) 3222 0555
www.qca.org.au

SUBMISSIONS

Closing date for submissions: 4 November 2019

Public involvement is an important element of the decision-making processes of the Queensland Competition Authority (QCA). Therefore submissions are invited from interested parties concerning its review of rural irrigation prices for 2020–24. The QCA will take account of all submissions received within the stated timeframes.

Submissions, comments or inquiries regarding this paper should be directed to:

Queensland Competition Authority
GPO Box 2257
Brisbane Q 4001

Tel (07) 3222 0555
Fax (07) 3222 0599
www.qca.org.au/submissions

Confidentiality

In the interests of transparency and to promote informed discussion and consultation, the QCA intends to make all submissions publicly available. However, if a person making a submission believes that information in the submission is confidential, that person should claim confidentiality in respect of the document (or the relevant part of the document) at the time the submission is given to the QCA and state the basis for the confidentiality claim.

The assessment of confidentiality claims will be made by the QCA in accordance with the *Queensland Competition Authority Act 1997*, including an assessment of whether disclosure of the information would damage the person's commercial activities and considerations of the public interest.

Claims for confidentiality should be clearly noted on the front page of the submission. The relevant sections of the submission should also be marked as confidential, so that the remainder of the document can be made publicly available. It would also be appreciated if two versions of the submission (i.e. a complete version and another excising confidential information) could be provided.

A confidentiality claim template is available on request. We encourage stakeholders to use this template when making confidentiality claims. The confidentiality claim template provides guidance on the type of information that would assist our assessment of claims for confidentiality.

Public access to submissions

Subject to any confidentiality constraints, submissions will be available for public inspection at our Brisbane office, or on our website at www.qca.org.au. If you experience any difficulty gaining access to documents please contact us on (07) 3222 0555.

Contents

EXECUTIVE SUMMARY

The Queensland Government has directed the Queensland Competition Authority to investigate the pricing practices for monopoly business activities of Sunwater and Seqwater relating to the supply of water for irrigation services, in specified water supply schemes and distribution systems.

The key objective of this review is to recommend prices to be charged by Sunwater and Seqwater to irrigation customers in the specified water supply schemes and distribution systems for the period 1 July 2020 to 30 June 2024.

This part of the draft report (Part C) assesses the costs and prices associated with irrigation schemes operated by Seqwater. Our overall approach to this review is outlined in Part A of the draft report.

Costs

We are required to recommend prices that seek to recover certain prudent and efficient costs. We have assessed the operating expenditure (opex) and renewals expenditure proposed by Seqwater for prudency and efficiency. Our recommended costs are in Chapters 2 and 3.

We have taken our recent findings in relation to our 2018–21 Seqwater bulk water price review into account in assessing prudent and efficient expenditure. In that review, we assessed the prudency and efficiency of Seqwater's proposed operating and capital expenditure (including irrigation-related costs) for the period 1 July 2018 to 30 June 2028.

We note that Seqwater's actual irrigation scheme opex was significantly lower than our opex forecasts over the 2013–17 price path period. In addition, Seqwater's proposed base year opex is lower than actual historical expenditure.

For renewals, we have reviewed historical and forecast projects with a material pricing impact. However, we have not proposed any further cost savings.

Draft prices

Our draft recommended prices and other charges, for the period 2020–24, are detailed in Chapters 7 and 8 of this report. These prices are also outlined in scheme-specific information sheets.

We have derived our inflation forecast using Reserve Bank of Australia (RBA) forecasts where available and the midpoint of the RBA target band in later years. This method derives an inflation forecast of an average 2.37 per cent, which we have used to increase prices over the price path period.

Pricing issues that we have assessed as part of our investigation include:

- the appropriate tariff structure (section 6.2)—the cost-reflective (lower bound) prices in the draft report reflect our recommended apportionment of fixed and variable costs
- treatment of distribution losses (section 6.3)— we have estimated the costs associated with historical excess distribution loss WAEs, and allocated the bulk holding (fixed) costs of these to Seqwater on the basis that distribution system customers should not pay for distribution loss WAEs in excess of what is required to meet actual loss releases.

For the Central Brisbane River WSS, we have assessed the proposed zero allocation of costs to irrigators proposed by Seqwater and the Mid-Brisbane River Irrigators Committee (MBRI). While we welcome customers and the water businesses working together to reach agreement on pricing issues, we consider that the proposed cost allocation of zero is inappropriate and inconsistent with the requirements of the

referral. However, we have recommended a fixed price that is lower than the prevailing fixed price, based on an improved approach to assigning benefits attributable to different customer groups.

We have reassessed the allocation of bulk WSS costs to customer priority groups, particularly in respect of Inspector-General for Emergency Management (IGEM) review costs, dam safety upgrade capex and insurance costs. We consider that each of these costs are asset-related rather than service-related, and as such, we have allocated these costs using the headworks utilisation factor.

Transition to lower bound prices

We have sought to recommend prices that transition gradually to lower bound costs, as this will give users sufficient time to adjust.

Our recommended fixed prices reflect the transitional path to the cost-reflective (lower bound) target outlined in the pricing principles in the referral. We have also generally assessed the appropriate level of any volumetric price increase with reference to the maximum level of annual real price increases that have occurred over the previous two price path periods of $2.38/ML of water access entitlement (WAE) ($2020–21).

We have separately assessed appropriate transition paths for two key categories of tariff groups:

- above lower bound costs—those tariff groups with existing prices that are already more than sufficient to recover the costs allowable under the terms of the referral
- below lower bound costs—those tariff groups with existing prices that are not yet sufficient to recover the costs allowable under the terms of the referral.

Above lower bound prices

For those tariff groups with existing prices above lower bound costs, we have sought to transition prices to the lower bound cost target by maintaining fixed prices in nominal terms until this cost base is reached.

Where existing volumetric prices are above cost-reflective volumetric prices, we have reduced the existing volumetric price to the cost-reflective price immediately. Where volumetric prices are below cost-reflective volumetric prices, we have maintained the existing volumetric price in real terms until overall prices reach the lower bound cost target.

Below lower bound prices

For those tariff groups with existing prices below lower bound costs, we have sought to transition fixed prices to the cost-reflective fixed price by the government's prescribed increase of $2.38/ML of WAE (plus inflation).

Where existing volumetric prices are above cost-reflective volumetric prices, we have reduced the existing volumetric price to the cost-reflective price immediately. We have generally recommended volumetric prices that fully recover relevant variable costs, with the exception of the following tariff groups where this would lead to a price increase well above the $2.38/ML of WAE (plus inflation) in previous price path periods:

- Cedar Pocket WSS
- Pie Creek distribution system.

For these tariff groups, we consider it appropriate to stage this change in approach over reasonable timeframes. We have therefore recommended that volumetric (Part B and Part D) prices increase by our estimate of inflation over the price path period.

We have accepted Seqwater's proposal that a regulatory asset base (RAB) approach on an 'as-commissioned' basis would be appropriate for calculating a dam safety upgrade capex allowance. Since

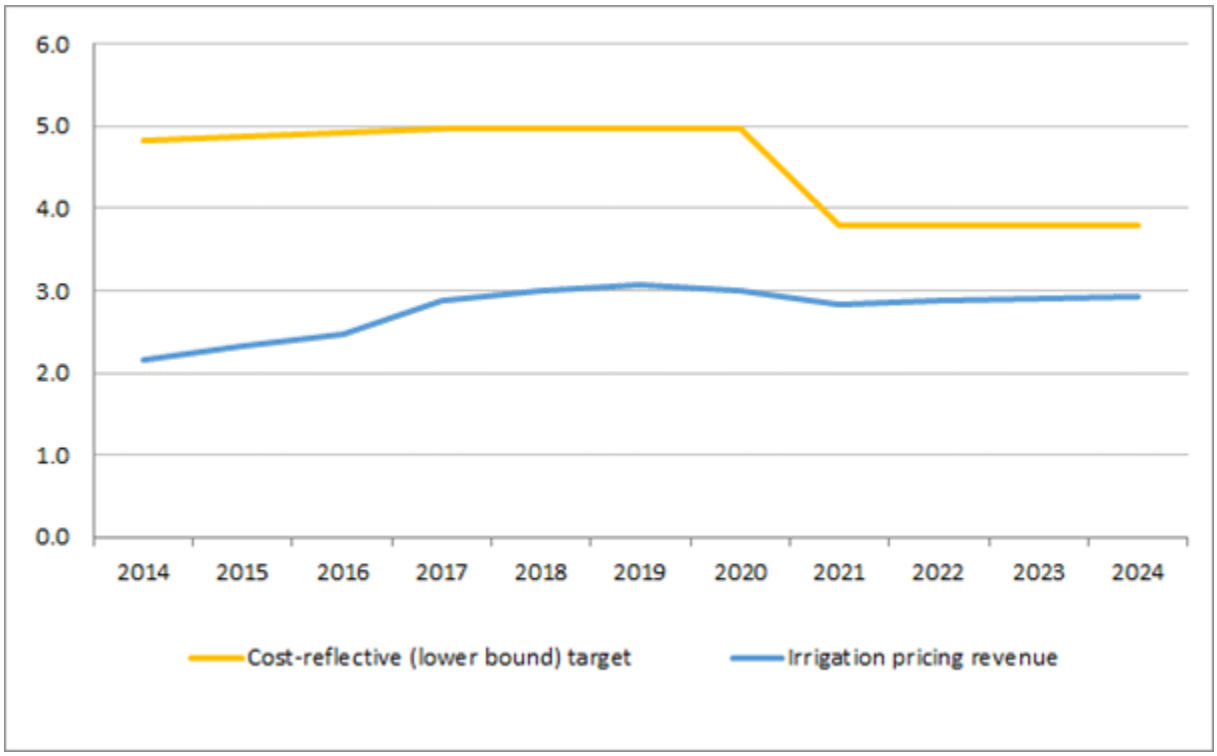
Seqwater does not have any dam safety upgrade projects forecast to be commissioned in this price path period, we have not calculated a separate pricing option inclusive of a dam safety upgrade capex allowance. However, we have provided an indicative impact of the potential future inclusion of the Somerset Dam Upgrade project capex (scheduled for commissioning in 2025–26) for Central Brisbane River WSS prices (see Part A, Chapter 4).

Implications

For each tariff group, the impact on water bills will vary depending on an irrigator's water use profile. We have presented indicative customer bill impacts and estimated customer bills in Chapter 9.

Figure 1 compares revenue implied by our cost-reflective prices and our draft recommended prices.

Figure 1 Comparison of irrigation revenues ($2018–19, millions)



Notes: These revenues reflect the irrigation share of total scheme costs.

Draft recommendations

A summary of our draft recommendations from this Part C are shown in Table 1.

Table 1 Summary of draft recommendations

Number	*Draft recommendation*	*Chapter*
18	We recommend that Seqwater should work with its customers and with the Government to move to a RAB-based approach for future price reviews.	Chapter 4
19	We recommend the tariff structure should include: • a volumetric price that covers variable costs associated with the delivery of water services • a fixed price that reflects the balance of the revenue requirement allocated to the particular tariff group.	Chapter 6
20	We recommend that:	Chapter 6

Number	*Draft recommendation*	*Chapter*
	• prudent and efficient bulk costs associated with necessary distribution loss WAEs be recovered from distribution system customers • the bulk holding (fixed) costs of distribution loss WAEs not required to service distribution system customers be borne by Seqwater.	
21	We recommend that: • dam safety upgrade capex and Inspector-General Emergency Management (IGEM) review costs should be allocated to medium and high priority customers using headworks utilisation factors (HUFs) for bulk WSSs, and using nominal WAEs for distribution systems • insurance costs should be allocated to medium and high priority customers using HUFs for bulk WSSs, and using nominal WAEs for distribution systems.	Chapter 7
22	We recommend that: • prices for irrigation customers for each water supply scheme and distribution system should be set according to the prices set out in Tables 55 and 56 • prices for the Central Lockyer Valley WSS be updated to take into account the Water Plan (Moreton) (Supply Scheme Arrangements) Amendment Plan 2019 as soon as practicable after it is finalised.	Chapter 7
23	We recommend that: • termination fees applicable to customers in the Morton Vale Pipeline distribution system should be calculated as up to 11 times (including GST) the cost-reflective fixed (Part C) tariff • termination fees applicable to Pie Creek distribution system should be calculated as up to 11 times (including GST) the recommended fixed (Part C) tariff • Seqwater can apply a lower multiple if it is in its commercial interests to do so • Seqwater should never recover any revenue shortfall from remaining customers upon exit of the scheme by another customer.	Chapter 8
24	We recommend that Seqwater improve its engagement with customers by: • ensuring that customers are engaged on an ongoing basis to provide more focus on what is important to customers over the course of the price path period and to provide a better understanding of customer requirements prior to the next price review • ensuring that its consultation draws a clearer link between proposed expenditure and both prices and service level outcomes for customers.	Chapter 10

Next steps

Public involvement is a key part of our decision-making process and we invite interested parties and stakeholders to comment on our draft report. Submissions are due by 4 November 2019.

The Government will decide irrigation prices after considering our final recommendations, which we must provide by 31 January 2020.

THE ROLE OF THE QCA – TASK, TIMING AND CONTACTS

The Queensland Competition Authority (QCA) is an independent statutory body which promotes competition as the basis for enhancing efficiency and growth in the Queensland economy.

The QCA's primary role is to ensure that monopoly businesses operating in Queensland, particularly in the provision of key infrastructure, do not abuse their market power through unfair pricing or restrictive access arrangements.

The QCA's primary role with respect to irrigation water pricing is to recommend prices to be charged by Sunwater and Seqwater to irrigation customers in specific water supply schemes and distribution systems. In recommending prices, we take into consideration the matters in section 26 of the Queensland Competition Authority Act 1997, inclusive of the terms set out in the Minister's referral notice (Appendix A).

Key dates

QCA publishes notice of investigation	31 October 2018
Initial stakeholder submissions identifying key issues to be considered in QCA review	30 November 2018
Lodgement of regulatory submissions by Sunwater and Seqwater	By 30 November 2018
Draft report to the Queensland Government	By 31 August 2019
Submissions due on draft report and Sunwater minimum access charge issues paper	4 November 2019
Final report to the Queensland Government	By 31 January 2020

Contacts

Enquiries regarding this project should be directed to:

ATTN: Darren Page
Tel (07) 3222 0555
www.qca.org.au/Contact-us

1 INTRODUCTION

The Queensland Government has asked the QCA to investigate the pricing practices for monopoly business activities of Sunwater and Seqwater (the water businesses) relating to the supply of water for irrigation services, in specified water supply schemes and distribution systems.

The key objective of this review is to recommend prices that the water businesses will be charging irrigation customers in the specified water supply schemes and distribution systems for the period 1 July 2020 to 30 June 2024.

This part of the draft report (Part C) assesses the costs and prices associated with irrigation schemes operated by Seqwater.

1.1 Background

While the government sets the irrigation prices that Seqwater charges, it can ask the QCA to recommend prices. We completed our first review of Seqwater's irrigation prices in 2013 and recommended prices for the period 1 July 2013 to 30 June 2017 (the 2013 review).[1] The government set bulk water prices for the four-year period that were consistent with our recommendations.

Prior to this, five former Sunwater schemes were transferred to Seqwater on 1 July 2008.[2] Seqwater inherited the 2006–11 Sunwater price paths for these schemes.

In the 2013 review, the QCA recommended price paths from 1 July 2013 to 30 June 2017 for irrigation customers in seven water supply schemes (WSSs) and two associated distribution systems operated by Seqwater. The government then set price paths commencing 1 January 2014 consistent with the QCA's recommendations.

From 2017–18 to 2019–20, the Government has extended these price paths by applying an increase of 2.5 per cent each year to all tariff groups. In addition to this increase, tariff groups below cost-reflective levels incurred increases of $2 per megalitre (in $2012–13 real terms) until revenues consistent with cost-reflective prices were reached.

1.2 Referral

The objectives of the review are set out in the referral notice (the referral).[3] The key objective of the review is to recommend prices to be charged by the water businesses to irrigation customers in the specified WSSs and distribution systems for the period 1 July 2020 to 30 June 2024. The Queensland Government will consider our recommendations when it sets those prices.

The referral requires us to recommend prices that are based on all tariff groups transitioning to cost-reflective prices that incorporate the following allowable costs:

- prudent and efficient operational, maintenance and administrative costs

[1] QCA, *Seqwater Irrigation Price Review: 2013–17*, final report, April 2013.

[2] These schemes were the Central Lockyer Valley (including Morton Vale Pipeline), Logan River, Lower Lockyer Valley, Mary Valley (including Cedar Pocket Dam—now a separate WSS) and Warrill Valley WSSs. Other contractual arrangements were transferred to Seqwater from Sunwater, including the Morton Vale Pipeline tariff group. Seqwater is also responsible for the Central Brisbane River WSS.

[3] See Appendix A for a copy of the referral.

- an appropriate allowance for prudent and efficient expenditure on renewing existing assets.[4]

These allowable costs are also referred to in this report as lower bound costs. 'Lower bound' has been previously defined by the Government as a price, for each WSS/distribution system, that recovers the prudent and efficient costs of operating, maintaining, administering and renewing each scheme. These costs exclude certain costs, such as a return on and of existing assets (as at 1 July 2000). In contrast, full commercial or 'upper bound' prices include the same costs as lower bound prices as well as a provision for the cost of capital. Consequently, it is important to note that while lower bound prices are referred to as 'cost reflective', they still involve a subsidy from taxpayers as the water businesses are neither earning a return on, nor recovering, the initial investment in the existing assets.

The referral requires that our recommendations also provide an additional set of prices, which should include an appropriate allowance for prudent and efficient capital expenditure associated with dam safety upgrade costs that are forecast to be incurred from 1 July 2020 onwards.

We have been asked to recommend prices that adopt the current tariff groups except for certain water supply schemes operated by Sunwater that we have been asked to review.

The referral also asks us to account for the findings of our recent investigation of Seqwater's bulk water prices. This investigation reviewed Seqwater's policies and procedures, and assessed the prudency and efficiency of Seqwater's proposed operating and capital expenditure from 1 July 2018 to 30 June 2028.

1.3 Irrigation services

An irrigation service is defined in the referral as the supply of water or drainage services for irrigation of crops or pastures for commercial gain.[5] This terminology is different to that used in the previous reviews[6] and means that our recommended prices may potentially apply to a narrower range of irrigation customers compared to our previous review.

As a result of the irrigation services constraint, the structure and level of prices for non-irrigation customers in the specified WSSs and distribution systems are outside the scope of this investigation. The referral clarifies that nothing prevents the water businesses from negotiating full commercial prices to supply water to non-irrigation customers.

Note that this change in definition does not have an impact on the level of irrigation prices that we recommend. Our recommended prices for each irrigation tariff group are estimated by reference to the level of the cost-reflective price for medium priority water access entitlements (WAEs) or, where a high priority irrigation tariff group current exists, by reference to the cost-reflective price for high priority WAEs.

1.4 Overview of Seqwater's services

Seqwater provides bulk water supply services to water retailers, other industrial customers, irrigation and other WAE holders. In 2016–17, irrigation revenues (including community service obligations (CSOs) accounted for around 0.4 per cent ($3.2 million) of Seqwater's regulated

[4] Allowable costs also include the QCA's regulatory fees up to a cap of $2.5 million, and exclude recreational costs incurred from 1 July 2000.
[5] Consistent with schedule 4 of the *Water Act 2000*.
[6] In the previous reviews, we were required to more broadly recommend 'irrigation prices to apply' to specified water supply schemes.

revenue, with the majority of Seqwater's regulated revenues coming from urban and industrial customers (99.6 per cent).

Seqwater owns and operates a network of water supply assets, including dams, weirs, water treatment plants, the Gold Coast Desalination Plant and the Western Corridor Recycled Water Scheme. Seqwater's network of bulk water supply assets stretches from Noosa on the Sunshine Coast in the north to Tugun on the Gold Coast in the south, and from North Stradbroke Island in the east to Gatton in the west. Seqwater's pipeline network enables drinking water to be transported around the region.

Seqwater owns and operates $8.5 billion of assets[7], made up of 26 dams, 51 weirs, two borefields, 600 km of pipelines, 22 bulk water pump stations and 18 bulk water reservoirs. Seqwater's assets also include water treatment works and manufactured water assets.

1.4.1 Bulk water supply services to urban and industrial customers

Seqwater is a registered drinking water service provider under the Water Supply (Safety and Reliability) Act 2008. It is responsible for supplying treated bulk water to local council areas in SEQ. The water is supplied to bulk supply points and then delivered to businesses and households by the retailer servicing each area:

- Queensland Urban Utilities supplies the Brisbane, Ipswich, Lockyer Valley, Scenic Rim, and Somerset council areas.
- Unitywater supplies the Moreton Bay, Sunshine Coast and Noosa council areas.
- Logan City Council, Redland City Council and Gold Coast City Council supply their respective council areas.

1.4.2 Irrigation services

Seqwater has around 1200 irrigation customers across seven bulk WSSs[8] and two associated distribution systems[9]. These WSSs provide bulk water services that involve storing for, and delivering raw water to, customers in accordance with customers' WAEs.[10]

The Department of Natural Resources, Mines and Energy (DNRME) determines the WAE held by each customer, including annual nominal volume, reliability (usually medium or high priority) and location of extraction.

Seqwater can only supply water to a customer with a WAE. Announced allocations specify the portion of a customer's WAE available for use (by priority group). They are updated throughout the water year (generally after rainfall events).

[7] The regulated asset base value as at 1 July 2018 as determined by the QCA in the 2018–21 SEQ urban bulk water price review.

[8] Cedar Pocket WSS, Central Brisbane River WSS, Central Lockyer Valley WSS, Logan River WSS, Lower Lockyer Valley WSS, Mary Valley WSS and Warrill Valley WSS.

[9] Morton Vale Pipeline (which supplies water from the Central Lockyer Valley WSS) and the Pie Creek distribution system (which supplies water from the Mary Valley WSS).

[10] A WAE is an ongoing entitlement to exclusively access a share of water, including water allocations or interim water allocations. Within each WSS, there are usually a number of different classes (or products) of WAE. The most common classes are high priority and medium priority. In general, irrigators hold medium priority WAEs. The water sharing rules under each operations manual determine the relative access to water for each priority.

Two of Seqwater's bulk WSSs have links to distribution systems. Distribution systems generally are comprised of pumps, open channels and/or pipes designed to deliver water to customers not located on a river.

All distribution system customers must also hold bulk WAEs.

Supply contracts

Seqwater enters into a supply contract with its customer. These are generally standard across all users and reflect the standard supply contracts set under the Water Act 2000. Under this standard contract, the customer, as owner of the WAE, bears the risk of the availability of water under their WAE. Customers can also trade WAEs in water plan areas where water licences and interim water allocations have been converted to water allocations.

These terms of supply have not changed since the 2013 review.

Service standards

Service standards were established in 2001 in all WSSs, except the Central Lockyer Valley and Central Brisbane River WSSs, in consultation with customer representatives. These standards were carried across to Seqwater from Sunwater. The service standards for Central Brisbane River and Central Lockyer Valley WSSs have been defined in the contract terms and through the water planning processes.

Changes to Moreton Water Plan

In November 2018, proposed amendments to the Moreton Water Plan were published for feedback from stakeholders. These proposed changes included the conversion of historic water entitlements to volumetric water allocations assigned to individual customers. The Government is currently considering submissions on these proposed changes.

1.4.3 Other services

Seqwater provides bulk water supply services to Stanwell Corporation (for its power stations), Toowoomba Regional Council, irrigation customers and water entitlement holders (such as Gympie Regional Council). Prices for the services provided to these customers are not the subject of this review.

In addition, Seqwater provides flood mitigation services at Wivenhoe, Somerset and North Pine dams and access to recreation facilities at various dams.

1.5 Seqwater's legislative and regulatory obligations

Seqwater must comply with a range of obligations when providing water services, as set out in a number of legislative and regulatory instruments. More information on the key obligations is provided in Part A (Appendix E).

1.6 Approach to reviewing Seqwater's irrigation prices

Figure 2 outlines the steps involved in calculating prices.

Figure 2 QCA's approach to the review of Seqwater's irrigation prices

	Step	Description	Relevant Section
1	**Establish revenue requirement at the scheme/system level**	Assess cost components, such as the appropriate allowance for renewals expenditure, to establish revenue requirement for each scheme/system.	**Part C Chapters 2–4**
2	**Establish the forecast volume of water entitlements and usage**	Determine volume of entitlements and usage for each tariff group to use as a basis for revenue allocation and calculating prices.	**Part C Chapter 5**
3	**Determine the structure of cost-reflective fixed and volumetric charges**	Determine the allocation of revenue between fixed and volumetric charges across all tariff groups in the specified schemes/systems.	**Part C Chapter 6-7**
4	**Calculate recommend fixed and volumetric tariffs**	Derive fixed tariff in accordance with government pricing principles. Consider less than cost-reflective volumetric tariff to moderate bill impacts.	**Part C Chapter 7**
5	**Calculate miscellaneous charges**	Derive drainage charges, drain diversion charges, termination fees and water harvesting charges for relevant schemes/systems.	**Part C Chapter 8**
6	**Undertake customer bill analysis**	Evaluate the impact of our pricing recommendations on irrigation customers.	**Part C Chapter 9**

2 OPERATING EXPENDITURE

This chapter sets out our assessment of the prudency and efficiency of Seqwater's proposed operating costs.

We have taken into account the findings of our recent investigation of Seqwater's bulk water prices as required by the referral. That investigation reviewed Seqwater's policies and procedures, and assessed the prudency and efficiency of Seqwater's proposed operating expenditure from 1 July 2018 to 30 June 2028.

We consider Seqwater's proposed opex to be generally prudent and efficient.

2.1 Overview

2.1.1 Seqwater's submission

Seqwater proposed operating expenditure (opex) of $52.3 million over the period from 1 July 2020 to 30 June 2024 (see Table 2 below). This represents total scheme costs, including costs allocated to both irrigation and non-irrigation customers.

Table 2 Seqwater's proposed operating costs (all sectors), 2020–21 to 2023–24 ($ million, nominal)

Cost	*2020–21*	*2021–22*	*2022–23*	*2023–24*	*Total*
Labour	2.3	2.4	2.5	2.5	**9.7**
Electricity	0.4	0.4	0.4	0.4	**1.6**
Repairs and maintenance	1.1	1.1	1.1	1.2	**4.4**
Other	1.9	2.0	2.0	2.1	**8.0**
Local government rates	1.9	2.0	2.0	2.1	**8.0**
Dam safety inspection	0.1	0.1	0.1	0.1	**0.4**
Insurance	0.6	0.6	0.7	0.7	**2.6**
Total direct	**8.4**	**8.6**	**8.8**	**9.0**	**34.7**
Billing system	0.3	0.3	0.3	0.3	**1.3**
Operations	3.8	3.9	3.9	4.0	**15.6**
Non-infrastructure	0.1	0.2	0.2	0.2	**0.6**
Total non-direct	**4.2**	**4.3**	**4.4**	**4.5**	**17.5**
Total operating costs	**12.6**	**12.9**	**13.2**	**13.5**	**52.3**

Notes: Includes all costs in the specified 7 water supply schemes and 2 distribution systems operated by Seqwater, including those costs allocated to irrigation and non-irrigation customers.

Source: Seqwater pricing model 2018.

Seqwater said that a key requirement of the referral was that we should take into account findings of the recent investigation in the 2018–21 Seqwater bulk price review. Seqwater said that its submission used the same cost base that we had assessed as prudent and efficient in the

2018–21 Seqwater bulk price review. It expected that would avoid the need for us to conduct a further detailed review of these costs.[11]

Seqwater's forecasting approach involved:

- setting 2018–19 base year operating costs on the 2018–19 base year costs that were approved as part of the 2018–21 Seqwater bulk price review
- applying some specific adjustments where its financial systems had not appropriately allocated costs to specific irrigation schemes (including removing recreational costs)
- escalating input costs using the measures of input cost inflation we approved as part of the 2018–21 Seqwater bulk price review
- applying the continuing efficiency target (i.e. annual cost savings achievable by Seqwater by operating more efficiently) we approved as part of the 2018–21 Seqwater bulk price review.

Seqwater said that over recent years it had secured significant operating costs savings.[12] Seqwater said that as shown in the 2018–21 Seqwater bulk price review, it had exceeded our target operating cost savings by an additional $67 million over 2015–2018. Additionally, Seqwater noted that we found its operating costs to be largely efficient, resulting in only a small reduction in operating costs compared to its submitted costs over 2018–19 to 2027–28. Seqwater said that these cost savings also apply to its irrigation services.

Seqwater submitted that applying the same cost allocation approach from the 2013 review resulted in operating costs of $3.3 million allocated to irrigation customers in the first year of the upcoming price path (2020–21). This compares to irrigation-related operating costs of $3.6 million that we removed from 2020–21 operating costs in the 2018–21 Seqwater bulk water price review.[13]

2.1.2 Other stakeholders' submission

QFF supported Seqwater's recommendation that we should not have to undertake significant investigations into the cost estimates and approaches that we have already recommended in the 2018–21 Seqwater bulk water price review.

2.1.3 Key issues for consideration

We have considered all aspects of Seqwater's proposal in making draft recommendations on the prudent and efficient level of Seqwater's operating expenditure.

We have taken our recent findings in relation to our 2018–21 Seqwater bulk water price review into account, as required by the referral. In the 2018–21 Seqwater bulk water review, we assessed the prudency and efficiency of Seqwater's proposed operating costs (including irrigation-related costs) for the period 1 July 2018 to 30 June 2028.

Seqwater's actual operating cost savings exceeded our target operating cost savings over the previous price path period (Table 3). In the last year of the previous price path period (2016–17), Seqwater's actual operating costs were 25 per cent (or $4.9 million) lower than the recommended operating costs from our 2013 review.

[11] Seqwater, sub. 1, p.10.
[12] Seqwater, sub. 1, p. 10.
[13] QCA, *Seqwater Bulk Water Price Review 2018–21*, final report, March 2018, p. 18.

Table 3 Seqwater's actual operating costs compared to the QCA 2013 review (all sectors) ($ million, nominal)

	2013–14	*2014–15*	*2015–16*	*2016–17*	*Total*
Seqwater actual opex	21.6	16.6	15.5	14.4	**68.1**
QCA-recommended opex (2013 review)	18.2	18.5	18.9	19.3	**74.9**
Difference	**3.4**	**(2.0)**	**(3.4)**	**(4.9)**	**(6.8)**

Source: QCA, 2013; Seqwater response to QCA RFI 31; various NSPs from 2014–15 to 2017–18.

Taking into account our recent assessment of the prudency and efficiency of Seqwater's operating expenditure over an extended period that covers the irrigation price review period, we have identified the following issues for further consideration:

- reconciliation of Seqwater's proposed base year costs for irrigation schemes with Seqwater's total operating costs that we assessed in our 2018–21 Seqwater bulk water price review
- appropriate allocation of non-direct operating costs to irrigation tariff groups
- appropriate escalation of input costs, given updated conditions.

2.2 Base year operating expenditure

2.2.1 Seqwater's submission

Seqwater submitted that it had used our recommended 2018–19 opex from the 2018–21 urban bulk water price review as the base year cost base, since this had already been established to be prudent and efficient.

Seqwater then excluded costs that only relate to urban bulk water services to determine the irrigation share to be allocated to irrigation schemes. Seqwater also removed costs associated with recreational activities as required by the referral notice.

Seqwater's proposed base year opex is summarised in Table 4.

Table 4 Seqwater's proposed base year opex for irrigation service contracts (all sectors) ($ million, nominal)

Cost category	*Base year*	*Price path period*				
	2018–19	*2020–21*	*2021–22*	*2022–23*	*2023–24*	*Total*
Labour	2.2	2.3	2.4	2.5	2.5	**9.7**
Electricity	0.4	0.4	0.4	0.4	0.4	**1.6**
Repairs and maintenance	1.0	1.1	1.1	1.1	1.2	**4.4**
Other	1.8	1.9	2.0	2.0	2.1	**8.0**
Local government rates	1.8	1.9	2.0	2.0	2.1	**8.0**
Insurance	0.6	0.6	0.6	0.7	0.7	**2.6**
Total direct opex	**7.9**	**8.2**	**8.5**	**8.7**	**8.9**	**34.4**
Operations	3.6	3.8	3.9	3.9	4.0	**15.6**

Cost category	*Base year*	*Price path period*				
	2018–19	*2020–21*	*2021–22*	*2022–23*	*2023–24*	*Total*
Non-infrastructure	0.1	0.1	0.2	0.2	0.2	**0.6**
Total non-direct opex	**3.7**	**3.9**	**4.0**	**4.1**	**4.2**	**16.2**
Total opex	**11.6**	**12.1**	**12.5**	**12.8**	**13.1**	**50.6**

Source: Seqwater pricing model 2018.

2.2.2 QCA assessment

In accordance with the referral notice, we have taken into account our recommendations from our 2018 review of Seqwater's urban bulk water prices for 2018–21 in assessing Seqwater's proposed base year opex.

We note that Seqwater's businesswide budgeted opex for 2018–19 is $246.9 million[14], which is slightly less than the $247.3 million[15] that we recommended in the 2018 urban bulk water price review. Of this expenditure, Seqwater is proposing to allocate $3.3 million to medium priority entitlement holders in its irrigation service contracts, compared to the $3.6 million that we excluded from opex in the 2018 review of urban bulk water prices.

In the 2018 urban bulk water price review, our focus was on major opex categories including:

- labour (inclusive of employee expenses and contract labour)
- electricity
- other materials and services (including chemicals).

We note that the above categories together constitute the majority of direct costs for irrigation service contracts.

As the bulk of direct costs were reviewed as part of the 2018 bulk water price review, we have focused our attention on the non-direct cost base and its allocation to irrigation service contracts. We have also made some modelling adjustments to base year opex.

Base year direct opex

We consider Seqwater's base year direct opex to be broadly efficient (as discussed above).

However, we have made an adjustment to base year local government rates. Seqwater proposed to use actual rates for 2017–18, escalated by CPI, to obtain the 2018–19 base year cost. Seqwater assumed CPI to be 2.5 per cent for this purpose. While we accept the use of actual rates for 2017–18, we have used the RBA's short-term inflation forecast of 1.75 per cent.[16]

We have adjusted base year electricity costs for Pie Creek. Given that the pumping of water is a significant driver of electricity costs in this scheme, we based the forecast of this cost on per megalitre of water usage.

[14] Seqwater regulatory pricing model.
[15] QCA, *Seqwater Bulk Water Price Review 2018–21*, final report, March 2018, p. 34.
[16] RBA, Statement on Monetary Policy, May 2019, table 5.1.

We have therefore estimated a variable electricity cost per megalitre to apply to our forecast of water usage to derive efficient base year variable costs. We have then added our estimate of efficient base year fixed costs.

We have also made modelling adjustments to correct for errors in Seqwater's pricing model. This has increased repair and maintenance costs by $85,600, compared to Seqwater's submission (Table 5).

Table 5 QCA-recommended direct opex for 2018–19 base year for irrigation service contracts (all sectors) ($ million)

Cost category	*Seqwater submitted*	*QCA adjustment[a]*	*QCA draft*
Labour	2.2	–	2.2
Electricity	0.4	–	0.4
Repairs and maintenance	1.0	0.1	1.1
Other	1.8	–	1.8
Local government rates	1.8	–	1.8
Insurance	0.6	–	0.6
Total direct opex	**7.9**	**0.1**	**8.0**

a Includes QCA modelling adjustments.

Source: Seqwater, sub. 1; Seqwater pricing model 2018; QCA analysis.

Table 6 shows our recommended base year direct opex by scheme.

Table 6 QCA-recommended direct opex for 2018–19 base year by scheme (all sectors) ($000s)

Scheme	*Seqwater submitted*	*QCA adjustment[a]*	*QCA draft*
Cedar Pocket	111.2	(0.1)	111.2
Central Brisbane River	4,075.2	(8.5)	4,066.7
Central Lockyer Valley	518.4	–	518.4
Mortonvale	44.9	–	44.9
Logan River	1,389.4	(4.4)	1,385.0
Lower Lockyer Valley	434.9	31.7[a]	466.7
Mary Valley	483.1	(0.1)	483.0
Pie Creek	194.6	(8.7)	185.9
Warrill Valley	656.2	52.6[a]	708.9
Total direct opex	**7,908.1**	**62.6**	**7,970.7**

a Includes modelling adjustments to correct for errors in Seqwater's pricing model.

Source: Seqwater, sub. 1; Seqwater pricing model 2018; QCA analysis.

Base year non-direct opex

Seqwater's non-direct costs are costs that derive from group or corporate functions, such as finance and human resources, that preclude direct attribution to individual irrigation schemes.

To determine the non-direct cost base, Seqwater forecast corporate and administration costs for the 2018–19 base year and removed:

- costs related solely to the provision of urban drinking water and water grid services
- one-off costs such as flood class action costs
- costs attributable to assets not relevant to irrigation schemes (such as the Gold Coast Desalination Plant).

Seqwater used total direct costs as its cost allocation base to allocate non-direct costs to irrigation service contracts (Table 7).

Table 7 Seqwater's proposed 2018–19 base year non-direct opex (all sectors) ($ million)

Cost category	*Cost base*	*Cost allocated to irrigation service contracts*
Costs allocated across all shared assets	47.7	2.7
Costs allocated across all shared assets plus contractors	25.7	0.9
Costs allocated across irrigation service contracts only	–	–
Total operations	73.5	3.6
Non-infrastructure	2.5	0.1
Total non-direct opex	**76.3**	**3.7**

Source: Seqwater, sub. 1; Seqwater pricing model 2018.

We consider that it is appropriate to allocate non-direct opex based on total direct opex as proposed by Seqwater.

Table 8 shows our recommended base year non-direct opex by scheme.

Table 8 QCA-recommended 2018–19 base year non-direct opex by scheme (all sectors) ($'000)

Scheme	*Seqwater submission*	*QCA adjustment*	*QCA draft*
Cedar Pocket	52.2	–	52.2
Central Brisbane River	1,924.3	(4.2)	1,920.2
Central Lockyer Valley	247.0	–	246.9
Mortonvale	21.1	–	21.1
Logan River	641.7	8.0	649.7
Lower Lockyer Valley	217.4	14.9	232.3
Mary Valley	226.7	(0.1)	226.6
Pie Creek	91.3	(4.1)	87.2
Warrill Valley	307.9	24.7	332.6
Total non-direct opex	**3,729.6**	**39.2**	**3,768.7**

Source: Seqwater, sub. 1; Seqwater pricing model 2018; QCA analysis.

2.3 Step changes to operating expenditure

2.3.1 Seqwater's submission

Seqwater proposed to include $300,000 in indirect costs from 2020–21 as the 'notional' cost of a proposed upgrade to its billing and water accounting system for irrigation customers and other raw water WAE customers.

Seqwater submitted that the system used at present included many manual processes and that it takes significant time to send bills out after the end of the quarter.[17] Seqwater also said that it had consulted the Mary Valley and Logan River irrigation customer reference group on this and that these customers were supportive of investigating options for improvements.

Seqwater said that it was yet to finalise a business case for this proposal and that it intended to further investigate the proposal and provide us with the outcome of this investigation prior to our draft report.[18]

Seqwater also included dam safety inspections in its proposed step changes (Table 9).

Table 9 Seqwater's proposed step changes for irrigation service contracts (all sectors) ($ million, nominal)

Cost category	*Price path period*				
	2020–21	*2021–22*	*2022–23*	*2023–24*	*Total*
Billing system	0.3	0.3	0.3	0.3	**1.3**
Dam safety inspection	0.1	0.1	0.1	0.1	**0.4**
Total step changes	**0.4**	**0.4**	**0.4**	**0.4**	**1.7**

Source: Seqwater pricing model 2018.

Seqwater said that it did not have an estimate of the QCA regulatory fees for this irrigation price review so had not included these in its costs. Seqwater said that the recovery of QCA regulatory fees through prices was consistent with standard regulatory practice.[19]

2.3.2 QCA assessment

As at the time of our draft report, Seqwater had not provided us with further details on its customer billing proposal. In July, Seqwater said that the business case for this project had not been approved; it was awaiting further cost information from a potential supplier to finalise the development of some of the options.[20]

In the absence of a business case for this proposal, we have excluded $300,000 from the non-direct cost base. Should Seqwater provide us with a business case prior to the final report, we will consider the merit of including this expenditure in the cost base.

As dam safety inspections are a compliance obligation for Seqwater, we have accepted Seqwater's proposed step change for this expenditure.

[17] Seqwater, sub. 1, p. 21.
[18] Seqwater, sub. 1, p. 21.
[19] Seqwater, sub. 1, p. 10.
[20] Seqwater response to QCA RFI 45.

We have allocated shared regulatory costs or fees relating to this investigation based on water entitlements (ML) held by irrigation customers in each of the water supply schemes specified in the referral.

The total costs incurred by the QCA in making recommendations under the referral are forecast to amount to $3.1 million. Costs have been allocated to Seqwater's WSSs over each year of the price path (see Table 10).

Table 10 QCA-recommended annual step change in opex ($ million, nominal)

Step change	*Seqwater submission*	*QCA adjustment*	*QCA draft*
Customer billing	0.3	(0.3)	–
Dam safety inspections	0.1	–	0.1
QCA regulatory fee	–	0.04	0.04

Source: Seqwater pricing model 2018; QCA analysis.

2.4 Cost escalation

2.4.1 Seqwater's submission

Seqwater proposed to use the same escalation factors as those that we approved for the 2018–21 urban bulk water price review, but it updated the estimates for the latest available forecasts. Seqwater's escalation factors for each year of the price path are summarised in Table 11.

Table 11 Seqwater's proposed annual cost escalation factors (%)

Cost category	*Basis for escalation factor*	*Forecast period*	*Escalation factor (%)*
Chemicals, other materials and capital expenditure	CPI using latest short-term inflation forecast of the RBA	2019–20	2.25
	Midpoint of the RBA target range	2020–24	2.50
Insurance	Midpoint of the RBA target range	2019–24	2.50
Employee expenses	Queensland Government Budget 2018–19	2019–21	3.00
	10-year average wage price index for all sectors in Queensland over 2008–18 (Australian Bureau of Statistics)	2021–22	3.10
	10-year average wage price index for all sectors in Queensland over 2008–18 (Australian Bureau of Statistics)	2022–24	2.91
Contract labour	Queensland Government Budget 2018–19	2019–21	3.00
	10-year average wage price index for all sectors in Queensland over 2008–18 (Australian Bureau of Statistics)	2021–24	3.10
Contracted services	Weighted average of wage price index and consumer price index	2019–24	2.38 in 2019–20 increasing to 2.59 for 2020–22 before decreasing to 2.57 for 2022–24

Electricity	AEMO 2018 retail electricity price assumptions	2019–24	Between (7.40) and 9.04

Source: Seqwater, sub. 1, p. 18.

2.4.2 QCA assessment

In accordance with the referral notice, we have taken into account our recommendations from our 2018 review of Seqwater's urban bulk water prices for 2018–21 in assessing Seqwater's proposed cost escalation factors. We note that Seqwater proposed to use the same escalation factors as those that we approved for the 2018–21 urban bulk water price review, but updated the estimates for the latest available forecasts

We note Seqwater proposed similar escalation factors to those proposed by Sunwater. AECOM reviewed the escalation factors that Sunwater proposed and generally agreed with them.[21]

We note that while publicly available indicators suggest that insurance prices have increased in recent quarters, there were price decreases in some years over the previous price path period.[22] Given the lack of publicly available forward projections and the challenges in forecasting changes to insurance premiums over time, we accept Seqwater's proposal to apply inflation forecasts to insurance.

We have also accepted Seqwater's use of AEMO's retail electricity price assumptions as the default electricity cost escalator, consistent with the 2018–21 urban bulk water price review.

We have updated Seqwater's cost escalation factors to use the RBA's latest short-term inflation forecast (where available) and the midpoint of the RBA's target range for the price-path period. We have also updated the labour escalation factor for Queensland Treasury's most recent forecasts of the Queensland wage price index (WPI) up to and including 2022–23. For 2023–24, we have used the 10-year average of the Queensland WPI of 2.92 per cent, consistent with our approach in our recent water pricing investigations.[23]

Our recommended escalation factors for direct opex are summarised in Table 12.

Table 12 QCA-recommended cost escalation factors (%)

Cost category	*Forecast period*	*Escalation factor (%)*
Chemicals, other materials, capital expenditure and insurance	2019–2020	2.00
	2020–2024	2.37
Employee expenses and contract labour	2019–2023	2.25 (2019–20); 2.50 (2020–22); 2.75 (2022–23)
	2023–2024	2.92
Contracted services	2019–2020	2.14
	2020–2022	2.44
	2022–2023	2.58
	2023–2024	2.68

[21] AECOM, *Rural Irrigation Operational Expenditure Review*, 2019, pp 132-136.
[22] See, for example, Marsh, *Global Insurance Market Index*, First Quarter 2019.
[23] QCA, *Seqwater Bulk Water Price Review 2018–21*, final report, March 2018; QCA, *Gladstone Area Water Board Price Monitoring 2015–2020*, final report, May 2015.

Electricity	2019–2020	(7.63)
	2020–2021	(2.21)
	2021–2022	3.57
	2022–2023	8.90
	2023–2024	(0.57)

Source: AECOM, Rural Irrigation Operational Expenditure Review, 2019, pp 132-136; Queensland Treasury, Queensland Budget 2019–20, Budget Strategy and Outlook, Budget Paper No. 2, June 2019, p. 35; ABS, Wage Price Index, Australia, March 2019, Table 8a: Ordinary Hourly Rates of Pay Excluding Bonuses: All Sectors by State, Original, cat. no. 6345.0.

2.5 Efficiency target

2.5.1 Seqwater's submission

Seqwater proposed a continuing efficiency target of 0.2 per cent each year (cumulative) of controllable operating expenditure across the regulatory period, consistent with our recommended target from the 2018 urban bulk water price review.

Seqwater submitted that all its opex for irrigation service contracts was controllable and that it had therefore applied the efficiency target to total opex.

Seqwater considered this prudent, as it had achieved significant efficiency gains over the previous regulatory period.

2.5.2 QCA assessment

Seqwater's proposal to apply a continuing efficiency target of 0.2 per cent per year (cumulative) of base year controllable opex is consistent with our approved target from the 2018 urban bulk water price review and with other recent regulatory reviews of water businesses in other jurisdictions (on a growth-adjusted basis). On that basis, we have accepted Seqwater's proposed continuing efficiency target.

Table 13 Seqwater's proposed efficiency savings ($'000, nominal)

	2018–19	***2019–20***	***2020–21***	***2021–22***	***2022–23***	***2023–24***
Controllable OPEX	11,802.3	12,010.4	12,285.8	12,585.7	12,920.4	13,238.8
Continuing efficiency target (%)	–	0.2	0.4	0.6	0.8	1.0
Efficiency savings	–	24.0	49.1	75.5	103.4	132.4

Source: Seqwater pricing model 2018; QCA analysis.

2.6 Summary of total operating expenditure

Our recommended opex for Seqwater's irrigation service contracts is summarised in Table 14.

Table 14 QCA-recommended opex for irrigation service contracts (all sectors) ($ million, nominal)

Cost category	*Base year*	*Price path period*				
	2018–19	*2020–21*	*2021–22*	*2022–23*	*2023–24*	*Total*
Labour	2.2	2.3	2.4	2.4	2.5	**9.6**
Electricity	0.4	0.4	0.4	0.4	0.4	**1.6**
Repairs and maintenance	1.1	1.2	1.2	1.2	1.3	**4.9**
Other	1.8	2.0	2.0	2.1	2.1	**8.1**
Local government rates	1.8	1.9	2.0	2.0	2.1	**7.9**
Dam safety inspection	0.1	0.1	0.1	0.1	0.1	**0.4**
Insurance	0.6	0.6	0.6	0.6	0.7	**2.6**
Total direct	**8.0**	**8.4**	**8.6**	**8.8**	**9.0**	**35.0**
Operations	3.6	3.8	3.9	4.0	4.1	**15.7**
Non-infrastructure	0.1	0.2	0.2	0.2	0.2	**0.6**
Total non-direct	**3.8**	**3.9**	**4.0**	**4.1**	**4.2**	**16.3**
Efficiency target	–	–	(0.1)	(0.1)	(0.1)	**0.4**
Total operating costs	**11.8**	**12.3**	**12.6**	**12.9**	**13.1**	**50.9**

Source: QCA analysis.

Note: Other includes QCA regulatory fee.

3 RENEWALS EXPENDITURE

This chapter assesses the prudency and efficiency of Seqwater's renewals expenditure.

We have taken into account the findings from our 2018 review of Seqwater's urban bulk water prices, as required by the referral. In that review, we assessed the prudency and efficiency of Seqwater's capital expenditure for the period 1 July 2018 to 30 June 2028.

3.1 Overview

Seqwater's submission

Seqwater's renewals forecast was based on a composite approach, drawing data from multiple sources to derive long-term renewals profiles—with non-metering renewals for 2020–21 to 2034–35 sourced from its Asset Portfolio Master Plan (APMP) and forecasts for 2035–36 to 2049–50 derived from prior long-term renewals forecasts.[24]

Seqwater had included metering renewals to 2022, based on its meter replacement program, which is separate to the rest of its renewals planning process. Seqwater proposed to recover these costs through its renewals annuity, consistent with the previous QCA irrigation pricing review. It proposed a 30-year planning period for forecast renewals expenditure.

Seqwater stated that it had maintained the definition of renewals expenditure that was used for the previous review—that is, non-maintenance expenditure that is required to maintain the service capacity of the assets.

Table 15 Seqwater's renewals expenditure for irrigation service contracts (all sectors) ($ million, nominal)

Cost	*2013–18*	*2018–20*	*2020–24*	*2024–33*	*2033–43*	*2043–53*	*Total 2020–53*
Metering	2.3	2.8	1.6	–	–	–	**1.6**
Non-metering[a]	2.7	2.9	10.7	14.4	59.9	65.5	**150.4**
Total ($ million, nominal)	**5.0**	**5.7**	**12.4**	**14.4**	**59.9**	**65.5**	**152.1**
Total ($2018–19, million)	**5.3**	**5.6**	**11.8**	**11.7**	**38.2**	**31.7**	**93.3**
Average ($2018–19, millions)	**1.1**	**2.8**	**2.9**	**1.2**	**3.8**	**3.2**	**11.1**

a Includes expenditure for Central Brisbane River. In its November 2018 submission, Seqwater submitted that it was not proposing to recover renewals expenditure for Central Brisbane River from its irrigation customers.

Sources: Seqwater response to QCA RFI 2.

Dam safety upgrade capex

Seqwater did not forecast any dam safety upgrade capex over the price-path period.

Key issues for consideration

We have considered all aspects of Seqwater's proposal and have also taken into account the findings from our 2018 review of Seqwater's urban bulk water prices. In that review, we assessed

[24] Seqwater, sub. 1, p. 22.

the prudency and efficiency of Seqwater's capital expenditure for the period 1 July 2018 to 30 June 2028.

Issues that we have identified for further consideration include:

- Seqwater's historical renewals expenditure
- changes in Seqwater's non-metering renewals program since the 2018 urban bulk water price review (which considered prudent efficient expenditure to 2028)
- non-metering renewals expenditure beyond 2028.

3.2 Historical renewals expenditure

The referral requires the QCA to recommend an appropriate allowance for prudent and efficient expenditure on renewing existing assets, including an appropriate allowance for expenditure incurred in the previous price path periods. Existing assets are assets commissioned prior to 1 July 2000. Subject to certain conditions[25], the referral requires that expenditures on renewing assets should not include costs associated with:

- augmentation of existing assets
- new assets
- any capital expenditure that is not a like-for-like or modern equivalent replacement or does not reflect a regulatory requirement.

We have taken into account our findings from our 2018 urban bulk water price review in assessing Seqwater's historical renewals expenditure. We have also considered our recommendations from our 2013 review of Seqwater's rural irrigation prices.

3.2.1 Seqwater's submission

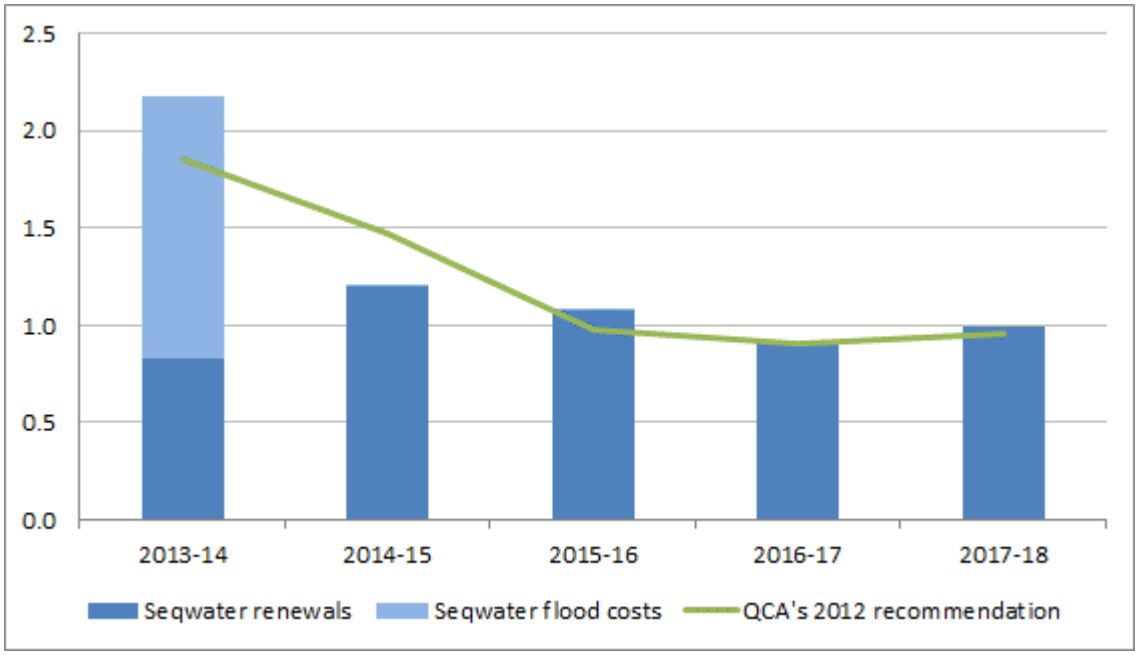
Seqwater submitted that its actual renewals expenditure over the previous price path was $5.17 million, compared to our recommended expenditure of $5.23 million. Seqwater also incurred $1.36 million in uninsured flood damage costs.

3.2.2 QCA assessment

Actual expenditure has been generally below our recommended expenditure, except for flood costs incurred in 2013–14 (Figure 3).

[25] Unless we are satisfied that the inclusion of these costs will generate net positive benefits for existing customers and relevant customers have been consulted.

Figure 3 Seqwater's historical renewals expenditure compared to the QCA's recommended expenditure (all sectors) ($ million, nominal)



Source: Seqwater response to QCA RFI 1; QCA, 2012.

We engaged AECOM to assess a sample of historical projects (summarised in Table 16).

Table 16 Sample of historical renewals projects reviewed by AECOM ($000, nominal)

Project	*Scheme*	*Value*
Flood costs not claimed	Central Lockyer Valley	849.7
Lake Clarendon channel refurbishment	Central Lockyer Valley	514.0

Source: Rural Irrigation Capital Expenditure Review, AECOM, 2019, p. 16.

AECOM's assessment did not identify any inefficiencies, and therefore AECOM did not recommend any adjustments (Table 17).

Table 17 Recommended adjustments to the value of historical renewals projects ($000, nominal)

Project	*Scheme*	*Assessment of prudency*	*Assessment of efficiency*	*Submitted cost*	*Adjustment*	*Recommended*
Flood costs not claimed	Various	Prudent	Efficient	847	–	847
Lake Clarendon channel refurbishment	Central Lockyer Valley	Prudent	Efficient	514	–	514

Source: Rural Irrigation Capital Expenditure Review, AECOM, 2019, p. 42.

Taking AECOM's findings into account, and given that Seqwater's actual expenditure is below our recommended expenditure from the 2013 review and that our 2018 review of urban bulk water prices did not identify any inefficiencies in Seqwater's historical renewals, we have accepted Seqwater's proposed historical expenditure (see our recommended historical renewals in the table below).

Table 18 Seqwater's historical renewals expenditure for irrigation service contracts (all sectors) ($million, nominal)

Cost	*Seqwater submitted*	*QCA adjustment*	*QCA draft*
Metering	5.1	–	5.1
Non-metering	5.6	–	5.6
Total	**10.7**	**–**	**10.7**

Note: This covers expenditure from 2013–14 to 2019–20.

Source: Seqwater, sub. 1; Seqwater response to QCA RFI 34.

3.3 Non-metering renewals forecasts to 2027–28

3.3.1 Seqwater's submission

Seqwater proposed non-metering renewals of $3.3 million over the period to 2027–28 in its November 2018 submission, but in January 2019 it provided the QCA with updated forecasts, saying that:

- there were omissions in the original projections
- the revised projects were more in line with the methodology used for the 2018 urban bulk water price review.

The difference between the November 2018 forecasts and the January 2019 forecasts is summarised below.

Table 19 Seqwater's non-metering renewals expenditure for irrigation service contracts (all sectors) ($millions, nominal)

	2020–24	*2024–28*	*Total*
Original submission	1.6	1.7	**3.3**
Revised submission[a]	3.0	2.7	**5.7**
Difference	**1.3**	**1.0**	**2.4**

a Excludes expenditure for Central Brisbane River to enable like-for-like comparison with the original submission. Seqwater was not proposing to recover renewals expenditure for Central Brisbane River, as stated in its November 2018 submission. Sources: Seqwater, sub. 1; Seqwater response to QCA RFI 2; Seqwater pricing model 2018.

3.3.2 QCA assessment

In our 2018 urban bulk water price review, we undertook a comprehensive assessment of Seqwater's asset planning and management and found this to be consistent with good industry practice. In particular, we found that Seqwater's corporate governance and procurement framework provides an effective approach to managing key asset and investment risks and compliance obligations, and that its capital planning framework is consistent with its legislative requirements and good industry practice.[26]

For this reason, we have targeted our assessment to differences between our recommended expenditure in the 2018 review—based on Seqwater's APMP at that time—and Seqwater's re-submitted expenditure.

[26] QCA, *Seqwater Bulk Water Price Review* 2018–21, final report, March 2018, p. 39.

Table 20 compares the recommended expenditure from our 2018 urban bulk water price review with Seqwater's resubmitted expenditure.

Table 20 Seqwater's non-metering renewals program, 2020–21 to 2021–28 (all sectors) ($2018–19, millions)

Scheme	*Seqwater submission*			*The 2018 urban bulk water price review*
	Shared assets[a]	*Irrigation only assets*	*Total*	
Central Brisbane River[b]	13.7	–	13.7	7.1
Central Lockyer Valley	1.7	–	1.7	1.6
Lower Lockyer Valley	0.2	0.3	0.5	0.0
Cedar Pocket	0.1	–	0.1	–
Mary Valley	0.2	–	0.2	0.2
Pie Creek	1.1	0.4	1.5	–
Logan River	0.8	–	0.8	0.8
Warrill Valley	0.2	0.1	0.3	0.1
Total	**18.0**	**0.8**	**18.8**	**9.8**

a Total value of assets before allocation. Irrigation share allocated using headworks utilisation factors (discussed in Chapter 7). b Figures obtained from Seqwater's APMP; Seqwater was not proposing to recover renewals expenditure for Central Brisbane River from its irrigation customers, as stated in its November 2018 submission. However, we consider it is appropriate to recover a share of these costs from irrigation customers (discussed in Chapter 6).

Source: Seqwater response to QCA RFI 2; QCA, Seqwater Bulk Water Price Path 2018-21, final report, March 2018.

We note that Seqwater's submission is based on its latest APMP. Our review indicates that the increase in expenditure in Central Brisbane is largely the result of the deferral of expenditure on Somerset Dam from earlier years to 2020–21.

We have selected a small sample of irrigation-only projects for review, as these were not a focus of our 2018 urban bulk water price review (Table 21).

Table 21 Sample of non-metering renewals projects reviewed by AECOM ($000, nominal)

Project	*Year*	*Scheme*	*Value*
Air valve replacements at Pie Creek main channel	2023	Pie Creek	380
Allowance for long-term renewals at Pie Creek pump station	2026	Pie Creek	1,820

Source: Rural Irrigation Capital Expenditure Review, AECOM, 2019, p. 45.

We engaged AECOM to assist us in this assessment.

AECOM's review did not identify any inefficiencies in assessed projects. AECOM's assessment is summarised below.

Table 22 Recommended adjustments to the value of non-metering renewals projects ($000, nominal)

Project	*Scheme*	*Assessment of prudency*	*Assessment of efficiency*	*Submitted cost*	*Adjustment*	*Recommended*
Air valve replacements at Pie Creek main channel	Pie Creek	Prudent	Efficient	380	–	380
Allowance for long-term renewals at Pie Creek pump station	Pie Creek	Prudent	Efficient	1,820	–	1,820

Source: Rural Irrigation Capital Expenditure Review, AECOM, 2019, Appendix B.

We accept AECOM's recommendations. Our recommended profile of non-metering renewals expenditure over the period to 2027–28 is summarised below.

Table 23 Seqwater's non-metering renewals expenditure for irrigation service contracts (all sectors) ($million, nominal)

	2020–24	*2024–28*	*Total*
Seqwater	10.7	10.4	**21.1**
QCA adjustments	–	–	**–**
QCA draft	**10.7**	**10.4**	**21.1**

Note: Includes expenditure for Central Brisbane River. Seqwater was not proposing to recover renewals expenditure for Central Brisbane River, as stated in its November 2018 submission. However, we consider it is appropriate to recover a share of these costs from irrigation customers (discussed in Chapter 6).

Sources: Seqwater, sub. 1; Seqwater pricing model 2018; Seqwater response to QCA RFI 2.

3.4 Non-metering renewals forecasts beyond 2027–28

3.4.1 Seqwater's submission

Seqwater proposed non-metering renewals of $69.6 million over the period beyond 2027–28 in its November 2018 submission, but it provided the QCA with updated forecasts in January 2019, saying that:

- there were omissions in the original projections
- the revised projects were more in line with the methodology used for the 2018 urban bulk water price review.

The difference between the November 2018 forecasts and the January 2019 forecasts is summarised in Table 24. As Seqwater submitted that it was not proposing to recover renewals expenditure for Central Brisbane River from its irrigation customers, we have excluded Central Brisbane non–metering renewals expenditure from the analysis below.

Table 24 Seqwater's non-metering renewals expenditure for irrigation service contracts (all sectors) ($ million, nominal)

	2028–33	*2033–43*	*2043–53*	*Total*
Original submission	2.5	24.8	42.2	**69.6**
Revised submission[a]	1.9	15.0	65.1	**82.0**
Difference	**(0.6)**	**(9.9)**	**22.9**	**12.4**

a Excludes expenditure for Central Brisbane River to enable like-for-like comparison with the original submission. Seqwater was not proposing to recover renewals expenditure for Central Brisbane River, as stated in its November 2018 submission.

Sources: Seqwater, sub. 1; Seqwater pricing model 2018; Seqwater response to QCA RFI 2.

3.4.2 QCA assessment

We have assessed a sample of projects in the period beyond 2027–28 to help determine the prudency and efficiency of expenditure in this period (Table 25).

Table 25 Sample of non-metering renewals projects reviewed by AECOM ($000, nominal)

Project	*Year*	*Scheme*	*Value*
Crowley Vale Weir inlet works—raw water pump	2040	Central Lockyer Valley	100
Air valve type 1 replacements	2047	Morton Vale Pipeline	860
Atkinson Dam building renewals	2051	Lower Lockyer Valley	13,050
Allowance for long-term renewals at Pie Creek pump station	2036	Pie Creek	1,820

Source: Rural Irrigation Capital Expenditure Review, AECOM, 2019, p. 45.

We engaged AECOM to assist us in this assessment.

AECOM's review did not identify any inefficiencies in assessed projects. AECOM's assessment is summarised in Table 26.

Table 26 Recommended adjustments to the value of non-metering renewals projects ($000, nominal)

Project	*Scheme*	*Assessment of prudency*	*Assessment of efficiency*	*Submitted cost*	*Adjustment*	*Recommended*
Crowley Vale Weir inlet works—raw water pump	Central Lockyer Valley	Prudent	Efficient	100	–	100
Air valve type 1 replacements		Prudent	Efficient	860	–	860
Atkinson Dam building renewals	Lower Lockyer Valley	Prudent	Efficient	13,050	–	13,050

Source: Rural Irrigation Capital Expenditure Review, AECOM, 2019, Appendix B.

We accept AECOM's recommendations. Our recommended profile of non-renewals expenditure over the planning period beyond 2027–28 is summarised in Table 27.

Table 27 Seqwater's non-metering renewals expenditure for irrigation service contracts (all sectors) ($million, nominal)

	2028–33	*2033–43*	*2043–53*	*Total*
Seqwater[a]	4.0	59.9	65.5	**129.3**
QCA adjustments	–	–	–	**–**
QCA draft	**4.0**	**59.9**	**65.5**	**129.3**

a Includes expenditure for Central Brisbane River. Seqwater was not proposing to recover renewals expenditure for Central Brisbane River, as stated in its November 2018 submission. However, we consider it is appropriate to recover a share of these costs from irrigation customers (discussed in Chapter 6).

Sources: Seqwater, sub. 1; Seqwater pricing model 2018; Seqwater response to QCA RFI 2.

3.5 Summary

Our recommended profile of total non–metering and metering renewals expenditure over the 30-year planning period is summarised in Table 28.

Table 28 QCA's recommended renewals expenditure over 30-year planning period (all sectors) ($million, nominal)[a]

Cost	*2020–24*	*2024-33*	*2033–43*	*2043–53*	*Total*
Total (bulk WSSs and distribution systems)	12.4	14.4	59.9	65.5	**152.1**
QCA adjustments	–	–	–	–	**–**
QCA draft	**12.4**	**14.4**	**59.9**	**65.5**	**152.1**

a Includes expenditure for Central Brisbane River. Seqwater was not proposing to recover renewals expenditure for Central Brisbane River from its irrigation customers, as stated in its November 2018 submission.

Sources: Seqwater, sub. 1; Seqwater response to QCA RFI 2; QCA analysis.

4 REVENUE REQUIREMENT

This chapter explains how we have calculated total prudent and efficient costs for each irrigation service contract. These costs consist of:

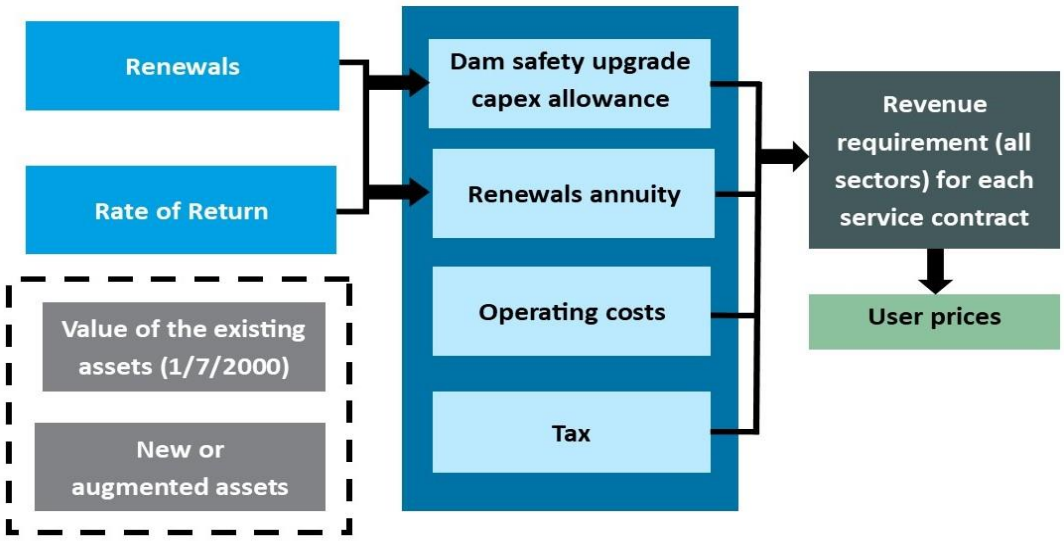
- *prudent and efficient operating costs*
- *an allowance for the prudent and efficient costs on renewing assets*
- *an allowance for prudent and efficient dam safety upgrade capex forecast to be incurred from 1 July 2020, to be applied in the set of prices where this allowance is included*
- *revenue offsets*
- *a tax allowance.*

4.1 Calculating the total revenue requirement

We have used a building block approach to calculating the total prudent and efficient costs for all sectors for each irrigation service contract by considering the following cost components:

- operating expenditure (opex)—the ongoing costs of running the business and maintaining assets (Chapter 2), including operations, maintenance and administration costs
- renewals expenditure allowance—an appropriate allowance for the costs of renewing existing assets (section 4.2), reflecting our assessment of renewals expenditure (Chapter 3) and an appropriate rate of return (Part A, Appendix C)
- revenue offsets identified on a service contract basis (section 4.5)
- tax—consistent with our post-tax nominal approach to WACC, we include an allowance for tax as part of total costs (section 4.6).

Figure 4 Calculating the revenue requirement for each irrigation service contract



Notes: As per the referral, costs recovered from irrigation prices are not to consider the value of existing assets (as at 1 July 2000) or the costs associated with new or augmented assets (unless we are satisfied that existing customers will benefit and they have been consulted). The dam safety upgrade capex allowance is only considered in the alternative set of prices that we are required to recommend under the terms of the referral.

We have also assessed an additional cost component—an appropriate allowance for dam safety upgrade capital expenditure forecast to be incurred from 1 July 2020 onwards—to calculate the alternative pricing option that includes an appropriate allowance for dam safety upgrade capital expenditure (see section 4.3).

4.2 Renewals expenditure allowance

The referral asks us to recommend prices to recover costs including an appropriate allowance for prudent and efficient expenditure on renewing existing assets.

4.2.1 Approach

Previous investigation

In the 2013 review, the QCA was directed to recommend a revenue stream to recover prudent and efficient expenditure on the renewing existing assets through a renewals annuity approach.

We accepted the use of a rolling annual annuity that involved the calculation of a separate new annuity for each year of the price path, based on the closing value of the annuity fund for the previous year and the present value of the forecast renewals for the term of the annuity.

Seqwater's submission

Consistent with previous price path periods, Seqwater has proposed a rolling annual annuity approach to recovering prudent and efficient expenditure on the renewing existing assets.

Other stakeholders' submissions

No other stakeholder provided comments on this issue.

QCA assessment

Economic regulators have used both the annuity and RAB approaches to calculate the capital cost component of the annual revenue requirement for regulated rural water businesses. Over the life of the asset and using identical costs, the present value of a renewals annuity should be the same as the present value of the RAB building blocks approach.[27]

A key difference between the annuity and RAB approaches is the time profile of capital costs received by the regulated business.

Under the annuity approach, forecast renewals expenditure required to maintain assets is smoothed over the long term. This generally results in customers paying upfront for expenditure that is forecast to be incurred in future years. A water business that has built up an annuity reserve will not have to rely on raising finance for renewals expenditure. Therefore, it will not generally receive a return on capital spent to renew existing assets.

Under the RAB approach, renewals expenditure is smoothed so that the firm recovers a return on capital and a return of capital over the life of the renewal (starting from when the renewals expenditure is incurred or the asset is commissioned). The return of capital will exactly recover the cost of the asset, and the return on capital will recover financing costs (interest on debt and a return to equity holders).

In theory, a renewals annuity should be calculated over a term equivalent to the asset with the longest life in the RAB. Where the term for a renewals annuity is shorter than the term of the

[27] QCA, *Issues in the Application of Annuities*, information paper, 2014.

longest-life asset in the RAB, an under- or overestimate of the annual capital costs applicable to an asset may occur, depending on the timing of the calculation within the life cycle of the asset.

However, we consider there are some potential issues with Seqwater's application of the renewals annuity approach, including:

- difficulties in accurately forecasting expenditure over a 20-year or 30-year planning period to achieve an appropriate renewals annuity allowance
- intergenerational equity, given that a 20-year or 30-year planning period does not cover the longest-life asset in Seqwater's asset base.

We consider that there are benefits in transitioning to a RAB-based approach. A RAB-based approach can be more transparent, as it allows customers to see the pricing impacts of near-term renewals expenditure and requires the business to provide the capital and service the associated financing costs. This aligns closely with the planning focus of Seqwater's NSPs, which focus on renewals expenditure in the short term to the end of the next price path period.

A RAB-based approach for renewals expenditure would provide for consistency with Seqwater's proposed approach for recovering irrigators' share of dam safety upgrade capital expenditure (see section 4.3). It would also align with the RAB-based approach proposed by Seqwater used to develop Seqwater's bulk water prices, which recover the majority of Seqwater's revenues.

However, there are a number of implications to consider in moving to a RAB-based approach.

If a RAB-based approach was adopted, an opening RAB would have to be established. Such an opening RAB would exclude the value of the asset base for Seqwater's existing assets (as at 1 July 2000), as it is the Government's pricing policy not to consider those assets for pricing purposes.

The renewals annuity approach commenced for Seqwater's irrigation schemes in 2000. Under a RAB approach, only the value of the asset base for Seqwater's existing assets would be considered for inclusion in the initial asset base, and not any renewals expenditure since 1 July 2000 incorporated in the renewals annuity. Including this historical renewals expenditure would result in the return on the initial RAB recovering the costs already potentially funded by customers through the renewals annuity.

We would need to carefully consider the implications of a RAB-based approach before adopting it as an appropriate allowance for renewals expenditure. The appropriate approach for funding renewals expenditure on long-lived assets is an important issue. It is important to ensure that Seqwater has sufficient funds to adequately maintain and replace its infrastructure, as well as appropriate incentives to undertake this work cost effectively.

We accept Seqwater's proposal that a renewals annuity approach will provide for an appropriate renewals expenditure allowance. That approach will result in allowed revenues or prices such that renewals expenditure incurred is expected to be recovered in present value terms, with the discount rate equal to the rate of return on investment that is commensurate with the regulatory and commercial risks involved with providing access to the service. This ensures that Seqwater is adequately compensated for its renewals expenditure; hence, efficient investment will be made in the future, and at the same time, customers pay reasonable prices.

However, we consider that Seqwater should investigate options with its customers and with the Government to move to RAB-based approach for future price reviews.

We will investigate this issue further prior to our final report. We welcome stakeholder views on the implications of moving to a RAB approach in response to this draft report.

Draft recommendation 18

We recommend that Seqwater should work with its customers and with the Government to move to a RAB-based approach for future price reviews.

4.2.2 Opening annuity balance

Under a rolling renewals annuity approach, the opening balance of the asset restoration reserve (also referred to as the annuity balance) at the beginning of the price path (1 July 2020) takes into account the accumulated under- and over recovery of renewals expenditure over previous price path periods.

We therefore need to be satisfied that the opening annuity balance only includes historical renewals expenditure that is prudent and efficient. This covers historical renewals expenditure since the beginning of the previous price path period (i.e. 1 July 2013).

Seqwater's submission

Seqwater said that the opening renewals annuity balances for 2020–21 were based on the opening annuity balances for 2013–14, less renewals expenditure, plus income and interest over the 2013–17 price paths.

For the Mary Valley WSS, Seqwater said that a recent review found that the headworks utilisation factor (HUF) approved in the 2013 review was too high due to the medium priority cut-off rule that applied to water supplied from Borumba Dam being incorrectly applied (see section 7.3). This resulted in a higher share of fixed bulk infrastructure costs being allocated to irrigators.[28] Seqwater proposed that the additional revenue collected due to this issue be credited as an adjustment to the opening renewals annuity balance. Seqwater said that customers agreed with this proposal.[29]

Seqwater proposed calculating and reporting the annuity balances for the irrigation share only of each scheme.[30] Seqwater said that this would allow for a simpler and more transparent calculation of those costs only recovered from the irrigation customers, such as the meter replacement program. Seqwater said that its shared schemes[31] only had a relatively small allocation of renewals costs under the HUF, and the annuity approach was generally not relevant for non-irrigation customers whose prices were generally based on a RAB approach (e.g. through SEQ bulk water prices).

Seqwater did not include irrigator only adjustments in their regulatory model used to derive their proposed prices but this information was included for reporting purposes in their scheme-level submissions.

Other stakeholders' submissions

No stakeholders provided submissions on this particular issue.

[28] Seqwater, sub. 1, p. 44.
[29] Seqwater, sub. 7, p. 8.
[30] Seqwater, sub. 1, p. 26.
[31] A shared scheme is a scheme supplying both urban high priority WAE customers and irrigation medium priority WAE customers.

QCA assessment

A rolling renewals annuity involves the calculation of a separate new annuity path each year, based on the closing value of the annuity fund for the previous year and the present value of the forecast renewals for the term of the annuity. The annuity is calculated at the start of each year to achieve a zero closing annuity balance at the end of the term (20 years). This process is repeated for each subsequent year. The term rolling refers to the progressive annual iterative process whereby the annuity calculation is moved forward annually.

The starting point for our assessment is the opening annuity balances for 2013–14. We have confirmed that Seqwater's 2013–14 opening annuity balances across all schemes reconcile with our recommended 2013–14 opening annuity balances.[32]

We accept that there may be merit in Seqwater's proposal to report renewals annuity balances for the irrigation share only of each scheme. This aligns with the approach that we have previously accepted for deriving the RAB used to calculate SEQ bulk water prices. For instance, in the 2018 Seqwater bulk water price review, only the high priority HUF share of capital expenditure is incorporated in the RAB.

We also accept that an irrigation only share of annuity balances could be more transparent to irrigation customers for reporting purposes, particularly in the shared Seqwater schemes with high urban shares. This would allow for the capital expenditure in these shared schemes to be clearly allocated between the irrigation share (in the annuity balance) and SEQ bulk water share (in the RAB).

However, for the purposes of modelling prices for our draft report we have used the whole of scheme annuity balance, consistent with Seqwater's modelling underlying its proposed prices. We note that this approach will not impact on our recommended prices for this price path period, as the renewals allowance only impacts on the fixed (Part A and Part C) prices, and no Seqwater tariff groups will transition to the Government's definition of cost reflective fixed prices over this price path period. However, if Seqwater provides updated price modelling with an irrigation only annuity account, we will consider this prior to our final report.

We accept Seqwater's proposal to credit additional revenue collected due to the incorrect calculation of the Mary Valley WSS HUF as an adjustment to the opening renewals annuity balance for this scheme.

We have rolled forward the opening 2013–14 annuity balance for each scheme through to end of the previous price path in 2016–17. The roll-forward occurs each year by making the following adjustments to each year's opening balance:

- adding the renewals annuity allowance from our 2013 review
- subtracting our recommended prudent and efficient renewals costs (see Chapter 3)
- adjusting for interest each year using the post-tax nominal WACC of 6.20 per cent from our 2013 review.

We have then rolled forward the opening 2017–18 annuity balance to the commencement of the new price path period using the same approach. Our assessed annuity revenue allowance for 2016–17 was increased by forecast inflation (2.5 per cent) each year, in line with the increase in

[32] QCA, *Seqwater Irrigation Price Review: 2013–17, final report*, April 2013, p. 93.

the cost-reflective target price used by Government to set the transitional price path over this period.

Our recommended opening annuity balances for 2020–21 are shown in Table 29.

Table 29 QCA-recommended 2020–21 opening annuity balance (all sectors)[a] ($'000, nominal)

Scheme	*Seqwater (November 2018)*	*QCA draft*
Cedar Pocket	68	68
Central Brisbane[b]	–	868
Central Lockyer Valley	(2,109)	(2,386)
Morton Vale Pipeline	123	411
Logan River	(2,319)	(2,169)
Lower Lockyer Valley	(1,470)	(1,512)
Mary Valley	(4,214)	(4,620)
Pie Creek	400	436
Warrill Valley	(1,789)	(1,693)

a Includes irrigation and non-irrigation share. b Seqwater did not submit proposed costs for Central Brisbane River WSS, as it proposed zero prices for this scheme.

Source: Seqwater, sub. 1, p. 50.

4.2.3 Planning period

To calculate a renewals annuity, it is necessary to determine the length of the planning period. This is the period over which forecast renewals expenditures are incorporated into the calculation of the renewals annuity. In the 2013 review, we applied a 20-year planning period.

Seqwater's submission

Seqwater considered that moving from a 20-year to a 30-year planning period was appropriate for the following reasons:

- Many of Seqwater's assets used to provide irrigation services have lives greater than 20 years and the period of recovery should ideally match the asset life.
- A 30-year planning period leads to a less volatile renewals allowance and allows expensive renewal projects to be included without creating a volatile price impact.
- The discounting of future expenditure appropriately takes into account this uncertainty and the renewal project has a bigger impact on the annuity as it draws closer and becomes more certain.
- The annuity balance provides a balancing mechanism to ensure the business does not overrecover renewals costs.[33]

Seqwater indicated that the 30-year annuity period was presented during the customer consultation process but no feedback was received on this issue.[34]

[33] Seqwater, sub. 1, p. 26.
[34] Seqwater, sub. 1, p. 27.

Other stakeholders' submissions

No stakeholders provided submissions on Seqwater's proposed planning period.

QCA assessment

In theory, a renewals annuity should be calculated over a term equivalent to the longest life asset in the RAB (as noted in section 4.2.1). Where the term for a renewals annuity is shorter than the term of the asset with the longest life in the RAB, an under- or overestimate of the annual capital costs applicable to an asset may occur, depending on the timing of the calculation within the life cycle of the asset.

We consider that both 20-year and 30-year planning periods may result in intergenerational equity issues given that a 20-year or 30-year planning period does not cover the longest-life asset in Seqwater's asset base.

In the 2012 review, our concerns regarding forecast renewals expenditure in the outer years resulted in us choosing a 20-year planning period. We noted that the appropriate response was for Seqwater to improve the reliability of the costs and scope of longer-term renewals projects.

In our 2018–21 Seqwater bulk water price review, our consultant KPMG considered that, overall, Seqwater's capital planning framework was commendable and consistent with its legislative requirements and good industry practice.[35]

For this review, we have assessed the impact on the renewals annuity allowance of moving from a 20-year to a 30-year planning period. Across all bulk WSSs, the total renewals annuity allowance is 1.9 per cent lower under a planning period of 30 years compared to 20 years (Table 30). Six of the nine schemes have a lower annuity allowance under the 30-year planning period.

Table 30 Total renewals annuity allowance over 2020–24 period—20-year vs 30-year planning period, bulk WSSs ($'000, nominal)

Scheme	*20-year planning period*	*30-year planning period*	*Difference (%)*
Cedar Pocket	24	19	(19.1)
Central Brisbane	8,509	6,510	(23.5)
Central Lockyer Valley	1,375	1,347	(2.0)
Morton Vale Pipeline	(103)	14	(114.0)
Logan River	963	831	(13.7)
Lower Lockyer Valley	716	1,573	119.7
Mary Valley	1,245	2,151	72.7)
Pie Creek	454	348	(23.3)
Warrill Valley	1,100	1,296	17.8
Total	**14,282**	**14,089**	**(1.4)**

Source: QCA analysis.

For this review, we have accepted Seqwater's proposed 30-year planning period.

[35] KPMG, *Seqwater expenditure review: prudency and efficiency assessment*, updated report for the QCA, March 2018, pp. 65–67.

4.2.4 Calculating the renewals annuity

In calculating the renewals annuity, the following is required:

- opening balance of the annuity balance at the beginning of the price path period (see section 4.2.2)
- forecast renewals expenditure over an appropriate planning period
- an appropriate discount rate that reflects Seqwater's opportunity cost of funds.

Seqwater's submission

Seqwater proposed that for schemes with prices above the irrigation cost recovery target, the surplus revenue should be returned to the annuity account moving forward (from 2020–21 onwards).[36] While Seqwater modelled the value of the surplus, it did not return this to the annuity balance within the regulatory model.

Other stakeholders' submissions

QFF supported using revenue recovered above the cost reflective level to reduce the negative renewals annuity balances in Logan River, Mary Valley, and Warrill Valley.[37]

QCA assessment

In its price modelling, Seqwater has applied a rolling annual annuity that is consistent with the approach that the QCA applied in calculating recommended prices in the 2013 review.

Seqwater said that stakeholders supported its proposal to treat revenue above the irrigation cost recovery target as a surplus and return it to customers via the renewals annuity balance. This is applicable in schemes with current prices above the irrigation cost recovery target—Logan River, Mary Valley and Warrill Valley WSSs.

While the pricing principles in the referral prevent us from reducing the fixed (Part A) price, they do not prevent Seqwater (or Sunwater) from returning the surplus revenue above the cost target to the relevant schemes. This approach is consistent with the principle in the referral that prices are to be based on all tariff groups transitioning to the irrigation cost recovery target.

For the purposes of this review, this modified treatment will have no impact on our recommended prices.

Our recommended renewals annuities for each of Seqwater's schemes are summarised in the table below.

[36] Seqwater, sub. 1, pp. 25–26.
[37] Queensland Farmers' Federation, sub. 131, p. 2.

Table 31 QCA's draft recommended renewals annuities for 2020–24 (all sectors) ($000s, nominal)

Scheme	*2020–21*	*2021–22*	*2022–23*	*2023–24*
Cedar Pocket	5	5	5	5
Central Brisbane	1,628	1,628	1,627	1,627
Central Lockyer Valley	336	336	336	339
Morton Vale Pipeline	4	4	4	4
Logan River	208	208	208	208
Lower Lockyer Valley	138	478	478	479
Mary Valley	537	537	537	540
Pie Creek	86	86	87	89
Warrill Valley	288	288	360	360
Total	**3,230**	**3,569**	**3,640**	**3,650**

Note: Includes irrigation and non-irrigation customer share only.

4.3 Dam safety upgrade capital expenditure allowance

Under the referral, we are required to provide an alternative pricing option that includes an apportionment of an appropriate allowance for dam safety upgrade capital expenditure. Our proposed approach for apportioning dam safety upgrade capital expenditure is in Chapter 4 of Part A of the draft report.

4.3.1 Seqwater's submission

Seqwater propesed, if it were to recover irrigators' share of dam safety upgrade costs from irrigation customers, to use a RAB-based approach with projects incorporated in the RAB on an 'as-commissioned' basis for the following reasons:

- Dam safety upgrades have very long lives similar to the dams they improve; therefore, it would not be appropriate to recover these costs over a 20- or 30-year period used in the renewals annuity method.
- A RAB-based approach on an 'as-commissioned' basis means customers do not contribute to the costs of the project until it is commissioned.
- Seqwater already uses a RAB approach for SEQ urban bulk water prices, so it would provide for consistency.[38]

Seqwater said that dam safety projects in the irrigation scheme have either been commissioned prior to 1 July 2020, or are not forecast to be commissioned until beyond 2023–24. On this basis, Seqwater said it is not proposing any costs associated with dam safety upgrades during the price path.[39]

[38] Seqwater, sub. 1, p. 28.
[39] Seqwater, sub. 1, p. 28.

4.3.2 QCA assessment

As a regulatory compliance cost, dam safety upgrade capex differs in nature to other renewals costs in the renewals annuity that seek to provide for the future cost of refurbishment and replacement of all assets within a defined system of existing assets. Dam safety upgrades do not reflect like-for-like or modern equivalent replacement of existing assets—rather, these projects upgrade existing assets to meet dam safety compliance requirements. We consider that capital costs that lead to the upgrade of existing infrastructure should be recovered using a separate capital annuity or RAB-based approach.

We do not consider that a renewals annuity with a 20- or 30-year planning period is appropriate for deriving an allowance for dam safety upgrade capital expenditure. Under the renewals annuity approach, the recovery of dam safety upgrade capital expenditure would substantially take place over the 20- or 30-year planning period, rather than over the life of the asset, as would occur under a RAB-based approach. In previous SEQ bulk water investigations, we assumed an asset life of 150 years for dam safety upgrades.[40]

We accept Seqwater's proposal that a RAB-based approach is appropriate for calculating an appropriate allowance for the prudent and efficient capital expenditure on dam safety upgrades. A RAB-based approach would recover capital-related costs over the useful life of the asset, ensuring that the costs of the services are recovered over a timeframe that is the same as for the provision of the services. It also addresses intergenerational equity concerns associated with existing customers paying for services that also deliver benefits to future customers.

We accept Seqwater's proposal to incorporate dam safety upgrade capital expenditure in the RAB on an 'as-commissioned' basis. In previous SEQ bulk water investigations, we recognised dam safety upgrade capital expenditure in the RAB from the year in which a project is commissioned (i.e. on an as-commissioned basis), as it is from this point in time that capex starts delivering a service and providing benefits. Under the existing regulatory framework for SEQ bulk water prices, an ex post review of actual capital expenditure would be undertaken if costs are higher than previously approved forecasts, to ensure that only prudent and efficient costs are recovered in prices.

We consider that dam safety upgrade capital expenditure is similar to capital expenditure that seeks to increase the service or productive capacity of the existing asset base, in that it upgrades existing assets and provides benefits over the term of its economic useful life.

None of Seqwater's dam safety upgrade projects are expected to be commissioned in the price path period. However, some of its planned dam safety upgrades are expected to be completed beyond the price path period (Table 32).

[40] QCA, *Seqwater Bulk Water Price Review 2018–21,* final report, March 2018.

Table 32 Projected timing of dam safety upgrade projects

WSS	*Projected timing (if any)*
Cedar Pocket WSS	No upgrade currently required
Central Brisbane River WSS	Somerset Dam (commissioning 2025–26) Wivenhoe Dam (commissioning 2031–32)
Central Lockyer Valley WSS	Dam safety upgrades for Bill Gunn Dam and Clarendon Dam are commissioning prior to 1 July 2020
Logan River WSS	Maroon Dam (commissioning 2036–37)
Lower Lockyer Valley WSS	Atkinson Dam (commissioning 2036–37)
Mary Valley WSS	Borumba Dam (commissioning 2035–36)
Warrill Valley WSS	Moogerah Dam (Stage 1B) (commissioning 2034–35) Moogerah Dam (Stage 2) (commissioning 2036–37)

Source: Seqwater, sub. 1, pp. 28–29.

In our 2018–21 Seqwater bulk water price review, we recommended that $223.1 million in capital expenditure on the Somerset Dam safety upgrade project be recovered from SEQ bulk water prices, with commissioning to occur in 2025–26.[41] For indicative purposes, this additional cost would be equivalent to an additional $4.91 per megalitre in the fixed (Part A) price for irrigators in the Central Brisbane River WSS.[42]

4.4 Working capital allowance

4.4.1 Seqwater's submission

Seqwater has not proposed a working capital allowance. It said that while conceptually a working capital allowance would be appropriate, the allowance for irrigation services would likely be small.[43]

4.4.2 QCA assessment

By far the largest portion of irrigators' payments to Seqwater relates to fixed Part A and C prices, which are paid in advance. This means that for irrigation activities it is likely that Seqwater would not generally suffer an economic cost resulting from the timing difference between receivables and payables.

As a result, we consider that a zero working capital allowance is appropriate. In the 2013 review, our approach was also not to incorporate a working capital allowance.

[41] While Seqwater submitted $285.5 million in incurred costs, we approved $223.1 million in our 2018–21 Seqwater bulk water price review. See QCA, *Seqwater Bulk Water Price Review 2018–21,* final report, March 2018, pp. 41–47.
[42] Note this is an indicative price impact, based on the WACC of 4.74 per cent used in this draft report and an asset life of 150 years for regulatory depreciation (consistent with the asset life approved for this project in our 2018–21 Seqwater bulk water price review).
[43] Seqwater, sub. 1, p. 21.

4.5 Revenue offsets

4.5.1 Seqwater's submission

Seqwater submitted that most of the revenue offsets that were identified in the previous irrigation price review relate to recreation services. As recreation costs are being excluded from this review, Seqwater said that recreation revenue should not be offset for the purpose of setting irrigation prices.[44]

Seqwater said that there were only minor remaining sources of alternate revenue for the schemes. These account for a total of $0.06 million in 2020–21, and have been accounted for in the relevant schemes. The total of the revenue offsets for all schemes is around $0.06 million in 2020–21.

4.5.2 QCA assessment

We have not subjected Seqwater's proposed revenue offsets to review as they are generally relatively minor. These revenue offsets were deducted from the scheme total costs and are therefore effectively shared between irrigation and other scheme users.

4.6 Tax allowance

Under the referral, we have been directed to provide Seqwater with an allowance for tax (if applicable).

4.6.1 Seqwater's submission

Seqwater noted that in the 2013 review, tax cash flows were excluded from the QCA's revenue and price modelling, despite a post-tax WACC being applied.

Seqwater derived its renewals annuity allowance using a post-tax nominal WACC, noting that this was the QCA's preference in previous regulatory reviews. While tax is not explicitly excluded in this review, Seqwater has not proposed any tax cash flows. Seqwater said that the QCA could therefore consider if the post-tax WACC remains appropriate without any tax cash flows.

4.6.2 QCA assessment

In the 2013 review, we said that the QCA's efficient costs were equivalent to the definition of lower bound.[45] Given the definition of lower bound pricing excludes income tax[46], we did not calculate a separate tax allowance.

For Seqwater's irrigation business, the referral directs us to recommend prices that do not consider Seqwater's asset base and therefore do not allow a return on the historical investment. Under the renewals annuity approach that has been used since 2000, renewals expenditure are excluded from the asset base and treated as 'operational'—that is, being deductible for tax purposes. As a result, no tax liability is associated with renewing existing assets.

The implication is that Seqwater is required to generate sufficient cash flows to cover only the returns to the providers of equity and debt capital—that is, the post-tax WACC, not the pre-tax WACC.

[44] Seqwater, sub. 1, p. 18.
[45] QCA, *Seqwater Irrigation Price Review 2013–17*, final report, April 2013, p. 246.
[46] QCA, *Seqwater Irrigation Price Review 2013–17*, final report, April 2013, p. vii.

We consider that a zero tax allowance over the price path period for the irrigation service contracts is appropriate for this investigation.

4.7 Total revenue requirement

Total scheme costs are presented in Table 33. These reflect the total costs across Seqwater's schemes that are the subject to our investigation and that will be allocated between irrigation and other scheme users (see Chapter 7).

Table 33 Total whole of scheme costs 2020–24 (all sectors) ($ million, nominal)

Cost	*2020–21*	*2021–22*	*2022–23*	*2023–24*	*Total*
Operating costs	12.3	12.6	12.9	13.1	**50.9**
Renewals annuity	3.2	3.6	3.6	3.6	**14.1**
Revenue offsets	(1.5)	(1.5)	(1.6)	(1.6)	**(6.2)**
Tax	-	-	-	-	**-**
Total costs	**14.1**	**14.6**	**14.9**	**15.2**	**58.9**

Source: QCA analysis.

Table 34 below presents draft total costs by bulk WSS and distribution system for 2020–21.

Table 34 Total costs for bulk WSSs and distribution systems, 2020–21 (all sectors) ($ millions, nominal)

Scheme	*Operating costs*	*Renewals annuity*	*Revenue offsets*	*Tax*	*Total*
Cedar Pocket	0.2	0.0	(0.0)	-	**0.2**
Central Brisbane River	6.3	1.6	(1.4)	-	**6.5**
Central Lockyer Valley	0.8	0.3	(0.0)	-	**1.1**
Morton Vale Pipeline	0.1	0.0	-	-	**0.1**
Logan River	2.1	0.2	(0.0)	-	**2.3**
Lower Lockyer Valley	0.7	0.1	(0.0)	-	**0.9**
Mary Valley	0.8	0.5	-	-	**1.3**
Pie Creek	0.3	0.1	-	-	**0.4**
Warrill Valley	1.1	0.3	(0.0)	-	**1.4**
Total	**12.3**	**3.2**	**(1.5)**	**-**	**14.1**

Source: QCA analysis.

5 FORECAST ENTITLEMENT AND USAGE VOLUMES

We have estimated water access entitlements (WAEs) and usage volumes, which we have used to convert Seqwater's revenue requirement into prices for each tariff group.

For the tariff groups considered in this investigation, the fixed (Part A and Part C) charge is derived using WAEs in each tariff grouping, while the variable (Part B and Part D) charge is based on an assumed level of water use for the scheme as a whole.

For a given level of costs allocated to each tariff group or scheme, a lower (higher) volume of WAE/usage will lead to a higher (lower) fixed/volumetric price.

5.1 Water access entitlements

Most WAEs held by irrigators are medium priority WAEs, although there are relatively low volumes of high priority irrigation WAEs in some schemes. Forecast WAEs are used in calculating prices and in allocating some fixed costs[47] between medium and high priority WAE customers in each scheme.

5.1.1 Seqwater's submission

Seqwater said that its forecast WAEs were based on the latest available information on ownership of water allocations in each of its schemes. Seqwater did not propose any adjustments to its scheme-level WAEs.

5.1.2 QCA assessment

We have reconciled Seqwater's proposed WAE forecasts at the scheme level with the QCA's forecasts in the 2013 review and with information published on the Government's website (where available).

In the 2013 review, we found that original WAEs associated with the Morton Vale Pipeline had been 5,051 ML but then decreased due to customers handing back allocations. To avoid remaining customers paying for costs attributed to these volumes, we instead calculated fixed prices using 5,051 ML, as that was the agreed volume at the establishment of the scheme.[48]

Consistent with the 2013 review, we have adjusted Morton Vale Pipeline WAEs to 5,051 ML for calculating the Part C distribution fixed price. We have, however, retained Seqwater's submitted WAE of 3,420 ML for calculating the Part A bulk fixed price.

For the remaining WSS and distribution systems operated by Seqwater, we are satisfied that Seqwater's proposed WAE forecasts are an appropriate basis for deriving fixed prices.

[47] Except for asset-related headworks (bulk) costs, which are generally allocated between medium and high priority WAE customers using the headworks utilisation factor.

[48] QCA, *Seqwater Irrigation Price Review: 2013–17,* Volume 2: Central Lockyer Valley Water Supply Scheme, final report, April 2013, pp. 28–31.

Table 35 Proposed WAE (ML), medium priority

Scheme	*Seqwater's proposed WAE*	*QCA draft*
Cedar Pocket	495	495
Central Brisbane River	7,194	7,194
Central Lockyer Valley	16,357	16,357
Morton Vale Pipeline	3,420	5,051
Logan River	13,555	13,555
Lower Lockyer Valley	12,620	12,620
Mary Valley	21,899	21,899
Pie Creek	835	835
Warrill Valley	23,884	23,884

Source: Seqwater pricing model 2018; QCA analysis.

5.2 Usage volumes

Water usage volumes are used to derive the Part B and Part D tariff. For each WSS and distribution system, the variable costs are divided by the estimated water usage to calculate the volumetric tariff.

5.2.1 Previous investigation

In the 2013 review, 15 years of historical water use data was available for each WSS and distribution system. We noted that the previous 10 years of water use in SEQ had not been typical, as there has been low water use, due to up to nine years of drought followed by one to two years of floods.[49]

In response to a number of submissions on this issue, we recommended an averaging approach that excluded water years where the usage was below the 15-year average and estimated an average water usage from the remaining years (i.e. the average of the above-average water use years).[50]

5.2.2 Seqwater's submission

Seqwater submitted that the forecast water usage should be based on 15 years of data on the basis that it promotes:

- the objectives of regulatory precedent and certainty, as the period is the same as for the previous QCA decision
- price stability, as a shorter period will be more variable, and could lead to price volatility at each price reset.[51]

Seqwater proposed a simple average of the 15-year period on the basis of the following:

- Seqwater's budgeting is not done based on a typical year, as suggested by the QCA in the 2012 review. Seqwater considers its costs to be fixed and does not budget on the basis that

[49] QCA, *Seqwater Irrigation Price Review 2013–17*, Volume 1, final report, April 2013, p. 241.
[50] QCA, *Seqwater Irrigation Price Review 2013–17*, Volume 1, final report, April 2013, p. 241.
[51] Seqwater, sub. 1, p. 32.

above-average water deliveries will be needed. Seqwater based its budget on historical trends, without excluding observations.

- To calculate the variable charge based on an above-average water use forecast effectively ensures that Seqwater will not recover its variable revenue over the long term. It is not reasonable for the QCA to recommend a variable cost component that cannot be recovered in normal conditions.
- This is consistent with other jurisdictions. For WaterNSW, IPART divides the variable revenue requirement by the 20-year rolling average of water use.[52]

Seqwater's forecast usage are shown in the table below.

Table 36 Seqwater proposed water usage forecast estimates (ML per year)

Scheme	*15-year average (medium priority)*	*15-year average (medium and high priority)*
Cedar Pocket	312	312
Central Brisbane River	1,890[a]	155,935[a]
Central Lockyer Valley	4,550	4,550
Morton Vale Pipeline	747	747
Logan River	3,660	6,172
Lower Lockyer Valley	1,746	1,746
Mary Valley	5,888	10,920
Pie Creek	202	202
Warrill Valley	3,867	5,784

a The average for Central Brisbane River WSS is 5 years from 2013–14, as no earlier data is available.

Source: Seqwater response to QCA RFI 23 and 29.

Seqwater said that using the long-term average of water usage as a basis for pricing was supported by its customers.[53]

5.2.3 QCA assessment

Consistent with the 2013 review, our estimate of scheme-level variable costs are divided by the assumed level of water usage to calculate the volumetric tariff.

To establish a meaningful water use denominator, we consider that the approach to estimating the assumed level of water use should be representative of normally occurring conditions, consistent with our approach to estimating base year costs.

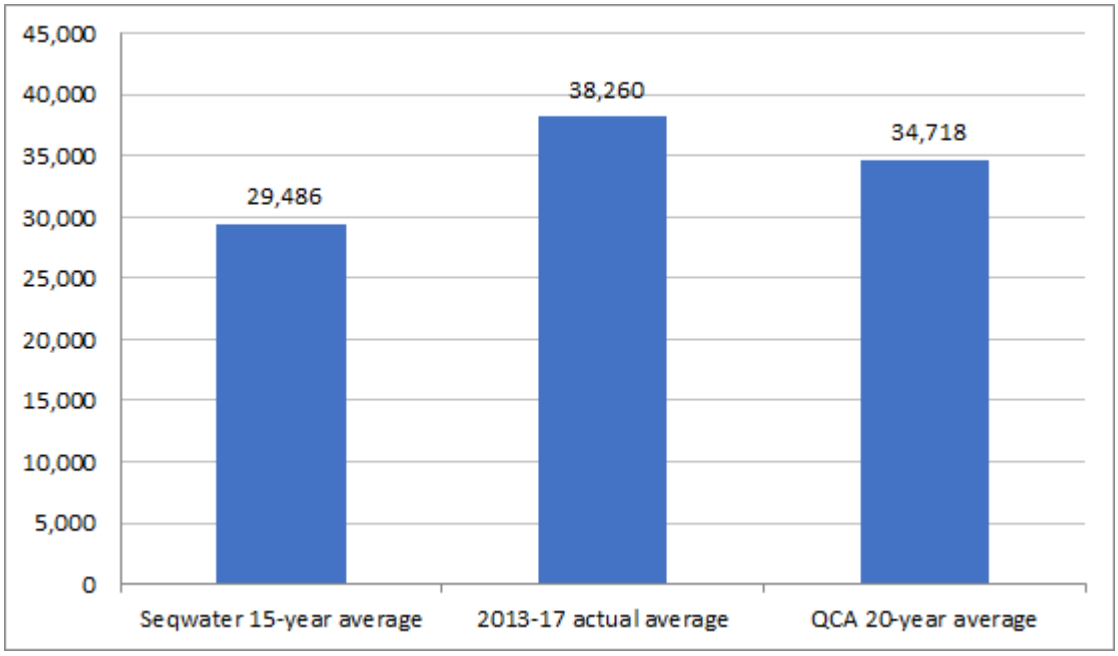
We had concerns in the 2013 review about the averaging period including a large number of years with abnormally low water usage (reflecting severe drought and/or flood impacts mainly during the period up to and including 2010–11). However, we now have an additional six years of usage data, from 2012–13 to 2017–18, to use in an averaging approach.

[52] Seqwater, sub. 1, p. 32.
[53] Seqwater, sub. 1, p. 33.

Given this extended dataset, our preference is to use a 20-year averaging period to cover a larger number of observations obviating the need to exclude any data points. This is consistent with IPART's approach to deriving variable tariffs for WaterNSW. We consider that a simple averaging approach results in revenue and pricing outcomes that are both simple and transparent to customers.

Figure 5 shows water use estimates that were derived using a 20-year averaging period compared with actual water use over the previous price path period from 2013–14 to 2016–17.

Figure 5 Total bulk water use (ML/year)



Notes: Includes water usage associated with medium and high priority WAE. Excludes Central Brisbane River usage, for which usage data is only available from 2013–14 onwards. Includes bulk water delivered to distribution system customers. Seqwater's 15-year average relates to the period from 2002–03 to 2016–17. Our 20-year average relates to the period from 1998–99 to 2017–18.

Table 37 outlines our proposed water usage assumptions for each scheme.

Table 37 Proposed total water use, total bulk water (ML/year)

Scheme	*Seqwater proposed*	*QCA draft*
Cedar Pocket	312	300
Central Brisbane River	n.a.	155,935
Central Lockyer Valley	4,550	6,128
Morton Vale Pipeline	747	856
Logan River	6,172	7,167
Lower Lockyer Valley	1,746	2,366
Mary Valley	10,920	10,760
Pie Creek	202	207
Warrill Valley	5,784	7,997

Notes: Includes water usage associated with medium and high priority WAE. The QCA-proposed average for Central Brisbane River WSS is 5 years from 2013–14, as no earlier data is available.

Source: Seqwater responses to QCA RFI 23 and 29; QCA analysis.

6 PRICING FRAMEWORK ISSUES IN SEQWATER SCHEMES

The referral directs us to recommend irrigation prices for all current tariff groups. We are also required to review the tariff groups in certain water supply schemes and develop alternative tariff groups as a second pricing option.

This chapter outlines our assessment of pricing framework issues relevant to tariff groups in Seqwater's schemes that were raised by stakeholders or identified for further consideration.

6.1 Background

The following pricing framework issues relevant to Seqwater schemes attracted comment from stakeholders or have been identified for further consideration:

- the appropriate tariff structure and the appropriate allocation of costs between fixed and volumetric prices (section 6.2)
- the appropriate treatment of distribution loss water access entitlements held by Seqwater to manage losses that occur when diverting water to customers in the distribution system (section 6.3)
- Seqwater's proposed zero cost allocation for the Central Brisbane River WSS (section 6.4).

6.2 Tariff structure

In recommending prices, we need to determine the appropriate tariff structure and the appropriate allocation of costs between fixed and volumetric prices.

In doing so, consistent with the requirements of the referral notice, we also need to have regard to the fixed and variable nature of the underlying costs and to derive the fixed (Part A and Part C) prices independently of volumetric (Part B and Part D) prices. We also needs to consider other matters, including efficient costs, efficient resource allocation, revenue sustainability, and other matters outlined in Section 26 of the QCA Act.

6.2.1 Previous investigation

In the 2013 review, we concluded that customers should be allocated revenue risk and, accordingly, recommended rebalanced two-part tariff structures that better aligned prices with the underlying nature of the costs. We said that this tariff balance would also send efficient price signals.

Under our recommended two-part tariff structures, the fixed price components (Parts A and C) generally reflected fixed costs and the volumetric price components (Parts B and D) generally reflected variable costs (subject to the constraints of the Government's pricing principles).

6.2.2 Seqwater's submission

Seqwater said that costs that do not vary with the volume of water deliveries should be recovered through the fixed charge, and costs that vary with water deliveries should be recovered through the variable charge.[54]

[54] Seqwater, sub. 1, p. 38.

The exception to this was in the Lockyer Valley schemes, where due to the performance of the schemes (where the customers have their announced allocations reduced substantially quite frequently), customers would prefer costs to be allocated more to the volumetric charges.[55]

6.2.3 Other stakeholders' submissions

Customers in schemes with lower levels of reliability have raised concerns with paying a fixed fee when there is no/little water supplied.

In the Lockyer Valley schemes (Central Lockyer Valley WSS and Lower Lockyer Valley WSS), stakeholders commented on supply reliability concerns and requested that the QCA look at pricing alternatives.[56] In particular, stakeholders said:

- Water reliability over the life of water assets has been unreliable, and water is not available for significant periods.
- A future price path with a heavy weighting (up to 95 per cent) on a fixed charge is not sustainable, as water users rely on the availability of water for their production to produce revenue.
- Consideration should be given to pricing alternatives that specify a higher operational cost with limited fixed costs, enabling users to generate revenue and pay for water use when the seasons allow for such use.
- Equity would be compromised by charging for water that is simply not available from poorly performing assets. This inequity would lead to clear social impacts on the short-term viability of businesses and communities.

6.2.4 QCA assessment

Tariff balance

We consider that the approach to tariff structures that we took in the 2013 review is an appropriate starting point for the current review. That is, a two-part tariff structure with a fixed component that generally aligns with the underlying fixed costs and a volumetric component that generally aligns with the underlying variable costs.

This approach is consistent with the requirements of the referral, including the requirement to have regard to the fixed and variable nature of the underlying costs. It will also help to send signals regarding the efficient costs of providing water supply services to irrigation customers (noting that any price signals may be tempered to some degree by the Government's pricing principles), which in turn may promote higher value production and efficient investment by active irrigators.

As the businesses' costs are largely fixed, aligning the tariff structure with the nature of the underlying costs is also consistent with our proposed allocation of volume risk and will help to address the revenue adequacy requirements in the referral notice.

In the 2013 review, we noted that Seqwater has a large degree of manually operated schemes (with some exceptions) that require ongoing effort to deliver water. In times of reduced supply, some activities can be reduced or deferred.

[55] Seqwater, sub. 1, p. 39.
[56] Barden Produce, sub. 82; Golden Finch Lawns, sub. 61; Member for Lockyer, sub. 125; Lockyer Valley Regional Council, sub. 117; Lockyer Valley Irrigators, sub. 116; QFF, sub. 131; Somerset Regional Council, sub. 76.

Schemes impacted by drought

We consider that any relief from fixed (Part A) prices during a drought is a matter more appropriately determined by the Queensland Government. Drought assistance provided by the Queensland and Australian governments generally encompasses a range of measures and any relief from Part A charges needs to be considered in that context.

Low reliability schemes

While we acknowledge the concerns raised by customers in schemes with low reliability (in particular, the Lockyer Valley schemes), we do not consider that this issue is best addressed through adjusting the tariff structure for these schemes. Adjusting the tariff structure would potentially be inconsistent with the Government's pricing principles in the referral. The recommended fixed price faced by each irrigation customer under the referral is generally required to be no lower than the existing 2019–20 fixed price. This limits our ability to rebalance tariff structures.

In addition, rebalancing the tariff structure may mask the underlying problems in some schemes and delay the timely consideration and resolution of those problems. We note that the Government is currently working with irrigators in the Central Lockyer Valley and Lower Lockyer Valley WSSs to investigate potential options to address the reliability issues in those schemes. We encourage both parties to continue those investigations.

Draft recommendation 19

We recommend the tariff structure should include:

- a volumetric price that covers variable costs associated with the delivery of water services
- a fixed price that reflects the balance of the revenue requirement allocated to the particular tariff group.

6.3 Distribution and bulk losses

Seqwater owns distribution loss WAEs in distribution systems and some bulk WSSs to account for water losses incurred in the delivery of water to customers. These WAEs were granted to Seqwater under the Water Act 2000 when the associated schemes were included into a resource operation plan (ROP). These allocations are held by Seqwater to ensure that customers receive a reliable supply of water.

Many factors are responsible for distribution losses, including pipe leakage, evaporation, storage seepage, overflows and drainage for maintenance. Distribution losses are applicable to the following schemes operated by Seqwater: Morton Vale Pipeline distribution system, Pie Creek distribution system, Lower Lockyer Valley WSS and Warrill Valley WSS.

Although referred to as distribution losses in the relevant water management protocols, losses associated with the Lower Lockyer Valley and Warrill Valley WSSs are not genuine distribution losses, as they are losses associated with bulk assets (these relate to losses from channels and pipelines within a bulk tariff group).

The overall volume of loss WAEs held by Seqwater is not material in comparison to Sunwater, but the appropriateness of the distribution loss WAEs does warrant consideration.

6.3.1 Previous investigation

In the 2013 review, we considered that distribution loss WAEs were a valid consideration in establishing the cost of providing services, as they relate to the additional storage infrastructure required to ensure the level of supply required by customers.

Consistent with the 2012 Sunwater irrigation price review, we recommended that prudent and efficient bulk costs associated with distribution loss WAEs should be recovered from distribution system customers, but distribution system customers should not pay for bulk holding (fixed) costs associated with distribution loss WAEs in excess of what is required to meet actual loss releases required by Seqwater. Consequently, we recommended that any bulk fixed costs in excess of what is required to provide a reliable supply of water should be borne by Seqwater.

We recommended that Department of Natural Resources, Mines and Energy (DNRME), as the natural resource regulator, should review distribution loss WAEs to establish the efficient level to be held by Seqwater in accordance to the time frames established for amending the ROPs. We identified three avenues under the Water Act 2000 that would allow for such a review. These were amending the relevant ROPs, providing a ministerial direction to Seqwater, or amending the Water Resource Plans. Amending the relevant ROP to require a reconfiguration of Seqwater's distribution loss WAEs was considered to be the most effective option.[57]

Once the purpose of the distribution loss WAEs had been changed to a tradable allocation, Seqwater could sell the newly available WAE to customers. If the level of distribution loss WAEs in a particular year was insufficient to meet actual losses, Seqwater had the ability to buy WAEs in the temporary trading market to make up the shortfall. We said that costs associated with temporary trading for this purpose could be recovered through an end-of-period adjustment.

However, due to lack of data, we were unable to establish what the actual level of distribution loss WAEs was for all schemes. Consequently, the appropriate allocation of distribution loss WAEs was assessed on a scheme by scheme basis (Table 38).

Table 38 Treatment of distribution loss WAEs in the 2013 review

Scheme	*2013 review approach*
Pie Creek	Data provided by Seqwater showed that from time to time the full distribution loss WAEs were required for Pie Creek distribution system. We therefore recommended that costs associated with all distribution loss WAEs be recovered from irrigators. However, since the holding of high priority WAEs had material price impacts for Pie Creek, we recommended that DNRME should reconsider the mix of high priority to medium priority distribution loss WAEs.[58]
Morton Vale Pipeline	We determined that excess distribution loss interim water allocations (IWAs) were likely to exist for Morton Vale. We considered customers should only pay 50 per cent of costs associated with distribution loss IWAs.[59] We noted that while Seqwater could not currently sell this excess distribution loss IWAs, the volume was not material enough to provide significant long- term volume risk management options.[60]

[57] QCA, *Seqwater Irrigation Price Review 2013–17*, final report, April 2013, pp. 64–73.
[58] QCA, *Seqwater Irrigation Price Review 2013–17*, Volume 2 :Mary Valley Water Supply Scheme, final report, April 2013, pp. 14–18.
[59] QCA, *Seqwater Irrigation Price Review 2013–17*, Volume 2: Central Lockyer Water Supply Scheme, final report, April 2013, pp. 24–28.
[60] QCA, *Seqwater Irrigation Price Review 2013–17*, Volume 2: Central Lockyer Water Supply Scheme, final report, April 2013, p. 15.

Lower Lockyer Valley	As we were unable to establish what actual distribution losses were, and as Lower Lockyer Valley did not have permanently tradable WAEs, costs associated with the full allocation of 1500 ML medium priority distribution loss IWAs were allocated to customers.[61]
Warrill Valley	As we were unable to establish what actual distribution losses were, and as Warrill Valley did not have permanently tradable WAEs, costs associated with the full allocation of medium priority distribution loss IWAs were allocated to customers. However, it was noted that both medium and high priority customers benefit from distribution losses, with high priority IWAs making up 28 per cent of entitlements. This benefit was disproportionate, given the restrictions that apply to medium priority entitlements through the system of announced allocations. For these reasons, we considered that costs associated with distribution loss IWAs should be allocated using the headworks utilisation factor (HUF).[62]

Source: QCA 2013.

6.3.2 Seqwater's submission

Seqwater did not apply the 2013 review treatment in calculating its proposed irrigation prices.

6.3.3 Other stakeholders' submission

No stakeholders provided submission on this issue in relation to Seqwater schemes.

6.3.4 QCA assessment

We have reassessed the appropriateness of the 2013 review approach. Since the last review, Warrill Valley and Lower Lockyer Valley have been issued with permanently tradable WAEs. DNRME is in the process of establishing permanently tradable WAE in Central Lockyer Valley, which includes Morton Vale Pipeline.

In the 2013 review, we recommended that DNRME review the efficient level of distribution loss WAEs allocated to Seqwater in accordance to the time frames established for amending the ROPs. However, DNRME said that the volume of water allocation needed to cover the distribution losses is essentially a function of operation, asset maintenance and contractual arrangements between the scheme operator and the customer. Accordingly, any change to distribution loss WAEs should be instigated by Seqwater and DNRME will assess the application according to the criteria.[63]

Distribution customers are unable to control the level of distribution loss WAE. Seqwater, as the owner of distribution loss WAEs, is responsible for the management of distribution loss WAEs within its distribution systems. Therefore, we consider that distribution system customers should only be allocated the costs associated with the level of distribution loss WAEs required to meet actual losses.

We consider that Seqwater is best placed to manage the risk of distribution loss WAEs in excess of what is needed to ensure a reliable supply to distribution customers. The water planning framework does allow Seqwater to apply to change the purpose of distribution loss WAEs, which it could then sell to customers (see Box 1). Therefore, we consider that the appropriate incentives should be in place for Seqwater to minimise losses and maximise saleable WAEs.

[61] QCA, *Seqwater Irrigation Price Review 2013–17*, Volume 2: Lower Lockyer Valley Water Supply Scheme, final report, April 2013, pp. 12–15.
[62] QCA, *Seqwater Irrigation Price Review 2013–17*, Volume2: Warrill Valley Water Supply Scheme, final report, April 2013, pp. 13–16.
[63] Submission to the QCA from the Department of Natural Resources and Mines, Queensland Government, *Seqwater Irrigation Price Review: 2013–17*, February 2013.

> **Box 1—Water planning framework under the Water Act 2000**
>
> Since the 2013 review, the Water Act 2000 has changed, to allow a new water planning framework to be implemented. This has seen resource operations plans (ROPs) replaced with water management protocols (WMPs), with some water plan areas yet to transition to the new framework. Other changes to the Water Act 2000 include the section under which an application to change to a water allocation is made.
>
> Applicants can apply to change the purpose of distribution loss WAE apply under section 159 (Applying for water allocation dealing consistent with water allocation dealing rules), whereas previously this was done under sections 129A or 130 of the Act.[64] This is stated in the relevant WMPs and ROPs, along with criteria that must be met for the change to be approved. The applicable water dealing rules can be prescribed to apply to the whole state or to a water plan area under section 158 of the Act. Where a WMP or ROP does not specify the water dealing rules for a water plan area, the state water dealing rules apply, which are listed under section 73 of the Water Regulation 2016.
>
> The relevant WMPs or ROPs specify the criteria that must be met for a change of purpose to distribution loss WAEs to be approved by DNRME. These criteria are unique to each scheme, but generally specify that Seqwater must provide evidence that a sufficient volume of distribution loss WAEs is held to provide for actual losses in the system.

Seqwater has provided distribution loss data for the Pie Creek distribution system, Warrill Valley WSS and Lower Lockyer Valley WSS from 2013–14 onwards. No data was available for the Morton Vale Pipeline, since the pipeline is gravity fed from the dam.

Distribution loss WAEs are periodically announced in accordance with the level of water available in storages, as is the case for all types of WAEs. This means that when announced allocations are less than 100 per cent, the water to provide for losses is lower than the distribution loss WAEs. As water available to customers is also reduced, usage within the system will decrease. Consequently, we have adjusted the actual distribution loss data to account for the level of distribution system usage.

To calculate the efficient level of distribution loss WAE, we have taken the maximum distribution loss WAEs required over the period after adjusting for usage.

The maximum actual distribution loss deliveries for Pie Creek, adjusted for the level of water use that year, have been significantly less than 100 per cent for each of the years from 2013–14 onwards (see Table 39). Based on available data from the 2013 review, we also note that maximum actual distribution loss deliveries are significantly less than 100 per cent over the 15 years to 2017–18.[65]

[64] *Water Act 2000* (Qld) (Water Act), s. 159.

[65] Prior to 2013–14, the maximum medium priority distribution loss WAEs used (adjusted for actual water use) was 47 per cent in 2003–04. Note that data was not available for 2006–07, 2007–08, 2011–12 and 2012–13.

Table 39 Distribution loss WAEs used, Pie Creek distribution system (ML)

	2013–14	*2014–15*	*2015–16*	*2016–17*	*2017–18*
High priority (HP) distribution loss WAE	60	60	60	60	60
Medium priority (MP) distribution loss WAE	426	426	426	426	426
Actual distribution losses (HP + MP)	93	9	53	147	42
HP distribution loss WAE used	60 (100%)	9 (16%)	53 (88%)	60 (100%)	42 (71%)
MP distribution loss WAE used	33 (8%)	–	–	87 (20%)	–
Water use as a percentage of WAE	26%	27%	21%	34%	25%
MP distribution loss WAE used, adjusted for actual water use	30%	–	–	60%	–

Source: Seqwater response to QCA RFI 41; QCA analysis.

We note that usage in Pie Creek has remained low in recent years, which explains in part why actual distribution losses have been low. However, many other factors such as climatic factors affect the level of losses. Seqwater have informed that as Pie Creek is a supplementary scheme, during especially wet years the natural flows of the river can result in negative distribution losses. Despite these factors, it appears that the current holding of distribution loss WAEs is excessive for the requirements of Pie Creek, and represent a significant financial burden to customers.

Data for Warrill Valley and Lower Lockyer Valley shows that in most years since 2013–14, all distribution loss WAEs have been required for both schemes. Therefore, the current holding of distribution loss WAEs appears to be appropriate to ensure a reliable supply of water to customers.

Although no data is available for Morton Vale Pipeline, Seqwater has informed us that distribution loss IWAs are reserved to refill the pipeline, and distribution losses are caused by breaks or other failures in the pipeline. Seqwater believes it is appropriate that irrigators bear the cost of the full distribution loss IWAs. Seqwater also noted that, under the IROL, there is no provision to convert distribution loss IWAs to medium priority and sell it.[66]

Given the lack of information on actual distribution losses associated with the Morton Vale Pipeline since our 2013 review, we propose to maintain the current approach and propose 50 per cent of distribution loss IWA is efficient.

Table 40 below outlines our proposed efficient distribution loss for each of the relevant distribution systems and bulk WSSs.

[66] Seqwater response to QCA RFI 42.

Table 40 Efficient distribution loss WAEs in Seqwater schemes

Distribution system/bulk WSS	*Efficient high priority loss WAE*	*High priority loss WAE (ML)*	*Efficient medium priority loss WAE*	*Medium priority loss WAE (ML)*
Morton Vale Pipeline distribution system	50%	92	n.a.	n.a.
Pie Creek distribution system	100%	60	60%	256
Lower Lockyer Valley WSS	n.a.	n.a.	100%	1,500
Warrill Valley WSS	n.a.	n.a.	100%	3,714

Note: Adjusted distribution loss WAE figures have been rounded to the nearest integer.

Draft recommendation 20

We recommend that:

- prudent and efficient bulk costs associated with necessary distribution loss WAEs be recovered from distribution system customers
- the bulk holding (fixed) costs of distribution loss WAEs not required to service distribution system customers be borne by Seqwater.

6.4 Central Brisbane River WSS

The water supply assets in this scheme (Wivenhoe and Somerset dams) are shared with urban customers, who hold more than 97 per cent of WAEs.

Prior to the 2013 review, irrigators in the Central Brisbane River WSS were not required to pay water charges. Upon commencement of the Moreton ROP on 7 December 2009, irrigators' historical entitlements were converted to water allocations (or other entitlements) as stated in the ROP. The provisions of the Water Act 2000 then took effect so that the conditions of supply were provided for under the Standard Supply Contract—Central Brisbane River WSS.

The supply contract sets out the terms under which a customer is to pay water charges levied by Seqwater as the resource operations licence (ROL) holder, and requires water charges to be set by Seqwater, having regard to the criteria that would be applied by the economic regulator.

6.4.1 Previous investigation

Under the referral for the 2013 review, we were directed to recommend irrigation prices to apply from 1 July 2013 to 30 June 2017.

Our general approach in the 2013 review was to use the headworks utilisation factor (HUF) methodology to allocate fixed-asset-related costs[67] for bulk WSSs between medium and high priority WAEs (including among urban, industrial and irrigation customers). We considered that the HUF methodology provided an appropriate approach to allocating fixed-asset-related costs based on the relative benefit of each WSS's bulk water assets that was attributable to each WAE priority group.

[67] Except for 50% of fixed operations costs (relating to service provision costs), which were allocated based on current nominal WAE.

While the application of the HUF methodology was investigated for the Central Brisbane River WSS in the 2013 review, it would have resulted in an anomalous allocation of fixed costs to medium priority WAE holders. We instead opted for a simpler allocation approach, which took into account a range of triggers for the progressive reduction in medium priority allocations specified in the Moreton ROP. We argued that this approach was a better fit to the Central Brisbane circumstances.[68] This approach resulted in an allocation of 1.6 per cent of fixed-asset-related costs to irrigation customers.

6.4.2 Seqwater–MBRI joint submission

Seqwater said that in the 2013 review we relied on the existing regulatory framework (the Moreton ROP) as the basis for customers receiving benefit. Seqwater said that customers had challenged this as not being an appropriate basis for demonstrating benefit, because it does not recognise that there was no increased benefit to irrigators from the presence and operations of the dams and regulation.[69]

For this review, Seqwater and MBRI have worked together to investigate alternative approaches to cost allocation between high and medium priority WAE customers in the Central Brisbane River WSS.[70] As part of that investigation, the Central Brisbane benefits study was undertaken by an independent consultant, SLR Consulting, who assessed the hydrologic performance of the irrigation WAEs across two cases developed jointly by Seqwater and MBRI:

- existing 'with dams' case—the current full use of entitlements model, which includes the two dams (Wivenhoe and Somerset) and the existing regulation of operations of these dams
- alternative 'without dams' case—the base full use of entitlements model is modified to remove:
  - Wivenhoe and Somerset dams
  - high priority water supply
  - system regulation, including removal of restrictions on what water irrigators can access.[71]

The study assessed benefit by comparing the amount of water extracted by irrigators in the alternative case with the extractions made under the existing case. Based on the statistics presented in this study, it concluded that less water is available to irrigators in dry periods[72] in the existing case, compared to the alternative 'no dams' case.

Seqwater and MBRI said that the study concluded that the WSS assets did not provide irrigators with any significant change to the hydrologic benefit, compared to a situation where the dams and high priority water supply did not exist and irrigators were able to take water from natural flows. Based on this study, Seqwater submitted that irrigation customers should not contribute to recovery of the headworks-related costs (i.e. effectively the HUF is zero).

Seqwater said that while this study concludes no hydrologic benefit of the scheme for the irrigation customers, this does not necessitate any change to existing ROP regulatory framework.

[68] See QCA, *Seqwater Irrigation Price Review 2013–17*, Volume 2: Central Brisbane River WSS, final report, April 2013, section 4.5.
[69] Seqwater, sub. 3, p. 6.
[70] Seqwater, sub. 3, pp. 6–7.
[71] Seqwater, sub. 10.
[72] The study assessed the relative hydrological performance between the two cases over the 'lowest diversion period' for supply for this scheme (1997 to 2011), which sought to align with the period of analysis under the HUF methodology. Results were also presented for the long-term average.

Seqwater said the existing regulatory framework (including water sharing rules between irrigators and urban water supply) will continue.

Seqwater and MBRI said it was appropriate to assess the benefits associated with the existing regulatory regime (and existing assets) by comparing the system with the regulation, to the system without, as this allows consideration of the benefits (or impacts) created by the system. They said that this type of analysis is similar to that used in business cases for infrastructure projects, or in regulatory reviews (i.e. comparing the benefits with the project or regulation to the benefits without it).[73]

Seqwater considered that this approach sets no new precedent for rural water in Queensland and is consistent with accepted pricing principles. Seqwater said that the Central Brisbane River scheme is unique in that there is only a very small fraction of water entitlement for irrigation use. Seqwater also said that even in other irrigation schemes with low reliability water entitlements, the performance of entitlements would be expected to have improved under the existing regulatory framework with dams in place.

6.4.3 QCA assessment

Our recommended prices must be consistent with the lower bound cost target, the pricing principles and other requirements in the referral, and the requirements of the QCA Act (see Part A, Chapter 2).

Consistent with those obligations, we must recommend prices that are based on our assessment of prudent and efficient costs. This requires us to assess the prudent and efficient costs attributable to each irrigation tariff group. To do this, we need an appropriate approach to allocating scheme-level prudent and efficient costs between high and medium priority WAE customers that accounts for the relative benefit of the scheme's bulk water assets attributable to each WAE priority group.

In developing such an approach for the Central Brisbane River WSS, we have considered the joint submissions from Seqwater and MBRI, including the benefits study, and additional information provided to us in response to our requests for information. This consideration has required us to assess specific aspects of the benefits study, including:

- the appropriateness of comparing the two modelled scenarios as a basis for assessing the relative benefit of the scheme's bulk water assets that is attributable to each WAE priority group
- the comprehensiveness and relevance of output statistics presented, in terms of assessing the relative benefit of the scheme's bulk water assets that is attributable to each WAE priority group
- whether the results from this study provide an improved approach to assigning benefits attributable to each WAE priority group in the Central Brisbane River WSS, as compared to the adjusted nominal WAE used by the QCA in the 2013 review.

We engaged Water Solutions to provide advice to assist our assessment.

We are required to have regard to agreements between the water businesses and their customers if we consider that the proposed prices are in line with the requirements of the referral. We must also make recommendations about appropriate prices for the monopoly

[73] Seqwater/MBRI response to the QCA RFI, April 2019.

business activities based on our assessment of the prudent and efficient costs that Seqwater requires to provide bulk water supply services and meet its legislative and regulatory obligations.

Seqwater's proposed approach to determining the allocation of costs

Seqwater's proposed cost allocation for irrigation entitlements is predicated on the key finding of the benefit study—that is, irrigators do not receive a hydrologic benefit from Wivenhoe and Somerset dams (and the associated operation and entitlements).[74] As noted above, that finding was based on a comparison between the existing 'with dams' case and an alternative, hypothetical 'no dams' case, which assumed that:

- there was no high priority urban water supply
- there was no system regulation and consequently there are no restrictions on what water irrigators can access
- Wivenhoe and Somerset dams were not in place.

We have some concerns about the validity and appropriateness of the assumptions underlying the benefits study.

Assumption: No high priority urban water supply

Water supply for urban use has been drawn from the Brisbane River for over 100 years, well before the construction of Wivenhoe and Somerset dams. For example, the Ipswich Municipal Council began drawing water from the Brisbane River at Kholo in 1878 and the Brisbane Board of Waterworks began pumping water from the Brisbane River at the Mt Crosby Pumping Station in 1892.[75]

Water Solutions considered that the historical urban demand should have been included in the hypothetical 'no dams' case for it to be an accurate representation of historical conditions. It also considered that the alternative case needed to be an accurate representation of historical conditions if it was to provide an appropriate basis for assessing the relative benefits of the Central Brisbane River WSS to medium priority WAE irrigators.[76]

We do not consider it is appropriate to base the cost allocation for this scheme on a benefits study that relies on a hypothetical scenario that excludes all urban water supply to reach its conclusions, as this hypothetical scenario is not consistent with the historical use of water supplies from the Brisbane River.

Assumption: No system regulation

The hypothetical 'no dams' case in the benefits study removes the relevant dams and the system regulation on the basis that they are 'currently inherently linked'.[77] The Seqwater/MBRI joint submissions and the benefits study also suggest that the current regulatory framework, including the operational and access rules, are in place for the benefit of urban users only. For example, in a response to a request for information, Seqwater and MBRI stated:

> The conversion of the unsupplemented water allocations that were formerly held by irrigators in the mid-Brisbane zone of the Central Brisbane Water Supply Scheme (WSS) to supplemented

[74] Seqwater, sub. 3, p. 8.
[75] Queensland Urban Utilities, Our history, https://urbanutilities.com.au/about-us/who-we-are/our-history.
[76] Water Solutions, *Rural Irrigation Price Review 2020–24: Assessment of Hydrologic Factors*, prepared for the QCA, July 2019.
[77] Seqwater, sub. 10, p. 16.

> water allocations, as created by the regulation, were never demonstrated to be of any incremental benefit to these irrigators.[78]

We consider that this approach is not appropriate and note that the regulatory requirements are not in place for the benefit of urban users only. Over the last twenty years or so, water policy and regulation in Queensland has changed significantly in response to concerns about the sustainability of water resources and the environmental impacts of water use. In particular, the Water Act 2000 (Qld) introduced a materially different framework (the Water Act framework) for water allocation and management in Queensland, which unlike the previous regulatory framework included explicit requirements to consider environmental water needs and the longer-term sustainability of water use. [79]

This framework also gave effect to Queensland's commitments under the 1994 water resources policy of the Council of Australian Governments (COAG) and, subsequently, the 2004 Intergovernmental Agreement on a National Water Initiative (NWI), both of which required all jurisdictions to implement a comprehensive system for water allocation and management.[80] Under those agreements, Queensland also committed to:

- formally recognise the environment as a legitimate user of water and make appropriate allocations to it
- generally require a water access entitlement for the consumptive use of water
- separate water access entitlements from land ownership and to specify those entitlements as a perpetual or open-ended share of the consumptive pool of a specified water resource, as determined by the relevant water plan
- give water for the environment (or water required to deliver other public benefit outcomes, as defined in the relevant water plan) statutory recognition and at least the same degree of security as water access entitlements for consumptive use
- prepare statutory water plans for surface water and groundwater management units in which entitlements are issued.

One of the key drivers for those agreements and the associated regulatory reform (including the introduction of the Water Act framework) was a recognition that the regulatory frameworks in place at that time were inadequate, as they did not facilitate environmentally sustainable levels of extraction or deal effectively with the adverse environmental externalities associated with the consumptive use of water.[81]

The Water Act framework applies to all water resources in Queensland and, consistent with its requirements, water plans have been implemented in areas across the state, with the aim of sustainably managing and allocating water resources. The plans can apply to rivers, lakes, springs, overland flow and underground water, and are designed to balance the needs of all water users

[78] Seqwater/MBRI response to QCA RFI, March 2019.
[79] Queensland Parliament, *Parliamentary Debates (Hansard)*, 22 June 2000, p. 1891 (Second reading speech for the Water Bill 2000 by the Hon RJ Welford MP).
[80] Queensland Parliament, *Parliamentary Debates (Hansard)*, 22 June 2000, p. 1891 (Second reading speech for the Water Bill 2000 by the Hon RJ Welford MP).
[81] Queensland Parliament, *Parliamentary Debates (Hansard*), 22 June 2000, p. 1891 (Second reading speech for the Water Bill 2000 by the Hon RJ Welford MP); COAG communique, Hobart, 25 February 1994; COAG communique, Hobart, Attachment A—Water resource policy, 25 February 1994; COAG communique, Canberra, 25 June 2004.

(e.g. urban, industrial, irrigation) and the environment.[82] Many of those plan areas are subject to an announced allocations approach, irrespective of whether the water in those systems is predominantly used for urban purposes or other purposes, such as industry or agriculture.

Under the Water Act framework, water in the Central Brisbane River WSS is managed consistent with the Water Plan (Moreton) 2007. This water plan requires water to be allocated and sustainably managed in a way that seeks to achieve a balance between specific ecological outcomes (section 12 of the plan) and some general outcomes (section 11 of the plan).[83]

The environmental aspects of the Moreton Water Plan include measures designed to maintain flows, as there is a significant relationship between flow, riverine processes and the health of aquatic ecosystems, including Moreton Bay (a designated wetland of international importance under the Ramsar Convention[84]).[85]

The general outcomes in the Moreton Water Plan include:

- to provide for additional water to be taken from the plan area for future water requirements
- to protect the probability of taking water under water entitlements
- to provide for the continued use of all water entitlements and other authorisations to take or interfere with water in the plan area.

This means the water in the system is now managed in a way that seeks to deliver specific ecological outcomes (including environmental flow objectives) and to provide for the continued use of all water entitlements, including medium priority WAEs for irrigation and high priority WAEs for urban water supply. As such, the plan seeks to balance the competing needs of the environment, urban users and rural users.[86]

This approach is materially different to that taken under previous regulatory frameworks, whereby entitlements were issued on a first-come, first-served basis and there was no requirement for a body issuing a new entitlement to consider the potential impact on the reliability of supply of existing users.[87] The previous approach had the potential to disadvantage existing users, including irrigators, as there was a possibility that the granting of new entitlements may have resulted in insufficient water to meet existing entitlements.[88] We note that such an outcome was not an inconsequential risk in the Moreton Water Plan area, given that at the time the plan was implemented, water resources were close to the full sustainable allocation and the

[82] Business Queensland, Water planning framework, accessed 2 August 2019, https://www.business.qld.gov.au/industries/mining-energy-water/water/catchments-planning/planning.
[83] Section 10 of the Water Plan (Moreton) 2007.
[84] The Ramsar Convention (The Convention on Wetlands of International Importance) is an international agreement relating to wetlands of international importance. The Convention's broad aims are to halt the worldwide loss of wetlands and to conserve, through wise use and management, those that remain (https://www.environment.gov.au/water/wetlands/ramsar).
[85] Department of Natural Resources, Mines and Water, *Moreton draft water resource plan*, overview report and draft plan, July 2006, p. 31.
[86] Department of Natural Resources and Water, *Moreton water resource plan*, consultation report, June 2007, p. 1.
[87] Queensland Parliament, *Parliamentary Debates (Hansard)*, 22 June 2000, p. 1891 (Second reading speech for the Water Bill 2000 by the Hon RJ Welford MP).
[88] Queensland Parliament, *Parliamentary Debates (Hansard)*, 22 June 2000, p. 1891 (Second reading speech for the Water Bill 2000 by the Hon RJ Welford MP).

area was expected to experience further population and economic growth.[89] Water entitlements were also tied to land and this could have imposed some restrictions on agricultural expansion.[90]

In contrast, under the Water Act framework, existing entitlements that have converted to water allocations are protected through water allocation security objectives and performance indicators. Those objectives and indicators have been designed to ensure that future water planning and management decisions do not affect the probability of water users being able to take water under their water allocations. In addition, according to the Queensland Government, those objectives and indicators also provide a probability of supply which would assist long-term business and water use planning.[91] Water allocations have also been separated from land, providing water users with greater flexibility.[92] Medium priority irrigation water users in the Central Brisbane River WSS benefit from those measures.

Given the above, we are of the view that the Water Act framework, including system regulation in the Central Brisbane River WSS, is in place to benefit consumptive water users (including irrigators), as well as the environment and the broader Queensland community.

We also note the advice of Water Solutions that the alternative 'without dams' case does not appear to include:

- any rules to protect environmental flow water, for example, minimum thresholds for extraction or rules to protect events important for the environment. Section 8.4 of the benefits study indicates the irrigators are included using unregulated irrigation nodes, and as such will take any water that flows past their diversion point, even if that water was necessary to meet an environmental flow objective (EFO). The 'without dams' case may thus not meet the EFOs required in the Moreton Water Plan
- any rules to protect water required for other users. Additionally, the 'without dams' case has removed all of the high priority demand from the scheme (including the Glamorgan Vale Water Board WAEs and the WAEs for South East Queensland urban users). The modelling of the irrigators as unregulated irrigators means they will take any water that flows past their diversion point, even if that water was necessary to meet the water allocation security objective (WASO) for another user. Without including the other users in the model, or protecting the water required to deliver to these users, the 'without dams' case is unlikely to meet the WASOs required in the Moreton Water Plan.[93]

The approach taken in the alternative 'without dams' case therefore assumes that, if the dams were not in place, irrigators would be able to take any water that flows past their diversion point regardless of the Moreton Water Plan requirements and any associated EFOs and WASOs. Noting the Water Act framework was introduced to address, amongst other matters, environmental concerns about consumptive water use and that it would apply to entitlements in the Central Brisbane River WSS, irrespective of whether relevant dam infrastructure was in place, we do not consider this assumption or the approach of removing system regulation to be reasonable.

In light of the materially different approach to allocating and managing water under the Water Act framework, including explicit requirements to provide water for the environment, we

[89] Department of Natural Resources and Water, *Moreton water resource plan*, consultation report, June 2007, p. 32.
[90] Department of Natural Resources and Water, *Moreton water resource plan*, consultation report, June 2007, p. 32.
[91] Department of Natural Resources and Water, *Moreton water resource plan*, consultation report, June 2007, p. 10.
[92] Queensland Parliament, *Parliamentary Debates (Hansard)*, 22 June 2000, p. 1893 (Second reading speech for the Water Bill 2000 by the Hon Rod RJ Welford MP).
[93] Water Solutions Water Solutions, *Rural Irrigation Price Review 2020–24: Assessment of Hydrologic Factors*, prepared for the QCA, July 2019, p. 16.

consider it is unlikely that all of the benefits that irrigators may have had under the previous regulatory regime, including the ability to take their full entitlement during low flow periods, would have continued unfettered. Consequently, we do not consider it is appropriate to base the cost allocation for this scheme on a benefits study that uses a hypothetical 'no regulation' scenario to reach its conclusions.

Assumption: No dams

Supplemented water is provided in a regulated scheme, usually supplied from either a dam, weir or other improvements (e.g. barrage, off-stream storage), but can include natural stream flow. It generally has higher reliability than unsupplemented water. Supplemented water supply schemes are operated by a water service provider, with releases made from infrastructure to meet water demands while maintaining the needs of the environment.[94]

We note that under the Water Act framework, water allocations in the Central Brisbane River WSS are deemed to be supplemented.[95] Further, the Moreton Water Management Protocol defines the maximum volumes of high priority and medium priority water available in the Central Brisbane River WSS and indicates that the allocations of both priority groups are considered supplemented by the Wivenhoe Dam and Somerset Dam infrastructure. We also note that the reliability of the medium priority WAEs in the mid-Brisbane zone is directly linked to the combined useable volumes of Somerset and Wivenhoe dams.[96]

We also note that, consistent with the Water Act framework, the total volume of allocations in the system, along with the allocations for individual priority groups (including medium priority WAEs), has been determined based on the yield of the system as a whole, including supplemented volumes, natural flows from tributaries and overland flows. That is, the allocations have been determined on the assumption that the relevant dam infrastructure is in place.

Seqwater and MBRI said that other supplemented schemes are different from the Central Brisbane River WSS in that they specifically included an objective of providing for irrigation supplies with a specified volume and reliability. They have suggested that there is a different foundation to the underlying premise by which supplemented water entitlements were established in the Central Brisbane River WSS compared to all other schemes. They said that this requires a different perspective and the application of an appropriate yet different approach for this scheme.[97]

Like surface water allocations in other subcatchments of the Moreton Water Plan area and other areas of the state, the supplemented water entitlements in the Central Brisbane River WSS were established consistent with the requirements of the Water Act and the relevant water plan.[98] Under those requirements, water in the Moreton Water Plan area is to be allocated and sustainably managed in a way that seeks to achieve a balance between specific general outcomes

[94] Department of Natural Resources, Mines and Energy, *Queensland bulk water opportunities statement*, December 2018 update, p. 19.

[95] Schedule 15 of the Moreton Water Plan defines supplemented water. Water supplied in the Central Brisbane WSS falls within that definition as it is supplied under the Central Brisbane River Water Supply Scheme Resource Operations Licence.

[96] Announced allocations in the Central Brisbane WSS are based off usable storage volumes in Wivenhoe and Somerset (Central Brisbane River Water Supply Scheme Operations Manual, Department of Natural Resources, Mines and Energy, 2018, p. 3).

[97] Seqwater/MBRI response to RFI, March 2019.

[98] Department of Environment and Resource Management (December 2009) *Moreton Resource Operations Plan consultation report*, pp. 5, 8.

and ecological outcomes.[99] As we noted in our 2013 report, the Central Brisbane River WSS differs from other regulated WSSs that have a mix of medium and high priority WAEs only in that the medium priority WAEs in this scheme are a very small proportion of the overall scheme WAEs.[100]

Seqwater and MBRI have proposed that the relevant dam infrastructure does not provide irrigators with any significant change to the hydrologic benefit compared to a situation where the dams and high priority water supply did not exist and irrigators were able to take water from natural flows. This proposition implies that irrigators have a right to the natural flows in the system, to the exclusion of other consumptive users and the environment. However, such an implied right is inconsistent with the Water Act framework under which all users share the natural flows in proportion with their entitlements and consistent with the environmental flow objectives.

In its report, Water Solutions also identified that WAE holders, including medium priority WAE holders, benefit from the water supply security and flexibility of supply that the dam infrastructure provides. They can extract all their water early in the water year, all their water late in the water year, or any pattern in between. Water Solutions also noted that this flexibility is likely to be much reduced in the 'no dams' case.[101]

Water Solutions also noted the following concerns with the specification of the alternative 'without dams' scenario as a representation of outcomes for irrigators without dams and associated regulation:

- The existing authority to divert water for irrigation in this scheme is significantly different to the authority to divert water that existed before Somerset and Wivenhoe Dams. For example, WAEs are now volume based, separated from land, and able to be traded.
- To accurately model historical conditions in the alternative 'without dams' case would require clearer specification of a stated year and significant research to determine the actual infrastructure, system operating rules, and issued authorities to divert water for irrigation and other purposes in the stated year.[102]

Seqwater and MBRI said that while there is some benefit to users of the entitlement to take water, the HUF methodology assesses cost allocation based on performance for a worst performing time, that is, the critical period of 15 years. This critical period indicates the benefit between priority groups of users (e.g. high and medium priority WAE holders). Seqwater and MBRI said that it was clear from the Central Brisbane Benefits Study, that the scheme does not provide any increased benefit to users in the worst performing years, especially when compared to performance that would have enabled the irrigation water take if the dams and regulation were not in place.[103]

Seqwater and MBRI said that had a benefit been demonstrated in this critical period, the next step in the study would have been to attempt to calculate a HUF to inform the cost allocation,

[99] Section 10 of the Moreton Water Plan.
[100] QCA, *Seqwater Irrigation Price Review: 2013–17*, final report, April 2013, p. 22.
[101] Water Solutions, *Rural Irrigation Price Review 2020–24: Assessment of Hydrologic Factors*, prepared for the QCA, July 2019, pp. 17–18.
[102] Water Solutions, *Rural Irrigation Price Review 2020–24: Assessment of Hydrologic Factors*, prepared for the QCA, July 2019, pp. 15–16.
[103] Seqwater/MBRI response to QCA RFI, April 2019.

however as there was no benefit demonstrated, there was no basis for a taking this step for this scheme.[104]

We do not consider the 15-year 'critical period' used in the HUF methodology for assessing the relative benefits of a scheme's bulk water assets between high and medium priority WAE customers to be relevant when assessing the relative benefits between the two cases considered in the benefits study. The purpose of the HUF methodology is to determine the storage capacity required for high priority WAEs having regard to the worst-case inflow. The relevance of the 15-year worst-case inflow in the HUF approach is because we accepted that the proportion of storage capacity dedicated to high priority WAEs was driven by worse-case inflow scenarios, not long-term averages. The relevance of using the 15-year critical period in assessing the relative benefits to medium priority WAE customers between 'with dams' and 'no dams' is not clear.

Given the above, we consider that:

- Consistent with the Water Act framework, both WAE priority groups in the Central Brisbane River WSS are supplemented by the Wivenhoe and Somerset dam infrastructure, and therefore benefit from the supplemented flows provided by that infrastructure.
- In accordance with the Water Act framework, all users also share the natural flows in proportion with their entitlements and consistent with the environmental flow objectives.
- The allocations in the Central Brisbane River WSS have been set based on the system being supplemented by the relevant dam infrastructure and that WAE holders, including medium priority WAE holders, benefit from the water supply security and flexibility of supply that the dam infrastructure provides.
- The alternative 'no dams' case in the benefits study is not consistent with the Water Act framework, as it assumes that irrigators are supplied from natural flows and can divert water irrespective of the needs of the environment and downstream water users.
- The relevance of using the 15-year critical period in assessing the relative benefits to medium priority WAE customers between 'with dams' and 'no dams' is not clear.
- Medium priority WAE holders benefit from the relevant dam infrastructure and therefore should be allocated an appropriate share of the costs.

Comprehensiveness and relevance of results

Water Solutions assessed the comprehensiveness and relevance of the statistics presented in the Central Brisbane benefits study with regard to assessing the relative benefit of the scheme's bulk water assets that is attributable to irrigators (and other medium priority WAE holders) as compared to high priority WAE holders.

The key output statistics presented in the benefits study were:

- the mean annual diversion volume as a percentage of total nominal volume of water entitlements
- the number of diversion days each year as a percentage of total days in the year.

These statistics were presented over the full simulation period and the lowest diversion period, which sought to align with the period of analysis under the HUF methodology.

[104] Seqwater/MBRI response to QCA RFI, April 2019.

Water Solutions considered that the statistics presented in the Central Brisbane benefits study were not comprehensive, as results were not presented for the two cases against the EFOs or against the WASOs in the Moreton Water Plan. Water Solutions said it expected that:

- the existing 'with dams' case would meet EFOs, while it was likely that the alternative 'without dams' case would not meet EFOs
- the existing 'with dams' case would meet WASOs, while it was likely that the alternative 'without dams' case would not meet the WASOs for other non-irrigation users.

Water Solutions said that it was not a fair comparison if one case met the EFO and WASO requirements of the Moreton Water Plan, while the other case did not.

Water Solutions made the following observations with regard to the statistics presented in the Central Brisbane benefits study:

- While mean annual diversion is a useful statistic, the definition of the diversion days statistic combined with the use of the full use of entitlements modelling methodology[105] means that it tends to be potentially misleading.
- The analysis of the exceedance plot of annual diversions should focus on the security of water supply (rather than the volume of diversion), as the key benefit from the presence of bulk storage infrastructure and associated regulation is the additional water supply security created. On this measure, the existing 'with dams' case provides irrigators with full nominal allocation in around 90 per cent of years[106] while the 'no dams' case is around 50 per cent.
- Even if mean annual diversion is considered more important than water security, the presented figures illustrate that irrigators are significantly better off in the existing 'with dams' case as compared to the 'no dams' case under all conditions other than the extremely severe millennium drought, when scheme restrictions led to lower diversions under the existing case, compared to the unconstrained conditions of the 'no dams' case.

Conclusion on proposed cost allocation and approach

Given the above, we conclude the following:

- The Central Brisbane River WSS differs from other regulated WSSs that have a mix of medium and high priority WAEs only in that the medium priority WAEs in this scheme are a very small proportion of the overall scheme WAEs.
- The supplemented WAEs in the Central Brisbane River WSS have been established in accordance with the requirements of the Water Act and the relevant water plan, and this is consistent with the approach for determining the WAEs in other subcatchments of the Moreton Water Plan area and other supplemented water supply schemes throughout the state. As such, the foundation underpinning the establishment of entitlements in the Central Brisbane River WSS does not warrant a different approach to determining the hydrologic benefits.

[105] This methodology assumes that WAE holders divert water at their full daily rate from the start of the water year to the date their cumulative extraction reaches the announced allocation limit, not taking into account that many irrigators may modify their rate of extraction based on the announced allocation in the particular water year.

[106] Water Solutions also notes that the percentage of full nominal allocation of around 90 per cent under the existing 'with dams' case is very close to the required WASO of 90 per cent—Water Solutions, *Rural Irrigation Price Review 2020–24: Assessment of Hydrologic Factors*, prepared for the QCA, July 2019, p. 21.

- It is not appropriate to base the cost allocation for this scheme on a benefits study that relies on a hypothetical scenario that is not consistent with the historical use of water supplies from the Brisbane River or the requirements of the Water Act framework. In addition, the alternative 'no dams' case in the benefits study is not consistent with the Water Act framework, as it assumes that irrigators are supplied from natural flows and can divert water irrespective of the needs of the environment and downstream water users.
- Consistent with the Water Act framework, both WAE priority groups in the Central Brisbane River WSS are supplemented by the Wivenhoe and Somerset dam infrastructure, and therefore benefit from the supplemented flows provided by the dam infrastructure. All users also share the natural flows in proportion with their entitlements and consistent with the EFOs.
- The allocations in the Central Brisbane River WSS have been set based on the system being supplemented by the relevant dam infrastructure and that WAE holders, including medium priority WAE holders, benefit from the water supply security and flexibility of supply that the dam infrastructure provides.
- Medium priority WAE holders benefit from the relevant dam infrastructure and therefore should be allocated an appropriate share of the costs. The proposed cost allocation of zero does not reflect an appropriate share of the costs.

Customer agreement

Under the referral, we are required to consider a range of matters in making our recommendations, including:

> Where the Authority considers that it has been demonstrated that customers have agreed to the costs and/or prices proposed by the businesses and the Authority considers that the proposed prices are in line with the requirements of this Notice, the Authority must have regard to these agreements in recommending appropriate prices.[107]

Seqwater and MBRI have indicated that their agreed position that the bulk water supply charges (both Part A and Part B) for this scheme should be zero is an agreement that falls within the scope of paragraph C(1.5) of the referral. The agreement is predicated on the findings of the benefits study.[108]

We welcome customers and the water businesses working together to reach agreement on pricing issues. We are also generally receptive to recognising these agreements when we recommend appropriate prices. However, in accordance with paragraph C(1.5), we consider that the agreements must be consistent with the requirements of the referral, including the pricing principles.

As outlined above, we consider that the key assumptions underpinning the 'without dams' case of the benefits study are inconsistent with the historical use of water in the Brisbane River and the requirements of the Water Act framework. Consequently, we are of the view that the study's findings do not adequately represent the benefits that medium priority irrigation WAE holders obtain from the relevant dam infrastructure. Given that medium priority irrigation WAE holders benefit from the relevant dam infrastructure, we consider that the proposed cost allocation of zero is inappropriate and inconsistent with the requirements of the referral.

[107] Paragraph C(1.5) of the referral.
[108] Seqwater/MBRI response to QCA RFI, April 2019; Seqwater, sub. 3.

While we acknowledge that the appropriate cost allocation proportion for medium priority WAEs is likely to be very small, we do not support the Seqwater proposal to allocate those costs to urban users. Given that medium priority WAE irrigators benefit from the water scheme infrastructure, such an approach would introduce an implicit cross-subsidy from high priority urban users to medium priority irrigators. This outcome would be inconsistent with the referral requirements, including the requirement that prices transition to the lower bound cost target, and with Queensland's commitments under the NWI.[109] It may also set an unhelpful precedent whereby customer agreements are utilised to shift costs that should be allocated to irrigation customers to other customers within WSSs without the agreement of those other customers.

Alternative cost allocation approach

Water Solutions considered whether the results from this study, or additional modelling based on an alternative cost allocation approach, could provide an improved approach to assigning benefits attributable to each WAE priority group in the Central Brisbane River WSS, as compared to the adjusted nominal WAE used by us in the 2013 review. Water Solutions proposed that the most appropriate cost allocation approach was a modification to the standard HUF methodology.

The HUF methodology seeks to calculate the relative share of storage assets in each WSS required to supply medium and high priority WAEs. In the 2013 review, we accepted that the storage capacity required to deliver the priority of water required was an appropriate driver of costs and was therefore a reasonable approach to apportion costs between medium and high priority WAEs.

Under the standard HUF methodology, the middle zone of storage volume allocated to medium priority WAE (defined as MP1 in the HUF methodology) is the storage volume required to supply between 0 and 100 per cent of medium priority announced allocations. The announced allocation methodology for medium priority WAE in the Central Brisbane River WSS is simply assessed as the difference between storage volumes associated with combined percentage of useable volume in storage (CPUVS, as defined in the Operations Manual) of Wivenhoe and Somerset dams of 15 per cent and 50 per cent.

Water Solutions said the storage volume assigned using this approach was clearly far in excess of the actual volume required to supply medium priority WAE holders each year. Water Solutions proposed, instead, to follow the conceptual approach applied for other WSSs and estimate the storage volume required to deliver 100 per cent of medium priority WAE each year (referred to as MP1_MP)[110]. Water Solutions then assigned the remainder in this middle zone of storage volume allocated to high priority WAE (MP1_HP). Water Solutions said that in the Central Brisbane River WSS, the middle zone of storage volume is actually supplying water for both medium priority WAEs this year and security for high priority WAEs for the following years.

Consistent with the standard HUF approach, Water Solutions assigned the final zone of the combined storages between medium and high priority (MP2 and HP2) based on the relative nominal volumes of the priority groups.

The medium priority HUF was calculated for each 15-year period, based on the standard HUF methodology. The 15-year 'critical period' with the lowest HUF was chosen, which related to the 15 years ending June 2010. This approach calculated a medium priority HUF of 1.12 per cent.

[109] See Chapter 2 in Part A of our draft report for more information.

[110] Adjusted for transmission and operational losses (TOLs), which Water Solutions assumed to be 20 per cent of water delivered. Water Solutions provided the sensitivity of this TOL assumption in table 3.6 of its report.

Water Solutions also calculated the medium priority HUF for a range of TOL assumptions, with the calculated HUF ranging from 1.01 per cent (assuming 0 per cent TOLs) to 1.58 per cent (assuming 100 per cent TOLs).

Water Solutions made the following comparisons of the unit cost ratio between high and medium priority WAE of 2.27:1 associated with its calculated medium priority HUF of 1.12 per cent:

- The HP:MP cost ratio is lower than for many other schemes, which is consistent with the relatively high performance of medium priority WAE in the Central Brisbane River WSS.
- The HP:MP cost ratio of 2.27:1 appeared to be of the right order, given the relativity of the WASOs for high priority and medium priority specified in the Moreton Water Plan.

We consider that Water Solutions' proposed approach is an appropriate methodology for determining the relative benefits of Central Brisbane River WSS's storage assets between medium and high priority WAE customers. Consistent with our approach in the 2012 and 2013 reviews, and consistent with our approach in this review for all other Seqwater and Sunwater schemes, we have rounded the calculated percentage to the nearest whole percentage point (resulting in a calculated percentage of 1.0 per cent).

7 DRAFT RECOMMENDED PRICES

In this chapter, we present our draft recommendations on irrigation prices for the period 1 July 2020 to 30 June 2024, as well as indicative bill impacts.

The prices we recommend in the final report may differ from the prices in this draft report. We also note that the government will determine prices after considering whether to accept our final recommendations.

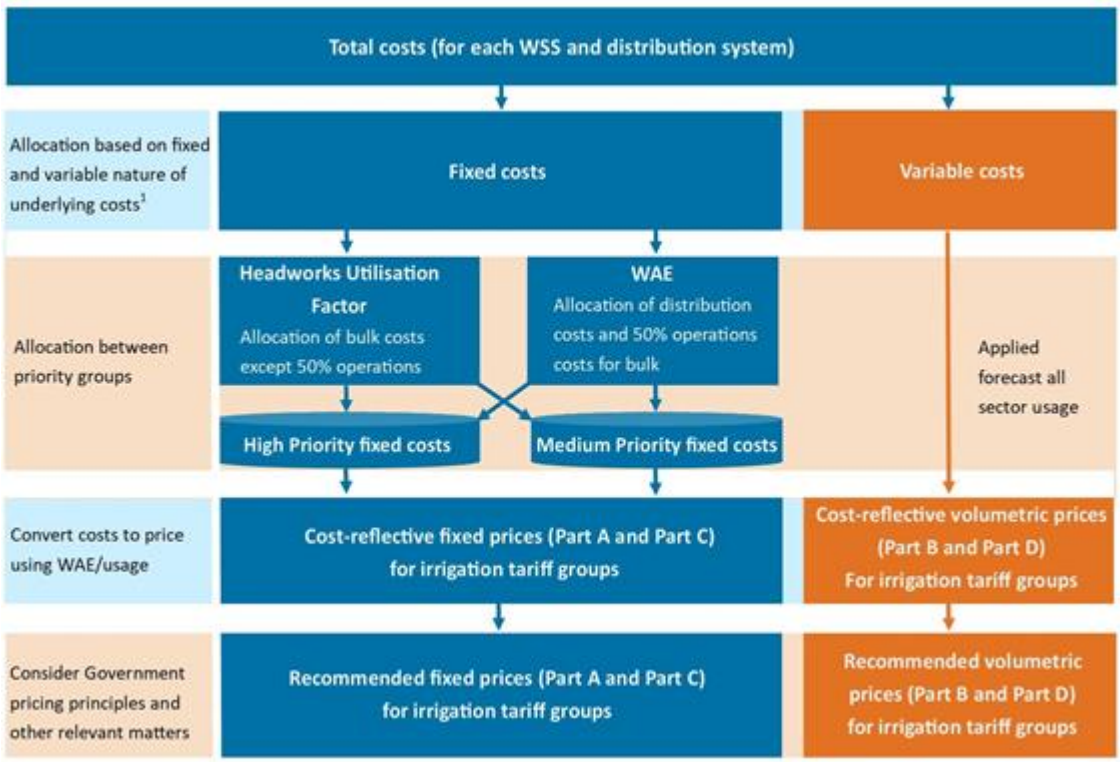
7.1 Background

Seqwater proposed an amended approach to calculating irrigation prices as compared to the 2013 review. We provide our assessment of Seqwater's proposed approach in section 7.2.

Our approach to deriving irrigation prices is consistent with the 2013 review approach (Figure 6). The main steps in converting the revenue requirement (Chapter 4) to prices are:

- Allocate costs to be recovered from the fixed (Part A and Part C, if applicable) price and volumetric (Part B and Part D, if applicable) price based on the fixed and variable nature of underlying costs (section 7.3).
- Allocate fixed costs between medium and high priority WAE customers (section 7.4).
- Convert costs to a fixed and volumetric price that reflects the costs allowable under the referral (referred to as the 'cost reflective' price in each tariff group, in the referral) (section 7.5).
- Consider matters in the referral, including the Government's pricing principles, and in section 26 of the QCA Act when calculating recommended prices (section 7.6).

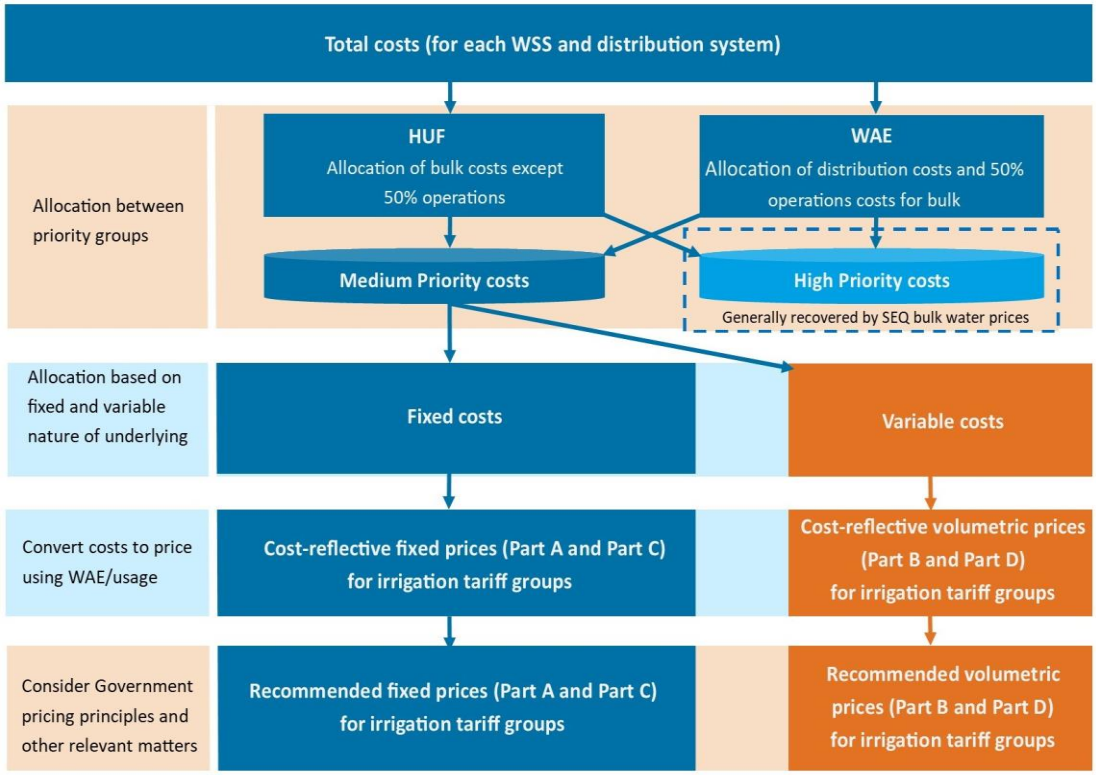
Figure 6 Approach to deriving recommended irrigation prices



7.2 Seqwater's proposed pricing methodology

Seqwater's proposed approach to deriving recommended irrigation prices (Figure 7) differs from the methodology in the 2013 review. The key change is the allocation of total scheme costs between medium and high priority customers prior to allocating costs between fixed and volumetric prices.

Figure 7 Seqwater's proposed approach to deriving irrigation prices



Source: QCA analysis.

Seqwater's regulatory pricing model allocates scheme-level total costs between medium and high priority customers by the appropriate cost allocator for each cost category (i.e. HUF or WAE). High priority costs are then removed from consideration, and medium priority costs are allocated between fixed and variable prices, based on Seqwater's proposed split at the cost category level.

Seqwater said that the only true variable cost is electricity pumping costs for the Pie Creek distribution system; however, it consulted with customers and they supported allocating some costs to the volumetric charge. Seqwater proposed that in addition to the variable costs of electricity pumping costs in the Pie Creek distribution system, 5 per cent of some cost categories should be treated as variable costs and recovered through the variable charge.[111]

We consider that there are opportunities for Seqwater to reduce costs in Seqwater schemes during times of lower water use, and that the fixed/variable splits used in the 2013 review remain appropriate (outlined in section 7.3).

On this basis, we consider that variable costs incurred in relation to water use should be allocated between medium and high priority customers on the basis of relative water usage. This requires the establishment of fixed and variable costs as an initial step in the price calculation approach.

[111] Seqwater, sub. 1, p. 38.

7.3 Fixed and variable costs

The referral requires us to have regard for the fixed and variable nature of the underlying costs in recommending prices.

We consider that the tariff structure should include a volumetric price that covers variable costs associated with the delivery of water services (section 6.2). The fixed price should reflect the balance of the revenue requirement allocated to the particular tariff group.

7.3.1 Previous investigation

In the 2013 review, we applied the average fixed/variable splits at the activity level from the 2012 Sunwater irrigation price review. We considered that this approach was appropriate given the similarities in assets and operations between Sunwater and Seqwater, and the cost involved in appointing an independent consultant to seek to more precisely calculate the fixed/variable split.

In the 2012 Sunwater review, our consultant Indec investigated whether a causal relationship could exist between costs and water usage over a five-year period. Indec undertook a statistical analysis of past costs and considered the most appropriate management approach to deliver services.[112] The analysis was undertaken on a scheme-wide basis (that is, other customer sectors were included in addition to irrigation customers).

Indec concluded that, with the exception of electricity to pump water (considered a variable cost), and some indirect and overhead costs (considered fixed costs), many other expenditure types were semi-variable[113] in relation to variations in customer water use. We accepted Indec's findings for operating costs but recommended that renewals costs were fixed in relation to water use.

Table 41 below presents the findings for operating costs for both bulk and distribution systems.

Table 41 Variable operating costs by activity—2013 review (%)

Activity	*Variable costs in bulk WSSs (%)*	*Variable costs in distribution systems (%)*
Direct operations and maintenance[a]	20	20–35
Electricity pumping costs	100	100
Other electricity costs	—	—
Non-direct costs	—	—

a Excludes electricity costs.

Source: Indec, Qualitative Framework and Assessment of Fixed and Variable Cost Drivers, final report, prepared for the QCA, 2011; QCA analysis.

7.3.2 Seqwater's submission

Seqwater said it had examined whether a cost is fixed or varies according to water deliveries—costs that do not vary with the volume of water deliveries should be recovered through the fixed

[112] Indec, *Qualitative Framework and Assessment of Fixed and Variable Cost Drivers*, final report, prepared for the QCA, 2011.

[113] Semi-variable costs are costs that have a fixed minimum component and a variable component that does not exhibit a constant relationship with incremental units of usage (but do vary in a less direct manner).

charge, and costs that vary with water deliveries should be recovered through the variable charge.[114]

Seqwater did not consider it reasonable to continue to rely on our analysis from the previous irrigation review, because the review was undertaken in 2011 and was undertaken for another business (Sunwater) and applied to Seqwater.[115] Seqwater said that in our 2018–21 Seqwater bulk water price review, we recommended that 15 per cent of 2018–19 base year operating costs were variable. Seqwater said that none of the identified variable costs (chemicals, electricity usage at water treatment plants and sludge) related to irrigation activities.[116]

Seqwater said that in recent regulatory reviews for rural water businesses in other jurisdictions, other regulators had concluded that 100 per cent of costs were fixed. In particular:

- WaterNSW—in IPART's review of prices for rural bulk water services from 1 July 2017 to 30 June 2020, WaterNSW submitted that a cost-reflective tariff would be close to 100 per cent fixed. IPART allowed a volatility allowance recognising that WaterNSW is subject to revenue volatility risk arising from the difference between its largely fixed cost structure and the approved tariff structure (which reflects a fixed to variable split of 40:60 in many valleys).
- Goulburn-Murray Water—ESC approved 100 per cent fixed bulk storage and diversion charges, with ESC's consultant Index concluding that costs related to diversion services are fixed and do not vary with water usage.
- Lower Murray Water— the ACCC's Water Monitoring Report 2016–17 reported bills consisting entirely of fixed charges for Lower Murray Water.

Compared to existing tariffs, Seqwater has proposed a significant rebalancing of costs from variable to fixed. Seqwater said that customers are generally supportive of the proposed ratio of fixed to variable costs.

Seqwater proposed that 5 per cent of direct operating costs (i.e. excluding non-direct costs) and 100 per cent of electricity (pumping) costs be allocated to variable costs (see Table 42 below).[117]

Table 42 Variable operating costs by activity—Seqwater's proposed approach (%)

Activity	*Variable (%)*
Direct operations and maintenance[a]	5
Electricity pumping costs	100
Other electricity costs	5
Insurance	5
Local government rates	—
Dam safety inspection	5
Non-direct costs	—
Renewals annuity	—
Dam safety upgrade capex	—

[114] Seqwater, sub. 1, p. 35.
[115] Seqwater, sub. 1, p. 36.
[116] Seqwater, sub. 1, p. 36–37.
[117] Seqwater, sub. 1, p. 38–39.

a Includes labour, repairs and maintenance, and other direct costs and dam safety inspection costs. Excludes electricity costs, local government rates and dam safety inspection costs.

Source: Seqwater, sub. 1, pp. 38–39.

7.3.3 Other stakeholders' submissions

In the Lockyer Valley schemes (Central Lockyer Valley WSS and Lower Lockyer Valley WSS), stakeholders commented on supply reliability concerns and requested the QCA look at pricing alternatives.[118] In particular, stakeholders said that a future price path with a heavy weighting (up to 95 per cent) on a fixed charge is not sustainable, as water users rely on the availability of water for their production to produce revenue (these submissions are discussed in section 6.1).

7.3.4 QCA assessment

Electricity costs

Electricity costs in Pie Creek distribution system comprise a significant component of its overall operating costs, due to the cost of pumping water.

We requested information from Seqwater on the calculations underlying its proposed base year electricity costs for the Pie Creek distribution system. Seqwater said that Pie Creek pump station was designated as a small electricity site in Seqwater, meaning that the annual budget is based on prior expenditure.[119] Seqwater said that it escalated its 2017–18 budget for network service plan (NSP) reporting by 2.5 per cent to derive the base budget for 2018–19.

Consistent with the 2013 review, we have assigned our calculated 2018–19 base year electricity costs between fixed and variable costs based on the fixed and variable nature of the underlying electricity tariff components.

Table 43 shows our proposed split between fixed and variable costs for the Pie Creek distribution system.

Table 43 QCA's 2018–19 base-year electricity costs for Pie Creek distribution system

Tariff group	*Variable cost ($/ML)*	*Water usage forecast (ML)*	*Total variable cost ($'000)*	*Total fixed cost ($'000)*	*Total base year cost ($'000)*
Pie Creek	104.74	207	21.7	0.5	22.2

Source: Seqwater response to QCA RFI 24; QCA analysis.

Tariff balance

We consider that the fixed/variable splits recommended by the QCA in the 2013 review are an appropriate starting point for the current review. We noted in the 2013 review that Sunwater and Seqwater WSSs share similar characteristics. Most operating costs are fixed and do not vary with water use. The assets and their operation are similar across both businesses. Both businesses have a large degree of manually operated schemes (with some exceptions) that require ongoing effort to deliver water. In times of reduced supply, some activities can be reduced or deferred.

[118] Barden Produce, sub. 81, p. 1; Golden Finch Lawns, sub. 61, p. 1; Member for Lockyer, sub. 124, p. 1; Lockyer Valley Regional Council, sub. 116p. 2; Lockyer Valley Irrigators, sub. 115, p. 2; QFF, sub. 130, p. 4; Somerset Regional Council, sub. 75, p. 1.

[119] Seqwater response to QCA RFI 24.

We asked Seqwater whether there have been any material changes to its operational and maintenance processes since 2013 that would materially affect the level of variable costs. Seqwater did not identify any such changes in its response.[120]

In the 2018–21 bulk water price review, we were not required to assess the fixed to variable split of costs. The referral directed us to recommend a fully volumetric price for SEQ bulk water services provided by Seqwater. Seqwater provided detailed costs at the fixed/variable and cost category level[121]; however, we assessed costs at the total operating cost level for recovery through SEQ bulk water prices.

In terms of regulatory precedence in other jurisdictions, we consider that the approach taken in the QCA's 2013 review is generally consistent with IPART's most recent WaterNSW price determination. In that review, IPART considered that fixed costs should be recovered through fixed charges, and variable costs should be recovered through variable (usage) charges, as this promotes the economically efficient use of water infrastructure assets.[122]

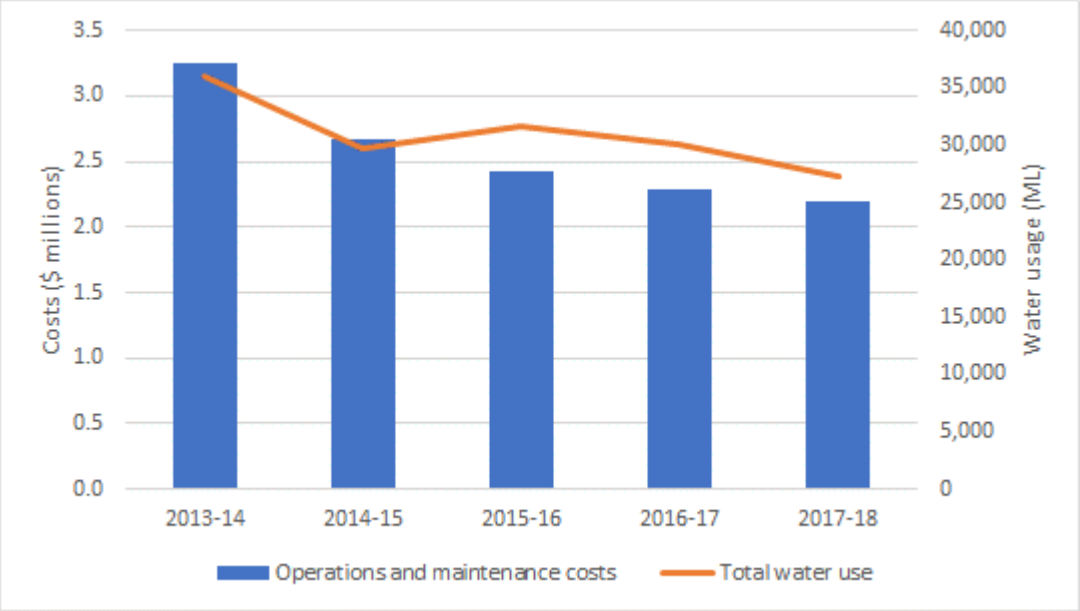
Given that WaterNSW's costs were largely fixed, IPART considered that an 80:20 fixed to variable tariff structure better reflected WaterNSW's largely fixed cost structure and struck a reasonable balance of risk sharing between WaterNSW and its customers. However, it did approve existing tariff structures that did not align with those views (including a 40:60 fixed to variable ratio in some valleys), contingent on the use of a risk management product that would result in WaterNSW receiving revenues that aligned with its preferred 80:20 split.[123]

For ESC's 2016 review of prices, Goulburn-Murray Water stated its view that its cost structure for delivering diversion services was 'relatively fixed' in terms of varying with volumes of water use.[124] ESC's consultant, Indec, assessed total operating costs and annual water usage for the period from 2010–11 to 2014–15 for diversion services. While a high-level assessment showed that total costs did not vary with water usage, Goulburn-Murray Water did state that operating costs were predominantly labour related and the mix of labour related activities changes between periods of low and high water use.[125]

In the case of Seqwater, operational staff can allocate time between Seqwater schemes within close geographic proximity (for example, Cedar Pocket Dam, Mary Valley and Pie Creek) depending on operational requirements. In addition, we consider that there are opportunities to reduce costs in Seqwater schemes during times of lower water use—for example, contractors are engaged to undertake repair and maintenance activities, so contractor expenses do not need to be incurred if repair and maintenance requirements decrease. Direct operations and maintenance costs have reduced over the period 2013–14 to 2017–18, as total irrigation water usage has decreased over the same period (Figure 8).

[120] Seqwater response to QCA RFI 37.
[121] Seqwater, submission to the QCA, *Seqwater Bulk Water Price Review 2018–21*, draft report, 31 July 2017.
[122] IPART, *WaterNSW—Review of prices for rural bulk water services from 1 July 2017 to 30 June 2021*, final report, June 2017, p. 117.
[123] IPART, *WaterNSW—Review of prices for rural bulk water services from 1 July 2017 to 30 June 2021*, final report, June 2017, pp. 115–122.
[124] ESC, *Goulburn-Murray Water Price Review 2016*, final decision, June 2016, p. 68.
[125] Indec*, 2016–20 Review of Water Prices for Goulburn-Murray Water: Tariff Structure Proposals*, final report, prepared for ESC, January 2016, p. 27.

Figure 8 Operating costs and water usage—direct operations and maintenance activities



Note: Total whole of scheme costs. Excludes Central Brisbane River WSS.

Source: Seqwater response to QCA RFI 31; QCA analysis.

We do not consider that Seqwater has provided sufficient justification for moving away from the cost allocation approach that we applied in the 2013 review. Seqwater has said that customers are generally supportive of the proposed rebalancing of costs from volumetric to fixed prices in most Seqwater schemes[126], but that is in the context of constraints on increasing or decreasing fixed prices in the Government's pricing principles. Given that the fixed price is effectively set under these principles for all Seqwater schemes[127], the effect of this rebalancing is a significant reduction in customers' bills in the first year of the price path period.

The allocation of costs between the fixed and variable components of prices involves a degree of subjectivity and judgement. For this review, the referral directs us to ensure, where possible, that revenue and pricing outcomes are both simple and transparent to customers. We have adopted for this review the 20 per cent allocation of direct operations and maintenance costs that we applied for bulk WSSs in the 2013 review, for both bulk WSS and distribution systems, as we consider this is simple and transparent and broadly reflects the underlying fixed and variable nature of the costs of operating Seqwater's irrigation schemes.

Table 44 presents our proposed fixed/cost allocations for operating costs.

[126] In particular, in Cedar Pocket, Logan River, Mary Valley (including Pie Creek) and Warrill Valley schemes.

[127] The current fixed price for all Seqwater schemes is either well below the cost-reflective (lower bound) price and will increase by $2.38/ML plus inflation over the price path period, or the current fixed price is well above the cost-reflective price and will be maintained in nominal terms over the price path period.

Table 44 Variable operating costs by activity—QCA's proposed approach (%)

Activity	*Seqwater's proposal (%)*	*QCA draft (%)*
Direct operations and maintenance[a]	5	20
Electricity pumping costs	100	Pie Creek only
Other electricity costs	5	—
Insurance	5	—
Local government rates	—	—
Dam safety inspection	5	—
Non-direct costs	—	—
Renewal annuity	—	—
Dam safety upgrade capex	—	—

a Excludes electricity costs.

Source: QCA analysis.

Table 45 shows the proportion of revenue allocated to the fixed and variable charges for each bulk WSS, before the application of the Government's pricing principles in the referral.

Table 45 QCA's recommended fixed and variable cost apportionment, 2020–24

Scheme	*2013 review (%)*		*2020–24 review (%)*	
	Fixed	*Variable*	*Fixed*	*Variable*
Cedar Pocket	90	10	88	12
Central Brisbane River	89	11	9	8
Central Lockyer Valley	89	11	9	6
Morton Vale Pipeline	7	22	85	15
Logan River	91	9	94	6
Lower Lockyer Valley	90	10	92	8
Mary Valley	91	9	92	8
Pie Creek	81	19	87	1
Warrill Valley	89	11	91	9%

Note: Whole of scheme costs.

Source: QCA, Seqwater Irrigation Price review: 2013–17, final report, April2013, QCA analysis.

7.4 Allocating costs between medium and high priority users

Seqwater's customers hold WAEs specifying the reliability or priority group of the entitlement, for example, medium or high priority WAEs. Holders of high priority WAEs can usually rely on being able to access their nominal volume more often than holders of a lower priority WAE (e.g. medium priority).

A high priority WAE does not provide a 100 per cent guarantee that the holder will always get access to water. Rather, high priority means that the holder can expect to be given higher priority when available water supplies are being shared between customers of all priorities. When water supplies are low, high priority WAE holders tend to be allocated a larger share of their WAE than

lower priority WAE holders. Medium priority customers often do not get any water until high priority customers have received 100 per cent of their nominal volume.

It is therefore necessary for our cost allocation approach to account for these differing priority groups of water entitlements.

7.4.1 Previous investigation

In the 2013 review, variable costs were allocated between medium and high priority WAE according to water use.

To recover variable costs, the QCA derived a volumetric price for each irrigation service contract (Part B and Part D, if applicable) that increased by inflation over the price path period. The cost-reflective volumetric price aligned the total variable costs for each service contract for all sectors (including but not limited to irrigation) with an assumed level of all sectors water usage particular to each service contract. This approach effectively assumed the same volumetric price for medium and high priority customers.

For Logan River, Mary Valley and Warrill Valley WSSs (where there are medium and high priority customers), the QCA's recommended approach for allocating fixed costs between medium and high priority WAE used:

- the headworks utilisation factor (HUF) for the renewals annuity allowance and fixed repairs and maintenance costs
- the HUF for 50 per cent of costs and nominal WAE for 50 per cent of costs, for all other fixed operating costs.

This approach is summarised in Table 46.

Table 46 Fixed cost allocation between medium and high priority WAEs in the 2013 review

Cost component	***Fixed cost allocation methodology***	
	Bulk WSSs	***Distribution systems***
Repair and maintenance	HUF	WAE
All other operating costs	50% by HUF, 50% by WAE	WAE
Renewals annuity	HUF	WAE

For the Central Brisbane River WSS, we said that since meter reading, release scheduling and water releases are likely to occur to a lesser extent than for other schemes, there is a case to allocate less operations costs to irrigators in this scheme than for other WSSs. We proposed to allocate 100 per cent of fixed operating costs on the basis of the adjusted WAEs in the Central Brisbane River WSS.

For the remaining bulk WSSs (Cedar Pocket Dam, Central Lockyer Valley and Lower Lockyer Valley WSSs), in which materially all customers are allocated medium priority WAEs, we allocated fixed costs using WAEs.[128]

[128] We allocated 100 per cent of fixed costs to medium priority customers in the Cedar Pocket and Lower Lockyer Valley WSSs, and 98.9 per cent to medium priority customers in the Central Lockyer Valley WSS.

7.4.2 Seqwater's submission

Seqwater engaged Badu Advisory to review and update the HUFs for three of Seqwater's WSSs where material quantities of medium and high priority WAEs exist (Logan River, Warrill Valley and Mary Valley WSSs).[129] The assessment of the appropriate cost allocation between medium and high priority customers for Central Brisbane River WSS was considered separately (see section 6.3).

Seqwater said that based on this review, the HUFs were updated to take into account:

- cut-off rules that prevent releases from headworks storage under defined conditions—the 2013 review analysis did not properly incorporate the medium priority cut-off rule that applies to water supplied from Borumba Dam in the Mary Valley WSS. Correctly modelling the cut-off rule materially changes the HUF in this scheme
- changes in high priority allocations—Logan has additional high priority allocations due to the addition of new storages, and some conversion of medium priority to high priority. While this lowers the share for irrigation, it also increases the costs to be shared as the costs associated with the new storages now need to be included
- significant changes to water sharing rules—the Logan ROP also updated the water sharing rules to provide preferential access by the newly created high priority water allocations to the water stored in the scheme's combined storage
- correction and updating of the 15-year critical period—the 2013 review analysis (incorrectly) used 14 years of data. The updated analysis (appropriately) uses 15 years of data.[130]

Table 47 below outlines Seqwater's proposed HUF changes as compared to the 2013 review.

Table 47 Seqwater's proposed headworks utilisation factors

WSS	*2013 review*	*Proposed HUF*	*Reason*
Logan River	16%	2%	Significant impact from changes to ROP and water sharing rules, with new storages added (in particular, Wyaralong Dam) and changed water sharing rules. Minor error: 14 years vs 15 years.
Mary Valley	26%	11%	Significant impact from missed cut-off rule. Minor error: 14 years vs 15 years.
Warrill Valley	11%	10%	Minor impact from change in volume of high priority allocations. Minor error: 14 years vs 15 years.

Source: Seqwater, sub. 1, p. 35.

Seqwater said that these reductions in the HUF have resulted in significant reductions to the costs allocated to medium priority customers, and consequently the cost-reflective prices in these schemes. Seqwater proposed that the difference between actual revenue collected and cost-reflective revenue be credited to the annuity balance in each scheme to reduce the pressure on future prices.[131]

[129] Seqwater, sub. 9.
[130] Seqwater, sub. 1, pp. 34–35.
[131] Seqwater, sub. 1, p. 35.

7.4.3 Other stakeholders' submission

QFF said that it supported Seqwater's proposal to apply revenue recovered above cost-reflective in the three schemes with variations in the HUF over the new price path so as to reduce the substantial negative annuity balances in these schemes.[132]

7.4.4 QCA assessment

The HUF methodology seeks to calculate the relative share of storage assets in each WSS required to supply medium and high priority WAE. This recognises that relatively more infrastructure is required to deliver high priority WAE than medium priority WAE and, consequently, relatively greater headworks costs are associated with high priority WAE than medium priority WAE.

Essentially, the storage capacity required for each category of water entitlement is the cost driver for the purpose of cost allocation. It indicates that storage-related infrastructure costs, associated with each megalitre of high priority WAE, are greater than the storage costs for each megalitre of medium priority WAE.

We accept that the storage capacity required to deliver the priority of water required is an appropriate driver of costs and is therefore a reasonable approach to apportion costs between medium and high priority WAE.

We have reassessed the bulk WSS costs that are allocated to priority groups using the HUF, particularly in light of our assessment of new compliance costs relating to Inspector-General Emergency Management (IGEM) review costs and dam safety upgrade capex. We have also reassessed the allocation approach for insurance costs, in response to stakeholders' comments and also in light of Sunwater's proposed treatment of flood damage costs and associated insurance claim revenues.

Based on this assessment, we consider that insurance costs, dam safety capex and IGEM costs should be allocated to medium and high priority customers using HUFs (see section 7.3 of Part B).

Assessment of proposed HUFs

In the 2012 Sunwater review, we commissioned Gilbert & Sutherland Pty Ltd (G&S) to conduct an independent review of Sunwater's proposed HUF methodology. Based on this independent review, we modified Sunwater's methodology for apportioning the top layer of storage between medium and high priority to reflect the ratio of nominal WAE volumes for medium and high priority customers.

Table 48 summarises the HUF methodology that we accepted in the 2013 review.

[132] QFF, sub. 131, p. 2.

Table 48 HUF methodology adopted in 2013 review

Step	*Description*
1. Identify the water entitlement groupings	For each WSS, establish the highest (high priority or HP) and second highest (typically medium priority or MP) water entitlement groups.
2. Determine the volumes of the identified water entitlement groupings	Determine the total WAE associated with each group. Where the ROP permits the conversion of high priority entitlements to medium priority (or vice versa), the maximum volume of HP WAE (HP max) that can exist and corresponding MP WAE (MP min) must be determined.
3. Determine the extent to which water sharing rules and other operational requirements give the different WAE priority groups exclusive or shared access to components of storage capacity	Using the water sharing rules and other operational requirements set out in the ROP, partition the total storage of the WSS as follows: (a) the bottom horizontal storage layer reserved for exclusively supplying HP WAE (HP1) – the 'bottom' level (b) the middle horizontal storage layer available for exclusive use by MP WAE (MP1) – the 'middle' level (c) the top horizontal storage layer to be shared between MP and HP WAE – the 'top' level. The 'top' level is apportioned between MP (MP2) and HP (HP2) WAE according to the ratio of MP and HP nominal volumes.
4. Assess the hydrologic performance of each component of headworks storage	Hydrologic models (based on Integrated Quantity Quality Models or IQQM) are used to derive the probabilities of each component of headworks storage in step 3 being accessible to the relevant WAE priority group during the driest 15-year period. The critical 15-year period reflects the proportion of storage capacity actually dedicated to HP WAE given that this capacity is driven by worst-case inflow scenarios.
5. Determine the HUF	Using the parameters established and derived in steps 1 to 4 above, the percentage of headworks storage capacity that MP customers have access to during the critical 15-year period is calculated for each WSS.

Source: QCA, SunWater Irrigation Price Review: 2012–17, final report, 2012, pp. 183–192.

We propose to accept Seqwater's proposed HUFs for the Logan River, Warrill Valley and Mary Valley WSSs. These have been derived appropriately using the HUF methodology that we adopted in the 2013 review.

For the Central Brisbane River WSS, we have adopted a modified HUF approach to calculate an allocation of 1.1 per cent of fixed costs to medium priority customers (see section 6.3).

As the three remaining WSSs (Cedar Pocket Dam, Central Lockyer Valley and Lower Lockyer Valley WSSs) materially only have medium priority WAE, we have allocated fixed costs using WAE.

Table 49 compares our proposed cost allocation with that used in the 2013 review.

Table 49 QCA-recommended allocation of fixed asset related costs to medium priority (%)

WSS	*2013 review (%)*	*Seqwater's proposal (%)*	*QCA draft (%)*
Cedar Pocket	100	100	100
Central Brisbane River	1.6	—	1
Central Lockyer Valley	98.9	98.9	98.9
Logan River	16	2	2
Lower Lockyer Valley	100	100	100
Mary Valley	26	11	11
Warrill Valley	11	1	10

Source: QCA, Seqwater Irrigation Price Review: 2013–17, final report, April 2013; Seqwater, sub. 1; QCA analysis.

Our proposed approach to allocating fixed costs between medium and high priority WAE is as follows:

- For bulk WSSs where different priority groups exist (Logan River, Warrill Valley and Mary Valley WSSs), 50 per cent of fixed operations costs are allocated by nominal WAE, with the remaining costs allocated using the HUF (or equivalent) in Table 49 above[133] .
- For Central Brisbane River WSS, all fixed costs are allocated using the modified HUF in Table 49above.
- For Cedar Pocket, Central Lockyer Valley and Lower Lockyer Valley WSSs, all fixed costs are allocated using nominal WAE.
- For distribution systems, all fixed costs are allocated using nominal WAE.
- Consistent with the 2013 review, we consider that the metering renewals costs be recovered exclusively from irrigation customers, as the metering program is for the exclusive benefit of irrigation customers.

Draft recommendation 21

We recommend that:

- dam safety upgrade capex and IGEM costs should be allocated to medium and high priority customers using HUFs for bulk WSSs, and using nominal WAEs for distribution systems
- insurance costs should be allocated to medium and high priority customers using HUFs for bulk WSSs, and using nominal WAEs for distribution systems.

7.5 Cost-reflective prices

To establish recommended prices, we first need to derive fixed and volumetric cost-reflective prices for each tariff grouping that incorporate prudent and efficient costs allowable under the referral and increase by the QCA's measure of inflation over the price path period.

[133] All fixed repairs and maintenance, insurance costs, non-metering renewals and dam safety upgrade capex, and 50 per cent of fixed operations costs, are allocated via the HUF.

The revenue requirements (Chapter 4) are converted to cost-reflective prices by applying the following steps (see section 7.1):

- Allocate costs to be recovered from the fixed (Part A and Part C, if applicable) and volumetric (Part B and Part D, if applicable) prices based on the fixed and variable nature of underlying costs (section 7.3.)
- Allocate fixed costs between medium and high priority WAE customers (section 7.4).
- Convert costs to a fixed and volumetric price that reflects the costs allowable under the referral (referred to as the 'cost reflective' price in each tariff group, in the referral).

7.5.1 Fixed prices

The fixed (Part A and Part C) prices are based on WAEs in each tariff grouping. Our draft cost-reflective fixed prices for bulk WSSs are compared to current prices in Table 50.

Table 50 Cost-reflective fixed (Part A) prices by tariff grouping, compared to 2019–20 current prices—bulk WSS ($/ML, nominal)

Tariff group	*2019–20*	*2020–21*	*Change (%)*
Cedar Pocket	22.36	324.69	1,352
Central Brisbane	24.48	5.81	(76)
Central Lockyer Valley	35.42	63.89	80
Morton Vale Pipeline	45.76	77.36	69
Logan River	26.80	18.09	(33)
Lower Lockyer Valley	47.53	92.70	95
Mary Valley	24.13	13.71	(43)
Pie Creek	54.30	397.90	633
Warrill Valley	25.41	19.79	(22)

Notes: For bulk WSSs, the fixed price is the Part A price, and the volumetric price is the Part B price. Tariff groups are medium priority WAE. For distributions (Morton Vale Pipeline and Pie Creek), these are 'bundled' prices comprising bulk (Part A) and distribution system (Part C) fixed prices. The 2020–21 price for the Central Lockyer Valley WSS is based on the priority groups and volumes in the current Interim Resource Operations Licence in place for the scheme.

Source: QCA analysis.

7.5.2 Volumetric prices

The volumetric (Part B) price reflects the average water use for the scheme as a whole based on the average 20-year water use (see section 5.2).

Our draft cost-reflective volumetric prices for bulk WSSs are compared to current prices in Table 51.

Table 51 Cost-reflective volumetric (Part B) prices by tariff grouping, compared to 2019–20 current prices—bulk WSS ($/ML, nominal)

Tariff group	*2019–20*	*2020–21*	*Change (%)*
Cedar Pocket	42.85	70.66	65
Central Brisbane	11.76	2.81	(76)
Central Lockyer Valley	11.46	11.17	(3)
Morton Vale Pipeline	15.19	21.93	44
Logan River	11.57	19.20	66
Lower Lockyer Valley	25.80	30.40	18
Mary Valley	9.62	8.11	(16)
Pie Creek	91.57[b]	266.12	191
Warrill Valley	8.49	15.18	79

a For bulk WSSs, the fixed price is the Part A price, and the volumetric price is the Part B price. Tariff groups are medium priority WAE. For distributions (Morton Vale Pipeline and Pie Creek), these are 'bundled' prices comprising bulk (Part B) and distribution system (Part D) fixed prices. b In the 2013 review, we moderated bill impacts by recommending a distribution system volumetric (Part D) price that only recovered the variable electricity pumping cost.

Source: QCA analysis.

Our estimates of cost-reflective prices are higher in real terms than our cost-reflective tariffs in the 2013 review for some tariff groups due to the lower volume forecasts in this review (see section 5.2).

7.6 Government pricing principles

In 2000, the Government established a lower bound cost recovery target for irrigation prices in existing irrigation schemes that it considered was the minimum level of cost recovery for a water business to be viable.[134] As noted in Part A (Chapter 2) of our draft report, this target remains Government policy and prices are expected to transition to it over time.

The pricing principles in the referral give effect to this longer-term government policy objective and include:

- recommending prices that are based on all tariff groups transitioning to cost-reflective prices that incorporate efficient costs allowable under the referral and increase by the QCA's measure of inflation
- in considering tariff structures, having regard to the fixed and variable nature of the underlying costs
- deriving the fixed (Part A and Part C) prices independently of volumetric (Part B and Part D) prices.

Under the terms of this referral, key differences from the previous relate to our ability to adjust the fixed component of prices. In recommending fixed (Part A and Part C) prices, the pricing principles in schedule 2 of the referral require that:

[134] Queensland Treasury and Department of Energy and Water Supply, submission to the ACCC, *Review of Water Charge Rule*, *draft advice*, March 2016, p. 6.

- fixed prices are to be derived independently of the volumetric prices, whereas in the previous review the fixed prices at the start of the price path period were adjusted to offset changes in volumetric prices
- at the start of the new price path, the fixed bulk (Part A) price for distribution system customers[135] is to be no more than the cost-reflective fixed price, whereas in the previous review the fixed (Part A) price was the same for bulk and distribution system customers and, in some cases, was higher than the cost-reflective fixed price[136].

The principles in schedule 2 of the referral require us to apply the following general rule[137] to the bulk fixed price (Part A) and to the total fixed price (Part A + Part C) for each tariff group:

- If the prevailing (2019–20) fixed price is below the initial (2020–21) cost-reflective fixed price, then the prevailing fixed price is increased annually by inflation plus $2.38 (from 2020–21, increasing by inflation each year) until the cost-reflective fixed price is reached.
- If the prevailing (2019–20) fixed price is above the initial (2020–21) cost-reflective fixed price, then the prevailing fixed price should remain unchanged until the cost-reflective fixed price is reached, with the exception of the bulk fixed (Part A) price that applies to customers of a distribution system[138], which should be reduced to the cost-reflective fixed (Part A) price (with this reduction fully offset by an increase in the distribution fixed (Part C) price).

The referral requires that in recommending volumetric prices (Part B and Part D), we should have regard to moving to cost-reflective prices immediately. Paragraph C(1.4) of the referral directs us to consider less than cost-reflective volumetric prices, which are necessary to moderate bill impacts for customers.

7.6.1 Seqwater's submission

Seqwater said that it had proposed prices that had taken into account the Government's pricing principles.[139] Seqwater's existing volumetric prices were generally above its proposed cost-reflective prices, which Seqwater adjusted down to cost-reflective levels based on the referral. For Pie Creek distribution system, Seqwater proposed to moderate bill impacts for volumetric (Part D) price. Seqwater said that this proposal was consistent with the approach taken in the 2013 review and was allowed for under the referral.

7.6.2 Other stakeholder's submission

No other stakeholders made submissions on this issue.

7.6.3 QCA assessment

In recommending prices, our ability to adjust the fixed component of prices is limited by the pricing principles in schedule 2 of the referral. Our recommended fixed prices reflect the transitional path to cost-reflective fixed prices that is outlined in the referral. However, the referral does provide us with scope to consider less than cost reflective volumetric prices where necessary to moderate bill impacts.

---

[135] This includes customers of distribution systems operated by a local-customer-owned company or cooperative and customers of distribution systems operated by Sunwater or Seqwater.
[136] In each of these cases, the total fixed price (Part A + Part C) was no more than the total cost-reflective price.
[137] Subject to paragraph H of schedule 2 of the referral (for the Central Brisbane River WSS).
[138] This includes customers of distribution systems operated by a local customer-owned company or co-operative and customers of distribution systems operated by Sunwater or Seqwater.
[139] Seqwater, sub. 1, p. 41.

Specifically, the referral requires that in recommending volumetric prices (Part B and Part D), we should have regard to moving to cost-reflective prices immediately. The referral also directs us to consider less than cost-reflective volumetric prices, which are necessary to moderate bill impacts for customers. As outlined in Chapter 2 (Part A), we consider that 'moderating bill impacts' involves transitioning any volumetric price increases required to move to cost-reflective prices (and meet the lower bound cost objective) in a staged manner that allows users sufficient time to adjust.

Consistent with the lower bound cost target as the key tenet of the Government's water pricing policy, the key pricing principle in the referral is to transition existing irrigation prices to prices that reflect the costs allowable under the terms of the referral. As a result, we have separated our assessment of irrigation prices into two key categories of tariff groups:

- above lower bound costs—those tariff groups with existing prices that are already more than sufficient to recover the costs allowable under the terms of the referral
- below lower bound costs—those tariff groups with existing prices that are not yet sufficient to recover the costs allowable under the terms of the referral.

Tariff groups with existing prices above lower bound costs

For tariff groups with existing prices above lower bound costs, we have sought to transition to prices that reflect the lower bound cost base by maintaining fixed prices in nominal terms until this cost base is reached.

The exception to this approach is the Central Brisbane River WSS, for which the referral states that the fixed (Part A) price at the commencement of the price path period may be less than the prevailing 2019–20 fixed (Part A) price, where:

- cost allocations are reapportioned as anticipated in the 2013 review final report
- it is an outcome of wider cost allocation investigations with customers.

Seqwater and MBRI worked together to investigate alternative approaches to cost allocation between high and medium priority WAE customers in the Central Brisbane River WSS. The joint Seqwater/MBRI submission proposed assigning costs to medium priority WAE customers (including irrigators) based on a comparison of hydrologic benefits to irrigators between the existing case (the 'with dams' case) and an alternative scenario (the ‘without dams' case).[140]

We concluded that medium priority WAE holders benefit from the relevant dam infrastructure and therefore should be allocated an appropriate share of the costs (section 6.4).

Our consultant, Water Solutions, considered whether the results from this study, or additional modelling based on an alternative cost allocation approach, could provide an improved approach to assigning benefits attributable to each WAE priority group in the Central Brisbane River WSS, as compared to the adjusted nominal WAE used in the 2013 review. Water Solutions proposed that the most appropriate cost allocation approach was a modification to the standard HUF methodology.

We considered that Water Solutions' proposed approach is an appropriate methodology for determining the relative benefits of Central Brisbane River WSS's storage assets between medium and high priority WAE customers.

[140] Seqwater, sub. 3, pp. 6–7.

Given that our review process has developed an updated cost allocation approach that has resulted in the lower bound cost target being lower than the prevailing 2020–21 fixed (Part A) price, we have recommended the lower fixed (Part A) price for this scheme that is consistent with the lower bound target.

In recommending volumetric prices for schemes above the lower bound cost target, we have applied the following approach:

- Where existing volumetric prices are above cost-reflective volumetric prices, we have reduced the existing volumetric price to the cost-reflective price immediately.
- Where volumetric prices are below cost-reflective volumetric prices, we have maintained the existing volumetric price in real terms over the price path period until the cost-reflective revenue is reached.

Table 52 shows bulk WSS tariff groups with existing prices that are more than sufficient to recover lower bound costs, with existing levels of both fixed and volumetric prices above cost-reflective fixed and volumetric prices.

Table 52 Tariff groups with existing fixed and volumetric prices above cost-reflective prices—bulk WSS ($/ML, nominal)

Tariff group	*2019–20 current prices*		*2020–21 cost-reflective prices*	
	Fixed ($/ML)	*Volumetric ($/ML)*	*Fixed ($/ML)*	*Volumetric ($/ML)*
Central Brisbane River	24.48	11.76	5.81	2.81
Mary Valley	24.13	9.63	13.71	8.11

Notes: The fixed price is the Part A charge, and the volumetric price is the Part B charge. Tariff groups are medium priority WAE.

Table 53 shows bulk WSS tariff groups with existing prices that are more than sufficient to recover lower bound costs, with existing fixed prices above cost-reflective fixed prices and volumetric prices below cost-reflective volumetric prices.

Table 53 Tariff groups with existing fixed prices above cost-reflective, and volumetric prices below cost-reflective—bulk WSS ($/ML, nominal)

Tariff group	*2019–20 current prices*			*2020–21 cost-reflective prices*		
	Fixed ($/ML)	*Volumetric ($/ML)*	*Revenue ($'000)*	*Fixed ($/ML)*	*Volumetric ($/ML)*	*Revenue ($'000)*
Logan River	26.80	11.57	417	18.09	19.20	334
Warrill Valley	25.41	8.49	551	19.79	15.18	469

Notes: The fixed price is the Part A charge, and the volumetric price is the Part B charge. Tariff groups are medium priority WAE. Revenue has been derived by applying the irrigation WAE to the fixed price, and the QCA-proposed MP water usage (see section 5.2.4) to the volumetric price.

The existing fixed and volumetric prices for these tariff groups are more than sufficient to recover the costs allowable under the referral (i.e. cost-reflective revenues). Given that the key pricing principle in the referral is to transition existing irrigation prices to prices that reflect the costs allowable under the terms of the referral, we have maintained fixed and volumetric prices at 2019–20 levels over the price path period for these tariff groups.

While this results in volumetric prices that are lower than cost-reflective, we do not consider that the difference is significant. As the businesses' costs are largely fixed, the tariff balance in existing prices is consistent with our proposed allocation of volume risk (Part A, Chapter 3) and is consistent with the revenue adequacy requirements in the referral notice. We consider that a lower than cost-reflective volumetric price will not have material implications on signalling the efficient costs of providing water supply services to irrigation customers, noting that any price signals may also be tempered to some degree by the Government's pricing principles.

Tariff groups with existing prices below lower bound costs

For those tariff groups with existing prices below lower bound costs, we have followed the prescribed transitional approach for fixed prices. Of these tariff groups, we have applied the following approach in recommending volumetric price:

- Where existing volumetric prices are above cost-reflective volumetric prices, we have reduced the existing volumetric price to the cost-reflective price immediately.
- Where volumetric prices are below cost-reflective volumetric prices, we have assessed the transitional path for volumetric prices based on the requirements of the referral and the matters we are required to have regard for under section 26 of the QCA Act.

Over the past year, there has been public consultation on the Government's proposal to convert water entitlements in the Central Lockyer Valley WSS to tradeable WAEs. On 23 July 2019, the Minister asked for a new draft Moreton water plan amendment to be prepared, replacing the draft Moreton water plan amendment released in 2018. The prices derived in this section for Central Lockyer Valley WSS are based on the priority groups and volumes in the current Interim Resource Operations Licence in place for this scheme.

Table 54 shows tariff groups with existing prices that are less than those required to recover lower bound costs, with existing levels of both fixed and volumetric prices below cost-reflective fixed and volumetric prices.

Table 54 Tariff groups with existing fixed and volumetric prices below cost-reflective—bulk WSS ($/ML, nominal)

Tariff group	*2019–20 current prices*		*2020–21 cost-reflective prices*	
	Fixed ($/ML)	*Volumetric ($/ML)*	*Fixed ($/ML)*	*Volumetric ($/ML)*
Cedar Pocket	22.36	42.85	324.69	70.66
Lower Lockyer Valley	47.53	25.80	92.70	30.40
Pie Creek	54.30	91.57	397.90	266.12

Notes: The fixed price is the Part A charge, and the volumetric price is the Part B charge. Tariff groups are medium priority WAE.

We consider the price paths with an annual increase of $2.38/ML of WAE (plus inflation) reflect the maximum level of increases that have occurred over the previous two price path periods that have allowed prices to transition to lower bound costs in a staged manner that allows users sufficient time to adjust.

Where possible, we have sought to recommend volumetric prices that fully recover cost-reflective volumetric prices. The volumetric component generally aligns with the underlying variable costs, which help to send signals regarding the efficient costs of providing water supply services to irrigation customers (noting that any price signals may be tempered to some degree

by the Government's pricing principles),. This in turn may promote higher value production and efficient investment by active irrigators.

However, consistent with the 2013 review, Cedar Pocket WSS and Pie Creek distribution system have existing prices that are well below the lower bound cost target. While these two schemes have a relatively small total annual costs[141], they both have a very small customer base to recover these costs from. We recognise that the absolute level of the calculated fixed price in both schemes is exceptionally high as compared to all other irrigation schemes operated by Sunwater and Seqwater. The volumetric price is also high for both Cedar Pocket (in terms of bulk WSSs) and Pie Creek (compared to other distribution systems).

We note that customers in the Pie Creek distribution system raised concerns with the prospect of increasing irrigation prices. In particular, stakeholders were concerned with the uncertainty as to whether the volumetric price would continue to be moderated, as was the case in the 2013 review. We noted some of the unique characteristics of this scheme in our 2013 review—in particular, the significant development of rural residential blocks, the lack of materialisation of expected demand, and the changing characteristics of demand.

We understand the concerns of stakeholders regarding the high cost nature of these two schemes and the transition to the Government's lower bound price target. We consider the price paths with an annual increase of $2.38/ML of WAE (plus inflation) are the maximum level of increases that can be sustained, given the limited scope to transition to alternative, more commercially viable crops due to the local climate and growing conditions. We have therefore recommended that volumetric (Part B + Part D) prices increase by our estimate of inflation over the price path period.

Summary of draft recommended prices

Table 55 summarises the existing 2019–20 price, the 2020–21 cost-reflective price (consistent with the Government's lower bound target), and our draft recommended prices for bulk WSSs operated by Seqwater.

Table 55 Draft recommended prices—bulk WSSs ($/ML, nominal)

Bulk WSS	*Price*	*2019–20 existing*	*2020–21 lower bound*	*2020–21 QCA draft*	*2021–22 QCA draft*	*2022–23 QCA draft*	*2023–24 QCA draft*
Cedar Pocket	Part A	22.36	324.69	25.27	28.25	31.30	34.42
	Part B	42.85	70.66	43.86	44.90	45.96	47.05
Central Brisbane	Part A	24.48	5.81	5.81	5.95	6.09	6.23
	Part B	11.76	2.81	2.81	2.87	2.94	3.01
Central Lockyer Valley	Part A	35.42	63.89	38.64	41.93	45.31	48.76
	Part B	11.46	11.17	11.17	11.43	11.70	11.98
Logan River	Part A	26.80	18.09	26.80	26.80	26.80	26.80
	Part B	11.57	19.20	11.85	12.13	12.41	12.71
	Part A	47.53	92.70	51.04	54.63	58.30	62.07

[141] Cedar Creek's total costs for 2020–21 are less than $200,000, while Pie Creek's annual costs for 2020–21 are less than $400,000.

Bulk WSS	*Price*	*2019–20 existing*	*2020–21 lower bound*	*2020–21 QCA draft*	*2021–22 QCA draft*	*2022–23 QCA draft*	*2023–24 QCA draft*
Lower Lockyer Valley	Part B	25.80	30.40	30.40	31.12	31.85	32.61
Mary Valley	Part A	24.13	13.71	24.13	24.13	24.13	24.13
	Part B	9.63	8.11	8.11	8.31	8.50	8.71
Warrill Valley	Part A	25.41	19.79	25.41	25.41	25.41	25.41
	Part B	8.49	15.18	8.69	8.89	9.10	9.32

Notes: The fixed price is the Part A charge, and the volumetric price is the Part B charge. Tariff groups are medium priority WAE. Recommended prices for the Central Lockyer Valley WSS are based on the priority groups and volumes in the current Interim Resource Operations Licence in place for the scheme.

Source: QCA analysis.

Table 56 summarises the existing 2019–20 price, the 2020–21 cost-reflective price (consistent with the Government's lower bound target), and our draft recommended prices for distribution systems operated by Seqwater.

Table 56 Draft recommended prices—distribution systems ($/ML, nominal)

System	*Price*	*2019–20 existing*	*2020–21 lower bound*	*2020–21 QCA draft*	*2021–22 QCA draft*	*2022–23 QCA draft*	*2023–24 QCA draft*
Morton Vale Pipeline	Part A	35.42	63.89	38.64	41.93	45.31	48.76
	Part B	5.72	11.17	11.17	11.43	11.70	11.98
	Part C	10.34	13.47	10.59	10.84	11.10	11.36
	Part D	9.47	10.77	10.77	11.02	11.28	11.55
	Total fixed	**45.76**	**77.36**	**49.22**	**52.77**	**56.40**	**60.12**
	Volumetric	**15.19**	**21.93**	**21.93**	**22.45**	**22.98**	**23.53**
Pie Creek	Part A	21.59	13.71	13.71	14.03	14.37	14.71
	Part B	9.63	8.11	8.11	8.31	8.50	8.71
	Part C	32.71	384.19	43.75	47.22	50.77	54.41
	Part D	81.94	258.01	85.63	87.65	89.73	91.86
	Total fixed	**54.30**	**397.90**	**57.46**	**61.25**	**65.14**	**69.12**
	Volumetric	**91.57**	**266.12**	**93.74**	**95.96**	**98.24**	**100.56**

Notes: The fixed price is the Part A charge, and the volumetric price is the Part B charge. Tariff groups are medium priority WAE.

Source: QCA analysis.

Draft recommendation 22

We recommend that:

- prices for irrigation customers for each water supply scheme and distribution system should be set according to the prices set out in Tables 55 and 56
- prices for the Central Lockyer Valley WSS be updated to take into account the Water Plan (Moreton) (Supply Scheme Arrangements) Amendment Plan 2019 as soon as practicable after it is finalised.

8 MISCELLANEOUS CHARGES

The referral directs the QCA to make recommendations on appropriate prices including termination fees, drainage prices, drainage diversion prices and water harvesting prices.

Seqwater does not provide drainage, drainage diversion or water harvesting services in any of its irrigation schemes. It charges termination fees in the Morton Vale Pipeline and Pie Creek distribution systems. In this chapter, we present our recommendations on these charges.

8.1 Termination fees

Termination fees are applicable in Seqwater distribution schemes when a distribution system WAE is permanently transferred to a different section of the scheme, generally the river.

The termination fee is intended to allow Seqwater to recover fixed costs associated with the permanently transferred WAE. This protects remaining customers from prices being increased to ensure Seqwater's revenue adequacy.

8.1.1 Previous investigation

In the 2013 review, we recommended that Seqwater's termination fee should be calculated as up to 11 times (including GST) the cost-reflective distribution fixed (Part C) tariff. [142] This was based on the ACCC 2008 termination fee rules for the Murray-Darling Basin. The ACCC recommended that termination fees should be calculated as up to 10 times the relevant cost-reflective fixed tariff.[143] The ACCC released amended guidelines in 2011 that allowed for the inclusion of GST into the multiplier where applicable.[144]

Seqwater's view was that irrigators of the Morton Vale Pipeline had an existing contract with Seqwater that specified a methodology for calculating termination fees, and the conditions of this contract had precedence.[145] We recommended that if Seqwater chose to renegotiate the Morton Vale Pipeline contract, then our recommended approach for calculating termination fees should apply.

We also noted that original entitlements associated with the Morton Vale Pipeline had been 5,051 ML, but this volume reduced due to customers handing back allocations. To avoid remaining customers paying for costs attributed to the volumes that were handed back, we considered that the relevant cost-reflective fixed (Part C) tariff used to derive termination fees should be based on 5,051 ML WAE, as this was the agreed volume at the establishment of the scheme.[146]

For Pie Creek, the recommended approach resulted in a termination fee that was substantially higher than any other scheme. In addition, we recognised the unique circumstances that existed in Pie Creek and the economic concerns that stakeholders had raised. Therefore, we proposed an alternative approach to apply as a transitional arrangement, with the termination fee calculated

[142] QCA, *Seqwater Irrigation Price Review: 2013–17*, final report, April 2013, pp. 73–77.
[143] ACCC, *Water Charge (Termination Fees) Rules*, final advice, December 2008.
[144] ACCC, *ACCC final advice on an amendment to the Water Charge (Termination Fees) Rules 2009*, June 2010.
[145] QCA, *Seqwater Irrigation Price Review: 2013–17*, Volume 2: Central Lockyer Valley Water Supply Scheme, final report, April 2013, pp. 28–29.
[146] QCA, *Seqwater Irrigation Price Review: 2013–17,* Volume 2: Central Lockyer Valley Water Supply Scheme, final report, April 2013, pp. 28–31.

as up to 11 times the recommended (not the cost-reflective) Part C tariff. This was until Seqwater and the Government's consideration of future options for this tariff group had been completed.

We noted that this recommendation could imply a higher community service obligation (CSO) contribution from Government to offset the cost impact on remaining users. However, we considered this was a matter for the Government to determine in negotiations with Seqwater.[147]

8.1.2 Seqwater's submission

Seqwater proposed the arrangements for termination fees should continue as per the current price path arrangements:

- For the Morton Vale Pipeline, termination fees should be 11 times the cost-reflective fixed (Part C) price.
- For the Pie Creek distribution system, the termination fee should be 11 times the recommended fixed (Part C) price.[148]

8.1.3 Other stakeholders' submissions

No other stakeholders provided submissions on this issue.

8.1.4 QCA assessment

The QCA has reassessed the appropriateness of the 2013 review approach. Seqwater has proposed no changes to the way termination fees are calculated.

Since the last review, there has been no change to the ACCC Water Charge (Termination Fees) Rules 2009. The rules determined that termination fees in the Murray-Darling Basin should be calculated as up to 10 times the relevant cost reflective fixed tariff.[149] As Seqwater is subject to GST payment on termination revenue it receives, the ACCC multiplier of up to 10 adjusted for GST results in a multiplier of up to 11.[150]

In setting a termination fee, the ACCC rules sought to balance the financial cost to a water business or remaining customers against providing an incentive to the water business to rationalise or reduce costs in a network. We consider that a termination fee applied as 11 times the cost-reflective distribution fixed (Part C) price balances the interests of Seqwater and its customers with providing appropriate incentives for Seqwater to supply only those services required by their customers.

With regard our recommendations in the 2013 review for Morton Vale Pipeline, we recognise that the termination fee stated within the Morton Vale Pipeline contract is a separate matter. This relates to a fee for early termination of the capital charge that is payable by customers up to 2026. It is not related to the termination fee recommendations we are required to provide, which relate to fixed operating and renewals costs.

As remaining customers should not pay for any shortfall in revenue upon exit of the scheme by another customer, the termination fee for Morton Vale Pipeline should continue to be based on

[147] QCA 2013, *Seqwater Irrigation Price Review: 2013–17*, Volume 2: Mary Valley Water Supply Scheme, final report, April, pp. 19–21.
[148] Seqwater, sub. 1, p. 43.
[149] ACCC, *Water Charge (Termination Fees) Rules*, final advice, 2008.
[150] ACCC, *ACCC final advice on an amendment to the Water Charge (Termination Fees) Rules 2009*, final report, 2010.

the cost-reflective fixed (Part C) price calculated using 5,051ML WAE—the agreed volume at the establishment of the scheme.

In the previous review, as a transitional arrangement, we recommended the termination fee for Pie Creek should be calculated as up to 11 times the recommended (not the cost-reflective) Part C tariff. This was until Seqwater and the Government's consideration of future options for this tariff group had been completed. Seqwater has informed us that a DNRME-led review of the Pie Creek distribution system in line with the recommendations of the 2013 final report was completed in February 2018. As part of the review, Seqwater was asked to complete an engineering review to identify potential ways to improve scheme efficiency and reduce operational costs. This process included consultation with customers and QFF, and site visits. However, the outcomes of the review did not result in any operational changes.

It is clear that the recommended approach still results in a disproportionately high termination fee for Pie Creek compared to other schemes. We also note that Seqwater proposed no change to current termination fee arrangements. Therefore, we recommend that the termination fee for Pie Creek should continue to be calculated as up to 11 times the recommended (not the cost-reflective) Part C tariff. See Table 57 for the maximum termination fee for each tariff group.

Our recommended approach ensures that the shortfall should not be recovered from remaining customers as result of other customers terminating. This means that Seqwater will bear the revenue risk if it is not able to sell the terminated WAE once the termination revenue has been exhausted. On the other hand, if Seqwater is able to sell the terminated WAE before the termination revenue has been exhausted, we consider that Seqwater should be able to retain the additional revenue. This will provide the appropriate incentive for Seqwater to attract new customers.

Table 57 Maximum termination fees for each tariff group ($/ML WAE, nominal)

Tariff group	*2020–21*	*2021–22*	*2022–23*	*2023–24*
Morton Vale Pipeline	148.22	151.73	155.33	159.01
Pie Creek	481.21	519.41	558.52	598.56

Source: QCA analysis.

Draft recommendation 23

We recommend that:

- termination fees applicable to customers in the Morton Vale Pipeline distribution system should be calculated as up to 11 times (including GST) the cost-reflective fixed (Part C) tariff
- termination fees applicable to Pie Creek distribution system should be calculated as up to 11 times (including GST) the recommended fixed (Part C) tariff
- Seqwater can apply a lower multiple to the relevant cost-reflective fixed tariff if it is in their commercial interests to do so
- Seqwater should never recover any revenue shortfall from remaining customers upon exit of the scheme by another customer.

9 IMPACTS ON CUSTOMER BILLS

The referral directs the QCA to consider and analyse how its recommended appropriate prices might be reflected in customer bills for each irrigation tariff group.

This chapter outlines the impact of our pricing recommendations on Seqwater's irrigation customers.

We have been directed to provide estimated customer bills as part of our recommendations. These can be found for each irrigation tariff group in Appendix B and the relevant scheme information sheets. The scheme information sheets also provide indicative customer bill impacts for varying levels of usage.

The Treasurer has only referred certain aspects of the monopoly business activities of Sunwater and Seqwater (the water businesses) to the QCA for an investigation about the pricing practices relating to those activities (i.e. those activities undertaken for an irrigation service).[151] Consequently, our investigation and recommendations are confined to pricing for irrigation customers in the specified schemes and systems.

The customer bill impacts are presented in nominal dollar values. This means that prices **include forecast inflation**. We have forecast inflation over the regulatory period to be 2.37 per cent (see Chapter 2). Our analysis of bill impacts has been based on the 15-year irrigator-only average usage for each water supply scheme and distribution system.

The customer bill impacts and estimated customer bills presented in this chapter are indicative only—an irrigator's unique water use profile will determine the change to individual irrigation water bills.

9.1 Customer bill impacts

In making our recommendations, we have considered the likely impact on Seqwater's irrigation customers.

For bulk WSS prices, the bill estimates (in $/ML) are derived using the fixed (Part A) price and by applying average irrigation water use (at the scheme level) to the volumetric (Part B) price. For distribution tariffs, this represents the sum of the fixed (Part A and Part C) price and the average irrigation water use applied to the volumetric (Part B and Part D) price.

The change in $/ML has been calculated from current 2019–20 irrigation prices to the first year of the new price path (2020–21). The change in $/ML has also been calculated over the new price path period.

Indicative bill impacts are shown on a $/ML basis for existing tariff groups after bill moderation (see Chapter 7 for details on how we have moderated bill impacts).

Table 58 shows the indicative customer bill impacts for Seqwater irrigation tariff groups.

[151] An 'irrigation service' is defined in Schedule 4 of the Water Act 2000 as 'the supply of water or drainage services for irrigation of crops or pastures for commercial gain'.

Table 58 Indicative bill impacts compared to current prices ($/ML nominal)—Seqwater

Tariff group	*Average usage (%)*	*2019–20 ($/ML) (a)*	*2020–21 ($/ML) (b)*	*2023–24 ($/ML) (c)*	*Change from (a) to (b) (%)*	*Change from (a) to (c) (%)*
Cedar Pocket	63	49.36	52.91	64.08	7	30
Central Brisbane River	27	27.62	6.56	7.04	(76)	(75)
Central Lockyer Valley	37	39.60	42.72	53.14	8	34
Morton Vale Pipeline	15	48.01	52.47	63.60	9	32
Logan River	27	29.93	30.00	30.23	–	1
Lower Lockyer Valley	16	51.59	55.82	67.19	8	30
Mary Valley	33	27.35	26.85	27.04	(2)	(1)
Pie Creek	24	76.45	80.13	93.45	5	22
Warrill Valley	19	27.04	27.08	27.20	–	1

Note: $/ML bill estimates are derived using the fixed (Part A) price and applying average irrigation water use (at the scheme level) to the volumetric (Part B) price.

Source: Seqwater, sub. 1; QCA analysis.

Further analysis for each tariff group is provided below.

9.1.1 Cedar Pocket

Table 59 shows the indicative customer bill impacts for the Cedar Pocket irrigation tariff group.

Table 59 Indicative bill impacts compared to current prices ($/ML nominal)—Cedar Pocket

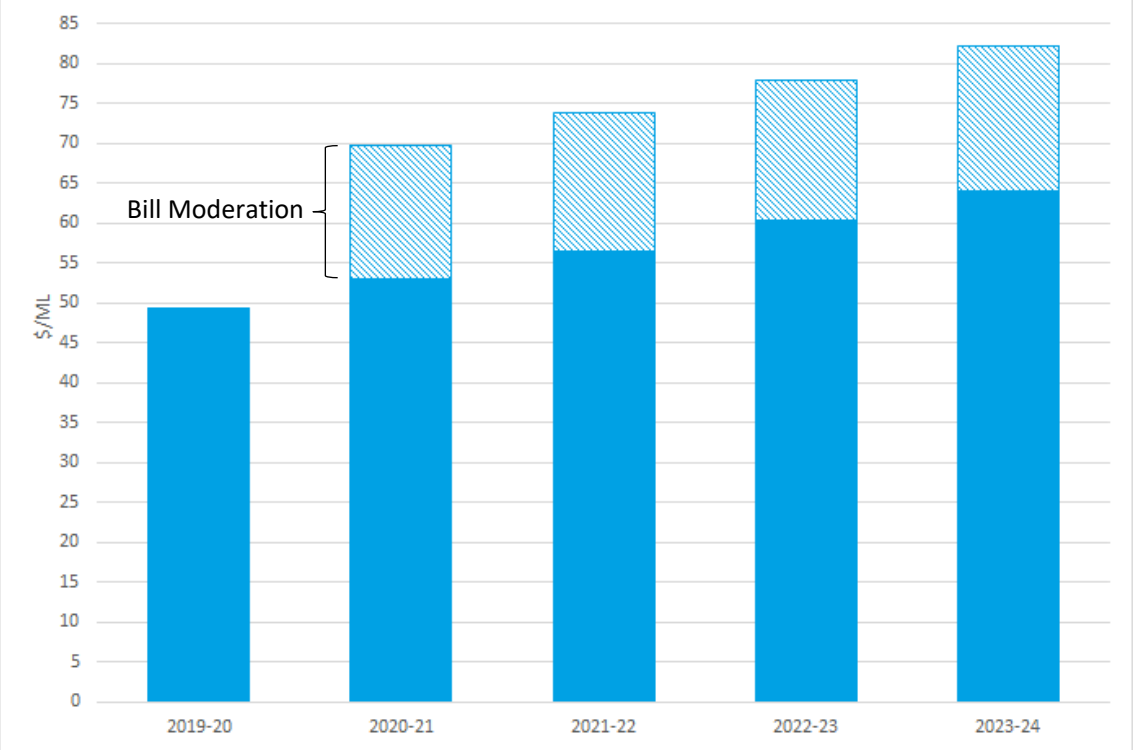
Tariff group	*Average usage (%)*	*2019–20 ($/ML) (a)*	*2020–21 ($/ML) (b)*	*2023–24 ($/ML) (c)*	*Change from (a) to (b) (%)*	*Change from (a) to (c) (%)*
Cedar Pocket	63	49.36	52.91	64.08	7	30

Note: $/ML bill estimates are derived using the fixed (Part A) price and applying average irrigation water use (at the scheme level) to the volumetric (Part B) price.

Source: Seqwater pricing model; QCA analysis.

Figure 9 below shows the indicative bill impacts on a $/ML basis for Cedar Pocket, with and without any bill moderation.

Figure 9 Indicative bill impacts compared to current prices ($/ML nominal)—Cedar Pocket



Notes: Bill estimates in $/ML are derived using the fixed (Part A) price and applying average irrigation water use (at the scheme level) to the volumetric (Part B) price. The dashed area of the graph represents the reduction in the Part B tariff for bill moderation purposes. The indicative bill impact based on our recommended prices is represented by the solid fill area of the graph.

Source: Seqwater pricing model; QCA analysis.

9.1.2 Central Brisbane River

Table 60 shows the indicative customer bill impacts for the Central Brisbane River irrigation tariff group.

Table 60 Indicative bill impacts compared to current prices ($/ML nominal)—Central Brisbane River

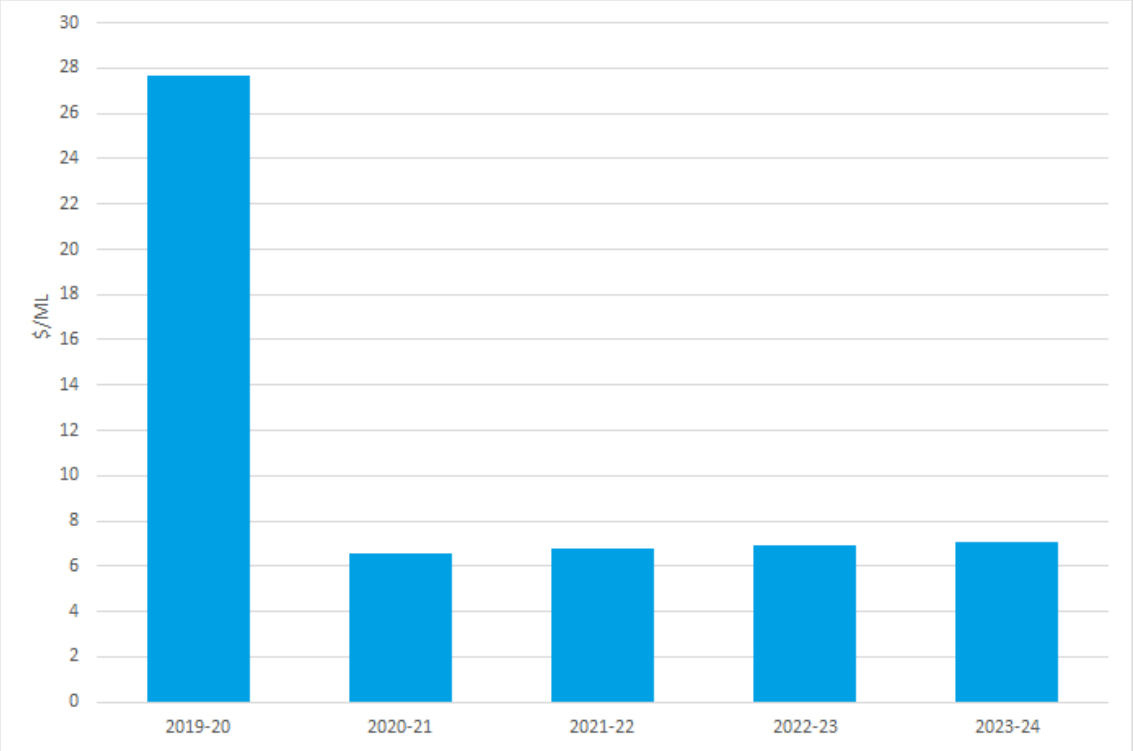
Tariff group	*Average usage (%)*	*2019–20 ($/ML) (a)*	*2020–21 ($/ML) (b)*	*2023–24 ($/ML) (c)*	*Change from (a) to (b) (%)*	*Change from (a) to (c) (%)*
Central Brisbane River	27	27.62	6.56	7.04	(76)	(75)

Note: Bill estimates (in $/ML) are derived using the fixed (Part A) price and applying average irrigation water use (at the scheme level) to the volumetric (Part B) price.

Source: Seqwater pricing model; QCA analysis.

Figure 10 shows the indicative bill impacts on a $/ML basis for Central Brisbane River.

Figure 10 Indicative bill impacts compared to current prices ($/ML, nominal)—Central Brisbane River



Note: Bill estimates (in $/ML) are derived using the fixed (Part A) price and applying average irrigation water use (at the scheme level) to the volumetric (Part B) price.

Source: Seqwater pricing model; QCA analysis.

9.1.3 Central Lockyer Valley

Table 61 shows the indicative customer bill impacts for the Central Lockyer Valley irrigation tariff group.

Table 61 Indicative bill impacts compared to current prices ($/ML nominal)—Central Lockyer Valley

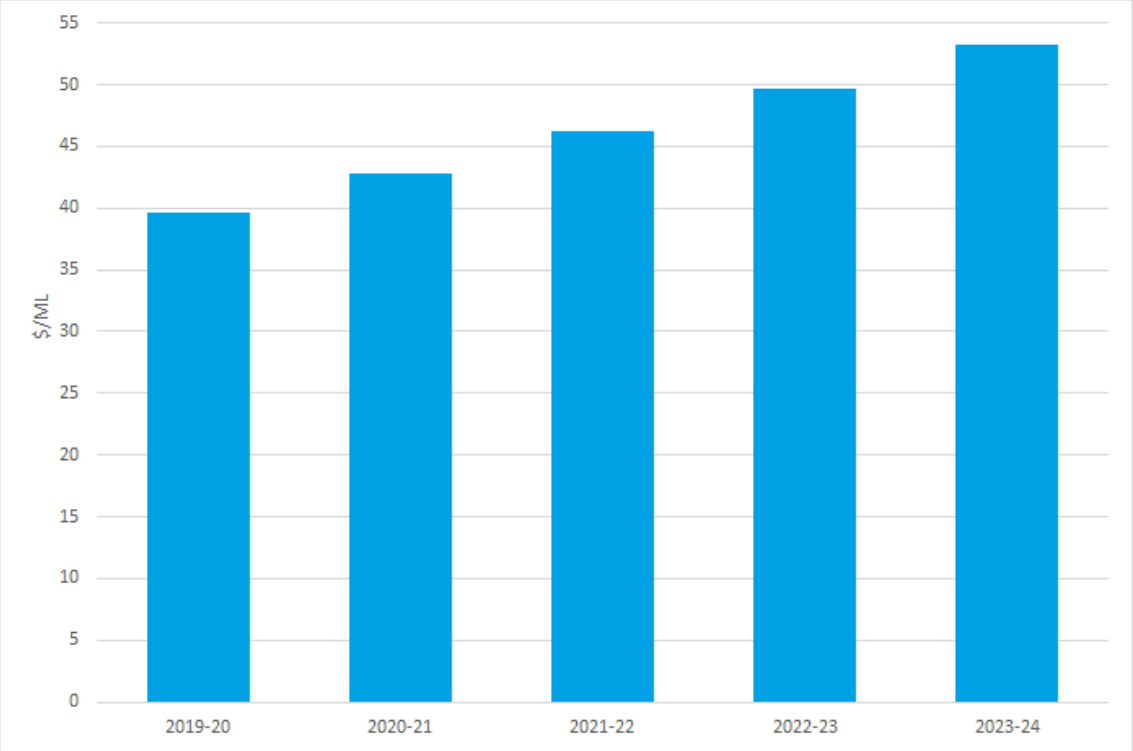
Tariff group	*Average usage (%)*	*2019–20 ($/ML) (a)*	*2020–21 ($/ML) (b)*	*2023–24 ($/ML) (c)*	*Change from (a) to (b) (%)*	*Change from (a) to (c) (%)*
Central Lockyer Valley	37	39.60	42.72	53.14	8	34

Note: Bill estimates (in $/ML) are derived using the fixed (Part A) price and applying average irrigation water use (at the scheme level) to the volumetric (Part B) price.

Source: Seqwater pricing model; QCA analysis.

Figure 11 shows the indicative bill impacts on a $/ML basis for Central Lockyer Valley.

Figure 11 Indicative bill impacts compared to current prices ($/ML nominal)—Central Lockyer Valley



Note: Bill estimates (in $/ML) are derived using the fixed (Part A) price and applying average irrigation water use (at the scheme level) to the volumetric (Part B) price.

Source: Seqwater pricing model; QCA analysis.

Over the past year, there has been public consultation on the Government's proposal to convert water entitlements in the Central Lockyer Valley WSS to tradeable WAEs. On 23 July 2019, the Minister asked for a new draft Moreton water plan amendment to be prepared, replacing the draft Moreton water plan amendment released in 2018. The prices derived in this section are based on the existing Moreton water plan, and have not accounted for the possible pricing implications of any proposed changes in the draft Moreton water plan amendment.

9.1.4 Morton Vale Pipeline

Table 62 shows the indicative customer bill impacts for the Morton Vale Pipeline irrigation tariff group.

Table 62 Indicative bill impacts compared to current prices ($/ML nominal)—Morton Vale Pipeline

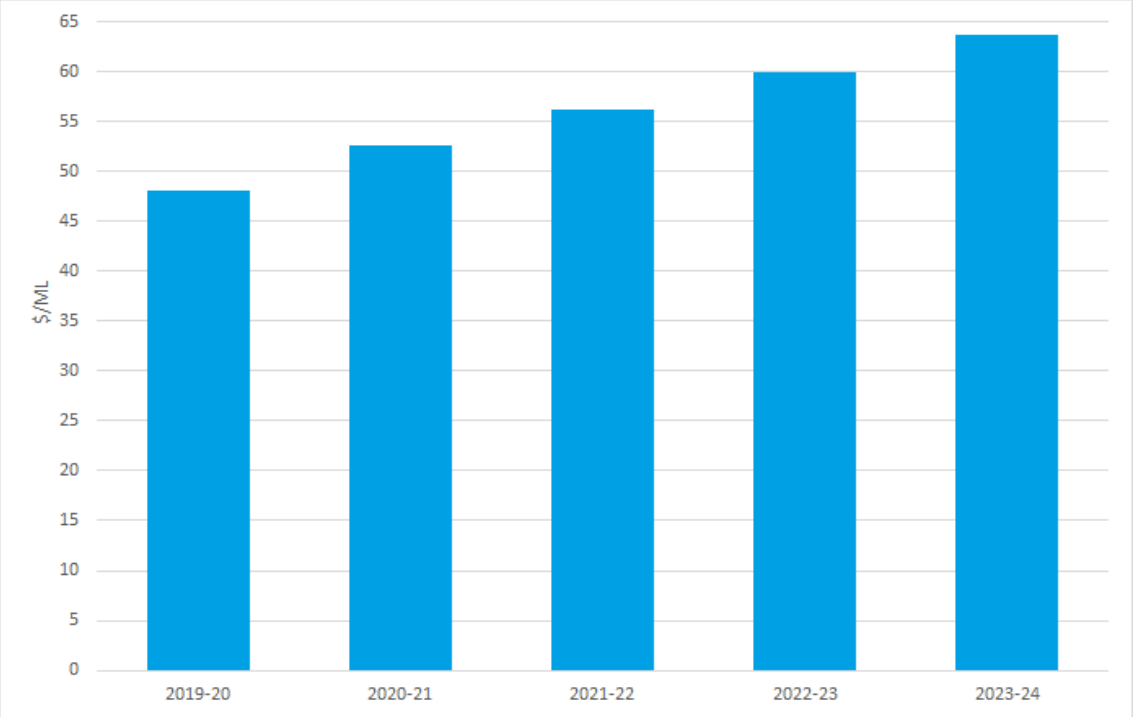
Tariff group	*Average usage (%)*	*2019–20 ($/ML) (a)*	*2020–21 ($/ML) (b)*	*2023–24 ($/ML) (c)*	*Change from (a) to (b) (%)*	*Change from (a) to (c) (%)*
Morton Vale Pipeline	15	48.01	52.47	63.60	9	32

Note: Bill estimates (in $/ML) are derived using the fixed (Part A + Part C) price and applying average irrigation water use (at the scheme level) to the volumetric (Part B + Part D) price.

Source: Seqwater pricing model; QCA analysis.

Figure 12 shows the indicative bill impacts on a $/ML basis for Morton Vale Pipeline.

Figure 12 Indicative bill impacts compared to current prices ($/ML nominal)—Morton Vale Pipeline



Note: Bill estimates (in $/ML) are derived using the fixed (Part A + Part C) price and applying average irrigation water use (at the scheme level) to the volumetric (Part B + Part D) price.

Source: Seqwater pricing model; QCA analysis.

9.1.5 Logan River

Table 63 shows the indicative customer bill impacts for the Logan River irrigation tariff group.

Table 63 Indicative bill impacts compared to current prices ($/ML nominal)—Logan River

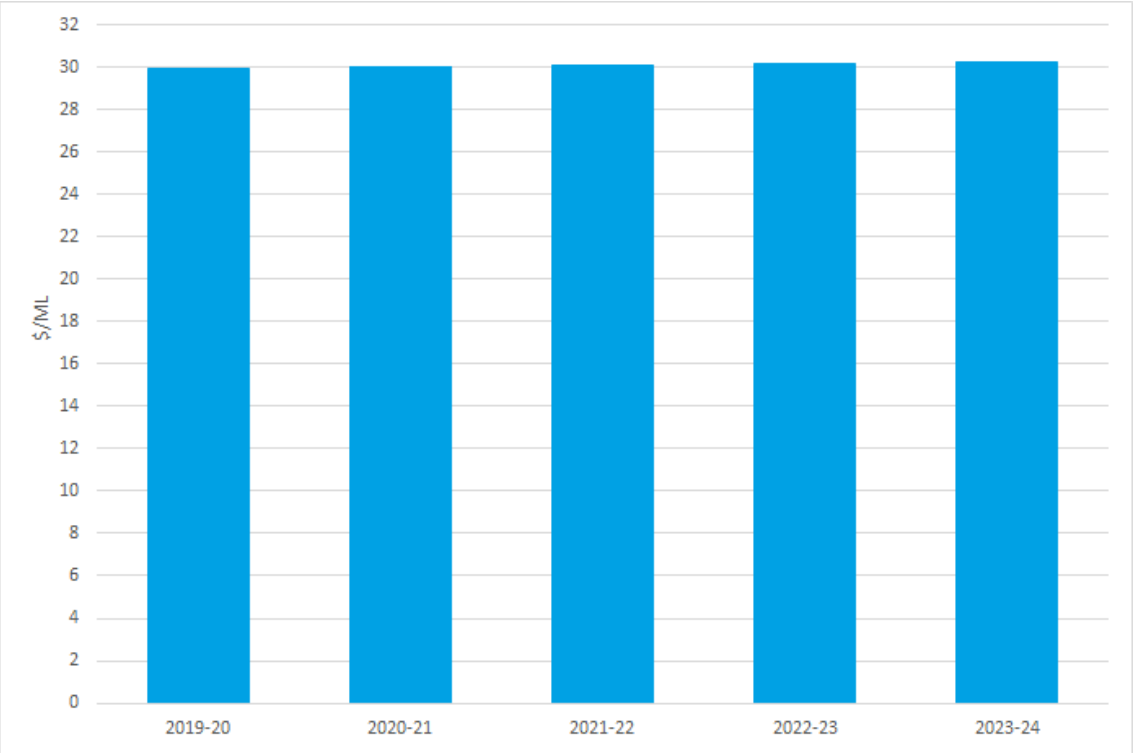
Tariff group	*Average usage (%)*	*2019–20 ($/ML) (a)*	*2020–21 ($/ML) (b)*	*2023–24 ($/ML) (c)*	*Change from (a) to (b) (%)*	*Change from (a) to (c) (%)*
Logan River	27	29.93	30.00	30.23	–	1

Note: Bill estimates (in $/ML) are derived using the fixed (Part A) price and applying average irrigation water use (at the scheme level) to the volumetric (Part B) price.

Source: Seqwater pricing model; QCA analysis.

Figure 13 shows the indicative bill impacts on a $/ML basis for Logan River.

Figure 13 Indicative bill impacts compared to current prices ($/ML nominal)—Logan River



Note: Bill estimates (in $/M)L are derived using the fixed (Part A) price and applying average irrigation water use (at the scheme level) to the volumetric (Part B) price.

Source: Seqwater pricing model; QCA analysis.

9.1.6 Lower Lockyer Valley

Table 64 shows the indicative customer bill impacts for the Lower Lockyer Valley irrigation tariff group.

Table 64 Indicative bill impacts compared to current prices ($/ML nominal)—Lower Lockyer Valley

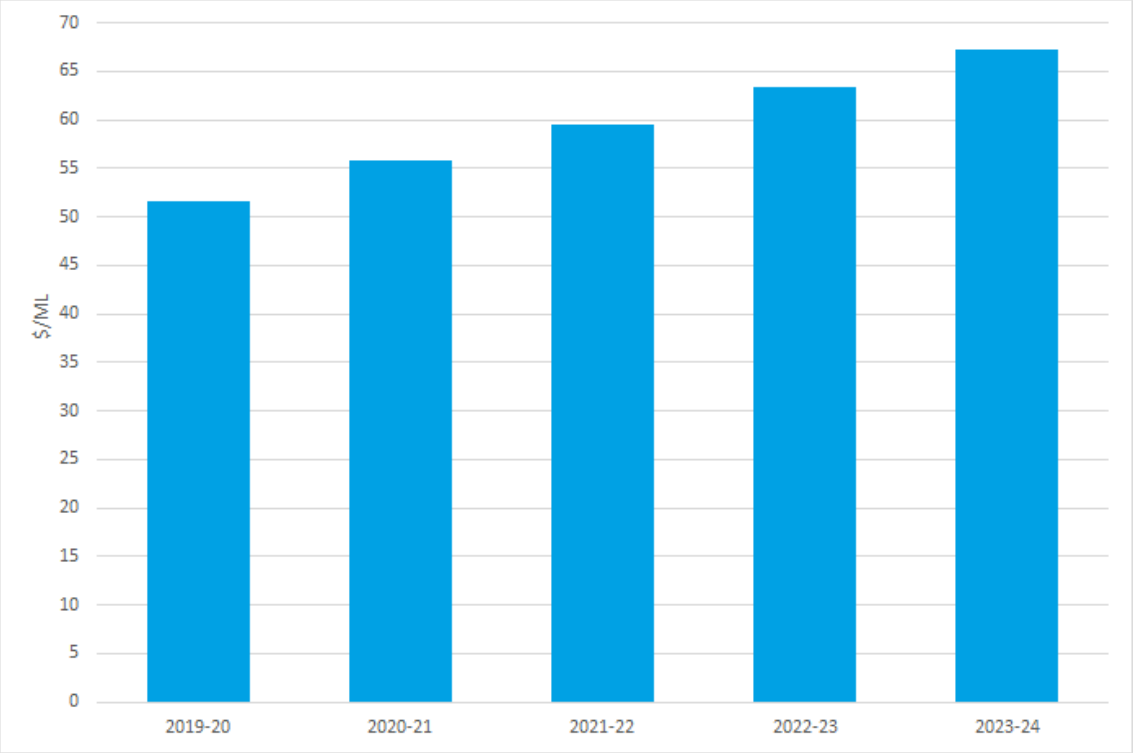
Tariff group	*Average usage (%)*	*2019–20 ($/ML) (a)*	*2020–21 ($/ML) (b)*	*2023–24 ($/ML) (c)*	*Change from (a) to (b) (%)*	*Change from (a) to (c) (%)*
Lower Lockyer Valley	16	51.59	55.82	67.19	8	30

Note: Bill estimates (in $/ML) are derived using the fixed (Part A) price and applying average irrigation water use (at the scheme level) to the volumetric (Part B) price.

Source: Seqwater pricing model; QCA analysis.

Figure 14 shows the indicative bill impacts on a $/ML basis for Lower Lockyer Valley.

Figure 14 Indicative bill impacts compared to current prices ($/ML nominal)—Lower Lockyer Valley



Note: Bill estimates (in $/ML) are derived using the fixed (Part A) price and applying average irrigation water use (at the scheme level) to the volumetric (Part B) price.

Source: Seqwater pricing model; QCA analysis.

9.1.7 Mary Valley

Table 65 shows the indicative customer bill impacts for the Mary Valley irrigation tariff group.

Table 65 Indicative bill impacts compared to current prices ($/ML nominal)—Mary Valley

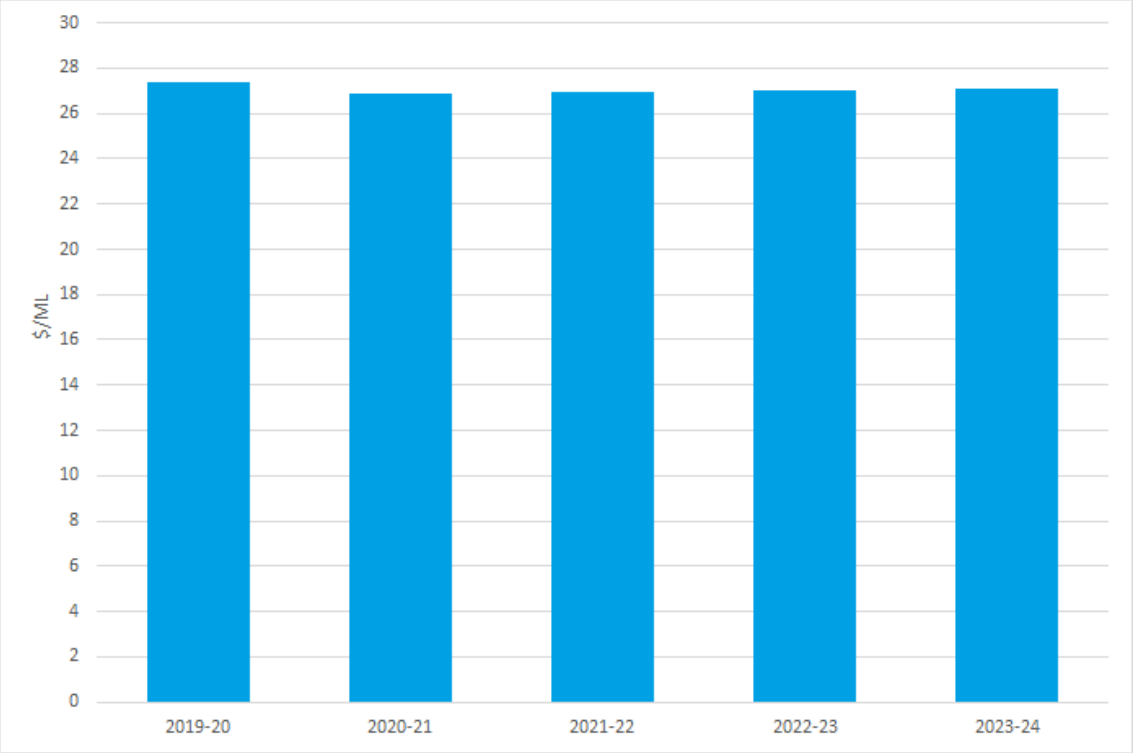
Tariff group	*Average usage (%)*	*2019–20 ($/ML) (a)*	*2020–21 ($/ML) (b)*	*2023–24 ($/ML) (c)*	*Change from (a) to (b) (%)*	*Change from (a) to (c) (%)*
Mary Valley	33	27.35	26.85	27.04	(2)	(1)

Note: Bill estimates (in $/M)L are derived using the fixed (Part A) price and applying average irrigation water use (at the scheme level) to the volumetric (Part B) price.

Source: Seqwater pricing model; QCA analysis.

Figure 15 shows the indicative bill impacts on a $/ML basis for Mary Valley.

Figure 15 Indicative bill impacts compared to current prices ($/ML nominal)—Mary Valley



Note: Bill estimates (in $/ML) are derived using the fixed (Part A) price and applying average irrigation water use (at the scheme level) to the volumetric (Part B) price.

Source: Seqwater pricing model; QCA analysis.

9.1.8 Pie Creek

Table 66 shows the indicative customer bill impacts for the Pie Creek irrigation tariff group.

Table 66 Indicative bill impacts compared to current prices ($/ML nominal)—Pie Creek

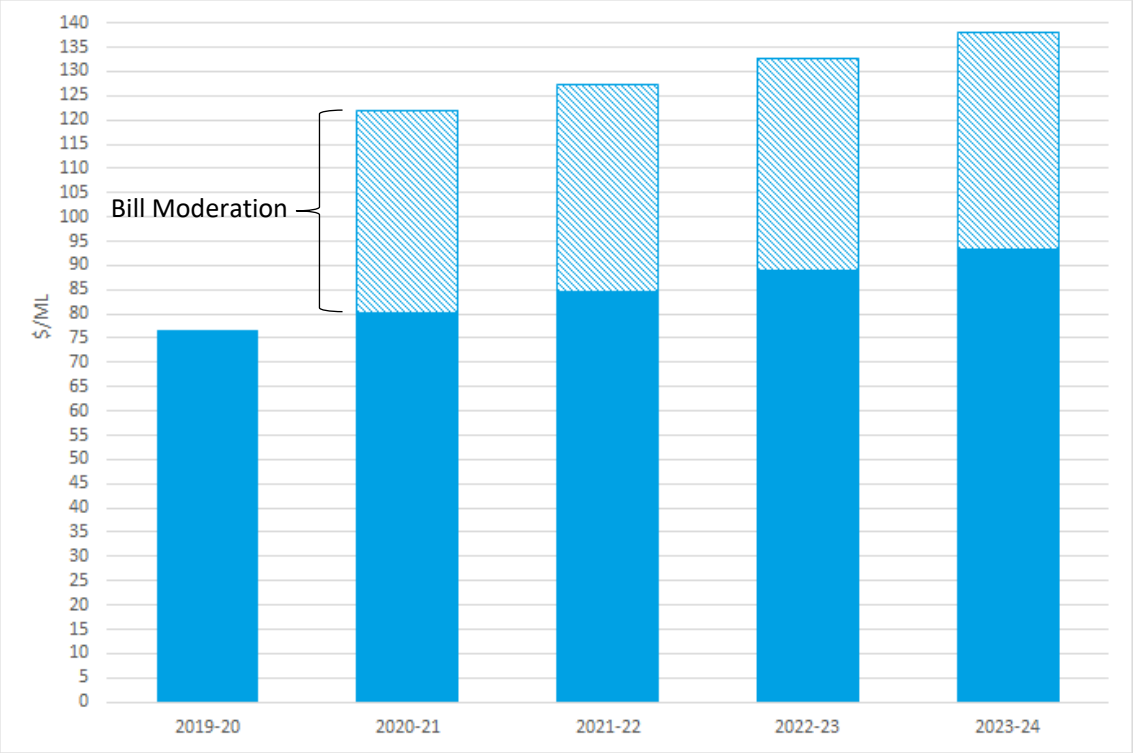
Tariff group	*Average usage (%)*	*2019–20 ($/ML) (a)*	*2020–21 ($/ML) (b)*	*2023–24 ($/ML) (c)*	*Change from (a) to (b) (%)*	*Change from (a) to (c) (%)*
Pie Creek	24	76.45	80.13	93.45	5	22

Note: Bill estimates (in $/ML) are derived using the fixed (Part A + Part C) price and applying average irrigation water use (at the scheme level) to the volumetric (Part B + Part D) price.

Source: Seqwater pricing model; QCA analysis.

Figure 16 shows the indicative bill impacts on a $/ML basis for Pie Creek.

Figure 16 Indicative bill impacts compared to current prices ($/ML nominal)—Pie Creek



Notes: Bill estimates (in $/ML) are derived using the fixed (Part A + Part C) price and applying average irrigation water use (at the scheme level) to the volumetric (Part B + Part D) price. The dashed area of the graph represents the reduction in the Part D tariff for bill moderation purposes. The indicative bill impact based on our recommended prices is represented by the solid fill area of the graph.

Source: Seqwater pricing model; QCA analysis.

9.1.9 Warrill Valley

Table 67 the indicative customer bill impacts for the Warrill Valley irrigation tariff group.

Table 67 Indicative bill impacts compared to current prices ($/ML nominal)—Warrill Valley

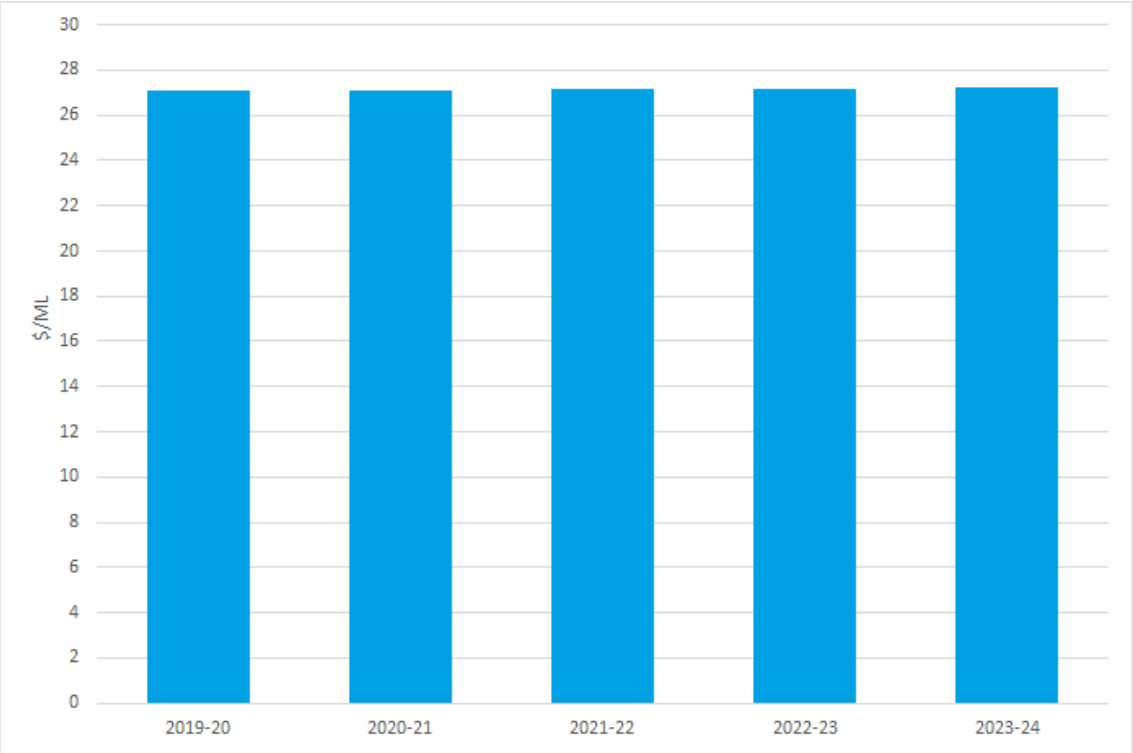
Tariff group	*Average usage (%)*	*2019–20 $/ML (a)*	*2020–21 $/ML (b)*	*2023–24 $/ML (c)*	*Change from (a) to (b) (%)*	*Change from (a) to (c) (%)*
Warrill Valley	19	27.04	27.08	27.20	–	1

Note: Bill estimates (in $/ML) are derived using the fixed (Part A) price and applying average irrigation water use (at the scheme level) to the volumetric (Part B) price.

Source: Seqwater pricing model; QCA analysis.

Figure 17 shows the indicative bill impacts on a $/ML basis for Warrill Valley.

Figure 17 Indicative bill impacts compared to current prices ($/ML nominal)—Warrill Valley



Note: Bill estimates (in $/ML) are derived using the fixed (Part A) price and applying average irrigation water use (at the scheme level) to the volumetric (Part B) price.

Source: Seqwater pricing model; QCA analysis.

10 CUSTOMER ENGAGEMENT

In the 2013 review, we made recommendations relating to Seqwater improving its customer engagement processes. We consider that effective customer engagement provides opportunities for closer alignment of the outcomes sought by businesses and their customers.

This chapter provides an assessment of the customer engagement conducted by Seqwater against what is currently considered good practice in the Australian water sector.

10.1 Background

Customer engagement is important in competitive markets to define customer expectations which firms can seek to address. Customer engagement is even more important in monopoly markets because, in the absence of alternative service providers, it provides an opportunity for customers to reveal their preferred combinations of service quality and price.

Customer involvement is an important mechanism for providing appropriate checks and balances on the activities of regulated service providers. To meet these objectives it is essential that customers are meaningfully engaged in decision making on an ongoing basis.

Sunwater and Seqwater, in their submissions, provided information on their customer engagement activities including:

- their customer engagement strategy
- the key issues customers raised during customer engagement and their response to the issues raised
- their learnings from customer engagement, and whether each business considers views expressed were sufficiently representative of the broader customer base.

10.2 Seqwater's submission

Seqwater said that it had not established Irrigation Advisory Committees in its schemes, as the customers did not indicate demand for this form of engagement. It provides all customers in the scheme with an opportunity to engage with it through annual forums focusing on NSPs.[152]

The NSP forums are usually held around May to present draft annual outcomes and budgets and seek feedback from customers. The NSPs are then published by 30 September. Seqwater said that this process was implemented based on the QCA's recommendations from the 2013 review. [153]

Seqwater had undertaken customer engagement in two steps during the development of the price submission:

- establishing small reference groups (Irrigation Customer Reference Groups (ICRGs)) for detailed feedback
- holding 'town-hall' style forums in each scheme area to which all customers are invited.[154]

[152] Seqwater, sub. 1, p. 47.
[153] Seqwater, sub. 1, p. 13.
[154] Seqwater, sub. 1, p. 13.

Seqwater said that the exception to this approach was for the Central Brisbane River WSS. Seqwater engaged directly with the Mid-Brisbane River Irrigators Committee (MBRI), which represents the majority of irrigation customers in the scheme.

In preparation for this pricing review, Seqwater contacted regular participants from the forums in each scheme to be involved in ICRGs for six of its schemes. This involved a number of different rounds of meetings:

- initial introductory meetings from April to June 2018.
- a second round of meetings, which were held in August 2018—during which Seqwater shared its understanding of policies for the review and indicative cost information, and discussed information to be shared with customers at the wider forum
- a final round of meetings which held in October 2018—to discuss the final positions for Seqwater's submission and seek any final feedback.[155]

Seqwater invited all customers in the six schemes to attend forums held in September 2018. It also informed them of an engagement website that Seqwater established for the review. Customers could give feedback via a survey on the website if they could not attend the forum. Seqwater said that it did not receive many survey responses either via the engagement website or at the forums.[156]

Key messages from the ICRGs included:

- support for Seqwater's proposals, with the exception of the Lockyer Valley schemes. These proposals included the allocation of fixed and variable costs, the long-term average water usage assumption, and the proposal to reinvest any surplus into the renewals fund to reduce the renewals annuity balances
- concerns about reliability of water in some schemes (Lockyer Valley schemes and Logan River)
- concerns about affordability and sustainability of some schemes (Lockyer Valley schemes, Pie Creek and Cedar Pocket)
- concerns about the performance of Lockyer Valley schemes and the affordability of these schemes into the future; customers wanted these issues taken into account for future prices.[157]

10.3 Other jurisdictions

Water businesses and regulators across other jurisdictions are actively seeking to improve their engagement with customers. This trend is most evident in Victoria, with the implementation of the PREMO framework, and in South Australia, with SA Water adopting customer-centric planning.

To assess Seqwater's customer engagement against what is considered good practice, we have compared Seqwater's proposal against the practice of other water utilities of a similar size and/or

[155] Seqwater, sub. 1, p. 47–48.
[156] Seqwater received 22 survey responses from the six WSSs (i.e. excluding Central Brisbane River WSS) and two distribution systems, out of a total of over 1,000 irrigation customers in these schemes (Seqwater, sub. 1, p. 50).
[157] Seqwater, sub. 1, p. 49.

service offering that have recently been through regulatory review processes. The water businesses included in the analysis are:

- Southern Rural Water (SRW)—SRW provides irrigation services in Victoria and was rated by the ESC as leading under the PREMO framework with regard to its customer engagement
- WaterNSW—WaterNSW is the primary provider of irrigation services in NSW and is subject to economic oversight by IPART
- SA Water—SA Water is a vertically integrated water service provider in SA and is regulated by ESCOSA. SAWater provides irrigation and rural services.

10.3.1 Southern Rural Water

SRW uses various mechanisms to engage with its customers. These include:

- Customer Consultative Committees—members are selected to ensure a broad range of customer views are heard and meet regularly with SRW to provide input on a range of issues including helping to shape tariff structures or system and service improvements
- board engagement—board meetings are held at locations across SRW's region, which provides the board with direct insight into the issues and concerns of customers at a local level. The director and board also meet regularly with the customer committees to listen to issue and concerns raised
- field days—SRW staff attend a number of field days and similar events to provide a forum for customers to speak directly with staff
- Customer First Team—provides a regular forum for staff from across SRW to share their perspectives and promote opportunities to improve customer service. The team also visits customer sites to get a better appreciation of the issues that are of most interest for customers
- project engagement—irrigation district modernisation and other specific projects have significant and ongoing customer engagement programs of their own, including price impacts and project works.[158]

Face-to-face engagement is also supported by other channels including:

- detailed biennual customer surveys
- short transactional customer surveys and feedback
- regular newsletters, websites and social media.

Additional engagement took place during the development of SRW's price submission in order to design and test its proposals. A range of methods were used including online and phone surveys, regional focus groups, one-on-one interviews, social media and attendance at industry field days. This process started about a year before the price submission was due.

Topics covered in SRW's customer engagement included:

- service improvements related to water trading, maintenance of irrigation assets, water security and its strategy for the Macalister Irrigation District
- support for customers experiencing financial hardship

[158] SRW, submission to ESC, *Water price review 2018*, 2017.

- prices and affordability
- tariff structures including the mix of fixed and variable charges in residential customer bills.

10.3.2 WaterNSW

In the lead-up to the 2018 ESC water price review, WaterNSW engaged in face-to-face meetings with customers. It presented information and sought direct feedback from customers during these meetings.[159]

The CSC Reference Group was also established to assist WaterNSW with the development of the pricing proposal and comprised nominated leads from each of the CSCs. The reference group provided input on issues such as:

- key themes and matters of importance
- the package of information to present during consultation
- issues to consult on
- how to conduct the consultation process
- pricing matters that would not change.

WaterNSW engages with its customers on an ongoing basis. However, WaterNSW engaged in a more targeted consultation program for the purposes of its pricing proposal. This involved five phases:

- Phase 1—Establishment of CSC Reference Group and agreement on key matters and principles (November to December 2015)
- Phase 2—Key customer representatives provided with necessary background information to enable them to assess pricing information and analysis (January to March 2016)
- Phase 3—Presentation of pricing information and analysis and opportunities for customers to provide feedback (April to June 2016)
- Phase 4—Ongoing consultation with customers and IPART as part of its public consultation process on WaterNSW's proposal (July 2016 to June 2017)
- Phase 5—Post-determination consultation (June 2017 onwards).

Key matters for consultation included:

- tariff structures including the fixed to variable split
- impact of the unders and overs mechanism
- proposing the introduction of a mechanism to address WaterNSW revenue volatility
- how prices are derived from costs.

10.3.3 SA Water

SA Water used a number of mechanisms to engage with its customers during its 2016 pricing proposal at Stage 1, 3 and 5 of its engagement program:

[159] WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal: Regulated prices for NSW Rural Bulk Water Services from 1 July 2017 to 30 June 2021,* 30 June 2016.

- At Stage 1, SA Water used 15 focus groups with 118 customers and consultation with Customer Advisory Groups to understand customer values, needs and expectations.
- At Stage 3, SA Water used 9 workshops (116 residential and 28 business customers), engagement with Customer Advisory Groups and an online survey (1232 customers) to engage customers about service improvements and investment opportunities developed by SA Water in response to the Stage 1 findings.
- At Stage 5, SA Water used 4 workshops (36 residential and 11 business customers) to gain customer feedback on SA Water's proposed response to the Stage 3 insights. Workshop participants were selected from those customers that attended the Stage 3 workshops.

SA Water engaged with its customers on an ongoing basis through its Customer Engagement Program. However, for the purposes of the 2016 price submission (due August 2015), SA Water engaged with customers on a more targeted basis from November 2013 to March 2015:

- Stage 1—November 2013 to February 2014 (understand customer values, needs and expectations)
- Stage 2—Internal business planning to develop potential service improvement and improvement opportunities in response to feedback from Stage 1
- Stage 3—June 2014 (provide customers with the opportunity to consider costs and benefits of proposed investment and service improvement opportunities. Customers were provided with a level of education to enable them to make an informed decision at the workshops)
- Stage 4—Internal business planning using feedback from Stage 3 to refine service improvement opportunities which customers supported
- Stage 5—March to April 2015 (consultation on expenditure proposals for the 2016 to 2020 regulatory period).

The topics discussed centred around six core areas that were developed at Stage 1 and tested during the customer engagement process. These included:

- customer experience (e.g. SMS technology)
- service standards
- service delivery and investment (e.g. investments in preventative maintenance)
- water quality (e.g. taste of water supplies)
- water recycling
- water for growth (e.g. opportunities to support economic development through initiatives such as partnering with industry and business)

For all the topics, potential service improvements and investment opportunities were presented to customers in the form of cost impacts and implications on prices/bills.

10.4 QCA assessment

We have assessed the following elements of the Seqwater's engagement with customers, based on the information provided in its submission to the QCA:

- structure—the form or structure of the engagement, and covers the formal arrangements used and the stated purpose of each of these arrangements

- timing—the timing or scheduling of consultation, including during the development of the price submission and on an ongoing basis
- scope—the scope of issues covered in the engagement.

10.4.1 Structure

Seqwater used its annual forums to largely inform customers about its pricing proposal. While this is a reasonable approach, there are opportunities for Seqwater to expand on the use of the forums as a vehicle to design and test aspects of its proposal with customers. The adoption of a customer-centric approach involves developing engagement programs that are more than informative in nature but are aimed at identifying and incorporating customer preferences into planning and decision-making.

The primary engagement channels used during the price review process were the annual forums, Irrigation Customer Reference Groups and the customer survey. These processes (or very similar processes) are common across water businesses and form a foundation for good practice engagement. However, other businesses typically supplement these with additional processes. A broader approach to consultation improves customer representation and is necessary in avoiding any issues associated with capture. There are opportunities for Seqwater to broaden its engagement by adopting other engagement channels.

The low response rate for the customer survey raises material concern regarding the level of broader customer representation in the engagement. Low participation can also be an indicator of ineffective approaches to direct communication between Seqwater and its customers.

We also note that the variability in participation rates in the annual forums and customer reference groups makes the scope of the engagement tools utilised by Seqwater important in addressing any potential representation problems across groups or schemes. Forums and reference groups can be supported by other mechanisms, such as online customer forums (that may address customer's accessibility issues) and/or online surveys targeted at those schemes with low forum representation.

10.4.2 Timing

Seqwater gave customers only eight months to provide input on the development of the pricing proposal, which is not consistent with practice in the other jurisdictions that typically allow more time. In particular, the forum and survey were conducted two months before the submission was due, constraining the opportunity for customers to influence planning and design outcomes and test the proposals.

While Seqwater engages customer on an ongoing basis through the annual forums, it is not clear how Seqwater has incorporated this ongoing engagement in the development of its proposal and how it used this engagement to create focus on the issues that are most important to customers in terms of service delivery and price/bill impacts.

Some schemes raised concerns about affordability, sustainability of the schemes and aspects of service delivery such as reliability of water. This observation is logically consistent with the relationship between customers and service providers, as has been clearly evidenced in the recent PREMO and SAWater price reviews.

It follows that the relationship between prices and service levels is an essential element of any effective engagement with customers. Meaningful consultation relies on drawing a clear nexus between proposed expenditure and both prices and services. In the absence of this information,

customers are not capable of making informed decisions on the trade-offs and relativities involved in price and service.

10.4.3 Scope

There is no clear connection between the proposed costs and pricing and billing outcomes for customers. It is clear from the customer engagement that affordability and performance is a concern for some schemes.

The consultation would be more meaningful if it clearly linked proposed expenditure, prices and services. In the absence of this information, customers are not capable of making informed decisions on the trade-offs and relativities involved in price and service.

Seqwater did not appear to provide a clear link between the proposed costs and service level outcomes for customers. There is also no clear identification of the billing and service level outcomes customer want.

Seqwater's process did not clearly delineate between negotiable and non-negotiable issues, making it difficult to tailor engagement processes such that they are fit for purpose.

As a result, there is a material amount of customer feedback that appears to be either highly technical in nature or alternatively not typically topics that customers would be engaged on. For example, Seqwater engaged customers on water usage forecasts or the renewals annuity balance, which should be internal business decisions/considerations. While these topics are important, they are not overly informative of the customer's ultimate billing and service preferences.

10.4.4 Summary

Based on our findings above, we consider that Seqwater should seek to improve the structure, timing and scope of its customer engagement.

Draft recommendation 24

We recommend that Seqwater improve its engagement with customers by:

- ensuring that customers are engaged on an ongoing basis to provide more focus on what is important to customers over the course of the price path period and to provide a better understanding of customer requirements prior to the next price review
- ensuring that its consultation draws a clearer link between proposed expenditure and both prices and service level outcomes for customers.

APPENDIX A: REFERRAL

Queensland Government

Deputy Premier
Treasurer
Minister for Aboriginal and Torres Strait Islander Partnerships

1 William Street
GPO Box 611 Brisbane
Queensland 4001 Australia
Telephone +61 7 3719 7100
Email deputy.premier@ministerial.qld.gov.au

ABN 90 856 020 239

Our Ref: 01852-2018

29 OCT 2018

Professor Flavio Menezes
Chair
Queensland Competition Authority
GPO Box 2257
BRISBANE QLD 4001

Dear Professor Menezes Flavio,

Please find enclosed a referral notice issued under section 23 of the *Queensland Competition Authority Act 1997*, referring the relevant monopoly business activities of SunWater and Seqwater to the Queensland Competition Authority (the Authority) for an investigation about pricing practices in relation to rural irrigation prices to apply from 1 July 2020 to 30 June 2024.

I appreciate the Authority's continued involvement in ensuring rural irrigation prices have effective regulatory oversight.

I am advised that officers from Queensland Treasury have consulted with the Authority in the preparation of this referral notice. SunWater and Seqwater have also been advised of this investigation and have been encouraged to work closely with the Authority to ensure the reporting timeframes for the review are met.

Should you have any queries regarding this matter, please contact Mr Dennis Molloy, Assistant Under Treasurer, Shareholder and Structural Policy Division on (07) 3035 1988.

Yours sincerely

JACKIE TRAD MP
DEPUTY PREMIER
Treasurer
Minister for Aboriginal and Torres Strait Islander Partnerships

Encl.

Cc: The Honourable Dr Anthony Lynham MP,
Minister for Natural Resources, Mines and Energy

QUEENSLAND COMPETITION AUTHORITY ACT 1997
Section 23 and Section 24

REFERRAL AND DIRECTION NOTICE

A Section 23 – Referral

(1.1) As the Treasurer of Queensland, under section 23 of the Queensland Competition Authority Act 1997 (the Act), I refer the monopoly business activities of SunWater and the Queensland Bulk Water Supply Authority (trading as Seqwater) (the businesses) described in paragraph A(1.2) to the Queensland Competition Authority (the Authority) for an investigation about pricing practices relating to those activities.

(1.2) The monopoly business activities are:

- the bulk water storage and water distribution undertaken by SunWater; and
- the bulk water supply undertaken by Seqwater,

to the extent those activities are:

- undertaken for an irrigation service as defined in the *Water Act 2000*[1]; and
- in the water supply schemes and distribution systems (WSS) set out in Schedule 1 excluding water services provided by Burnett Water Pty Ltd in relation to Paradise Dam and Kirar Weir, consistent with the Authority's Final Report SunWater Irrigation Price Review: 2012-17 Volume 1.

B Section 24 – Directions

(1.1) Under section 24 of the Act, I direct the Authority to make recommendations about the following matters:

(a) appropriate prices (including drainage prices, water harvesting prices and termination fees for relevant WSS) to be charged by the businesses for the period of 1 July 2020 to 30 June 2024 (the price path period) in relation to the monopoly business activities specified in paragraph A(1.2), subject to paragraph C(1.7); and
(b) appropriate price review triggers and other mechanisms, to manage the risks associated with material changes in the allowable costs identified in paragraph C(1.2) outside the control of the businesses.

[1] For clarity, an irrigation service is defined in Schedule 4 of the *Water Act 2000* as the supply of water or drainage services for irrigation of crops or pastures for commercial gain.

(1.2) The recommendations made by the Authority under B(1.1) should include two sets of appropriate prices in relation to prudent and efficient capital expenditure associated with dam safety upgrades, one set where all dam safety upgrade capital expenditure is excluded and one set where an appropriate allowance for capital expenditure forecast to be incurred from 1 July 2020 onwards is included. The recommendations made by the Authority are not required to specify which set of prices are to apply.

(1.3) In making its recommendations under B(1.2), the Authority is to develop and apply an appropriate approach for apportioning dam safety upgrade capital expenditure and explain this approach and its application as part of its recommendations.

(1.4) The recommendations made by the Authority under B(1.1) should adopt the current tariff groups for all WSS, other than where the Authority develops alternative tariff groups for the categories of prices listed in Schedule 3 as required under paragraph B(1.5).

(1.5) The Authority is to review the tariff groups for the categories of prices listed in Schedule 3 and develop alternative tariff groups. The recommendations made by the Authority should include two sets of appropriate prices, one set which maintains the current tariff groups and one set based on the alternative tariff groups. The recommendations made by the Authority are not required to specify which set of prices are to apply.

(1.6) Under section 24 of the Act, I direct the Authority to consider the stated matters listed as "Matters for consideration in making recommendations" in paragraph C when conducting the investigation and making the recommendations under paragraph B.

C Matters for consideration in making recommendations

(1.1) The Authority is to apply the Principles in Schedule 2 in recommending appropriate prices under this Notice. However, where the Authority is recommending appropriate prices that include dam safety upgrade capital expenditure under paragraph B(1.2) or for alternative tariff groups under paragraph B(1.5), the Authority may apply the Principles in Schedule 2 as it considers appropriate.

(1.2) The Authority is to consider the following matters in relation to costs and in recommending appropriate prices under this Notice:

(a) Subject to paragraphs C(1.1), C(1.3) and C(1.7) the following costs are to be recovered over the price path period,:

i. prudent and efficient operational, maintenance and administrative costs[2] (for clarity, this may include an end-of-period adjustment relating to historical costs that were unforeseen and unable to be managed, on the basis of changing market conditions for inputs or the result of regulatory imposts, and in accordance with the Authority's recommendations from its May 2012[3] and April 2013[4] reports); and

ii. an appropriate allowance for prudent and efficient expenditure on renewing existing assets[5] (for clarity, this allowance should also account for prudent and efficient renewals expenditure incurred in the previous price path periods).

(b) For the avoidance of doubt, costs recovered under paragraph C(1.2)(a) are to include the following:

i. costs incurred by the businesses to implement the 2015 recommendations made by the Inspector-General Emergency Management;

ii. costs that are required to meet regulatory obligations or deliver agreed service levels, where costs to deliver agreed service levels are not materially higher than the costs of like-for-like replacement or modern equivalent replacement; and

iii. regulatory fees charged by the Authority to the businesses to make the recommendations under this Notice up to $2.5 million. For clarity, the Authority should detail the total cost incurred by the Authority in making the recommendations under this Notice.

(c) for clarity, the value of the asset base for existing assets (as at 1 July 2000) should not be considered.

(1.3) Costs associated with the provision of recreation facilities that are incurred by the businesses from 1 July 2020 onwards that would not otherwise be incurred to supply water, are not to be included, unless the Authority is satisfied that there is customer support for these costs to remain included.

(1.4) Subject to paragraphs C(1.1) and C(1.2) (above), the Authority should have regard to:

(a) balancing the legitimate commercial interests of the businesses with the interests of their customers, including considering less than cost reflective volumetric prices which are necessary to moderate bill impacts for customers, and

(b) ensuring, where possible, that revenue and pricing outcomes are both simple and transparent for customers.

---

[2] Including an allowance for tax (where applicable).
[3] Final Report, SunWater Irrigation Price Review 2012-17, Volume 1.
[4] Final Report, Seqwater Irrigation Price Review 2013-17, Volume 1.
[5] Existing assets are assets commissioned prior to 1 July 2000. Expenditure on renewing assets should not include costs associated with augmentation of existing assets or new assets, subject to paragraph C(1.7).

(1.5) Where the Authority considers that it has been demonstrated that customers have agreed to the costs and/or prices proposed by the businesses and the Authority considers that the proposed prices are in line with the requirements of this Notice, the Authority must have regard to these agreements in recommending appropriate prices.

(1.6) Where relevant, the findings of the Authority's investigation of Seqwater's bulk water prices for the 2018-21 period should be taken into account in recommending appropriate prices.

(1.7) For the purposes of this Notice, the recommended appropriate prices should not recover costs associated with augmentation of existing assets, new assets[6] or any capital expenditure which is not like-for-like or modern equivalent replacement or does not reflect a regulatory requirement unless the Authority is satisfied that the costs will generate net positive benefits for existing customers and customers have been consulted. Where the Authority is not so satisfied, prices to recover these costs are a commercial matter for the businesses to negotiate with customers.

(1.8) The Authority should consider and analyse how its recommended appropriate prices might be reflected in customer bills for each tariff group in all WSS (excluding drainage prices, water harvesting prices and termination fees) and provide this analysis and estimated customer bills as part of its recommendations.

D. Consultation

The Authority must undertake an open consultation process with all relevant parties, as required by section 25 of the Act, and consider submissions within the timetable for the delivery of the Final Report to the Treasurer detailed in paragraph E. All reports and submissions must be made publicly available, including on the Authority's website.

E. Timing

(1.1) The notice given and published by the Authority under section 25 of the Act on receipt of this Referral and Direction Notice, must require submissions on proposed costs (and supporting information) to be made to the Authority by the businesses by no later than 30 November 2018.

(1.2) The Authority must provide to the Treasurer and the Minister for Natural Resources, Mines and Energy the:
(a) Draft Report by no later than 31 August 2019; and
(b) Final Report and recommended price paths by no later than 31 January 2020.

(1.3) The Final Report will inform the Treasurer's and Minister for Natural Resources, Mines and Energy's deliberations in determining price paths to apply for the period from 1 July 2020 to 30 June 2024 by direction under section 999 of the *Water Act 2000* in relation to SunWater and under section 1013D of the *Water Act 2000* in relation to Seqwater.

[6] New assets are assets commissioned after 1 July 2000.

F. Other matters

(1.1) For the avoidance of doubt, nothing in this Notice prevents the businesses from negotiating full commercial prices to supply water other than for the monopoly business activities described in paragraph A(1.2).

(1.2) The Authority may exercise all the powers under Part 6 of the *Queensland Competition Authority Act 1997* in undertaking the investigation under this Notice.

HON. JACKIE TRAD MP
DEPUTY PREMIER
Treasurer
Minister for Aboriginal and Torres Strait Islander Partnerships

Schedule 1

Water Supply Schemes operated by SunWater

Barker Barambah
Bowen Broken Rivers
Boyne River and Tarong
Bundaberg
Burdekin-Haughton
Callide Valley
Chinchilla Weir
Cunnamulla
Dawson Valley
Eton
Lower Mary
Lower Fitzroy
Macintyre Brook
Maranoa River
Mareeba-Dimbulah
Nogoa-Mackenzie
Pioneer River
Proserpine River
St George
Three Moon Creek
Upper Burnett
Upper Condamine

Distribution Systems operated by SunWater
Bundaberg
Burdekin-Haughton
Eton
Emerald
Lower Mary
Mareeba-Dimbulah
Theodore

Water Supply Schemes operated by Seqwater
Cedar Pocket
Central Brisbane River
Central Lockyer Valley
Logan River
Lower Lockyer Valley
Mary Valley
Warrill Valley

Distribution Systems operated by Seqwater
Morton Vale Pipeline
Pie Creek

Note: Where the Authority is advised before publication of its Draft Report that final agreement has been reached on the terms to transfer operation of a distribution system owned by SunWater to a local customer owned company or co-operative, then the Authority is not to provide prices to recover the cost of the infrastructure for this distribution system.

Schedule 2

Principles

A. Prices are to be based on all tariff groups transitioning to cost-reflective prices. Cost-reflective prices reflect the costs in paragraph C(1.2) and increase by the Authority's measure of inflation over the price path period.

B. In considering tariff structures, regard should be had to the fixed and variable nature of the underlying costs.

C. Fixed (Part A and Part C) prices are to be derived independently of Volumetric (Part B and Part D) prices.

D. For water supply schemes where the only fixed price applicable is the Fixed (Part A) price:
   i. if the prevailing[7] Fixed (Part A) price is above the initial[8] cost-reflective Fixed (Part A) price, the prevailing Fixed (Part A) price should be maintained in nominal terms over the price path period until the cost-reflective Fixed (Part A) price is reached, with the exception of Fixed (Part A) prices which apply to customers of a distribution system operated by a local customer owned company or co-operative, in which case the Fixed (Part A) price should be reduced to the cost-reflective Fixed (Part A) price.
   ii. if the prevailing Fixed (Part A) price is less than the initial cost-reflective Fixed (Part A) price, the prevailing Fixed (Part A) price should increase each year by the Authority's measure of inflation plus an additional component of $2.38 per mega litre (from 2020-21, increasing by the Authority's measure of inflation each year) until the cost-reflective Fixed (Part A) price is reached[9].

E. For distribution systems where Fixed (Part A) and Fixed (Part C) prices are applicable:
   i. if the prevailing Fixed (Part A) price is above the initial cost-reflective Fixed (Part A) price, the prevailing Fixed (Part A) price should be reduced to the cost-reflective Fixed (Part A) price.
   ii. if the prevailing Fixed (Part A) price is less than the initial cost-reflective Fixed (Part A) price, the prevailing Fixed (Part A) price should increase each year by the Authority's measure of inflation plus an additional component of $2.38 per mega litre (from 2020-21, increasing by the Authority's measure of inflation each year) until the cost-reflective Fixed (Part A) price is reached[10].
   iii. if the prevailing total Fixed (Part A + Part C) price is above the initial total cost-reflective Fixed (Part A + Part C) price, the prevailing total Fixed (Part A + Part C) price should be maintained in nominal terms over the price path period until the total cost-reflective Fixed (Part A + Part C) price is reached.

[7] The prevailing price for a particular tariff group is the price that relates to the 2019-20 period.
[8] The initial cost-reflective price for a particular tariff group is the price that relates to the 2020-21 period.
[9] The additional component may be less than specified in paragraph Dii in order for the price not to exceed the cost-reflective Fixed (Part A) price.
[10] The additional component may be less than specified in paragraph Eii in order for the price not to exceed the cost-reflective Fixed (Part A) price.

iv. if the prevailing total Fixed (Part A + Part C) price is less than the initial total cost-reflective Fixed (Part A + Part C) price, the prevailing total Fixed (Part A + Part C) price should increase each year by the Authority's measure of inflation plus an additional component of $2.38 per mega litre (from 2020-21, increasing by the Authority's measure of inflation each year) until the total cost-reflective Fixed (Part A + Part C) price is reached[11].

F. Volumetric prices (Part B and Part D) should have regard to moving to cost-reflective Volumetric prices (Part B and Part D) immediately.

G. For the Burdekin-Haughton WSS, the costs of SunWater supplying 185,000 ML to Lower Burdekin Water are not to be recovered from the prices applying to the remaining water entitlements.

H. For the Central Brisbane River WSS, where cost allocations are reapportioned as anticipated in the Final Report, Seqwater Irrigation Price Review 2013-17, Volume 2, Central Brisbane River Water Supply Scheme, or as an outcome of wider cost allocation investigations with customers, the Fixed (Part A) price for the commencement of the price path period may be less than the prevailing Fixed (Part A) price.

Schedule 3 – Categories of prices to be reviewed

Part A and Part B prices for the Dawson Valley WSS
Part A and Part B prices for the Three Moon Creek WSS
Part A and Part B prices for the St George WSS

[11] The additional component may be less than specified in paragraph Eiv in order for the price not to exceed the cost-reflective Fixed (Part A + Part C) price.

APPENDIX B: REVENUE REQUIREMENT BY SCHEME/SYSTEMS

Cedar Pocket WSS

Table 68 Total whole of scheme costs, Cedar Pocket WSS ($ thousands, nominal)

Cost	*2020–21*	*2021–22*	*2022–23*	*2023–24*
Labour	63.7	65.3	67.1	69.1
Electricity	0.3	0.4	0.4	0.4
Repairs and maintenance	15.2	15.5	15.9	16.4
Other	33.3	63.1	34.2	37.5
Insurance	3.4	3.4	3.5	3.6
Non–direct	54.5	55.8	57.1	58.4
Renewals annuity	4.8	4.8	4.8	4.8
Revenue offsets	(0.8)	(0.8)	(0.8)	(0.9)
Total costs	**174.4**	**207.5**	**182.2**	**189.3**

Notes: Total whole of scheme costs, including those costs allocated to irrigation and non-irrigation customers.

Table 69 Draft recommended prices for irrigation customers, Cedar Pocket WSS ($/ML, nominal)

	2019–20 (current)	*2020–21*	*2021–22*	*2022–23*	*2023–24*
Fixed (Part A)	22.36	25.27	28.25	31.30	34.42
Volumetric (Part B)	42.85	43.86	44.90	45.96	47.05

Note: Fixed (Part A) prices are charged on a $/ML WAE basis, and volumetric (Part B) prices are charged on $/ML usage.

Table 70 Bill impacts compared to current prices, Cedar Pocket WSS– average usage ($ nominal)

	2019–20 (current)	*2020–21*	*2023–24*	*Change 2019–20 to 2020–21 (%)*	*Change 2019–20 to 2023–24 (%)*
100 ML WAE	4,936	5,291	6,408	7	30
500 ML WAE	24,682	26,457	32,038	7	30
1,000 ML WAE	49,364	52,914	64,077	7	30

Note: Bill impacts analysis is based on the 15-year average usage by irrigation customers in this scheme.

Table 71 Change in water bill (%), Cedar Pocket WSS

Water use as a portion of entitlement held (%)	*Water bill change from 2019–20 to 2020–21 (%)*	*Water bill change from 2019–20 to 2023–24 (%)*
0	13	54
25	10	40
50	8	32
75	7	28
100	6	25

Central Brisbane River WSS

Table 72 Total whole of scheme costs, Central Brisbane River WSS ($ thousands, nominal)

Cost	*2020–21*	*2021–22*	*2022–23*	*2023–24*
Labour	1,084.1	1,111.2	1,141.8	1,175.1
Electricity	163.9	169.7	184.8	183.8
Repairs and maintenance	125.9	129.0	132.3	135.8
Other	2,633.1	2,602.0	2,681.9	2,706.5
Insurance	278.5	285.1	291.9	298.8
Non–direct	2,005.0	2,052.5	2,101.1	2,150.9
Renewals annuity	1,628.0	1,627.5	1,627.0	1,627.0
Revenue offsets	(1,427.6)	(1,461.4)	(1,496.1)	(1,531.5)
Total costs	**6,490.9**	**6,515.6**	**6,664.8**	**6,746.6**

Notes: Total whole of scheme costs, including those costs allocated to irrigation and non-irrigation customers.

Table 73 Draft recommended prices for irrigation customers, Central Brisbane River WSS ($/ML, nominal)

	2019–20 (current)	*2020–21*	*2021–22*	*2022–23*	*2023–24*
Fixed (Part A)	24.48	5.81	5.95	6.09	6.23
Volumetric (Part B)	11.76	2.81	2.87	2.94	3.01

Note: Fixed (Part A) prices are charged on a $/ML WAE basis, and volumetric (Part B) prices are charged on $/ML usage.

Table 74 Bill impacts compared to current prices, Central Brisbane WSS– average usage ($ nominal)

	2019–20 (current)	*2020–21*	*2023–24*	*Change 2019–20 to 2020–21 (%)*	*Change 2019–20 to 2023–24 (%)*
100 ML WAE	2,762	656	704	(76)	(75)
500 ML WAE	13,809	3,280	3,519	(76)	(75)
1,000 ML WAE	27,618	6,560	7,038	(76)	(75)

Note: Bill impacts analysis is based on the 15-year average usage by irrigation customers in this scheme.

Table 75 Change in water bill (%), Central Brisbane River WSS

Water use as a portion of entitlement held (%)	*Water bill change from 2019–20 to 2020–21 (%)*	*Water bill change from 2019–20 to 2023–24 (%)*
0	(76)	(75)
25	(76)	(75)
50	(76)	(75)
75	(76)	(74)
100	(76)	(74)

Central Lockyer Valley WSS

Table 76 Total whole of scheme costs, Central Lockyer Valley WSS ($ thousands, nominal)

Cost	*2020–21*	*2021–22*	*2022–23*	*2023–24*
Labour	124.2	127.3	130.8	134.6
Electricity	112.8	116.8	127.2	126.5
Repairs and maintenance	174.5	178.7	183.4	188.3
Other	53.7	71.6	52.9	43.7
Insurance	70.1	71.8	73.5	75.2
Non–direct	257.8	263.9	270.2	276.6
Renewals annuity	335.7	336.2	336.1	339.1
Revenue offsets	(1.4)	(1.5)	(1.5)	(1.5)
Total costs	**1,127.3**	**1,164.9**	**1,172.6**	**1,182.4**

Notes: Total whole of scheme costs, including those costs allocated to irrigation and non-irrigation customers.

Table 77 Draft recommended prices for irrigation customers, Central Lockyer Valley WSS ($/ML, nominal)

	2019–20 (current)	*2020–21*	*2021–22*	*2022–23*	*2023–24*
Fixed (Part A)	35.42	38.64	41.93	45.31	48.76
Volumetric (Part B)	11.46	11.17	11.43	11.70	11.98

Note: Fixed (Part A) prices are charged on a $/ML WAE basis, and volumetric (Part B) prices are charged on $/ML usage.

Table 78 Bill impacts compared to current prices, Central Lockyer Valley WSS– average usage ($ nominal)

	2019–20 (current)	*2020–21*	*2023–24*	*Change 2019–20 to 2020–21 (%)*	*Change 2019–20 to 2023–24 (%)*
100 ML WAE	3,960	4,272	5,314	8	34
500 ML WAE	19,802	21,358	26,568	8	34
1,000 ML WAE	39,604	42,716	53,136	8	34

Note: Bill impacts analysis is based on the 15-year average usage by irrigation customers in this scheme.

Table 79 Change in water bill (%), Central Lockyer Valley WSS

Water use as a portion of entitlement held (%)	*Water bill change from 2019–20 to 2020–21 (%)*	*Water bill change from 2019–20 to 2023–24 (%)*
0	9	38
25	8	35
50	7	33
75	7	31
100	6	30

Morton Vale Pipeline distribution system

Table 80 Total whole of scheme costs, Morton Vale Pipeline ($ thousands, nominal)

Cost	*2020–21*	*2021–22*	*2022–23*	*2023–24*
Labour	31.1	31.8	32.7	33.7
Electricity	-	-	-	-
Repairs and maintenance	5.2	5.4	5.5	5.6
Other	10.9	11.0	11.1	11.2
Insurance	1.1	1.1	1.2	1.2
Non–direct	22.0	22.5	23.1	23.6
Renewals annuity	3.6	3.6	3.6	3.6
Revenue offsets	-	-	-	-
Total costs	**73.9**	**75.5**	**77.2**	**79.0**

Table 81 Draft recommended prices for irrigation customers, Morton Vale Pipeline ($/ML, nominal)

	2019–20 (current)	*2020–21*	*2021–22*	*2022–23*	*2023–24*
Fixed (Part A)	35.42	38.64	41.93	45.31	48.76
Volumetric (Part B)	5.72	11.17	11.43	11.70	11.98
Fixed (Part C)	10.34	10.59	10.84	11.10	11.36
Volumetric (Part D)	9.47	10.77	11.02	11.28	11.55
Bundled Fixed	45.76	49.22	52.77	56.40	60.12
Bundled Volumetric	15.19	21.93	22.45	22.98	23.53

Table 82 Bill impacts compared to current prices, Morton Vale Pipeline– average usage ($ nominal)

	2019–20 (current)	*2020–21*	*2023–24*	*Change 2019–20 to 2020–21 (%)*	*Change 2019–20 to 2023–24 (%)*
100 ML WAE	4,801	5,247	6,360	9	32
500 ML WAE	24,003	26,234	31,799	9	32
1,000 ML WAE	48,006	52,467	63,598	9	32

Note: Bill impacts analysis is based on the 15-year average usage by irrigation customers in this scheme.

Table 83 Change in water bill (%), Morton Vale Pipeline

Water use as a portion of entitlement held (%)	*Water bill change from 2019–20 to 2020–21 (%)*	*Water bill change from 2019–20 to 2023–24 (%)*
0	8	31
25	10	33
50	13	35
75	15	36
100	17	37

Logan River WSS

Table 84 Total whole of scheme costs, Logan River WSS ($ thousands, nominal)

Cost	*2020–21*	*2021–22*	*2022–23*	*2023–24*
Labour	314.4	322.2	331.1	340.7
Electricity	9.1	9.4	10.2	10.2
Repairs and maintenance	300.4	307.8	315.7	324.2
Other	661.4	722.3	684.2	719.8
Insurance	158.8	162.5	166.4	170.3
Non–direct	678.4	694.5	711.0	727.8
Renewals annuity	207.7	207.6	208.0	207.9
Revenue offsets	(20.3)	(20.8)	(21.3)	(21.8)
Total costs	**2,309.8**	**2,405.5**	**2,405.3**	**2,479.2**

Notes: Total whole of scheme costs, including those costs allocated to irrigation and non-irrigation customers.

Table 85 Draft recommended prices for irrigation customers, Logan River WSS ($/ML, nominal)

	2019–20 (current)	*2020–21*	*2021–22*	*2022–23*	*2023–24*
Fixed (Part A)	26.80	26.80	26.80	26.80	26.80
Volumetric (Part B)	11.57	11.85	12.13	12.41	12.71

Note: Fixed (Part A) prices are charged on a $/ML WAE basis, and volumetric (Part B) prices are charged on $/ML usage.

Table 86 Bill impacts compared to current prices, Logan River WSS– average usage ($ nominal)

	2019–20 (current)	*2020–21*	*2023–24*	*Change 2019–20 to 2020–21 (%)*	*Change 2019–20 to 2023–24 (%)*
100 ML WAE	2,993	3,000	3,023	0	1
500 ML WAE	14,963	15,000	15,116	0	1
1,000 ML WAE	29,925	29,999	30,232	0	1

Note: Bill impacts analysis is based on the 15-year average usage by irrigation customers in this scheme.

Table 87 Change in water bill (%), Logan River WSS

Water use as a portion of entitlement held (%)	*Water bill change from 2019–20 to 2020–21 (%)*	*Water bill change from 2019–20 to 2023–24 (%)*
0	0	0
25	0	1
50	0	2
75	1	2
100	1	3

Lower Lockyer Valley WSS

Table 88 Total whole of scheme costs, Lower Lockyer Valley WSS ($ thousands, nominal)

Cost	*2020–21*	*2021–22*	*2022–23*	*2023–24*
Labour	139.7	143.2	147.2	151.5
Electricity	41.1	42.6	46.4	46.1
Repairs and maintenance	108.1	110.7	113.5	116.4
Other	169.7	168.4	174.8	201.6
Insurance	28.7	29.3	30.0	30.7
Non–direct	242.6	248.3	254.2	260.2
Renewals annuity	138.4	477.8	477.7	478.9
Revenue offsets	(5.8)	(5.9)	(6.0)	(6.2)
Total costs	**862.5**	**1,214.5**	**1,237.7**	**1,279.3**

Notes: Total whole of scheme costs, including those costs allocated to irrigation and non-irrigation customers.

Table 89 Draft recommended prices for irrigation customers, Lower Lockyer Valley WSS ($/ML, nominal)

	2019–20 (current)	*2020–21*	*2021–22*	*2022–23*	*2023–24*
Fixed (Part A)	47.53	51.04	54.63	58.30	62.07
Volumetric (Part B)	25.80	30.40	31.12	31.85	32.61

Note: Fixed (Part A) prices are charged on a $/ML WAE basis, and volumetric (Part B) prices are charged on $/ML usage.

Table 90 Bill impacts compared to current prices, Lower Lockyer Valley WSS– average usage ($ nominal)

	2019–20 (current)	*2020–21*	*2023–24*	*Change 2019–20 to 2020–21 (%)*	*Change 2019–20 to 2023–24 (%)*
100 ML WAE	5,159	5,582	6,719	8	30
500 ML WAE	25,794	27,908	33,595	8	30
1,000 ML WAE	51,587	55,816	67,190	8	30

Note: Bill impacts analysis is based on the 15-year average usage by irrigation customers in this scheme.

Table 91 Change in water bill (%), Lower Lockyer Valley WSS

Water use as a portion of entitlement held (%)	*Water bill change from 2019–20 to 2020–21 (%)*	*Water bill change from 2019–20 to 2023–24 (%)*
0	7	31
25	9	30
50	10	30
75	10	29
100	11	29

Mary Valley WSS

Table 92 Total whole of scheme costs, Mary Valley WSS ($ thousands, nominal)

Cost	*2020–21*	*2021–22*	*2022–23*	*2023–24*
Labour	204.8	209.9	215.6	221.9
Electricity	7.0	7.3	7.9	7.9
Repairs and maintenance	122.3	125.3	128.5	132.0
Other	149.1	128.2	126.1	131.6
Insurance	52.2	53.5	54.7	56.0
Non–direct	236.6	242.2	248.0	253.8
Renewals annuity	537.2	537.1	536.9	539.6
Revenue offsets	-	-	-	-
Total costs	**1,309.3**	**1,303.4**	**1,317.8**	**1,343.0**

Notes: Total whole of scheme costs, including those costs allocated to irrigation and non-irrigation customers.

Table 93 Draft recommended prices for irrigation customers, Mary Valley WSS ($/ML, nominal)

	2019–20 (current)	*2020–21*	*2021–22*	*2022–23*	*2023–24*
Fixed (Part A)	24.13	24.13	24.13	24.13	24.13
Volumetric (Part B)	9.63	8.11	8.31	8.50	8.71

Note: Fixed (Part A) prices are charged on a $/ML WAE basis, and volumetric (Part B) prices are charged on $/ML usage.

Table 94 Bill impacts compared to current prices, Mary Valley WSS– average usage ($ nominal)

	2019–20 (current)	*2020–21*	*2023–24*	*Change 2019–20 to 2020–21 (%)*	*Change 2019–20 to 2023–24 (%)*
100 ML WAE	2,735	2,685	2,704	(2)	(1)
500 ML WAE	13,676	13,423	13,521	(2)	(1)
1,000 ML WAE	27,352	26,845	27,043	(2)	(1)

Note: Bill impacts analysis is based on the 15-year average usage by irrigation customers in this scheme.

Table 95 Change in water bill (%), Mary Valley WSS

Water use as a portion of entitlement held (%)	*Water bill change from 2019–20 to 2020–21 (%)*	*Water bill change from 2019–20 to 2023–24 (%)*
0	0	0
25	(1)	(1)
50	(3)	(2)
75	(4)	(2)
100	(4)	(3)

Pie Creek distribution system

Table 96 Total whole of scheme costs, Pie Creek ($ thousands, nominal)

Cost	*2020–21*	*2021–22*	*2022–23*	*2023–24*
Labour	61.6	63.2	64.9	66.8
Electricity	20.0	20.7	22.6	22.4
Repairs and maintenance	84.8	86.8	89.1	91.5
Other	21.6	21.6	21.5	21.4
Insurance	2.6	2.7	2.8	2.8
Non–direct	91.1	93.2	95.4	97.7
Renewals annuity	86.0	86.0	86.6	89.3
Revenue offsets	-	-	-	-
Total costs	**367.7**	**374.2**	**382.8**	**391.9**

Table 97 Draft recommended prices for irrigation customers, Pie Creek ($/ML, nominal)

	2019–20 (current)	*2020–21*	*2021–22*	*2022–23*	*2023–24*
Fixed (Part A)	21.59	13.71	14.03	14.37	14.71
Volumetric (Part B)	9.63	8.11	8.31	8.50	8.71
Fixed (Part C)	32.71	43.75	47.22	50.77	54.41
Volumetric (Part D)	81.94	85.63	87.65	89.73	91.86
Bundled Fixed	54.30	57.46	61.25	65.14	69.12
Bundled Volumetric	91.57	93.74	95.96	98.24	100.56

Table 98 Bill impacts compared to current prices, Pie Creek– average usage ($ nominal)

	2019–20 (current)	*2020–21*	*2023–24*	*Change 2019–20 to 2020–21 (%)*	*Change 2019–20 to 2023–24 (%)*
100 ML WAE	7,645	8,013	9,345	5	22
500 ML WAE	38,226	40,066	46,725	5	22
1,000 ML WAE	76,452	80,132	93,450	5	22

Note: Bill impacts analysis is based on the 15-year average usage by irrigation customers in this scheme.

Table 99 Change in water bill (%), Pie Creek

Water use as a portion of entitlement held (%)	*Water bill change from 2019–20 to 2020–21 (%)*	*Water bill change from 2019–20 to 2023–24 (%)*
0	6	27
25	5	22
50	4	19
75	4	18
100	4	16

Warrill Valley WSS

Table 100 Total whole of scheme costs, Warrill Valley WSS ($ thousands, nominal)

Cost	*2020–21*	*2021–22*	*2022–23*	*2023–24*
Labour	271.7	278.5	286.2	294.5
Electricity	8.1	8.4	9.2	9.1
Repairs and maintenance	238.1	243.9	250.0	256.4
Other	205.7	215.7	238.3	221.4
Insurance	21.2	21.7	22.3	22.8
Non–direct	347.2	355.5	363.9	372.5
Renewals annuity	288.2	288.1	359.7	359.6
Revenue offsets	(30.2)	(30.9)	(31.6)	(32.4)
Total costs	**1,350.2**	**1,381.0**	**1,497.9**	**1,504.0**

Notes: Total whole of scheme costs, including those costs allocated to irrigation and non-irrigation customers.

Table 101 Draft recommended prices for irrigation customers, Warrill Valley WSS ($/ML, nominal)

	2019–20 (current)	*2020–21*	*2021–22*	*2022–23*	*2023–24*
Fixed (Part A)	25.41	25.41	25.41	25.41	25.41
Volumetric (Part B)	8.49	8.69	8.89	9.10	9.32

Note: Fixed (Part A) prices are charged on a $/ML WAE basis, and volumetric (Part B) prices are charged on $/ML usage.

Table 102 Bill impacts compared to current prices, Warrill Valley WSS– average usage ($ nominal)

	2019–20 (current)	*2020–21*	*2023–24*	*Change 2019–20 to 2020–21 (%)*	*Change 2019–20 to 2023–24 (%)*
100 ML WAE	2,704	2,708	2,720	0	1
500 ML WAE	13,519	13,538	13,599	0	1
1,000 ML WAE	27,038	27,076	27,198	0	1

Note: Bill impacts analysis is based on the 15-year average usage by irrigation customers in this scheme.

Table 103 Change in water bill (%), Warrill Valley WSS

Water use as a portion of entitlement held (%)	*Water bill change from 2019–20 to 2020–21 (%)*	*Water bill change from 2019–20 to 2023–24 (%)*
0	0	0
25	0	1
50	0	1
75	0	2
100	1	2