frontier economics

Cost escalation factors

A report for Seqwater | 25 June 2021

Disclaimer

Contents

Tables

Figures

Boxes

Executive Summary

Seqwater is preparing for the next regulatory review of its bulk water prices by the QCA, with prices to apply from 1 July 2022. As an input to this review, Seqwater engaged Frontier Economics to provide analysis and independent advice on the escalation rates that should apply to generate estimates of nominal operating costs for a number of categories of operating expenditure and also for capital expenditure for the period 2019-20 to 2027-28 (inclusive).

Table 1 summarises the approach we have followed to forecast each escalator.

For most of the escalators, we recommend continuing with the current approach adopted by the QCA. This reflects our judgement to retain the current approach unless there are compelling reasons to change and it would make a material difference to do so.

However, we recommend one major change relating to the way that Seqwater should forecast inflation. We consider that the method of forecasting inflation previously used by the QCA is not appropriate in the prevailing low-inflation environment. This is because the QCA's method assumes that inflation will revert to the mid-point of the RBA's target range (i.e., 2.5%) after two years and remain at that level for a further eight years, without having regard to the state of the economy or market expectations.

We consider that a consistent approach should be adopted when developing CPI cost escalators for the purposes of determining expenditure allowances and the when forecasting inflation for the purposes of setting Seqwater's allowed return on capital over the upcoming regulatory period. We have, therefore, recommended a market-based forecast of CPI inflation derived using traded inflation swaps. The recommended change of approach would result in lower escalation rates (and therefore a lower opex allowance) over the forthcoming regulatory period than if the QCA's existing approach were adopted. The approach we recommend is also consistent with the directions of the Ministerial Referral Notice.

We also recommend that Seqwater use wage escalation rates specified in its current Enterprise Agreement to escalate the cost of contractors (service delivery), recognising that Seqwater has an obligation to pay its contractors in line with its own award. This would align the wage escalators between the employee and contract labour category and the contractors (service delivery) category.[1]

We found that while, in principle, there are some preferable escalators for other specific cost components—such as the Producer Price Index to measure certain inputs to production—the practical challenges associated with deriving reliable forecasts using those escalators would be significant. We have therefore recommended retaining the QCA's current approach in those instances. This would allow the regulatory process to focus on more material issues.

Table 2 presents our recommended escalation rates for the period 2019-20 to 2027-28 derived using the methodologies summarised in **Table 1**.

[1] The contractors (service delivery) category also has a service sub-component relating to services (non-wages) that we propose to escalate by CPI.

Table 1: Frontier Economics' recommended approach for forecasting escalation factors

Category	Current QCA Approach	Frontier Recommendation	Source
Employee and contract labour expenses	Enterprise Agreement escalation rates for duration of existing Enterprise Agreement, plus an estimate of the growth in allowance costs Queensland Treasury's one-year ahead and two-year ahead forecasts of Queensland WPI Long-term (10 year) average of historical average growth rate in Queensland WPI	Use the best indicator of the labour cost escalation rates that would be faced by Seqwater available. This would mean using: • The base escalation rates specified in the Enterprise Agreement, plus an estimate of the growth in allowance costs, for the remainder of the agreement (to the end of FY23); • Thereafter, the Queensland Treasury estimates of WPI for the budget forecast period (FY24); and • The10-year historical average of the ABS WPI for Queensland.	• Seqwater Enterprise Agreement • Queensland Treasury Budget Strategy and Outlook • 10-year average, based on ABS WPI for Queensland

Category	Current QCA Approach	Frontier Recommendation	Source
Contractors (service delivery)	0.44*CPI (forecasts and midpoint of RBA inflation target range) and 0.56*WPI estimated as 10-year historical average growth rate in Queensland WPI	Weighted average of: • CPI, based on market-based inflation estimate • WPI based on: – Seqwater Enterprise Agreement for its duration – The Queensland Treasury WPI forecast its forecast period and – A forecast using the historic 10-year Queensland WPI for the remainder of the period	• Weights based on split of costs provided by Seqwater • Market-based forecast inflation (inflation swaps) • Seqwater Enterprise Agreement • Queensland Treasury Budget Strategy and Outlook • 10-year average, based on ABS WPI for Queensland
Chemicals	RBA inflation forecasts and mid-point of RBA inflation target range	Market-based forecast inflation (inflation swaps)	Market-based forecast inflation (inflation swaps)
Other materials and services, including insurance	RBA inflation forecasts and mid-point of RBA inflation target range	Market-based forecast inflation (inflation swaps)	Market-based forecast inflation (inflation swaps)
Capital expenditure	RBA inflation forecasts and midpoint of RBA inflation target range	Market-based forecast inflation (inflation swaps)	Market-based forecast inflation (inflation swaps)

Table 2: Forecast escalators for the period 2019-20 to 2027-28

	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
Employee and contract labour expenses	3.00%	0.20%	4.44%	3.00%	2.25%	2.59%	2.59%	2.59%	2.59%
Service delivery contractors – labour component	3.00%	0.20%	4.44%	3.00%	2.25%	2.59%	2.59%	2.59%	2.59%
Service delivery contractors – non-labour (other services) component	-1.00%	4.24%	1.81%	1.89%	2.10%	2.32%	2.38%	2.40%	2.43%
Chemicals	-1.00%	4.24%	1.81%	1.89%	2.10%	2.32%	2.38%	2.40%	2.43%
Other materials and services, including insurance	-1.00%	4.24%	1.81%	1.89%	2.10%	2.32%	2.38%	2.40%	2.43%
Capital expenditure	-1.00%	4.24%	1.81%	1.89%	2.10%	2.32%	2.38%	2.40%	2.43%

Source: Frontier Economics

1 Introduction and background

1.1 Purpose of this report

Seqwater has engaged Frontier Economics to provide analysis and independent advice on the escalation rates, for the years 2019-20 to 2027-28 (inclusive), that should apply to generate estimates of nominal operating expenditure (opex) and also for capital expenditure (capex). Specifically, Seqwater has asked us to develop forecast escalation rates for the following categories of operating costs:

- Employee and contract labour expenses;
- Contractors (service delivery);
- Chemicals; and
- Other materials and services

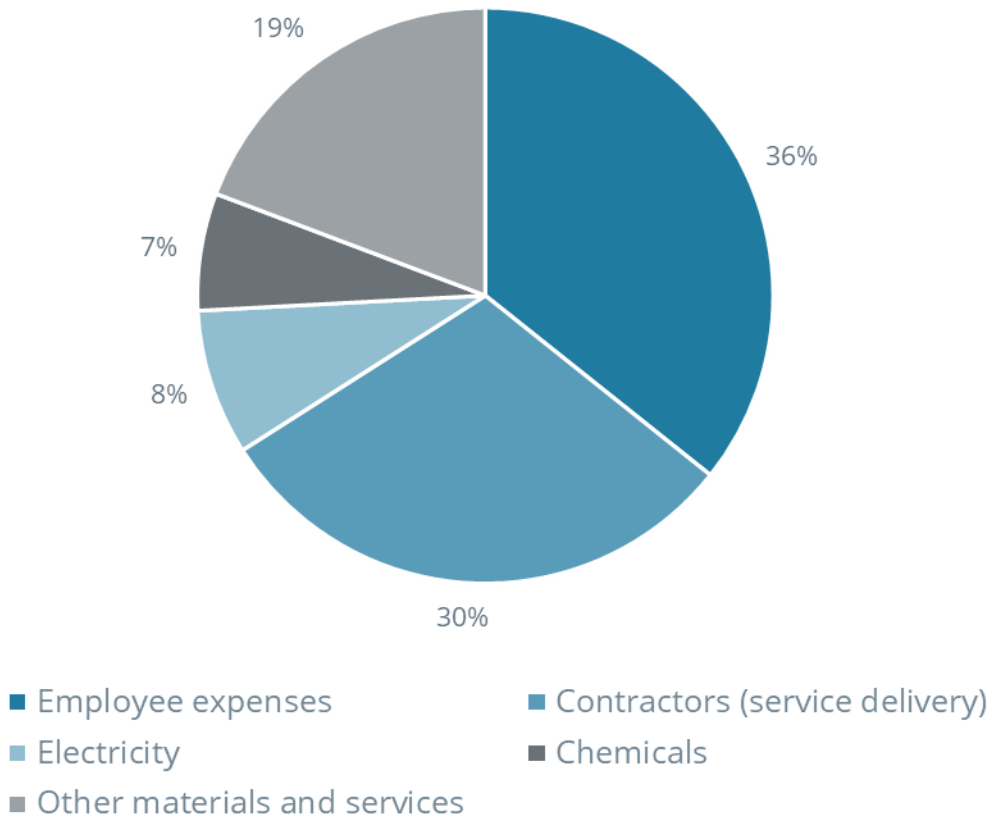
Seqwater's total fixed and variable operating expenditure in 2019-20 was $294 million.

As shown in **Figure 1** below, the largest contributors to actual operating expenditure in 2019-19 were:

- Employment and contract labour (36% of total operating expenditure or $105 million);
- Contract services (30% of total operating expenditure or $89 million); and
- Other materials and services (19% of total operating expenditure or $57 million).

Seqwater also has a long-term capex program. We understand that the capex associated with each project is expressed in real dollars and needs to be escalated to the 2019-20 base year.

Figure 1: Operating cost categories as a proportion of total fixed and variable operating expenditure (2019-20 actuals)



Source: Seqwater and Frontier Economics

1.2 Our approach

We have recommended escalators for each of the relevant categories (employee expenses, contract labour, contractors (service delivery), chemicals, and other materials and services) and capital expenditure.

We approached our review and made our recommendations after:

1. Establishing criteria to guide our recommendations; and
2. Assessing how alternative approaches (including the QCA's current approach and approaches adopted by other regulators) meet those criteria.

1.3 Criteria for proposed escalators

We have proposed the following criteria for developing our recommendations on cost escalators to apply to each of the cost categories.

As far as possible, cost escalators should:

1. **Support prudent and efficient cost recovery:** this means that the escalator should represent a reasonable reflection of the types of cost to which it is being applied.

2. **Preserve the incentive for Seqwater to seek efficiencies during the regulatory period:** the escalator should in general reflect a relevant industry benchmark rather than simply the actual costs incurred by the business.
3. **Be applied consistently within the regulatory proposal:** if forecasts or escalation rates are used in different areas of the regulatory determination, then a consistent approach to determining those forecasts or escalation rates should be adopted.
4. **Be consistent with previous QCA decisions:** the QCA's existing approach should continue to be used unless there are compelling economic reasons to change approach, and doing so would produce materially different outcomes.
5. **Be transparent and simple:** as far as possible escalators should rely on publicly available, readily accessible data that is understandable to Seqwater's stakeholders.

These objectives are broadly consistent with the Ministerial Referral Notice to the QCA, which sets out the approach to the QCA's review of Seqwater's prices.

We have applied these criteria when developing our recommendations for the cost escalators. In considering each escalator, we have had to balance these sometimes competing objectives. We have explained how we have done this in each relevant section.

1.4 Structure of this report

The remainder of this report is structured as follows:

- Section 2 provides an overview of the key broad types of indices commonly use to escalate costs and our general conclusions on their use; and
- Sections 3 to 7 examines and recommends escalators for each of the cost categories.

2 Commonly used price indices

This section provides an overview of the key broad types of indices commonly used to escalate costs and our general conclusions on their use.

There are several commonly used escalators, including:

- the consumer price index (CPI);
- the producer price indices (PPI); and
- wages price indices (WPI).

This section discusses the key characteristics of each of these commonly used measures and .

2.1 Our general recommended approach to cost escalators

Box 1 Frontier Economics' recommended approach to cost escalators

We generally recommend escalators that are targeted as closely as possible to the relevant costs borne by Seqwater. This means that where there is a more targeted measure (for example, a Queensland-specific rather than Australia-wide measure), we recommend using the more targeted measure. This will mean that the escalators more closely forecast prudent and efficient cost recovery for each cost category.

2.2 Consumer price inflation (CPI)

2.2.1 Measuring actual CPI

The Australian Bureau of Statistics (ABS) CPI produces a good measure of the inflationary impact on a household's expenses. The CPI measures the price movements in a 'basket' of goods and services that are typically consumed by a household.[2] This basket covers a wide range of goods and services, including:

- Food and non-alcoholic beverages;
- Alcohol and tobacco;
- Clothing and footwear;
- Housing;
- Furnishings, household equipment and services;
- Health;
- Transport;
- Communication;

[2] The ABS reweights the basket of goods annually for changes in household spending patterns.

- Recreation and culture;
- Education; and
- Insurance and financial services.

The ABS measures CPI in each capital city and also produces adjusted measures and sub-indices, providing for more targeted measures of inflationary pressure.

The CPI is a widely-used and trusted measure of general inflation. Regulators commonly use actual CPI inflation to:

- Increase prices annually during a regulatory period; and
- Roll forward the regulatory asset base (RAB).

By using CPI in these ways, regulators maintain prices and values in real terms.

2.2.2 Forecasting CPI inflation

Regulators use forecast CPI inflation to:

- Set the real return on capital allowance;
- Forecast price movements over an upcoming regulatory period (but then use an outturn CPI inflation to inflate the price each year); and
- In some instances, estimate cost changes during the regulatory period (i.e., the purpose of this report).

In decisions over the past several years, most regulators have tended to forecast longer term CPI inflation based on a one- or two-year inflation forecast (by the RBA) followed by the midpoint of the RBA's inflation target for the remainder of the forecast period. Depending on the length of the forecast, this approach tends to produce a forecast that is close to the RBA's 2.5% midpoint.

However, for over past five years or so, actual CPI inflation has persistently remained below 2.5% (see **Figure 2**) and traded financial products are pricing in a low expectation of future inflation.

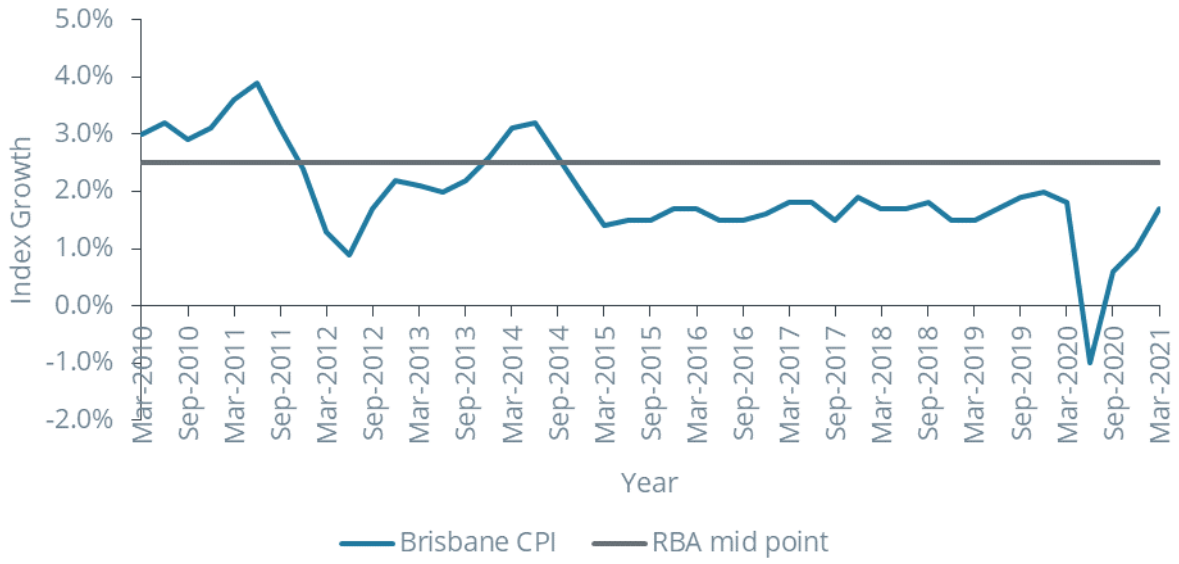
Therefore, in order to choose a more accurate escalator (thereby better reflecting efficient costs), we recommend adopting a 'market-based' approach to estimating expected inflation to produce far more realistic estimates. These market-based measures include estimates of bond breakeven inflation and inflation expectations implied by inflation swaps. For the purposes of this report, we have used forecasts of CPI inflation implied by zero-coupon inflation swaps.

This is consistent with the requirements of the Ministerial Referral Notice, which specifies that:[3]

> *The forecast rate of inflation must be determined by the Authority using the 40-day average of the forward inflation rate for that year implied by traded zero-coupon Australian inflation swaps.*

[3] Ministerial Referral Notice, para. (C)(9).

Figure 2: Outturn CPI vs 2.5%



Source: ABS data and Frontier Economics

The market-based inflation swaps estimate begins from year end June 2022. As such, for the market-based escalation rates, we have used the Brisbane CPI inflation for the year ended June 2020. Consistent with this, we forecast Brisbane CPI inflation for the year ended June 2021 by appending the most recent RBA forecasts to available Brisbane CPI data. The most recent RBA forecasts, in the May 2021 Statement on Monetary Policy, forecast 3.25% CPI inflation for the year ended June 2021.This implies 0.18% inflation for the quarter ended June 2021 when applied to ABS inflation data.[4] Applying this inflation forecast to the ABS Brisbane CPI index yields 4.24% inflation for the year ended June 2021.

For the each of the 40 trading days to 31 March 2021, we derived the forecast inflation rate for the period starting on the sample trading day and ending on 30 June for years 2021 through 2028 through interpolation of traded zero-coupon Australian inflation swaps, obtained from Bloomberg. We then decomposed these rates to obtain forward rates for each of the years ended 30 June 2022 to 2028. These forward inflation rates were then averaged over the 40 trading days in the sample to derive our inflation forecasts.

2.2.3 Producer price inflation (PPI)

The PPI measures the input costs for businesses. More specifically, it includes all products that are used or produced by establishments classified to a specific industry, including secondary production.[5] PPIs are either 'output' or 'input' indices, where 'output' refers to products produced by establishments classified to a specific industry; and 'input' relates to products used by

[4] ABS (2021), ABS series 6401.

[5] ABS (2021), Producer Price Indexes, Australia, available at: https://www.abs.gov.au/statistics/economy/price-indexes-and-inflation/producer-price-indexes-australia/latest-release

establishments classified to specific industries. As with the CPI, the ABS updates the weights periodically.[6]

The ABS publishes PPIs reflecting inputs, outputs, and by State/Territory and by sector.

2.2.4 Forecasting PPI

Unlike CPI, there are no readily available market-based financial instruments that price in changes in the PPI.

In the absence of a market-based forecast of PPI inflation, a simple method of forecasting PPI is to use an average of historical actual results. This approach assumes the best forecast of changes in the PPI is provided by the average rate of change in the PPI over some historical period. However, this is a fairly crude assumption, and there is little reason to think that such an approach would produce reliable forecasts over relatively short forecasting horizons.

An alternative method of forecasting changes to the PPI would be to use complex macroeconomic forecasting models. However, such models have a number of shortcomings, including their complexity and lack of transparency. Most such models are proprietary and therefore unable to be scrutinised by stakeholders and regulators. In addition, in our experience, the outputs of such macroeconomic forecasting models tend to be highly sensitive to input assumptions, and often suffer from large forecasting errors (i.e., outturns are often materially different from forecasts).

2.2.5 Frontier Economics recommendations for PPI

In our view, a PPI is a more reliable cost index than the CPI for the purposes of developing escalators of the expenditures incurred by businesses. This is because a PPI more closely reflects the costs of the inputs to production used by firms than the prices of goods and services consumed by households, as reflected in a CPI.

The main challenge in using the PPI as the basis of escalation rate forecasts is the lack of a simple, transparent and accurate forecasting. As noted above:

- There is no market-based method for forecasting changes in the PPI;
- The approach of relying on an historical average of changes in the PPI is likely to be too crude to produce reliable forecasts; and
- Macroeconomic forecasting models are complex, opaque and have a poor track-record in producing accurate forecasts.

For these reasons, and noting that the QCA does not currently use forecast escalation rates derived using the PPI, we recommend a compromise approach of using market-based CPI forecasts in place of forecasts derived using the PPI.

[6] The indices are weighted based on the Lowe index and are updated occasionally to ensure they remain relevant and representative of the producer's activities. Sample businesses are used to source ongoing price data. These businesses can be buyers or sellers depending on whether the price is an input or output index.

2.3 Measuring changes in wages (WPI)

Another specific type of cost index is a wage price index (WPI), which relates only to the labour costs incurred by producers.

2.3.1 Measuring WPI

The ABS has several methods to measure changes in labour costs. Labour costs include wages and salaries, paid leave, superannuation, taxes on employment, training and recruitment costs, and fringe benefits. Some of the ABS measures include the change in composition that has occurred in the labour market, while others measure benefits beyond wages.

We seek to measure the change in Seqwater's *wages* hence the WPI is the best measure. The WPI is unaffected by changes in the composition of the workforce from one quarter to the next as only occupations that have prices for the consecutive quarters are included in the construction of the WPI. Over time composition changes are reflected in index weights.

There are different WPI measures across states and industries. While the WPI for the Energy, Gas, Water and Waste Services sector (EGWWS) is the most relevant measure to Seqwater, the QCA currently uses the Queensland WPI. The Queensland Government uses a WPI-based forecast in its budget projections.

2.3.2 Forecasting WPI

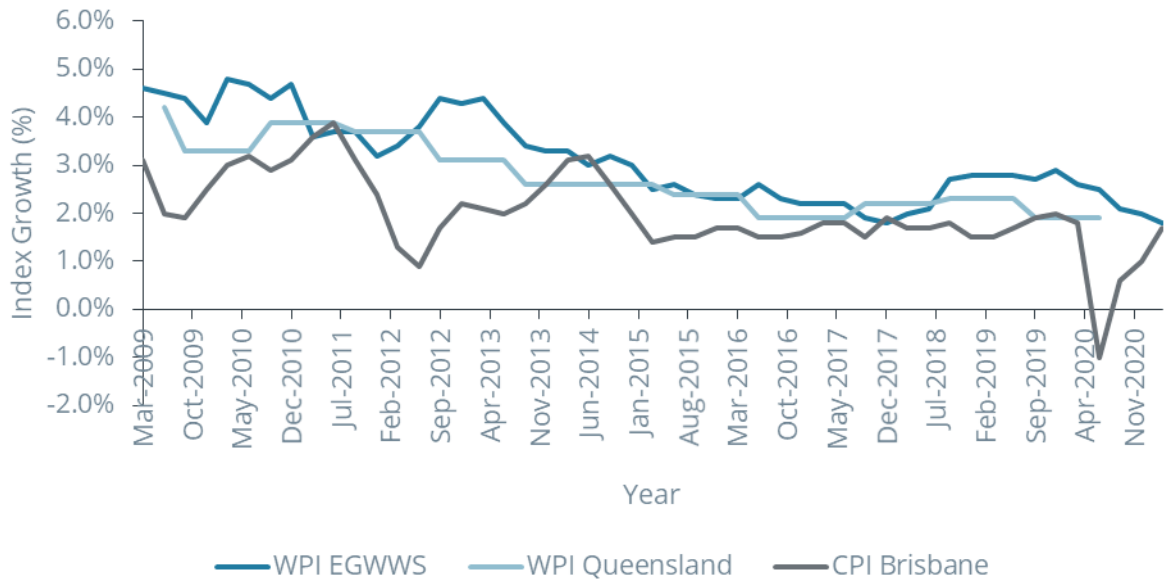
The QCA currently uses a 10-year historical average as the forecast for wages in the later years (beyond the term of the Seqwater Enterprise Agreement and the Queensland Government forecasting period). The QCA changed from a 15-year average to a 10-year average at the last review, recognising that wages growth had fallen in response to a softening labour market, and a 10-year average was likely to be a better predictor of future wages growth. Using a longer time period as the averaging period would increase the forecast because wages growth was higher 10-15 years ago than it has been more recently.

However, it is unclear what effect the Covid-19 pandemic will have on the labour market. While we consider a 10-year time horizon to be a generally suitable period for forecasting future WPI, the past 10 years are unlikely to be a good indicator of the impact of the pandemic on the economy and labour force over the short or medium term. We discuss this further in Section 3.

Figure 3 illustrates that, historically, wages growth has tended to exceed inflation as employees shared in productivity gains. In recent years, wages growth has been modest by historical standards, and in some periods real wages have fallen.

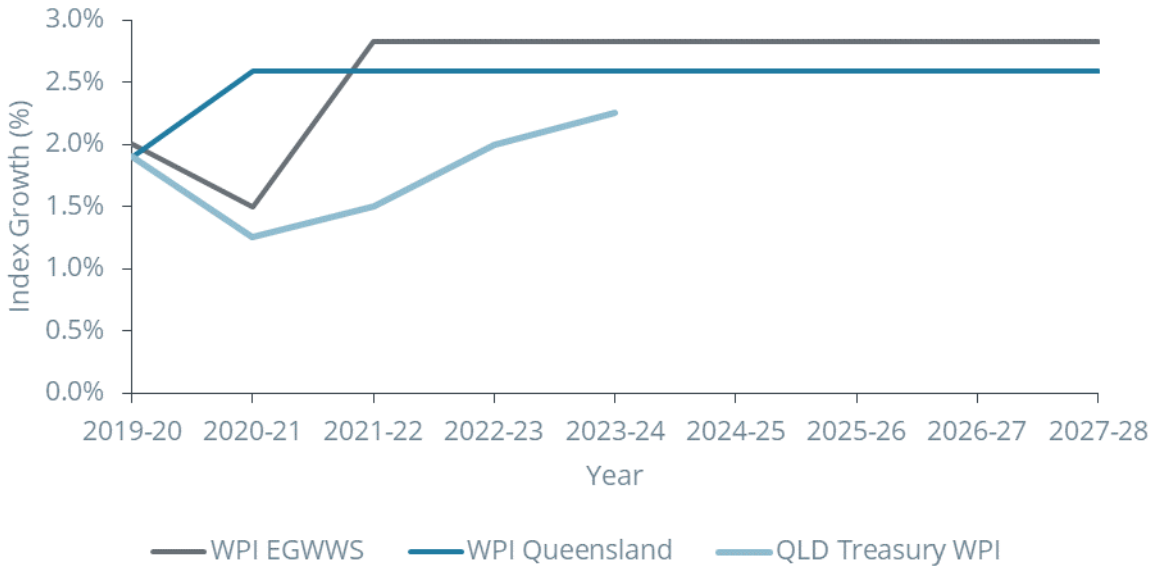
Figure 4 illustrates the forecasts for WPI relevant to Seqwater. As shown in **Figure 3** the decreasing trend in wages growth over the past 10 years has resulted in a lower 10-year average WPI for Electricity, Gas, Water and Waste Services (EGWWS). Queensland Treasury also uses a WPI-based forecast of wages in its budget process, based on the Queensland WPI. We expect that the next Queensland Treasury forecast will consider the impact of Covid-19 on the labour market.

Figure 3: Historical wage growth vs. growth in general inflation



Source: ABS data and Frontier Economics

Figure 4: WPI forecasts



Source: ABS data and Frontier Economics

2.3.3 Frontier Economics recommendations for WPI

As discussed further in the following section, we consider that both the WPI for EGWWS and Queensland Treasury WPI forecast would be appropriate as an escalator for labour costs as these are the measures that most closely relate to Seqwater.

3 Employee and contract labour expenses

Employee and contract labour costs represent the largest share of Seqwater's operating expenditure (see section 1). Seqwater has more than 600 employees in areas such as engineering, science and environment, policy and planning, project management, trades, dam management and water treatment, land management and corporate services.

In order to forecast employee and contract labour expenses, we have considered a range of different measures and also examined the employment market to determine if there are any material changes that are likely to emerge over the regulatory period.

We forecast that inflation will remain low over the upcoming regulatory period. We expect that the low inflation environment will temper nominal wage growth over the forecast period.

The remainder of this section sets out:

- Our recommendation;
- Possible approaches, including the QCA's current approach; and
- Analysis of the costs.

3.1 Our recommended escalation for employee and contract labour expenses

Box 2 Frontier Economics' recommended escalators for contract labour and expenses

We recommend that Seqwater align its proposed escalators to the annual employee and contract labour costs with the timeframe of the available data by adopting:

- The base escalation rates specified in the Enterprise Agreement, plus an estimate of the growth in allowance costs, for the remainder of the Enterprise Agreement
- Thereafter the Queensland Treasury WPI forecast for the remainder of the Budget forecast period
- For the remainder of the period a forecast based on the historic 10-year Queensland WPI.

Our recommendation recognises that:

- The current Seqwater Enterprise Agreement (2019-23) represents the most accurate indication of the cost of Seqwater's labour costs over the life of that agreement (objective 1). Because it does not cover the full regulatory period, it leaves Seqwater with the incentive to ensure its next Enterprise Agreement is as low as possible (and below the allowance) (objective 2). The 2018-21 QCA decision uses this measure (objective 4). In addition, the Enterprise Agreement represents the wage movements that will apply to Seqwater

employees. While there is considerable uncertainty about the state of the labour market more broadly (and hence movement in wages) over the short to medium term, the Enterprise Agreement provides information on Seqwater's agreed wage movements over the next three years.

There are two components to the growth in labour costs arising from the Enterprise Agreement:

- Firstly, Seqwater must pay guaranteed wage increases to all staff covered by the Enterprise Agreement. The rate of guaranteed wage increases is 2.8% p.a. in nearly all of the years over the term of the agreement. However, we note that there was no guaranteed wage increase during 2020-21, with two wage increases during 2021-22.[7]
- Secondly, Seqwater must pay certain allowances (e.g., overtime meal allowances, amongst others), over and above standard wages and salaries, under the terms of the Enterprise Agreement. Whilst the Enterprise Agreement does not guarantee that all staff covered by the agreement would be paid allowances, the payment of allowances to qualifying staff is an obligation imposed by the Enterprise Agreement that cannot be avoided by Seqwater. Nor could any efficient and prudent business in Seqwater's circumstances avoid such an obligation. It would be reasonable for the labour escalation rate to account for the growth in allowance costs – failure to do so would result in Seqwater recovering less than its efficient and prudent costs. Seqwater has advised us that, based on its own internal modelling, its best estimate of the annual growth in the cost of allowances over the term of the Enterprise Agreement is 0.2% p.a. We have adopted that estimate in this report.

Hence, for the years 2019-23, we have adopted a labour cost escalation rate comprising the guaranteed agreed rate of growth in wages (i.e., 2.80% in most years) plus Seqwater's estimate of the expected growth in the cost of allowances (i.e., 0.2% p.a.).

- The Queensland Treasury uses Queensland-specific WPI forecasts for the basis of the State budget. These are publicly available forecasts and should be used consistently across Government (unless there is a compelling reason not to). The Queensland Treasury forecasts include the impact of Covid-19 on the labour market and, hence, wages.
- The WPI measures the change in the price employers pay for labour due to market factors. The WPI is unaffected by changes in the quality or quantity of work performed; that is, it is unaffected by changes in the composition of the labour force, hours worked, or changes in characteristics of employees (e.g. work performance). This makes it the most appropriate of the ABS measures for forecasting the remaining escalation (objective 1). We agree that the shorter, 10-year forecasts that the QCA adopted recognise the sluggishness that affects both the CPI and WPI (and hence our proposed changes to the calculation of CPI). In the context of the current uncertainty about the future state of the labour market given the Covid-19 pandemic, we consider that this measure is objective and transparent and that there isn't a better forecast currently available. This forecast will have only minor impacts on prices as it will apply predominately after the regulatory period finishes, but in the forecast period to 2027-28.

[7] A 2.8% increase applied from July 2021, with a further 2.8% increase applied from January 2022. The change to apply for 2021-22 was calculated as $\frac{2.8\%+(1+2.8\%)^2-1}{2} = 4.24\%$.

3.2 Possible approaches

3.2.1 The QCA's current approach

Currently the QCA uses:

- EBA escalation rates for the duration of the existing EBA;
- Queensland Treasury's forecasts of the Queensland WPI; and
- Long-term (10 year) average of historical average growth rate in Queensland WPI.[8]

Chapter 4 of the QCA's Final Report for Seqwater's Bulk Water Price Review 2018-2021 sets out the QCA's reasoning for its approach.[9] The key change that the QCA made in its 2018-2021 regulatory period was to shorten the averaging period for the WPI from 15 years to 10 years, recognising that "real wage growth had been sluggish … and is expected to remain subdued …"[10]

We agree that the shorter historical average is likely to produce a better forecast because wages growth has been tempered by the persistent low inflation environment. We expect that wages growth will remain subdued in the short to medium term as a result of the impact of Covid-19 pandemic.

3.2.2 Alternative approaches

The alternative approaches to labour-related escalators are outlined below.

Average weekly ordinary time earnings

Average weekly ordinary time earnings is an ABS measure of the total regular cash payments made to employees divided by the number of employees. However, compared to WPI this measure is sensitive to compositional changes in the workforce (including the mix of full time, casual and part time staff, and the change in hours worked in a given period). For this reason, we consider WPI to be a better measure.

Trends in Federal Enterprise Bargaining agreements

A summary of enterprise bargaining agreements by sector and state, as reported by the Commonwealth Attorney-General's Department.[11] In total, Enterprise Agreements (federal and state) cover around 38% of all Australian employees, with the majority being federal agreements. While we consider this information to be relevant, we consider that using the specific agreement for the remainder of the period will provide a more accurate forecast of labour costs in early years than the average as reported in these results. However, we note that Seqwater's results are consistent with the Federal Enterprise Bargaining results.[12]

[8] Queensland Competition Authority, Seqwater Bulk Water Price Review 2018-2021, Final Report, March 2018, pp27-28

[9] Queensland Competition Authority, Seqwater Bulk Water Price Review 2018-2021, Final Report, March 2018, Chapter 4

[10] Queensland Competition Authority, Seqwater Bulk Water Price Review 2018-2021, Final Report, March 2018, p28

[11] Attorney-General's Department, Trends in Federal Enterprise Bargaining Report, December quarter 2020, available at: https://www.ag.gov.au/system/files/2021-03/trends-in-federal-enterprise-bargaining-december-2020.pdf

[12] For the private sector the September 2019 quarter report by the Attorney Generals' Department listed Electricity, gas, water and waste services as one of the highest average annualised wage increases at 3% - consistent with the national average, with all agreements on the last day of the quarter reflecting at 2.8% increase. It listed the average annualised wages growth in Queensland at 2.7%.

CPI (ABS)

Some regulators use CPI to escalate labour-related expenses. For example, ESCOSA applies an ABS-based CPI escalator, arguing that SA Water's total labour costs are a function of labour prices, the number of people employed and productivity and, therefore, any of them can be adjusted to ensure that total labour costs are held within the limits of the Consumer Price Index.[13] We consider that our recommended approach will provide a better forecast of Seqwater's labour cost movement than the CPI.

Bespoke indices

It is possible to prepare forecasts specific to Seqwater based on macroeconomic modelling. This approach is taken by some other regulators. For example, the AER commissioned a report by Deloitte Access Economics and for Energex proposes to forecast WPI growth for the Queensland utilities industry.[14] This report forecasts that wages growth in the Queensland utilities sector will reach 3.0% in 2021-22 due to the forecast continued growth in the utilities sector, which is consistent with the Seqwater Enterprise Agreement. However, bespoke forecasts are not as transparent and readily available as other more common measures. In its February 2020 draft report on the Gladstone Area Water Board's retail price monitoring, the QCA expressed concern about using a bespoke index.[15]

Household Income and Labour Dynamics Australia (HILDA)

This measure is based on a household-based panel study collecting information about economic and subjective well-being, labour market dynamics and family dynamics. However, the key purpose of this survey is to provide information across a range of policy areas including health, education and social services. It is not designed to escalate costs for a particular industry.

3.3 Comparison of alternative escalators

Employee and contract labour expenses contribute more than a third of Seqwater's operating expenditure. **Figure 5** highlights the difference between the various labour cost indicators that could be used to develop cost escalators for Seqwater. The reported enterprise bargaining for EGWWS refers to the Federal Enterprise Bargaining trends which is based on a forecast of 3.1%.[16] This covers the agreements made in the federal workplace relations system. This specific indicator is highly relevant for Seqwater.

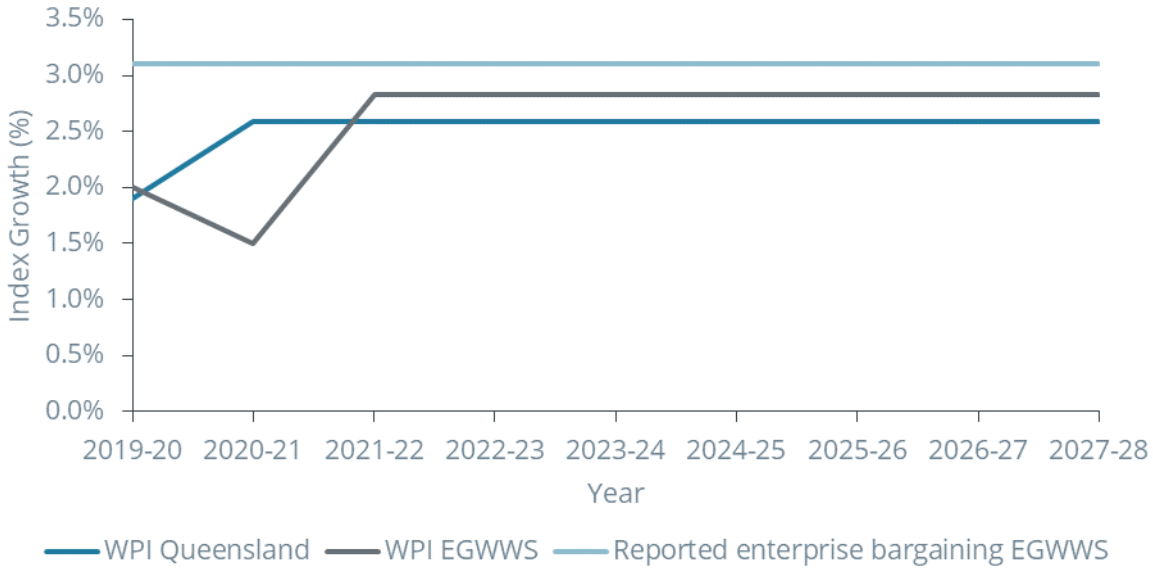
[13] Essential Services Commission of South Australia, Guidance Paper: Prudent and efficient expenditure, November 2018, p13

[14] Australian Energy Regulator, Energex Distribution Determination, 2020 to 2025, Draft Decision, Attachment 6 Operating expenditure, October 2019, p6-50

[15] The QCA said "We have a number of concerns regarding the transparency of the underlying DAE forecasts for CPI and WPI. We note that the DAE forecasts are derived using a proprietary macroeconomic model, and its assumptions are not easily understood or verifiable by stakeholders. We also note that DAE's forecasts tend to be licenced, subscription-based products. This means they are not freely available in the public domain and their broader public use is subject to limitations. We prefer CPI and WPI forecasts that are more transparent and widely available." QCA, Gladstone Area Water Board price monitoring 2020-25, Part A: Overview, Draft Report, February 2020, p20.

[16] Australian Government Attorney-General's Department, Trends in Federal Enterprise Bargaining Report, Table 17, December quarter 2020

Figure 5: WPI inflators and enterprise bargaining agreements for the forecast period



Source: Seqwater, ABS and Frontier Economics

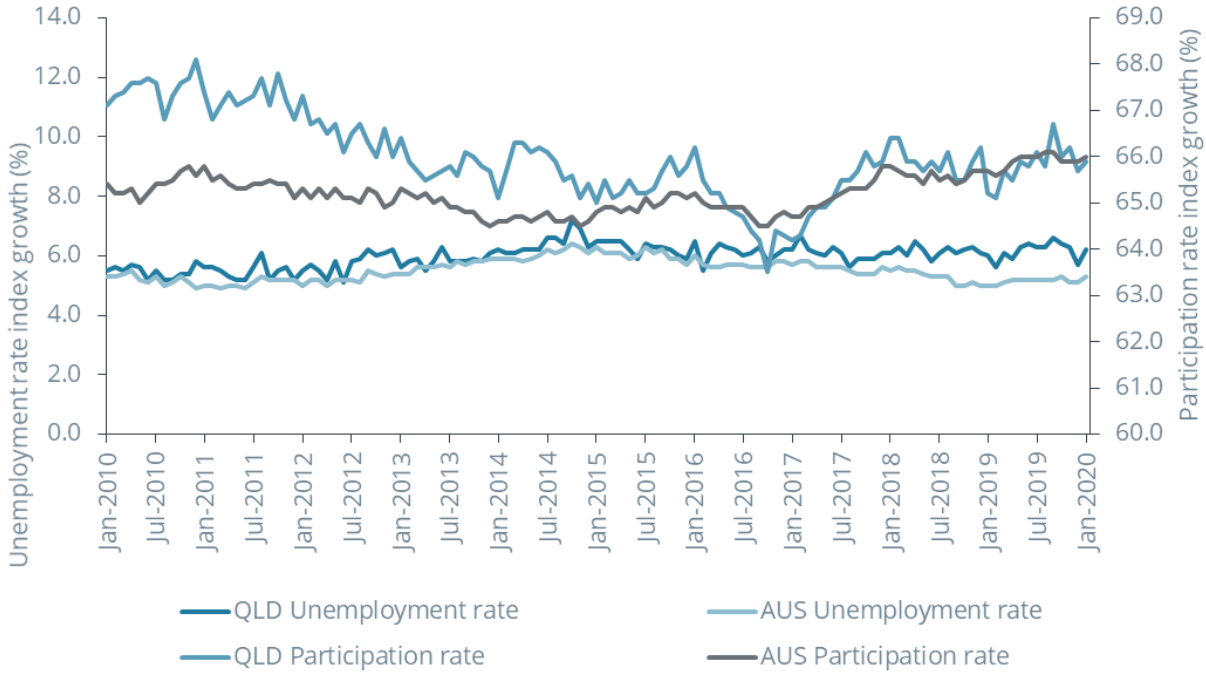
To test whether a historical average of WPI is a suitable escalator over the regulatory period, we examined whether labour market indicators point to a likely material change over the medium term. We examined the historical relationship between wages and inflation and the number of people employed and vacancies in the EGWWS industry in order to assess the state of the employment market relevant to Seqwater. We consider that the subdued real wage growth is likely to persist as inflation remains low. Further, there is significant economic uncertainty arising from the impact of the Covid-19 pandemic. At this stage it is difficult to predict the extent of the economic impact, but we expect it to be material over at least the short to medium term.

In March 2021 the trend unemployment rate in Queensland was 5.9% (compared to a national average of 5.6%).[17,18] The participation rate was high at around 67%. The relatively low unemployment rate and high participation rate suggests a recovery from the Covid-19 pandemic with the unemployment rate. The Queensland and national rates move in a relatively similar pattern, however on average the Queensland rates are slightly higher than the national rates, as shown in **Figure 6**. These rates are relatively stable so do not indicate a significant change in the market.

[17] Queensland Treasury, Labour Force, March 2021, 15 April 2021, p1

[18] The seasonally adjusted rate for Queensland was 5.9% against a 5.6% national average.

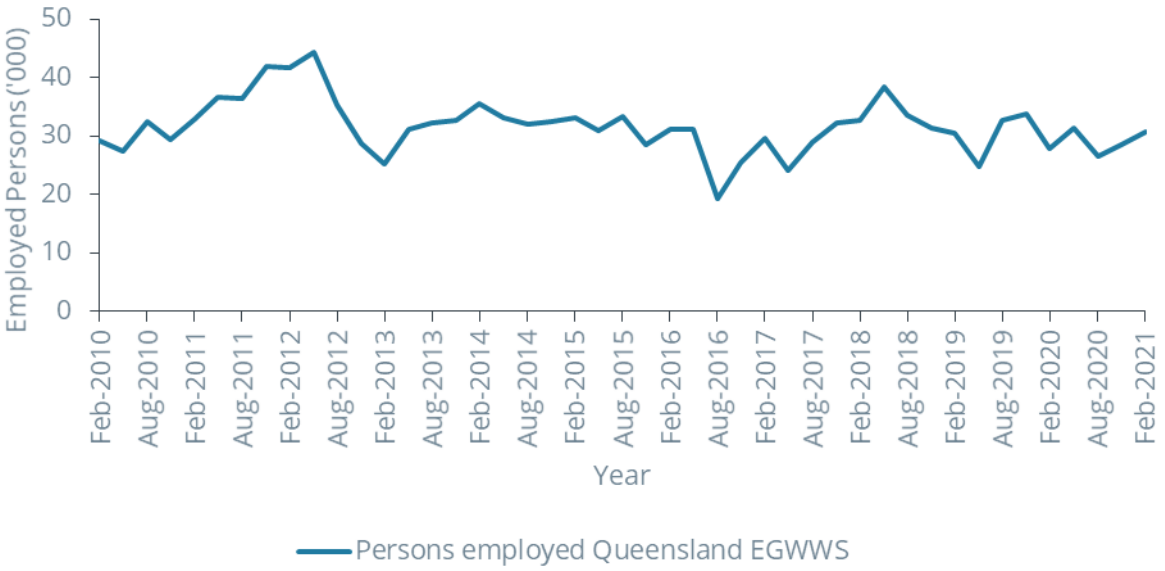
Figure 6: Unemployment and participation rates – Queensland and All Australia



Source: ABS and Frontier Economics

The number of people employed in the EGWWS industry in Queensland has declined over the past decade from 32,900 people to 30,000, which has contributed to the slightly increasing unemployment rate. However, it is important to note that this industry is relatively broad and can experience large and lumpy capital expenditure programs. We expect a material change in the broader labour market over the short to medium term as a result of the Covid-19 pandemic, although due to the essential nature of the EGWWS industries, we expect them to be more stable than the general labour market.

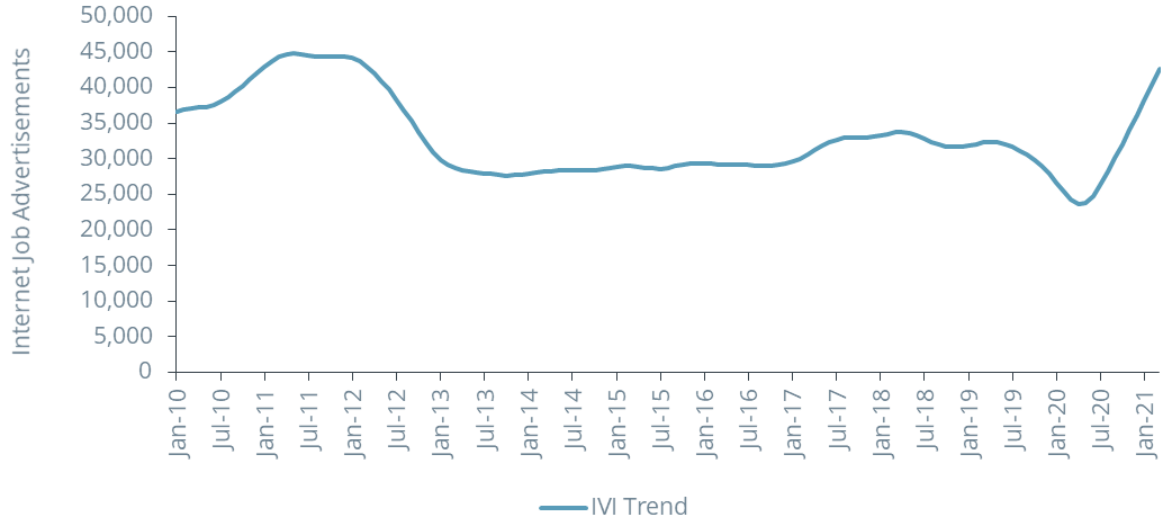
Figure 7: People employed in the EGWWS industry in Queensland



Source: ABS and Frontier Economics

Despite the fluctuating employment in the EGWWS sector, **Figure 8** demonstrates that job advertisements in Queensland have been stable since 2010 with a compound average growth rate (CAGR) of 1.25%.

Figure 8: Internet Job Advertisements (IVI) Trend for Queensland



Source: Australian Government Labour Market Information Portal and Frontier Economics

3.4 Conclusion and recommended escalator for labour costs

Based on the foregoing analysis, we recommend that Seqwater align its proposed escalators to the annual employee and contract labour costs with the timeframe of the available data by adopting:

- The rates specified in the Enterprise Agreement for the remainder of the agreement;

- Thereafter the Queensland Treasury WPI forecast for the remainder of the Budget forecast period (FY24) and
- For the remainder of the period a forecast based on the 10-year historical average of the Queensland WPI.

Applying this approach generates the escalation rates for employee and contract labour expenses, for the period 2019-20 to 2027-28, presented in **Table 3** below.

Table 3: Forecast escalators for employee and contract labour expenses

2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
3.00%	0.20%	4.44%	3.00%	2.25%	2.59%	2.59%	2.59%	2.59%

Source: Frontier Economics

4 Service delivery contractor costs

In addition to employing its own workforce, Seqwater contracts third parties to undertake operational and maintenance services. These contractors are for labour and other services.

To the extent that the contractors are for labour, the cost profile is effectively the same as Seqwater's own employees (see section 3). Indeed, Seqwater applies its Enterprise Agreement to its contractors.

In this section we provide recommended escalators for labour separate to the other services, recognising the different nature of these two sub-categories. We recommend that Seqwater apply these escalators to its split of costs in this category between contactors and other services.

4.1 Our recommendation for escalating contractors (service delivery) costs

Box 3 Frontier Economics' recommended escalators for contracted services

We recommend that Seqwater escalate:

- the labour component by:
  - Seqwater's Enterprise Agreement for its duration plus Seqwater's estimate of the growth in the cost of allowances;
  - Thereafter the Queensland Treasury WPI forecast its forecast period; and
  - Thereafter a forecast using the historic 10-year Queensland WPI until 2027-28.
- the 'other services' component using a market-based forecast of CPI inflation.

Our recommendation for the labour component is consistent with our recommended approach to the employee and labour cost escalator. This is because the Seqwater's Enterprise Agreement also applies to contract labour. The analysis presented in section 3 applies to the labour component of service delivery and, as such, is not repeated in this section.

The remainder of this section focusses on the 'other services' component of the contractors (service delivery) cost category.

Because of the disparate nature of the 'other services' component, we recommend escalating these costs by a general CPI measure. As described above, Frontier Economics' proposed CPI escalator is based on a market-based approach to estimating inflation. Our recommendation:

- Applies a general measure to a category of costs that is disparate in nature, meaning that it is an appropriate measure (objective 1). We have improved the accuracy of measuring CPI by adopting a market-based approach (see section 2).
- Maintains Seqwater's incentives to seek further efficiencies by being based on a benchmark rather than reflecting actual expenses (objective 2).

- Is consistent within the regulatory package (objective 3) – this is because we recommend the use of the market-based CPI for cost escalators and in calculating the real WACC. Further, consistent with our approach to the 'other services' cost category, where there are disparate costs, we have applied a CPI measure.
- Is broadly consistent with the current QCA approach (objective 4) as it applied a CPI measure. However, as discussed above, we recommend a market-based forecast of CPI.
- While the market-based CPI measure is not as transparent and simple as the QCA's current approach, we believe that it is a better forecast of inflation. We propose measures, including publishing the model calculating market-based CPI, as a means to improve the transparency. This balances objectives 1 and 5.

4.2 Possible approaches

4.2.1 QCA current approach

Currently the QCA escalates:

- the labour component by:
  - The Queensland Treasury WPI forecast over its forecast period; and
  - Thereafter a forecast using the historic 10-year Queensland WPI.
- The other services component by its CPI (based on RBA forecasts).

As described in section 3, we generally agree with the QCA's current approach. However, there are two key points of difference between our recommendation and the QCA's current approach:

- We have included Seqwater's current Enterprise Agreement for contractors because Seqwater is obliged to offer its contractors the same conditions as its employees.
- We use a market-based forecast of inflation, as set out in section 2.

4.2.2 Possible alternative approaches

Section 3 considers the issues relating to escalating labour-related costs. The issues relating to the employee and contract labour category are identical to those applying to the labour component of the contractors (service delivery) category. As such, the possible alternatives are not repeated in this section. Instead, in this section we discuss escalating the costs of the 'other services' component of the contractors (service delivery) category.

A forecast based on historic ABS CPI

As explained in section 2, we are in a period of persistent low inflation. As previously discussed, we recommend a forecast based on market data.

A forecast based on historical ABS PPI

The construction costs within this category could be escalated using various construction-based price indices. The PPI has specific indices (building, house, other residential buildings, non-residential buildings, heavy and civil engineering, and road and bridge) for construction costs for each region. While these are relevant to some aspects of Seqwater's business, in the past the QCA

has rejected these approaches because of the lack of relevance to a water business's operating activities.[19] For instance, the QCA has stated:[20]

> *One problem with available indexes, such as the PPI construction cost indexes (referred to by Seqwater), is that they are at best an imperfect match with Seqwater's operating activities. In particular, the building cost indexes used by Seqwater are more closely related to domestic, commercial, industrial and community service building activity than they are to operating and maintaining the civil engineering infrastructure associated with water storage and supply.*

Frontier Economics acknowledges that PPI may be a more accurate measure of changes in 'other services' costs. However, given the challenges associated with developing simple, transparent and accurate forecasts of PPI inflation, for the purpose of this review we recommend the use of CPI to escalate construction costs to align with the QCA's approach in the previous review period (objective 4).

A weighted approach comprising CPI, WPI and a PPI-based construction cost index

Seqwater has previously proposed a weighted approach comprising CPI, WPI and a PPI-based non-residential construction cost index. In the SEQ Bulk Water Price Path 2015-18 Draft Report, Seqwater submitted a combination of indices for materials and services escalation factor which were accepted by the QCA.[21] These were a forecast of the Queensland WPI, forecast of CPI based on RBA estimates, and a 10-year average of the non-residential building construction index for Queensland.

The relevant PPI could be Building Construction (Queensland) or Non-residential construction index (Queensland). Some regulators have not agreed to include a weighting for the fixed or non-residential construction costs, primarily because the construction-based indices are not a good match for assessing operating expenditure of water businesses (they are more aligned to the capital items). We do not consider that there is a compelling, economically sound reason to change this approach. Therefore, we do not recommend this option (objective 4).

4.3 Comparison of alternative escalators

Contractors make up just over a quarter of the total actual operating expenditure in 2019-20 (**Figure 1**) reflecting the large number of services that Seqwater outsources.

The Gold Coast Desalination Plant and the Western Corridor Recycled Water Scheme are two major projects for which Seqwater employs contractors. Additionally, contractors are employed for the construction, repair and maintenance of capital infrastructure (e.g., dams, weirs, conventional water treatment plants, and climate resilient water sources). Furthermore, Seqwater employs contractors for smaller services relating to electrical, mechanical, building and civil maintenance.

[19] Queensland Competition Authority, Seqwater Irrigation Price Review: 2013-17 Volume 1 Final Report, April 2013, p. 206

[20] Queensland Competition Authority, Seqwater Irrigation Price Review: 2013-17 Volume 1 Final Report, April 2019, p. 206

[21] Queensland Competition Authority, SEQ Bulk Water Price path 2015-18, Draft Report, November 2018, p. 54

Seqwater also engage consultants to provide specialised services across areas including engineering, water quality management, IT and project management.

In our view, the factors that are likely to drive changes in the labour component of the cost of service delivery contractors are likely to be similar to the factors that are likely to drive changes in the cost of employee and contract labour. Therefore, we recommend that the labour component of the cost of service delivery contractors be escalated using the same rates as those we recommended in section 3 for the purposes of escalating the cost of employee and contract labour.

We consider that, in principle, the non-labour (i.e., 'other services') component of service delivery contractor costs should be escalated using the PPI rather than the CPI, because the PPI is intended to reflect the input costs faced by businesses, whereas the CPI is intended to reflect general inflation in the cost of goods and services used by consumers. However, given the challenges of deriving simple, transparent and accurate forecasts of PPI inflation, and because the QCA has typically relied on CPI rather than PPI forecasts, we recommend the use of (market-based) CPI inflation forecasts to escalate the non-labour component of service delivery contractor costs.

4.4 Conclusion and recommended escalator for contractors costs

Based on the foregoing analysis, we recommend that Seqwater escalate:

- the labour component by:
  - Seqwater's Enterprise Agreement for its duration plus Seqwater's estimate of the growth in the cost of allowances;
  - Thereafter the Queensland Treasury WPI forecast its forecast period; and
  - Thereafter a forecast using the historic 10-year Queensland WPI until 2027-28.
- the 'other services' component using a market-based forecast of CPI inflation.

Applying this approach generates the escalation rates for the labour and non-labour components of service delivery contractor costs, for the period 2019-20 to 2027-28, presented in **Table 4** and **Table 5**.

Table 4: Forecast escalators for labour component of service delivery contractor costs

2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
3.00%	0.20%	4.44%	3.00%	2.25%	2.59%	2.59%	2.59%	2.59%

Source: Frontier Economics

Table 5: Forecast escalators for non-labour ('other services') component of service delivery contractor costs

2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
-1.00%	4.24%	1.81%	1.89%	2.10%	2.32%	2.38%	2.40%	2.43%

Source: Frontier Economics

5 Chemicals

Seqwater uses chemicals to treat water to bring it to the required standards. As such, chemicals play a crucial role in Seqwater's delivery of bulk water to its customers. However, chemicals represent only a relatively small proportion of Seqwater's operating costs (6%).

5.1 Our recommended escalation for chemical costs

Box 4 Frontier Economics' recommended escalators for chemical costs

We recommend that Seqwater propose to escalate the chemical costs by using Frontier Economics' forecast of CPI.

Our recommendation:

- Maintains Seqwater's incentives to seek further efficiencies by adopting a benchmark rather than reflecting actual expenses (objective 2);
- Is consistent with our proposed approach to inflation for the remainder of the regulatory package (objective 3);
- Is consistent with the current QCA approach. There is not a strong economic rationale to change this approach (objective 4); and
- Recognises that Seqwater's chemical costs represent only around 6% of its operating costs and, therefore, the benefits of consistency with the current regulatory approach outweigh accuracy benefit of a moving to PPI index (objectives 1 and 4).

5.2 Possible approaches

5.2.1 QCA's current approach

Currently the QCA applies a CPI escalator to the cost of chemicals.

5.2.2 Possible alternative approaches

This section sets out and assesses alternative escalators for chemical costs.

PPI

As part of its PPI series, the Australian Bureau of Statistics publishes sub-indices, including a basic chemical manufacturing sub-index, broken into further sub-categories. The most relevant category would be the inorganic chemicals category. While this PPI is derived on a national rather than state basis, we still consider that it would be an appropriate escalator. In its May 2017 decision on the Gladstone Area Water Board's (GAWB) price monitoring, the QCA adopted a PPI instead of a CPI for chemicals (based on advice from its consultants). However, in its February 2020 draft decision on GAWB the QCA applied a CPI escalation.

The significant price volatility in PPI in recent years (see **Figure 9**) means that basing the PPI escalator on historical data may not be an accurate representation of Seqwater's business. As discussed in section 2, as far as we are aware, there are no market-based forecasts of the PPI

inflation (unlike the CPI inflation). Furthermore, macroeconomic PPI forecasting models are complex, not transparent (given that most are proprietary) and prone to large forecasting errors. For these reasons, and because the QCA's current approach is to escalate the cost of the cost of chemical using forecasts of CPI inflation, we recommend a the used of escalation rates derived using market-based forecasts of CPI.

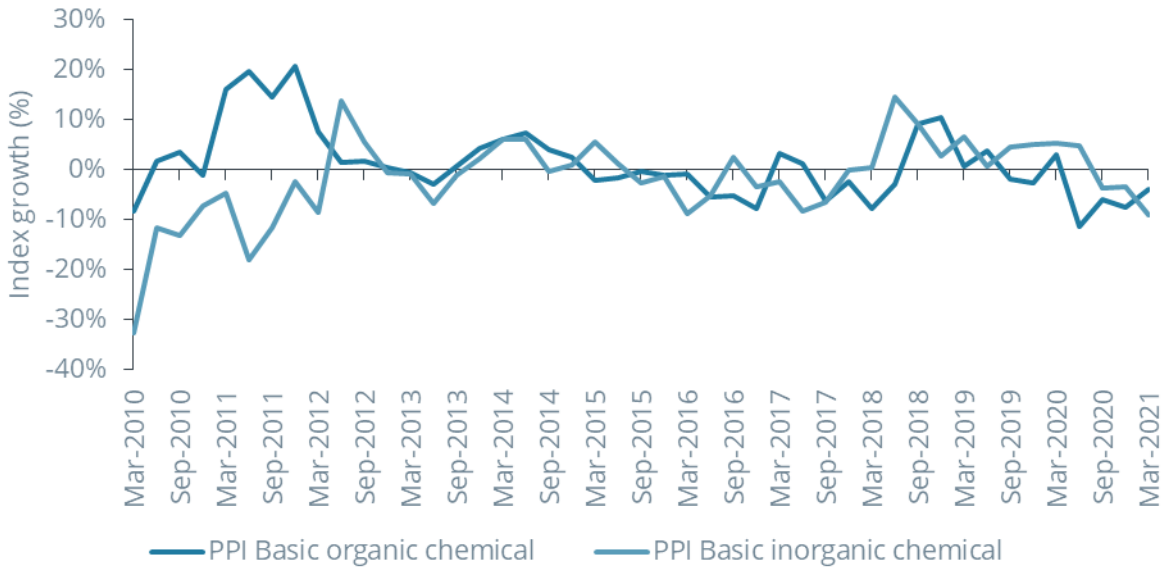
Crude oil forecast

Another possible proxy for the escalation rates applicable to the cost of chemicals inputs are crude oil forecasts. This measure attempts to capture the movement in the underlying market cost of the commodity. However, there is no good readily available indicator for this. As a proxy, GAWB proposed a forecast based on crude oil (prepared by Deloitte Access Economics). However, the QCA's consultants, KPMG, recommended against using this forecast and the QCA adopted a CPI forecast.

5.3 Comparison of alternative approaches

The majority of Seqwater's chemical inputs are inorganic chemicals. **Figure 9** shows the volatile historic relationship between organic and inorganic chemical price indices by comparing year on year growth. Since 2015 the PPI price indices displayed in **Figure 9** have been extremely volatile, fluctuating from 14.4% to -8.8% growth for basic inorganic chemicals, and 10.48% to -11.24% for basic organic chemicals.

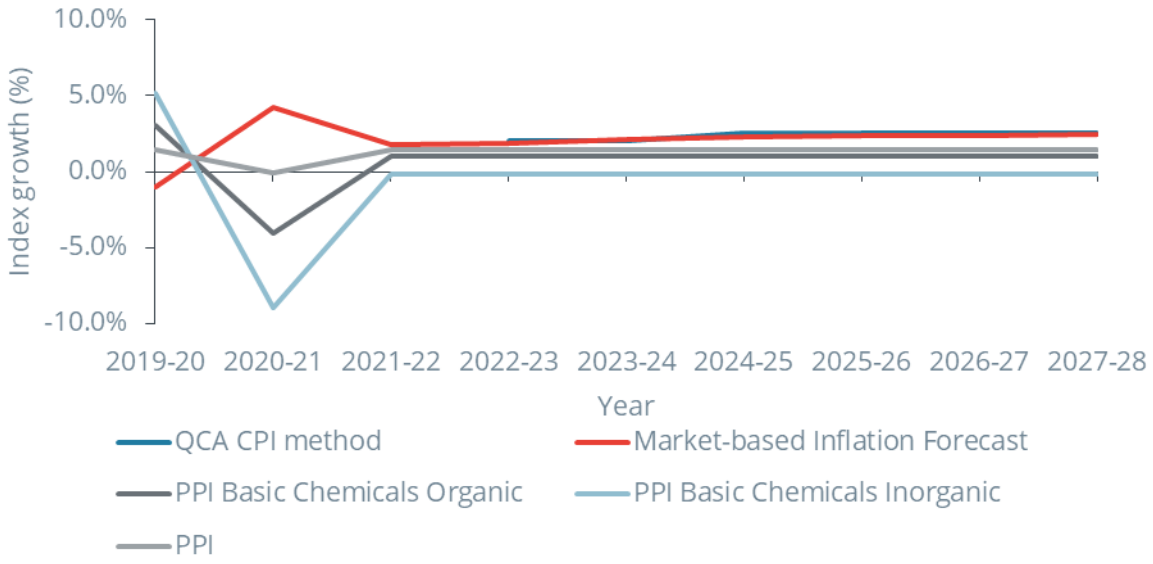
Figure 9: Historical movements in chemical price indices



Source: ABS data and Frontier Economics

Figure 10 presents forecasts of various PPI derived using a 10-year historical averaging approach.

Figure 10: Escalation rates derived using PPI and CPI



Source: Frontier Economics analysis of ABS data

5.4 Conclusion and recommended escalator for chemicals costs

Based on the foregoing analysis, while we consider that there are in-principle better measures that could be used, owing to the practical challenges of developing simple, transparent and accurate forecasts of PPI inflation—and because the QCA currently uses CPI—we recommend continuing the use of forecasts of CPI inflation to escalate chemicals costs. However, we recommend that these forecasts be derived using market data on traded securities, such as inflation swaps. Applying this approach generates the escalation rates for chemicals costs, for the period 2019-20 to 2027-28, presented in **Table 6**.

Table 6: Forecast escalators for chemicals costs

2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
-1.00%	4.24%	1.81%	1.89%	2.10%	2.32%	2.38%	2.40%	2.43%

Source: Frontier Economics

6 Other materials and services

The 'other materials and services' category comprises the remainder of Seqwater's operating expenditure. It includes expenditure such as administrative expenses, property related expenses, operating and maintenance expense (not related to external contractors or internal labour).

Insurance costs are included in this category. Insurance costs have increased substantially in recent years. However, we recommend that Seqwater adopt a 'step change' for insurance costs, and then applies the general CPI escalator for this cost category to insurance costs.

6.1 Our recommended escalation for other materials and services

Box 5 Frontier Economics' recommended escalators for other materials and services

We recommend that Seqwater propose to escalate the other materials and services costs using Frontier Economics' forecast of CPI.

Our recommended CPI escalation rates recognise that this cost category is broad. For such a broad category of costs we consider that CPI is an appropriate general escalator. Therefore, our recommendation for a CPI-based escalator:

- Recognises that CPI offers a reasonable escalator for the broad range of costs, making it reasonably reflect efficient costs (objective 1);
- Retains the incentive for Seqwater to pursue efficiencies to beat the benchmark (objective 2);
- Will apply consistently within the regulatory framework as we recommend that a market-based CPI measure be used for all purposes (objective 3);
- Is consistent with the QCA's current approach and recognises that there is not a strong rationale to move from CPI and offering constancy in approach (objective 4).

6.2 Alternative approaches

6.2.1 The QCA's current approach

Currently the QCA applies a CPI escalator based on RBA forecasts (discussed above) for this cost category, including insurance.

In recent decisions, the QCA has noted that insurance costs have increased materially recently. In its January 2020 final report on rural irrigation prices (2020-24 regulatory period) for Seqwater the QCA applied:

- Actual increases for 2019-20;
- Broker (Marsh) forecast for 2020-21; and

- CPI from 2022-24.[22]

The QCA said:[23]

> *We note changes to insurance premiums are difficult to forecast as they are dependent on conditions in global markets. AECOM's review for this investigation noted evidence to support the view that the insurance market had tightened in the short term, and evidence from Seqwater's insurance adviser Marsh indicated large premium increases in property insurance in the Pacific region. We note that this analysis was undertaken prior to the bushfires on the east coast of Australia in late 2019 and early 2020.*
>
> *As noted in section 2.2.2, we have accepted the actual increase in insurance costs for Seqwater in 2019–20. For 2020–21, we are recommending a 10 per cent increase in insurance costs, consistent with the escalation rate recommended by AECOM for Sunwater that we accepted. Seqwater faces the same insurance market as Sunwater and also uses Marsh as its insurance adviser. For the later years of the price path, AECOM recommend returning to CPI for insurance escalation. We have accepted this approach for Seqwater's insurance cost escalation, noting that we have recommended that Seqwater can recover a material change in insurance premiums that it is unable to manage through an end-of-period adjustment (see Chapter 3, Part A).*

In its February 2020 final decision on GAWB, the QCA applied a Queensland based CPI and added historical insurance growth premium of 3.4% per year.[24] Further, it noted:[25]

[22] Queensland Competition Authority, Rural irrigation price review 2020-24, Part C: Seqwater, Final Report, January 2020, p. 12

[23] Queensland Competition Authority, Rural irrigation price review 2020-24, Part C: Seqwater, Final Report, January 2020, p. 12

[24] Queensland Competition Authority, Gladstone Area Water Board price monitoring 2020-25, Part A: Overview, Final report, May 2020, p. 24

[25] Queensland Competition Authority, Gladstone Area Water Board price monitoring 2020-25, Part A: Overview, Final report, May 2020, p. 39

Given the emerging pressures in insurance markets and the uncertainty of forecasting it is possible that GAWB may need to recover higher insurance costs in future years.

6.3 Conclusion and recommended escalator for other materials and services

Based on the foregoing analysis, we recommend that Seqwater propose to escalate the other materials and services costs using the market-based forecast of CPI presented in **Table 7**.

Table 7: Forecast escalators for other materials and services

2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
-1.00%	4.24%	1.81%	1.89%	2.10%	2.32%	2.38%	2.40%	2.43%

Source: Frontier Economics

We also recommend that Seqwater address its increased insurance costs through a 'step' change and then apply the CPI escalator thereafter, consistent with the QCA's recent approaches.

7 Capital expenditure

Seqwater reviews its capital program on a regular basis. As such, when it compiles its program to submit to the QCA, it needs to rebase the costs to $2019-20. Further, Seqwater will need to escalate the capital forecasts over the forecast period (until 2027-28).

These capital expenditure forecasts for the regulatory period are included in the building block analysis to estimate total efficient costs over the upcoming regulatory period. However, at the start of the next regulatory period QCA will roll forward the regulatory asset base (RAB) to reflect the actual expenditure,[26] rather than the forecast expenditure. Therefore, these escalators will affect prices within the regulatory period only rather than for the life of the assets.

Over the forecast period, there are three main asset groups that will contribute to capital expenditure:

- Water storage;
- Water treatment; and
- Water transport.

7.1 Our recommendation

Box 6 Frontier Economics' recommended escalators for capital costs

We recommend that Seqwater propose to escalate capital costs using:

- Actual CPI where available
- Forecast CPI for remaining forecast period

7.2 Possible approaches

7.2.1 QCA's current approach

The QCA currently applies a CPI escalator, based on the RBA forecasts.

While we generally think that CPI is an appropriate escalator, we consider that the CPI forecasts should be based on market forecasts, as discussed in section 2.

A general CPI inflator is consistent with the previous review, and furthermore the QCA recommended the use of CPI for the recent GAWB price review.[27] In this case, the escalator was based on KPMG's updated CPI inflation forecasts based from Deloitte Access Economics forecasts that were submitted by GAWB.

[26] The Ministerial Referral Notice specifies how the QCA should assess the actual capital expenditure.

[27] Queensland Competition Authority (2020), Gladstone Area Water Board price monitoring 2020-25 part A: Overview, p. 59

7.2.2 Alternative approaches

PPI

The PPI or a subindex (e.g., Road and Bridges for Queensland) could be an appropriate escalator, although the QCA has previously found that it was not particularly relevant for the water industry. For example, in 2011 Allconnex's proposed use of the Road and Bridges PPI for Queensland was accepted by the QCA after highlighting that all factors contributing to the index may not be directly relevant to their water and sewerage business.[28] There was a similar response to Unitywater's proposed use of this index. The QCA accepted Unitywater's proposed escalator but noted that it is somewhat high.[29]

Australian Construction Index Forum forecasts

These are subscription-based forecasts prepared over a 10-year forecast horizon to capture construction and labour projections across all sectors, including major projects, drawing on data from ABS, CoreLogic and other economic analysis.[30] It is available for non-residential building and engineering construction. However, they are not publicly available and, as such, we prefer a CPI based measure.

Queensland Engineering Construction Activity Implicit Price Deflator

The Engineering Construction Activity implicit price deflator has been accepted by QCA in previous Seqwater reviews for historical capital expenditure. This deflator is published up to December 2020 by the ABS. An alternative approach is using this deflator for historical data and then use CPI for the forecast period as recommended by the QCA in Seqwater Bulk Water Price Review 2018-21.[31] However, this measure includes factors that are not directly relevant to a water business.

7.3 Conclusion and recommended escalator for capital expenditure

Based on the foregoing analysis, we recommend that Seqwater propose to escalate capital costs using:

- Actual CPI where available; and
- Forecast CPI (using the market-based method) for remaining forecast period.

Our recommended escalation rates for capital expenditure are presented below in **Table 8**.

Table 8: Recommended escalators for capital expenditure

[28] Queensland Competition Authority, Final Report, SEQ Interim Price Monitoring for 2011-12 Part B – Detailed Assessment, March 2012, p. 156.

[29] Queensland Competition Authority, Final Report, SEQ Interim Price Monitoring for 2011-12 Part B – Detailed Assessment, March 2012, p. 276.

[30] Australian Construction Industry Forum, ACIF forecasts, available at: https://www.acif.com.au/forecasts/forecasts

[31] Queensland Competition Authority, Final Report Seqwater Bulk Water Price Review 2018-21, March 2018, p. 50

2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
-1.00%	4.24%	1.81%	1.89%	2.10%	2.32%	2.38%	2.40%	2.43%

Source: Frontier Economics

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