GAWB's WACC for 2025-30 price monitoring period

A report prepared for GAWB's price submission

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EXECUTIVE SUMMARY

Synergies been engaged by Gladstone Areas Water Board (GAWB) to calculate a preliminary Weighted Average Cost of Capital (WACC) estimate for GAWB for its 2025-30 pricing period.

In doing so, we have had close regard to the contents of the Queensland Competition Authority's (QCA's) Rate of Return Review, Final Report, Version 3 (the QCA's Final Report) and GAWB's current WACC parameter values, especially the asset beta and gearing values.[1]

Our preliminary WACC estimate for GAWB is presented in Table 1 and reflects market data up to 30 April 2024.

Table 1 Synergies' WACC estimate for GAWB at 30 April 2024

Parameters	Values
Nominal risk-free rate	4.31%
Gearing	50%
Corporate tax rate	30%
Gamma	0.484
Cost of Equity	
Asset beta	0.45
Debt beta	0.12
Equity beta	0.78
Market Risk Premium	6.50%
Cost of Equity	**9.38%**
Cost of Debt	
Debt risk premium	1.96%
Debt raising costs	0.10%
Cost of Debt	**6.37%**
WACC Estimates	
Post-tax nominal (vanilla) WACC	**7.88%**

The basis of our parameter estimates are summarised below.

Capital structure (gearing)

Based on our analysis of listed comparators identified in the QCA's Final Report and relevant recent Australian regulatory decisions, we have retained the 50% gearing ratio

[1] https://www.qca.org.au/wp-content/uploads/2020/11/qca_rate-of-return-review_final-report_version-3_2024.pdf

currently being applied in GAWB's 2020-25 pricing period. Based on our comparator review, we consider that gearing ratios of comparable listed entities have not materially changed since the QCA last reviewed them for GAWB.

This gearing ratio is lower than the 60% gearing assumption that the QCA has approved for Seqwater, which we consider is reasonable given GAWB's more concentrated and predominantly industrial customer base.

Cost of equity

We have calculated the cost of equity estimate using the Sharpe-Lintner Capital Asset Pricing Model (SL CAPM) consistent with the QCA's Final Report. This requires estimates of the risk-free rate, market risk premium and beta.

Risk-free rate

Consistent with the long-term time horizon of GAWB's infrastructure investments, we have calculated the risk-free rate based on the 20-day average of 10-year Australian Commonwealth bond yields up to 30 April 2024.

Market risk premium

We have estimated a market risk premium (MRP) by applying the Ibbotson MRP methodology proposed by the QCA in its Final Report. Our MRP estimate applying the Ibbotson methodology is 6.53%, which is very similar to the QCA's most recent estimate of 6.50% for Seqwater.

Beta

In developing our asset beta estimate, we adopted the approach set out in the QCA's Final Report as follow:

- Check previous beta estimate for GAWB.
- Check recent Australian regulatory precedent.
- To the extent possible, use the comparator sample identified in the QCA's Final Report and calculate mean and median beta estimates.

Considering that the QCA applies an asset beta of 0.39 for Seqwater,[2] our first principles analysis indicates that GAWB's more concentrated customer base and industrial

[2] QCA (2022), Seqwater Bulk Water Price Review 2022–26, Final Report, pp 64-65

exposure leads to higher systematic risk, and thus the current 0.45 value denotes a lower bound for the asset beta.

Using the water and energy comparator sample listed in the QCA's Final Report, we estimate mean and median asset beta values of 0.45 and 0.46 respectively. Given this evidence, we do not think that there has been a material shift in the beta estimates that are being applied in GAWB's 2020-25 pricing period.

Our equity beta estimate has been derived from the asset beta by using the Brealey-Myers levering method proposed in the QCA's Final Report. Our debt beta estimate is also estimated in accordance with the QCA's Final Report.

Cost of debt

We have calculated the cost of debt using a trailing average approach for the first time for GAWB with a 10-year transition period as required by the Queensland Treasurer's Referral Notice to the QCA to undertake a price monitoring investigation in relation to GAWB's prices in the 2025-30 period.[3]

Given this is the first year of the 10-year transition period, we have used only the on-the-day rate in our cost of debt estimate of 4.31% for the first year of the 2025-30 pricing period. That is, the on-the-day rate is given a 100% weighting in the first year of the transition period. The cost of debt estimate for each subsequent year of the 2025-30 pricing period will receive a 10% weighting, with the first year's weighting reduced accordingly.

The 10-year transition path for implementation of GAWB's trailing average cost of debt will be half-way complete by the end of the 2025-30 pricing period.[4]

We have estimated debt raising costs in accordance with the QCA's Final Report.

Gamma and tax

We have applied the methodology set out in the QCA's Final Report to estimate gamma, including assuming a statutory tax rate of 30%.

[3] https://www.qca.org.au/wp-content/uploads/2023/12/referral-notice-gawb-14-december-2023_redacted.pdf

[4] The 10 year transition will not be completed until the end of the 2034/35 pricing year.

QCA-compliant WACC

Based on guidance provided by GAWB, we have developed a post-tax nominal vanilla WACC estimate of 7.88% substantially in accordance with the requirements of the QCA's Final Report. We have applied the QCA's approach in calculating cost of equity estimate and made only one divergence in the QCA's approach in calculating a cost of debt estimate as follows:

- As noted above, we have calculated a cost of debt estimate using a trailing average approach with a 10-year transition period, as required by the Referral Notice, rather than the QCA's default position of implementation of the trailing average with no transition period.

Having regard to the way we have calculated GAWB's WACC estimate, the QCA's Final Report notes that if it considers the regulated entity's proposed WACC estimate is reasonable, it is likely to accept it. The QCA provides further guidance on this reasonableness issue as follows:[5]

> For example, suppose a WACC proposal from a regulated entity applies the relevant methods and values set out by us (such as our method for estimating the risk-free rate and adopting our value of gamma) and it also applies the same values for the firm-specific parameters as in previous reviews (such as the same credit rating and gearing). To the extent that there have been no material changes in the overall risk profile and regulatory framework, it may be reasonable to approve such a proposal.

We consider that the WACC estimate for GAWB's 2025-30 pricing period that is presented in this report satisfies the QCA's reasonableness assessment as expressed in the above quote.

[5] QCA (2024), Rate of return review, Final Report, Version 3, pp 21

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Figures and Tables

1 Introduction

Synergies Economic Consulting (Synergies) has been engaged by Gladstone Area Water Board (GAWB) to estimate the weighted average cost of capital (WACC) to apply in setting its prices in the 2025-2030 pricing period.

1.1 QCA's Rate of Return Review Final Report[6]

Since the QCA's price monitoring investigation of GAWB for the 2020-25 pricing period, it has reviewed its approach to setting rates of return for entities subject to price regulation under the Queensland Competition Authority Act (the QCA Act).

Importantly, the QCA's Rate of Return Review Final Report Version 3 (the QCA's Final Report) indicated that its overall approach to estimating rates of return in future will include a streamlined process that it may use if a regulated entity proposes a rate of return it considers is reasonable. In contrast, if it considers a regulated entity has submitted a WACC estimate that is not reasonable, it will determine a rate of return by first estimating a bottom-up value and then assessing its reasonableness by applying a top-down approach.[7]

Any assessment of reasonableness requires the exercise of judgement. In our view, reasonableness in the context of this WACC review for the 2025-30 pricing period should entail having regard to:

- GAWB's forward-looking operational and financial risks, particularly in the context of its investment in the Fitzroy to Gladstone Pipeline (the FGP) and possible investments related to development of a hydrogen hub in the Gladstone region in the next 5 to 10 years.
- The WACC parameter methodologies set out in the QCA's Final Report.
- Recent Australian regulatory precedent regarding regulated water utility WACCs, as well as GAWB's current WACC parameter settings.

1.2 Material changes in GAWB's circumstances in 2025-30 pricing period

The most significant change in GAWB's circumstances looking forward to the 2025-30 pricing period is the significant increase in GAWB's capital program. This includes

[6] QCA (2024), Rate of Return Review, Final Report, Version 3, February

[7] QCA (2024),

construction of the estimated $983 million FGP plus additional expenditure on Awoonga Dam so that it meets the updated Australian National Committee on Large Dams (ANCOLD) and associated dam safety compliance obligations. GAWB is materially increasing its financial risk given the substantial borrowings it will need to undertake to fund the FGP and ANCOLD investments.

Further, at the latter end of the 2025-30 pricing period and beyond, GAWB may also be required to make investments to accommodate expected (but highly uncertain) new water demand from the emerging hydrogen industry in the Gladstone region. This type of investment for GAWB has a very different risk profile to the FGP, ANCOLD and business-as-usual investments, which potentially creates a challenge in setting the WACC.

1.3 Queensland Government's Referral Notice[8]

The QCA's price monitoring investigations of GAWB are undertaken under the QCA Act subject to a Referral Notice received from the Queensland Treasurer.

Amongst other things, the Referral Notice provides guidance to the QCA on matters it must consider in recommending appropriate prices for the 2025-30 pricing period.

In relation to the appropriate rate of return, the Referral Notice for the 2025-30 pricing period states that the WACC should be based on the methodologies outlined in the QCA's Final Report.

Further, in relation to estimating the cost of debt, a 10-year transition from the 'on-the-day' approach to the trailing average approach should be applied consistent with the Australian Energy Regulator's transition arrangements used for regulated electricity transmission and distribution networks.

1.4 Benchmark efficient entity approach

Consistent with Australian economic regulatory practice, the QCA determines WACCs for the entities that it price regulates by using the benchmark efficient entity approach. In other words, its approved WACCs reflect the cost of capital of a benchmark entity with a comparable risk profile to the regulated entity rather than the entity's actual cost of capital.

We have adopted the same approach in determining a WACC estimate for GAWB for the 2025-30 regulatory period.

[8] https://www.qca.org.au/wp-content/uploads/2023/12/referral-notice-gawb-14-december-2023_redacted.pdf

1.5 Report structure

The rest of this report is structured as follows:

- Chapter 2 – discusses GAWB's capital structure.
- Chapter 3 – estimates GAWB's cost of equity (including the risk-free rate, market risk premium and beta).
- Chapter 4 – estimates GAWB's cost of debt, including the introduction of the trailing average approach.
- Chapter 5 – presents the estimate of imputation credits (gamma).

2 Capital structure

The purpose of this chapter is to identify an appropriate long-term benchmark gearing ratio for GAWB based on domestic and international entities with comparable risks and having regard to relevant regulatory precedent.

2.1 Background

The assessment of capital structure (or gearing) in the WACC calculation is based on an assessment of an 'optimal' long-term target capital structure for GAWB given its risk profile and the industry within which it operates. In practice, we see numerous and sometimes disparate factors affecting the capital structure adopted by firms within the same industry (for example, different financing strategies, investment needs, owner preferences, tax treatments).

Of all the WACC parameters, determining the optimal benchmark capital structure is especially imprecise. In theory, we would expect to observe the gearing levels of firms in the same industry to cluster within a range, although in practice this range is often very wide, spanning 50% or more of the possible range. However, the capital structure assumption is based on establishing what the maximum efficient long-term gearing level for the business is likely to be. It is not based on the firm's actual gearing. This ensures that the firm is not rewarded for maintaining an inefficient capital structure.

Over time, we tend not to observe material changes in benchmark gearing levels, particularly for utilities. Hence, we begin by looking at evidence from comparable entities followed by an assessment of relevant Australian regulatory precedent.

The QCA's approved capital structure for GAWB for the 2020-25 price monitoring period is 50%. Consequently, a key part of our analysis is testing whether this level of gearing is likely to remain appropriate given changing financial market conditions and any changes in GAWB's risk profile in the next five years that are reasonably foreseeable and have implications for the 50% gearing level.

2.2 QCA's Final Report

The QCA's Final Report states that it will take the previous regulatory gearing as a starting point, and only depart from this benchmark if there is sufficient evidence of change—considering factors such as regulatory precedent, the entity's risk and analysis of comparators. This approach reflects its view that an entity's gearing is likely to be stable over time.

2.3 Comparable listed entities

Our review of the QCA's energy and water sample indicated that two Australian entities in the sample of 39 entities, Spark Infrastructure and AusNet Services, are no longer listed.[9] Consequently, we started our gearing assessment with the 37 remaining entities in the QCA's sample.

Our analysis of potential comparators identified several more that we considered were likely to have similar risk profiles to GAWB. However, when these were included in our gearing calculations, they did not have a material effect on our mean and median gearing estimates. Consequently, our sample of gearing comparators is based on the 37 entities from the QCA's sample.

Table 2 presents the gearing levels for 37 comparator entities, which range from 14% to 71%. The average and median gearing ratios are 39% and 41% respectively.

Table 2 Listed water and energy utilities gearing summary

Company	Gearing ratio
Alliant Energy Corp	35%
Ameren Corp	37%
American Electric Power Company Inc	40%
APA Group	47%
Avista Corp	42%
Black Hills Corp	44%
Canadian Utilities Ltd	47%
CMS Energy Corp	46%
Consolidated Edison Inc	41%
Dominion Energy Inc	38%
Duke Energy Corp	45%
Edison International	41%
Emera Inc	50%
Eversource Energy	37%
FirstEnergy Corp	52%
Fortis Inc	52%
Idacorp Inc	31%
MGE Energy Inc	19%
National Grid PLC	49%
NorthWestern Corp	41%
PNM Resources Inc	46%

[9] QCA (2024), pp 124-126

Company	Gearing ratio
Portland General Electric Co	42%
PPL Corp	45%
Sempra	37%
Southern Co	41%
WEC Energy Group Inc	32%
Xcel Energy Inc	40%
American Water Works Company Inc	33%
American States Water Co	17%
Artesian Resources Corp	29%
California Water Service Group	26%
Middlesex Water Co	21%
SJW Group	35%
Essential Utilities Inc	28%
York Water Co	19%
Severn Trent PLC	51%
United Utilities Group PLC	56%
Mean	**39%**
Median	**41%**
Maximum	56%
Minimum	17%

2.4 Australian regulatory precedent

Table 2 below shows that 60% is the most frequently applied gearing ratio in Australian regulatory decisions for water utilities. There are two exceptions to this.

First, the QCA has previously adopted a gearing ratio of 50% for GAWB, in part due to the concentrated nature of its customer base and associated demand (see first principles analysis in Section 3.3.3 of this report), as well as its dependence on a single relatively narrow water catchment, which result in GAWB having an elevated risk profile relative to Seqwater (which has a QCA-approved gearing ratio of 60% for regulatory purposes).

In this regard, we note that construction of the FGP, due to be completed in 2026, will provide an additional water catchment for GAWB and in so doing reduce its operating environment risk, such that it could potentially be able to sustain a higher level of debt for a given investment grade credit rating.

However, the concentrated nature of GAWB's customer base is unchanged and further, several of these customers are exposed to rapidly changing market conditions in the Australian energy sector, both from supplier (generation) and manufacturers' electricity

consumption perspectives, which creates higher risks associated with their ongoing demand for water.

Overall, GAWB's operating environment from both the supply and demand sides has changed since the QCA's last price monitoring review. However, viewed holistically, we consider it has not materially changed in terms of risk profile such that a change in gearing level is supported.

Second, Australian economic regulators approved gearing levels for water utilities remain grouped at the 60% level as indicated in Table 3.

Table 3 Recent Australian regulatory gearing decisions for water utilities

Water utility	Regulator	Year	Gearing ratio
Seqwater	QCA	2022	60%
Sunwater	QCA	2020	60%
GAWB	QCA	2020	50%
Various water utilities	IPART	2023	60%
Various water utilities	ESC	2021*	60%
SA Water	ESCOSA	2024	60%
TasWater	OTTER	2022	60%
Icon Water	ICRC	2023	60%

* ESC's gearing decision was to be applied in relation to its 2023 Water Price Reviews.

2.5 Conclusion

Having regard to the evidence from comparable listed entities as well as from regulatory precedent, we consider there are not strong grounds to change GAWB's current benchmark gearing ratio of 50%. This is approximately the mid-point of the most frequently applied gearing level in regulatory decisions (60%) and the mean and median estimates of the QCA's listed comparator set (39% and 41%).

Given that GAWB is exposed to a concentrated and predominantly industrial customer base, a lower gearing ratio could be supported due to the additional equity risk for GAWB arising from this situation.

3 Cost of equity

The purpose of this chapter is to estimate GAWB's cost of equity for the 2020-25 pricing period.

3.1 Sharp-Lintner CAPM

The QCA's Final Report identifies the Sharpe-Lintner Capital Asset Pricing Model (SL CAPM) as its preferred return on equity methodology. The methodology is expressed as follows:

$Re = Rf + \beta e * [E(Rm) - Rf]$

Where:

Rf = the risk-free rate of return

E(Rm) = the expected return on the market

[E(Rm) – Rf] = the market risk premium

βe = equity beta (measures systematic risk)

Each of these components are considered in turn.

3.2 Risk-free rate

The risk-free rate is used to estimate the cost of equity and debt. There are three main decisions to be made:

- the risk-free proxy
- the term to maturity
- the averaging period.

3.2.1 Risk free proxy

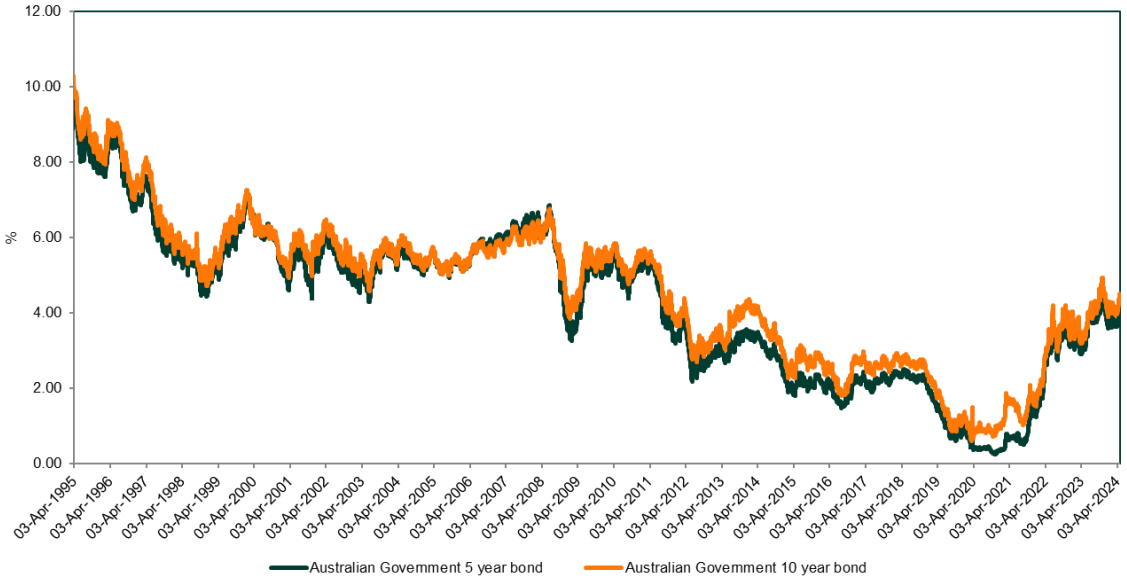
The Australian Government bond yield is generally used as a proxy for the risk-free rate in Australia, including by the QCA. The QCA determines the risk-free rate using an averaging period between 20 and 60 business days on the yields of 10-year Australian Government nominal bonds.[10] We also consider this to be the best proxy for the risk-free rate.

[10] QCA (2024), pp.96

Recent trends in the risk-free rate

Figure 1 shows that the Australian Government 5 and 10 year bond yields have increased significantly since late 2020, reflecting higher inflation expectations in the medium to long term arising from the emergence of strong inflationary pressures in the Australian economy. In response, the RBA tightened monetary policy through several increases in the cash rate, which is currently at a 12 year high of 4.35%. There are signs that CPI inflation has moderated somewhat since the RBA commenced increasing the cash rate, but this has not materially affected 5 and 10 year bond yields.

Figure 1 Australian Government 5 and 10 year Bond movements (Jan-1995 to Apr-2024)



Source: RBA

3.2.2 Term to maturity

The 10-year bond is the longest dated Australian Government debt instrument with high liquidity and readily available data.

For this reason, Australian economic regulators have often used a 10-year term to maturity, recognising network infrastructure is underpinned by investments in assets with long economic lives. This approach is also consistent with the long-term forward-looking horizon over which it is assumed investors are forming their return expectations under the SL CAPM.

3.2.3 Averaging period

In general, corporate finance, academic and regulatory practice is to use short averaging periods close to the date of the commencement of the relevant period (in this case, GAWB's 2025-30 pricing period). This is intended to mitigate problems that may occur if there is a spike in yields on the day that the rate is applied.

Accordingly, for now, we have assumed a 20-day averaging period for the risk-free rate at 30 April 2024 but recognise that this estimate will need updating closer to the start of the 2025-30 pricing period.

3.2.4 Risk-free rate estimate

Based on a 20-day average of the 10-year Commonwealth Government bond yield at 30 April 2024, our preliminary estimate of the risk-free rate for GAWB is 4.31%.

3.3 Market risk premium

The market risk premium is the amount an investor expects to earn from a diversified portfolio of investments (reflecting the market as a whole) that is above the return earned on a risk-free investment.

The key difficulty in estimating the market risk premium arises from it being an expectation and therefore not being directly observable. Whilst it is an inherently forward-looking parameter, the difficulty with observing or inferring it from market data means that there is valuable information about its value in historical data (historical averages of excess returns from the market above the relevant risk-free rate).

3.3.1 QCA's approach

The QCA's Final Report adopts the Ibbotson methodology for estimating the market risk premium. The Ibbotson method assumes that investors use historical excess returns data to determine the achievable future returns.

The QCA notes that the market risk premium calculated using the Ibbotson method will be supplemented by its consideration of a range of current market information to assess whether the overall return on equity requires an adjustment to reflect prevailing market conditions at the time of its relevant pricing decision.

The QCA's Final Report identifies its past use of the Siegel, Wright and survey methods to estimate the market risk premium. Given what it considers to be the limitations of these methods, the QCA notes that it will use estimates from these methods to provide directional guidance when considering the overall cost of equity). However, it will not

use the dividend growth model estimate or the Wright method for directly determining the MRP.[11]

3.3.2 Market risk premium estimate

Synergies' preferred approach to estimating the market risk premium utilises an average of the:

- Ibbotson approach (50% weighting): based on a long-term average of the market return minus the risk-free rate, resulting in a relatively stable market risk premium over time; and
- Wright approach (50% weighting): based on a long-term average of the market return. To calculate the market risk premium, the risk-free rate is subtracted from the market return. As a result, the Wright-based market risk premium increases when the risk-free rate decreases (and vice versa).

These two approaches both use historical market data and sit at each end of a theoretical spectrum. It is our view that the Ibbotson approach generally does not effectively capture the relationship between changes in the risk-free rate and market returns. Since the relationship between investors' expectations about market returns and movements in the risk-free rate is difficult to directly observe but likely falls somewhere between these two theoretical endpoints, we consider that both approaches should be given material weight in estimating the market risk premium.

However, reflecting GAWB's guidance, Synergies has applied the Ibbotson method alone as per the QCA's Final Report to estimate the market risk premium, which results in an estimate of 6.53%.

Our estimate is based on using arithmetic averages to estimate historical returns in accordance with the QCA's approach, noting the QCA's view that this may produce a conservative estimate of historical excess returns.[12]

We consider that use of the Ibbotson method will generate a stable, conservative estimate of the market risk premium for the 2020-25 pricing period given current and prospective economic and equity market conditions, including investor risk aversion and interest rate levels.

[11] QCA (2024), p 65

[12] QCA (2024), p 72

3.4 Beta

There are three key sources of information that can inform the assessment of an entity's systematic risk, namely:

- Benchmark results from comparable entities
- First principles analysis
- Regulatory precedent.

In undertaking an empirical analysis of beta estimates, reference needs to be made to an appropriate set of listed comparator entities for whom asset and equity betas can be estimated.

3.4.1 QCA's approach

The QCA's methodology set out in its Final Report involves a two-step process:

- First, generate industry samples by identifying relevant firms to estimate the asset beta by de-levering observed equity betas of these firms.
- Second, estimate the equity betas for the firms that make up these industry samples using its benchmark efficient entity gearing assumption.

Asset beta estimation

To estimate the asset beta, the QCA's Final Report states that it will assess the risk of the regulated entity using first principles, to determine a sample of comparator firms. It will then screen the same sample to remove both firms that do not have comparable risk to a typical firm operating in the industry sample and those with market capitalisation of less than USD$150 million.

Equity beta estimation

To calculate equity beta values, the QCA's Final Report states that it will use 10-year weekly returns data and de-lever to asset betas using the Brealey-Myers levering formula with a debt beta of 0.12. It will re-lever the asset beta using a regulatory benchmark gearing value to obtain a value for the equity beta.

3.4.2 Benchmark results from comparator entities

As noted in Section 2.2 of our report, the QCA's Final Report identified a sample of water and energy comparator entities that it intends to use as a starting point for its revenue and price determinations for these two sectors.

Synergies has adopted this comparator list except for Spark Infrastructure and AusNet Services, who are no longer listed, which results in a comparator set of 37 entities.

Betas have been estimated based on five years of weekly returns, regressed against the relevant domestic share market index using the Ordinary Least Squares method. To ensure the statistical validity of the sample we also tested if the entities in the comparator set had:

- a t-statistic of greater than 1.96 (we consider this is particularly important in measuring the statistical significance of the beta estimate)
- an R2 greater than 0.1.

All 37 entities in the comparator set satisfied these two tests. If entities had failed these tests, they would have been excluded from the comparator set.

Table 4 presents the asset betas for this comparator set. The asset betas have been de-levered from observable equity betas using the Brealey Myers de-levering methodology that the QCA's Final Report adopts for this purpose.

Table 4 Listed water and energy utilities' asset beta comparator sample

Company	Asset Beta
Alliant Energy Corp	0.49
Ameren Corp	0.43
American Electric Power Company Inc	0.43
APA Group	0.40
Avista Corp	0.42
Black Hills Corp	0.53
Canadian Utilities Ltd	0.46
CMS Energy Corp	0.39
Consolidated Edison Inc	0.31
Dominion Energy Inc	0.40
Duke Energy Corp	0.37
Edison International	0.51
Emera Inc	0.33
Eversource Energy	0.49
FirstEnergy Corp	0.40
Fortis Inc	0.33
Idacorp Inc	0.52
MGE Energy Inc	0.44
National Grid PLC	0.37

Company	Asset Beta
NorthWestern Corp	0.52
PNM Resources Inc	0.45
Portland General Electric Co	0.45
PPL Corp	0.55
Sempra	0.53
Southern Co	0.44
WEC Energy Group Inc	0.44
Xcel Energy Inc	0.41
American Water Works Company Inc	0.58
American States Water Co	0.41
Artesian Resources Corp	0.37
California Water Service Group	0.43
Middlesex Water Co	0.55
SJW Group	0.50
Essential Utilities Inc	0.59
York Water Co	0.59
Severn Trent PLC	0.34
United Utilities Group PLC	0.35
Mean	**0.45**
Median	**0.44**
Maximum	0.59
Minimum	0.31

3.4.3 First principles analysis

The key objective of the first principles analysis is to assess the extent to which the regulated entity's net cashflows (revenues less costs) have some sensitivity to movements in the general economy. Lally identifies several factors to be considered, including:[13]

- nature of the product or service
- nature of the customer
- pricing structure
- duration of contracts
- market power

[13] Lally, M. (2004). The cost of capital for regulated entities, Report prepared for the Queensland Competition Authority

- nature of price and/or revenue regulation (if any)
- growth options
- operating leverage.

The first principles analysis is largely contextual and can inform an assessment of where beta might sit within a range (that is, whether a factor puts upward or downward pressure on the estimated beta for the regulated entity). However, this remains a qualitative assessment. Noting the inherent uncertainty in beta estimation, it is not feasible to reliably quantify the impact of a particular factor on beta in isolation of other factors.[14]

A number of these factors are also interrelated – that is, the impact of one factor on beta could either be increased or lessened by another factor. Hence, while the impact of each factor can be considered in isolation, the overall assessment will reflect the net impact of the factors in combination.

In applying first principles analysis for this report, we have had close regard to the systematic risk profile of Seqwater given it is another water utility regulated by the QCA, and we highlight where its systematic risk exposure is likely to diverge from that of GAWB.

Nature of the service/product supplied and of the customer

These first two factors are inextricably linked and so will be considered together.

GAWB has a primarily industrial customer base, with around 80% of its water volume accounted for by these users. This is a significant source of differentiation from Seqwater, as well as the listed water utility comparators that were available for beta analysis in the previous section. In the case of Seqwater, approximately 75% of water supplied by Seqwater is used for residential purposes (as of 2020[15]).

Among GAWB's largest customers are:

- Two alumina refineries, Queensland Alumina Limited (QAL) and Rio Tinto Aluminium Yarwun (RTAY);
- Two electricity generators, Callide Power Management and CS Energy – Gladstone; and

[14] This would necessitate being able to have two samples, where the firms in the samples are largely identical other than for the relevant factor.

[15] Seqwater 2020 Water Security Program Annual Report, Table 2

- Gladstone Regional Council (serving residential customers).

With regard to the impacts of a concentrated customer base, in the context of the West Moreton system for Queensland Rail, the QCA observed that:[16]

> We view that, all other things being equal, having a smaller number of customers could increase the overall risk profile of a firm. A smaller customer base causes counterparty risk to be diversified across a smaller pool of customers, potentially amplifying the impact on revenue caused by a material decline in customer volumes.
>
> However, we acknowledge that this is only one factor that determines an entity's exposure to systematic risk – other market characteristics, such as the resilience of the customer base, may offset the effect of a small customer base.

At one extreme, a concentrated customer base heightens the prospect of asset stranding risk, which is asymmetric and therefore not compensated through the SL CAPM. However, even moderate economic fluctuations can lead to changes in levels of customer business activity. As a result, it is important to understand the drivers underpinning the industries to which GAWB's customers belong.

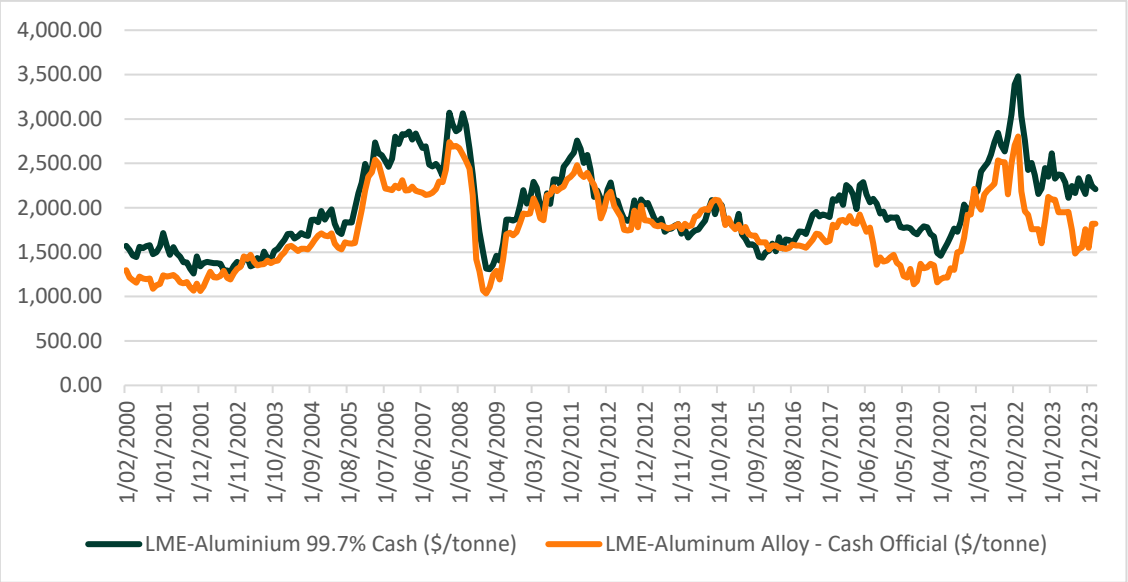
Alumina/Aluminium Industry outlook

Key external drivers for alumina refinement include the exchange rate, electricity prices and demand from aluminium smelters. Large amounts of water are required by alumina refineries to process solutions, generate steam, and recover chemicals by washing.

Figure 2 shows that aluminium prices have fallen dramatically since their 2022 peak. In part, this has been driven by China reducing production of alumina due to environmental concerns.

[16] QCA (2019), Queensland Rail's 2020 draft access undertaking, Draft Decision, April, p142.

Figure 2 Aluminium price (USD/Tonne)



Source: S&P Capital IQ Pro

Although current aluminium market conditions appear to be favourable for Australian producers, recent evidence shows that Gladstone-based producers are sensitive to adverse events. In 2016, QAL conducted several rounds of redundancies in response to deteriorating market conditions, characterised by low alumina prices but high electricity prices.

However, the investment outlook in the sector appears to be strong, with Rio Tinto and Sumitomo having committed to build a $111.1 million hydrogen pilot plant that would use hydrogen instead of natural gas in the calcination process to reduce emissions from the smelter.

Electricity Generation

The two electricity generators that GAWB supplies, Callide Power Management and CS Energy – Gladstone, tend to be less sensitive to commodity market conditions, but nevertheless participate in the National Electricity Market (NEM). These generators are facing increasing competition from large-scale renewable generators entering the NEM, as well as reduced operational demand due to increasing rooftop solar PV.

In its July 2019 Final Report for the NSW Rail Access Undertaking, IPART determined an asset beta of 0.58 for an electricity generation proxy industry (corresponding to an equity beta of 0.9 with 47% gearing). IPART noted that this was well above the beta that it had previously applied for other sectors, including water utilities. This strongly

suggests that a water utility with significant exposure to this sector would face higher systematic risk, holding all else constant.

It should be noted that Callide C Power coal-fired station's two generating units (C3 and C4) have been offline for some time (C3 since an explosion of the generating unit in May 2021 and C4 in October 2022 due to partial collapse of a cooling tower). Both are due back online in the coming months. However, the failure of older generation plant such as these presents clear volume risk to GAWB.

Callide B Power Station is due to close in 2028 and will not be replaced by another thermal generating unit in the region, given the Queensland Government's stated energy policy objectives, including a 70% renewable electricity generation target by 2032. Synergies is unaware of the contractual arrangement that GAWB has with CS Energy. However, the retirement of Callide B will see a significant diminishment of the water demand from the power station. This expected reduction in water demand could conceivably be taken up by existing or new customers, including those in an emerging Central Queensland Hydrogen Hub of which CS Energy is a participant.

Gladstone Power Station (the oldest of the current Queensland fleet) is due to close in 2035. Due to constraints on the Queensland network, there is a strong likelihood that Gladstone will not retire before then due to the electricity requirements of Gladstone, noting there is significant uncertainty around future electricity requirements and potential generation coming online to support any future hydrogen industry in the region.

Overall, it is reasonable to say that demand from Callide Power Management and CS Energy is currently more uncertain than it has previously been given rapidly evolving and fundamental changes occurring in the Queensland energy sector.

Emerging green hydrogen industry in Gladstone region

The emergence of a 'green' hydrogen industry in the Gladstone region in the next 10 years may materially change the water demand situation facing GAWB, including by significantly increasing water demand and diversifying its customer base.[17] The Queensland Government released its Hydrogen Industry Strategy 2019-2024 in May 2019 and Gladstone has been identified as a focal point for the Queensland hydrogen through establishment of the Central Queensland Hydrogen Hub.[18]

[17] 'Green' hydrogen is hydrogen produced by the electrolysis of water, using renewable electricity (eg wind or solar). We are assuming the ultimate Queensland Government policy intent is that the Gladstone-based hydrogen industry is 'green' rather than using existing fossil fuel-based methods of producing hydrogen.

[18] https://www.statedevelopment.qld.gov.au/__data/assets/pdf_file/0018/12195/queensland-hydrogen-strategy.pdf

However, in our view, the scope for green hydrogen to become a major new water demand source for GAWB is highly uncertain given its current early stage/emerging industry status. This uncertainty primarily relates to the significant water-related and hydrogen industry infrastructure investments that will be required to support the emerging industry, uncertainty about the most efficient hydrogen use cases and the Australian and international competition for public and private funding of hydrogen projects.

Water security

In terms of water supply, Lake Awoonga is currently the only available source for GAWB to deliver water to customers. However, the construction of the FGP will change this situation from its expected commissioning in 2026, providing greater water security for GAWB's existing customers. However, weather risk is generally treated as non-systematic in nature as it tends to be uncorrelated with most forms of domestic economic activity.

Further, in a 2010 report to the QCA, Marsden Jacob Associates (MJA) found that customers universally require high water reliability supplies and, as a result, have no interest in GAWB providing multiple products defined by customers' required levels of service.[19] This suggests the majority of GAWB's users would not be able to absorb reductions in water volume. This could only be accommodated by reducing their output, which could lead to an inability to cover costs.

MJA also found that the level of service quality differentiation between GAWB's customers was narrower than what had been observed in irrigation supply schemes, where differentiated products were more widely accepted. MJA's analysis uncovered only marginal evidence of differences in desired service levels among GAWB's customer base, with some exhibiting a potential willingness to consider trading small volumes of their allocations with other customers.

While the MJA work was completed over a decade ago, we consider that its findings are still likely to be relevant to GAWB's existing customer base given it has not fundamentally changed over this period.

Duration of water supply contracts

We understand that GAWB's customers can enter into short- or long-dated contracts (i.e. from 1 year to greater than 20 years).

[19] QCA (2010). Gladstone Area Water Board: Investigation of pricing practices, Final Report, June, p.47.

Further, GAWB's commercial arrangements provide weaker revenue protection compared to the take-or-pay contractual arrangements typically used for port or rail infrastructure.

There are also risks surrounding contract renewal over the medium to long term. Even during the term of a contract, GAWB's ability to recover revenue relies on the continued viability of industrial customers, whose profitability is generally correlated with domestic economic activity. Clearly, this distinguishes GAWB from conventional metropolitan water networks, such as Seqwater, whose more diversified customer base is dominated by residential demand that is less sensitive to domestic economic activity.

Market power

The existence of market power will have a mitigating effect on systematic risk. This assumes that where a firm possesses market power, it can exercise that power to its advantage. This in turn is a function of considerations such as the degree of market power held, including due to availability of alternative supply sources, the number of buyers in the market and the extent to which those buyers can exert countervailing power in negotiations regarding supply.

As the only supplier of bulk water in the Gladstone region, GAWB possesses market power, including because there are no viable alternative sources of water for GAWB's customers. However, it is also the case that many of GAWB's industrial customers are large and well-informed consumers of water such that they are likely to be able to exert countervailing power in negotiations with GAWB regarding the terms of their water supply.

Further, the existence of market power does not mitigate GAWB's systematic risk exposure any more than it does for the listed water utilities or Seqwater.

Pricing structure

GAWB's prices are set at the start of each pricing period and reflecting its contracts with water customers, must subsequently be increased annually by CPI for the remainder of the period. This framework limits the ability of GAWB to adjust its prices in response to changes in short-run economic conditions. Holding all else constant, this will have the tendency to increase systematic risk exposure, if the inability to adjust prices causes revenue to fluctuate more than would otherwise be the case.

This contractual issue is linked to the form or regulation applied to GAWB which results in its part exposure to water volume risk. This is discussed further in the next section.

Form of price and/or revenue regulation

The QCA has previously contended that the presence of economic regulation, including revenue caps, reduces systematic risk.[20] Whilst we accept that there are some scenarios where this may be the case, these are less applicable to GAWB and its systematic risk profile. GAWB is subject to price monitoring, in contrast to Seqwater, which is subject to deterministic price regulation.

Under GAWB's current regulatory framework, it receives some protection for revenue fluctuations, such that it can carry forward annual revenue variances compared to QCA-approved forecasts that are more than 10% of total revenue to the next pricing period (indexed at WACC recognising the time value of money). In other words, GAWB bears volume risk within this 10% 'deadband', but not beyond it as variations above the 10% 'deadband' are borne by customers.

However, given GAWB's concentrated industrial customer base and the relatively large water consumption of these customers relative to total water supplied, it is not certain that in the event of one or two large customers ceasing operations and disconnecting their water supply, GAWB would be able to fully recover its costs from all remaining customers.

As discussed above, the emergence of a green hydrogen industry in the Gladstone region could increase water demand and somewhat mitigate GAWB's current exposure to a concentrated industrial customer base, which would more strongly support its future revenue recovery. However, the potential size and timing of this mitigation possibility is highly uncertain at this stage such that it appears highly unlikely that hydrogen will mitigate GAWB's revenue recovery risk in the 2025-30 pricing period.

Finally, it is very difficult to reliably estimate the impact of these two different forms of economic regulation on systematic risk, including identifying appropriate beta comparators and then isolating the form of regulation impact for analytical purposes.

Investment options

Investment options refer to the potential to undertake significant new capital expenditure, particularly in new service areas or products. It is argued businesses that have several valuable investment opportunities in addition to their existing services/products will tend to have higher systematic risk compared to firms that have limited investment options. In the water utilities sector, these opportunities may be targeted to accommodate increased demand or to improve drought resilience.

[20] QCA (2022), Seqwater Bulk Water Price Review 2022–26, Final Report, March, p 61

As discussed above, in the next 5 to 10 years, it appears that GAWB's investment in the FGP will enhance risk mitigation in terms of water supply to its existing customer base. In contrast, the potential need to invest in projects related to the emerging hydrogen industry are likely to materially increase its systematic risk. Indeed, our view is that the risk profile of any hydrogen investments that GAWB may make in the next decade will have a materially higher risk exposure than its business-as-usual investments. In this regard, we do not believe that the WACC estimate that we have developed for GAWB's 2025-30 pricing period would be an appropriate one for hydrogen-related investments.

Operating leverage

Operating leverage is expressed as the proportion of fixed costs relative to total costs of an entity. Other things remaining equal, the greater the proportion of the costs that are fixed, the higher the beta of the entity because it will increase the volatility of a firm's returns relative to the market.27

When compared with the listed comparator water utilities that we have identified, as well as Seqwater, it is unclear whether GAWB's operating leverage would consistently differ materially from these entities given the capital-intensive and long life nature of water storage and distribution service provision.

However, there are instances where GAWB may exhibit higher operating leverage than comparable water utilities. For example, the establishment of water connections to the LNG facilities at Curtis Island is an example of a project with high fixed costs to a concentrated customer base, which may be atypical among water utilities with a stronger residential focus. However, overall, the differences in nature of customer base will only marginally manifest themselves through differences in operating leverage given the overriding capital-intensive nature of water service provision.

Conclusion from first principles analysis

Based on the above analysis, we consider that an asset beta equivalent to Seqwater (or equivalent entities) is not commensurate with the systematic risks that GAWB faces in the delivery of water services to its customer base because:

- GAWB has a highly concentrated industrial customer base, which has been shown to be sensitive to commodity market conditions, with forecast electricity generation plant closures over the 2025-30 pricing period.
- There are no other aspects of GAWB's services or operations that decrease its systematic risk exposure relative to Seqwater, or to the listed water utilities in the comparator set.

- The development of the FGP provides additional water security for GAWB's existing customers but does not mitigate the concentrated nature of its industrial customer base, including its exposure to a rapidly and fundamentally changing NEM.
- GAWB's future exposure to the emerging hydrogen industry in the Gladstone region is far more likely to increase its systematic risks than reduce them, such that we consider a higher rate of return would be appropriate for any such future investments.

Therefore, based on these observations, we consider that Seqwater's current asset beta of 0.41 forms at best a lower bound for GAWB's asset beta, such that the current approved 0.45 estimate for GAWB remains reasonable and should be retained for the 2025-30 pricing period.

3.4.4 Regulatory precedent

Table 5 presents recent Australian regulatory precedent regarding equity betas approved for water utilities. The equity beta range extends from 0.65 to 1.0, with GAWB's current approved equity beta estimate being 0.73.

Table 5 Recent Australian regulatory equity beta decisions for water utilities

Water utility	Regulator	Year	Equity beta
Seqwater	QCA	2022	0.766
Sunwater	QCA	2020	0.755
GAWB	QCA	2020	0.73
Various water utilities	IPART	2023	1.0
SA Water	ESCOSA	2024	0.67
TasWater	OTTER	2022	0.65
Icon Water	ICRC	2023	0.7

Note: ESC is not included in this table because the assumed beta in the allowable cost of equity is linked to the level of ambition expressed in a water utility's price submission to ESC and its value is not transparent.

Relatively small differences in the equity betas applied by other economic regulators compared to the equity beta applied for GAWB shown in Table 5 are mainly driven by financial risks reflected in GAWB's gearing of 50% compared to the 60% gearing applied to the other water service providers (refer Table 3).

Recent Australian regulatory precedent does not provide strong support for a material change in GAWB's equity beta for the 2025-30 pricing period.

3.4.5 Conclusion on asset and equity betas

Our analysis of 37 listed energy and water utilities, based on the QCA's sample of water and energy comparator entities, resulted in mean and median asset betas of 0.45 and 0.44 respectively. This quantitative analysis was supplemented by a first principles analysis, which qualitatively identified risk factors that suggest GAWB's beta should be higher than that of a conventional water utility, such as Seqwater, with a significant residential customer base. We also reviewed the range of equity beta estimates recently approved by Australian economic regulators.

This analysis indicates that there is no compelling evidence to support a departure from GAWB's beta estimates currently used to determine its prices. Hence, we have applied an asset beta of 0.45 for the purpose of our WACC estimate, which corresponds to an equity beta of 0.78, assuming a debt beta of 0.12 and 50% gearing level.

3.5 Conclusion on cost of equity

We have calculated a cost of equity estimate of 9.38% for GAWB's 2025-30 pricing period based on the QCA's Final Report's cost of equity methodology, using end-April 2024 data for the risk-free rate and beta estimates.

4 Cost of debt

The purpose of this chapter is to estimate GAWB's cost of debt for the 2025-30 pricing period.

4.1 Background

The cost of debt calculation generally being applied in Australian economic regulation can be expressed as follows:

Rd = Rf + DRP + DRC

Where:

Rf = risk-free rate

DRP = debt risk premium

DRC = debt raising costs

In applying the above cost of debt formula, there are several underlying assumptions that are required including:

- debt management approach
- risk-free rate
- term to maturity
- notional credit rating assumption
- method used to estimate the debt risk premium (DRP)
- debt raising costs.

Each of these assumptions is explained in this chapter following our summary of the QCA's approach to estimating the cost of debt.

4.2 QCA's Final Report

The QCA's approach to estimating the cost of debt is set out in its Final Report as follows:[21]

[21] QCA (2024), p 33

- Reference a benchmark efficient entity as opposed to the actual debt costs of the regulated entity.
- Apply a trailing average as the benchmark debt management strategy.
- Base the data source for the cost of debt on 10-year corporate bond yields reported by the RBA but consider the credit rating benchmark for entities on a case-by-case basis at the time of their next review.
- Use an unweighted (simple) 10-year trailing average, applied to the entire cost of debt, with annual debt tranche refinancing.
- Not require transition arrangements to implement the benchmark trailing average debt management strategy, in accordance with a forward-looking regulatory approach, except in exceptional circumstances.
- Apply debt-raising costs of 10 basis points per annum for the trailing average approach.

4.2.1 Referral Notice

The Referral Notice for GAWB's 2025-30 pricing period states that the QCA should apply the trailing average cost of debt approach but implement it with a 10-year transition period (like that applied by the AER when implementing the trailing average approach for regulated electricity and gas networks).

This requirement is different to the QCA's Final Report, which does not require transition arrangements to implement the benchmark trailing average approach except in exceptional circumstances.

GAWB has not previously been subject to the trailing average approach to estimate its cost of debt.

4.3 Debt management assumption

Given the QCA's Final Report and the Referral Notice propose somewhat different approaches to applying a trailing average approach for the first time to estimate the cost of debt, our approach is to estimate GAWB's cost of debt mainly as per the QCA's Final Report, but with an implementation transition period of 10 years as required in the Referral Notice.

Given GAWB's current investment in the FGP and potential hydrogen-related investments in the backend of the 2025-30 pricing period, it is expecting to incur additional debt funding although the quantum of this increase in debt is uncertain. This

suggests that use of a trailing average approach with transition period is likely to be a better proxy for its debt funding strategy and associated costs than a trailing average approach without transition period.

4.3.1 Implementing the trailing average approach with 10-year transition period

In practice, the 10-year transition period means that for the first year of implementation of the trailing average approach, the current (on-the-day) risk-free rate is given a 100% weighting in its calculation.

The risk-free rate applying in each subsequent year up to the 10th year, will receive a 10% weighting with the weighting applied to the first year risk-free rate reducing in line with each additional year added to the trailing average calculation. The 10-year transition period in implementing the trailing average cost of debt will be completed in GAWB's 2034/35 pricing year.

We have applied the same risk-free rate value of 4.31% in estimating the cost of debt as used in estimating the cost of equity. As discussed in Section 3.2 of our report, the risk-free rate estimate at 30 April 2024 is 4.31%.

Applying a weighted average rather than simple trailing average approach

As noted above, the QCA's preferred approach is to apply a simple 10-year trailing average to estimate the cost of debt, primarily on the grounds that it is relatively simple to administer and it is consistent with Australian regulatory precedent.

However, given GAWB's investment in the FGP will require a structural increase in GAWB's debt funding in the 2025-30 pricing period due to it materially increasing the size of GAWB's regulatory asset base, applying a simple trailing average approach will not accurately capture this change.

We agree with the QCA that a weighted trailing average approach would be more complicated to administer but consider that the material change in GAWB's debt financing circumstances in the 2025-30 pricing period warrants its use.

In terms of the form that a weighted trailing average approach could take, we understand that QTC will be making a submission to the QCA explaining a relatively straightforward way that this approach could be calculated by GAWB.[22] Consequently, we have not proposed a form of weighted trailing average in this report.

[22] QTC previously presented this approach to the AER as part of the latter's 2022 Rate of Return Instrument review process.

4.4 Debt Risk Premium

Applying the standard regulatory approach to estimate the cost of debt, a debt risk premium based on the assumed credit rating of corporate bonds issued by the regulated entity must be estimated.

4.4.1 Term to maturity

The QCA's Final Report requires that the data source for the cost of debt should be based on 10-year corporate bond yields reported by the RBA. We have used this data in estimating GAWB's cost of debt estimate.

4.4.2 Notional credit rating assumption

The QCA's Final Report notes that it will consider the credit rating benchmark for entities on a case-by-case basis at the time of the relevant price review.

The QCA has previously assumed a BBB benchmark credit rating for GAWB. This is a frequently applied benchmark for Australian water utilities given it is an investment grade credit rating. IPART, the ESC and ESCOSA all assume a credit rating of BBB for the entities that they regulate.

We have not uncovered any evidence that would suggest a change in this benchmark credit rating is required. Accordingly, and consistent with our risk-free rate calculation for the cost of equity, we have assumed a 10-year term to maturity for BBB corporate bonds, the longest available tenor (with appropriate liquidity) in an Australian context.

4.4.3 Debt risk premium estimation

Applying the standard regulatory approach to estimate the cost of debt, a debt risk premium based on the assumed credit rating of corporate bonds issued by the regulated entity must be estimated.

Under the QCA's cost of debt approach, the debt risk premium is estimated based on the difference between the yield on ten-year BBB corporate bonds and the risk-free rate (averaged over the same 20-day period).

The key issue is the data source and methodology used to estimate the 10-year BBB corporate bond yield. The QCA noted in its Final Report that the cost of debt data source should reflect 10-year corporate bond yields reported by the RBA. The QCA also noted that it did not consider it appropriate to use proprietary data sources or in-house models

in the interests of relying on data sources that are publicly available, robust, transparent and replicable.[23]

Given the QCA's position about use of proprietary data sources, we have estimated the debt risk premium using corporate bond yields reported by the RBA. However, there are two issues that need to be addressed in the use of the RBA's data:

- *Average tenor less than ten years*: to the extent that the 'ten year' estimate reflects an average bond tenor of less than ten years, it is not a ten year estimate. Accordingly, it should be extrapolated to a 10-year estimate. We have applied the QCA's linear extrapolation approach discussed further below.
- *Single day end of month estimate*: as the estimates are currently only produced on the last day of each month, there is a risk that this day was 'atypical' or influenced by a one-off event or perturbation in the market. Based on our review of the RBA's reported corporate bond data, we do not consider the end-March and end-April 2024 estimates to be atypical.

We understand from the QCA's Final Report that it applies linear extrapolation of the RBA's yield estimates for the 7- and 10-year effective tenors to determine the estimate for an exact 10-year tenor. To determine the rate for the first year of GAWB's transition period of its trailing average commencing in 2025-26, we have also applied a linear interpolation to daily bond rates published for 31 March 2024 and 30 April 2024 to determine daily rates, which can then be applied to calculate a 20-day average.

After applying linear extrapolation to the data explained above and based on a 20-day average up to 30 April 2024, we have calculated an estimate of the debt risk premium for a BBB rated corporate bond with a 10-year tenor of 1.96%.

4.5 Debt raising costs

The QCA's Final Report applies debt-raising costs of 10 basis points per annum in estimating the cost of debt.

We have adopted this approach in estimating GAWB's cost of debt for GAWB's 2025-30 pricing period.

[23] QCA (2024), p 42

4.6 Conclusion

We have calculated a cost of debt estimate for GAWB's 2025-30 pricing period based on implementation of the trailing average approach with a 10-year transition period as required by the Referral Notice.

This results in a trailing average cost of debt estimate of 6.37%, which comprises a risk-free rate of 4.31%, debt risk premium of 1.96% and debt raising costs of 0.1%.

5 Gamma

Gamma (γ) is the value of imputation credits to investors in a business, where some part of corporate tax paid by this entity can be claimed as a tax credit against personal income tax. To the extent it can be accessed by investors, it forms part of the assumed equity return to investors.

Gamma is the product of two inputs which must be estimated:

- the proportion of tax paid that has been distributed to shareholders as franking credits (the distribution rate); and
- the value the marginal investor places on $1 of franking credits, referred to as the value of distributed franking credits (or theta).

Gamma must take a value between zero and one depending on the assumptions made regarding the distribution rate and theta.

5.1 QCA's Final Report

Consistent with Australian economic regulatory practice, the QCA calculates its gamma estimate as a function of the:

- distribution rate—the ratio of distributed imputation credits to company tax paid; and
- utilisation rate (theta)—the rate at which distributed imputation credits are used by investors in the market.

The QCA estimates the distribution rate based on the average distribution rate of relevant firms from the 50 largest (by market capitalisation) ASX-listed firms. It estimates the utilisation rate based on the equity ownership of Australian-listed companies, using ABS data.

The QCA's gamma methodology results in a current gamma estimate of 0.484, based on a distribution rate of 0.88 and a utilisation rate of 0.55.[24]

5.2 GAWB's guidance to Synergies

GAWB has advised Synergies that the gamma estimate we develop for the purpose of the 2025-30 pricing period should be in accordance with the QCA's Final Report.

[24] QCA (2024), p 101

Consequently, we have not undertaken any further analysis in relation to estimating gamma in this report.

We note that given the QCA's use of a post-tax vanilla WACC estimate in its revenue modelling framework, the gamma estimate does not directly affect the WACC estimate, but rather will be reflected in GAWB's tax building block revenues, as well as affecting its expected post tax return on equity for the 2025-30 pricing period.

5.3 Conclusion

We have adopted a gamma estimate of 0.484 in accordance with the QCA's Final Report.