

6 September 2022

Mr Steve Edwell
Chair
Economic Regulation Authority
Level 4, Albert Facey House
469 Wellington Street
Perth WA 6000

Dear Mr Edwell

Re: Draft Rate of Return Instrument Consultation

Thank you for the opportunity to respond to the Draft 2022 Rate of Return Instrument dated 17 June 2022 and the Independent Panel's report published by the ERA on 24 August 2022. This letter outlines a submission from ATCO Gas Australia (ATCO). Our detailed response to the Draft Rate of Return Instrument can be found in Attachment 1.

ATCO supports the continued adoption of the hybrid trailing average method, as detailed in the Draft Rate of Return Instrument, to estimate the cost of debt. However, to mechanistically calculate the debt risk premium (DRP) the 2022 Rate of Return Instrument must incorporate the DRP Methods tools.

On the cost of equity, ATCO consider that further refinement is required before the ERA finalise the 2022 Rate of Return Instrument. In summary, our submission on the cost of equity includes:

- **Term for the cost of equity** - ATCO supports the 2022 Rate of Return Instrument adopting a 10-year term for the equity risk free rate because it better reflects investors' long term investment horizons.
- **Market risk premium (MRP)** – The estimate of MRP could be improved by: 1) estimating the historical MRP average by placing 100% weight on the arithmetic averaging method and 0% weight on geometric averaging; 2) placing explicit weight on the dividend growth model; and 3) calculating the MRP mechanistically at the time of each Access Arrangement decision so as to respond to changes in market conditions.
- **Beta** – ATCO supports the 2022 Rate of Return Instrument adopting international data to estimate beta. However, the estimate of beta could be improved by: 1) revisiting the decision to round down from 0.77 to 0.7; 2) using 10 years of data instead of departing from standard practice of estimating beta based on 3-5 years of historical returns; 3) and avoiding the use of data for delisted comparator which are not relevant to future returns.

If you have any questions or would like to discuss any of these matters further, please contact me or Hugh Smith, General Manager Regulation and AA6 Lead.

Yours sincerely



John Ivulich
Chief Financial Officer

Attachment 1: ATCO Submission



ATTACHMENT 1: ATCO SUBMISSION

DRAFT 2022 RATE OF RETURN INSTRUMENT

GAS DIVISION

06/09/2022

Contents

| | | |
|-----|---------------------------------------|----|
| 1. | INTRODUCTION | 1 |
| 2. | AVERAGING PERIOD PROCESS | 3 |
| 3. | GEARING | 5 |
| 4. | RETURN ON DEBT | 6 |
| 5. | TERM FOR EQUITY | 9 |
| 6. | PROXY FOR EQUITY RISK FREE RATE | 14 |
| 7. | MARKET RISK PREMIUM | 15 |
| 8. | BETA..... | 24 |
| 9. | DEBT RAISING AND HEDGING COSTS | 31 |
| 10. | INFLATION..... | 35 |
| 11. | GAMMA | 37 |

1. INTRODUCTION

ATCO welcomes the opportunity to respond to the Economic Regulation Authority's (ERA) Draft 2022 Rate of Return Instrument dated 17 June 2022 and the Independent Panel's report published by the ERA on 24 August 2022.

1.1 Overview

ATCO's response to the Draft 2022 Rate of Return Instrument and Independent Panel report is summarised in the following table:

Table 1.1: Summary of ATCO's response to the Draft Rate of Return Instrument

| Parameter | Summary of ATCO's response |
|---------------------------------|--|
| Nominal Modelling | ATCO acknowledges the ERA's position that the application of the rate of return framework on a nominal basis in the revenue modelling framework is a matter for ATCO's upcoming AA6 submission. |
| Averaging period process | ATCO does not support changing the debt risk premium averaging period from 2 months to 3 months prior to the end of the calendar year. |
| Gearing | ATCO supports the continued use of 55% gearing. |
| Term of the WACC | <ul style="list-style-type: none">• ATCO supports the ERA adopting a 10 year term for the equity risk free rate because it better reflects investors' long term investment horizons.• ATCO supports the five year term for the debt risk free rate and the forecast of inflation. |
| Inflation | ATCO supports the continued use of the Treasury bond implied inflation approach. |
| Return on debt | |
| Risk free rate of return | ATCO supports use of the bank bill swap rate for the risk free rate. |
| Benchmark credit rating | ATCO supports the BBB+ credit rating |
| Debt risk premium | ATCO supports the continuation of the 10 year hybrid trailing average method |
| Debt raising costs | ATCO acknowledges the ERA re-estimation of debt raising costs but believes there are additional costs to include. |
| Return on equity | |
| Risk free rate of return | ATCO supports continuing to use Commonwealth Government Securities for the risk free rate |
| Market risk premium | <ul style="list-style-type: none">• ATCO does not support the ERA's approach to MRP and believes the following changes are required to reach appropriate MRP estimates.• Historical MRP - the ERA must place 100% weight on the arithmetic averaging method and 0% weight on geometric averaging, which is a biased estimator of the market's forward-looking expectations.• Forward estimate – the ERA must place explicit weight on the DGM. The DGM is important because it provides a forward-looking estimate of the MRP. |

| Parameter | Summary of ATCO's response |
|-------------|---|
| | <ul style="list-style-type: none"> • Calculation timing –ATCO supports the MRP and RFR being calculated mechanistically at the time of each Access Arrangement decision so as to respond to changes in market conditions. |
| Equity beta | <p>ATCO supports the inclusion of international data. There is very little current evidence on beta from the Australian market. Therefore, it is necessary to look internationally to avoid relying on out-of-date Australian data.</p> <p>The estimate of beta in the final instrument could be improved by reconsidering:</p> <ul style="list-style-type: none"> • the decision to “round” 0.77 to 0.7 • the determination to depart from standard practice of estimating beta based on 3-5 years of historical returns to use 10 years of data instead. This change is especially inappropriate if the rationale is to minimise the impact of financial shocks, given that the ERA is already using LAD to remove the impact of outliers. • use of data for delisted comparators, which are not relevant to future returns. |
| Gamma | ATCO accepts that the ERA has considered additional information from the Australian Taxation Office (ATO) as part of its assessment of gamma. |

1.2 Document structure

This document details ATCO's submission in response to the Economic Regulation Authority's (ERA) Draft 2022 Rate of Return Instrument and the Independent Panel's report on the Draft Instrument. This document is structured to be in the same order as sections 7 to 13 of the ERA's 2022 Draft Gas Rate of Return Instrument Explanatory Statement.

2. AVERAGING PERIOD PROCESS

2.1 Summary of ATCO's prior submission

ATCO's February 2022 submission supported the ERA's proposed standardised averaging period process, including extending the averaging period to be up to 40 days. However, ATCO did not support changing the debt risk premium annual update averaging period end date from 2 months to 3 months prior to the end of the calendar year.

2.2 ERA Draft Instrument

The ERA's draft instrument:

- continues to use a 20 day averaging period; and
- amends the averaging period for the debt risk premium annual update so it must fall within a window of at least three months, but no longer than seven months, before the beginning of the relevant regulatory year.

2.3 Independent Panel Report

The Independent Panel's review of the ERA's draft instrument found on balance, the ERA's proposed approach is appropriate and based on sound reasoning. Their observations included:

- Averaging market observations over 20 days (effectively one trading month) is appropriate to smooth out volatility and the influence of extreme outliers.
- Several stakeholders are involved in the tariff variation process. Receiving a response from all stakeholders and then cross-checking can take some time. Therefore, the change in the timing of the averaging window, to be at least three months from start of the regulatory year, seems appropriate.
- This change would only have an impact on the averaging process if there were a large degree of seasonality evident in Australian financial markets, and this does not seem to be the case.

2.4 ATCO's Response

ATCO does not support the amendment to the debt risk premium averaging period so that it concludes at least three months before the relevant regulatory year.

Instead, ATCO supports the continued adoption of the averaging window concluding at least two months before the end of the relevant regulatory year because the risk of delays to tariff variation processes have already been mitigated by:

- **Mechanistic calculation supported by automated tools:** The calculation of the debt risk premium is mechanistic and supported by the DRP Methods software tools published by the ERA. These tools support the calculation of the Debt Risk Premium in a timely manner 24 hours after the final date in the averaging period and certainty do not require the additional month as proposed by in the draft instrument.¹

¹ Paragraph 24 of the 2018 Rate of Return Instrument Appendix 6 DRP process for updating in R identifies a 24 hour timing delay following the conclusion of the averaging period: "The benchmark sample of bonds should be identified as soon as practical, but 24 hours after the date identified as the final trading day in the averaging period"

-
- **Availability of inflation forecasts drive the critical path:** The calculation of the debt risk premium is not on the critical path for the Tariff Variation Mechanism (TVM) calculations. The timing of the submission of the TVM is driven by the availability of the September quarter CPI data from the Australian Bureau of Statistics. Typically, this data is not available until close to the end of October. Therefore, allowing the calculation of the debt risk premium to be at least two months before the relevant regulatory period causes no additional delays to the submission of the TVM.

ATCO maintains the view that the averaging window concluding two months before the end of the relevant regulatory year allows for the estimate to be undertaken closer to the relevant regulatory year enabling a better estimate of the debt costs for the relevant period.

To date a period for 2 months has caused no issues for ATCO with completing the TVM calculations and its submissions on time. ATCO has not been advised of any issues encountered by the ERA in meeting the current timeframe.

If service providers have a tariff variation process that could be put at risk due to the timing of the averaging window, then as part of the Access Arrangement review process it remains open to those service provider to choose an averaging period ending earlier (say three months before the relevant regulatory year) if they require it.

3. GEARING

3.1 Summary of ATCO's prior submission

ATCO's February 2022 submission supported:

- the use of a gearing level of 55 per cent
- in principle adjusting debt and equity for hybrid securities

3.2 ERA Draft Instrument

The ERA's draft instrument:

- continues to adopt a gearing level of 55 per cent
- uses the book value of debt and the market value of equity averaged over five years
- removes from debt hybrid securities which have equity characteristics based on publicly available information

3.3 Independent Panel Report

The Independent Panels review of the ERA's draft instrument found the ERA's proposed approach using a gearing level of 55 per cent is appropriate and based on sound reasoning.

3.4 ATCO's Response

ATCO supports the continued use of 55 per cent gearing given the information provided in the ERA's Explanatory Statement.

4. RETURN ON DEBT

4.1 Summary of ATCO's prior submission

ATCO's February 2022 submission supported:

- Method - the use of a 10-year hybrid trailing average approach for the cost of debt estimation.
- Debt risk free rate – continued use of the five year interest rate swap rate
- Benchmark credit rating - the use of a benchmark credit rating of BBB+ for the 2022 gas instrument.
- Debt risk premium - the use of the revised bond yield approach for estimating the debt risk premium

4.2 ERA Draft Instrument

The ERA's draft instrument:

- Method - a 10-year hybrid trailing average approach for the cost of debt estimation.
- Debt risk free rate - the five year interest rate swap rate
- Benchmark credit rating - a benchmark credit rating of BBB+ for the 2022 gas instrument.
- Debt risk premium – the revised bond yield approach for estimating the debt risk premium

4.3 Independent Panel Report

The Independent Panels review of the ERA's draft instrument found the following:

- Method - The ERA's hybrid approach offers a sensible compromise between alternate approaches, minimising interest rate risk and refinancing risk and satisfies the NPV=0 principle. Replication of the Instrument is aided by the explicit guidance provided for the implementation of the annual update.
- Debt risk free rate - The ERA's reasoning for the use of the five year interest rate swap rate as the risk free rate is credible. However, the reasoning could be improved by a) providing a more detailed explanation as to how firms would go about exploiting the slope of the yield curve, and b) clarification as to why it is reasonable for the (five-year) term to differ from that used elsewhere (10-year).
- Benchmark credit rating - The Panel suggested the ERA should provide some explanation around the issue of differing default risks for differing maturities for bonds with the same credit rating and consider increasing the minimum maturity to five years, provided sufficient bonds remain in the benchmark sample.
- Debt risk premium - Overall, the Panel considered the approach to calculating the debt risk premium to be transparent and replicable.

4.4 ATCO's Response

ATCO supports the continued use of:

- a 10-year hybrid trailing average approach for the cost of debt estimation,
- the five year interest rate swap rate as an estimate of the debt risk free rate

-
- a benchmark credit rating of BBB+
 - the revised bond yield approach for estimating the debt risk premium

4.4.1 Method and risk free rate

The 10-year hybrid trailing average approach for the cost of debt estimation is supported by ATCO as it is a practical debt strategy able to be replicated by service providers. As stated by the ERA the use of derivative arrangements to adjust rates to lock in a five-year bill swap at the start of the regulatory period appropriately aligns cost of debt in the regulatory context². Additionally, a deviation from this approach may create practical difficulties for service providers in realigning their debt portfolio with a new approach.

Use of the five year bank bill swap rate is supported as an estimate of the debt risk free rate because:

- use of the five-year bank bill swap rate is consistent with the efficient and implementable hybrid trailing average debt strategy.
- under the hybrid approach the business will enter into swap contracts to hedge the risk free rate every time it is reset during the regulatory review process. This strategy facilitates the service provider's ability to repeat the process for the next regulatory period. The continued adoption of the five-year bank bill swap rate is necessary for regulatory certainty to support this financing strategy.

Addressing the Independent Panel's point regarding consistency in the term of the risk free rate, the risk free rate terms for debt and equity are independent and need not be the same. For debt, a five year term is consistent with the efficient debt strategy. For equity a 10 year term is consistent with setting a rate of return consistent with market practice as expected by equity investors.

4.4.2 Benchmark credit rating

ATCO supports the use of a benchmark credit rating of BBB+ for the 2022 gas instrument.

However, increasing uncertainty on the use of gas due to climate change related legislation and consumer action to reduce carbon emissions may change the role and operations of natural gas distribution networks.

Maintaining an investment grade credit rating consistent with the benchmark credit rating may require different actions by regulators and service providers than in the past.

4.4.3 Debt risk premium

ATCO continues to support the ERA's revised bond yield approach, including the procedures listed on the ERA's website³ to estimate the debt risk premium including annual updates.

However, it is important that the ERA incorporate the DRP Methods tools into the 2022 Rate of Return Instrument. The DRP Methods tools were published as an addendum to the 2018 explanatory statement and are a notable omission from the 2022 draft rate of return instrument. ATCO note that whilst these tools are referenced in paragraph 475 of the explanatory statement, they do not form part of the Rate of Return Instrument. These tools are required to

² ERA, Explanatory statement for the 2022 draft gas rate of return instrument, 17 June 2022, page 59

³ Available at <https://www.erawa.com.au/cproot/21477/2/DRP-using-R-version-3-.pdf>

mechanistically calculate the debt risk premium. The ERA must publish the existing DRP Methods and associated documentation, spreadsheets and R-Code as part of the final 2022 Rate of Return Instrument to support the mechanistic calculation of the debt risk premium.

Should the methods included in the rate of return instrument become unworkable, an alternative method for updating the debt risk premium should be incorporated into the rate of return instrument. Currently, the implementation of alternative methods is restricted to a set of three specific circumstances. ATCO suggest a fourth category is needed with a broader definition than the unavailability of Bloomberg bond data.

5. TERM FOR EQUITY

5.1 Summary of ATCO's prior submission

ATCO's prior submissions did not agree with the continued adoption of the five-year term for equity returns. ATCO's position is that a longer term for the equity risk free rate is more appropriate given investors' longer investment time horizon. ATCO noted that nearly all other regulators use a longer term risk free rate and was not aware of any other regulator using a five-year term for the cost of equity, except for the NZCC⁴.

5.2 ERA Draft Instrument

The ERA's draft instrument adopts a 10 year term.

5.3 Independent Panel Report

The Independent Panels review of the ERA's draft instrument found the following in relation to the equity term:

- 10-year estimation periods are arguably more consistent with standard finance practice of applying a discount rate with a term equal to the period of the cashflows being discounted. However, investment horizons are unobservable, so this contention remains open to debate.
- Dr Lally makes the case that a five-year term better achieves the NPV=0 principle. However, the matter remains open to debate given weaknesses identified in the proof and the logic behind it.
- On balance, the Panel considers that the ERA's proposal to use a ten-year term is appropriate and based on sound reasoning.

5.4 ATCO's Response

ATCO supports a 10 year term for the equity risk free rate as determined by the ERA in its draft rate of return instrument.

After a review of the term of the equity risk free rate the ERA decided the correct term is 10 years.⁵ In summary, the ERA considered evidence including:

- the new regulatory work on the term for the return on equity
- submissions received in response to the ERA's discussion paper
- the AER's concurrent evidence sessions
- new advice from Dr Lally commissioned by the ERA in response to submissions received

The ERA considered the salient issues when deciding the term of the equity risk free rate in its review. The ERA first considered the context of its task in setting a rate of return:

"The ERA considers that the term for equity depends on what rate a regulator is setting:

⁴ The NZCC uses a five-year risk free rate but the NZCC also estimates a distribution for the vanilla WACC and sets the allowed rate of return above the mid-point of the vanilla WACC. This adjustment amounted to 0.75% uplift on the cost of equity in the most recent NZCC decision.

⁵ The evidence considered and the conclusions reached are set out in: ERA, Explanatory statement for the 2022 draft gas rate of return instrument, 17 June 2022, para 603

- *A regulatory rate – A rate that provides required returns according to regulatory settings and principles, and recognises resets for every regulatory period. Application of such a rate reflects one view of efficient costs under a resetting regulatory framework.*
- *A competitive market rate – A rate that provides the expected returns of equity investors according to market conditions and practices for infrastructure assets, which is generally a long-term rate with a term exceeding the length of the regulatory period. Application of such a rate reflects one view that regulated assets have long lives and investors are concerned with cashflows over the life of the asset. This rate also uses the longest term generally available (10 years) for a proxy that investors would use to discount cashflows.”⁶*

Having completed its review of the evidence, the ERA reached the conclusion its task was to set a competitive market rate consistent with efficient investors’ consideration of cashflows over the long term. ATCO supports this conclusion as it better provides the opportunity to recover at least the efficient costs – including investment costs – the service provider incurs consistent with the revenue and pricing principles.

In setting the Rate of Return Instrument the ERA’s primary considerations are the National Gas Objective (NGO) and Revenue and Pricing Principles (RPP) set out in the National Gas Law (NGL). The ERA may only make an instrument if satisfied the instrument will or is most likely to contribute to the NGO to the greatest degree and must have regard to the RPP.⁷ The NGO and RPP require:

- Promote economic efficiency through efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers⁸
- A service provider should be provided with a reasonable opportunity to recover at least the efficient costs the service provider incurs⁹
- A service provider should be provided with effective incentives in order to promote economic efficiency with respect to reference services the service provider provides¹⁰

The NGO and RPP are designed to work together to achieve the ultimate objective of efficient investment and operation in the long term interests of consumers. As the Australian Competition Tribunal (Tribunal) has held previously in relation to the AER’s role and the NEO (which is equivalent to the NGO but relates to electricity networks):

“...the NEO and the RPP operate together. It is not the case that the NEO means that, where the long term interests of consumers is relevant, the RPP must be ignored or suppressed. The assumption in the regulatory scheme is that the long term interests of consumers is served by ensuring that monopoly infrastructure providers are permitted to recover at least the efficient costs of providing those services and, broadly speaking, the AER’s role is to fix those efficient costs by reference to the proxy of the efficient costs of the competitive market.”¹¹

The important phrases in the Tribunal’s decision are “competitive market” and “recover at least the efficient costs”. The Tribunal’s conclusions support the ERA’s logic and conclusion regarding setting the term of the risk free rate.

⁶ ERA, Explanatory statement for the 2022 draft gas rate of return instrument, 17 June 2022, para 590

⁷ National Gas Access (WA) Act 2009, 10 October 2020, section 30D

⁸ Ibid., section 23

⁹ Ibid., section 24(2)

¹⁰ Ibid., section 24(2)

¹¹ Applications by Public Interest Advocacy Service Ltd and Ausgrid [2016] ACompT 1 at [787]

The ERA secondly considered matching returns to expected returns to achieve NPV = 0:

“Consistent with standard finance practice the term of the discount rate is equal to the period of the cashflows being considered. Therefore, if investors do consider cashflows over the long-term (or even beyond the regulatory period) they will discount those cashflows with a long-term discount rate.

If regulated revenues are set with reference to a 10-year term for equity and equity investors discount cashflows with a 10-year term this ensures that NPV=0 is maintained.”¹²

Noting that investors consider long term cashflows across multiple regulatory periods and expect to receive returns consistent with this perspective¹³, and 10 year Government securities are the longest dated bonds available with a liquid market¹⁴, the ERA concluded that a ten year term for equity satisfied the NPV = 0 principle:

“The ERA considers that a 10-year term for equity reflects the following advantages ...
... Meets the NPV=0 principle. If the goal is to match the regulatory allowance to the market cost of capital (i.e. the return that investors require) the term should be set to match the practices of investors. A 10-year term for equity supports efficient financing costs over multiple regulatory periods.”¹⁵

The ERA’s conclusion is also supported by the conclusions reached by the Queensland Competition Authority in its recent rate of return review¹⁶ and by every other Australian regulator apart from the AER’s recent change to a five year term in its draft rate of return instrument.

ATCO notes that, contrary to the ERA’s sound reasoning, the AER’s recently issued draft rate of return instrument proposes to change from a 10 year to a five year equity risk free rate term.¹⁷ This decision appears illogical and without justification because:

- it is at odds with past AER determinations regarding the equity risk free rate term,
- the AER’s draft Rate of Return Instrument proposes that the allowed return on equity should *not* be set to match the market cost of capital, but that it should instead be set in accordance with some mathematical analysis that the AER says is grounded in the NPV=0 principle.

The AER’s June 2022 Explanatory Statement contains two brief mathematical expositions – one developed by Dr Lally and one developed by AER staff.¹⁸ Dr Lally explains that his mathematical analysis is based on a 1989 paper by Professor Schmalensee.¹⁹

The ENA’s September 2022 submission to the AER²⁰ explains that they commissioned a report in the form of a statement to the AER from Professor Schmalensee²¹, a renowned regulatory economist from MIT whose work has been cited over 30,000 times.

¹² ERA, Explanatory statement for the 2022 draft gas rate of return instrument, 17 June 2022, para 595

¹³ Ibid., para 600

¹⁴ Ibid., para 604

¹⁵ Ibid., para 599

¹⁶ Queensland Competition Authority, Final report – Rate of return review, November 2021, p. 83

¹⁷ AER, Draft Rate of Return Instrument, Explanatory Statement, June 2022, page 93

¹⁸ Ibid., pages 103-104 and 109-110

¹⁹ Lally, M., The appropriate term for the allowed cost of capital, April 2021, pages 4 & 7

²⁰ ENA, Rate of Return Instrument Review: ENA response to AER’s draft decision, September 2022, page 54

²¹ Statement of Richard Schmalensee, Ph.D. To the Australian Energy Regulator, July 29, 2022

Professor Schmalensee in his statement to the AER has stated that his 1989 paper relied on by Dr Lally in no way supports the assertion that the term of the risk free rate must equal the regulatory period:

*Schmalensee (1989) certainly does not “show” that the term of the allowed return must match the term of the regulatory cycle. Efficient regulation generally requires that the allowed rate of return must be consistent with the return required by investors – however they determine it.*²²

The AER’s 2022 Draft Explanatory Statement attempts to support its assertion to adopt a five year term through a formulaic analysis of the necessary condition with regard to the term of the risk free rate to satisfy the NPV = 0 principle.²³

Professor Schmalensee finds the assumption underpinning this analysis that the period 2 cashflows in the AER’s two period model are discounted at the period 1 rate of return indefensible²⁴. Effectively the AER has assumed it will set a rate of return in period 2, presumably the expected rate of return on equity at that time, to a rate other than the rate at which cashflows in that period are discounted [i.e. the period 1 rate of return which is different to the period 2 rate of return is applied to the discounting of both period 1 and period 2 cashflows]. In this case it is impossible for the NPV of those cashflows to be zero.

For its part, the ERA correctly recognised the limitations of Dr Lally’s theoretical “proof” that the term of equity must match the regulatory period for the NPV=0 principle to be satisfied, noting that:

*“Unlike bonds, residual value [of equity investment] is not returned in cash at the end of the period, but rather comprises a value whose recovery remains at risk from future regulatory decisions and changes in the market. [...] The market value of equity in the business is not certain to equal the equity’s share of the [...] RAB value at the end of the regulatory period, but will instead reflect the present value (at that time) of all expected future cash flows.”*²⁵

Indeed, from the perspective of an equity investor in regulated infrastructure networks, the horizon of relevant cash flows is in no way limited by the term of regulatory periods or even by the useful lives of particular assets. Rather, equity investments are utilised to finance regulated network service over an indefinite long-term horizon (including through the reinvestment of cash flows in expansion or augmentation of network assets) and rational equity investors will discount the cash flows from such businesses based on the market opportunity cost of equity investment in alternative securities of equivalent risk.

Consequently, as the ERA recognised, it is the long-term horizon investors have in capital markets for investment in regulated infrastructure businesses – not the periodic review period imposed by a regulator – that determines the appropriate “term” for the market cost of equity.²⁶ In turn, the term of government bond securities used to proxy the equity risk free rate in the rate of return instrument should as closely as possibly match the long term (or perpetual) horizon of equity investment.

Ultimately, the revenue and pricing principles must be followed in setting the estimated rate of return. That is, the allowed rate of return must be the best estimate of the rate of return expected by investors. Economic efficiency requires this. If the return is too low there will be

²² Statement of Richard Schmalensee, Ph.D. To the Australian Energy Regulator, July 29, 2022, page 8

²³ AER, Draft rate of return instrument, Explanatory statement, June 2022, page 103

²⁴ Statement of Richard Schmalensee, Ph.D. To the Australian Energy Regulator, July 29, 2022, page 10

²⁵ ERA, Explanatory statement for the 2022 draft gas rate of return instrument, 17 June 2022, para 594

²⁶ Ibid., para 595

under investment. If the return is too high the service provider will receive undue economic rents.

In these circumstances no weight should be attributed to the AER draft decision with regard to the equity risk free rate term.²⁷

In summary, ATCO supports the ERA's conclusion that the appropriate term for the equity risk free rate is 10 years as it best supports the NGO and RPPs. The ERA's conclusion is supported by sound logic arrived at by a consideration of the salient issues when setting the equity risk free rate.

²⁷ A more detailed exposition of these matters with regard to the AER's equity term draft decision can be found in: ENA, Rate of Return Instrument Review: ENA response to AER's draft decision, September 2022, Section 4

6. PROXY FOR EQUITY RISK FREE RATE

6.1 Summary of ATCO's prior submission

ATCO's February 2022 submission supported using Commonwealth Government securities (CGS) as the best proxy for the equity risk free rate.

6.2 ERA Draft Instrument

The ERA's draft instrument continues to use Commonwealth Government securities (CGS) as the best estimate of the equity risk free rate.

6.3 Independent Panel Report

The Panel considered that the ERA's approach to measuring the risk-free rate is appropriate and based on sound reasoning.

6.4 ATCO's Response

ATCO supports the continued adoption of CGS to derive the best estimate of the equity risk free rate because they are:

- essentially free from default risk
- relatively liquid
- transparently and regularly reported
- a proven and commonly used proxy

7. MARKET RISK PREMIUM

7.1 Summary of ATCO's prior submission

ATCO's February and May 2022 submissions incorporated the following positions on market risk premium:

- **Historical Market Risk Premium**
 - Supported the use of sampling periods post-1958 as it is from the period that has the most reliable data and is likely to better estimate a forward looking MRP.
 - Supported the inclusion of the 2000-21 period. Moreover, ATCO considered that this should replace the 1988-2021 period. This will leave 3 periods each starting roughly 20 years apart. The 1988-21 period currently sits oddly with the other estimates starting only 8 years after the 1980 period and 12 years before the 2000 period.
 - Supported the ERA decision to only consider the Brailsford, Handley and Maheswaran (BHM) dataset when estimating the MRP from 1958 onwards
 - ATCO did not support estimating the historical market risk premium by a simple average of the arithmetic and geometric means. The use of the geometric mean to estimate the historical average MRP is not sound. The arithmetic average should solely be used to estimate the historical MRP.
- **Forward estimate:** Providing explicit weight to a dividend growth model (DGM) in estimating the MRP. ATCO considered that the evidence of the weights adopted by the ERA in past determinations suggest that a 50% weight could reasonably be applied to the DGM estimate in the Guidelines.
- **Calculation timing:** ATCO did not support the current approach of estimating and considering the market risk premium (MRP) and the risk free rate independently from one another. It is not appropriate for the MRP to be fixed in the Rate of Return Instrument and then used in an access arrangement determination which will potentially still be on foot up to 9 years after the Rate of Return Instrument is determined. The MRP should be updated (mechanistically) at each access arrangement determination when the risk free rate is updated so that both parameters reflect the market conditions at the time.

7.2 ERA Draft Instrument

The ERA's draft instrument adopts a fixed estimate of the market risk premium of 6.2% based on:

- a re-evaluation of the use of the arithmetic and geometric mean placing 60% weight on the arithmetic and 40% weight on the geometric mean to estimate the historical MRP
- four overlapping periods using data from 1958, 1980, 1988 and 2000 to current and the BHM dataset
- using its judgement to derive a point estimate

7.3 Independent Panel Report

The Panel considered that the ERA's approach to estimating the market risk premium is appropriate and based on sound reasoning. In reaching its conclusion the panel considered:

- removal of pre 1959 data, introduction of a new 2000 to date period and sole use of the BHM dataset will improve the quality of data and its relevance to current market conditions

- a weighting in favour of the arithmetic mean is justifiable based on the mathematical principles on which the two methods are built and the purpose of the Instrument being to estimate the probability weighted average future return (which is better achieved with the arithmetic mean). However, the panel supported the ERA’s weighting and estimation periods used due to the sensitivity of the MRP to changes particularly in the absence of strong theoretical or empirical support.
- use of the DGM to be reasonable but noted that it carries a high risk of error and upward bias. The Panel recommended the ERA give further consideration to appropriate use of the DGM when developing the next Instrument.
- use of the ERA’s conditioning variables reasonable when the ERA applies its regulatory discretion to determine the MRP and that it was also reasonable current levels of the conditioning variables did not justify adjusting the historical MRP estimate. However, the Panel recommended the ERA more fully describes how insights from the conditioning variables were or could be incorporated into the Instrument.
- as the possible relationship between MRP and risk-free rate remains a contentious and unresolved issue, the Panel considered the ERA’s use of a constant MRP to be appropriate and based on sound reasoning
- while noting that less reliance on the DGM would produce a figure closer to 6.0 per cent, the Panel considered that 6.2 per cent falls within a reasonable range

7.4 ATCO’s Response

ATCO does not support the ERA’s draft instrument which fixes an estimate of the market risk premium of 6.2%.

ATCO considers that the ERA should modify its approach as follows:

- **Historical MRP** - must adopt the arithmetic averaging method and reject geometric averaging
- **Forward estimate** - must place explicit weight on the DGM. The DGM is important because it provides a forward-looking estimate of the MRP.
- **Calculation timing** - the MRP must be calculated mechanistically at each access arrangement decision.

7.4.1 Historical MRP

ATCO is generally supportive of the time periods and data set used to estimate the historical average MRP for the ERA’s 2022 draft rate of return instrument.

ATCO maintains its position that to correctly estimate the historical market risk premium the ERA must adopt solely the arithmetic averaging method. ATCO does not accept the ERA’s position that an unbiased estimate of the market risk premium is likely to be somewhere between the geometric average and the arithmetic average.²⁸ Instead the correct unbiased estimate of the historical market risk premium must adopt solely the arithmetic averaging method.

The reasons for this position are summarised in ATCO’s previous submissions.²⁹ However, the crux of the issue is that the ERA mistakenly believes its objective is to estimate the expected compound return from a specific “buy and accumulate” investment strategy. That strategy posits

²⁸ ERA, Explanatory statement for the 2022 draft gas rate of return instrument, 17 June 2022, para 750

²⁹ ATCO, Attachment 1: ATCO submissions, 2022 Rate of return instrument Discussion paper, 16 February 2022, pages 18-28

that an investor buys equities in one year, reinvests all returns³⁰ on that initial investment and then realises the total value of that investment after N years. It is the case that an investor following such a “buy and accumulate” strategy will expect to achieve an internal rate of return (IRR) that falls between the historical arithmetic and geometric average of returns (assuming the same distribution of future as past returns)³¹.

The ERA’s task is not to determine the IRR on a specific investment strategy. The ERA’s task is to estimate the discount that investors apply to the equity market portfolio. These are not the same thing. Brealey, Myers and Allen (2020) explain this clearly by way of an example of an asset that has three equally probable possible returns each year being: -10%, +10% and +30%. The expected return is, by definition, the equal weighted average of these – being 10%.

The discount rate that investors apply must be the same as the expected return (assuming efficient markets). This implies that investors must apply a 10% discount rate to that asset. Otherwise, they would bid up/down the price of the asset to change its expected return. The authors point out that this is axiomatically true. There can be no doubt that the discount rate used by investors matches the expected return.

Brealey, Myers and Allen (2020) go on to point out that if that same distribution was true in every year in the past (and future) then we would observe historical series that gave:

- An arithmetic average return of 10%; and
- A geometric average of 8.8% ($= (0.90 \times 1.1 \times 1.3)^{1/3}$).

The authors note that 8.8% measures a real phenomenon, namely the IRR of a “buy and accumulate” strategy.³² But, the ex-post realised compound average annual return measured by the geometric average it is not the same thing as the discount rate used (on an ex ante basis) appropriately value the future earnings from the asset. That discount rate must, by definition, be the expected rate of return: 10%. This is true irrespective of what time horizon or investment strategy individual investors might adopt, as Brealey, Myers and Allen (2020) clearly demonstrate.

Berk and DeMarzo (2020), in a competing textbook make the same point:³³

“...we should use the arithmetic average return when we are trying to estimate an investment’s expected return over a future horizon based on its past performance.”

Likewise, Dr. Lally has made essentially the same point in his advice to the AER:

“The AER’s belief that geometric averages are useful apparently arises from a belief that there is a compounding effect in their regulatory process (AER, 2012, Appendix A.2.1), and therefore the analysis of Blume (1974) and Jacquier et al (2003) applies. However, I do not think that there is any such compounding effect in regulatory situations and the absence of a compounding effect leads to a preference for the

³⁰ Exactly where between these averages will depend on how long “N” years is (the “investment horizon”) and how many observations are in the historical data “T”. For values of N that are small relative to T “buy and accumulate” strategy will deliver expected returns close to the arithmetic average. However, as N grows relative to T more weight should be given to the geometric mean. There is an established literature on how these weights should be determined (Indro and Lee (1997) (such as Blume (1974) and Jacquier et al (2003)).

³¹ Indro and Lee, Biases in Arithmetic and Geometric Averages as Estimates of Long-Run Expected Returns and Risk Premia, Financial Management, Vol. 26, No. 4 (Winter, 1997), pp. 81-90

³² Of course, there are alternative investment strategies that will deliver a 10% IRR – such as a strategy that retains a constant dollar value investment in the asset (consuming/saving positive earnings and replenishing negative earnings). But this is also beside the point. The task for the ERA is not to “pick” an investment strategy and compensate based on the expected IRR of that strategy. The task for the ERA is to estimate the discount rate at which investors discount future returns.

³³ Berk, J. and P. DeMarzo, Corporate Finance, 5th global edition, Pearson, 2020, p. 368

arithmetic mean over the geometric mean. If historical average returns are used, they should be arithmetic rather than geometric averages.”³⁴

Dr Lally has also advised the AER that use of the geometric average is inconsistent with the NPV=0 principle. He presents a detailed algebraic analysis to evaluate whether each form of average is consistent with the NPV=0 principle and concludes that:

“The geometric mean fails this test whilst the arithmetic mean will satisfy it if annual returns are independent and drawn from the same distribution. So, if historical average returns are used, they should be arithmetic rather than geometric.”³⁵

ATCO supports the positions detailed by the ENA in its submission into the AER’s 2022 Rate of Return Instrument supporting the arithmetic averaging method. The ENA’s submission provides an extensive and compelling review of the evidence regarding the averaging method.³⁶

Nonetheless, in the event that the ERA continue to use both the arithmetic and geometric means to estimate the historical MRP then it will be necessary for the ERA to correct its calculation and weights placed on the geometric mean historical MRP as follows:

- Firstly, the geometric mean MRP should not be calculated as a separate number but rather the difference between the geometric mean market return less the geometric mean risk free rate return. This ensures both consistency and the correct effect of compounding on the geometric mean MRP.
- Secondly, if the ERA continues to (mistakenly) attempt to estimate the expected IRR from a “buy and accumulate” investment strategy it should rely on the relevant finance literature to arrive at the weights given to the arithmetic and geometric means (e.g., the work of Indiro and Lee (1997)).

On the first issue, the correct measure of the excess return on a “buy and accumulate” investment strategy is the difference in annualised returns between investing in the market portfolio over the relevant period and the annualised returns from investing in risk free bonds, using the same strategy over the same period. The ERA’s current estimation method will not give this answer and will be potentially materially biased when the risk free rate and realised MRP are not interrelated/correlated. CEG estimated³⁷ that the correct approach raised the geometric mean relative to the ERA approach by between 0.04% and 0.24%. CEG’s results are extracted below.

Table 7.1: Market risk premium estimates corrected for annualised return of the risk free rate

| Time Period | Current ERA method | Alternative method | Differences (Alternative - Current) |
|-------------|--------------------|--------------------|-------------------------------------|
| 1958-2021 | 4.81% | 5.05% | 0.24% |
| 1980-2021 | 5.00% | 5.23% | 0.23% |
| 1988-2021 | 5.35% | 5.48% | 0.13% |
| 2000-2021 | 5.54% | 5.58% | 0.04% |

On the second issue, Indro and Lee’s weighting scheme is given by:

³⁴ Lally, M., The cost of equity and the market risk premium, Victoria University of Wellington, 25 July 2012, pages 31-32

³⁵ Ibid., page 32

³⁶ ENA, Estimating the cost of equity - Response to AER’s Pathway to 2022 rate of return instrument Draft equity omnibus working paper, September 2021, pages 43-48

³⁷ CEG, 4 May 2022 memo “Analysis on the autocorrelation of the market risk premium”. Available at <https://www.erawa.com.au/cproot/22652/2/AGIG-submission-to-focused-consultation.PDF>

$$\text{Weighted mean} = \frac{T - N}{T - 1} R_A + \frac{N - 1}{T - 1} R_G$$

Where: T = total number of time periods (observations), N = investment horizon, R_A = arithmetic mean, R_G = geometric mean

Applying these formulas to the ERA and CEG's amended estimate of the MRP results in the following effects.

| Table 7.2: Market risk premium estimates correct for weightings | MRP with current ERA geomean | MRP with correct geomean | Difference |
|--|-------------------------------------|---------------------------------|-------------------|
| ERA's weighting | 6.02% | 6.09% | 0.07% |
| Indro and Lee's weighting | 6.29% | 6.33% | 0.04% |
| Difference | 0.27% | 0.24% | |

The ERA should modify its approach to estimating the historical MRP as follows:

- amend its estimate of the historical average MRP to be based solely on the arithmetic average (6.75% from Table 10 in the Draft Explanatory Statement).
- if the ERA determine to apply some weight to the historical geometric average then the ERA must firstly amend the method of calculating the historical geometric mean MRP to account for the risk free rate and secondly amend the weight applied to it in accordance with the recommendations made in this submission (at least 6.33% from Table 7.2 above).

7.4.2 Forward estimate

The Market Risk Premium, and the cost of capital generally, is a forward-looking concept. Accordingly, ATCO considers that the ERA should not rely solely on a backwards-looking (historical) estimate of the MRP, and that combining the historical arithmetic average excess market return with a forward-looking estimate from a DGM will do a much better job of ensuring the MRP reflects prevailing conditions in the market for equity funds.³⁸

The DGM, a forward looking MRP estimation method, has important strengths:

- it has a theoretical foundation accepted by experts and regulators
- it is commonly used in practice (including by other regulators)
- it produces a forward-looking estimate of the market risk premium that is commensurate with prevailing conditions while providing insulation against financial market shocks

The ERA's draft rate of return instrument maintains the use of the DGM to contribute to the estimate of the market risk premium but does not give it material weight. In their 2020 review of regulatory practice for the AER, the Brattle Group confirmed the continued use of dividend growth models by regulators to estimate equity returns.³⁹ North American regulators put significant weight on forward-looking estimates of the MRP, and some (for example, the U.S. Federal Energy Regulatory Commission) only use forward-looking estimates.

The ERA itself has previously placed significant weight on the DGM as shown in the table below.

³⁸ National Gas Access (WA) Act, As at 10 October 2020, sections 30A(e) and 30D(5)

³⁹ The Brattle Group, A Review of International approaches to Regulated Rates of Return, Prepared for the Australian Energy Regulator, June 2020, page 44

Table 7.3: ERA’s past use of the DGM⁴⁰

| Decision | Date | MRP range | MRP Point Estimate | Implied DGM Weighting |
|-------------------------|--------|---------------|--------------------|-----------------------|
| ATCO | Sep-15 | 5.40% - 8.80% | 7.50% | 62% ⁴¹ |
| Goldfields Gas Pipeline | Jun-16 | 5.40% - 8.80% | 7.40% | 59% |
| DBP | Jun-16 | 5.40% - 8.80% | 7.40% | 59% |
| WA Rail | Oct-17 | 6.90% - 7.20% | 7.20% | 100% |
| Water Inquiry | Nov-17 | 5.40% - 8.80% | 6.90% | 44% |
| Western Power | Sep-18 | 5.70% - 7.60% | 6.00% | 16% |

ATCO considers that the evidence of the weights adopted by the ERA in past determinations suggest that a 50% weight could reasonably be applied to the DGM estimate in the Guidelines. This will result in the Guidelines placing material weight but less reliance on the DGM than in the majority of the ERA’s decisions since 2013 but prior to the current Rate of Return Instrument.

The ERA has placed an implied weight of 20% on the DGM MRP estimate of 6.9% in reaching its point estimate MRP of 6.2%. The ERA states the DGM receives less weight due to the ongoing concerns the ERA has about the proper implementation of the DGM given the issues surrounding input assumptions, forecasts and variability of outputs. ATCO considers these matters have been resolved by the calibrated DGM developed by Frontier Economics for the ENA⁴².

ATCO supports the response that has been provided by the ENA on the matters raised in the draft rate of return instrument on the calibrated DGM, summarised in Table 7.4 below.⁴³ The main point in support of the ENA’s calibrated DGM is constructed to ensure that the average DGM estimate equals the HER estimate – it is unbiased.

Table 7.4: Summary of ENA’s response

| Issue from ERA’s Explanatory Statement | ENA response summary |
|---|--|
| The DGM perpetuity growth rate should be linked to the economy-wide growth rate less a downward adjustment. | <ul style="list-style-type: none"> When the ERA’s approach is applied to the 1988-2021 period, it produces an average MRP estimate materially below the HER estimate for the same period. That is, the approach produces an estimate that is downwardly biased. The calibrated DGM calculates a single long-run growth rate that equates the average DGM estimates with the average historical MRP estimate for a particular historical period – an unbiased estimate. |
| The calibrated DGM uses a constant long-run (perpetuity) growth rate and proposes that it is possible that investors might have been adopting | The ENA addressed this point in its March 2022 submission to the AER. ⁴⁵ Whether the current quarter has strong growth, low growth, or negative growth has important implications for the growth |

⁴⁰ ATCO, Attachment 1: ATCO Submission, Draft rate of return guidelines, 28 September 2018

⁴¹ ERA, Revised decision of the Economic Regulation Authority’s access arrangement for the Mid-West and South-West Gas Distribution Systems, 25 October 2016, para 57

⁴² ENA, Estimating the cost of equity, Response to AER’s pathway to 2022 rate of return instrument: Draft equity omnibus working paper 3 September 2021, pages 54-56

⁴³ ENA, Rate of Return Instrument Review: Response to ERA’s draft rate of return instrument, September 2022, pages 16-20

⁴⁵ ENA, Rate of Return Instrument Review: Response to AER’s Final Omnibus and Information papers, March 2022, pages 80-81

| Issue from ERA's Explanatory Statement | ENA response summary |
|---|--|
| different perpetuity growth assumptions at different points in time. ⁴⁴ | forecast next quarter, but not for the forecast of long-run perpetual growth starting 10 years later. |
| The calibrated DGM (like all DGMs) produces estimates that are sometimes above, and sometimes below, the long-run average. The current estimates are somewhat above the long-run average. This leads the ERA to express its concern about adopting this approach at a time that would result in higher allowances when it was not used in the past when it would have resulted in lower allowances. ⁴⁶ | The current ERA's decision-making should not be affected by considerations of 'balancing up' allowances that might have been set in past ERA decisions. |
| The ERA's concern that the implied long-term growth rate is above the ERA's estimate of long-run GDP growth. ⁴⁷ | In the ENA's September 2022 submission to the AER, ⁴⁸ it explains how the DGM can be set to reflect the prevailing long-run GDP growth forecast at the time of each estimate while also calibrating the estimates to ensure unbiasedness. |
| The ERA's concern that the calibrated DGM produces a wide range of MRP estimates over the period from 1988. ⁴⁹ | What is more relevant to networks and consumers is not volatility in the MRP, but volatility in the allowed return on equity. The ENA's September 2022 submission to the AER demonstrates that the calibrated DGM calculates an allowed return on equity that is much more stable than the HER approach. ⁵⁰ |

ATCO submits that the Guidelines can and must place material weight on the DGM estimate because:

- it is relevant evidence that can be relied upon, as shown by its use by other regulators, to derive an estimate of the market risk premium.
- placing material and explicit weight on the DGM estimate recognises that the market risk premium is a forward-looking estimate and is necessary in order for service providers to be provided with a reasonable opportunity to recover at least the efficient costs the service provider incurs in providing reference services consistent with revenue and pricing principles
- an estimate is calculated consistent with prevailing conditions in the market for equity funds

More broadly combining the DGM estimate of the MRP with the historical average of the MRP provides additional information to the process of setting the cost of equity and increases the likelihood that the estimate arrived at reflects current market conditions.

In conclusion, applying a 50% weight to the DGM estimate would result in a market risk premium estimate that has regard to all relevant estimates, the prevailing conditions in equity markets and

⁴⁴ ERA, Explanatory statement for the 2022 draft gas rate of return instrument, June 2022, para 795

⁴⁶ Ibid., para 797-798

⁴⁷ Ibid., para 799

⁴⁸ ENA, Rate of Return Instrument Review: ENA response to AER's draft decision, September 2022, page 91

⁴⁹ ERA, Explanatory statement for the 2022 draft gas rate of return instrument, June 2022, para 800

⁵⁰ ENA, Rate of Return Instrument Review: ENA response to AER's draft decision, September 2022, page 88

accordingly gives rise to the best empirical estimate of the market risk premium, necessary for the achievement of the National Gas Objective.

7.4.3 Calculation timing

ATCO maintains its position that the MRP should be updated at the time of an access arrangement determination. This is because an estimate of the MRP must:

1. be capable of handling the potential effects of a financial market shock.
2. be forward looking to promote efficient investment
3. be consistent with the prevailing conditions in the market for equity funds

The ERA's 2022 Draft Rate of Return Instrument proposes the MRP is fixed for the term of the Rate of Return Instrument, which embodies an assumption the MRP is independent of movements in the risk free rate. The ERA concluded that there is no perfect method to mechanically update estimated market returns for reasons including:⁵¹

- It is not possible to do this mechanically while being confident that all potential market conditions can be accommodated.
- Regulatory discretion is needed to best estimate the market risk premium but under a binding gas rate of return instrument any change to the market risk premium would have to be done in a mechanical way without the use of discretion, therefore, precluding the use of judgement at the time of any update and consequently making updates impractical.
- The ERA considers that there is no reliable method for the mechanical mapping of conditioning variables to the market risk premium.

ATCO notes that the AER has given explicit consideration to updating the MRP at the time of an access arrangement determination in its 2022 Draft Rate of Return Instrument and proposed an option that allows mechanistic updating of the MRP using a 3 stage DGM and an arithmetic average of the historical MRP. The AER's analysis shows it is possible to mechanistically update the MRP including use of a DGM model. The AER in practice provides annual updates of its MRP estimate. Additionally, the AER's analysis indicates a more stable MRP going forward⁵² where 50% weight is given to the 3 stage DGM.

It is important to update the MRP to produce results more reflective of market conditions at the time of an access arrangement determination and be less likely to produce the shocks and volatility in returns of an assumed fixed MRP. ATCO considers that these goals are consistent with the revenue and pricing principle, in that they allow for a return commensurate with the regulatory and commercial risks involved in providing the reference service, appropriately based on the opportunity cost of capital as contemporaneously observed in capital markets.

Based on this requirement to take into account the impact of contemporaneous market circumstances on investors' required returns, the MRP must be updated at the time of an access arrangement determination. This can be achieved by specifying the MRP calculation mechanistic in the rate of return instrument. Updating the MRP at the time of an access arrangement determination will:

- make estimation of the MRP and total equity return less vulnerable to financial market shocks

⁵¹ ERA, Explanatory statement for the 2022 draft gas rate of return instrument, 17 June 2022, para 852-856

⁵² AER, Draft Rate of return Instrument Explanatory Statement, June 2022, pages 150-152

-
- make the MRP and equity return more forward looking
 - improve consistency and validity in the estimated financial parameters (primarily the risk free rate and the MRP) by estimating them in the same market conditions

8. BETA

8.1 Summary of ATCO's prior submissions

ATCO's February and May 2022 submissions incorporated the following positions on beta:

- ATCO supported the ERA further examining adding domestic infrastructure providers to the domestic comparator set but recognises it as a second best option to using international energy infrastructure comparators
- ATCO supported the ERA adding listed international firms operating energy networks in the United States, Canada, United Kingdom and New Zealand to the beta comparator set using the country pooling method
- ATCO supported use of the Least Absolute Deviations (LAD) regression, to improve the robustness of estimates where that was required
- ATCO supported the use of a fixed estimate of beta

8.2 ERA Draft Instrument

The ERA's draft instrument adopts a fixed estimate of beta of 0.7 based on:

- a sample of domestic and international beta comparators based on country pooling and re-levering to the benchmark firm gearing
- equal weighting to both LAD and OLS estimators of beta
- equally weighting both five year and 10 year estimates of beta using weekly data
- using the total return index as calculated by Bloomberg for individual stocks and market indices
- additional weight placed on domestic comparators, including delisted comparators, to derive a point estimate of beta
- an approach to M&A transactions that result in the delisting of a firm wherein the observations from announcement to close are excluded and not counted as a valid observation
- the application of regulatory discretion with respect to beta estimates derived for firms involved in material transactions that do not result in the delisting of a firm
- using four differing techniques including, OLS, LAD, Maximum likelihood robust method (MM) and Theil-Sen (T-S)

8.3 Independent Panel Report

The Panel considered the ERA's proposed equity beta estimation to be appropriate and based on sound reasoning including that the ERA's approach to incorporating international sample firms, including the country and entity selection, is appropriate and based on sound reasoning.

In the face of difficult options, the Panel considered that the ERA's blended approach, using both international and domestic firm data, is appropriate and based on sound reasoning, noting that the approach will need to be more fully developed in time for the next Instrument:

- The very small sample of Australian listed energy networks has significant negative implications for the robustness of any estimates generated.

-
- Ultimately, the requirement for statistical robustness will require a sample of international comparator firms.

The Panel considered the ERA’s proposal of using both a five-year and a ten year estimation window using weekly data as well as the use of LAD as the robust estimator to be appropriate and based on sound reasoning.

8.4 ATCO’s Response

ATCO supports the inclusion of international beta estimates because there is very little current evidence on beta from the Australian market which makes it necessary to look internationally to avoid relying on out-of-date Australian data.

ATCO generally supports the proposed sample of international comparator firms listed in the ERA’s draft rate of return instrument,⁵³ but notes that the ERA did not provide adequate explanation regarding the amendments it did (and did not) incorporate in response to the Focused Consultation.⁵⁴ ATCO provided detailed recommendations regarding the exclusion of certain companies that had substantial exposure to higher-risk unregulated business activities and/or whose stock price data was materially impacted by M&A activity or other anomalous factors during a relevant 5-year beta estimation window. The ERA appears to have accepted certain of these recommendations and rejected others, but no rationale was provided. ATCO encourages the ERA to provide more detail regarding the specific criteria and judgement it applied in determining whether to include or exclude comparators based on the proportion of their business devoted to regulated utility service and the impact of M&A or other financial circumstances on their stock return data.

ATCO does not support the ERA’s draft estimate of the beta of 0.7 for the following reasons:

- **Layering conservatism:** The ERA has made a number of adjustments all of which operate to lower the estimate and therefore likely bias the beta estimate downward:
 - **LAD estimate:** Incorporation of LAD estimates on their own is a reasonable method to improve the robustness of the estimate although it reduces the beta estimate incorporating international data.
 - **10 year beta estimate:** Additionally introducing 10 year beta estimates to reduce the effect of current market shocks:
 - effectively “double counts” for the effect of recent market shocks
 - is at odds with the ERA’s statement “energy networks would have been relatively more immune from shocks compared to other industries”⁵⁵
 - is not required to adjust for M & A activity as the ERA has already adjusted for M & A activity
 - given beta is a parameter used in the estimate of a forward looking return, reduces the weight given to more relevant rising beta values evident prior to March 2020 shown in the ERA’s Figure 9⁵⁶ as well as international evidence presented by ATCO in its previous submission⁵⁷

⁵³ ERA, Explanatory statement for the 2022 draft gas rate of return instrument, 17 June 2022, Appendix 4, Table 18

⁵⁴ Ibid., Appendix 4, Table 19

⁵⁵ Ibid., page 156

⁵⁶ Ibid., page 164

⁵⁷ ATCO, Attachment 1: ATCO Submission, 2022 Rate of return instrument Discussion paper, February 2022, page 32

- **Rounding:** While recognising the need for the ERA to exercise judgment in deriving a point estimate of beta rounding down from 0.77 to 0.7 by placing additional weight on outdated delisted domestic firm data appears excessive given the measures already taken to achieve a robust beta estimate and as ATCO has previously submitted it does not believe there is reason to argue Australian betas are lower than international comparators.⁵⁸
- **Delisted firms:** Delisted firm comparator data (as employed by the ERA for 3 of the 4 firms identified in its Domestic Energy Sample) contributes no information on the prevailing conditions in the market for equity funds and should not be used.

We expand on our reasoning in the sections below.

8.4.1 LAD Beta Estimates

ATCO acknowledges that a LAD beta estimate is not an estimate of beta in the sense of being theoretically consistent with the CAPM model which is a construct based on covariances and normal distributions of returns. However, in the broader context of trying to estimate a parameter which is robust to market shocks to show how the returns of a particular firm vary with the market LAD has been found to be more stable than an OLS estimate in recent times.⁵⁹

Therefore, ATCO supports the use of LAD estimates of beta to supplement OLS beta estimates where there is evidence OLS beta estimates are affected by market shocks as shown in the ERA's Figure 9⁶⁰.

8.4.2 10 year beta estimate

ATCO considers the ERA should revisit and question its use of a 10 year beta estimate for several reasons.

- Given beta is a parameter used in the estimate of a forward looking return, reduces the effect of rising beta values evident prior to March 2020 shown in the ERA's Figure 9⁶¹ as well as international evidence presented by ATCO in its previous submission⁶²
- In seeking to reduce the effect of current market shocks, it should not be necessary to incorporate a 10-year historical beta estimation window, since LAD estimates have already been employed to improve the robustness of ERA's beta estimates to outlying return observations.
- The proposed change to incorporate 10 year beta is at odds with the ERA's statement that "energy networks would have been relatively more immune from shocks compared to other industries"⁶³ – since if this is the case, that robustness would be observed in the market data.

The ERA explains its rationale for introducing a 10 year beta estimate as follows:

"The ERA notes that the current five-year window includes market shocks such as COVID-19 and the conflict in the Ukraine. The ERA also notes that the current five-

⁵⁸ ATCO, Attachment 1: ATCO Submission, 2022 Rate of return instrument Discussion paper, February 2022, page 32

⁵⁹ ENA, Estimating the cost of equity, Response to AER's Pathway to 2022 Rate of Return Instrument: Draft Equity Omnibus Working Paper 3 September 2021, page 83

⁶⁰ ERA, Explanatory statement for the 2022 draft gas rate of return instrument, 17 June 2022, page 164

⁶¹ Ibid., page 164

⁶² ATCO, Attachment 1: ATCO Submission, 2022 Rate of return instrument Discussion paper, February 2022, page 32

⁶³ ERA, Explanatory statement for the 2022 draft gas rate of return instrument, 17 June 2022, para 959

year window includes M&A activity for domestic energy networks, both currently listed or recently delisted.

To the extent that these shocks do not represent permanent changes to systematic risk and bias equity beta estimates, the consideration of a longer window can moderate the impact of these shocks. Therefore, the ERA will expand its considerations to include the 10-year window.⁶⁴

Ideally, stakeholders will be able to reliably predict the estimation method used by the ERA from one Rate of Return Instrument update to the next. Changing the beta estimation window from decision to decision should not be done lightly. By introducing a 10 year estimation window in this decision the ERA is, to an extent, creating regulatory uncertainty. Moreover, it is unclear whether it is the ERA's intention to continue estimating 10 year betas in all future Rate of Return Instrument updates. Or, alternatively, is it the ERA's intention to drop the 10 year beta estimate at the next Rate of Return Instrument update in 2026? ATCO notes that in 2026 a 10 year beta will include 2020 while a five year beta will not. These are important consideration for the predictability and reliability of regulatory processes and the ERA should explain its intentions now.

Given that the ERA has already used LAD estimates of beta to minimize the impact of outlying relative return observations – including ones that may be driven by market shocks -- the question is: Why is this additional measure necessary, particularly when it operates to move the estimates of beta in the same direction as the LAD estimates?

The question must also be asked why this measure is necessary when the ERA is of the view “energy networks would have been relatively more immune from shocks compared to other industries”.

The ERA further states:

“The balance between relevance and statistical robustness still lies in favour of five-year estimation windows as the primary estimate:

- *The ERA notes the findings from the Brattle Group's report that international regulators tend to favour shorter estimation windows.*
- *Concerns of market shocks are possibly moderated by the ERA's use of robust estimators⁶⁵*

Despite viewing the five year estimate as the *primary* estimate the ERA has given equal weight to the 5 and 10 year estimates. This equal weighting appears inconsistent with the ERA's stated view regarding the estimation window.

As the ERA has stated, return on equity is a forward-looking concept; equity beta should ideally reflect expectations informed by prevailing market conditions. This suggests a shorter estimation window should be used, as longer estimation windows introduce risks that structural breaks are present in the return series, which make estimated equity betas less useful⁶⁶. The ERA's Figure 9 makes it clear extending the estimation window to 10 years makes the beta estimates less representative of the increasing betas prior to March 2020 which are more relevant to current market conditions than betas of 10 years ago.

⁶⁴ ERA, Explanatory statement for the 2022 draft gas rate of return instrument, 17 June 2022, para 981

⁶⁵ Ibid., para 983

⁶⁶ Ibid., para 979

US and Canada beta analysis recently submitted to the AUC showed there is evidence of rising betas.⁶⁷ The market evidence indicates that the risk of utility investments has increased relative to the broader capital markets. This is directly observable in the market betas of publicly traded utility stocks, which have increased markedly since 2018, and especially since the onset of the COVID-19 pandemic

The ERA has controlled for M & A activity that results in delisting of a firm by excluding observations from announcement to close and not counted them as a valid observation. Our preference would be to simply exclude any company for which the data is significantly affected by M&A activity, as opposed to snipping out periods of data.

For all other transactions, if the size of the transaction is material then the ERA will identify affected firms and exercise its regulatory discretion in considering the resulting estimates.

Therefore, ATCO questions the need for introducing a 10 year beta to control for domestic M&A activity as stated by the ERA. A better option is to remove the delisted firms from the sample as explained further in section 8.4.4 below.

Extending the estimation period to 10 years places additional weight on domestic delisted comparators which provide no information regarding beta in current market conditions. As a result, the ERA should revisit its rationale for introducing a 10 year beta estimation period.

8.4.3 Rounding

ATCO recognises the need for the ERA to exercise judgment in selecting a point estimate of beta. However, rounding down from 0.77 to 0.7 appears to be an excessive adjustment:

- The ERA has already depressed the average beta value (from 0.82 to 0.77) by use of LAD and 10 year beta estimates. The use of country versus full pooling also directionally reduces the estimated beta all else equal.
- Especially in this context, rounding down beta has the effect of placing more weight on domestic comparators that is not justified.

The ERA's stated rationale for applying a further downward shift in the beta estimate is "to recognise that Australian equity beta estimates are generally lower than international estimates"⁶⁸. ATCO's February submission presented evidence on this issue of the perceived difference in Australian and international betas and concluded it was not reasonable, on the available evidence, to make such a conclusion⁶⁹. The lower estimated Australian betas are from a much smaller sample and the observed differences are not statistically significant.⁷⁰

There is no reason to expect that betas would be intrinsically lower in Australia than in other jurisdictions; the activity of distributing gas is no different operationally in Australia than in other jurisdictions. In addition, regulatory frameworks for gas distribution are similar in many jurisdictions: while there may be some differences, ATCO is not aware of any reason to think that

⁶⁷ Alberta Utilities Commission (AUC), 2023 Generic Cost of Capital (GCOC) Proceeding ID 27084, Exhibit 27084-X0029, Evidence of Dr Bente Villadsen, pg 7

⁶⁸ ERA, Explanatory statement for the 2022 draft gas rate of return instrument, 17 June 2022, para 1086

⁶⁹ ATCO, Attachment 1: ATCO Submission, 2022 Rate of return instrument Discussion paper, February 2022, page 32

⁷⁰ This difference between the "true" and "estimated" betas is an important distinction in the current context. Statistical estimates of a single firm's beta tell us something about the similarity of the movements in a firm's returns relative to movements in the market in the historical period being examined. However, statistical confidence intervals from beta regressions do not tell us anything about the accuracy of the estimate to the true systematic risk of the firm. Rather, these confidence intervals only tell us the confidence that we can have about the estimated asset beta in the future if the future is the same as the past (or, more exactly, the generation process for future equity return data is the same as it was in the estimation period).

these differences would necessarily result in lower systematic risks in Australia than in other countries.

In its May submission to the ERA's focussed consultation ATCO discussed the advantages and disadvantages of both full pooling and country pooling⁷¹. ATCO considers that either full pooling or country pooling could be used. Country pooling introduces some risk that the results of one or a small number of firms could be over-weighted and could potentially introduce anomalies. However, provided that a sufficient number of countries are represented, and that the few firms in each small market are appropriately representative as comparators, this risk should be reasonably small.

In the context of rounding ATCO notes that the ERA's selection of the country pooling method, although it may be justified, has also contributed to a lowering of the beta estimate as shown in **Table 8.1**.

Table 8.1: ERA December 2021 Discussion paper beta estimates⁷²

| | OLS estimate | LAD estimate |
|-----------------|--------------|--------------|
| Full pooling | 1.1 | 0.8 |
| Country pooling | 0.8 | 0.7 |

By justifying a reduction in the estimate of beta on a perceived lower Australian beta compared to international beta's the ERA is also implicitly placing more weight on delisted Australian comparator firm betas which are less informative regarding expected future returns.

In summary, the ERA has made 4 decisions in the process of estimating beta all of which operate to reduce the beta estimate. Use of LAD and country pooling may be justified to deal with specific matters relating to the reliability of the estimate. The use of LAD and country pooling both operate to reduce the beta estimate. In reviewing its draft decision, the ERA must question whether further downward adjustment by the use of 10 year estimates and domestic anchoring in reaching a point estimate are justified given steps already taken to improve the reliability of the beta estimate.

8.4.4 Delisted firms

The ERA's beta estimate places material weight on delisted Australian firm data while estimating a parameter to be used in estimating expected future returns.

- The domestic comparator sample includes 3 delisted firms (Ausnet Services, Duet group and Spark Infrastructure)
- Although the ERA has stated in the draft 2022 rate of return instrument explanatory statement it will only use the last five years of data for these firms it has then produced 10 year beta estimates in tables 13 and 14 placing further weight on uninformative data.
- As noted in the previous section, further weight has been placed on this uninformative data to justify a reduction in the ERA's beta point estimate from 0.77 to 0.7.

Placing so much weight on delisted Australian comparator firms as noted in the previous section reduces the relevance of the beta estimate to estimating expected future returns. This is most clear in the case of Duet which has been delisted since 2017 and thus does not include any data from the rising beta trend post that date. DUET Group data should be omitted, or given less

⁷¹ ATCO, Attachment 1: ATCO Submission, 2022 Rate of return instrument focussed consultation paper, page 8

⁷² ERA, Focussed consultation for the 2022 gas rate of return instrument review, Discussion paper, April 2022, page 8

weight because it is no longer listed, and therefore contributes no information on the prevailing conditions in the market for equity funds.

Further, even though the acquisitions of AusNet Services and Spark Infrastructure were completed relatively recently, care must be taken in using partial period data for these firms in estimating beta. It would be inconsistent to consider foreign firm data subject to M & A activity while including domestic firm data in the same circumstances. The ERA should:

- clarify that M & A related beta data has been treated consistently.
- reconsider the weight placed on delisted Australian firm beta's in its beta estimate.

9. DEBT RAISING AND HEDGING COSTS

9.1 Summary of ATCO's prior submission

ATCO's April 2022 submission in response to the Chairmont review of debt hedging and raising costs:

- broadly supported Chairmont's findings to increase the debt raising cost allowance due to the higher offshore issuance costs and inclusion of costs for a 2nd credit rating and annual surveillance
- sought for the ERA to further investigate the arranger fees and liquidity management cost components of the debt raising costs to ensure that all costs consistent with the benchmark debt strategy are included.
- supported the increased debt hedging cost allowance due to the addition of an allowance for the costs involved in negotiating an International Swaps Dealers Agreement (ISDA).
- accepted Chairmont's proposed allowance for hedging costs

9.2 ERA Draft instrument

The ERA's draft instrument:

- confirmed the Chairmont proposed hedging cost allowance of 0.123 per cent
- applied a debt raising cost of 0.165 per cent, an increase of 0.01 per cent over the allowance proposed by Chairmont to take account of additional data on arrangement fees available from Bloomberg

9.3 Independent Panel Report

The Panel considered the ERA's approach to debt and equity raising costs to be appropriate and based on sound reasoning.

- The ERA's addition [to the Chairmont suggested amount] of 1 basis point per annum to partially incorporate the insights available from the Bloomberg sample is appropriate.
- The ERA's decision not to consider issue price discounts is considered appropriate.
- The Panel considers the ERA's decision to not make an allowance for liquidity facilities costs in the debt raising costs to be appropriate but suggests that the matter of liquidity facilities costs is clarified in future Instrument reviews.
- The ERA may consider more fully exploring the refinancing before maturity issue in future reviews, but the Panel considers the ERA's decision to not make an allowance for the three-month financing fee in the debt raising costs to be appropriate.
- ESG trends may increase the cost of debt or the cost of raising debt for the benchmark firm, but at present the nature and extent of this impact is unknown. As such, the Panel considers the ERA's decision to exclude ESG costs from the Instrument to be appropriate.

9.4 ATCO's response

ATCO broadly supports the ERA increasing the debt raising cost allowance due to the higher offshore issuance costs and inclusion of costs for a second credit rating and annual surveillance.

ATCO supports increasing the debt hedging cost allowance to 0.123 per cent due to the addition of an allowance for the costs involved in negotiating an International Swaps Dealers Agreement (ISDA).

However, ATCO considers the ERA should consider increasing the debt raising cost allowance further to take account of all debt raising costs including:

- higher arranger fees based on Bloomberg data
- issue price discount
- liquidity facilities costs and/or three-month refinancing fee
- Environmental, Social and Governance (ESG) costs.

ATCO acknowledges the ERA's 1 bppa increase in its estimate of the costs of arrangement fees paid directly by issuers to arrangers to reflect the evidence provided by CEG. This reflects an implicit 38% weight to CEG's estimate and a 62% weight to Chairmont's estimate. ATCO submits that the ERA should reconsider this weighting. The final weighting should have greater regard to the lack of any transparency associated with Chairmont's "confidential survey" method and the AER's prior rejection of Chairmont's method and CEG's detailed exposition of its own replicable estimate.

The ERA's basis for rejecting CEG's estimate of the cost of issue price discounting has previously been addressed in a November 2019 report by CEG.⁷³ ATCO recommends that the ERA review section 3 of that report and consider whether this changes the ERA's conclusion. In particular, ATCO notes that the ERA at paragraph 1172 fifth dot point of the Draft Explanatory Statement quotes Chairmont in support of its decision. CEG's response to this point includes the same Chairmont statement that the ERA relies on and is excised below:

Rather than being a fundamental difficulty, point 5. is our core proposition. Chairmont state: "For bonds allocated to the underwriter any post issuance trading price difference is borne by the underwriter, not the issuer. Underwriters are compensated for this risk through the underwriting fee which is included within the overall Arrangement fee." We entirely agree with this. It also follows that if the issue price is set well below the market value of the bond then the arrangement fee will be much smaller (and vice versa) because the expected cost of bearing that market value risk is lower and/or negative;

ATCO supports CEG's analysis and as a result the ERA should increase the allowance for issue price discount costs by 5.1 bppa in accordance with evidence submitted in ATCO's April 2022 submission.⁷⁴

In relation to liquidity facility costs and/or three month early refinancing cost, these costs serve the same purpose and are, to some extent, interchangeable. A firm with large liquidity facilities will not need to engage in the same level of early refinancing as a firm without liquidity facilities. In its Draft Explanatory Statement the "ERA recognises that liquidity facility costs may be incurred by an efficient prudent energy network"⁷⁵ but it rejects compensating for these costs on the basis that they may:

⁷³ CEG, The cost of arranging debt issues, November 2019. Available at <https://www.aer.gov.au/system/files/SAPN%20-%20Revised%20Proposal%20-%203.1%20-%20CEG%20-%20The%20cost%20of%20arranging%20debt%20issues%20-%20November%202019.pdf>

⁷⁴ CEG, Debt arranging and liquidity management costs, April 2022, pages 9-29, Attachment 1, ATCO Submission to Rate of return discussion paper 13 April 2022

⁷⁵ ERA, Explanatory statement for the 2022 draft gas rate of return instrument, 17 June 2022, para 1179

-
- not be necessary to maintain a BBB+ credit rating;⁷⁶ and
 - be compensated in working capital allowances.⁷⁷

ATCO submits that neither of these conjectures are true. CEG provided expert advice on the first dot point that it would not be possible to maintain an investment grade credit rating (let alone a BBB+ credit rating) without liquidity facilities/early refinancing. CEG references the S&P rating methodology, Methodology and Assumptions: Liquidity Descriptors for Global Corporate Issuers, December 16, 2014.

With expert evidence that such costs are necessary to maintain an investment grade credit rating and no expert evidence to the contrary, ATCO submits that the ERA should not base its decision on speculation that the expert evidence “might” be wrong. ATCO considers that the ERA should carefully consider the CEG evidence and revisit its decision. In this regard, ATCO draws attention to the following passages from the S&P methodology that CEG referenced (emphasis added):

*Our key quantitative liquidity measures (see section A) generally focus on liquidity sources and uses over a prospective 12-month horizon. In addition, under the methodology, we assess whether companies demonstrate prudent liquidity management to meet all forecasted intra-year debt maturities and working capital needs. For liquidity to be assessed as **at least adequate, we expect appropriate forms of backup and sources of liquidity to cover** at least 100% of intra-year working capital needs and **debt maturities, including CP, over the following 12 months**, subject to the provisions outlined in paragraphs 38-39 that include guidelines for assessing liquidity over a six-month time horizon if certain criteria are met. Companies will not receive an assessment of higher than less than adequate to the extent we observe liquidity management shortcomings that could lead to intra-year liquidity weakness. Due to the limitations of intra-year disclosure, our analysis generally focuses on general treasury liquidity polices and controls, including those that relate to CP backup coverage. (para 11)*

A company with less than adequate liquidity has an SACP no higher than 'bb+'. (para 40)

ATCO notes that, under a 10 year hybrid trailing average debt strategy, within a 12 month period 10% of a firms’ debt will fall due.

In relation to the ERA’s second speculation that these costs “might” be recovered in the working capital allowance, ATCO notes that this is not a matter for speculation. There is no compensation in the ERA’s working capital allowance for the costs of liquidity management associated with debt refinancing. The working capital allowance is solely estimated based on the timing gap between receivables and expenses.

The ERA also rejects the inclusion of early refinance costs on the basis that they “might” not be necessary to maintain a BBB+ credit rating⁷⁸ and on the basis that a trailing average already “minimises refinancing risks.”⁷⁹

ATCO refers the ERA to the same S&P rating methodology⁸⁰ and submits that this evidence demonstrates that liquidity management costs must be incurred to maintain an investment grade

⁷⁶ Ibid., para 1181

⁷⁷ Ibid para., 1182

⁷⁸ ERA, Explanatory statement for the 2022 draft gas rate of return instrument, 17 June 2022, para 1187

⁷⁹ Ibid., para 1188

⁸⁰ S&P rating methodology, Methodology and Assumptions: Liquidity Descriptors for Global Corporate Issuers, December 16, 2014

credit rating. As a result, the ERA should increase the allowance for issuing costs by 12 bppa in accordance with evidence submitted in ATCO's April 2022 submission⁸¹.

⁸¹ CEG, Debt arranging and liquidity management costs, April 2022, pages 30-36, Attachment 1, ATCO Submission to Rate of return discussion paper, 13 April 2022

10. INFLATION

10.1 Summary of ATCO's prior submission

ATCO's February 2022 submission supported the ERA's continued use of the Treasury bond implied inflation approach to estimate the expected inflation rate because ATCO is of the view that market expectations provide the best estimates of expected inflation for the regulatory period. ATCO also supported a five year term for inflation.

10.2 ERA Draft Instrument

The ERA's draft instrument continues the use of the Treasury bond implied inflation approach to estimate the expected inflation rate and a five year term for inflation.

10.3 Independent Panel Report

The Independent Panels review of the ERA's draft instrument found the following.

- Market-based approaches to measuring inflation expectations offer advantages over survey and forecast-based measures. As the ERA notes (Para 1250), market-based measures allow for the aggregation of expectations from a wide array of economic agents.
- The choice of a five-year term is consistent with the regulatory cycle and consequently the regulatory approach for meeting the NPV=0 principle.
- The Panel noted that while this term is consistent with the five-year term of the interest rate swap rate used in computation of the rate of return on debt, it is not consistent with the 10-year term used to estimate the risk-free rate in relation to the rate of return on equity.
- The Panel considers the approach can be readily replicated.

On balance, the Panel considered that the ERA's proposed approach to estimate inflation is appropriate and based on sound reasoning.

10.4 ATCO's Response

ATCO supports the ERA's continued use of the Treasury bond implied inflation approach to estimate the expected inflation rate because ATCO is of the view that market expectations provide the best estimates of expected inflation for the regulatory period.

ATCO continues to support a five year term for inflation as it best estimates the inflation to be added to the asset base when it is rolled forward to the next access arrangement period.

The primary consideration in determining the period over which inflation is estimated is ensuring the service provider receives the required return as it is estimated at the start of the regulatory period and to reflect expected inflation increases over the regulatory period.

The aim of the post tax revenue model (PTRM) used by Australian regulators to set regulated revenues is to preserve a real return to service providers. This is achieved by:

- Adding actual inflation to the RAB to preserve the value of the investment in real terms.
- Allowing a nominal rate of return on the RAB.

-
- Deducting forecast inflation on the opening asset base from allowed nominal depreciation so that the inflation component of return is not received twice.

As it is actual inflation over the five year access arrangement period that is added to the RAB at the end of the period, to preserve the total nominal return to the service provider as best possible requires that inflation be estimated over five years. That is the forecast for inflation is of the actual inflation that will be added to the RAB⁸². Matching the period provides the best estimate of the inflation to be deducted from depreciation at the start of the period such that it as closely as possible matches the inflation added to the RAB at the end of the period. Therefore, the term of the inflation estimate is five years.

Given the role that inflation plays in setting regulated returns in the PTRM framework term of the inflation estimation period is independent of the equity and debt term.

⁸² Note: The inflation forecast typically is done a few months prior to the start of an access arrangement period at a time consistent with the observation period of the risk free rate. Similarly, actual inflation added to the RAB has a lag of about three months to allow calculation of the RAB to be rolled forward into the subsequent access arrangement period at the time of the subsequent access arrangement decision.

11. GAMMA

11.1 Summary of ATCO's prior submission

ATCO's February 2022 submission supported determining the estimate of gamma from aggregate tax statistics data published by the ATO.

ATCO did not accept the ERA's application of the Monkhouse formula to calculate gamma as it used inconsistent data and was overly complicated relative to using ATO statistics.

11.2 ERA Draft Instrument

The ERA's draft instrument:

- continues to apply the Monkhouse formula (distribution rate X utilisation rate) to calculate a gamma of 0.5
- applies an estimate of 0.9 for the distribution rate. This was determined based on the financial reports of the 50 largest Australian Securities Exchange-listed (ASX) firms⁸³
- applies an estimate of 0.6 for the utilisation rate. The ERA derived this estimate by applying the equity ownership approach to determine the percentage of domestic investors in the Australian equity market. The utilisation rate was estimated for all Australian equity from the national accounts of the Australian Bureau of Statistics (ABS)⁸⁴.

11.3 Independent Panel Report

The Panel considers the ERA's use of a gamma of 0.5 in the Instrument to be appropriate and based on sound reasoning while noting:

- there is a long history of debate around the appropriate estimation of gamma for regulatory purposes in Australian and that it remains contentious.
- whether the ASX 50 is representative of the benchmark efficient firm is open to debate, and the ERA may consider resolving this in future Instruments by answering the following questions:
 - Does the distribution rate differ significantly between ASX50 and non-ASX50 firms?
 - If so, is the benchmark firm an ASX50 firm?

11.4 ATCO's Response

ATCO maintains its position that the ERA's estimate of gamma through its application of the Monkhouse formula does not give rise to the best estimate of gamma. It is an internally inconsistent approach that involves estimating the proportion of credits that are distributed to one group of shareholders (50 large firms) and the proportion that are redeemed by an entirely different group of shareholders (all equity, including unlisted firms). Estimating gamma using different and inconsistent data for the two components does not result in an appropriate or best estimate of gamma consistent with the National Gas Objective and the Revenue and Pricing Principles.

⁸³ Dr Lally, M., Estimating the Distribution Rate for Imputation Credits for the Top 50 ASX Companies, June 2021, pp. 3

⁸⁴ ABS, Australian National Accounts: Finance and Wealth, Catalogue 5232.0, Tables 48 and 49

ATCO have previously advocated for determining the estimate of gamma from aggregate tax statistics data published by the ATO.⁸⁵ This method calculates gamma directly as the proportion of created credits that are actually redeemed by investors in Australia. Under this approach, gamma is estimated directly as the ratio of total credits redeemed to total credits created, where each component is obtained from official ATO taxation statistics.

ATCO understands that in estimating gamma using ATO tax statistics, the only data needed is corporate tax paid and credits redeemed. The reliability of these figures has been confirmed as part of the ENA's December 2017 submission to the AER, where Hathaway states that:

*The Company Tax item is the total company tax collected by the ATO during the relevant period and the Credits Redeemed item is the total amount of credits redeemed via the filing of personal tax returns. These two data items are 100% reliable as they are figures that relate directly to ATO tax collections. There is no reason to question the ATO's records of the amount of corporate and personal tax it has collected.*⁸⁶

Hathaway goes on to conclude that the ATO tax statistics can “clearly” be used to provide a reliable utilisation estimate of gamma.⁸⁷

The ERA have noted that Hathaway identified a discrepancy with the tracking of imputation credits in the ATO taxation statistics. Since 2018 the AER has sought additional information from the ATO on its tax statistics to resolve this discrepancy:

- In its May 2018 response⁸⁸, the ATO provided information to the AER regarding “Net distribution (actual credits claimed, not including companies, vs distributions to entities who can use credits, not companies)”. The data shows an average utilisation rate of 54% over the years 2012 to 2016. In comparison the ERA's initial position of a utilisation rate of 60% based on the national accounts appears high.
- In its October 2021 response⁸⁹, the ATO does not provide further clarification on the issue of reconciling the franking account balance. Given that issues with the reliability of the use of ATO tax statistics for estimating the value of imputation credits remain unresolved, the ERA does not consider that the ATO tax statistics can be used as a basis for estimating gamma⁹⁰.

However, in June 2018, Hathaway confirmed that a utilisation gamma can be estimated as the ratio of credits redeemed to credits created from ATO tax statistics.⁹¹ The ATO's concerns with the use of tax statistics in time series analysis for gamma are not a relevant factor for disregarding the use of the ATO tax statistics. Hathaway has noted that similar concerns exist for nearly all finance and economic data.⁹² The ATO are the primary source of the imputation tax statistics and there is no other source of the data.

⁸⁵ ATCO, ATCO Submission – Draft Rate of Return Guidelines, page 27-35, Available from: <https://www.erawa.com.au/cproot/19888/2/ATCO%20Gas%20Australia%20-%20public%20submission.pdf>

⁸⁶ Hathaway, N., Capital Research Memorandum, 12 December 2017, page 1, Available from: <https://www.aer.gov.au/system/files/Energy%20Networks%20Association%20-%20submission%20on%20rate%20of%20return%20issues%20paper%20-%2012%20December%202017%20-%20Attachment%20C%20-%20Letter%20-%20Dr%20Neville%20Hathaway%20-%20Tax%20Statistics.pdf>

⁸⁷ Hathaway, N., Capital Research Memorandum, 12 December 2017, page 2

⁸⁸ Available at: https://www.aer.gov.au/system/files/ATO%20Note%20-%20Franking%20account%20reconciliation%20-%2011%20December%202018_0.pdf

⁸⁹ Available at: <https://www.aer.gov.au/system/files/ATO%20Note%20-%20Franking%20account%20reconciliation%20-%2028%20October%202021.pdf>

⁹⁰ ERA, Explanatory statement for the 2022 draft gas rate of return instrument, 17 June 2022, para 1309

⁹¹ Hathaway, N., Capital Research Memorandum, 28 June 2018, Available from: <https://www.aer.gov.au/system/files/ENA%20-%20Capital%20Research%20Memorandum%20-%2028%20June%202018.pdf>

⁹² Ibid., page 6

ATCO accepts that there are two minor issues in relation to the credits created field because some tax paid does not create imputation credits due to it being paid by non-resident companies and because the ATO reports tax 'owed' and some taxpayers may default on that obligation. However, Hathaway's June 2018 memorandum confirms that these two issues are very minor and immaterial.

ATCO continues to support the simpler ATO method of calculating gamma based on franking credits redeemed divided by franking credits created. The fewer parameters required to be estimated and the more they are estimated based on consistent data the less estimation error is likely.