



Economic Regulation Authority

2026 gas rate of return instrument review

Discussion paper

23 October 2025

Acknowledgement of Country

At the ERA we value our cultural diversity and respect the traditional custodians of the land and waters on which we live and work.

We acknowledge their continuing connection to culture and community, their traditions and stories. We commit to listening, continuously improving our performance and building a brighter future together.

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Invitation to make submissions

Submissions are due by 4:00 pm WST, Wednesday, 26 November 2025

The ERA invites comment on this paper and encourages all interested parties to provide comment on the matters discussed in this paper and any other issues or concerns not already raised in this paper.

We would prefer to receive your comments via our online submission form
<https://www.erawa.com.au/consultation>

You can also send comments through:

Email: publicsubmissions@erawa.com.au

Post: Level 4, Albert Facey House, 469 Wellington Street, Perth WA 6000

Please note that submissions provided electronically do not need to be provided separately in hard copy.

All submissions will be made available on our website unless arrangements are made in advance between the author and the ERA. This is because it is preferable that all submissions be publicly available to facilitate an informed and transparent consultative process. Parties wishing to submit confidential information are requested to contact us at info@erawa.com.au.

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Contents

Invitation to make submissions	iii
About this instrument and review	ii
1. Introduction.....	1
1.1. 2022 gas instrument	2
1.2. 2026 gas instrument process	3
2. Regulatory framework	6
2.1. National Gas Law	6
2.2. National Gas Rules.....	7
3. Considerations for the ERA when determining a gas rate of return.....	8
3.1. Use of regulatory judgement	9
3.2. 2026 gas instrument review.....	10
4. List of questions from the discussion paper	12
5. 2022 gas instrument performance.....	13
5.1. Mechanical calculation of market parameters	13
5.2. Reflection of changing market conditions.....	14
6. Key topics for 2026 gas instrument review	18
6.1. Fewer listed companies in the sample	18
6.2. Gearing	20
6.3. Benchmark credit rating.....	22
6.4. Debt approach	24
6.5. Refinement of market risk premium methods.....	31
6.6. Equity beta estimation	33

List of appendices

Appendix 1 Regulatory requirements	36
Appendix 2 2022 Gas Instrument List of Comparators	40
Appendix 3 Market risk premium indicative estimates	42
Appendix 4 Equity beta estimates	43
Appendix 5 List of Tables.....	44
Appendix 6 List of Figures	45

About this instrument and review

The Economic Regulation Authority is undertaking its four-yearly review of the gas rate of return instrument.

The gas instrument sets out the methods the ERA and gas pipeline service providers will use to estimate the allowed rate of return and value of imputation credits for gas transmission and distribution service providers.

This rate of return provides regulated businesses with funds to service the interest on their loans and give a return to shareholders. The rate of return represents a large component of the revenue of gas pipelines and affects regulated prices that customers pay.

The gas instrument is required under the National Gas Law as implemented in Western Australia by the *National Gas Access (WA) Act 2009*. Regulated gas pipelines in Western Australia include the Dampier to Bunbury Natural Gas Pipeline, the Goldfields Gas Pipeline and the Mid-West and South-West Gas Distribution Systems.

The ERA published the current gas instrument, the 2022 Final Gas Rate of Return Instrument, on 16 December 2022.

The ERA is required to complete a review of the current gas instrument and publish a final version of our new gas instrument by 16 December 2026.

This review provides an opportunity to undertake an assessment of approaches for determining the allowed rate of return to ensure they remain in the long-term interest of consumers.

This discussion paper sets out the ERA's working views on the key topics we have identified where further work is needed for the 2026 gas rate of return instrument.

The ERA is seeking stakeholder feedback on this gas instrument discussion paper and asks questions of stakeholders.

The ERA will consider stakeholder submissions on the discussion paper in the development of its draft 2026 gas instrument, which is expected to be published for further comment in mid-2026.

1. Introduction

1. The ERA is Western Australia's independent economic regulator and one of its functions is approving access arrangements for gas transmission and distribution services that facilitate third-party access to monopoly gas infrastructure.
2. The ERA's responsibilities are established under the National Gas Law (NGL) and National Gas Rules (NGR) as applied in Western Australia.¹ The ERA is guided in its role by the national gas objective set out in the NGL. This objective focuses on promoting the long-term interests of consumers of natural gas.
3. As part of the ERA's regulatory responsibility to determine revenues for gas pipeline service providers, we must set a rate of return to be applied on regulated assets. The rate of return a regulated gas pipeline receives on its regulatory asset base, known as the return on capital or a weighted average cost of capital, is a key driver of the total amount of revenue the service provider derives from revenue determinations made by the ERA.
4. The rate of return provides a business with the money to pay the interest on its loans and give a return on equity to investors.
5. The rate of return is important for both consumers and owners of gas pipelines. To set an efficient rate of return:
 - We want to set the rate of return so gas consumers do not pay more than needed.
 - However, the rate of return needs to be sufficiently high to encourage gas pipelines to continue to operate and invest in pipeline networks so consumers receive safe and reliable services.
6. The NGL requires the ERA to produce a gas rate of return instrument, which is a binding instrument on both the ERA and gas pipeline service providers.²
7. The ERA published the current gas rate of return instrument on 16 December 2022.
8. The ERA must review the gas instrument and replace the reviewed instrument within four years of the last gas instrument.³
9. The ERA will review the current gas instrument and publish the 2026 gas instrument by 16 December 2026.
10. These reviews provide an opportunity to undertake a comprehensive assessment of approaches for determining the allowed rate of return.

¹ The *National Gas Access (WA) Act* 2009 implements the National Gas Access (Western Australia) Law and National Gas Rules for Western Australia. All references to National Gas Law (NGL) and National Gas Rules (NGR) referred to throughout this document are references to the NGL and NGR which apply in Western Australia.

² NGL, section 30D.

³ NGL, section 30P.

11. The 2026 gas instrument will be required for the next round of gas access arrangements:
 - Mid-West and South-West Gas Distribution Systems proposal assessment commences in September 2028 (access period commencement date is 1 January 2030).
 - Goldfields Gas Pipeline proposal assessment commences in January 2029 (access period commencement date is 1 January 2030).
 - Dampier to Bunbury Natural Gas Pipeline proposal assessment commences in January 2030 (access period commencement date is 1 January 2031).
12. This discussion paper sets out the ERA's working views on the key topics we have identified where further work is needed for the 2026 gas rate of return instrument.
13. During the review process for the gas instrument the ERA will consider a range of information, including stakeholder submissions, expert advice, academic literature, market data and developments, information arising from the review consultation processes and any other relevant information, to formulate its final positions for the 2026 gas instrument.
14. The ERA encourages all interested parties to provide submissions on the matters discussed in this paper and any other matters or concerns.
15. The ERA will consider the submissions received and subsequently publish a draft 2026 gas rate of return instrument and associated explanatory statement.

1.1. 2022 gas instrument

16. The 2022 gas instrument and its detailed explanatory information can be found on the ERA's website. The 2022 gas instrument built on established positions from the 2018 gas rate of return guidelines.⁴
17. In September 2023, the gas instrument was amended due to the cessation of a Reserve Bank of Australia (RBA) statistical table (which was later reinstated). We amended the instrument to allow a schedule of possible data sources, to deal with contingencies around the cessation of the data sources for the risk free rate.⁵
18. At a high-level, the 2022 gas instrument sets out the following process for calculating the rate of return for a service provider:⁶
 - The rate of return is calculated according to a nominal vanilla weighted average cost of capital (WACC) formula.
 - The assumed capital structure for applying the WACC formula is 55 per cent debt and 45 per cent equity. Fixed over the period of the instrument.

⁴ ERA, *2022 review Final Gas Rate of Return Instrument and Explanatory Statement*, December 2022, [online](#).

⁵ ERA, *Amendments to 2022 instrument*, September 2023, [online](#).

⁶ ERA, *2022 final gas rate of return instrument*, December 2022.

- The estimate of the return on debt is based on a risk premium above the risk free rate, plus an additional margin for administrative and hedging costs. The parameters of the return on debt are estimated as follows:
 - The risk free rate is based on bank bill swap rates, applying a five-year term, and is updated at the start of an access arrangement and fixed for the length of the regulatory period.
 - The debt risk premium is based on a 10-year trailing average debt risk premium which will be updated annually throughout the regulatory period. The debt risk premia are calculated according to the revised bond yield approach using a sample of corporate bonds with a BBB+ credit rating and a term of 10 years.
 - The annual allowance for debt-raising and debt-hedging costs is 0.165 per cent and 0.123 per cent respectively. Fixed over the period of the instrument.
- The estimate of the return on equity is calculated by applying the capital asset pricing model. The inputs to this model are estimated as follows:
 - The risk-free rate is estimated based on the yields on ten-year Commonwealth Government Securities.
 - An equity beta of 0.7. Fixed over the period of the instrument.
 - A market risk premium of 6.1 per cent. Fixed over the period of the instrument.
- The ERA estimates the expected five-year inflation rate using the Treasury bond implied inflation approach.
- The ERA determines gamma through the Monkhouse formula as the product of the distribution rate and utilisation rate. Gamma is estimated at 0.5. Fixed over the period of the instrument.

1.2. 2026 gas instrument process

19. The 2026 gas instrument review approach is to:
 - Take the 2022 gas instrument as the starting point.
 - Review each rate of return component for possible change.
 - Assess the relative merits of any new evidence, considering any new matters that stakeholders raise as relevant.
20. In this paper, the ERA focuses on some key topics we have identified where further work is required and proposes working views.
21. This discussion paper forms part of the broader consultation that the ERA is undertaking as part of the preparation of the 2026 gas instrument.

22. The NGL prescribes several consultation requirements that the ERA must fulfil to develop the 2026 gas instrument. These requirements include that the ERA must consider the advice, recommendations or submissions given by:
 - A Consumer Reference Group
 - An Independent Panel review of the draft gas instrument
 - Expert evidence
 - Stakeholder submissions.
23. In October 2025, we published a paper setting out the engagement process for the review. This engagement document did not discuss substantive technical rate of return matters.⁷
24. The intent of the Consumer Reference Group is to provide direct and ongoing feedback to the ERA during the review that represents broad consumer perspectives. The Consumer Reference Group will have the opportunity to make submissions throughout the process.
25. The Independent Panel will review the draft gas instrument and report on whether it is supported by sound reasoning, based on the available information, such that it is capable of promoting the achievement of the national gas objective. The main purposes of the Independent Panel process are to give the ERA the benefit of an independent review, and to promote confidence among stakeholders that the ERA's proposed approach for the gas instrument is robust.
26. Throughout the review, the ERA will consider the views of experts. Considering expert evidence will assist the ERA to make decisions that result in a gas instrument that will, or is most likely to, contribute to the achievement of the national gas objective.
27. Indicative milestones for the 2026 gas instrument review are shown in Table 1.

⁷ ERA, *Engagement process for 2026 gas rate of return instrument*, October 2025.

Table 1: Milestones of the 2026 gas rate of return instrument review

Milestone	Description	Date
Engagement process paper	Detailed the process for the 2026 gas instrument review and sought nominations for the bodies that the ERA must establish under the NGL consultation requirements.	October 2025
ERA discussion paper (this document)	This paper outlines the ERA's views on key technical issues for the 2026 gas rate of return instrument and invites public submissions.	October 2025
Public submissions on the discussion paper	The ERA will receive written submissions in response to its discussion paper.	November 2025
2026 draft gas instrument	The ERA will publish a draft gas rate of return instrument and explanatory information, which will subsequently be reviewed by the Independent Panel.	June 2026
Independent Panel report	The Independent Panel will provide a report, which will be published on the ERA's website, including the panel's assessment of the evidence and reasons supporting the draft 2026 gas instrument.	August 2026
Public submissions on draft gas instrument and Independent Panel report	The ERA will invite public submissions on the draft 2026 gas instrument and the Independent Panel report.	September 2026
2026 final gas instrument	The 2026 gas instrument and explanatory information will be published and will be a binding instrument, applying to all regulatory determinations made while it is in force.	December 2026

2. Regulatory framework

28. The ERA's responsibilities for gas transmission and distribution services are established under the National Gas Law and National Gas Rules as applied in Western Australia.
29. This section summarises the requirements of the NGL and NGR that establish the regulatory framework for the rate of return decision making process and the gas instrument review. The full text of the NGL and NGR are reproduced in Appendix 3.

2.1. National Gas Law

30. The NGL provides for a legislated, uniform national framework governing access to monopoly gas infrastructure. The national gas objective sets out the aim of the NGL:⁸

The objective of this Law is to promote efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers of natural gas with respect to –

- (a) price, quality, safety, reliability and security of supply of natural gas; and
- (b) the achievement of targets set by a participating jurisdiction-
 - (i) for reducing Australia's greenhouse gas emissions; or
 - (ii) that are likely to contribute to reducing Australia's greenhouse gas emissions.

31. The NGL states that the gas instrument must set out the way to calculate the rate of return on capital and value of imputation credits that will be applied by the ERA in performing or exercising our economic regulatory functions.⁹
32. The NGL sets out the content of a rate of return instrument, stating that the instrument may include matters that the ERA considers appropriate.¹⁰ Additionally, the NGL sets out that we must publish explanatory information for a rate of return instrument.¹¹
33. The ERA sets the allowed rate of return to achieve the national gas objective.¹² The NGL and the national gas objective are intended to promote economic efficiency:¹³

The national gas objective is an economic concept and should be interpreted as such.

The long term interest of consumers of gas requires the economic welfare of consumers, over the long term, to be maximised. If gas markets and access to pipeline services are efficient in an economic sense, the long term economic interests of consumers in respect of price, quality, reliability, safety and security of natural gas services will be maximised.

⁸ NGL, section 23.

⁹ NGL, section 30D.

¹⁰ NGL, section 30E.

¹¹ NGL, section 30L.

¹² NGL, section 30D.

¹³ Holloway, P., *Second Reading Speech: National Gas (South Australia) Bill 2008, Parliamentary Debates (SA)*, Legislative Council, 30 April 2008.

34. In setting the allowed rate of return, the NGL states that the ERA must also have regard to the revenue and pricing principles (section 30D).¹⁴ The revenue and pricing principles in the NGL give effect to the national gas objective by targeting economically efficient outcomes, through effective incentives.¹⁵

2.2. National Gas Rules

35. The NGR detail how the rate of return is applied when determining regulated revenues (rule 87). The allowed rate of return is to be applied to the projected capital base for a regulatory year.
36. The estimated cost of corporate income tax is detailed in section 87A of the NGR, including the use of allowed imputation credits.
37. The 2026 gas instrument will set out the way to calculate the allowed rate of return, including the way to calculate the value of imputation credits, for service providers for applicable access arrangements while it is in force and will be binding on the ERA and service providers.

¹⁴ NGL, section 30D.

¹⁵ Holloway, P., *Second Reading Speech: National Gas (South Australia) Bill 2008, Parliamentary Debates (SA)*, Legislative Council, 30 April 2008.

3. Considerations for the ERA when determining a gas rate of return

38. To come to a decision, the ERA will need to determine the regulatory approach that best delivers the requirements of the NGL, NGR, national gas objective, and revenue and pricing principles.
39. To support the long-term interests of consumers, the ERA aims to promote efficient investment in, and operation of, regulated gas pipelines, and the efficient use of gas pipelines. This supports gas pipelines running their networks so they are safe and available to consumers, while at the same time sending consumers price signals to avoid under or over consumption.
40. The ERA may make a gas instrument only if it is satisfied that the instrument will, or is most likely to contribute to, the achievement of the national gas objective to the greatest degree.¹⁶ The ERA must also have regard to the revenue and pricing principles and other information the ERA considers appropriate.
41. For the 2026 gas instrument, the ERA intends to select the methods for calculating rate of return parameters that provide an estimate that is consistent with the efficient financing costs of a benchmark efficient entity with a similar degree of risk in the provision of reference services. The ERA considers that the promotion of the long-term interests of consumers and the efficiency objectives of the national gas objective and the revenue and pricing principles are best achieved through this approach.
42. The ERA will estimate a benchmark expected rate of return that is applied to a benchmark gas network service provider. The ERA does not determine the returns of a specific gas network service provider based on all its individual circumstances nor actual costs.
43. The ERA defines the benchmark efficient entity as a pure-play network service provider operating within Australia without parental ownership, with a similar degree of risk as that which applies to the service provider in respect of the provision of gas pipeline services.
44. The revenue and pricing principles require gas network service providers to be provided with a reasonable opportunity to recover at least the efficient costs they incur. The rate of return must remunerate the efficient financing costs of the service provider.
45. If the expected rate of return deviates from the market rate of return, then the allowable rates of return will either be too high or too low compared to the market's expected rate of return. This would not promote efficient investment in, and use of, the service provider's gas pipelines. These inefficient outcomes would not be in the long-term interests of consumers.
46. The allowed rate of return must not be set too high because:
 - Investors will be overcompensated for the risk involved in supplying capital to service providers compared to other investments. This means the returns from regulated assets will be higher than the returns of other comparable assets.

¹⁶ NGL, section 30D(3).

- Service providers will have an incentive to over-invest in regulated assets. The higher returns will encourage investors to build more assets than are necessary.
 - Consumers will pay higher prices than is efficient, which may distort downstream and upstream investment decisions. Prices will be higher as a result of both more regulated assets that need to be recovered and higher returns being paid on those assets. Higher prices may result in consumers demanding less gas transports services than would otherwise be the case.
47. The allowed rate of return must not be set too low because:
- Investors will be undercompensated for the risk involved in supplying capital to service providers compared to other investments. This means the returns from regulated assets will be lower than the returns of other comparable assets.
 - Service providers will be discouraged from investing in regulated assets and there may be under-investment. The lower returns will encourage investors to put their money in other non-regulated gas pipeline assets. This may affect both growth and maintenance investments. Therefore, the safety and reliability of the gas pipeline may be affected.
 - Consumers will pay lower prices than is efficient, which may distort downstream and upstream investment decisions. Lower prices may result in consumers demanding more gas transports services than would otherwise be the case.
48. The ERA will aim to determine its best estimate of an efficient rate of return, consistent with the risks involved in providing regulated gas services. This is a best possible rate of return estimate that is neither too high nor too low. The ERA considers that the best approach to estimating the efficient cost of capital is to base estimates of the parameters of the WACC on observations of market data, because market data reflects the aggregate expectations of investors.

3.1. Use of regulatory judgement

49. The national gas framework does not prescribe the method for the estimation of the rate of return, or its various components.
50. The estimation of the rate of return can be complex and contentious, and the rate of return is a material driver of regulated revenue. Given the sizes of the gas pipeline regulated asset bases, the rate of return can contribute between 40 per cent and 50 per cent of total regulated revenues.
51. The market cost of capital for a gas pipeline service provider related to regulated gas pipeline services cannot be directly observed and must instead be estimated.
52. The ERA is the decision maker in the gas rate of return process. As an independent regulator, it is the ERA's responsibility to ensure that its decisions are well-reasoned and based on robust consultation. This requires judgement to weigh competing evidence, models and stakeholder views to reach an optimal decision.
53. The ERA's gas instrument decisions must satisfy the NGL which states:¹⁷
- The [ERA] may make an instrument only if satisfied the instrument will, or is most likely to, contribute to the achievement of the national gas objective to the greatest degree.

¹⁷ NGL, section 30D(3).

54. The ERA will therefore apply its regulatory judgement in developing the 2026 gas instrument and its estimates for rate of return parameters. In applying regulatory judgement and making decisions, the ERA will examine a broad range of evidence including financial market data, financial models, investment practices and stakeholder views.
55. In accordance with the efficiency objectives set out under the NGL and the promotion of the long-term interests of consumers of natural gas, the ERA will establish the rate of return at a level sufficient to meet the cost of capital for financing investment by gas service providers.
56. The rate of return produced by the 2026 gas instrument should be neither higher nor lower than is needed to match a service provider's efficient financing costs.
57. The ERA will be transparent in its reasoning and provide detailed explanations.

3.2. 2026 gas instrument review

58. The ERA's 2022 gas instrument built upon past instruments and reviews and a standardisation of positions across rate of return parameters. The gas instrument has been used across all heavily regulated gas pipelines and over many access arrangements and tariff variation processes.
59. The development and application of the 2022 gas instrument has allowed gas pipelines, stakeholders and the ERA to gain insights into how to implement a binding instrument to ensure it effectively supports a gas pipeline access arrangement determination and associated annual tariff variation processes.
60. An effective gas instrument should be:
 - reflective of economic and finance principles and market information
 - fit for purpose
 - transparent
 - implementable and replicable
 - sufficiently flexible as to allow for changing market conditions.
61. To support the ERA's decision-making on the 2026 gas instrument, the ERA will have regard to the following factors. While these factors are not prescribed, they help inform the ERA's judgement:
 - We aim to deliver an efficient, forward-looking, market-based rate of return.
 - We will simplify, refine and improve approaches where possible, informed by market developments, academic studies and regulatory practice.
 - We recognise that expected rates of return are largely unobservable, which means that there may not be one perfect way to estimate returns.
 - We recognise that certain areas of the rate of return may have multiple valid approaches, which necessitate the use of our judgement.

- We recognise that stability and predictability of the gas instrument provides value to stakeholders.

4. List of questions from the discussion paper

62. Table 2 details the questions the ERA has raised throughout the discussion paper.

Table 2: List of questions

#	Question
1	Has the 2022 gas instrument supported the effective mechanical calculations of the rate of return required for access arrangement and tariff variation processes?
2	How has the 2022 gas instrument performed in reflecting changing financial market conditions? Are there any areas of concern that the recent volatility of financial markets has presented?
3	Do you support the ERA's proposed approach for the domestic sample (retain the use of APA, Spark Infrastructure Group and Ausnet Services, remove the DUET Group)?
4	Do you support the ERA's continued consideration of select international firms? Are there any new international firms that may be appropriate to now include?
5	Is gearing sufficiently stable to maintain the 55 per cent gearing ratio?
6	Do you support the continued use of domestic energy networks to estimate gearing? If not, please explain why and your alternative approach.
7	If an international sample is to be used for estimating gearing, which jurisdictions and companies could be considered comparable and included as part of the sample? Please explain why.
8	Is credit rating sufficiently stable to maintain BBB+ credit rating?
9	Do you support the continued use of domestic energy networks to determine the benchmark credit rating? If not, please explain why and your alternative approach.
10	Do you support a change in return on debt approach to a full trailing average? If not, please provide your reasons.
11	If a full trailing average debt approach is to be implemented in the 2026 gas instrument, are transitional arrangements needed and why? Please detail what transitional arrangements may look like.
12	To update the dividend growth model, what are the more current real GDP growth parameters?
13	Do you support discontinuing the use of conditioning variables to inform the ERA's decision on the market risk premium? Please provide reasons for your response.
14	Do you support the ERA's suggested simplifications for the estimation of equity beta? If not, please provide your reasons and any other potential approaches that might be adopted instead for the 2026 gas instrument.

63. The ERA encourages all interested parties to provide submissions on the matters discussed in this paper and any other matters or concerns.

5. 2022 gas instrument performance

5.1. Mechanical calculation of market parameters

64. The ERA has considered how effective the 2022 gas instrument has been in allowing the calculation of rates of return for gas pipeline access arrangements.
65. The 2022 gas instrument allows certain market parameters to change over the period of the instrument to reflect changing market conditions. Rate of return parameters that are updated include:
 - Risk free rate for the return on equity.
 - Interest rate swap rate for the return on debt.
 - Debt risk premium for the return on debt.
 - Expected inflation for the purposes of calculating a real weighted average cost of capital.
66. The other rate of return parameters are considered to be more fixed and therefore are held constant over the four-year period of the instrument.
67. The methods for calculating market based parameters are built on previous instruments and have been operating over multiple access arrangement cycles.
68. In September 2023, after the 2022 Gas Instrument was published, the 2022 Gas Instrument was amended due to the cessation of an RBA statistical table (which was later reinstated).¹⁸ The 2022 Gas Instrument was amended to allow a schedule of possible data sources, to deal with contingencies around the cessation of the data sources for determining the risk free rate. This schedule provided sufficient flexibility to allow for the RBA reinstatement of the statistical table.
69. The ERA used the 2022 gas instrument to calculate rates of return for:
 - The Mid-West and South-West Gas Distribution Systems access arrangement commencing on 1 January 2025.
 - The Goldfields Gas Pipeline access arrangement commencing on 1 January 2025.
 - Dampier to Bunbury Natural Gas Pipeline to commence on 1 January 2026.
 - 2026 tariff variations for both the Mid-West and South-West Gas Distribution Systems and Goldfields Gas Pipeline.
70. The mechanics set out in the 2022 gas instrument allowed the ERA and the gas pipelines to calculate required market rate of return parameters for the three different gas pipelines at the different times of their respective access arrangement cycles.
71. The ERA considers that the methods and process of the 2022 gas instrument are working well and has effectively supported the delivery of multiple access arrangements and allow for the required annual variations to tariffs.

¹⁸ ERA, *Amendments to 2022 instrument*, September 2023, [online](#).

72. During the 2026 gas instrument review the ERA will continue to look to refine and improve the methods for calculating market parameters where possible.

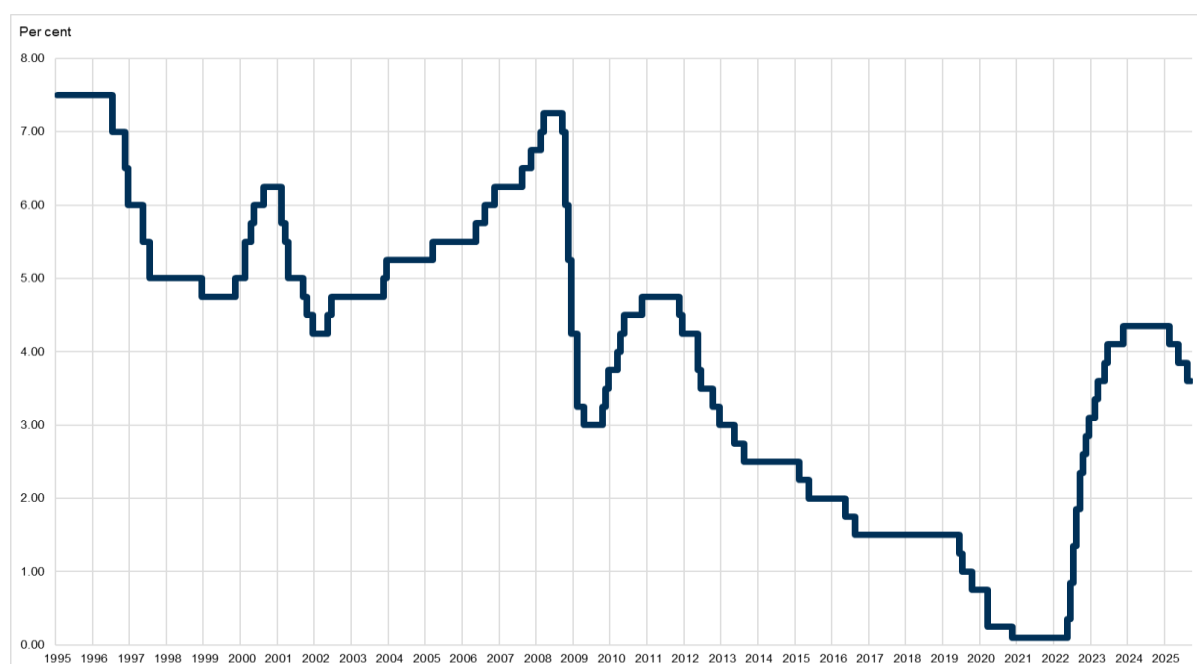
Question 1

Has the 2022 gas instrument supported the effective mechanical calculations of the rate of return required for access arrangement and tariff variation processes?

5.2. Reflection of changing market conditions

73. Changing economic and financial conditions are important factors in determining a regulated firm's cost of capital.
74. The ERA has considered how a binding instrument might perform under different market conditions and concluded that it was likely robust to a wide range of market conditions.¹⁹
75. Economic and financial conditions have changed significantly over the last decade and since the previous gas pipeline access arrangements that incorporated rates of returns calculated in 2019 and 2020. Although the risk free rate had been volatile and uncertain between 2019 and 2023, it appears to have returned to long-term levels. Inflation in Australia increased to 6.6 per cent in 2022. Other shocks such as conflicts in Ukraine and the Middle East, global supply shortages and the more recent trade wars have added to uncertainty in the financial environment.
76. Figure 1 details how the RBA's cash rate target has changed over the last decade. This shows that interest rates reached historic low levels from 2020 and since then the RBA progressively increased the cash rate between May 2022 and November 2023.

Figure 1: Reserve Bank of Australia cash rate target (1995 to 2025)

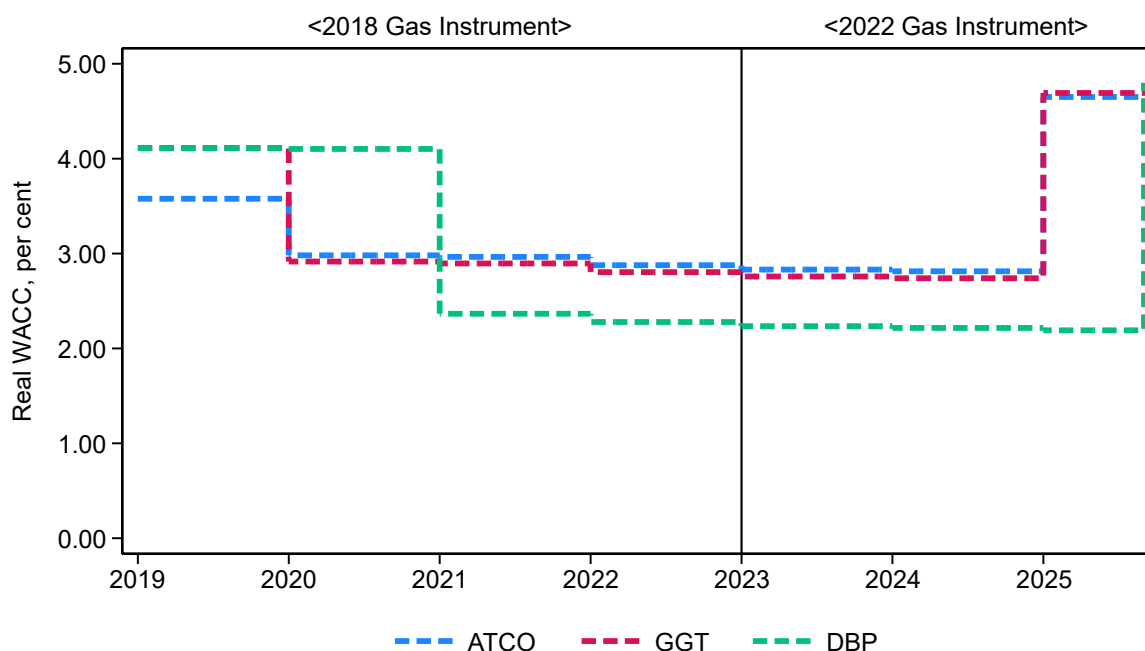


Source: ERA analysis based on Reserve Bank of Australia F1 statistical tables.

¹⁹ ERA, *Explanatory statement for the 2022 final gas rate of return instrument*, December 2022, p. 228.

77. It should be noted that previous gas pipeline access arrangements incorporated rates of returns calculated in 2019 and 2020 when interest rates were moving to their historic lows. Current gas pipeline access arrangements incorporate rates of return calculated in 2024 and 2025 when interest rates increased to more long-term levels.
78. A comparison of the rates of return from previous and current access arrangements is presented in Figure 2.

Figure 2: Rates of return set by the 2018 and 2022 gas instrument



Source: ERA analysis of tariff and revenue models of gas access arrangements.

Note: ATCO refers the Mid West South West Gas Distribution Systems network. GGT refers to the Goldfields Gas Pipeline network. DBP refers to the Dampier to Bunbury Natural Gas Pipeline network and is an indicative rate as of September 2025. WACC means weighted average cost of capital. Real WACCs included changes for debt risk premium updates that occur via tariff variations.

79. The rates of return set by the 2018 and 2022 gas instruments are:
- Responsive to market conditions, when risk free rates change, so do rates of return in a manner likely reflective of the prevailing market for equity funds.
 - Correlated and consistent amongst the three regulated gas pipelines, which is expected given that the risk profile of each gas pipeline is broadly similar to the others. If the gas instrument set rates of return that were wildly divergent for the gas pipelines in a temporally close manner, this would be a matter of concern.
 - The current gas pipeline access arrangements experienced quite material increases in the rate of return driven by the large change in market conditions. This contributed to larger regulatory price increases.
80. The conclusion of the majority of gas access arrangement reviews allows us to compare realised results with the sensitivity analysis conducted for the 2022 gas instrument, which is presented in Table 3.²⁰

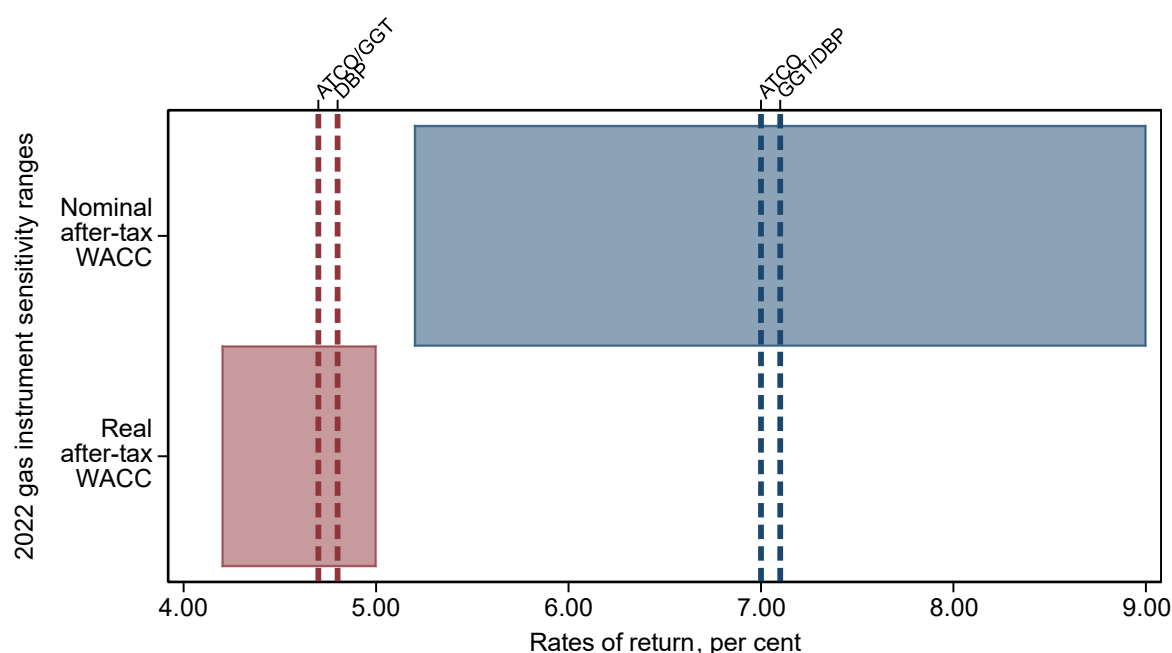
²⁰ The sensitivity analysis is explained in the 2022 Gas Instrument explanatory statement and takes +/- 2 standard deviations for each parameter in a directionally consistent way to form the high and low scenarios.

Table 3: 2022 gas instrument rate of return (%)

	2022 gas instrument			Access arrangement reviews		
	Low	Mid	High	ATCO	GGT	DBP ¹
Date	Sep-22			Sep-24	Sep-24	Sep-25
Return on debt						
Nominal return on debt	4.4	6.5	8.6	6.0	6.1	5.9
Return on equity						
Nominal after tax return on equity	6.2	8.1	9.9	8.2	8.3	8.6
Other parameters						
Forecast inflation rate	1.0	2.5	4.0	2.3	2.3	2.2
Weighted Average Cost of Capital						
Nominal after-tax WACC	5.2	7.2	9.2	7.0	7.1	7.1
Real after-tax WACC	4.2	4.6	5.0	4.7	4.7	4.8

1. The DBP AA6 review has not been complete. The DBP numbers are indicative only to reflect current rates as at September 2025.

81. Realised rate of return estimates using the 2022 gas instrument are consistent with the *ex-ante* sensitivity analysis, showing that it was capable of achieving reliable and predictable performance.
82. The sensitivity range in the 2022 gas instrument and rates of returns from recent access arrangements is visually presented in Figure 3.

Figure 3: Rates of return set by the 2022 Gas Instrument

Source: ERA analysis.

Note: ATCO refers the Mid West South West Gas Distribution Systems sixth access arrangement final decision. GGT refers to the Goldfields Gas Pipeline fifth access arrangement final decision. DBP refers to the Dampier to Bunbury Natural Gas Pipeline sixth access arrangement as at September 2025. WACC means weighted average cost of capital. Elements in red indicate real WACCs, blue indicates nominal WACCs.

83. The nominal after-tax rates of return set by the 2022 gas instrument were nearly at the exact midpoint of the *ex-ante* sensitivity analysis, which likely supports the gas instrument's goal of promoting predictability and stability. The results for real after-tax rates of return exhibited more volatility, but were still within the range of plausible *ex-ante* outcomes.
84. The recent period of changing financial market conditions provides a unique period to demonstrate how dynamic the gas rate of return instrument is in reflecting changing market conditions.

Question 2

How has the 2022 gas instrument performed in reflecting changing financial market conditions? Are there any areas of concern that the recent volatility of financial markets has presented?

6. Key topics for 2026 gas instrument review

85. This section sets out the ERA's working views on the key topics we have identified where further work is needed for the 2026 gas rate of return instrument.
86. These topics include:
 - Fewer listed companies
 - Gearing
 - Credit rating
 - Debt approach
 - Refinement of market risk premium methods
 - Equity beta estimation.
87. The ERA is actively considering these matters and this discussion paper does not set a finalised position on any rate of return parameter nor an estimate of what a final total weighted average cost of capital would be. Instead, the ERA is open to new information and welcomes stakeholder feedback on the discussion paper to inform its preliminary positions for the 2026 draft gas instrument.

6.1. Fewer listed companies in the sample

88. The ERA estimates an expected rate of return that is applied to a benchmark efficient entity. The ERA does not determine the returns of a specific gas network service provider based on all its individual circumstances.
89. In the 2022 gas instrument the ERA defined the benchmark efficient entity as a pure-play network service provider operating within Australia without parental ownership, with a similar degree of risk as that which applies to the service provider in respect of the provision of gas network services. A pure-play network only represents the gas pipeline regulated business and its associated risk. It does not include any other investments which may increase or reduce risk exposure.
90. To estimate a benchmark rate of return, and associated financial parameters, it is necessary to establish a sample of companies that have similar characteristics to a gas service provider.
91. The 2026 gas instrument review period commences with one remaining listed domestic comparator, compared with three during the 2022 review period.
92. The remaining comparator is the APA Group, a diversified energy company that owns a portfolio of assets spanning gas infrastructure, renewable generation and recently electricity transmission and battery energy storage systems. Regulatory revenues make up a low percentage of APA Group's total revenue. Its current corporate strategy is to continue diversifying away from gas infrastructure, which weakens its relevance as a benchmark that we can consider for the purposes of the gas instrument.
93. Related to this is that the ERA has considered that recently delisted firms can still be informative, but this relevance weakens over time and as historic estimates become less useful.

94. The three delisted firms that were included in the 2022 gas instrument were the DUET Group (delisted in 2016), Ausnet Services (delisted in 2021) and Spark Infrastructure Group (delisted in 2021).
95. For the 2026 gas instrument we are proposing to retain Ausnet Services and Spark Infrastructure Group as our domestic comparator set.
96. Ausnet Services and Spark Infrastructure will have only been delisted for five years by the end of the 2026 review, which is sufficiently recent to be informative about the systematic risk of gas pipelines.
97. We are not confident that retaining the DUET Group provides meaningful information regarding the expected systematic risk of a gas pipeline for access arrangements with start years up to 2030 using pre 2016 estimates.
98. In 2022, we did expand the samples to include select international firms for the purposes of equity beta estimation.
99. The ERA developed some filters to review relative international comparator firms to incorporate into a benchmark sample. Those firms should:
 - Operate under similar regulatory, legal and other institutional arrangements to those in Australia.
 - Come from countries with capital markets that are sufficiently deep, liquid, large and informationally efficient and where English is the language used for company disclosures.
 - Have materially similar regulated activities, which are informed by public information such as proportion of regulated revenue/income, assets and other disclosures.
100. On this basis the 2022 gas instrument incorporated some international comparator firms that comprised the equity beta sample, including firms that operate energy networks in the United States, Canada, the United Kingdom and New Zealand. The sample from the 2022 gas instrument is detailed in Appendix 2.
101. In the absence of directly comparable domestic comparators the ERA proposes to continue to consider select international businesses. The ERA will work to review and refine this list of international comparators.

Question 3

Do you support the ERA's proposed approach for the domestic sample (retain the use of APA, Spark Infrastructure Group and Ausnet Services, remove the DUET Group)?

Question 4

Do you support the ERA's continued consideration of select international firms? Are there any new international firms that may be appropriate to now include?

6.2. Gearing

102. Gearing is the proportion of a business' assets financed by debt and equity. Gearing is defined as the ratio of the value of debt to total capital (that is, the sum of debt and equity) and is generally expressed as follows:

$$\text{Gearing} = \frac{\text{Debt}}{\text{Debt} + \text{Equity}}$$

Equation 1

103. In the 2022 gas instrument the average gearing of a benchmark sample of energy networks informed the benchmark efficient level of gearing.
104. The ERA considered that the gearing ratio should be determined from observations of the gearing levels of firms in a benchmark sample of listed Australian energy networks. The gearing levels of Australia energy networks will most closely reflect the regulatory and commercial risks involved in providing regulated services.
105. Under the 2022 gas instrument, the ERA:
- Did not consider it appropriate to compensate a regulated service provider for its actual decisions on gearing.
 - Was not able to accurately measure actual gearing given the limitations of the regulatory accounts of its regulated entities.
 - Considered that the use of average gearing from the benchmark sample was appropriate. Using average gearing is a commonly applied approach that involves averaging performance measures across similar firms to infer an attainable benchmark.
 - Did not forecast directional movements of debt relative to equity that might happen. For example, the ERA did not consider factors such as market capitalisation forecasts and debt issuance constraints.
106. To calculate gearing, the ERA used the following method in the 2022 gas instrument:
- Used comparator firms in its benchmark sample of firms.
 - Used a market-based gearing level to reflect efficient financing.
 - Gearing was observed over a five-year period.
 - Gearing estimates were observed on an annual basis from financial statements and market data.
 - The market value of equity is equal to a firm's market capitalisation, which is equal to the share price multiplied by volume of shares issued.
 - As the availability of market value of debt is limited, the book value of debt is used as a proxy. The book value of debt is calculated from current and non-current borrowings from financial statements.

- Debt is taken at a gross level. That is, no deduction is made for cash or marketable securities. Gross debt is used as it is not possible to determine whether cash equivalents are used to repay debt or pay dividend. In addition, an efficient network business would have some cash as part of its optimal asset mix.
107. Based on the above method, the ERA used a gearing ratio of 55 per cent based on four sample firms: APA Group, AusNet Services, DUET Group and Spark Infrastructure Group.
108. While three of the sample firms had been delisted, including DUET Group, AusNet Services and Spark Infrastructure Group, past market information still provided a useful reference for the 2022 gas instrument.
109. The ERA considers that gearing levels are relatively stable over time, particularly considering rounding, and that the existing benchmark sample provides information to inform a decision on a benchmark gearing level.
110. However, the APA Group is the only remaining listed domestic comparator for the 2026 gas instrument review period.
111. As discussed in Section 6.1, we are proposing the retention of Ausnet Services and Spark Infrastructure Group and the removal of the DUET Group as our domestic comparator set.
112. As Ausnet Services and Spark Infrastructure Group have only been delisted for five years by the end of the 2026 review period, we consider that is sufficiently recent to be informative about the gearing levels, which are relatively stable over time.
113. Although the long-term average gearing has been relatively stable over the years, the current sample could become less relevant in the future due to obsolete market data from the delisted firms.
114. The ERA notes that the inclusion of international comparator firms in the gearing estimation might be a possible approach to expand the current sample. However, we also recognise that the inclusion of international firms may bias the gearing estimates, due to non-comparability to Australian energy service providers and differences in regulatory requirements, taxation systems and market conditions.
115. Given the market realities and difficulties of finding other suitable Australian comparators, the ERA seeks stakeholder views on how a shrinking pool of comparators can be dealt with for the purposes of gearing.
116. In determining gearing the ERA will assess the possible use of international comparator firms that may be considered to estimate equity beta.

Question 5

Is gearing sufficiently stable to maintain the 55 per cent gearing ratio?

Question 6

Do you support the continued use of domestic energy networks to estimate gearing?
If not, please explain why and your alternative approach.

Question 7

If an international sample is to be used for estimating gearing, which jurisdictions and companies could be considered comparable and included as part of the sample?
Please explain why.

6.3. Benchmark credit rating

117. The benchmark credit rating is an input required to estimate the return on debt.
118. The credit rating is defined as the forward-looking opinion provided by a ratings agency of an entity's credit risk. Credit ratings provide a broad classification of a firm's probability of defaulting on its debt obligations. Therefore, credit ratings represent the risk present in holding a debt instrument.
119. The 2022 gas instrument maintained a credit rating of BBB+, which remained fixed for the term of the instrument.
120. To estimate the benchmark efficient entity's credit rating, the ERA used a median credit rating approach. Under this approach, a benchmark sample of comparator companies must be constructed. This does not have to be constrained to listed or privately owned companies. However, a company that is included in the sample is required to satisfy two characteristics:
 - First, the company must be a network service provider in the gas and/or electricity industry in Australia.
 - Second, the company's credit rating must be published by an international ratings agency such as S&P or Moody's. Moody's credit ratings are converted into the equivalent S&P credit ratings as the ERA's debt risk premium approach uses S&P ratings.
121. The 2022 gas instrument used the same sample for both the gearing estimation and the credit rating. This benchmark sample included the APA Group, AusNet Services (delisted in 2021), DUET Group (delisted in 2016) and Spark Infrastructure Group (delisted in 2021).
122. We consider the benchmark credit rating to be relatively stable over time, and the existing benchmark sample provides information to inform a decision on a benchmark credit rating.

123. Table 4 provides historic credit ratings for Australian energy network businesses.

Table 4: Energy network business credit ratings

Issuer	2016	2017	2018	2019	2020	2021	2022	2023	2024
APA Infrastructure Ltd	BBB	BBB	BBB	BBB	BBB	BBB	BBB	BBB	BBB
ATCO Gas Australia LP	A-	BBB+	BBB+	BBB+	BBB+	BBB+	BBB+	BBB+	BBB+
DBNGP Trust	BBB-	BBB	BBB	BBB	BBB	NR	NR	NR	NR
DBNGP Finance Co P/L	BBB-	BBB	BBB	BBB	BBB	A-	A-	A-	A-
ElectraNet P/L	BBB+	BBB+	BBB+	BBB+	BBB	NR	BBB	BBB	BBB
Energy Partnership (Gas) P/L	BBB-	BBB+	BBB+	BBB+	BBB+	A-	A-	A-	A-
Australian Gas Networks Ltd	BBB+	BBB+	BBB+	A-	A-	A-	A-	A-	A-
ETSA Utilities Finance P/L	A-	A-	A-	A-	A-	A-	A-	A-	A-
AusNet Services Ltd	A-	A-	A-	A-	A-	A-	BBB+	BBB+	BBB+
AusNet Services Holdings	A-	A-	A-	A-	A-	A-	BBB+	BBB+	BBB+
AusNet Transmission Group P/L	A-	A-	A-	A-	A-	A-	BBB+	BBB+	BBB+
SGSP (Australia) Asset Ptd Ltd	A-	A-	A-	A-	A-	A-	A-	A-	A-
United Energy Distribution P/L	BBB	A-	A-	A-	A-	A-	A-	A-	A-
Victoria Power Networks P/L	BBB+	BBB+	BBB+	BBB+	A-	BBB+	BBB+	BBB+	BBB+
Victoria Power Networks (Finance) P/L	A-	A-	A-	BBB+	A-	A-	A-	A-	A-
NSW Electricity Networks Finance P/L	BBB	BBB	BBB	BBB	BBB	BBB	BBB	BBB	BBB
Ausgrid Finance P/L	BBB+	BBB+	BBB	BBB	BBB	BBB	BBB	BBB	BBB
Network Finance Company P/L	NR	BBB+	BBB+	BBB+	BBB+	BBB+	BBB+	BBB+	BBB+
Industry Median	BBB+	BBB+	BBB+	BBB+	BBB+	A-	BBB+	BBB+	BBB+

Source: Bloomberg, Standard & Poor's, Moody's. AER rate of return annual update 2024, December 2024.

124. As illustrated in Table 4, credit ratings tend to be relatively stable over time. While most businesses experience minimal fluctuations, there are small variations through time for some businesses, which are likely to be linked to firm-specific events rather than broad market movements.
125. We consider maintaining the use of a benchmark efficient entity to inform the benchmark credit rating. We define the benchmark efficient entity as a pure-play network service provider operating within Australia without parental ownership, with a similar degree of risk as that which applies to the service provider in respect of the provision of gas network services.
126. Given that any material cross-jurisdictional differences might affect comparability of domestic and international comparator firms' credit ratings, the ERA considers that if the sample needs to be expanded, domestic comparator firms that meet the selection criteria as previously discussed should be prioritised for inclusion into the credit rating sample for the 2026 Gas Instrument.

Question 8

Is credit rating sufficiently stable to maintain BBB+ credit rating?

Question 9

Do you support the continued use of domestic energy networks to determine the benchmark credit rating? If not, please explain why and your alternative approach.

6.4. Debt approach

127. The WACC includes a component for the return on debt. The return on debt is the return that debt holders require from a firm to compensate them for the risk they take in providing debt financing to the company.
128. The 2022 gas instrument estimated the return on debt based on a risk premium above the risk free rate, plus an additional margin for administrative and hedging costs.
129. The risk free rate is the rate of return of a hypothetical investment with no risk of financial loss, over a given period of time.
130. The debt risk premium is the margin above the risk free rate of return required to compensate holders of debt securities for the risk in providing debt finance. The debt risk premium is compensation for investors who tolerate the extra risk, compared to that of a risk free asset.
131. Debt raising and hedging costs are the administrative costs and other charges incurred by businesses in raising and hedging finance.
132. The 2022 gas instrument used the hybrid trailing average approach to estimate the return on debt.

133. Under the hybrid trailing average approach:

- The benchmark entity enters into an assumed benchmark efficient debt strategy. In this case, the strategy is a portfolio of 10-year fixed-rate debt with 10 per cent refinanced each year.
- The benchmark entity uses derivative arrangements to adjust rates from the efficient debt portfolio to lock in five-year interest rate swap rates, set on the day at the start of the regulatory period.
- A 10-year trailing average debt risk premium is used as the credit risk of debt issuances cannot be hedged.
- A 10-year trailing average debt risk premium is updated annually through the tariff variation mechanism, which accommodates annual changes in the credit risk of new debt issuances.

Reasoning for the approach for estimating return on debt

134. Consistent with the national gas objective and the revenue and pricing principles, the ERA considers that the service provider should be provided with a reasonable opportunity to recover at least the efficient costs the service provider incurs. The Net Present Value (NPV) equals 0 principle also helps ensure that investors are compensated at a level to encourage efficient investment, so that the present value of the future stream of expected cash flows of a firm is equal to the regulated asset base.

135. To consider the different debt approaches it is also necessary to consider how they address financial risks of debt financing, including:

- Interest rate risk – the risk of differences arising between the allowed return on debt costs and the actual cost of debt. Interest rate risk can be managed using interest rate swap contracts.
- Refinancing risk – the risk of rolling over debt and the cost of debt at the time of issuing new debt. Refinancing risk can be managed by having multiple sources of debt, issuing longer term debt and staggering debt over different periods.

136. In addition to the hybrid trailing average approach, the 2022 gas instrument also evaluated a full trailing average approach of estimating the return on debt. A full trailing average approach measures the return on debt as a trailing average of the total cost of debt. Generally, this debt management strategy assumes debt is issued for a 10-year term and each debt tranche is sized at 10 per cent of the entire debt portfolio. This assumes that all debt is contracted for 10 years and 10 per cent of the total debt portfolio is refinanced each year. Under this approach, all debt is issued at a fixed rate and the cost of debt is a simple weight of 10 per cent for each year of the trailing average.

137. It should be noted that underlying the hybrid trailing average approach in the 2022 Gas Instrument is the full trailing average debt approach. The hybrid trailing average overlays derivative contracts on top of the full trailing average to lock in a part of the debt cost at the commencement of an access arrangement.

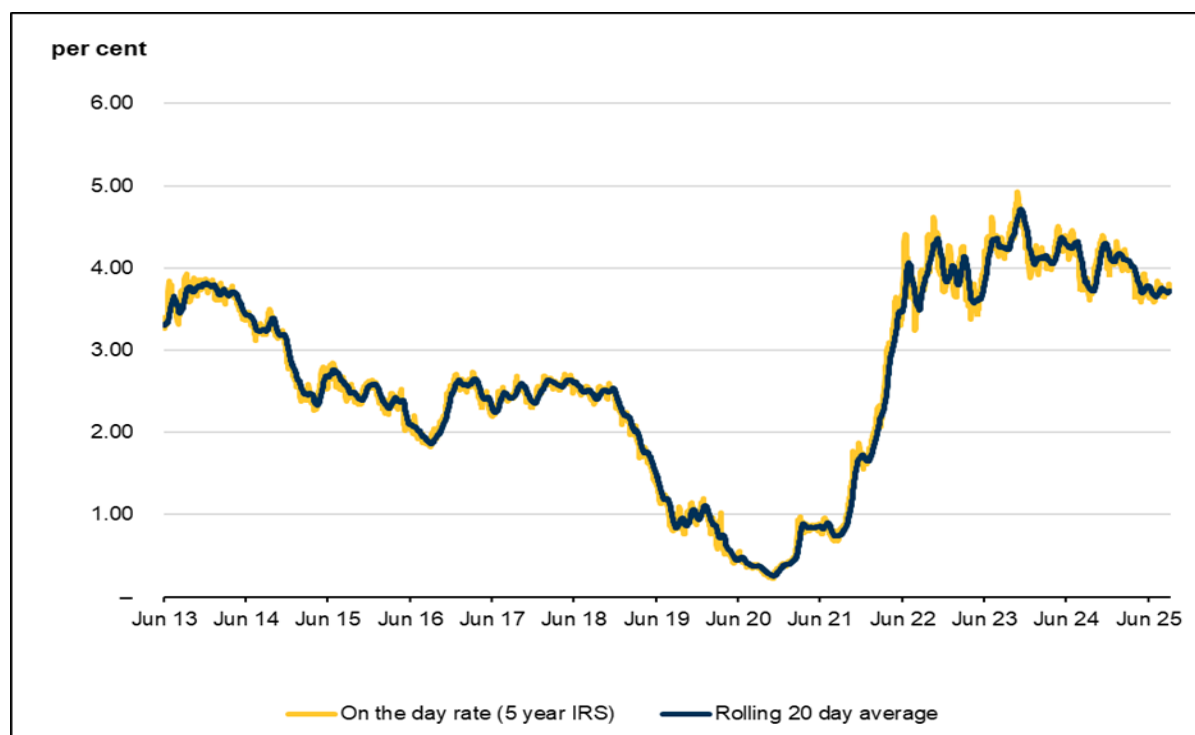
138. In its consideration of the overall return on debt approach, the ERA considered the NPV=0 principle and evaluated how well each approach would achieve the national gas objective, and revenue and pricing principles, under the NGL and the NGR.

139. In the 2022 gas instrument review the ERA recognised that both the hybrid trailing average and trailing average approaches to the cost of debt have pros and cons.²¹
- The full trailing average approach reduces volatility of the cost of debt and the resulting volatility for regulated services as it provides smoothing benefits for networks and customers.
 - However, the full trailing approach leads to the greatest volatility of the cost of debt within an access arrangement period, including the greatest difference between forecast cost of debt and actual cost of debt in the last year of an access arrangement.
 - The hybrid trailing average approach creates greater variability at the start of an access arrangement period.
 - However, the hybrid trailing average approach minimises price volatility within an access arrangement period and incorporates forward-looking rates into debt costs.
140. The 2022 gas instrument maintained the historic hybrid trailing average approach, which worked to minimise the price volatility within an access arrangement and incorporate some forward-looking rates. Transitional arrangements may have been required for any change.
141. The 2022 gas instrument considered that both full trailing average approach and hybrid trailing average approach achieve the NPV=0 principle while also recognising interest rate risk, refinancing risk and the staggered nature of debt portfolios.

The effect of market volatility on the cost of debt estimation

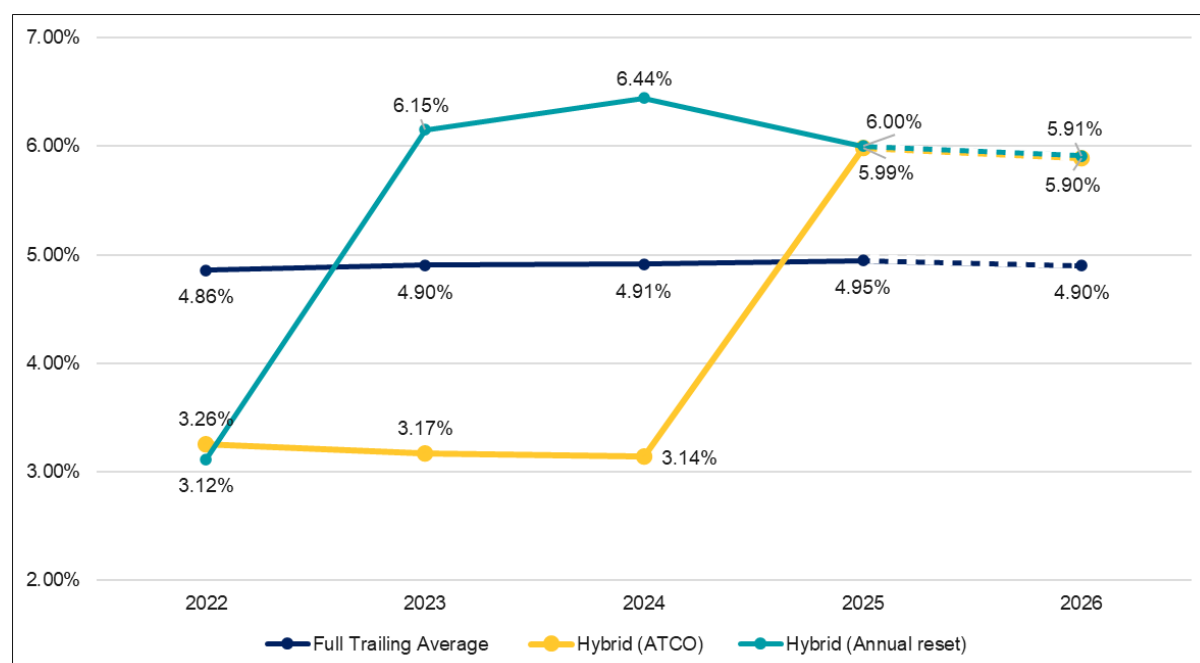
142. Economic and financial conditions have changed significantly over the last decade. This financial volatility provides an opportunity to consider how different debt approaches perform with financial volatility.
143. Figure 4 details changes in five-year interest rate swap yields over the last decade. The five-year interest rate swap yields reached historic lows around 2020 during the COVID-19 pandemic. Yields then increased quickly over a short period driven by supply chain and other market shocks. Figure 4 shows that the interest rate swap rates have been volatile and uncertain as the economy recovered from the pandemic, increasing from the lowest 0.2 per cent in November 2020 to close to 5.0 per cent in July 2023.

²¹ ERA, *Explanatory statement for the 2022 final gas rate of return instrument*, December 2022, pp. 66-68.

Figure 4: Five-year interest rate swap yields

Source: ERA analysis; based on Bloomberg data

144. The rates of return for the previous gas pipeline access arrangements were set in a low interest rate environment - the Mid-West and South-West Gas Distribution System and Goldfields Gas Pipeline were determined toward the end of 2019 and the Dampier to Bunbury Natural Gas Pipeline the end of 2020. The current access arrangements were set in a materially higher interest rate environment at the end of 2024 and 2025.
145. Since the publication of 2022 gas instrument, the swap yields have fluctuated from year to year, ranging from the minimum of 3.38 per cent in April 2023 to the maximum of 4.93 per cent in October 2023, with the average swap yield of around 4.05 per cent between January 2023 to September 2025.
146. To understand the performance of both the hybrid trailing average and a full trailing average the ERA has estimated both methods each year assuming an annual reset for an access arrangement since the publication of the 2022 gas instrument. ATCO's hybrid debt costs are also overlayed, where its access arrangement was reset on 1 January 2025. The comparison of debt approaches is provided in Figure 5.

Figure 5: Cost of debt comparison

Note: Cost of debt estimates for the 20 trading day periods from 2022 to 2026. Indicative 2026 cost of debt estimates based on a 20-trading day averaging period in September 2025. Annual hybrid reset based on a 20-trading day period in September for the interest rate swap rates in that year.

147. Figure 5 illustrates the variability of return on debt under the two debt approaches:

- The hybrid trailing average cost of debt does produce some volatility each year.
- The reset of the hybrid trailing average at the time of an access arrangement determination (in this case for ATCO) can contribute to a step change in debt costs between access arrangements.
- The annual reset of the hybrid trailing average reflects more volatility of five-year interest rate swap rates, particularly the significant yield increase from 2022 to 2023 (see the teal line from Figure 5).
- The full trailing average produces relatively stable debt costs over time.
- The annual change in the full trailing average can be comparable to the intra-period changes to debt costs with an access arrangement, as seen for ATCO.

148. Given the variable and forward-looking risk free rate, the cost of debt estimates under the hybrid trailing average approach have changed significantly compared to the full trailing average approach, reflecting the volatility of financial markets since the publication of 2022 gas instrument. The cost of debt under the hybrid trailing average prior to 2022 would reflect more volatility than shown in Figure 5 as interest rates move down to historic lows and then quickly back up.

149. The full trailing average approach produces a cost of debt that remains relatively stable and predictable throughout the same period.

150. As the hybrid approach incorporates the 'on-the-day' base rate into the total cost of debt, this might expose the regulated firms and customers to the risk of swap rates at a single point in time, presumably at the start of the regulatory period. Comparatively, the full trailing average approach helps avoid the timing risk as it smooths the volatility by incorporating 10-years of debt into its staggered debt portfolio and leads to relatively more predictable price paths for consumers.
151. As the full trailing average approach assumes stable, long-term debt management, it is more consistent with the nature of regulated assets and better aligned with real-world financing strategies of large infrastructure firms. Comparatively, the hybrid trailing average approach assumes that firms hedge using swaps to achieve a five-year fixed rate, which may not reflect actual practice.
152. The hybrid approach is technically complex, and the 2022 gas instrument provided an allowance of 0.123 per cent to compensate for the cost of conducting hedging for exposure movements in the swap rate. These hedging costs are not required under the full trailing average approach.
153. Given that volatility is expected to continue in financial markets a full trailing average approach appears to provide the following practical and operational advantages compared to the hybrid trailing average approach:
- Improves stability and predictability in regulatory allowances.
 - It is simpler than the hybrid trailing average approach and has no requirement for incorporating hedging costs into the total debt portfolio.
 - Closer alignment with the actual long-term fixed-rate debt portfolios.
 - Reduces exposure to timing and market volatility risks for regulated services and customers due to the smoothing effect of the 10-year trailing average.
 - Reduces the impact of extreme events that affect both the risk free rate and the debt risk premium. The smoothing effect spreads volatility over time.
 - Produces more stable and smoother price paths for the long-term interest of consumers.
 - It is used by other regulators across Australia and is well understood.
154. The ERA considers that both full trailing average approach and hybrid trailing average approach achieve the NPV=0 principle, as it can be implemented so that debt costs are able to match the debt allowance included in regulated revenues. Both approaches also recognise that most capital is sunk.
155. We consider that any approach to estimating the return on debt should provide the best estimate of the cost of debt for gas pipelines for the regulatory period and best achieves both the national gas objective and revenue and pricing principles for the long-term interests of consumers.

Question 10

Do you support a change in return on debt approach to a full trailing average? If not, please provide your reasons.

Transitional arrangements

156. The benchmark debt strategy assumes the use of a portfolio of 10-year fixed-rate debt with 10 per cent refinanced each year. Under the hybrid trailing average approach, the benchmark entity uses derivative arrangements to adjust rates from the efficient debt portfolio to lock in five-year interest rate swap rates, set on the day at the start of the regulatory period. A 10-year trailing average debt risk premium is used as the credit risk of debt issuances cannot be hedged. This compares to the full trailing average approach, which assumes that all debt is issued at a fixed rate and the total cost of debt is a simple weight of 10 per cent for each year of the trailing average.
157. If a regulated firm switches from a hybrid approach to a full trailing average approach, a transitional plan might be required to respect the existing debt financing arrangement and to allow some time for the positions to expire. The ERA will have further discussions with the gas pipelines to confirm their existing positions and exposure.
158. Transition arrangements will differ according to when debt tranches were financed, where some illustrative transition options are presented in Table 5:

Table 5: Full trailing average transition options

#	Type of debt	Approach	Illustrative transition option
A	Existing raised debt tranches	Debt raised according to the hybrid trailing average approach was debt with an original term of 10 years at fixed rates. This fixed rate was then swapped to floating exposure for that debt term.	The floating exposure is swapped to fixed exposure for the remaining term of each existing debt tranche at the access arrangement reset. The hybrid approach continues for the existing debt tranches until debt is refinanced.
B	Debt to be raised during the gas pipeline's current access arrangement before the transition	Debt that is to be raised could continue with the hybrid trailing average approach, or one which anticipates a change to the full trailing average at the next access arrangement.	Anticipate the transition and modifies the interest rate swap to a shorter term to facilitate the transition at the next access arrangement reset.
C	New debt post transition	Implementation of the full trailing average through the issuance of fixed rate debt for 10 years.	No transition required.

159. A transition might be required for debt tranches A and B, especially if a gas pipeline has fully implemented the hybrid trailing average for its debt management strategy.
160. However, transitional arrangements might not be needed when switching from a hybrid approach to a full trailing average approach under the following conditions:
- A regulated firm has implemented a full trailing average approach to finance its debt over the years.

- A regulated firm has not fully implemented the hybrid approach to its debt portfolio. There may be no derivative positions to unwind.
- Regulated firms that adopt active hedging strategies to their debt portfolio may already have minimised exposure to cost fluctuations caused by methodology changes.

161. The ERA considers that any decision on transitional arrangements need to be consistent with the requirements of the revenue and pricing principles under the National Gas Law to ensure that a service provider has a reasonable opportunity to recover the efficient costs incurred.

Question 11

If a full trailing average debt approach is to be implemented in the 2026 gas instrument, are transitional arrangements needed and why? Please detail what transitional arrangements may look like.

6.5. Refinement of market risk premium methods

162. The market risk premium is the expected rate of return in excess of the risk free rate that investors require to invest in a fully-diversified portfolio. Ex-ante, investors always require a rate of return above the risk free rate to invest in a risky asset, therefore the expected market risk premium is always positive. Ex-post, the realised return to the market portfolio may be negative. To establish the cost of capital, the ex-ante market risk premium is as follows:

$$\text{Expected Market Risk Premium} = \mathbb{E}[\text{Market return} - \text{Risk-Free rate}]$$

Equation 2

163. It is a component in the Sharpe-Lintner Capital Asset Pricing Model (CAPM) and is currently estimated with a variety of methods that range from historical results to market based models.

164. In the 2022 Gas Instrument to determine a point estimate for the market risk premium the ERA:

- Placed more reliance on the historic market risk premium estimate, relative to the Dividend Growth Model (DGM) estimate.
- Determined a final point estimate of the market risk premium by using regulatory judgement, including considering conditioning variables.
- Rounded the final point estimate of the market risk premium to one decimal place.

165. The 2022 Gas Instrument applied a market risk premium of 6.1 per cent that remained fixed for the term of the gas instrument.

166. The ERA supports the continuation of the methods established over the course of multiple gas instrument reviews in estimating the market risk premium. This includes estimating the historic market premium following the approach established by Ibbotson and using the DGM.

167. Indicatively, the ERA estimates that the historic market risk premium estimate is 5.9 per cent and the DGM estimate is 4.9 per cent (see Appendix 3).
168. The ERA is considering whether the parameters used in the DGM should be updated as they have remained the same since 2013.²²
169. Dividend Growth Models attempt to extract estimates of expected returns from security prices, where the DGM utilised by the ERA has the following form:

$$\text{Market price} = \frac{\text{Current value of the dividend} \times (1 + \text{dividend growth rate})}{\text{Expected rate of return} - \text{Assumed dividend growth rate}}$$

Equation 3

170. Through rearranging the above formula an implied expected market rate of return (r) can be calculated from current price (p), current dividend (D_0) and an assumed dividend growth rate (g). The market risk premium can be calculated by using the extracted market rate of return and subtracting the risk free rate.
171. The ERA's DGM requires several assumptions in order to extract the expected return, one of which is the expected dividend growth rate. The ERA is interested in stakeholder views on the estimation of the expected dividend growth rate, which is calculated based on a terminal real GDP growth rate that is adjusted for the net creation of new shares from new companies and new share issuance from existing companies. This is then converted to nominal terms using long term inflation expectations.
172. The current parameters applied are presented in Table 6.

Table 6: Dividend growth rate assumptions

Dividend Growth	Inflation	Real GDP	Net Creation
4.6 per cent	2.5 per cent	3.0 per cent	1.0 per cent
$(1 + 0.046) =$	$(1 + 0.025)$	$X (1 + 0.030 - 0.010)$	

173. Currently the ERA applies a real GDP growth assumption of 3.0 per cent, while more recent government forecasts suggest that the current expectations of real GDP growth is 2.2 per cent.²³ This would result in a dividend growth rate of 3.7 per cent.²⁴
174. For the 2026 review we are interested in updating the real GDP growth parameters, particularly in methods and sources of data in keeping this estimate current with market conditions in line with the broader macro-economic environment that the 2026 gas instrument will apply to.

²² ERA, *Explanatory Statement for the Rate of Return Guidelines*, December 2013, p. 155.

²³ Commonwealth Treasury, *Intergenerational Report 2023 - Australia's Future to 2063*, October 2023, p. 3.

²⁴ Dividend Growth Rate = $(1 + 0.025) \times (1 + 0.022 - 0.01) - 1 = 0.0373 = 3.7$ per cent (rounded to 1 dp).

Question 12

To update the dividend growth model, what are the more current real GDP growth parameters?

175. Further, the ERA is considering discontinuing with the usage of conditioning variables, where the conditioning variables that were used for the 2022 Gas Instrument were the:
- Five year AAA bond default spread and interest rate swap
 - All Ordinaries annual dividend yield
 - ASX200 VIX index.
176. In determining a point estimate for the market risk premium, the ERA considered historical market risk premium, the dividend growth model and conditioning variables. For each of the conditioning variables, their current levels were considered against average levels.
177. The ERA is considering discontinuance given the imprecision and uncertainty in the application of conditioning variables, which may potentially aid in the simplification and transparency of the ERA's market risk premium approach.

Question 13

Do you support discontinuing the use of conditioning variables to inform the ERA's decision on the market risk premium? Please provide reasons for your response.

6.6. Equity beta estimation

178. The equity beta is a parameter that measures the systematic risk of a security or a portfolio in comparison to the market as a whole. Equity beta is an important factor for determining the return on equity, which is incorporated into the weighted average cost of capital.
179. Equity beta is the slope parameter β_i in the Sharpe-Lintner CAPM. The slope parameter β_i correlates a specific asset's return in excess of the risk free rate of return, to movements in the return on the market portfolio:

$$R_i = R_f + \beta_i (R_M - R_f)$$

Equation 4

where:

- R_i is the required rate of return on equity for the asset, firm or industry in question
- R_f is the risk free rate
- β_i is the equity beta that describes how a particular portfolio i will follow the market which is defined as $\beta_i = \text{cov}(R_i, R_M) / \text{var}(R_M)$

$(R_M - R_f)$ is the market risk premium.

180. For the 2022 gas instrument to determine a point estimate for equity beta the ERA:
 - Uses domestic and international comparator firms.
 - Considers five-year and 10-year data periods.
 - Mechanically estimates equity beta using the method, including the use of Ordinary Least Squares (OLS) and Least Absolute Deviation (LAD) estimators.
 - Pools beta estimates by country.
 - Examines the distribution of equity betas.
 - Exercises regulatory discretion to determine the best point estimate.
181. The 2022 gas instrument applied an equity beta of 0.7 that remained fixed for the term of the instrument.
182. The ERA undertook an extensive review of equity beta methodology and sample selection during the 2022 review. We are not proposing major changes in how we approach equity beta for the 2026 gas instrument and will continue to estimate equity beta with updated information where possible. This will involve:
 - Checking for any further de-listings since the 2022 review
 - Checking for new comparators in Australia, New Zealand, the United Kingdom, Canada and the United States
 - Considering any other relevant information.
183. We have reflected upon the matters raised previously to see whether refinements were possible as part of our commitment to continual improvement. The ERA is considering the following refinements for its equity beta estimation consistent with simplifying the approach and increasing transparency:
 - **Gearing:** the equity beta approach uses Bloomberg data to calculate gearing for the purposes of re-levering observed betas to the benchmark leverage ratio. We propose that the observed gearing is rounded to the nearest per cent for the purposes of the re-levering calculations. Gearing was previously unrounded, which we found could reduce the ability for our results to be replicated by stakeholders.
 - **Removal of the portfolio approach:** given that APA is the only remaining listed domestic firm, the portfolio approach reduces down to itself as a single stock and is no longer meaningful. Accordingly, we propose that we simplify the methodology by no longer estimating portfolios, especially as most countries have very small samples as well.
 - **Simplification of the merger and acquisition (M&A) checks:** the 2022 gas instrument review considered a series of checks for M&A effects that may not be effective enough to justify the increased complexity and subjectivity that may be required. We now propose that these checks are consolidated into one change that focuses on firms that become delisted due to a merger event. For these firms we propose that their equity beta be estimated with a sample that removes the

observations up to two weeks prior to the announcement date. We have conducted some empirical analysis on the domestic sample which indicates that beta estimates that include the announcement to delisting returns are biased, usually downwards. We choose a period that goes further back than the announcement date due to observed runups in the target stock price indicative of information leakage which is consistent with results in the M&A literature. We also suggest the removal of the other checks as they become less informative over time as nearly every firm in our sample will eventually be involved in M&A as either a bidder or seller.

184. We have updated equity beta estimates consistent with our suggested refinements as at June 2025 which are presented in Appendix 4. Some high-level observations from the updated equity beta calculations include:

- The five-year estimates have reduced since 2022 across the domestic ($\beta = 0.43$ versus 0.47) and the international sample ($\beta = 0.69$ versus 0.82).
- There is considerable variability present in individual asset estimates, where volatility is likely to remain an issue as it was for past reviews which were affected by various macroeconomic shocks.
- However, the 10-year estimates and the LAD estimator provide results that are more stable and consistent with 2022 ($\beta = 0.73$ versus 0.75).

Question 14

Do you support the ERA's suggested simplifications for the estimation of equity beta? If not, please provide your reasons and any other potential approaches that might be adopted instead for the 2026 gas instrument.

Appendix 1 Regulatory requirements

The *National Gas Access (WA) Act 2009* implements a modified version of the National Gas Law (NGL) and National Gas Rules (NGR) in Western Australia. The regulations referred to are those that apply in Western Australia.

National Gas Law

The national gas objective (NGO) sets out the aim of the NGL:

24 National gas objective

The objective of this Law is to promote efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers of natural gas with respect to –

- (a) price, quality, safety, reliability and security of supply of natural gas; and
- (b) the achievement of targets set by a participating jurisdiction-
 - (i) for reducing Australia's greenhouse gas emissions; or
 - (ii) that are likely to contribute to reducing Australia's greenhouse gas emissions.

The revenue and pricing principles support the achievement of the NGO and the making of a rate of return instrument.

24 Revenue and pricing principles

- (1) The revenue and pricing principles are the principles set out in subsections (2) to (7).
- (2) A service provider should be provided with a reasonable opportunity to recover at least the efficient costs the service provider incurs in—
 - (a) providing reference services; and
 - (b) complying with a regulatory obligation or requirement or making a regulatory payment.
- (3) A service provider should be provided with effective incentives in order to promote economic efficiency with respect to reference services the service provider provides. The economic efficiency that should be promoted includes—
 - (a) efficient investment in, or in connection with, a pipeline with which the service provider provides reference services; and
 - (b) the efficient provision of pipeline services; and
 - (c) the efficient use of the pipeline.
- (4) Regard should be had to the capital base with respect to a pipeline adopted—
 - (a) in any previous—
 - (i) full access arrangement decision; or
 - (ii) decision of a relevant Regulator under section 2 of the Gas Code;
 - (b) in the [NGR].
- (5) A reference tariff should allow for a return commensurate with the regulatory and commercial risks involved in providing the reference service to which that tariff relates.
- (6) Regard should be had to the economic costs and risks of the potential for under and over investment by a service provider in a pipeline with which the service provider provides pipeline services.
- (7) Regard should be had to the economic costs and risks of the potential for under and over utilisation of a pipeline with which a service provider provides pipeline services.

The ERA is to make a rate of return instrument that specifies the methodology to calculate the rate of return on capital, and a method or value for imputation credits.

30D [ERA] to make rate of return instrument

- (1) This section applies if a rate of return on capital or the value of imputation credits is required for performing or exercising an [ERA] economic regulatory function or power.
- (2) The [ERA] must make an instrument (a rate of return instrument) stating—
 - (a) for a rate of return on capital—the way to calculate the rate; and
 - (b) for the value of imputation credits—the value or the way to calculate the value.
- (3) The [ERA] may make an instrument only if satisfied the instrument will, or is most likely to, contribute to the achievement of the national gas objective to the greatest degree.
- (4) Subject to subsection (3), the way to calculate a rate of return on capital must include a weighted average of an allowed return on equity and an allowed return on debt.
- (5) In making an instrument, the [ERA] must have regard to—
 - (a) the revenue and pricing principles; and
 - (b) other information the [ERA] considers appropriate.

The content of the rate of return instrument is specified by section 30E:

30E Content of rate of return instrument

- (1) If a rate of return instrument states the value of imputation credits, the instrument must state a single value to apply in relation to all covered pipeline service providers.
- (2) If a rate of return instrument states a way to calculate the rate of return on capital or the value of imputation credits, the instrument must—
 - (a) provide for the same methodology to apply in relation to all covered pipeline service providers in calculating the rate or value; and
 - (b) provide for the methodology to apply automatically without the exercise of any discretion by the [ERA]

Example for paragraph (b)—

The instrument cannot include different methodologies or a band of values from which the [ERA] could choose in applying the instrument.

- (3) Subject to subsections (1) and (2), the instrument may include other matters the [ERA] considers appropriate.

Example—

Matters to help a covered pipeline service provider calculate a rate of return or the value of imputation credits.

30L Publication of explanatory information

The [ERA] must publish explanatory information for a rate of return instrument on its website when the instrument is published under section 30N.

The consultation requirements for making the rate of return instrument is specified by section 30H and 30I.

30H – Requirements before publishing draft instrument

- (1) Before publishing a draft rate of return instrument under this Subdivision, the [ERA] must—
 - (a) establish a reference group to help the [ERA] implement an effective consumer consultation process for making the proposed instrument (a consumer reference group); and

...

(c) seek concurrent expert opinions or evidence about the proposed instrument.

...

- (3) Subject to subsections (4) and (5), the [ERA] may seek the expert opinions or evidence in the way it considers appropriate.

Example—

The [ERA] might convene a conference of experts to identify key issues, and areas of dispute and agreement among the experts, about the content of the proposed instrument.

- (4) The [ERA] must call for nominations of eligible experts but may seek the expert opinions or evidence from any eligible expert.
- (5) If practicable, the [ERA] must seek the expert opinions or evidence from at least 3 eligible experts.
- (6) The [ERA] must publish on its website—
- (a) submissions made under this section; and
 - (b) a report on the outcomes of seeking the expert opinions or evidence.
- (7) In this section—

eligible expert means a person with qualifications or experience in a field the [ERA] considers relevant to making a rate of return instrument.

Examples of relevant fields—

Finance, economics, law, consumer affairs, institutional investment.

30I – Consumer reference group

- (1) A consumer reference group for making a rate of return instrument—
- (a) is to consist of the members appointed by the [ERA]; and
 - (b) may carry out its activities, including giving advice or recommendations to the [ERA] about the instrument, in the way it considers appropriate.
- (2) Without limiting subsection (1)(b), the consumer reference group may—
- (a) consult with consumers of natural gas; and
 - (b) facilitate consumer engagement in the process for making the instrument; and
 - (c) make written submissions to the [ERA] about the content of the instrument and the process for making it.
- (3) The [ERA] must publish on its website any written advice, recommendations or submissions given to it by the consumer reference group.

30K – Report about draft instrument by independent panel

- (1) The [ERA] must, as soon as practicable after publishing the draft instrument, establish an independent panel to give the [ERA] a written report about the instrument.
- (2) The panel—
- (a) may carry out its activities, including giving the report, in the way it considers appropriate; but
 - (b) must seek to give the report by consensus.
- (3) The panel must—
- (a) consist of at least 3 members, appointed by the [ERA], who have qualifications or experience in a field the [ERA] considers relevant to making a rate of return instrument; and

Examples of relevant fields—

Finance, economics, law, consumer affairs, institutional investment.

- (b) give the report to the [ERA] before the [ERA] makes the instrument.
- (4) The [ERA] must take reasonable steps to minimise and manage any conflicts of interest a panel member may have in relation to making the instrument.
- (5) The report must—
 - (a) include the panel's assessment of the evidence and reasons supporting the rate of return on capital or the value of imputation credits under the instrument; and
 - (b) state whether the report is given by consensus.
- (6) The [ERA] must publish the report on its website.

30P – Review and replacement of instrument

- (1) The [ERA] must—
 - (a) review each rate of return instrument; and
 - (b) make a new rate of return instrument under this Division to replace the reviewed instrument.
- (2) The [ERA] must replace the reviewed instrument by publishing the new instrument on its website on the day that is—
 - (a) the fourth anniversary of the day the reviewed instrument was published; or
 - (b) if the day mentioned in paragraph (a) is not a business day—the first business day after that day.

National Gas Rules**87—Rate of return**

The return on the projected capital base for a service provider for a regulatory year of an access arrangement period for an applicable access arrangement ($RPCB_t$) is to be calculated using the following formula:

$$RPCB_t = a_t \times v_t$$

where:

a_t is the allowed rate of return for the regulatory year; and

v_t is the value, as at the beginning of the regulatory year, of the projected capital base for the regulatory year (as established under rule 78 and subject to rule 82(3)).

87A—Estimated cost of corporate income tax

The estimated cost of corporate income tax of a service provider for each regulatory year of an access arrangement period (ETC_t) is to be estimated in accordance with the following formula:

$$ETC_t = (ETIt \times rt) (1 - \gamma)$$

where:

$ETIt$ is an estimate of the taxable income for that regulatory year that would be earned by a benchmark efficient entity as a result of the provision of reference services if such an entity, rather than the service provider, operated the business of the service provider;

rt is the expected statutory income tax rate for that regulatory year as determined by the [ERA]; and

γ is the allowed imputation credits for the regulatory year

Appendix 2 2022 Gas Instrument List of Comparators

Table 7: 2022 Gas Instrument list of comparator firms for equity beta consideration

Ticker	Company Name
Australia	
APA AU Equity	APA GROUP
AST AU Equity	AUSNET SERVICES
DUE AU Equity	DUET GROUP
SKI AU Equity	SPARK INFRASTRUCTURE GROUP
Canada	
ALA CN Equity	ALTAGAS LTD
AQN CN Equity	ALGONQUIN POWER & UTILITIES
CU CN Equity	CANADIAN UTILITIES LTD-A
EMA CN Equity	EMERA INC
ENB CN Equity	ENBRIDGE INC
FTS CN Equity	FORTIS INC
H CN Equity	HYDRO ONE LTD
TRP CN Equity	TC ENERGY
United Kingdom	
NG/ LN Equity	NATIONAL GRID PLC
SSE LN Equity	SSE PLC
New Zealand	
VCT NZ Equity	VECTOR LTD
United States	
AEE US Equity	AMEREN CORPORATION
AGR US Equity	AVANGRID INC
ALE US Equity	ALLETE INC
ATO US Equity	ATMOS ENERGY CORP
AVA US Equity	AVISTA CORP
BKH US Equity	BLACK HILLS CORP
CMS US Equity	CMS ENERGY CORP
CNP US Equity	CENTERPOINT ENERGY INC
CPK US Equity	CHESAPEAKE UTILITIES CORP
D US Equity	DOMINION ENERGY INC
DTE US Equity	DTE ENERGY COMPANY
DUK US Equity	DUKE ENERGY CORP
ED US Equity	CONSOLIDATED EDISON INC
EIX US Equity	EDISON INTERNATIONAL
ES US Equity	EVERSOURCE ENERGY
ETR US Equity	ENTERGY CORP
EVRG US Equity	EVERGY INC
EXC US Equity	EXELON CORP
FE US Equity	FIRSTENERGY CORP
HE US Equity	HAWAIIAN ELECTRIC INDS
IDA US Equity	IDACORP INC
KMI US Equity	KINDER MORGAN INC
LNT US Equity	ALLIANT ENERGY CORP
MGEE US Equity	MGE ENERGY INC

Ticker	Company Name
NEE US Equity	NEXTERA ENERGY INC
NFG US Equity	NATIONAL FUEL GAS CO
NI US Equity	NISOURCE INC
NJR US Equity	NEW JERSEY RESOURCES CORP
NWE US Equity	NORTHWESTERN CORP
NWN US Equity	NORTHWEST NATURAL HOLDING CO
OGE US Equity	OGE ENERGY CORP
OGS US Equity	ONE GAS INC
PCG US Equity	P G & E CORP
PEG US Equity	PUBLIC SERVICE ENTERPRISE GP
PNM US Equity	PNM RESOURCES INC
(renamed to TXNM US Equity)	(renamed to TXNM ENERGY)
PNW US Equity	PINNACLE WEST CAPITAL
POR US Equity	PORTLAND GENERAL ELECTRIC CO
PPL US Equity	PPL CORP
RGCO US Equity	RGC RESOURCES INC
SJI US Equity	SOUTH JERSEY INDUSTRIES
SO US Equity	SOUTHERN CO/THE
SR US Equity	SPIRE INC
SRE US Equity	SEMPRA ENERGY
SWX US Equity	SOUTHWEST GAS HOLDINGS INC
UTL US Equity	UNITIL CORP
WEC US Equity	WEC ENERGY GROUP INC
XEL US Equity	XCEL ENERGY INC

Appendix 3 Market risk premium indicative estimates

Table 8: Historic market risk premium estimates (per cent)

Time period	Arithmetic mean	Geometric mean
1958-2024	6.70	4.58
1980-2024	6.72	4.78
1988-2024	6.44	5.09
2000-2024	6.64	5.26
Mean	6.62	4.93
Weights	60	40
Historic market risk premium estimate	5.9	

Table 9: Dividend growth model estimates (per cent)

	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Mean
DGM implied return	8.86	9.50	9.90	9.16	8.99	8.91	9.22
Risk Free Rate	4.48	4.42	4.42	4.27	4.35	4.21	4.36
DGM market risk premium	4.38	5.07	5.48	4.90	4.64	4.70	4.86
DGM estimate							4.9

Note: DGM estimates using the real GDP growth assumption of 3 per cent, which results in dividend growth rate of 4.6 per cent.

Appendix 4 Equity beta estimates

Table 10: Australian five and ten year equity beta estimates at benchmark leverage

Estimator	APA	AST	SKI	Mean
Panel A: 5 year estimates				
OLS	0.44	0.27	0.38	0.36
LAD	0.46	0.51	0.50	0.49
Mean All Methods	0.45	0.37	0.44	0.43
Panel B: 10 year estimates				
OLS	0.65	0.43	0.41	0.50
LAD	0.73	0.57	0.49	0.59
Mean All Methods	0.69	0.50	0.45	0.55

Table 11: Domestic and international equity beta estimates at benchmark leverage

Estimator	AUS	US	Canada	UK	NZ	Mean of all countries
Panel A: 5 year estimates						
OLS	0.36	0.57	0.66	0.89	0.68	0.63
LAD	0.49	0.52	0.68	0.94	0.53	0.63
Mean All Methods	0.43	0.55	0.67	0.92	0.60	0.63
Panel B: 10 year estimates						
OLS	0.50	0.82	0.87	0.95	0.67	0.76
LAD	0.59	0.61	0.84	0.88	0.58	0.70
Mean All Methods	0.55	0.72	0.86	0.92	0.63	0.73

Appendix 5 List of Tables

Table 1:	Milestones of the 2026 gas rate of return instrument review	5
Table 2:	List of questions.....	12
Table 3:	2022 gas instrument rate of return (%).....	16
Table 4:	Energy network business credit ratings.....	23
Table 5:	Full trailing average transition options.....	30
Table 6:	Dividend growth rate assumptions	32
Table 7:	2022 Gas Instrument list of comparator firms for equity beta consideration	40
Table 8:	Historic market risk premium estimates (per cent)	42
Table 9:	Dividend growth model estimates (per cent)	42
Table 10:	Australian five and ten year equity beta estimates at benchmark leverage	43
Table 11:	Domestic and international equity beta estimates at benchmark leverage	43

Appendix 6 List of Figures

Figure 1:	Reserve Bank of Australia cash rate target (1995 to 2025)	14
Figure 2:	Rates of return set by the 2018 and 2022 gas instrument	15
Figure 3:	Rates of return set by the 2022 Gas Instrument	17
Figure 4:	Five-year interest rate swap yields	27
Figure 5:	Cost of debt comparison.....	28