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14 October 2026

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

**Re: Draft Rate of Return Instrument Consultation**

ATCO welcomes the opportunity to respond to the Economic Regulation Authority's (ERA) Draft 2026 Rate of Return Instrument, published on 28 June 2026, and the Independent Panel's report published on 6 October 2026. ATCO supports a rate of return framework that promotes regulatory stability, provides a reasonable opportunity for service providers to recover their efficient financing costs, and facilitates ongoing investment in gas network infrastructure consistent with the National Gas Objective and the Revenue and Pricing Principles. Our detailed response to the Draft Rate of Return Instrument can be found in Attachment 1. Attachment 2 contains a report prepared by Competition Economics Group (CEG) on *Retaining the Hybrid Trailing Average*.

This review is occurring during a period of significant change in the regulatory environment for gas networks. In particular, the Australian Energy Market Commission's Gas Networks in Transition reforms have the potential to alter and introduce new risks faced by regulated gas networks and the mechanisms available to recover efficient costs.

Regarding the Gas Networks in Transition, ATCO does not agree that the proposed capital redundancy provisions are the appropriate tool to manage future uncertainty as it creates regulatory risk that is not compensated for in the current framework. The proposed redundancy provisions introduce uncertainty into future decision-making and reduce confidence that service providers will have a reasonable opportunity to recover efficient costs over time. The resulting new regulatory risk has not been assessed and will undermine investor confidence in future network investment, as well as have flow on impacts to financing and credit ratings. The partial redundancy rules can remove capital efficiently invested creating a new risk for network businesses that did not exist prior to its introduction. Compensation for this risk has never previously been provided or accounted for in the rate of return, effectively depriving investors of their due returns.

Against this backdrop, changes to established rate of return parameters need to be cognisant of the new risks that investors will bear under the revised framework. It is now more important than ever that the rate of return is implemented in a manner that promotes regulatory stability and investor confidence.

On the cost of debt, ATCO considers that a BBB+ benchmark credit rating no longer reflects the financing costs of a benchmark efficient entity, and that a BBB benchmark credit rating is more appropriate under the current policy setting. We also do not support replacing the hybrid approach with a full trailing average approach.

On the cost of equity, ATCO considers that the proposed MRP of 5.8% understates the return required by investors and is materially below recent Australian regulatory estimates, primarily due to methodological choices which need to be reconsidered. We support the continuation of the 0.7 beta estimate as there is no evidence of a change in the underlying systematic risk of regulated energy network businesses.

ATCO's submission focuses on those areas where further consideration is warranted and where the available evidence does not support a departure from established approaches.

In these areas, ATCO has provided empirical and economic analysis to assist the ERA in determining a Rate of Return Instrument that reflects the efficient financing costs of a benchmark efficient entity and promotes the long-term interests of consumers.

If you have any questions or would like to discuss any of these matters further, please contact me.

Yours sincerely

**Hugh Smith**
Executive General Manager Regulatory and Corporate Affairs

Attachment 1: ATCO Submission

Attachment 2: CEG Report on Retaining the Hybrid Trailing Average

# ATTACHMENT 1: ATCO SUBMISSION

## DRAFT 2026 RATE OF RETURN INSTRUMENT

**GAS DIVISION**

14/10/2026

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# 1. EXECUTIVE SUMMARY

ATCO welcomes the opportunity to respond to the Economic Regulation Authority's (ERA) Draft Rate of Return Instrument dated 28 July 2026, and the Independent Panel's report published by the ERA on 6 October 2026.

The ERA's Draft Instrument proposes changes to the debt methodology and a lower market risk premium. The draft has maintained other parameters consistent with the 2022 Rate of Return Instrument which preserves regulatory certainty.

The broader regulatory context highlights the importance of evidence-based decision making when considering changes to established rate of return parameters. The Australian Energy Market Commission's Gas Networks in Transition rule changes are progressing alongside this review and may have significant implications for future regulatory arrangements. In this context, changes to established rate of return parameters need to be cognisant of the new risks that investors will bear under the revised framework.

ATCO supports retaining established rate of return parameters where they continue to achieve the National Gas Objective and Revenue and Pricing Principles. The ERA's objective of estimating efficient financing costs for a benchmark efficient entity provides an appropriate framework for determining the gas rate of return for the long-term benefit of consumers.

ATCO supports many aspects of the Draft Instrument, including the proposed averaging period process, gearing estimate, inflation methodology, gamma and use of a 10-year Commonwealth Government Securities bond as the risk-free rate. However, several proposed changes are not supported by the available evidence or the new risks faced by gas networks. Table 1.1 summarises ATCO's positions for key parameters.

**Table 1.1:** ATCO's key positions

| Parameter | Summary of ATCO's key positions |
|---|---|
| **Return on debt** | Retain the hybrid approach. ERA has not demonstrated that a full trailing average would better estimate efficient financing costs. |
| **Market risk premium** | The proposed market risk premium (MRP) of 5.8% is too low and is influenced by methodological choices. Historical MRP estimates should be based on the arithmetic mean. The ERA should adopt an internally consistent approach in estimating and implementing the MRP. |
| **Equity beta** | Retain beta of 0.7. The updated evidence does not provide an unambiguous basis for concluding that the benchmark entity's systematic risk has fundamentally changed since 2022. The ERA's methodological refinements improve the robustness of the analysis but do not justify a change to the equity beta. |
| **Benchmark credit rating** | Recommend a BBB benchmark credit rating. Increasing uncertainty associated with the energy transition is changing the risk profile of gas networks. The Gas Network in Transition rule changes introduce new risks for network service providers. A BBB benchmark credit rating more appropriately reflects the financing costs of a benchmark efficient entity. |

ATCO has provided empirical analysis in the appendices to support our submission. We have also attached Competition Economics Group's (CEG) report, *Retaining the Hybrid Trailing Average*, in support of retaining the hybrid approach to estimate cost of debt.

The sections that follow present our response to the key parameters adopted in the Draft Rate of Return Instrument. For ease of reference, the document is organised in the same sequence as the Explanatory Statement. A summary of our positions is set out below.

We do not support replacing the hybrid approach with a full trailing average approach. In ATCO's view, the ERA has not demonstrated that the proposed change would provide a better estimate of the efficient financing costs of a benchmark efficient entity, particularly given that the underlying rate of return objectives remain unchanged. ERA's proposed departure from the hybrid approach should be assessed over the full interest rate cycle rather than on the basis of short-term outcomes.

The hybrid approach is structurally better than the trailing average, and addresses the problems associated with the trailing average without the complications of the weighted trailing average that the AER has been driven to contemplate. We have attached a report by Competition Economics Group on this issue with our submission.

ATCO considers that the proposed MRP of 5.8% understates the return required by investors and is materially below recent Australian regulatory estimates. This mainly reflects methodological choices in estimating the historical MRP, particularly the use of the geometric mean. We have undertaken econometric analysis to respond to ERA's Pink Lake Analytics Report and maintain that the arithmetic mean is the best estimator of historical MRP. We support ERA's approach to combine historical and forward-looking evidence, including the DGM, but recommend that the ERA use an internally consistent approach in estimating and applying the MRP.

While the ERA's proposed refinements in estimating beta improve the robustness, transparency and replicability of the analysis, they do not provide evidence of a change in the underlying systematic risk of regulated energy network businesses. The comparator evidence remains broadly stable and the 0.7 estimate is robust across alternative estimation approaches. In ATCO's view, the lower beta estimate appears to be primarily driven by changes in the estimation methodology and sample period, including the exclusion of COVID-era observations, rather than evidence of a fundamental change in risk.

Increasing uncertainty associated with the energy transition is changing the risk profile of gas networks through its impact on future demand, asset utilisation and asset stranding risk. As a result, ATCO considers that a BBB+ benchmark credit rating no longer reflects the financing costs of a benchmark efficient entity, and that a BBB benchmark credit rating is more appropriate under the current policy setting.

Ultimately, retaining established methodologies unless there is compelling evidence for change promotes regulatory certainty, supports efficient long-term investment and financing decisions, and benefits consumers through safe, reliable and efficiently priced services.

## 2. AVERAGING PERIOD

**Key message**

ATCO supports ERA's proposed changes to the averaging period as they provide greater regulatory certainty and streamline the administration of access arrangement processes.

ATCO supports the averaging period in the Draft Instrument to fall within three-to-seven months before the regulatory period for updating key debt parameters.

ATCO supports ERA's proposed removal of the dependency on the ERA's Draft Decision date and replacement with dates linked to the intended start of the access arrangement/regulatory period. This provides regulatory certainty and mitigates timetable issues related to the nomination of the averaging window.

ATCO agrees that the annual updates under the revised bond yield approach to cost of debt should be updated as part of the annual tariff variation process.

If the ERA adopts the proposed cost of debt approach and a transition period is provided the annual tariff variation update should include the debt risk premium under the hybrid tranches, as well as the cost of debt update under the full trailing average approach.

# 3. GEARING

**Key message**

ATCO supports ERA's proposed gearing of 55 per cent and ERA's proposed treatment of hybrid securities in estimating the gearing level.

The Draft Instrument:

- continues to adopt a gearing level of 55 per cent;
- uses book value of debt and the market value of equity averaged over five years;
- treats APA's hybrid debt issuance appropriately based on publicly available information.

ATCO supports:

- the use of gearing level of 55 per cent;
- adjusting debt and equity for hybrid securities.

ATCO supports the Independent Panel's findings that gearing ratio is based on a shrinking set of domestic comparators and the recommendation that the ERA consider this in the next Rate of Return Review.

# 4. BENCHMARK CREDIT RATING

**Key messages**

ATCO recommends a BBB benchmark credit rating. Increasing uncertainty associated with the energy transition is changing the risk profile of gas networks. The Gas Network in Transition rule changes introduce new risks for network service providers. A BBB benchmark credit rating more appropriately reflects the financing costs of a benchmark efficient entity

ATCO recommends a BBB credit rating in the 2026 Rate of Return Instrument.

ATCO does not support a BBB+ rating or the view that Western Australian gas networks face a materially lower risk profile than comparable Australian energy network businesses. The risk profile of Western Australian gas networks is evolving as the energy transition creates increasing uncertainty around future gas demand, asset utilisation and the potential asset stranding. These transition-related risks were not as pronounced historically but could become more material over the period in which the 2026 Gas Rate of Return Instrument will apply.

Increasing uncertainty on the use of gas due to energy transition, climate change related legislation and consumer action to reduce carbon emissions may change the role and operations of natural gas distribution networks. This uncertainty is exacerbated by the Gas Networks in Transition rule change, which includes new capital redundancy provisions. As a result, maintaining an investment grade credit rating consistent with the benchmark credit rating may require different actions by regulators and service providers than in the past.

Increased uncertainty and risks faced by gas networks across Australia require that the benchmark credit rating be reduced to BBB to reflect the current policy setting.

# 5. RETURN ON DEBT

**Key messages**

- ATCO does not support the proposal to move to a full trailing average approach. The hybrid approach is structurally better than the trailing average, and addresses the problems associated with the trailing average without the complications of the weighted trailing average that the AER has been driven to contemplate.
- The ERA has not adequately explained why the full trailing average approach is now preferred over the hybrid approach, despite the underlying rate of return objectives remaining unchanged. ATCO is concerned that the ERA is proposing this change because the short-term analysis of the hybrid costs show it exceeds the full trailing average costs. A hybrid approach will, by design, produce outcomes both above and below a long-term trailing average, while maintaining a closer connection to prevailing financing conditions at the time of an access arrangement determination. The ERA should instead assess the proposal against the objective of estimating efficient financing costs for a benchmark entity.
- If a trailing average is adopted, a single 10-year reset provides a clearer, more predictable and more logical transition to the destination benchmark. The ERA's preferred two 5-year resets option delays the transition, retains exposure to future interest rate movements and introduces complexity without delivering any corresponding benefit.

## 5.1 Regulatory precedence for the hybrid trailing method

The ERA has adopted the hybrid trailing average for well over a decade, in contrast to other Australian regulators that have adopted the full trailing average, because the hybrid approach circumvents potential issues which may be encountered under the full trailing average approach. In ATCO's 2015 Final Decision for the AA4 period the ERA adopted the hybrid trailing average and has since adopted it in the 2018 and 2022 rate of return instruments.

The ERA is now placing significant weight on the fact that a full trailing average approach is widely used by Australian regulators and is well understood.[1] The AER has found that the full trailing average is not without its issues or appropriate in all circumstances. For example, in the 2022 RORI review, the AER recognised that a full trailing average may not appropriately compensate businesses with materially different debt requirements than the standard 10% refinance every year assumption. The AER acknowledged that firms with very large investment programs scheduled over a short period of time could be incorrectly compensated under the simple trailing average approach. To address this issue, the AER suggested implementing a weighted trailing average in future reviews to adjust cost of debt allowance to better reflect changing market conditions.[2]

The ERA should note that rather than supporting a move to full trailing average, the AER's recent work highlights the recognised limitations of this approach and the need for increasingly complex modifications to address them. Against this backdrop, the hybrid approach continues to offer a practical and robust means of aligning cost of debt allowance and efficient financing costs when debt requirements differ from the assumed 10-year equally weighted refinance strategy.

1 ERA's Explanatory Statement for the 2026 Draft Rate of Return Instrument Attachment 4, paragraph 139 & 157

2 AER 2026 Rate of Return Instrument Review Discussion Paper, page 12 paragraph 1

ATCO's position is that the ERA should not place material weight on regulatory precedent for the full trailing average in these circumstances. Compared to the full trailing average, the hybrid trailing average is more robust to all possible future scenarios, whether the RAB is increasing, stable or declining.

## 5.2 ATCO supports the retention of the hybrid trailing method

ATCO supports the retention of the hybrid approach in the 2026 Instrument. The Draft Instrument does not make the case for abandoning the hybrid trailing average.

### Volatility between resets

The Draft Instrument proposes the trailing average approach based on the reasoning that when market rates rise materially before a regulatory reset, the hybrid approach can produce a higher allowed cost of debt than a trailing average approach and consumers pay higher prices during the subsequent access arrangement period.[3]

If the ERA's concern is primarily around price volatility, then this can be addressed by lengthening the averaging window from the current 20-day window to say 90 or 120 trading days, as the New Zealand Commerce Commission has done, without changing the underlying debt methodology.[4]

### Lower expected cost to consumers

Both theory and the historical evidence indicates that the hybrid approach has delivered lower debt costs for consumers over the long term. The hybrid approach compensates a five-year base rate; the trailing average compensates a 10-year base rate. Since 10-year yields typically track above 5-year yields, the hybrid approach is expected to be cheaper for consumers by around 14 to 21 basis points per annum (bppa) (between $1.2 million and $1.8 million a year on ATCO's benchmark debt of around $0.9 billion) permanently, net of hedging costs.[5]

The proposal to adopt a full trailing average at this time is a response to current market conditions, notwithstanding that the transition would take up to ten years to complete. Any decision to change approach should not be made based on short term movements but rather a long-term view is needed to ensure the Instrument delivers on the long-term outlook that is embedded in the National Gas Objective.

The ERA's Explanatory Statement has not presented a balanced view of the costs to consumers over the long term:

- Figure 4.2 in the Draft Instrument (Explanatory Statement) illustrates that ATCO's 5-year swap rate locked-in at the start of Access Arrangement 6 was higher than the 10-year trailing average.
- Figure 4.4 illustrates a scenario in which a temporary increase in the 5-year swap rates occurs immediately before a regulatory reset and results in the hybrid approach producing a higher allowed cost of debt than a full trailing average approach. Figure 4.4 concludes that consumers may pay more than they would under a full trailing average during the Access Arrangement 6 period. Figure 4.4 only presents one side of the story.

The same reset mechanism under the hybrid approach can operate in the opposite direction. If prevailing market rates at the commencement of an access arrangement are below the trailing

[3] ERA's Explanatory Statement for the 2026 Draft Rate of Return Instrument Attachment 4, paragraph 151 & 152
[4] CEG Report for ATCO Gas Australia, Retaining the Hybrid Trailing Average, Section 4.2.2
[5] CEG Report for ATCO Gas Australia, Retaining the Hybrid Trailing Average, paragraph 105

average, consumers benefit from a lower allowed cost of debt under the hybrid approach, as they did in AA5. In those circumstances, the hybrid approach will result in prices that are lower than prevailing market financing costs. Figure 4.4 of the Draft Instrument does not acknowledge this equally plausible outcome.

Figure 5.1 below extends the analysis presented in Figure 4.2 of the Draft Instrument back to 2016. It illustrates ATCO's historical cost of debt under alternative approaches - hybrid approach and the proposed trailing average approach (counterfactual) - and compares it with the prevailing market cost of debt during 2016-2026.

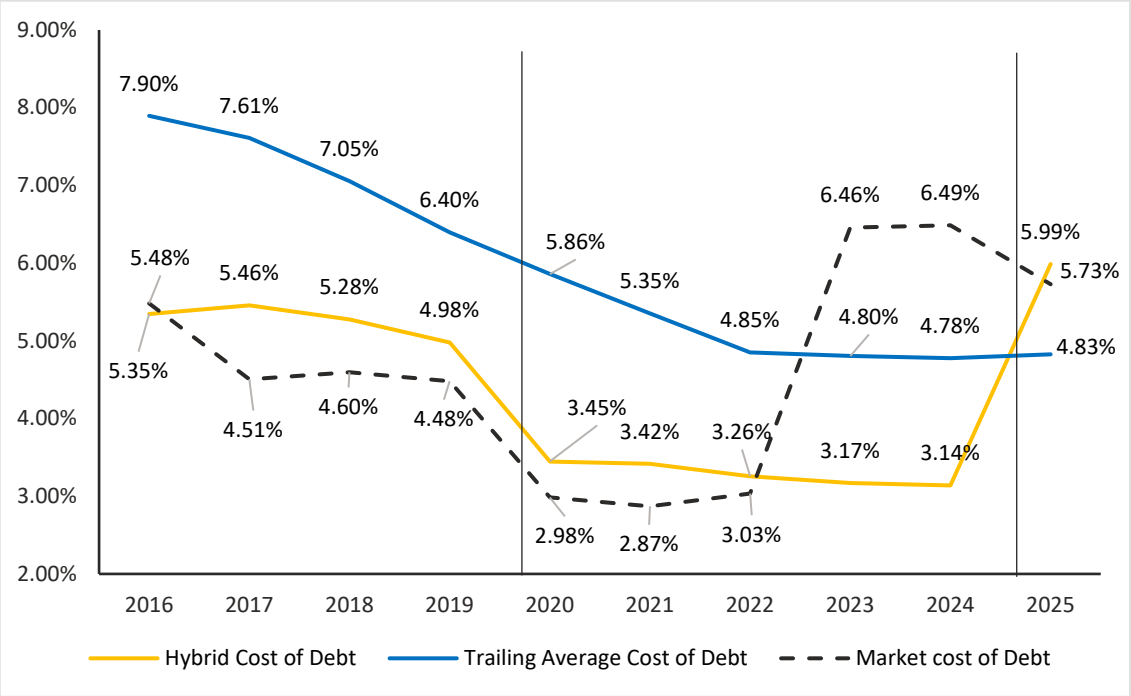



**Figure 5.1: Historical comparison of ATCO's Allowed Cost of Debt Under Alternative Approaches**

Source: ATCO's hybrid cost of debt is sourced from ERA's Access Arrangement 6 Final Decision Tariff Model. Counterfactual 10-year trailing average is sourced from Bloomberg (ADSWAP10), and the figures represent a 10-year trailing average of 10-year swap rates along with debt raising costs. Market cost of debt is sourced from Bloomberg (ADSWAP10) without a 10-year trailing average and includes allowed debt raising costs.

*Note: The figure provides information for 20 trading days in September every year for a like-for-like comparison. ATCO has not estimated the cost of debt under the revised bond yield approach because a consistent BBB+ bond sample is not readily available for the historical period, particularly before 2016 when estimating the 10-year counterfactual trailing average. The numbers are indicative.*

Since 2016 ATCO's cost of debt under the hybrid approach was lower than the counterfactual trailing average approach. The ERA's analysis (in Figures 4.3 and 4.4) does not acknowledge this historical evidence.

By design, a methodology that incorporates prevailing market rates will sometimes produce outcomes above a long-term trailing average and sometimes below it. The question that the ERA should consider is which methodology is more likely to estimate the efficient financing costs of a benchmark efficient entity and thereby support efficient investment and financing decisions and benefit consumers in the long term.

Importantly, the ERA recognised this issue in the 2022 Rate of Return Review where the ERA stated that under a full trailing average approach high debt costs in 2022 would have an ongoing effect across multiple future regulatory periods. [6]

If the ERA is concerned about higher costs to consumers, then the ERA should retain the hybrid trailing approach. The hybrid trailing approach is a lower cost to the consumers in the long run because, net of hedging costs since 10-year yields track above 5-year yields in the market.

The ERA's decision should not have a short term focus in response to the current position of the interest-rate cycle particularly because there has not been any fundamental change in the ERA's objectives for the Rate of Return Instrument.

## 5.3 Regulatory stability

The ERA's proposed move from the hybrid approach to a full trailing average places greater emphasis on the benefits of stability, predictability and smoother consumer price outcomes.

However, the objectives of the 2026 Gas Rate of Return Instrument remain consistent with those applied in the 2022 review and focus on estimating the efficient financing costs of a benchmark efficient entity, supporting efficient investment and promoting long term interests of the consumers consistent with the National Gas Objective and Revenue and Pricing Principles.

The ERA has not made the case for why the hybrid approach, which was previously considered consistent with these objectives, is no longer regarded as the preferred methodology and why the benefits of a full trailing average approach are considered to outweigh the advantages associated with the hybrid approach.

The ERA's 2026 RORI objectives are unchanged from 2022. The 2026 Draft Instrument focuses on estimating the efficient financing costs of a benchmark efficient entity, promoting efficient investment and efficient use of gas services, and providing a reasonable opportunity to recover efficient costs.

Under the plausible future scenarios, whether the RAB is increasing, stable or decreasing, the hybrid trailing approach is preferred as it can accommodate all future scenarios. The analysis by CEG shows that in particular the declining RAB scenario separates the two methods.[7]

ATCO's position is that the retention of the hybrid trailing average method supports regulatory certainty as it is superior under any future scenario and can be continued to be adopted no matter what the direction the energy transition takes.

## 5.4 10-year reset provides a clean transition in case a full trailing average is adopted

ATCO strongly supports retaining the hybrid trailing average approach and does not accept that the ERA has established a case for replacing it. If the ERA nevertheless adopts a full trailing average approach, a single 10-year reset is the more coherent, stable and predictable transition mechanism.

The ERA's rationale for preferring the five-year reset is unpersuasive. The two five-year resets introduce an additional risk in year 6 and retain exposure to the very interest rate risk that the transition is intended to remove. The ERA has not demonstrated why the two 5-year resets are superior under the National Gas Objective or the Revenue and Pricing Principles.

6 ERA, 2022 Explanatory Statement for the Final Gas Rate of Return Instrument, Paragraphs 334-336

7 CEG Report for ATCO Gas Australia, Retaining the Hybrid Trailing Average, Sections 4.3.1 and 4.3.2

The purpose of the gradual transition is to move from a hybrid approach to a full trailing average approach. A 10-year reset provides a clear, stable and predictable pathway to that destination benchmark by fixing the remaining hybrid exposure at the start of year 1 and allowing it to expire naturally over the transition period.

The ERA's preferred five-year reset does not provide a logical transition to a 10-year trailing average. Rather than progressively aligning compensation with the 10-year benchmark, the proposal initially shortens the effective tenor of compensation below that of the existing hybrid approach and delays the transition to a 10-year cost of debt for as long as possible.

ATCO disagrees with the Independent Panel Report recommendation of having a shortest transition period possible. A gradual transition over a 10-year period is required under the assumed financing strategy of a benchmark efficient entity where 10% of the debt is refinanced every year. Any transition which does not provide a reasonable opportunity to recover efficient costs to service providers goes against the National Gas Objective and Revenue and Pricing Principles.

The rate of return is based on a benchmark efficient entity, not the actual financing decisions of individual service providers. As with any benchmark framework, some firms will outperform the benchmark while others will underperform. Assessing transition arrangements on a case-by-case basis would undermine the benchmark approach and weaken the incentives it is intended to create. Maintaining a benchmark approach also promotes efficient long-term investment in pipeline infrastructure, which supports the long-term interests of consumers through the provision of safe, reliable and efficient services at the lowest sustainable cost.

The Independent Panel recommends implementing the transition from the date the 2026 RORI is finalised, rather than from the commencement of the next access arrangement period. Applying the debt transition immediately from the end of 2026 would effectively reopen financing assumptions already embedded in existing access arrangements.

This would be inconsistent with the operation of section 30Q (1) (b) of the NGL, which applies the rate of return instrument prospectively through future regulatory decisions. It would also not provide a reasonable opportunity for service providers to recover efficient financing costs under the Revenue and Pricing Principles. The appropriate time to implement a gradual debt transition is through the next access arrangement determination, when the 2026 Rate of Return Instrument first applies.

### Consistency with ERA’s guiding principles

In selecting between the two transition options, the Draft Instrument does not apply its guiding principles consistently.

The Draft Instrument identifies a number of guiding principles for assessing alternative transition mechanisms, including regulatory certainty and stability, replicability, avoidance of material windfall gains and losses, intergenerational equity, and conceptual coherence with the benchmark debt portfolio.

The ERA acknowledges that both the 10-year reset and 5-year reset options are replicable, avoid material windfall gains and losses, and promote stability during the transition period. Notwithstanding these findings, the ERA expresses a preference for the 5-year reset on the basis that it is more responsive to current market conditions and better reflects aspects of the existing hybrid approach.

This reasoning places weight on characteristics of the methodology that the ERA has otherwise concluded should be replaced.

### Single 10-year reset avoids repricing event in year 6

The proposed 5-year reset exposes consumers and service providers to uncertainty that does not arise under a single 10-year reset.

Going into year 6 of the transition, the two 5-year resets option refinances 40% of debt at the going market rates which results in the possibility of the allowance being higher or lower than the single 10-year reset. The ERA's illustrative worked example gleans over this possibility by assuming the same future swap rates under both approaches for Years 6 to 9. As a result, the analysis does not fully reflect the additional interest rate risk created by the Year 6 reset under the five-year option.[8]

In practice, future rates are unknown and the debt allowance in the second access arrangement in the two 5-year resets option could be materially higher or lower than the debt allowance set at the start of the 10-year transition. The 10-year reset avoids this risk and determines the transition allowance from year 1.

### Additional hedging allowance required under two 5-year resets

Since the ERA's cost of debt spreadsheet assumes identical swap rates under the two approaches in years 6-9, it also does not recognise the additional hedging activity required under the two 5-year resets. Unlike the 10-year reset, the 5-year reset requires a further series of transactions to implement the Year 6 repricing event.

Along with hedging 50% of debt at 4 years tenor and 40% of debt at varying tenors between 1 to 4 years in the first access arrangement, it introduces additional hedging in year 6 where the 50% fixed tranche opens up and needs refixing. This increases its hedging proportion to 120%, as compared to 100% in the 10-year reset option. These hedging costs have not been allowed in the Draft Instrument, and the networks will not be compensated fully for hedging under the framework in the Draft Instrument.

[8] Refer to ERA's 2026 Draft Gas RORI Draft Explanatory Statement Worked Debt Example Spreadsheet available here.

# 6. DEBT RAISING AND HEDGING COSTS

**Key messages**

ATCO supports maintaining debt raising costs at 0.165 per cent per annum under the proposed full trailing average approach. Debt hedging costs of 0.123 per cent should continue under a hybrid approach

If the Final Instrument adopts a full trailing average approach, debt raising costs at 0.165 per cent per annum should be maintained. Since the underlying debt approach remains the 10% refinancing of debt every year, the debt portfolio and issuance strategies are unchanged under the full trailing average approach.

Debt hedging costs should continue to be applied under a hybrid approach, including during any transition to a full trailing average. If the ERA adopts a full trailing average approach, debt hedging costs will not be required after the transition period, as hedging strategy is already incorporated within the approach.

# 7. EQUITY RISK FREE RATE

**Key messages**

ATCO supports a 10-year CGS bond for the risk-free rate for the return on equity.

ATCO supports a 10-year Commonwealth Government Securities (CGS) bond for the risk-free rate for the return on equity. ATCO also supports the ERA's decision to estimate the yields using observed yields of 10-year CGS bonds, linearly interpolating the yields and annualising the resulting yield.

# 8. MARKET RISK PREMIUM

**Key messages**

- ERA's proposed MRP of 5.8% undermines regulatory certainty as it is materially below recent Australian regulatory decisions.
- ERA should not reference AER's draft estimate which lowers MRP from 6.2% to 6.1%. It diverts from the previous method without explicitly stating the reasons behind the divergence. This has been pointed out in the AER's Independent Panel Report.
- The historical estimate of the MRP should only use arithmetic mean, which is the best estimator of historical information, not geometric mean which provides the estimate of long term compounded returns.
- ATCO supports an internally consistent approach to estimating and implementing the MRP. If the ERA has regard to forward looking information, then the MRP should be updated at the start of the access arrangement. If the ERA fixes the MRP for the duration of the Instrument, then a long-term historical estimate should be used.

ATCO considers that the ERA's MRP estimate is materially low and is driven by methodological choices that should be reconsidered.

ATCO's response to MRP is centred around two main methodological issues:

- **Use of geometric mean**: ATCO reiterates its 2022 position that geometric mean should not be included in the historical estimate. To assist the ERA's consideration of this issue, we have attached a technical appendix (Appendix A) which provides an empirical rebuttal to the Pink Lake Analytics report.
- **Treatment of unconditional and conditional estimates**: The ERA should adopt an internally consistent approach to forward looking evidence. This issue ultimately comes down to whether the MRP should be updated at the start of the AA period or remain fixed for the duration of the RORI.

Taken together, these issues suggest that the ERA's MRP estimate is being unduly influenced by methodological choices rather than the weight of evidence, resulting in an allowance that sits materially below recent Australian regulatory practice.

The ERA should not place any weight on AER's reduction in MRP from 6.2 per cent to 6.1 per cent as that outcome is driven by an unexpected methodological change, the implications of which have been acknowledged in AER's Independent Panel Report.

The Draft Instrument proposes an MRP of 5.8 per cent which is materially below other Australian regulatory decisions since 2022. Regulatory certainty is a key consideration for long term investors looking across rate of return instruments over time.

## 8.1 Australian regulatory decisions since 2022

The ERA's proposed MRP of 5.8 per cent is materially lower than recent Australian regulatory estimates. While the ERA refers to the ACCC's WACC Statement and relies on similar evidence and decision-making principles, it has proposed an MRP of 5.8 per cent compared with the ACCC's estimate of 6.4 per cent.[9] This outcome suggests the difference is driven by methodological choices rather than the weight of the evidence.

[9] ERA Explanatory Statement for the 2026 Draft Rate of Return Instrument, Attachment 5

ACCC relies on CEPA's Report on WACC Methodology to arrive at their MRP estimate.

Table 8.1 provides the MRP estimates of Australian regulatory decisions since 2022 sourced from CEPA's Report submitted to the ACCC.

The broader body of Australian regulatory evidence does not support an MRP of 5.8 per cent.

**Table 8.1: MRP estimates of Australian regulatory decisions since 2022**

| Regulator | MRP estimate |
|---|---|
| AER (2023) | 6.2% |
| ACCC (Australia Post March 2024) | 6.2% |
| ESC (2023) | 6.31% |
| ESCOSA (2024) | 6.3% |
| ICRC (2023) | 6.3% |
| IPART (2024) | Current: 6.2%<br>Historic 6.0% |
| QCA (2024) | 6.55% |

Source: Table 3.2 CEPA Draft Report on WACC Methodology submitted to the ACCC in August 2025[10]

Since 2022 Australian regulators' MRP estimates range from 6.2 per cent to 6.55 per cent. ERA's proposed MRP of 5.8 per cent is a clear departure from recent Australian regulatory practice.

Investors in regulated assets are looking for regulatory certainty and predictability in regulator's decisions. The ERA's proposed marked reduction in the MRP does not meet this standard and will not support efficient investment in the long term interests of consumers.

## 8.2 Concurrent evidence from the AER's 2026 RORI Review

The AER's reduction from 6.2 per cent to 6.1 per cent should not be used as a benchmark for ERA's proposed MRP. The reduction reflects a departure from the AER's previous methodology rather than weakening evidence. This has been acknowledged in AER's Independent Panel Report.

While ERA's Explanatory Statement refers to the AER's Eligible Experts Report, it does not address the findings of the AER's Independent Panel Report.

The AER's Independent Panel Report found that the updated evidence did not support a reduction in the MRP. Compared with the 2022 RORI, most evidence remained stable or improved, with higher HER estimates, unchanged survey evidence, and similar VIX and credit spread indicators. [11]

Given the AER's Independent Panel Report concluded that the updated evidence did not support a reduction in the MRP, the AER's draft estimate should be given little to no weight in the ERA's assessment.

[10] CEPA's Draft Report summarises methods and estimates of MRP used by regulators across Australia. The Final CEPA Report which is referred in the Explanatory Statement built on the findings in the Draft Report. The Draft Report can be accessed here.

[11] Independent Panel Report, AER's 2026 Draft Rate of Return Instrument page 32

## 8.3 Arithmetic mean for historical returns

ATCO maintains that the historical MRP should be estimated using the arithmetic mean only. The arithmetic mean is supported by leading corporate finance textbooks, a substantial body of academic literature, and has been consistently adopted by Australian economic regulators.

The Pink Lake Analytics Report relies on academic literature that estimates long-term compounded returns for buy-and-hold investors over extended periods. These studies use simulated data and assumptions about future market outcomes and are directed at forecasting long-run investment performance. They do not address the regulatory task of estimating a single period expected return required under the CAPM and therefore provide no support for incorporating the geometric mean into the historical MRP estimate. The regulatory task is to estimate the return investors require to hold the market portfolio for a single period CAPM, not over the long run. For that purpose, the arithmetic mean is the best estimator of historical excess returns.

Table 8.2 shows that the ERA stands alone in applying a weighted average of geometric and arithmetic means. No other Australian regulator currently relies on geometric mean to determine the historical estimate.

**Table 8.2: How Australian regulators estimate historical returns**

| Regulator | Period (start) | Averaging | Point estimate |
|---|---|---|---|
| AER | 1883, 1937, 1958, 1980, 1988 | Arithmetic[12] | While the AER calculates estimates over five periods, it relies mostly on data from 1988. |
| ACCC | 1988 | Arithmetic | Arithmetic average from 1988 |
| ERA | 1958, 1980, 1988, 2000 | Arithmetic and geometric | Weighted average of arithmetic (60%) and geometric mean (40%), each derived as the average of the estimates over different time periods |
| ESC | 1883, 1937, 1958, 1980, 1988 | Arithmetic | Median of the five periods |
| ESCOSA | 1883, 1937, 1958, 1988 | Arithmetic | Most weight on the data from 1958 |
| IPART | 1883, 1937, 1958, 1980, 1988 | Arithmetic | Point estimate of 6% |
| QCA | 1958 | Arithmetic | Arithmetic average from 1958 |

Source: Table 3.4 in CEPA's Draft Report on WACC Methodology submitted to the ACCC available here

Given the lack of regulatory support for ERA's approach, the burden of proof rests with the ERA to demonstrate why its methodology should be preferred to the approach consistently applied elsewhere.

Figure 8.1 compares the arithmetic and geometric means against observed historical MRP outcomes. For each sample period, the arithmetic mean is closer to the observed data than the geometric mean, as measured by the sum of squared deviations. Lower values indicate a closer fit between the estimate and the historical observations.

The results show that the arithmetic mean consistently provides a better fit to observed historical MRP outcomes than the geometric mean across all sample periods. This evidence supports the

[12] Based on AER's 2023 Final Decision on Rate of Return Review. AER's 2026 Draft Rate of Return Instrument uses geometric mean, but the draft methodology has been heavily criticised by stakeholders and AER's Independent Panel Report.

continued use of the arithmetic mean when estimating the historical MRP. By contrast, the geometric mean and the ERA's 60/40 weighted approach move the estimate further away from the observed data and provide a less reliable estimate of the historical MRP.

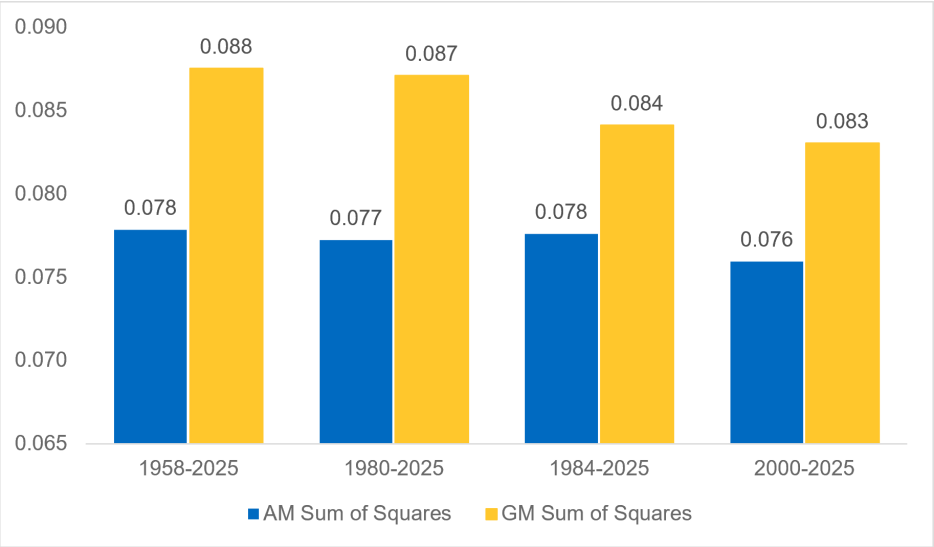



**Figure 8.1: AM vs GM: Sum of squared deviations from observed MRP outcomes**

Source: BHM dataset provided by the ERA

Note: Sum of squared deviations measures how far, on average, an estimator is from the actual observations. For every sample period, the arithmetic mean provides a closer fit to actual data than the geometric mean. Analysis is based on 2015-2025 period.

Appendix A provides a response to the analysis in the Pink Lake Analytics Report.

## 8.4 DGM estimate

ATCO supports the continued use of the DGM as a source of forward-looking evidence when estimating the MRP. We consider the ERA's refinements to the DGM since 2022 as broadly reasonable, including the use of a broader range of GDP and inflation forecasts and the reduction in the long-term dividend growth rate from 4.6 per cent to 4.0 per cent to reflect lower long-term economic growth expectations, however there has been significant volatility in the DGM estimate when compared to the 2022 Rate of Return Instrument.

Considering DGM estimates alongside historical MRP evidence provides a cross-check on the cost of equity and increases the likelihood that the resulting estimate reflects current market conditions. The use of forecasts from Consensus Economics, the OECD and the Parliamentary Budget Office further improves the robustness of the DGM estimate.

However, the DGM is subject to recognised limitations, and it should play a supporting rather than determinative role in estimating the MRP.[13] While the ERA's updated assumptions represent a reasonable refinement of the approach adopted in 2022, historical excess return evidence should remain the primary source of evidence on the MRP, with DGM estimates providing a forward-looking cross-check on the reasonableness of the resulting estimate.

[13] In 2013 Review of the AER's Dividend Growth Model, Dr Martin Lally emphasised that DGM relies on equity prices reflecting the present value of future dividends and on investors having rational expectations about future dividend growth. DGM estimates can also be materially affected by changes in payout ratios and retention rates.

## 8.5 Forward looking MRP

ATCO supports an internally consistent approach when estimating and applying the MRP.

The Draft Instrument adopts a conditional approach to estimating the MRP, through its reliance on forward-looking evidence such as the DGM, but applies the resulting estimate on an unconditional basis by fixing it for the duration of the Instrument. This results in an internally inconsistent framework.

MRP should be estimated and applied using a consistent framework. Two internally consistent approaches are available:

- Determine an unconditional estimate of MRP using long run historical information and fix the MRP in the Final Rate of Return Instrument.
- Determine a conditional MRP using both historical evidence and current market information and set the estimate at the commencement of each access arrangement period.[14]

If the ERA places any weight on the current market information, then the ERA should update the MRP at the start of each access arrangement. If the MRP is fixed for the duration of the Rate of Return Instrument (which indicates that the ERA places weight on the stability of the estimate), then historical average should be used as it incorporates the long-term trend of the parameter.

[14] A conditional estimate reflects current market information. An unconditional MRP relies solely on historical evidence and does not incorporate current market conditions. While historical estimates are derived from a sample, this does not make them conditional in the regulatory sense relevant to estimating the return on equity. The AER determines an unconditional MRP based solely on historical information.

# 9. BETA

**Key messages**

- ATCO supports retaining a beta of 0.7 because there is no evidence that systematic risk has changed, the comparator evidence remains stable, and the 0.7 estimate is robust across alternative estimation approaches.
- ERA's refinements improve the robustness, transparency and replicability of the analysis. But they do not provide evidence that the beta should be different from 0.7 when compared on a consistent basis.
- ERA's lower beta estimate appears to be influenced by changes in the estimation window, including the removal of COVID-era observations, rather than clear evidence of a fundamental change in the risk characteristics of regulated energy network businesses.

ATCO supports retaining a beta of 0.7 because there is no compelling evidence that the systematic risk of the benchmark efficient entity has changed since the ERA's 2022 RORI Review. The comparator evidence remains broadly stable and continues to support a beta of 0.7.

ERA's methodological refinements improve the robustness, transparency and replicability of the beta estimation process. While the refined methodology produces a lower empirical beta estimate of 0.6 currently, the ERA has recognised that the evidence is mixed across comparator samples and estimation approaches.

These refinements strengthen the estimation methodology but do not provide evidence that the appropriate regulatory beta should differ from 0.7.

Additionally, the reduction in the empirical beta estimate reflects the dropping out of COVID-19 months from the five-year estimation window, rather than compelling evidence of a material change in the risk characteristics of regulated energy network businesses.

We do not agree with the Independent Panel Report's recommendation to reconsider the underlying evidence because the available evidence continues to support a beta of 0.7.

ATCO also supports the ERA's continued reliance on international comparators. Given the limited number of listed Australian regulated energy network businesses, international comparators provide a broader and more reliable evidence base for assessing systematic risk. The rationale for this approach has strengthened since the 2022 RORI Review, as only one domestic comparator remains listed and previously relevant Australian comparators have been delisted for several years. We note that the Independent Panel has endorsed the use of international comparators.

## 9.1 Decline in observed beta estimates does not reflect a reduction in underlying risk

The ERA's updated analysis produces an average beta estimate of approximately 0.6 across countries and estimation windows. However, this observed estimate does not, of itself, demonstrate that the underlying systematic risk of the benchmark efficient entity has declined.

The ERA attributes the decline in recent beta estimates to events surrounding the April 2025 tariff announcements. However, evidence suggests that a more significant driver is the removal of COVID-era observations from the rolling estimation window April 2025 onwards. As those observations drop out of the sample, there is a "cliff-edge" decline in estimated betas,

irrespective of whether there has been any change in the underlying systematic risk of comparator businesses. Detailed analysis is provided in Appendix B.

ATCO considers that the key question is not whether recent beta estimates have declined, but whether that decline demonstrates a change in the systematic risk of the benchmark efficient entity. The exclusion of COVID-19 observations from a rolling five-year estimation window should not be interpreted as evidence that underlying systematic risk has fallen, as investors continue to incorporate the possibility of major economic shocks into their assessment of market risk.

ATCO supports the ERA's methodological refinements as they improve the robustness, transparency and replicability of the beta estimation framework. However, the available evidence does not demonstrate a material change in the systematic risk of the benchmark efficient entity since the 2022 review. ATCO therefore supports retaining an equity beta of 0.7.

## 9.2 Refinements strengthen the methodology but do not change the conclusion

ATCO supports the refinements the ERA has made to its beta estimation methodology in the 2026 Draft Instrument. However, as with any empirical exercise, the resulting estimates are sensitive to the way the refinements are implemented and interpreted.

Along with updating the comparator sample, the ERA has proposed two major refinements:

- Reference day adjustment
- Treatment of mergers and acquisitions

ATCO supports these refinements because they can potentially improve the robustness, transparency and replicability of the analysis.

However, neither the refinements nor the empirical evidence demonstrates that the risk of the benchmark efficient entity has changed sufficiently to justify moving away from a beta of 0.7.

ATCO's sensitivity analysis indicates that a stable beta estimate of 0.7 is robust to individual methodological changes. As shown in Table 9.1, reversing each of the ERA's refinements individually results in estimated betas that continue to support a rounded value of 0.7. While the refinements improve the robustness, transparency and replicability of the estimation framework, they do not materially alter the broader body of evidence or demonstrate a change in the underlying systematic risk of the benchmark efficient entity.

While the refinements collectively result in a lower central estimate to 0.6, introducing the refinements one at a time results in an unchanged beta of 0.7, all else remaining the same.

Table 9.1 demonstrates that the empirical estimate of 0.6 is primarily driven by the cumulative application of all refinements rather than any individual methodological change. When each refinement is reversed and assessed separately, the resulting estimate continues to support a rounded beta of 0.7. Similarly, the application of the previous ERA methodology also produces an estimate that is consistent with a beta of 0.7.

Reversals of the ERA's proposed methodological changes in the Draft 2026 Rate of Return Instrument. Table 10.1 indicates that in the empirical beta estimate is 0.7 (after rounding) in a like for like comparison.

**Table 9.1: Reversing ERA's refinements results in a stable beta of 0.7**

| Treatment of portfolio estimation approach | Treatment of reference days | Treatment of DUET and seven international comparators | 5Y OLS | 10Y OLS | 5Y LAD | 10Y LAD | Weighted OLS | Weighted LAD | Weighted beta |
|---|---|---|---|---|---|---|---|---|---|
| Remove | All reference days | Excluded | 0.58 | 0.66 | 0.55 | 0.60 | 0.62 | 0.58 | 0.60 |
| Remove | All reference days | Included | 0.66 | 0.73 | 0.64 | 0.66 | 0.69 | 0.65 | 0.7 (0.66 before rounding) |
| Remove | Friday | Included | 0.64 | 0.75 | 0.60 | 0.68 | 0.69 | 0.64 | 0.7 (0.67 before rounding) |
| Keep | All reference days | Included | 0.64 | 0.74 | 0.62 | 0.66 | 0.69 | 0.64 | 0.7 (0.66 before rounding) |
| Keep | Friday | Included | 0.62 | 0.75 | 0.58 | 0.69 | 0.69 | 0.64 | 0.7 (0.66 before rounding) |

Source: ATCO analysis. Equal weighting is applied to 5Y and 10Y estimates. Equal weighting is applied to OLS and LAD estimates.

This is an important result because it indicates that support for a beta of 0.7 is not dependent on any single modelling assumption or methodological specification. Rather, the estimate remains robust across a range of reasonable approaches, including both the ERA's previous methodology and alternative specifications that reverse individual refinements.

The evidence supporting a beta of 0.7 remains materially unchanged from the 2022 review. The ERA's methodological refinements improve the estimation framework but do not provide a compelling basis for revising the beta downward. ATCO therefore supports the ERA's exercise of regulatory judgement in retaining a beta of 0.7.

## 9.3 Comparator evidence remains stable

The comparator evidence has remained broadly stable since the 2022 review and does not indicate a statistically significant reduction in risk.

ATCO conducted empirical testing to analyse whether the beta estimates derived from the 2026 comparator set are statistically different from those presented in 2022 RORI. Figure 9.1 illustrates the results of that analysis.

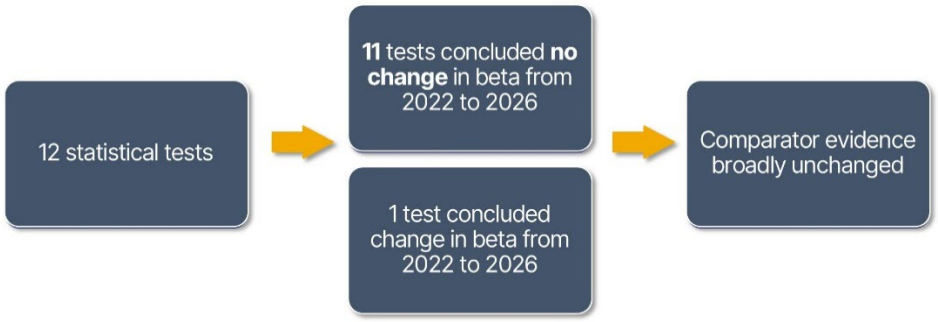



**Figure 9.1: Most statistical tests indicate no material change in comparator betas since 2022**

Source: ATCO Analysis

The statistical tests were done on comparator level information and then aggregated on country level for 10-year estimates for both OLS and LAD methods. Tests were also conducted on a mean of country estimates. The methodology was identical to one described in the ERA's Explanatory Statement.

11 of the 12 tests failed to conclude that the 2022 beta estimates are different from the 2026 estimates, indicating that there is no convincing statistical evidence that the 10-year beta estimates should be different from the 2022 value of 0.7. The details of the analysis are presented in Appendix B.

The observed decline in beta estimates is driven largely by random statistical variation and COVID 19 dropping out of the 5-year estimation window, as well as the cumulative application of the ERA's refinements, rather than a fundamental change in underlying risk. Consequently, the comparator evidence remains broadly stable, and sensitivity analysis indicates that support for a beta of 0.7 is robust across a range of reasonable estimation approaches. There is no compelling empirical basis for departing from the beta adopted in the 2022 Instrument, and ATCO supports the ERA's decision to retain a beta of 0.7 in the 2026 Instrument.

# 10. INFLATION

**Key messages**

ATCO supports ERA's Treasury bond implied inflation approach to estimating expected inflation and the five-year inflation term.

ATCO supports ERA's Treasury bond implied inflation approach to estimating expected inflation. Market expectations provide the best estimates of inflation for the regulatory period. ATCO also supports a five-year term for inflation.

Section 2.5.6 in Attachment 6 in ERA's Explanatory Statement sets out the role of expected inflation.

ATCO considers it would be beneficial to also clearly state that the inflation estimate determined in this Gas Rate of Return Review is designed for the purpose of estimating the ex-ante real return or the real WACC. Inflation determined in the Gas Rate of Return Instrument is not designed to escalate a Service Provider's reference tariffs - the escalation of a Service Provider's reference tariffs is done annually by utilising the tariff variation mechanism that is approved as part of a Service Provider's access arrangement. That is, there are different uses for inflation:

- the expected inflation estimate determined in the current Review - which is an average over a 5-year period - is designed for the purpose of estimating the ex-ante real return in the PTRM framework; and
- the annual adjustment of tariffs to account for inflation, which is achieved by the tariff variation mechanism that is set out in a Service Provider's access arrangement.

Further, paragraph 135 in the Draft Instrument states that the expected rate of inflation will be required to back out the expected inflation underpinning the nominal allowances, to allow accounting for subsequent inflation through the tariff variation mechanism.

With the *Gas Networks in Transition* rule change process being undertaken by the AEMC in parallel with this review, there remains a possibility that gas network service providers may adopt nominal modelling approaches for cost recovery in future access arrangements. The Gas Rate of Return Instrument should therefore retain sufficient flexibility to accommodate this outcome and avoid constraining future regulatory decisions. This would help ensure the instrument remains fit for purpose and capable of operating effectively under alternative cost recovery frameworks that may emerge as the regulatory framework evolves.

# 11. GAMMA

**Key messages**

Retaining a gamma of 0.5 promotes consistency with the ERA's established approach and remains appropriate because the underlying evidence has not materially changed.

ATCO supports retaining a gamma estimate of 0.5 as the underlying evidence has not materially changed and continues to support the ERA's long standing regulatory approach. While the updated data results in modest changes to the underlying estimates, the rounded utilisation and distribution rates remain unchanged, resulting in an unchanged estimate of gamma, as shown in the table below.

**Table 11.1: Gamma calculations since 2018**

| ASX top 50 | 2018 RORI (2000-2017) | 2022 RORI (2000-2021) | Draft 2026 RORI (2000-2025) |
|---|---|---|---|
| Distribution rate | 0.888 | 0.879 | 0.899 |
| ERA's rounding of distribution rate | 0.9 | 0.9 | 0.9 |
| Utilisation rate (5-year average) | 0.646 | 0.642 | 0.636 |
| ERA's rounding of utilisation rate | 0.6 | 0.6 | 0.6 |
| Gamma | 0.5 | 0.5 | 0.5 |

ATCO does not support the Independent Panel Report's recommendation to cease rounding intermediate estimates before applying the Monkhouse formula. The distribution rate and utilisation rate are not sourced directly from the data and are estimated using methodologies that are subject to sampling errors and biases. The purpose of rounding is to avoid attributing a false level of precision to parameters used to calculate gamma that is not supported by the underlying evidence.

In particular, the utilisation rate relies on ABS equity ownership data, which is not collected for the purpose of estimating gamma and provides only a proxy for the redemption of imputation credits rather than a direct measure of utilisation. ABS ownership data is also subject to recognised limitations relating to estimation and data quality. Further, the underlying data does not directly observe the creation, distribution, trading or redemption of imputation credits. Accordingly, reporting intermediate estimates to additional decimal places would incorporate a false level of precision that is not supported by the underlying evidence.

The ERA recognised these limitations in its 2018 and 2022 reviews and adopted a rounded approach that reflected the inherent uncertainty in the estimation of gamma. The Draft Rate of Return Instrument's estimate of gamma therefore reflects extensive regulatory, judicial and expert scrutiny over multiple review cycles.

Any departure from the established approach should be supported by compelling new evidence rather than a different interpretation of existing evidence. The Independent Panel has not identified any material change in market conditions, investor utilisation behaviour, ownership patterns, or the underlying data that would justify altering either the ERA's methodology or its

estimate of gamma. Consequently, the ERA should retain its current approach and continue to estimate gamma at 0.5.

# APPENDIX A. ATCO'S RESPONSE TO PINK LAKE ANALYTICS' REPORT ON MRP

ATCO agrees with the Pink Lake Analytics Report that forward-looking information should be considered when estimating the MRP. However, the Draft Instrument already incorporates forward-looking information through the DGM estimate. As a result, the historical and forward-looking sources of evidence perform distinct roles within the ERA's framework.

The Pink Lake Analytics Report does not estimate the historical average MRP directly. Rather, it evaluates alternative estimators based on their ability to predict future returns under a range of simulated scenarios and then uses those results to inform the historical estimate.[15]

A simpler approach is to use historical returns to estimate the historical MRP and use the DGM to provide the forward-looking perspective. This avoids incorporating forward-looking considerations into both the historical estimate and the forward-looking estimate.

The Pink Lake Analytics Report relies on academic studies that estimate long-term investment performance. These studies are concerned with how wealth grows over time when investors remain invested and reinvest returns. Their objective is therefore to estimate long-run wealth accumulation rather than the historical average excess return earned in a single period. The Report is useful if the task is to forecast long-run future wealth outcomes.[16]

Because the geometric mean measures the compound growth rate of wealth, its relevance increases as the investment horizon lengthens. For this reason, the academic literature generally links the relative weighting on the geometric mean to the assumed holding period.

The regulatory task is different. The ERA is not estimating the growth in wealth from a long-term investment strategy. Rather, it is estimating the return required by investors to hold the market portfolio under the CAPM. For the historical component of that estimate, the relevant evidence is the observed history of realised excess returns.

## A.1 Simulation method and assumptions

The Pink Lake report seeks to identify an estimator that best predicts future MRP rather than directly estimate the historical average MRP.

Using simulations calibrated to Australian market data, it finds that the arithmetic mean tends to overstate future expected returns, while including some weight on the geometric mean reduces this bias. The report does not identify a single correct weighting but concludes that some weight should be given to the geometric mean.

The simulations are designed to identify an estimator that best predicts future returns over a specified investment horizon. They are a basis for making a forward-looking adjustment to historical data rather than for estimating the historical average excess return itself.

[15] Pink Lake Analytics, Sensitivity Analysis of Market Risk Premium Estimators to Drivers of Bias and Precision, Executive Summary

[16] Jacquier, Kane and Marcus (2005) paper concludes that historical average returns, particularly the arithmetic mean, can give an overly optimistic picture of *future long-term returns* because they do not adequately account for estimation error and uncertainty. Jacquier. Kane and Marcus (2003) concludes that using historical average returns to *estimate long-term future returns* can be misleading because it tends to overstate what investors are likely to earn, and that lower estimates are more appropriate once uncertainty is properly accounted for. Indro and Lee (1997) also conclude that neither the arithmetic mean nor the geometric mean is fully reliable on its own for estimating *future long-run returns*, and that a modified estimator can do better.

The report relies on a number of assumptions that may be relevant when assessing alternative long term forward-looking estimators but are not required to estimate the historical average MRP directly from observed returns.

The Pink Lake simulations are calibrated using the historical BHM dataset. However, the results depend on several additional assumptions regarding the future behaviour of returns, including:

- The historical market return follows AR(1) process17
- Risk free rate is constant at 5%
- Holding period is 10 years

These assumptions are not supported by evidence as explained in the next sections.

### A.1.1 AR(1) Process

The Pink Lake Analytics simulations assume that market returns follow a first-order autoregressive (AR(1)) process. Under an AR(1) specification, returns in one period are partly determined by returns in the preceding period. This assumption plays an important role in the simulation framework because it defines the process used to generate future returns and assess the performance of alternative MRP estimators. The report also assumes first-order correlation to be -0.14 based on this process.

Figure 11.1 compares the performance of alternative time-series models using information from 1883-2025. The results do not provide evidence that an AR(1) specification provides an appropriate description of historical market returns. Alternative specifications perform better. Even with a rolling 30-year window, only 16% of the 114 rolling window regressions have a statistically significant AR(1) process.

| | AR(1) | AR(2) | MA(1) | ARMA(1,1) | ARMA(2,1) | ARMA(2,3) |
|---|---|---|---|---|---|---|
| ar1 | -0.14 | -0.16 | | 0.41 | -0.64** | -1.56*** |
| | (0.08) | (0.08) | | (0.33) | (0.23) | (0.16) |
| intercept | 0.12*** | 0.12*** | 0.12*** | 0.12*** | 0.12*** | 0.12*** |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| ar2 | | -0.17* | | | -0.24** | -0.56*** |
| | | (0.08) | | | (0.08) | (0.16) |
| ma1 | | | -0.19* | -0.58* | 0.50* | 1.49*** |
| | | | (0.09) | (0.29) | (0.23) | (0.16) |
| ma2 | | | | | | 0.21 |
| | | | | | | (0.22) |
| ma3 | | | | | | -0.30*** |
| | | | | | | (0.09) |
| AIC | -113.98 | -116.16 | -115.08 | -114.34 | -115.66 | -119.87 |
| AICc | -113.81 | -115.87 | -114.91 | -114.05 | -115.23 | -119.04 |
| BIC | -105.09 | -104.30 | -106.19 | -102.49 | -100.85 | -99.13 |
| Log Likelihood | 59.99 | 62.08 | 60.54 | 61.17 | 62.83 | 66.94 |
| Num. obs. | 143 | 143 | 143 | 143 | 143 | 143 |

**Figure 11.1: Alternative Models for Market returns**

Source: ATCO analysis based on BHM Dataset provided by ERA.

Note: The figure reports results for alternative time-series regressions. "***" denotes statistical significance at the 1 per cent level, "**" at the 5 per cent level and "*" at the 10 per cent level. Values without asterisks are not statistically significant.

The AR(1) process is a key input into the Pink Lake Analytics simulation framework because it determines how future returns are generated. If the assumed return-generating process does not

reflect the behaviour observed in the historical data, the simulated return outcomes are unlikely to provide a reliable representation of long term future market returns. Consequently, the conclusions drawn from those simulations, including the reported performance of alternative MRP estimators, are misleading. The simulation results should therefore be treated with caution. They reflect the behaviour of returns under an *assumed* model rather than the behaviour observed in the historical data itself.

### A.1.2 Holding period

The Pink Lake Analytics Report evaluates estimator performance over a 10-year holding period. However, available evidence indicates that Australian investors hold shares for much shorter periods, averaging around two years.[18]

This assumption matters because the further into the future the forecast extends, the more important compounding becomes. Over long holding periods, small differences in annual returns accumulate, making the geometric mean more relevant in the estimation. Over shorter holding periods, compounding has lower effect and the difference between the arithmetic and geometric mean is much smaller. As a result, the case for giving substantial weight to the geometric mean depends heavily on the assumed investment horizon.

However, we reiterate that the regulatory task is not to analyse compounding of return but to set a MRP for a single period under the CAPM model.

### A.1.3 Constant risk-free rate

In appendix B The Report lays out the simulation method for future MRP. It assumes that the historical market return (not MRP) follows a statistical model or a pattern and simulates 1,000,000 artificial scenarios based on the assumed model. It then assumes a constant risk-free rate of 5% and estimates MRP as the difference between simulated market returns and a constant risk-free rate.

The historical evidence of risk-free rate does not support this assumption. Figure 11.2 illustrates that the risk-free rate is volatile and should not be assumed to be fixed.

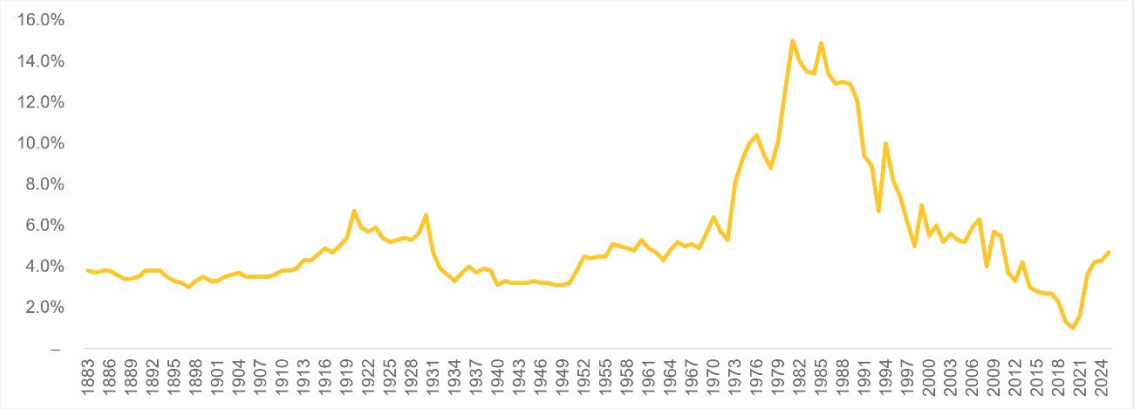



**Figure 11.2: Risk free rate**

Source: BHM Dataset provided by the ERA

By assuming a fixed risk-free rate, the simulation abstracts from an important source of variability in observed MRP outcomes. This simplification may affect the measured properties of the

[18] World Bank World Development Indicators (https://data.worldbank.org/indicator/CM.MKT.TRNR, https://data.worldbank.org/indicator/CM.MKT.TRAD.CD). Holding period is defined as value of stocks divided by turnover.

simulated MRP series, including its volatility, persistence and estimated bias. As a result, the simulation outcomes do not fully reflect the characteristics of the historical Australian data and should therefore be interpreted with caution.

## A.2 Recommendation

The Pink Lake Analytics Report provides evidence on the performance of alternative estimators in forecasting future returns over a long investment horizon. This is different to the regulatory task which is to estimate the historical MRP from observed historical excess returns and consider forward-looking evidence separately through the DGM.

Pink Lake Analytics' simulations rely on assumptions that are not supported by historical data and should be given little weight. The historical estimate should therefore rely on observed excess returns and the arithmetic mean. The ERA should not put any weight on simulation results that depend on unsupported assumptions regarding return persistence, holding periods and future risk-free rates.

# APPENDIX B. BETA

## B.1 Empirical testing for difference in comparator beta estimates

ATCO tested whether beta estimates have changed between 2022 and 2026 using country-average 10-year equity betas estimated using both OLS and LAD methods, together with the mean-of-countries estimates. For consistency, the analysis applies the 2026 estimation methodology and comparator sample to both periods, using data to June 2022 and May 2026 respectively.

Standard errors were estimated using the New Zealand Commerce Commission's approach, which accounts for estimation uncertainty, dispersion across comparators and cross-sectional correlation. Cross-sectional correlations were estimated using a bootstrap procedure with 2,000 iterations.[19] The estimated cross-sectional correlations for countries with more than one comparator in the ERA's 2026 sample are presented below in Table 11.2

**Table 11.2: Estimated cross-sectional correlations for Australia, US and Canada**

| Country | 2022 OLS correlation | 2026 OLS correlation | 2022 LAD correlation | 2026 LAD correlation |
|---|---|---|---|---|
| Australia | 0.43 | 0.42 | 0.34 | 0.37 |
| United States | 0.53 | 0.51 | 0.48 | 0.47 |
| Canada | 0.35 | 0.45 | 0.33 | 0.40 |

We estimated the correlation between the 2022 and 2026 beta estimates using a bootstrap procedure that preserves the overlap between the two estimation windows. These correlations were then incorporated into the statistical test used to assess whether the 2022 and 2026 beta estimates are significantly different.[20]

**Table 11.3: Results of statistical test of differences between ten-year beta estimates in 2022 and 2026**

| Country | Method | 2022 beta | 2026 beta | Difference | p-value |
|---|---|---|---|---|---|
| Australia | OLS | 0.527 | 0.452 | -0.075 | 35.2% |
| Australia | LAD | 0.584 | 0.509 | -0.074 | 30.8% |
| United States | OLS | 0.794 | 0.708 | -0.086 | 8.3% |
| United States | LAD | 0.652 | 0.549 | -0.103 | 3.5% |
| Canada | OLS | 0.869 | 0.779 | -0.091 | 43.8% |
| Canada | LAD | 0.756 | 0.689 | -0.067 | 58.8% |
| United Kingdom | OLS | 0.641 | 0.691 | 0.050 | 32.3% |

[19] For each iteration, weeks were randomly sampled with replacement from the estimation window and betas were re-estimated for each comparator. The same sampled weeks were applied across all comparators to preserve common market shocks, while observations from the COVID-19 disruption period were included exactly once in each iteration. The process was repeated 2,000 times. Correlations between comparator asset beta estimates were then calculated and averaged by country and estimation method. The results indicate positive cross-sectional correlation across all countries, suggesting that beta estimated within each comparator sample were influenced by common market factors.

[20] ATCO estimated the standard error of the difference between the two beta estimates for 2022 and 2026, while accounting for the fact that the two datasets are not independent. Since the 2022 and 2026 estimation windows share a substantial proportion of observations, the resulting beta estimates are positively correlated. Ignoring this correlation would overstate the standard error. The standard error of the difference is given by $E_{Diff} = \sqrt{SE_{2026}^2 + SE_{2022}^2 - 2 \times \hat{\rho} \times SE_{2022} \times SE_{2026}}$

| Country | Method | 2022 beta | 2026 beta | Difference | p-value |
|---|---|---|---|---|---|
| United Kingdom | LAD | 0.663 | 0.660 | -0.003 | 96.4% |
| New Zealand | OLS | 0.617 | 0.640 | 0.023 | 63.1% |
| New Zealand | LAD | 0.562 | 0.563 | 0.001 | 99.0% |
| Mean of countries | OLS | 0.690 | 0.654 | -0.036 | 30.9% |
| Mean of countries | LAD | 0.643 | 0.594 | -0.049 | 15.2% |

Source: ATCO analysis

ATCO then tested the null hypothesis that the 2022 and 2026 beta estimates are not different, while constructing a test statistic that accounts for the correlation between the 2022 and 2026 average estimates.

The p-value column provides the level of significance for each test. A p-value less than 5% can be interpreted as statistical evidence that the average beta in 2026 is not equal to the average beta in 2022. Of the 12 hypothesis tests performed, only a single test (United States, LAD) results in rejection of the null that the 2022 and 2026 average betas are not different. In other words, 11 of the 12 tests confirm that average betas have remained stable since 2022.

The ten-year beta estimates have remained stable between 2022 and 2026 and ERA's decision in the 2026 Draft Rate of Return Instrument to maintain an equity beta estimate of 0.7 is supported by the underlying evidence.

## B.2 Lower beta explained by exclusion of COVID-19 observations from the five-year estimation window

The ERA notes that beta estimates for the comparator sample declined following the April 2025 United States tariff announcements and suggests that this event may have contributed to the reduction in estimated betas.

ATCO tested this hypothesis by comparing beta estimates calculated using four-year and five-year rolling estimation windows. Under the ERA's approach, observations from March 2020, which captured the onset of COVID-19 and associated market disruption, dropped out of the five-year estimation window in April 2025. Importantly, those same observations dropped out of a four-year estimation window one year earlier, in April 2024.

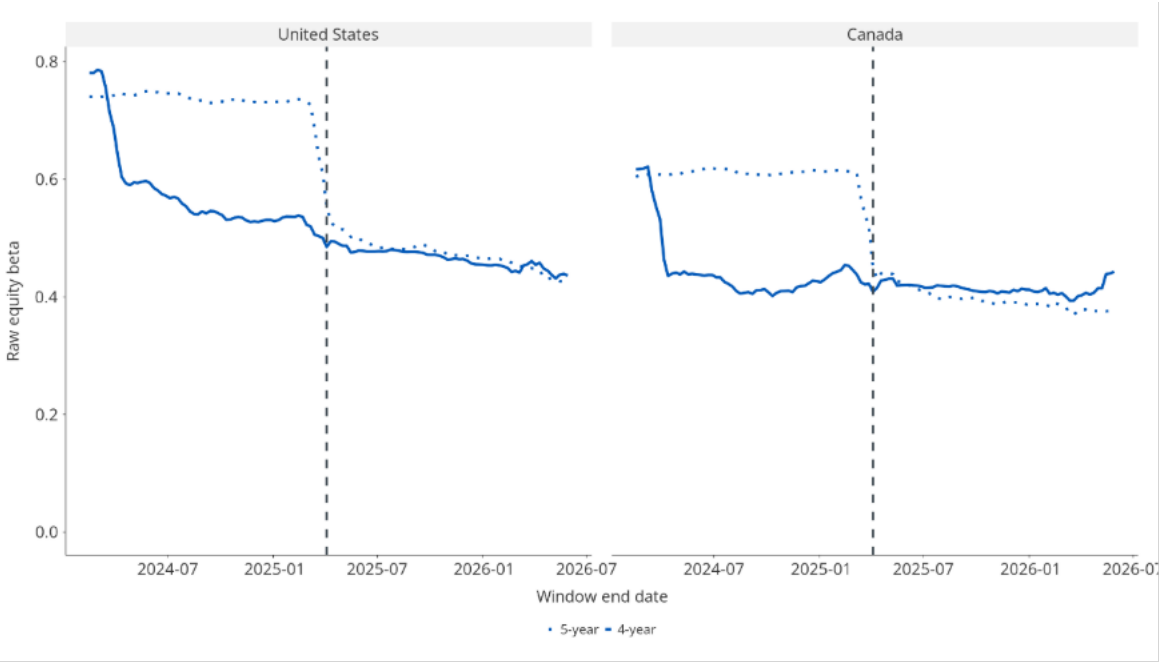
This provides a simple test of the competing explanations. If the decline in beta estimates reflects the removal of COVID-19 observations, the decline should occur approximately one year earlier in the four-year estimates. If the decline reflects the April 2025 tariff announcements, both series should decline at the same time.

Figure 11.3 supports the former explanation. The four-year rolling beta estimates decline sharply in April 2024, around 12 months before the corresponding decline in the five-year estimates and before the April 2025 tariff announcements. The timing of the declines aligns with the removal of March 2020 observations from each estimation window.

The evidence indicates that the decline in estimated betas is driven primarily by changes in the composition of the rolling estimation window, rather than the April 2025 tariff announcements.

This conclusion is also economically intuitive. The COVID-19 period provides valuable information about the performance of regulated energy networks during a period of significant market stress. Excluding these observations can mechanically reduce estimated betas even where the underlying systematic risk of network businesses has not changed. The decline in beta estimates therefore reflects the removal of particular observations from the sample, rather than evidence of a structural reduction in risk.

**Figure 11.3: The impact on beta estimates of COVID-19 dropping out of the estimation window**




Source: ATCO analysis.

Accordingly, the recent decline in beta estimates should not be attributed to the April 2025 tariff announcements and does not support a reduction in the benchmark beta.

Events such as COVID-19 should not be excluded when estimating beta. They are often the most informative observations because they reveal how network stocks respond to significant market movements. Once such events occur, investors recognise that similar shocks can happen again and incorporate that possibility into their expectations about future returns. By contrast, five-year rolling betas imply that investors price the risk of future pandemics for only five years before disregarding it entirely. This is implausible. Major shocks are likely to remain part of investors' expectations, even if their influence diminishes over time.

The observed decline in estimated betas reflects a statistical artefact arising from the exclusion of COVID-19 observations, not a genuine reduction in systematic risk. Accordingly, the evidence supports retaining the benchmark beta at 0.7.

# ATTACHMENT 2: RETAINING THE HYRBID TRAILING AVERAGE

COMPETITION ECONOMISTS GROUP (CEG)

14/10/2026

CEG COMPETITION ECONOMISTS GROUP

# Retaining the hybrid trailing average

## Report for ATCO Gas Australia


| Prepared by: | Prepared for: |
| --- | --- |
| Dr Tom Hird, CEG | ATCO Gas Australia |

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# Executive summary

1. We have been engaged by ATCO Gas Australia (ATCO) to provide an expert report on the return on debt in the Economic Regulation Authority's (ERA's) 2026 draft gas rate of return instrument. The draft instrument proposes to abandon the hybrid trailing average approach to the return on debt that the ERA adopted in 2015 in favour of a full 10-year trailing average, implemented through a 10-year 'gradual transition' for which the ERA has preferred a 'five-year reset' over the alternative '10-year reset' it also considered.[1]

2. Our report has two limbs. The first limb sets out reasons in favour of the ERA retaining the hybrid. The second limb explains why, if the ERA nonetheless proceeds to a full trailing average, its preferred five-year reset transition should not be adopted and the 10-year reset should be adopted instead.

## First limb: the case for abandoning the hybrid has not been made

3. The ERA adopted the hybrid in 2015 because, in its own words, the hybrid 'can be replicated exactly by the firm', 'can achieve the present value condition exactly at any point in time' and 'performs best with regard to regulatory costs'.[2] In the same process the ERA found that a simple trailing average creates 'a clear distortion in investment incentives' because the marginal return on debt applying to a new investment is not the prevailing rate but the trailing average.[3] Nothing in the 2026 draft explanatory statement identifies a defect in the hybrid that the full trailing average cures. The ERA accepts that both approaches satisfy the NPV=0 principle and both recognise that capital is sunk.[4] The contest is therefore about expected cost, investment incentives, hedgeability and administrative cost. On expected cost, hedgeability and administrative cost the hybrid remains the better benchmark (especially for a business of ATCO's size). On investment incentives, both benchmarks fall short of the optimal regime, because neither weights new interest rate data to the magnitude of the new debt requirement (if any) in a given year.

4. On hedgeability, the two benchmarks are very different once the RAB is not stable. A business whose RAB is rising can easily hedge to the hybrid. It cannot easily hedge to an unweighted trailing average. Hedging to a declining RAB is impossible for a trailing average but is relatively simple for a hybrid. In our view the relative ease of hedging a changing RAB is the decisive consideration for a gas network in transition.

5. This is a consideration the ERA has not addressed at all.

6. If the RAB is increasing then more debt is being raised than is being rolled over, and the weight given to more recent debt market conditions should be higher than one tenth. This is true under the hybrid and under the trailing average alike. However, under the hybrid a business can relatively simply manage interest rate mismatch associated with a growing RAB. All it has to do is enter, at the start of the access arrangement, into a single forward-starting swap that begins in the year the RAB is anticipated to grow and ends at the end of the access arrangement. For example, to manage RAB growth in year 3 of an access arrangement, a three-year swap starting in two years can be used (see section 4.3.1).

[1] ERA, *Explanatory statement for the 2026 draft gas rate of return instrument – Attachment 4: Debt*, 27 July 2026 (hereafter 'Attachment 4'), sections 2.4 and 8.4.

[2] ERA, *Estimating the return on debt: Discussion paper*, 4 March 2015, paragraphs 113 and 114; ERA, *Final decision on proposed revisions to the access arrangement for the Mid-West and South-West Gas Distribution Systems*, June 2015, pp. 86–87.

[3] ERA, *Estimating the return on debt: Discussion paper*, 4 March 2015, Box 1, p. 13.

[4] Attachment 4, paragraph 155.

7. Under a simple trailing average there is no such simple swap strategy. In theory, a business could enter into nine forward-starting swaps, each starting in two years, with terms of one to nine years. However, the cost and complexity of doing so are much higher and, because the swaps run for up to nine years beyond the growth, the right amounts depend on how the RAB changes in later access arrangements, for which there is no forecast. Such a hedging strategy is likely to be uneconomic (section 4.3.1). Even if undertaken, the swaps would only lock in the rates of the day they are written; they cannot recover the earlier rates already in the trailing average.

8. The incentive and hedging difficulties associated with a simple trailing average and a growing RAB are well understood and are the reason the AER has consulted on a weighted trailing average. A weighting scheme of that kind can be applied to either benchmark (section 4.3.2).

9. However, if the RAB is declining, perhaps as the energy transition proceeds, debt must shrink with the RAB. A business achieves this by not rolling its portfolio over (or by raising less new debt than the debt maturing). Here the two benchmarks part company even more dramatically.

10. Under the hybrid a declining RAB does not matter for the base rate, which is the larger and more volatile part of the cost of debt. The five-year swap is written on whatever the debt portfolio actually is at the start of each access arrangement, it can be sized to the path the portfolio is expected to follow (an amortising swap), and it is re-written at the next reset. No weighting scheme is needed. Under an unweighted trailing average a declining RAB matters a great deal. The allowance is an average of the last ten years' 10-year rates. That is only the business's actual cost if it issued one tenth of its debt in each of those years. A business that has reduced its rate of issuing (or stopped issuing entirely) holds disproportionately the older vintages, and there is no transaction available to it that converts the rates on the debt it has into the rates on the debt it never issued. Its base rate compensation is then simply wrong: in one direction if rates have risen, in the other if they have fallen, and it stays wrong until the last of the old debt matures, which can be ten years.

11. The only weighting scheme that has actually been developed in Australia, the AER's, deals with a declining RAB by assuming that the business invests the debt it no longer needs in BBB bonds, which no business does.[5] The ERA has in any case said that a weighted trailing average should not apply to Western Australian gas pipelines.[6] In the illustrative example in Appendix D, a business whose debt portfolio halves over five years after 10-year rates have risen by two percentage points is over-compensated by $29 million under an unweighted trailing average and by $7 million under the hybrid (the signs reverse if rates fall). Under the hybrid the mismatch is confined to the DRP, which is the smaller and less volatile component and is compensated in the same way under both benchmarks. Section 4.3.1 and Appendix D explain the mechanics.

12. To the extent the ERA's concern is the narrower one that a single 20-day averaging period can be unrepresentative, the proportionate remedy is a longer averaging window for the swap rate – as the New Zealand Commerce Commission (NZCC) did in 2016 when it extended its window from one month to three months, in the same decision in which it adopted a hybrid of the same structure as the ERA's – not a change of benchmark. A longer window smooths the bumps; the trailing average also smooths away the levels, and it is the levels that give the hybrid its advantages. It is also open to the ERA to propose other smoothing mechanisms – including NPV-neutral smoothing across access arrangements. This is a better way to achieve price smoothing than adopting a 10-year trailing average, which would leave a business whose RAB grows or declines exposed to interest rate risk that it can hedge under the hybrid.

5 CEG, *Implementing a weighted trailing average cost of debt*, report for Energy Networks Australia, 18 December 2025.

6 Attachment 4, paragraph 176.

13. The affirmative case for the hybrid therefore rests on four grounds, of which the first is, in our view, the most important for a gas network in transition. We also address investment incentives, the consideration on which the ERA relied in 2015, which in our view is neutral between the two benchmarks:

    a. **A changing RAB.** Both benchmarks presume a stable debt portfolio that rolls over one tenth a year. If the RAB grows, both need a weighting scheme to get investment incentives right. If no weighting scheme is implemented, only the hybrid is relatively simple to hedge to with a growing RAB. If the RAB declines the hybrid needs no weighting for the base rate, which is the larger part of the cost of debt: the base rate is fixed on the actual portfolio, for five years at a time, with a swap that can be sized to the expected decline. Only the DRP, which is compensated in the same way under both benchmarks, still carries vintages that were never issued. An unweighted trailing average cannot be hedged in that case, because the allowance, base rate and DRP alike, includes vintages that a business paying down debt never issues, and the exposure runs for up to ten years. The transition weights themselves assume a roll-over that a business with a declining RAB will not perform.

    b. **Lower expected cost to consumers.** The hybrid compensates a five-year base rate; the trailing average compensates a 10-year base rate. Since 1972 the 10-year Commonwealth Government Securities (CGS) yield has exceeded the five-year yield by 26 basis points per annum (bppa) on average, and by 33 bppa since 1995. This is well above the 12.3 bppa hedging cost allowance. Net of hedging costs, the hybrid is expected to be cheaper for consumers by around 14 to 21 bppa (between $1.2 million and $1.8 million a year on ATCO's benchmark debt of around $0.9 billion) permanently.

    c. **Attainability for an issuer of ATCO's size.** A full 10-year trailing average compensates a strategy of issuing 10-year fixed-rate debt in annual tranches in liquid markets. For a business of ATCO's size the annual refinancing tranche is in the order of $90 million, against benchmark domestic issue sizes of $250 million or more and a 10-year BBB market that is concentrated offshore. The ERA's own examination of the Western Australian pipelines found that 10 years is the *longest* tenor they target.[7] A business of ATCO's size can replicate a 10-year trailing average only synthetically, with swaps for which the full trailing average, unlike the hybrid, provides no allowance. The hybrid compensates a strategy that ATCO can implement.

    d. **Regulatory stability.** The ERA's own first principle for transition design is the avoidance of windfall gains or losses 'arising purely from timing or methodology change'.[8] A change of benchmark is itself such a change, and one that takes ten years to complete and ten years to reverse. Because the hybrid can be hedged whichever way the RAB moves, it is also the benchmark least likely to need revisiting if the path of the RAB changes; an unweighted trailing average would need to be revisited if the RAB declined, and nothing on the table would deal with that.

## Second limb: if the ERA proceeds, the five-year reset should not be adopted

14. The ERA's two implementation options share a common structure. Both assume the same benchmark portfolio of 10-year debt with 10 per cent refinanced each year, before and after the transition; under both, each legacy tranche retains the DRP of its issuance vintage until it matures; and under both, 10 per cent of the portfolio is refinanced each year into new 10-year fixed-rate debt priced under the full trailing average. The published 90:10, 80:20, … weights are therefore not policy weights at all –

[7] Attachment 4, paragraph 188.

[8] Attachment 4, paragraph 485.

they are simply the portfolio shares of legacy and new debt implied by natural roll-over. The only thing actually being 'transitioned' is the interest rate swap overlay on the legacy debt, and the two options differ only in the tenor of those swaps.

15. Under Option 1 (the 10-year reset), the benchmark entity enters nine swaps at the start of the transition with tenors of one to nine years, each matched to the remaining life of a legacy tranche, so that every tranche's base rate is fixed once for its whole remaining life. This is the transition that CEG identified in 2014 and 2021 as the replicable and efficient path from the hybrid to a trailing average, and that Chairmont recommended to the AER in 2015. Under Option 2 (the five-year reset) no swap may extend beyond the current access arrangement: 50 per cent of the book is fixed with five-year swaps and 40 per cent with one-to-four-year swaps, and at the start of the second access arrangement (Year 6) the surviving 40 per cent must be re-fixed with a fresh suite of one-to-four-year swaps at whatever rates then prevail.

16. Under Option 1 the weighted average tenor of the fixed-rate compensation rises monotonically from 5.5 years in Year 1 to 10 years in Year 10. Under Option 2 it starts at 4.5 years (below the five-year tenor of the hybrid it replaces) and falls again at Year 6, from 7.5 to 7.0 years. Because Option 2 fixes the legacy book for shorter tenors, it pays less than Option 1 in Years 1 to 5 on any upward-sloping curve: on the ERA's own inputs, between 8 and 22 basis points on the legacy book in Year 1 depending on the six-to-nine-year swap rates assumed, or roughly 7 to 20 basis points of the total return on debt. That lower figure is not a saving. It is the price of leaving 40 per cent of the book unfixed at Year 6 (the same trade-off of lower expected cost for reset exposure that defines the hybrid) and it is only recovered, if at all, through whatever rates prevail in 2035. A transition whose stated purpose is to remove reset exposure has been designed to preserve it, and to pay less than the destination benchmark for as long as possible on the way. If a shorter, cheaper, five-yearly reset base rate is desirable, that is the case for retaining the hybrid permanently, not for visiting it briefly on the way to paying the 10-year rate forever.

17. Option 2 also leaves 40 per cent of the book with an open base-rate position at the Year 6 boundary, to be re-fixed at rates that cannot be known today. The ERA's workbook resolves this by assumption: its Year 6 rates are simply 100 to 120 basis points above its Year 1 rates at the same tenors. The ERA lists 'increased volatility of debt costs over time, especially around reset time' as a weakness of the option,[9] and elsewhere identifies the avoidance of exactly such steps as the purpose of a gradual transition.[10] Meanwhile the hedging cost allowance, applied only to the declining swapped share of the book, provides the same 55 basis-point-years under both options even though Option 2 requires swaps on 130 per cent of the book (90 per cent at Year 1 and 40 per cent at Year 6) against 90 per cent under Option 1, and funds the Year 6 re-hedge at less than 5 bppa.

18. Each of the three reasons the ERA gives for preferring Option 2 fails against the ERA's own five guiding principles for transition design. The 'windfall' reason is premised on a firm that departs from the benchmark by remaining unhedged, which contradicts the ERA's statement that it will not compensate actual financial structures; for a firm that replicates the benchmark, Option 1 leaves no residual exposure at all while Option 2 forces an unhedged re-fix at Year 6. The 'intergenerational equity' reason inverts the principle as the ERA states it: re-pricing legacy debt at a regulatory reset is the opposite of consumers paying 'broadly in line with when the debt is incurred'. The 'conceptual coherence' reason defines coherence at paragraph 485 as the benchmark *not* being distorted by historical financing practice and then, at paragraph 547, prefers Option 2 *because* it aligns with historical practice. Nor can the five-year cap be explained by tenor (the ERA confirms the benchmark

[9] Attachment 4, paragraph 546.

[10] Attachment 4, paragraphs 489 and 508.

portfolio is 10-year debt under both approaches) or by observed practice (which paragraphs 480 to 483 disclaim as a basis for the benchmark). Table 4.8 of Attachment 4 contains no comparison of the two options on expected cost or NPV – the only question the framework actually poses.

19. Put simply, every reason the ERA gives for preferring Option 2 over Option 1 – a shorter base-rate tenor, greater responsiveness to prevailing rates, alignment with five-year resets – is a reason for preferring the hybrid over the trailing average. The ERA can have one of these conclusions but not both.

## Conclusions and recommendations

20. We conclude that:

    a. the case for abandoning the hybrid has not been made. For a business whose RAB is rising or declining the hybrid remains hedgeable and an unweighted trailing average is not; for a business whose RAB is growing both benchmarks need a weighting scheme to get investment incentives right. If the ERA's concern is primarily around price volatility then this can be addressed by lengthening the averaging window (for example to 90 or 120 trading days), as the NZCC has done, or by introducing NPV-neutral smoothing mechanisms. In our view, price smoothing is not a sensible rationale for altering the benchmark financing strategy (especially not to a strategy that a firm with a declining RAB cannot hedge); and

    b. in the alternative, if the ERA proceeds to a full trailing average, the transition should be the 10-year reset (Option 1) – the ERA's own simpler and cheaper-to-administer option, which is fully replicable in a single set of transactions on day one, involves no open interest rate position, and moves the benchmark monotonically from its five-year starting point to its 10-year destination.

# 1 Introduction

21. We have been engaged by ATCO to prepare an expert report on the return on debt in the ERA's 2026 draft gas rate of return instrument (the draft instrument). ATCO's scope of work asks us to address two questions:

    a. whether, and how, the current hybrid approach supports the efficient cost of debt for the benchmark efficient entity, and to provide the economic arguments against the proposed transition, in the context of the National Gas Access (WA) Act 2009 and the National Gas Rules as they apply in Western Australia, and ATCO's previous submissions to the ERA and to the AER; and

    b. whether the ERA's proposed transition options provide efficient compensation to service providers during the transition period.

22. In preparing this report we have relied principally on the draft instrument and its explanatory statement (in particular Attachment 4 – Debt), the ERA's worked example of the five-year reset and the accompanying Excel workbook, the ERA's 2015 discussion paper and final decision on ATCO's fourth access arrangement (in which the hybrid was adopted), ATCO's December 2025 submission to the ERA's discussion paper, the NZCC's 2016 and 2023 input methodologies decisions, and previous CEG reports on the cost of debt cited in the text. We have replicated the ERA's worked example in an Excel workbook that accompanies this report and extended it, on common inputs, to the 10-year reset; the workbook is provided in unlocked form so that every number in this report can be traced to its source.

23. The remainder of this report is structured as follows:

    a. section 2 sets out the framework within which the ERA's decision must be made and the questions that framework poses;

    b. section 3 describes what the ERA proposes and how its two transition options actually work;

    c. section 4 sets out the first limb of our report: why the case for abandoning the hybrid has not been made, including how the two benchmarks perform if the RAB grows, stays stable or declines;

    d. section 5 sets out the second limb: why, if the ERA proceeds, the five-year reset should not be adopted; and

    e. section 6 states our conclusions.

# 2 The framework and the questions it poses

## 2.1 The statutory test

24. The ERA may make a gas rate of return instrument only if it is satisfied that the instrument will, or is most likely to, contribute to the achievement of the national gas objective (NGO) to the greatest degree, and in doing so it must have regard to the revenue and pricing principles (RPP).[11] The NGO 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.[12] The RPP relevantly require that a service provider be provided with a reasonable opportunity to recover at least the efficient costs it incurs in providing reference services, that it be provided with effective incentives to promote economic efficiency including efficient investment, and that a reference tariff allow for a return commensurate with the regulatory and commercial risks involved.[13]

25. The ERA has translated these requirements into two operational tests that it applies throughout Attachment 4 and that we adopt in this report. The first is the present value, or 'NPV=0', principle: the allowance for the return on debt should compensate the benchmark efficient entity for the efficient cost of its debt so that, over the life of its assets, the present value of the expected cash flows equals the value of the regulated asset base.[14] The second is replicability: 'a service provider must reasonably be able to implement debt arrangements to match the debt allowances provided in regulatory revenue'.[15] The ERA restates the second test as the 'replicability' principle for transition design: 'the benchmark approach should be capable of being implemented by a prudent and efficient entity'.[16]

26. In CEG's previous reports for ATCO we have explained why these two tests follow from the requirement to compensate the efficient financing costs of a benchmark efficient entity.[17] Before the cost of something can be estimated, the 'something' must be defined. In the case of the cost of debt, this means that the regulator must first define a debt management strategy that a benchmark efficient entity could actually implement, and only then estimate the cost of implementing it. A benchmark that no entity could implement cannot be replicated, and an allowance that cannot be replicated will diverge from the costs actually incurred by an efficiently financed business (in one direction or the other) in a way that no amount of estimation precision can cure. This reasoning was accepted by the ERA in 2015, when it observed that the hybrid 'can be replicated exactly by the firm, whereas the Authority's current approach cannot'.[18]

## 2.2 The ERA's five principles for transition design

27. For the design of a transition, the ERA has set out five guiding principles.[19] Because we hold the ERA to these principles in section 5, we set them out in the ERA's words:

11 National Gas Law as applied in Western Australia by the National Gas Access (WA) Act 2009 (NGL (WA)), section 30D; see also ERA, *Explanatory statement for the 2026 draft gas rate of return instrument – Overview*, 27 July 2026, p. 3.

12 NGL (WA), section 23.

13 NGL (WA), section 24.

14 Attachment 4, paragraphs 129 and 131.

15 Attachment 4, paragraph 128.

16 Attachment 4, paragraph 485.

17 CEG, *Cost of debt consistent with the NGR and NGL*, November 2014, section 2; CEG, *Review of ERA discussion paper: Estimating the return on debt*, March 2015, section 3.1.

18 ERA, *Estimating the return on debt: Discussion paper*, 4 March 2015, paragraph 113.

19 Attachment 4, paragraph 485.

*Avoidance of material windfall gains or losses: Transitional arrangements should avoid creating significant distributional impacts arising purely from timing or methodology change.*

*Replicability: The benchmark approach should be capable of being implemented by a prudent and efficient entity.*

*Intergenerational equity: Consumers should pay for the cost of debt broadly in line with when the debt is incurred, rather than being overly exposed to interest-rate cycles or regulatory resets.*

*Regulatory certainty and stability: Transitional arrangements should promote confidence in regulatory framework by avoiding abrupt changes in allowed revenues and providing a clear and predictable pathway to any new methodology.*

*Conceptual coherence of the benchmark: Transitional arrangements should ensure that the benchmark is internally consistent and not distorted to accommodate historical financing practices that diverge from it.*

28. The ERA also states, in terms with which we agree, that the benchmark 'does not need to reflect the actual financial characteristics of a particular service provider', that 'it is not appropriate to compensate a regulated service provider for its actual financial structure', and that it is nonetheless 'appropriate to recognise the financial positions that a benchmark entity would have entered into when implementing debt strategies that would have delivered the hybrid debt approach in the past'.[20] These statements matter because, as we show in section 5, the ERA's stated reasons for preferring the five-year reset are inconsistent with them.

## 2.3 What the ERA does and does not claim

29. It is important to be clear about what the ERA has and has not found. The ERA does not find that the hybrid fails either of its operational tests. On the contrary, it finds 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'.[21] It lists among the strengths of the hybrid that it 'incorporates a forward-looking component', 'minimises price volatility within an access arrangement period', 'achieves the NPV=0 principle' and 'reduces refinancing risk'.[22]

30. The ERA's case for change therefore rests not on any failure of the hybrid against the tests that led the ERA to adopt it, but on a judgment, made 'on balance', that the full trailing average has 'practical and operational advantages' – principally greater stability of allowances between access arrangements, simplicity, alignment with 'real-world financing strategies of large infrastructure firms' and alignment with other regulators.[23] The questions that the framework poses are therefore: which benchmark delivers the lower expected cost for consumers; which provides the better incentives for efficient investment; how each allocates interest rate risk between the business and consumers, including whether a business can still hedge to each if its RAB grows or declines rather than staying stable; and what each costs to administer. We address each of these in section 4. If the answer to those questions favours the hybrid then the ERA cannot be satisfied that a change of benchmark contributes to the NGO to the greatest degree, and the question of transition does not arise.

[20] Attachment 4, paragraphs 480, 483 and 484.

[21] Attachment 4, paragraph 155.

[22] Attachment 4, paragraph 135.

[23] Attachment 4, paragraphs 156 to 158.

# 3 What the ERA proposes and how the pieces fit together

## 3.1 The hybrid as applied since 2015

31. Under the hybrid, the benchmark efficient entity is assumed to maintain a portfolio of 10-year fixed-rate debt with 10 per cent of the portfolio refinanced each year, and to use interest rate swaps to convert the base rate of interest on that portfolio into a five-year fixed rate set at the beginning of each access arrangement.[24] The allowed return on debt is the sum of:

    a. the five-year interest rate swap rate, averaged over 20 consecutive trading days just prior to the access arrangement, and fixed for the five years of the access arrangement;

    b. a 10-year trailing average of the debt risk premium (DRP) on 10-year BBB-band corporate bonds, updated annually so that each year the oldest annual estimate drops out and the latest is added;

    c. a debt raising cost allowance of 16.5 bppa; and

    d. a hedging cost allowance of 12.3 bppa, which compensates the transaction costs of the swaps.

32. The mechanics of the swap strategy that underpins the hybrid, which CEG has described in previous reports, are set out in Appendix A. Two features of those mechanics are essential to everything that follows. First, the DRP on each bond is fixed at issuance and cannot be altered by any derivative that is available in liquid markets, which is why the DRP component of the allowance is a trailing average under both the hybrid and the full trailing average. Second, the base rate can be altered using interest rate swaps, and under the hybrid it is: at the start of each access arrangement the benchmark entity's base rate exposure on its entire portfolio is floating, and it is converted into a five-year fixed rate by a pay-fixed swap entered into during the same averaging period that the ERA uses to set the allowance. It follows that at the start of the next access arrangement the entity's base rate is once more fully floating.

## 3.2 The full trailing average

33. Under the full trailing average, the benchmark entity holds the same portfolio of 10-year fixed-rate debt with 10 per cent refinanced each year, but enters into no swaps. Its cost of debt is simply the average of the yields on 10-year BBB-band debt issued in each of the last ten years, plus the debt raising cost allowance. The ERA states, correctly, that 'underlying the hybrid trailing average approach 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.'[25]

34. The two benchmarks therefore differ in exactly one respect: under the hybrid the base rate is a five-year swap rate reset every five years, while under the full trailing average it is a 10-year average of 10-year rates. The DRP component is a 10-year trailing average under both. This means that the entire debate about the choice of benchmark, and the entire debate about the transition, is a debate about the base rate component of the cost of debt and nothing else. As we explain in section 4.3.1, that one difference also determines how each benchmark copes with a RAB that grows or declines: under the hybrid the base rate is reset on the whole portfolio every five years, while under the full trailing average it carries ten years of history.

[24] Attachment 4, paragraphs 73 and 133.

[25] Attachment 4, paragraphs 134 and 496.

## 3.3 The 'gradual transition' and what is actually being transitioned

35. The ERA proposes a 10-year 'gradual transition' commencing in the first year of each pipeline's next access arrangement – for ATCO, 1 January 2030. In each year of the transition the allowed return on debt is a weighted average of the cost of the 'hybrid' (legacy) debt and the cost of 'full trailing average' (new) debt, with the weight on legacy debt falling from 90 per cent in Year 1 to zero in Year 10.[26]

36. Under both the hybrid and the full trailing average the benchmark portfolio is 10-year debt with 10 per cent refinanced each year.[27] If the RAB is rising, more debt is being raised than that required to refinance the maturing tranches and the simple average weights given to new debt are too low. If the RAB is declining, maturing tranches are not refinanced, the 'new' debt that the weights assume does not exist, and the transition pays prevailing 10-year yields on a share of the portfolio that a business paying down debt does not hold. We return to this in section 4.3.1.

37. Nor is the DRP being transitioned. Under both options 'each historical debt tranche retains its original historical debt risk premium' until it matures, and the ERA is explicit that 'the historic debt risk premium amounts from the hybrid approach and their treatment in a transition remains the same under both the five year and 10 year reset transition options'.[28] This is exactly how the DRP would evolve if the hybrid were retained, and exactly how it would evolve under a full trailing average with no transition at all.

38. The only thing that is actually being transitioned, therefore, is the swap overlay on the base rate of the legacy debt. At the start of 2030 the benchmark entity's base rate exposure on its nine legacy tranches is floating, because the five-year swaps it entered in 2025 will have expired. The transition consists of deciding what fixed rate the benchmark entity is assumed to lock in on each legacy tranche, and for how long. The ERA's two options are two answers to that question.

## 3.4 Option 1: the 10-year reset

39. Under Option 1 the benchmark entity enters, at the start of Year 1, nine pay-fixed swaps with tenors of one to nine years, one for each legacy tranche, each with a tenor equal to the remaining life of the tranche.[29] The legacy tranche issued in 2021, which matures in 2031, is fixed with a one-year swap; the tranche issued in 2029, which matures in 2039, is fixed with a nine-year swap. Each legacy tranche's base rate is thereby fixed once, for its whole remaining life, at the swap rate for that tenor prevailing in the averaging period before the transition. When a legacy tranche matures it is refinanced with new 10-year fixed-rate debt at the then-prevailing rate, exactly as under the full trailing average. No further swap transactions are required.

40. We note that this is the transition that CEG identified in its November 2014 report for ATCO and again in its 2021 report for Aurizon Network as the replicable and efficient transition from the hybrid to a trailing average, and that Chairmont identified for the AER in 2015.[30] Entering these swaps aligns the maturity profile of the entity's swap exposure with the maturity profile of its DRP exposure and creates what we have called a synthetic trailing average: the average of the DRP on 10-year debt issued nine years ago plus the one-year swap rate today, the DRP on debt issued eight years ago plus

[26] Attachment 4, paragraphs 453 to 455 and 552.

[27] Attachment 4, paragraph 498: 'Even if the debt portfolio is a 10-year trailing average debt structure under both approaches, it is the hybrid's swap arrangement and resulting floating risk free rate exposure that governs the timing of the transition.'

[28] Attachment 4, paragraphs 521 and 535.

[29] Attachment 4, paragraph 520.

[30] CEG, *Cost of debt consistent with the NGR and NGL*, November 2014, Appendix C; CEG, *Efficient regulatory benchmarks, and transitions, for the cost of debt*, August 2021, section 5.3; Chairmont, *Cost of debt: Transitional analysis*, April 2015, pp. 8–9.

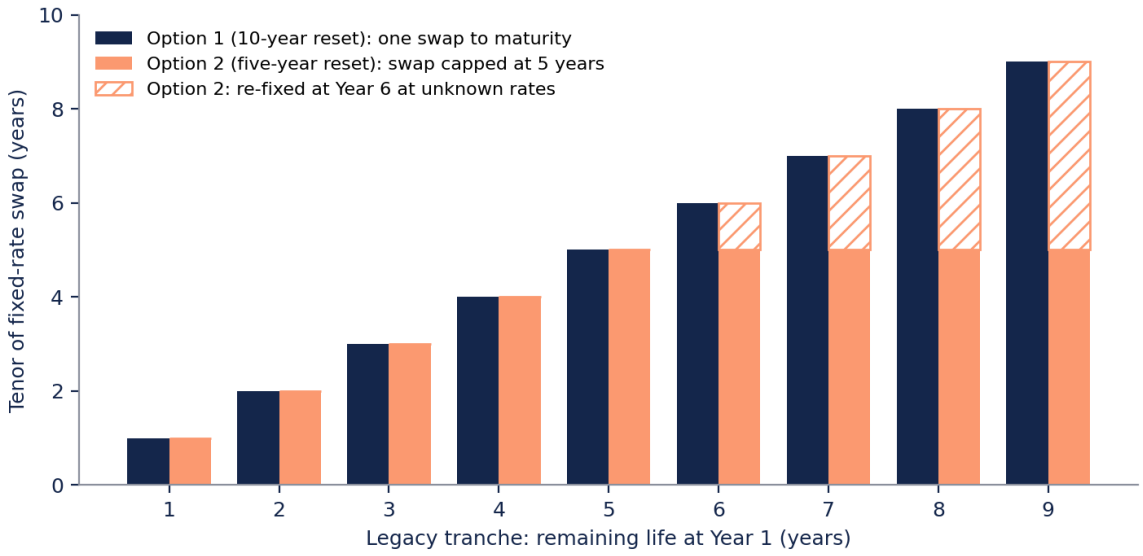
the two-year swap rate today, and so on. This portfolio then rolls forward in precisely the way a trailing average would.

## 3.5 Option 2: the five-year reset

41. Under Option 2 no swap may extend beyond the end of the current access arrangement. The five legacy tranches with five to nine years of remaining life (issued in 2025 to 2029) are fixed with five-year swaps, and the four tranches with one to four years of remaining life (issued in 2021 to 2024) are fixed with one-to-four-year swaps matched to their maturities. At the start of Year 6 (the first year of the second access arrangement) the four surviving legacy tranches (issued in 2026 to 2029, with one to four years of remaining life) must be re-fixed with a fresh suite of one-to-four-year swaps at whatever rates then prevail.[31] The ERA describes this as allowing 'for some change in the hybrid's market rates between access arrangements over the full transition period'.[32]

42. Figure 3-1 shows the tenor of the swap applied to each legacy tranche under the two options. Under Option 1 the tenor equals the remaining life of the tranche. Under Option 2 the tenor is capped at five years, and the hatched portion of each bar for the tranches with six to nine years of remaining life is the period for which the base rate is left open until it is re-fixed at Year 6.

Figure 3-1: Tenor of the fixed-rate swap applied to each legacy tranche under the ERA's two transition options




*Source: CEG analysis of Attachment 4, paragraphs 520 and 532.*

43. Table 3-1 summarises the swap transactions each option requires. Both options require nine swap contracts in total, but Option 2 requires them on a notional of 130 per cent of the book (90 per cent at Year 1 and 40 per cent again at Year 6) against 90 per cent under Option 1. As we explain in section 5.4, the ERA's hedging cost allowance nonetheless delivers identical compensation under the two options.

[31] Attachment 4, paragraphs 530 and 532.

[32] Attachment 4, paragraph 529.

Table 3-1: Swap transactions required under the ERA's two transition options

| Item | Option 1: 10-year reset | Option 2: five-year reset |
|---|---|---|
| Swap contracts executed at Year 1 | 9 | 5 |
| Notional swapped at Year 1 (share of book) | 90% | 90% |
| Swap contracts executed at Year 6 | 0 | 4 |
| Notional swapped at Year 6 (share of book) | 0% | 40% |
| Total swap contracts | 9 | 9 |
| Total notional swapped (share of book) | 90% | 130% |
| Open base-rate position at any time | None | 40% of book at Year 6 |

*Source: CEG analysis of Attachment 4, paragraphs 520 and 532.*

## 3.6 The ERA's worked example

44. The ERA has published a worked example of Option 2 with an accompanying Excel workbook.[33] It assumes a Year 1 swap curve of 4.0, 4.3, 4.5, 4.8 and 5.0 per cent at one to five years; Year 6 re-fix rates of 5.2, 5.4, 5.6 and 5.8 per cent at one to four years; historical DRPs of between 1.5 and 2.2 per cent on the legacy tranches; yields on new 10-year debt rising from 6.00 per cent in Year 1 to 6.45 per cent in Year 10; and the debt raising and hedging cost allowances of 16.5 and 12.3 bppa. On these inputs the ERA calculates an allowed return on debt of 6.746 per cent in Year 1, 6.728 per cent in Year 2 and 6.749 per cent in Year 6.

45. We have replicated the ERA's calculation and reproduce its results exactly. Because the ERA's worked example assumes swap rates only up to five years, applying Option 1 to the same example requires an assumption about the six-to-nine-year swap rates in Year 1. We extend the ERA's curve at the slope the ERA itself assumed for its one-to-five-year rates, 0.2 percentage points per year of tenor, giving 5.2, 5.4, 5.6 and 5.8 per cent at six to nine years. These happen to be the same numbers the ERA assumed for its Year 6 re-fix rates. All of the comparisons of the two options in section 5 are made on these common inputs, and we identify where the results depend on them.

[33] ERA, *Appendix – Cost of debt calculation for the transition*, and the workbook *2026 draft gas RORI draft explanatory statement worked debt example spreadsheet*, both published with the draft instrument.

# 4 The case for change has not been made

## 4.1 Why the ERA adopted the hybrid in 2015, and why the case for it remains unchanged

46. The hybrid was adopted by the ERA in its June 2015 final decision on ATCO's fourth access arrangement, following a discussion paper in which the ERA evaluated its former 'on the day' approach, the hybrid and the full trailing average against criteria derived from the NGO, the RPP and the National Gas Rules.[34] Three of the ERA's findings in that process are directly relevant to the choice it now proposes to make.

47. First, on replicability, the ERA found that:[35]

> *With regard to 'minimising differences', the hybrid trailing average approach can be replicated exactly by the firm, whereas the Authority's current approach cannot. Under the Authority's current approach, the firm is required to manage the ups and downs of prevailing rates, with its cost of debt sometimes exceeding the regulated return on debt, and sometimes undercutting it.*

48. Second, on the present value condition, the ERA found that 'the hybrid trailing average approach can achieve the present value condition exactly at any point in time, whereas the Authority's current approach only approximates the condition, on average, over the longer term'.[36] In its final decision the ERA concluded that 'the hybrid trailing average approaches clearly perform better in terms of "minimising differences" and the present value condition. The simple hybrid trailing average approach also performs best with regard to regulatory costs.'[37]

49. Third, on investment incentives, the ERA explained why a simple trailing average distorts the incentive to invest:[38]

> *Under a simple trailing average, the marginal return on debt applying to a new investment is not the prevailing rate, but rather the trailing average itself. So for example, if a firm increases the size of its regulatory asset base by 5 per cent in any year, then it will receive the regulated rate of return on that investment for the year in which it is expected to enter the asset base, and for subsequent years. That rate of return will incorporate the full trailing average; it will not be the prevailing rate. It makes no difference whether the new investment, as a proportion of the asset base, is greater or lesser than the proportion of debt annually updated in the trailing average. Therefore, to the extent that the prevailing rate exceeds the trailing average cost of debt allowance, then there will be an incentive to delay any forecast investment, so as to avoid making a loss. This is a clear distortion in investment incentives.*

50. None of these findings is revisited in the 2026 draft explanatory statement. The ERA does not say that the hybrid has ceased to be replicable, or that it has ceased to satisfy the present value condition, or that the investment distortion it identified in 2015 has disappeared. On the contrary, the ERA confirms that both approaches satisfy NPV=0,[39] and its discussion of the weighted trailing average

[34] ERA, *Estimating the return on debt: Discussion paper*, 4 March 2015; ERA, *Final decision on proposed revisions to the access arrangement for the Mid-West and South-West Gas Distribution Systems*, June 2015.

[35] ERA, *Estimating the return on debt: Discussion paper*, 4 March 2015, paragraph 113.

[36] ERA, *Estimating the return on debt: Discussion paper*, 4 March 2015, paragraph 114.

[37] ERA, *Final decision on proposed revisions to the access arrangement for the Mid-West and South-West Gas Distribution Systems*, June 2015, pp. 86–87.

[38] ERA, *Estimating the return on debt: Discussion paper*, 4 March 2015, Box 1, p. 13. The same reasoning appears in the ERA's final decision at p. 302.

[39] Attachment 4, paragraph 155.

implicitly accepts that the incentive problem is real – it simply considers that the problem is not large enough in Western Australia to warrant the weighting apparatus the AER has contemplated.[40] That is a judgment about the size of the problem. It is not a reason to prefer the trailing average, because a simple trailing average does not cure the problem; and, as we explain in section 4.3.2, the divergence between the allowance and the prevailing cost of debt arises under both simple benchmarks and, if it is material, is addressed by weighting under either.

51. The ERA has now applied the hybrid for a decade, across three access arrangements for each of the regulated pipelines. Its own examination of the pipelines' actual debt data found that 'a firm that closely aligns with the hybrid implementation have the smallest cost divergence between the regulatory and actual debt costs over time'.[41] That is direct evidence that the hybrid is replicable in practice, by the firm that has chosen to replicate it, and that the ERA's 2015 reasoning has been borne out.

## 4.2 The ERA's 2026 reasons, taken one at a time

52. The ERA's reasons for preferring the full trailing average are collected at paragraphs 156 to 159 of Attachment 4. We address each in turn.

### 4.2.1 Step changes between access arrangements

53. The ERA's principal concern is that the hybrid 'results in greater variability on debt allowances in periods of greater market volatility and subsequently results in greater variability in prices between different access arrangement periods', whereas the full trailing average 'minimises price volatility at the start of an access arrangement'.[42] Figures 4.2 to 4.4 of Attachment 4 illustrate the point: the five-year swap rate rose from 0.2 per cent in November 2020 to over 5 per cent in March 2026, and a hybrid reset at any point in that range locks the rate at that point in for five years.

54. There is no dispute about the arithmetic. The question is whether this is a defect that warrants a change of benchmark. We consider that it is not, for four reasons.

55. First, the step in the allowance is a step in the benchmark entity's actual cost. Under the hybrid the entity re-fixes the base rate on its entire portfolio in the same averaging period that the ERA uses to set the allowance, at the same five-year swap rate. If the allowance steps up by two percentage points at a reset, so does the entity's interest bill. The business bears no risk from the step, because it is hedged; and consumers are not paying more than the cost of the service, because the price of five-year money has risen. The ERA accepts this when it accepts that the hybrid satisfies NPV=0. What the ERA characterises as a defect is, from the perspective of efficient cost, simply the allowance tracking the cost. Consumers may nonetheless prefer a smoother path of prices; that is a preference about the timing of payments rather than about their level, and it can be accommodated without changing the benchmark, as we explain in the fourth point below.

56. Second, the trailing average reduces the size of the step between access arrangements, but it does not remove interest rate volatility from the allowance; it spreads it over ten years and pays it later. The ERA concedes that the full trailing average 'may lead to greater volatility of the cost of debt within an access arrangement period, with the potential difference between forecast cost of debt and actual cost of debt greatest in the last year of an access arrangement'.[43] Under the hybrid only the DRP moves within a period; under the full trailing average the whole cost of debt is updated every year.

[40] Attachment 4, paragraphs 172 to 177.
[41] Attachment 4, paragraph 488.
[42] Attachment 4, paragraph 156.
[43] Attachment 4, paragraph 140.

Beyond this, a 10-year trailing average sits, on average, about five years behind the level of market rates. When rates rise, consumers under the trailing average continue to pay rates from a lower-rate era for years – which is a windfall to them and a loss to the business if it has not replicated the benchmark, and NPV-neutral only if it has. When rates fall, the position reverses. Smoother prices are bought with a lag of about five years between market rates and the rates consumers pay. Whether that trade is worth making is a question about consumers' preferences over the path of prices; it is not a question about the efficient cost of debt, and, as the fourth point below explains, it can be answered under the hybrid directly.

57. Third, the ERA's illustration in Figure 4.4 – a 'volatile temporary market event at the start of an access arrangement' that is locked in for five years – identifies a genuine but much narrower issue, which is that the allowance for five years of revenue depends on 20 trading days of market data. That issue has a proportionate remedy within the hybrid, which we describe next.

58. Fourth, if the ERA is primarily concerned to smooth price changes over long periods, this can be achieved without adopting the trailing average. Under the hybrid there is already smoothing of price changes within each access arrangement. If the ERA wishes to smooth prices further, it is possible to create an overs-and-unders account that smooths price changes across access arrangements. For example, imagine that interest rates were particularly low (high) in an averaging period, such that a large price fall (rise) would be required even when smoothed over five years. It would be open to the ERA to have a mechanism whereby that price fall (rise) is reduced and, in effect, pushed into the next access arrangement in an NPV-neutral manner.

59. If it is this aspect of the trailing average (that it spreads changes in interest rates over 10 years) that the ERA finds attractive, then it can be implemented directly with a smoothing mechanism, without changing the cost of debt benchmark. Spreading changes in interest rates over time is, in substance, all that a 10-year trailing average does to prices; a smoothing mechanism does the same thing without changing what is being compensated, and without the cost, complexity and decade-long transition that a change of benchmark entails.

### 4.2.2 A longer averaging window smooths the bumps without smoothing the levels

60. The ERA's draft instrument measures the five-year swap rate over an averaging period of 20 consecutive trading days nominated in advance by the service provider.[44] If the ERA's concern is that a temporary event in that window could set the base rate for five years, the natural response is to lengthen the window (to 90 or 120 trading days, or longer) and to assume that the benchmark efficient entity executes its pay-fixed swaps progressively over the same window. The realised fixed rate on the entity's swap book is then the average of the five-year swap rates over the window, which is exactly the allowance, so replicability is preserved. The base rate remains a prevailing rate at the start of each access arrangement: it is the average of the last few months, not the last decade.

61. A simple example illustrates the difference between smoothing a bump and smoothing a level. Suppose the five-year swap rate is 4.0 per cent for eleven months and spikes to 5.0 per cent in the month before the access arrangement starts and then falls to 4.0 per cent again. A 20-day window catches the spike and sets the allowance at 5.0 per cent for five years. On ATCO's benchmark debt of around $874 million,[45] the extra percentage point is worth about $8.7 million a year, or some $44 million over the access arrangement before discounting. A 90-day window gives an allowance of about 4.33 per cent, so the spike contributes 33 basis points rather than 100; a six-month window

[44] ERA, *2026 draft gas rate of return instrument*, 27 July 2026.

[45] Opening capital base of $1,589.8 million at 1 January 2025 (ERA, *Draft decision on revisions to the access arrangement for the Mid-West and South-West Gas Distribution Systems 2025 to 2029 – Overview*, section 3.6) at the benchmark gearing of 55 per cent.

gives 4.17 per cent, or 17 basis points; a 12-month window gives 4.08 per cent, or 8 basis points. For comparison, the ERA's 10-year trailing average would dilute the same event to about 10 basis points – but only by also diluting every genuine change in the level of rates by 90 per cent, and by continuing to pay the diluted spike for ten years rather than five.

62. This is not a novel suggestion. The NZCC, which applies a hybrid of the same structure as the ERA's (a prevailing risk-free rate plus a five-year historical average of the debt premium) extended its risk-free rate 'determination window' from one month to three months in its 2016 input methodologies review.[46] It did so having satisfied itself that 'businesses are able to hedge their interest rate exposure for the risk-free rate using the interest rate swap market' and that the existence of that market 'means that there will be minimal violations of the NPV=0 principle regarding the risk-free rate'.[47] In its 2023 review the NZCC retained the three-month window, noting that submitters agreed the concern that had motivated it 'has been alleviated to some degree by the extension of the determination window to three months', and (having considered a trailing average of the risk-free rate) decided against it, stating that in its view the prevailing approach 'best promotes incentives to invest efficiently and to respond to current market conditions by reflecting the forward-looking opportunity cost of capital'.[48] The NZCC also found, on the debt data it collected, that regulated suppliers 'are able to use interest rate swaps to achieve greater alignment of their interest rate re-pricing periods with the regulatory periods' and 'can use interest rate swaps to materially hedge their risk-free rate exposure without significant hurdles'.[49]

63. Two details would need attention in implementing a longer window. A swap executed some months before the start of the access arrangement is, strictly, a forward-starting swap, so the allowance should be measured from the forward five-year rate for the same start date rather than the spot rate; on a normally sloped curve the difference is a few basis points and is directly observable.[50] And executing the swaps in tranches over a longer window is, if anything, easier on the market than executing swaps on more than half the value of the RAB in 20 days – a consideration CEG raised in its November 2014 report and which was the NZCC's stated reason for lengthening its window.[51]

64. We therefore consider that, even if the ERA's concern about temporary events at the start of an access arrangement were accepted in full, it would justify at most a longer averaging window. It does not justify a change of benchmark.

### 4.2.3 'Alignment with real-world financing strategies of large infrastructure firms'

65. The ERA states that the full trailing average 'is better aligned with real-world financing strategies of large infrastructure firms', whereas the hybrid 'assumes that firms hedge using swaps to achieve a five-year fixed rate, which may not reflect actual practice'.[52] The basis for this conclusion is unclear and appears unsound. Real-world financing strategies of large infrastructure firms reflect their operating environment. If they are regulated under the hybrid approach their funding arrangements

[46] NZCC, *Input methodologies review decisions – Topic paper 4: Cost of capital issues*, 20 December 2016, paragraphs 84 and 117.

[47] NZCC, *Input methodologies review decisions – Topic paper 4: Cost of capital issues*, 20 December 2016, paragraphs 87 to 88 and 99.

[48] NZCC, *Part 4 Input Methodologies Review 2023 – Final decision: Cost of capital topic paper*, 13 December 2023, paragraphs 3.7, 3.42, 3.121 and 3.122.

[49] NZCC, *Part 4 Input Methodologies Review 2023 – Final decision: Cost of capital topic paper*, 13 December 2023, paragraphs 3.40 and 3.43.

[50] This is the 'deferral risk' that UBS identified and priced at around six basis points in its January 2015 advice to the Networks NSW businesses: UBS, *Analysis of liquidity of interest rate swaps*, January 2015.

[51] CEG, *Cost of debt consistent with the NGR and NGL*, November 2014, paragraphs 21 and 73; NZCC, *Input methodologies review decisions – Topic paper 4: Cost of capital issues*, 20 December 2016, paragraph 117.

[52] Attachment 4, paragraph 156.

will tend to reflect the hybrid. If they are regulated under the trailing average then their funding arrangements will tend to reflect the trailing average. If they are regulated by contract then their funding arrangements will tend to reflect whatever provisions their contracts contain for changes in interest rates. It is the ERA's responsibility to set the efficient operating environment, and the regulated business's responsibility to fund itself efficiently given that environment.

66. This reason is also inconsistent with the ERA's own approach to the benchmark. The ERA states that 'the efficient benchmark does not need to reflect the actual financial characteristics of a particular service provider', that 'the actual decisions of a service provider may differ (and often will differ) from the benchmark firm', and that 'it is not appropriate to compensate a regulated service provider for its actual financial structure'.[53] We agree. But if actual practice does not determine the benchmark, it cannot be a reason to change it.

67. The reason is also inconsistent with the ERA's own evidence. The ERA collected debt data from all of the regulated pipelines and found that implementation of the hybrid 'has been mixed, ranging from close, partial to no implementation', that 'some gas pipelines have employed hedging strategy and entered swaps as part of their debt portfolios', and that the firm that most closely aligns with the hybrid 'have the smallest cost divergence between the regulatory and actual debt costs over time'.[54] ATCO has told the ERA that it 'uses the five-year swaps as a debt management strategy over the course of the access arrangement to achieve a fixed five-year rate'.[55] The evidence is that the hybrid is replicable, that at least one regulated pipeline replicates it, and that doing so works. The fact that other pipelines have chosen to depart from the benchmark is, on the ERA's own principles, their affair.

68. Finally, the reference to 'large infrastructure firms' points in the opposite direction from the one the ERA intends. As we discuss in section 4.3.4, a strategy of issuing 10-year fixed-rate debt in annual tranches is a strategy that large issuers, with a stable underlying asset value, can implement in liquid markets. A smaller issuer can align its base rate with either benchmark only by using swaps, and it is precisely because ATCO is not a large issuer that the hybrid (which compensates those swap transactions) is the better fit for it. Moreover, issuing 10-year fixed-rate debt in annual tranches of 10 per cent of the book is a sensible funding strategy only for a business whose RAB is stable; for one whose RAB is growing or declining it does not deliver the cost of debt that the trailing average allowance pays (section 4.3.1).

### 4.2.4 Simplicity and hedging costs

69. The ERA states that the full trailing average 'is simpler than the hybrid trailing average approach and has no requirement for incorporating hedging costs into the total debt portfolio', and that it 'does not impose additional administrative cost for debt hedging arrangements'.[56]

70. The hedging cost allowance is 12.3 bppa. As we show in section 4.3.3, the expected saving from compensating a five-year rather than a 10-year base rate is around 26 to 33 bppa. The hedging cost is therefore well below the saving it buys, and the net effect of the hybrid is to lower the expected cost of debt to consumers, not to raise it. To describe the hedging allowance as an 'additional' cost without reference to the saving it purchases is to count one side of the ledger.

71. Nor is the trailing average simpler once the transition (and RAB volatility) is taken into account. The ERA's own description of the transition acknowledges that it 'may increase complexity of treatment

[53] Attachment 4, paragraphs 480, 482 and 483.

[54] Attachment 4, paragraph 488.

[55] Attachment 4, paragraph 93, summarising ATCO, *Submission to Discussion Paper*, December 2025, pp. 7–10.

[56] Attachment 4, paragraphs 156 and 157.

of old hybrid debt tranches', 'takes longer to complete the whole transition to a full trailing average' and 'temporarily involves coexistence of hybrid and full trailing average elements'.[57] The ERA's worked example requires the regulator to track nine legacy tranches, each with its own vintage DRP and its own swap rate, alongside up to ten new tranches, for ten years, with a second round of swap rates to be observed and applied at Year 6 under the ERA's preferred option. The hybrid, by contrast, requires one swap rate every five years and one DRP estimate every year – as it has for a decade. Whatever simplicity the trailing average may offer in 2040, the path to it is more complex than the status quo, not less.

72. Moreover, the simple trailing average may be simpler for the ERA to estimate but it is not simpler for regulated businesses, especially of ATCO's size, to hedge to. Firstly, even if the RAB is stable, maintaining an evenly weighted portfolio of 10 tranches of 10-year debt is costly for a business of ATCO's size because it means issuing debt at well below the benchmark issue size (section 4.3.4).

73. Secondly, with a varying RAB (either increasing or falling) the hybrid is much easier (lower cost) to hedge to than the simple trailing average. Indeed, the simple trailing average cannot be hedged at all if the RAB is expected to fall (section 4.3.1).

### 4.2.5 lignment with other regulators

74. The ERA notes that the full trailing average 'is used by other regulators across Australia and is well understood'.[58] Alignment with other regulators is not a criterion in section 30D of the NGL (WA), and the ERA departed from the AER's approach in 2015 for reasons it explained at length and which, as set out above, have not been displaced.

75. Nor is the regulatory landscape as uniform as the ERA suggests. The NZCC, regulating gas pipelines and electricity networks under a purpose statement closely analogous to the NGO, applies a hybrid of the same structure as the ERA's and, in its 2023 review, expressly considered and decided against a transition to a trailing average.[59] Its stated reasons were that the prevailing approach better reflects the opportunity cost of capital and better promotes efficient investment; that 'the benchmark debt term under the trailing average approach is indeterminable'; and that 'the simple trailing average approach is unlikely to reflect suppliers' efficient debt costs if there are large, uneven amounts of capex', which it considered 'particularly pertinent now with the expected large increase in capex with electrification'.[60] The AER, for its part, has been driven by the same incentive problem to consult on a weighted trailing average, and in its 2026 draft instrument has retained the simple trailing average only on the footing that 'a targeted mechanism applying a weighted trailing average to the materially impacted businesses' may be needed.[61] We do not rely on the NZCC's assessment of the relative incentive properties of the two approaches, which in our view is an empirical question on which the evidence is mixed (section 4.3.2). The narrower point is that the regulatory landscape with which the ERA proposes to align is not uniform, and that the regulator whose approach the ERA proposes to adopt has spent the last five years considering how to modify it.

[57] Attachment 4, paragraph 509.

[58] Attachment 4, paragraph 157.

[59] NZCC, *Part 4 Input Methodologies Review 2023 – Final decision: Cost of capital topic paper*, 13 December 2023, paragraphs 3.121 and 3.122.

[60] NZCC, *Part 4 Input Methodologies Review 2023 – Final decision: Cost of capital topic paper*, 13 December 2023, paragraphs 3.55, 3.61 and 3.63 to 3.65.

[61] Attachment 4, paragraph 175, citing AER, *Draft 2026 Rate of Return Instrument – Explanatory Statement*, May 2026, pp. 51–52.

### 4.2.6 Temporary market events

76. The ERA states that the full trailing average 'can better accommodate extreme or temporary market events, as any temporary changes in financial conditions at the start of an access arrangements are not locked in for the full access arrangement period'.[62] This is the Figure 4.4 argument in another form and we have addressed it in section 4.2.2. We add only that the argument cuts both ways: a temporary event at the start of a period is as likely to depress the base rate as to raise it, and a longer averaging window dilutes both.

77. We also add that it would be open to the ERA to specify a separate mechanism to deal with 'extreme or temporary market events'. There are several ways in which this could be done. For example, immediately prior to the averaging period (and, therefore, prior to any benchmark swap contracts being entered into) the ERA could reserve the right to declare an 'extreme or temporary market event', which would trigger a pre-specified regulatory response such as:

    a. a longer averaging period;

    b. a benchmark assumption that the hybrid cost of debt has regard to that averaging period only for the first year of the access arrangement, with a further 'within-period' averaging period scheduled one year later, the swap rate in which determines the base rate for the final four years of the access arrangement; or

    c. other mechanisms of a similar kind.

## 4.3 The affirmative case for the hybrid

### 4.3.1 With a variable RAB the hybrid dominates the trailing average in terms of hedgability

78. The ERA's discussion of RABs that change over time is directed at growth (a possible expansion of the DBNGP) and at the incentive to defer investment when the allowance is below prevailing rates.[63] It is correct that a weighted trailing average (or a weighted hybrid for that matter) is required to address incentive issues where prevailing interest rates are very different from the allowance (the 10-year trailing average or, under the hybrid, the five-year rate fixed at the start of the access arrangement).

79. But absent that weighting scheme, which the ERA is reluctant to implement, only the hybrid can easily be hedged by the regulated business to manage its interest rate risk.

80. The access arrangement sets the allowance on a forecast of the capital base for each year, so at the reset a business knows how much new debt the allowance assumes it will raise, and when. Under the hybrid it can fix the base rate on that debt at the reset, in the same averaging period in which the allowance is set, with a single forward-starting swap that starts when the debt is raised and ends at the next reset. For $100 million of growth in year 3 of an access arrangement, that is a three-year swap on $100 million starting two years after the reset. It is the mirror image of the amortising swap used by a business whose RAB is declining, described below, and the two can be combined in one swap whose notional value follows the forecast path of the book. At the next reset the new debt joins the rest of the book under a fresh five-year swap. Strictly, the business locks in a forward rate rather than the five-year rate the allowance pays. But both come from the same curve on the same day, so the difference is known at the reset and is a question of compensation, not risk (Appendix D).

[62] Attachment 4, paragraph 156.

[63] Attachment 4, paragraphs 98 to 100 and 176 to 177.

81. Under the trailing average there is no equivalent. The allowance on the new debt is an average of 10-year rates going back ten years. A business could match it only by having borrowed, or fixed the rate on, that debt progressively over the previous decade, long before it knew it would need it. Once the growth is known, the most it can do is fix today's rates on the share of the new debt that the allowance treats as old. For $100 million of growth, that means nine forward-starting swaps of $10 million each, with terms of one to nine years, and the same again for every other year in which the RAB grows. Those swaps protect the business against movements in rates from the day they are written. They do not close the gap between today's rates and the earlier rates already in the average: at the end of August 2026 the prevailing 10-year BBB yield was 1.1 percentage points above its trailing average (section 4.3.2). The same swaps run up to nine years beyond the growth, into access arrangements for which there is no RAB forecast, so if the RAB later falls back they become exposures in their own right. And the trailing average provides no allowance for their cost. A business whose RAB is growing can hedge to the hybrid simply; in practice it cannot hedge to an unweighted trailing average.

82. Now consider a declining RAB. Connections to a gas network may continue to grow for some years; a decline is a longer-term possibility, not a forecast. The Western Australian Government's Sectoral Emissions Strategy, which the ERA itself cites, anticipates a significant decline in natural gas usage,[64] and a RAB can decline through accelerated depreciation, through the retirement of assets, or simply because depreciation outruns replacement capital expenditure. A RAB may also grow in one decade and decline in the next. We make no prediction about ATCO's RAB here. The point is that the instrument has to work for a gas network whose RAB may grow, may stay broadly stable or may decline over its life, and the two benchmarks behave very differently if it declines. A declining RAB raises a different question from the one the ERA has considered. It is not whether new investment is compensated at prevailing rates; it is whether a business whose debt must shrink with its RAB can keep its cost of debt aligned with its allowance at all.

83. Both benchmarks assume that it can, because both assume a stable RAB. Under both, the benchmark entity holds ten equal tranches of 10-year debt and refinances one each year, so that at any time one-tenth of its book was issued in each of the last ten years. That assumption is what allows the trailing average to be described as an average of the entity's own borrowing costs, and it is what allows the ERA to describe the transition as occurring 'largely through natural portfolio roll-over'. A business whose RAB is falling does not roll its portfolio over. It pays down debt in the only way a borrower can, by letting maturing debt run off without replacing it. Its book then consists disproportionately of the older vintages, and the premise that one-tenth of it was issued in each of the last ten years is false.

84. The contrast with growth is worth spelling out, because the two cases are not symmetric. A growing RAB means the business has to raise new debt at whatever rates prevail when it raises it. Neither benchmark compensates that debt at those rates: the hybrid pays the five-year swap rate set at the start of the access arrangement, and the trailing average pays a ten-year average. Both therefore need a weighting scheme if RAB growth is large, to keep the incentive to invest right, and either can be given one (section 4.3.2). The ERA has itself said it would consider a weighted trailing average if a major expansion of the DBNGP eventuated.[65] That is a point about investment incentives. On hedging, as explained above, a business that foresees its growth can hedge it simply under the hybrid and, in practice, cannot under the trailing average.

85. A declining RAB is different because the business does not have to price anything. It is not raising debt; it is letting debt run off. Under the hybrid the base rate on the debt that remains is simply re-

64 Attachment 4, paragraph 234, citing the Western Australian Government's Sectoral Emissions Strategy.

65 Attachment 4, paragraphs 176 and 177.

fixed at the next reset, on the actual portfolio, at the then five-year swap rate. The allowance and the business's cost move together whatever the size of the portfolio. Under the trailing average the allowance carries a history. It is an equal-weighted average of the 10-year yields of the last ten vintages, applied to the debt portfolio the business is assumed to need (leverage times RAB). What that does is set out in plain terms, with a worked example, in Appendix D. In the example, with the RAB halving over five years, half of those vintages were never issued (when debt matured it was not replaced). The business's actual cost is the average of the older vintages it still holds.

86. The difference between the allowance and the actual cost is the difference between the 10-year rates of the last few years and the 10-year rates of the years before. It is paid on the whole cost of debt, base rate and DRP alike, and the business cannot close it. No transaction in the swap market converts the rate on debt a business has into the rate on debt it does not have: swaps are priced at the rates of the day on which they are written, so a swap can deliver an earlier year's rate only against an upfront payment equal to the value of the difference. A business that foresees the decline can use swaps to protect itself against movements in rates from that day (Appendix D describes how), but only by locking in the rates of that day; the difference between those rates and the rates the allowance is averaging remains. If rates have risen, the trailing average over-pays a business whose RAB is declining; if they have fallen, it under-pays; and the effect persists until the last of the old vintages has left the average, up to ten years later.

87. Under the hybrid the base rate (the larger and the more volatile component of the cost of debt) is unaffected. It is a single five-year swap rate applied to whatever the book actually is at the start of each access arrangement. A business whose book is expected to shrink hedges it with a swap whose notional value steps down with the expected path of the book – an amortising swap, of the kind routinely written against amortising loans. On a sloping swap curve the rate on an amortising swap differs from the standard five-year rate by an amount known at the reset (on the ERA's steep example curve, and for the decline in the Appendix D example, about 14 basis points below it), so this too is a question of compensation, not risk. No weighting scheme is needed.

88. If the decline proves faster or slower than expected, or was not foreseen at all, the residual position is confined to the remainder of the five-year period and is corrected at the next reset, when the swap is re-written on the actual portfolio. The vintage mismatch survives only in the DRP, which is compensated as a 10-year trailing average under both benchmarks and which no derivative can hedge under either; and the DRP is both the smaller component and the less volatile one, its standard deviation over the last decade being roughly half that of the base rate.[66] That is the asymmetry. It is not that the trailing average carries more interest rate risk when the RAB falls than when it rises. An unweighted trailing average cannot be hedged whenever the RAB moves away from a stable portfolio, up or down, because in both cases the business ends up holding a different mix of vintages from the equal-weighted mix the allowance pays for; the mismatch simply has the opposite sign (Appendix D shows the growing case as a mirror image of the declining one).

89. The asymmetry with respect to falling and rising RAB is on the hybrid's side. A growing RAB requires new debt to be priced, and neither simple benchmark prices it correctly, so both need a weighting scheme for investment incentives. However, when the RAB is declining the hybrid needs no weighting for the base rate because a business that is paying down debt raises no new money between resets. Every dollar it still owes was on its books at the reset, when it fixed the base rate on that debt, with a swap that runs down with the book, at a rate known at the reset (on a flat curve, the rate the allowance pays). Stale or not, the reset rate is then the rate on both sides of the ledger, so

[66] RBA statistical tables F2 and F3, monthly, January 2015 to August 2026: standard deviation of 1.2 percentage points for the 10-year CGS yield and 0.6 percentage points for the spread of the 10-year BBB yield to CGS (see also section 4.3.2).

there are no vintages to match and nothing to weight. A business whose RAB is growing is in a different position: it raises new money between resets at whatever rate then prevails, and the hybrid pays it the reset rate on that money until the next reset. If it foresaw the growth at the reset, as it will have for growth that the access arrangement forecasts, it will already have fixed the base rate on that money then; only growth that was not foreseen leaves its base rate exposed, and then only until the next reset.

90. In the example in Appendix D – a $1,000 million book that halves over five years, or grows by half, after 10-year rates have risen by two percentage points, 1.5 of them in the base rate – the difference between allowance and actual cost totals $29 million under the trailing average and $7 million under the hybrid over the following decade, either way, and under the hybrid all of it is in the DRP (Tables D-1 and D-2 and Figure D-1). With the same fall in rates the signs reverse. Appendix D also shows what happens if rates move only after the reset at which the change begins: a business that foresaw the change could then protect itself under either benchmark, simply under the hybrid and only with an elaborate programme of swaps under the trailing average, and one that did not would be exposed under both by about the same amount over the decade, though under the hybrid only until the next reset (Table D-3).

91. The ERA has not weighed any of this, because its analysis of the benchmarks assumes the RAB is stable and its consideration of a weighted trailing average is directed at growth. It has also decided that a weighted trailing average should not apply to Western Australian gas pipelines.[67] Nor is there a weighting scheme on the table that would deal with a declining RAB. The scheme the AER developed handles a fall in the debt requirement by assuming that the business invests the money it no longer needs to borrow in BBB bonds, which is not what any business does; CEG explained the problem in its December 2025 report for Energy Networks Australia,[68] and, as AGIG noted, the ENA's variant gives the same result as the unweighted average when the RAB is stable or falling.[69] The outcome for a business whose RAB grows or declines under an unweighted trailing average is exactly what the ERA's own first principle for transition design is meant to exclude: a 'significant distributional impact arising purely from timing or methodology change', in one direction or the other, that no party can control. On the ERA's replicability test ('the benchmark approach should be capable of being implemented by a prudent and efficient entity') an unweighted trailing average fails for a business whose RAB grows or declines, unless today's rates happen to equal the earlier rates in the average; weighting the whole cost of debt would deal with growth, but not with decline. The hybrid passes in both cases as far as the base rate is concerned, provided the change is foreseen at the reset (if it is not, the exposure ends at the next reset), and the DRP, which is compensated in the same way under both benchmarks, would need the same treatment under either.

92. Three further points follow. First, the hybrid leaves a business free to shorten the tenor of its actual borrowing as its RAB declines (bank facilities or shorter notes maturing in step with the RAB) without any change to the way it hedges the base rate, because the five-year swap sits over the whole floating book whatever its maturity profile. Under the trailing average, shorter borrowing would have to be converted back into 10-year fixed rates, tranche by tranche, to match the allowance, and every one of those 10-year positions would outlast the debt it was meant to match. Second, the transition itself assumes a stable book. Its weights are natural roll-over shares (section 3.3); if a network's RAB falls over 2030 to 2039, the 'new' 10-year debt the weights assume will not be issued, and the transition will be paying prevailing 10-year yields on a share of the book that does not exist; if it grows, the transition will be paying legacy rates on debt raised at prevailing rates. A ten-year

[67] Attachment 4, paragraph 176.

[68] CEG, *Implementing a weighted trailing average cost of debt*, report for Energy Networks Australia, 18 December 2025.

[69] Attachment 4, paragraph 100, summarising AGIG, Submission to Discussion Paper, December 2025, pp. 11–12.

transition to a benchmark that assumes a stable portfolio is ill-suited to a decade in which a gas network's portfolio may well not be stable. Finally, if the ERA were prepared to adopt a weighting scheme for RAB growth after all, that question would fall away under either benchmark, and the choice between them would turn on the declining RAB case and on expected cost, attainability and stability (sections 4.3.3 to 4.3.5), where the hybrid is the better benchmark in any event.

93. Table 4-1 brings together how the two benchmarks perform if the RAB grows, stays broadly stable or declines, drawing on this section and on sections 4.3.3 and 4.3.4.

Table 4-1: How the two benchmarks perform if the RAB grows, is stable or declines

| *RAB scenario* | *Unweighted trailing average* | *Hybrid* | *Better benchmark* |
|---|---|---|---|
| Growing | New debt is paid the average of the previous ten years' rates – the 'clear distortion in investment incentives' identified by the ERA in 2015. The business can protect itself only with forward-starting swaps for each year of growth, running up to nine years beyond it, and even then cannot close the gap set by past rate movements. A weighting mechanism is needed for investment incentives. | The base rate on all debt is reset to market rates at each reset, then fixed for five years. Growth foreseen at the reset can be hedged then with a single forward-starting swap ending at the next reset, leaving only the DRP. A weighting mechanism is needed for investment incentives, as under the trailing average. | Hybrid on hedging; neither on incentives |
| Stable | Can be hedged. The base rate is an average of ten years of rates, about five years behind the market; the expected cost includes the 10-year term premium. Prices move less between access arrangements. | Can be hedged. The base rate is set at market rates at each reset; expected cost around 14 to 21 bppa lower, net of hedging costs; a strategy that an issuer of ATCO's size can implement. | Hybrid (lower expected cost; attainable) |
| Declining | Cannot be hedged: for up to ten years the allowance includes vintages the business never issued, on the base rate as well as the DRP. No weighting scheme on the table deals with it. | The base rate is re-fixed on the smaller book at each reset, with an amortising swap sized to the expected path of the book; only the DRP carries vintages never issued, as under the trailing average. | Hybrid, clearly |

*Source: CEG analysis; sections 4.3.1 to 4.3.4 and Appendix D.*

94. Taken across the three cases, the hybrid is the better benchmark. If the RAB grows, it is the easier benchmark to hedge to and no worse on investment incentives; if the RAB is stable or declines, it is better outright. There is no case in which the trailing average can be expected to perform materially better. That matters more than the result in any one case, because no one can know today which path a gas network's RAB will follow over the next two decades, and the path may change direction along the way. Material growth may call for a weighting mechanism under either benchmark, as the ERA already contemplates for an expansion of the DBNGP; only the trailing average would also have to be revisited if the RAB declined.

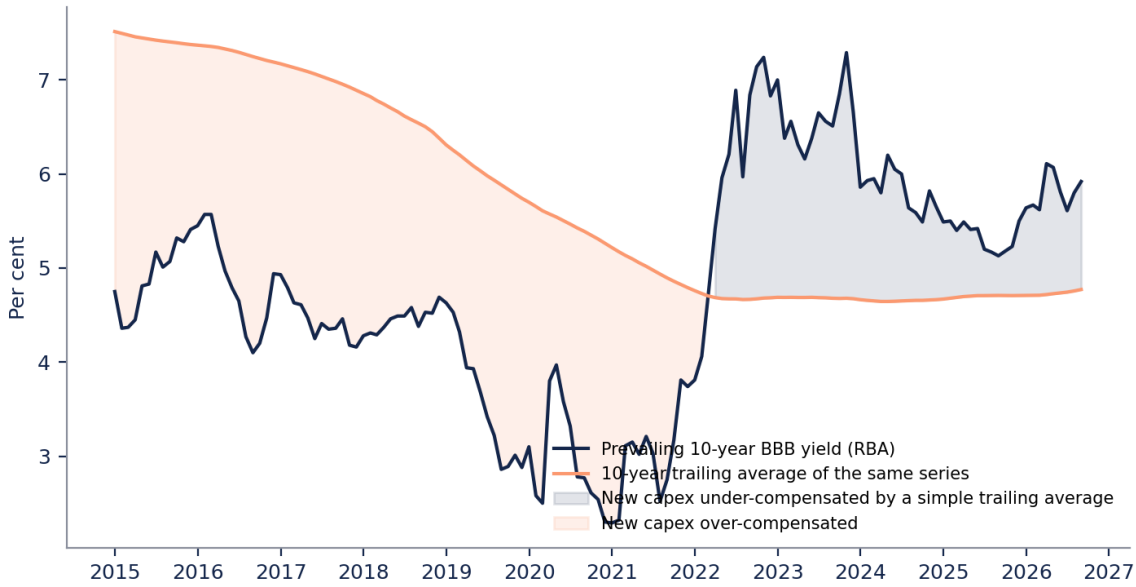
### 4.3.2 Investment incentives when the RAB grows

95. The ERA's 2015 Box 1, quoted in section 4.1, explains the incentive problem with a simple trailing average: new investment is compensated at the trailing average cost of debt, not at the cost of the debt that must actually be raised to fund it. When prevailing rates are above the trailing average, new

capex is under-compensated and there is an incentive to defer it; when prevailing rates are below the trailing average, new capex is over-compensated and there is an incentive to bring it forward.

96. The size of this distortion is not small. Figure 4-1 compares the RBA's estimate of the prevailing yield on 10-year BBB-rated non-financial corporate bonds with the 10-year trailing average of the same series, over the period for which ten years of history are available. The gap between the two has been as large as 3.1 percentage points in favour of over-compensation (August 2016) and 2.6 percentage points in favour of under-compensation (October 2023). At the end of August 2026 the prevailing yield was 5.9 per cent and the trailing average 4.8 per cent. A simple trailing average would today compensate a dollar of new investment at 4.8 per cent when the debt to fund it costs 5.9 per cent.

Figure 4-1: Prevailing 10-year BBB yield and its 10-year trailing average, 2015 to 2026




*Source: RBA statistical table F3 (non-financial corporate BBB-rated bonds, 10-year target tenor, monthly); CEG analysis.*

97. The regulatory response to this problem, where it has been taken seriously, has been to weight the trailing average by the amount of debt raised in each year. The AER consulted on such a weighted trailing average for its 2026 instrument. CEG examined the AER's proposal in detail in a December 2025 report for Energy Networks Australia and concluded that a weighted trailing average is feasible, and that a simpler variant proposed by the Queensland Treasury Corporation (which assumes that all RAB growth is funded with 10-year debt) is preferable to the AER's illustrative model.[70] The AER's illustrative model required the regulatory model to track up to 55 separate interest rates, required yield estimates at tenors for which data providers do not robustly publish estimates, and implicitly modelled businesses with declining RABs as corporate bond investors rather than borrowers. The AER's draft decision retained the simple trailing average for most businesses, accepting the distortion, and contemplated a targeted weighted mechanism for the most affected.[71] The NZCC, facing the same problem, cited it as a reason to retain its hybrid – a conclusion which, for the reasons given below, does not follow.[72] Where the hybrid does have a clear advantage when the RAB grows is hedgeability (section 4.3.1).

70 CEG, *Implementing a weighted trailing average cost of debt*, report for Energy Networks Australia, 18 December 2025.

71 Attachment 4, paragraph 175.

72 NZCC, *Part 4 Input Methodologies Review 2023 – Final decision: Cost of capital topic paper*, 13 December 2023, paragraphs 3.63 to 3.65.

98. The hybrid addresses part of the same problem without any weighting. Because the base rate (much the most volatile component of the cost of debt) is reset to the prevailing swap rate at the start of each access arrangement, the divergence that a trailing average accumulates over a decade is removed at each reset, and the base rate compensation for investment made at or near the start of an access arrangement is anchored to prevailing market conditions. The only component that is compensated on a trailing basis is the DRP, and the DRP is both smaller and less volatile than the base rate: over the period in Figure 4-1, the standard deviation of the 10-year CGS yield was roughly twice that of the spread between the 10-year BBB yield and the CGS yield.[73] But the hybrid does not address the whole of the problem: once fixed, the base rate stays fixed for five years whatever happens to prevailing rates in the meantime.

99. A hybrid with an averaging period in April 2021, for example, would have set a base rate for the following five years that was materially below the prevailing cost of debt in the last four years of a hypothetical access arrangement running from July 2021 to June 2026. The same concern arises under a trailing average, which over that period also sat well below prevailing rates (Figure 4-1). Which of the two simple benchmarks diverges more from the prevailing cost of debt over any given period depends on the path of interest rates in that period, and the ERA's 2015 assessment that the hybrid has the better incentive properties should not be overstated: in recent work for New Zealand electricity distributors, CEG found that, on New Zealand data for 2010 to 2025 and on simulated interest rate paths, the NZCC's hybrid was, if anything, less accurate than a trailing average in tracking the prevailing cost of debt.[74] Where the RAB is growing, the solution in both cases is the same: a weighting of the cost of debt such that the simple hybrid or trailing average compensates the debt RAB at the opening of the access arrangement and RAB growth is compensated at the prevailing cost of debt.

100. Specifically, within the hybrid, the ERA could implement weighting by:

a. continuing to model the cost of funding the debt RAB that exists at the beginning of the access arrangement on the status quo method – that is, continue to assume that:

   i. the benchmark entity issues (including refinancing) all debt in floating-rate bonds, or issues fixed-rate bonds and immediately converts them to floating rate by entering into a pay-floating/receive-fixed interest rate swap with the same tenor as the debt issued; and

   ii. at the beginning of the access arrangement the benchmark entity enters into a five-year receive-floating/pay-fixed interest rate swap with a term equal to the length of the access arrangement and a notional value equal to the debt RAB;

   But

b. assume that all new debt required to fund RAB growth is funded at prevailing interest rates (either floating or fixed for some period), keeping track of the cost of funding RAB growth separately from the cost of refinancing existing debt. The ERA would then need to consult on and describe an efficient mechanism to fold that funding back into the simple hybrid. For example, the ERA could compensate 'as if' the benchmark entity:

[73] RBA statistical tables F2 and F3, monthly, January 2015 to August 2026: standard deviation of 1.2 percentage points for the 10-year CGS yield and 0.6 percentage points for the spread of the 10-year BBB yield to CGS.

[74] CEG, *Economic assessment of status quo and TACD debt methodologies*, A report for the Big Six EDBs, 16 April 2026, sections 4.1 and 4.4. The NZCC's hybrid differs from the ERA's in using government bond yields rather than swap rates and a five-year rather than a 10-year average of the debt premium, but the base rate mechanics are the same.

i. funds all RAB growth at a tenor that aligns its maturity with the beginning of the access arrangement after the next one (which might be five to 10 years away, implying an assumed tenor of between five and 10 years); or

ii. funds all RAB growth with long-term debt and enters into two immediate swap transactions, one to convert the debt to floating rate and the other to fix it for the remainder of the current access arrangement; or

iii. other mechanisms of a similar kind.

101. This 'weighted hybrid' would eliminate the incentive effects that exist under the status quo when the prevailing cost of debt is very different from the regulatory allowance and substantial RAB increases are occurring in those years. A weighted trailing average would do the same for the trailing average. The choice between the two benchmarks is a choice about what is compensated on the opening RAB (a five-year swap rate reset at each access arrangement, or a 10-year average of 10-year rates) and not a choice about investment incentives, which weighting addresses under either. Hedgeability is a different matter, and there the hybrid has the advantage set out in section 4.3.1.

102. The ERA's own consideration of the weighted trailing average recognises that the case for weighting depends on 'the expected financing profile and capital investment requirements' of the business, and that it 'would have to further consider the weighted trailing average debt approach in its future 2030 gas instrument review' if a large expansion of the DBNGP eventuated.[75] That is, the ERA proposes to adopt a benchmark whose fitness depends on the RAB being stable, while acknowledging that it may have to add a weighting mechanism in four years' time if it is not. The same is true of the hybrid: neither simple benchmark compensates RAB growth at prevailing rates. If the ERA regards that as a material problem for a business whose RAB may grow substantially the answer is a weighting mechanism of the kind described above, under whichever benchmark is retained. What the incentive problem does not do is provide a reason to move from the hybrid to a simple trailing average, which does not cure it.

### 4.3.3 Lower expected cost to consumers

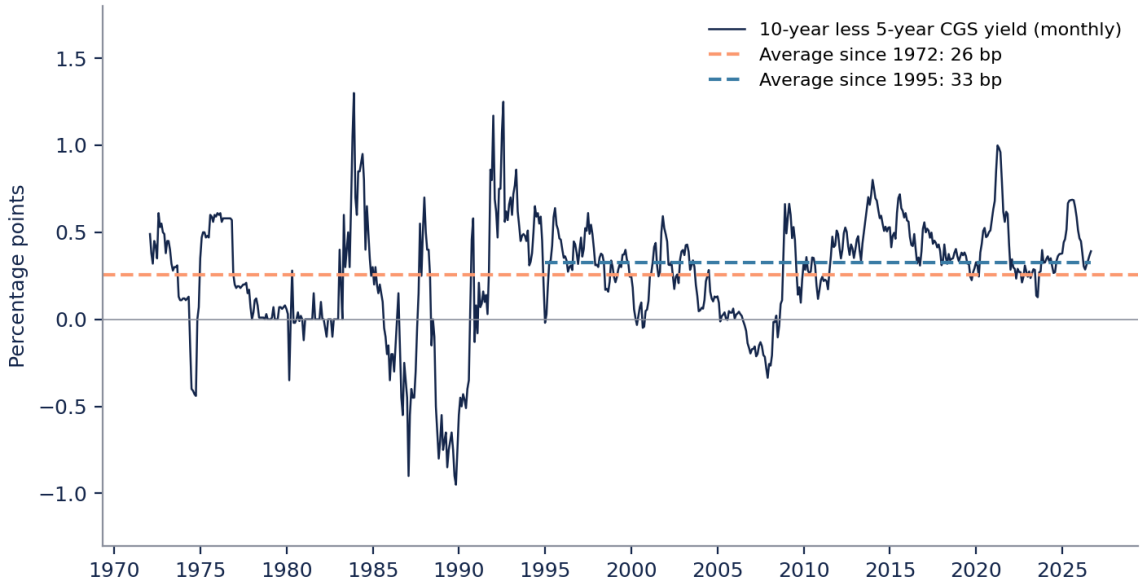
103. Under all of the benchmarks the ERA has considered the benchmark entity issues 10-year debt, so all of them compensate, in expectation, the same DRP – the DRP on 10-year debt. They differ in the base rate. The full trailing average compensates the 10-year base rate embedded in 10-year fixed-rate debt; the hybrid compensates the five-year swap rate. The difference is the term premium between five and ten years.

104. Figure 4-2 shows the difference between the 10-year and five-year CGS yields, monthly, from 1972 (the earliest date for which the RBA publishes a five-year yield) to August 2026. The difference between five- and 10-year government bond yields closely approximates the difference between five- and 10-year swap rates, and is available for a much longer period.[76] The 10-year yield has exceeded the five-year yield in 80 per cent of months. The average difference is 26 bppa over the whole period, 33 bppa since January 1995, and 34 bppa since January 2005. The period since 1995 (the era of explicit inflation targeting by the Reserve Bank) is arguably the more relevant guide to future market conditions.

[75] Attachment 4, paragraphs 176 and 177.

[76] On any given day the spread between the five-year swap rate and the five-year CGS yield is similar to the spread between the 10-year swap rate and the 10-year CGS yield, and the difference between them is relatively stable over time.

Figure 4-2: 10-year less five-year CGS yield, monthly, 1972 to 2026




*Source: RBA statistical table F2 (Capital market yields – Government bonds); CEG analysis.*

105. Against this saving must be set the hedging cost allowance of 12.3 bppa. Net of hedging costs, the hybrid can therefore be expected to deliver a cost of debt that is lower than the full trailing average by around 14 to 21 bppa, permanently. On ATCO's benchmark debt of around $874 million this is between $1.2 million and $1.8 million a year. Across the three regulated pipelines the saving to Western Australian gas consumers is correspondingly larger. The term premium is the market price of fixing the base rate for ten years rather than five, and consumers who pay it receive in exchange an allowance that moves less between access arrangements. Whether that stability is worth its price is a policy question for the ERA; but the ERA has not asked it, because it has nowhere compared the expected cost of the two benchmarks, and the same stability can be had more cheaply by smoothing (section 4.2.1).

106. We note that the ERA's own worked example assumes an upward-sloping swap curve, rising from 4.0 per cent at one year to 5.0 per cent at five years. The ERA has not, however, anywhere compared the expected cost of the two benchmarks to consumers. In our view that comparison is central to the question section 30D of the NGL (WA) poses, and it favours the hybrid.

### 4.3.4 Attainability for an issuer of ATCO's size

107. A full 10-year trailing average compensates a specific strategy: issuing 10-year fixed-rate debt, in annual tranches of 10 per cent of the portfolio, in liquid markets, every year. Whether a benchmark efficient entity 'with a similar degree of risk as that which applies to the service provider' could implement that strategy depends on the size of the tranches.

108. For ATCO, benchmark debt of around $874 million implies an annual refinancing tranche of around $87 million. Benchmark issue sizes in the domestic medium-term note market are in the order of $250 million or more, and the market for 10-year BBB-band corporate debt is concentrated offshore, in the US private placement and Euro markets, where issuance requires cross-currency swaps back into Australian dollars and carries its own transaction costs. A business of ATCO's size issuing $87 million a year at 10 years would either be issuing in sizes that attract a liquidity penalty or would be accessing bank and domestic markets at shorter tenors. The ERA's own examination of the pipelines'

debt data found that they 'have historically managed their debt issuances and tenors through managing credit margins to best align with regulatory allowances, with the longest targeted tenor of 10 years for their staggered debt portfolios'.[77] Ten years is the longest tenor targeted, not the typical one.

109. A smaller issuer can nonetheless align its base rate with a 10-year trailing average synthetically: by issuing in whatever sizes and tenors it can access, converting the base rate to floating, and fixing 10 per cent of the book each year with a 10-year swap. But the full trailing average, unlike the hybrid, provides no hedging cost allowance for doing so, because the benchmark strategy it compensates involves no swaps. The hybrid's benchmark strategy – issue in the sizes and tenors the business can access, convert the base rate to floating, and fix it for five years at the start of each access arrangement – is one that ATCO can implement, and the hybrid compensates the swap transactions it requires. Retaining the hybrid therefore both better reflects the financing practice attainable by a business like ATCO and delivers a lower expected cost of debt to consumers.

### 4.3.5 Stability and the ERA's own principle against methodology-driven windfalls

110. The first of the ERA's guiding principles for transition design is the avoidance of 'significant distributional impacts arising purely from timing or methodology change'.[78] A change of benchmark is, by definition, a methodology change. Whatever transition is chosen, the move from a five-year to a 10-year base rate will, at the moment it occurs, favour either the business or consumers depending on the shape of the yield curve and the level of rates at that time relative to the following decade. The ERA's transition principles are directed at minimising these effects; but the surest way to avoid a distributional impact arising from a methodology change is not to change the methodology.

111. The Consumer Reference Group made the related point that 'for customers to benefit, the chosen approach should remain throughout an entire interest rate cycle', and expressed concern about the approach being switched at each review.[79] We agree. A 10-year trailing average takes ten years to phase in and would take ten years to phase out. If the ERA were to conclude in 2030 or 2034 that the trailing average's incentive problem required a weighted mechanism, or that the hybrid had been the better benchmark after all, the cost of reversing course would be a second decade of transition. The hybrid, which resets the base rate every five years, preserves the ERA's flexibility to change the benchmark in the future at a fraction of that cost.[80]

112. Regulatory stability also favours the benchmark that performs well across the range of RAB outcomes. A gas network's RAB may grow, hold steady or decline over the next two decades, and may change direction along the way. The hybrid can be hedged in each of these cases (section 4.3.1), and does not need to be revisited if the path of the RAB changes, beyond the weighting mechanism that material growth would call for under either benchmark. An unweighted trailing average performs as intended only while the RAB is stable: like the hybrid, it would need a weighting mechanism if the RAB grew materially, as the ERA already contemplates for an expansion of the DBNGP, but unlike the hybrid it would also need revisiting if the RAB declined, and nothing on the table deals with that (section 4.3.1).

[77] Attachment 4, paragraph 188.

[78] Attachment 4, paragraph 485.

[79] Attachment 4, paragraph 95, summarising CRG, *Submission to Discussion Paper*, March 2026, p. 13.

[80] CEG made the same point in CEG, *Efficient regulatory benchmarks, and transitions, for the cost of debt*, August 2021, paragraph 132.

## 4.4 Conclusion on the first limb

113. The ERA adopted the hybrid in 2015 because it is replicable, satisfies the present value condition exactly, has the lowest regulatory cost and, in the ERA's assessment at the time, better preserves the incentive to invest. None of those findings has been revisited. The ERA's reasons for change amount to a preference for an allowance that moves less between access arrangements; but the movement the ERA objects to is the allowance tracking the benchmark entity's hedged cost, the trailing average buys smoother prices with a lag of about five years behind market rates, and smoother prices can be delivered directly – by a longer averaging window, as the NZCC has done, or by NPV-neutral smoothing across access arrangements – while retaining the hybrid.

114. Against this, the hybrid performs better than an unweighted trailing average across the range of RAB outcomes that a gas network may face. If the RAB grows, both benchmarks need a weighting mechanism to keep the incentive to invest right, but only the hybrid can be hedged simply: foreseen growth can be hedged at the reset with a single forward-starting swap, which the trailing average does not allow. If the RAB is stable, the hybrid provides a lower expected cost of debt for consumers, a benchmark strategy that an issuer of ATCO's size can implement and an allowance reset to market rates at each reset. If the RAB declines, a business can still hedge to the hybrid but cannot hedge to an unweighted trailing average, under which part of its debt is compensated, for up to ten years, at the rates of years in which it did not borrow. The hybrid also provides greater regulatory flexibility and, because it can be hedged whichever way the RAB moves, greater regulatory stability. Investment incentives, on which the ERA relied in 2015, provide no reason to change, because the divergence between the allowance and prevailing rates arises under both simple benchmarks and is addressed, if it needs to be, by weighting under either. On the tests the ERA itself applies, and on the question section 30D of the NGL (WA) poses, retaining the hybrid contributes to the achievement of the NGO to a greater degree than a full trailing average reached through a 10-year transition. The case for change has not been made.

# 5 If the ERA proceeds to a full trailing average, the five-year reset should not be adopted

## 5.1 The yardstick for choosing between the options

115. If, contrary to section 4, the ERA proceeds to a full trailing average, the choice between its two implementation options matters, and in our view the ERA has chosen the wrong one. The ERA's own analysis establishes as much.

116. The object of the transition, on the ERA's own description, is to move the base-rate component of the allowance from the hybrid's five-year swap rate to the 10-year rate embedded in 10-year fixed-rate debt, 'phasing out the explicit swap rate estimate and replacing it with the implicit base-rate component embedded in the observable bond yields', while remaining replicable and avoiding windfalls.[81] The yardstick for judging a transition is therefore how well it delivers compensation equal to the efficient cost of the benchmark entity moving from the one benchmark to the other – that is, whether it satisfies NPV=0 and replicability along the path, judged against the destination the ERA has announced.

117. It is notable that the ERA's comparison of the two options in Table 4.8 of Attachment 4 contains no comparison of them on this yardstick. The table compares the options on the 'length of interest-rate smoothing', 'responsiveness to market conditions', 'treatment of regulatory period' and 'resemblance of hybrid trailing average'. It does not compare the compensation they deliver, in expectation or in any scenario, against the cost of the destination benchmark. Yet, as we show below, the options differ materially on exactly that dimension on the ERA's own assumed inputs.

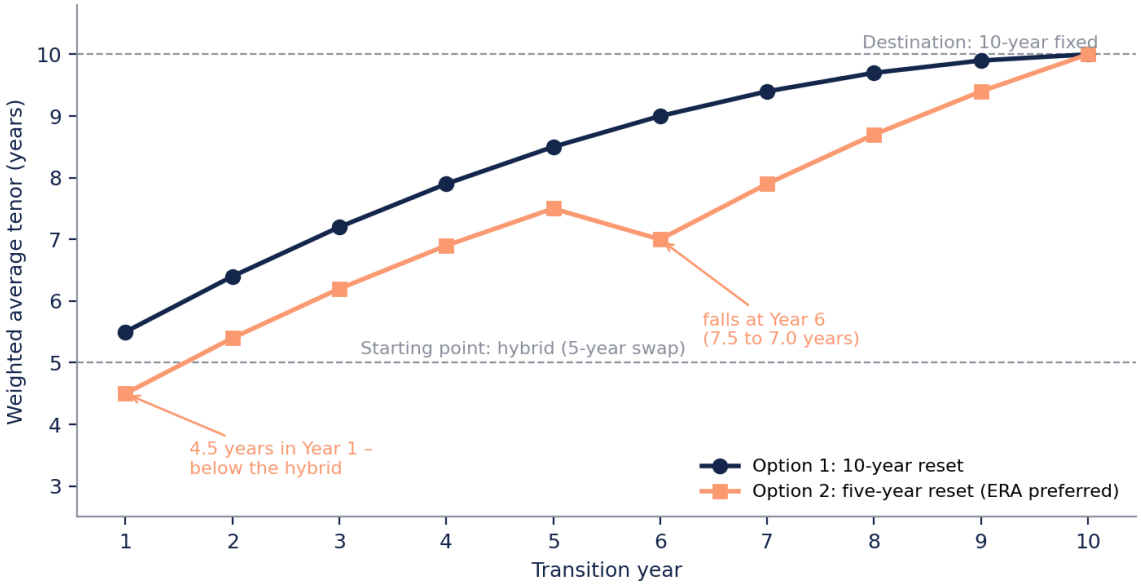
118. Like the ERA's worked example, the comparison in this section assumes a stable RAB. A growing or declining RAB affects the two options in the same way, through the transition weights (section 3.3), and does not change the ranking between them. If anything, a declining RAB strengthens it, because the part of the book that Option 2 leaves open at Year 6 is then a larger share of a smaller book (section 5.3); a growing RAB makes it a smaller share of a larger book, but does not remove it.

## 5.2 The five-year reset moves the benchmark in the wrong direction

119. The transition is supposed to move base-rate compensation from a five-year tenor to a 10-year tenor. A natural summary measure of where the transition has got to in any year is the weighted average tenor at which the base rate of the whole book has been fixed – counting each legacy tranche at the tenor of the swap applied to it and each new tranche at the 10-year tenor of the fixed-rate debt. Figure 5-1 plots this measure for the two options.

[81] Attachment 4, paragraphs 500 and 501.

Figure 5-1: Weighted average tenor of the fixed-rate (base rate) compensation under the ERA's two transition options




*Source: CEG analysis of Attachment 4, section 8.4.4 and the ERA's worked example workbook.*

120. Under Option 1 the weighted average tenor rises monotonically from 5.5 years in Year 1 to 10 years in Year 10: the transition starts a little above the hybrid's five years, because the first new tranche is 10-year debt, and moves steadily towards the destination. Under the ERA's preferred Option 2 the weighted average tenor starts at 4.5 years (below the five-year tenor of the hybrid it is transitioning away from) because four of the nine legacy tranches are fixed for less than five years. It then rises to 7.5 years in Year 5 and falls back to 7.0 years in Year 6, when the four surviving legacy tranches are re-fixed with one-to-four-year swaps. That is, the ERA proposes to implement a transition to a longer tenor by shortening the average tenor of compensation for as long as possible.

121. On an upward-sloping yield curve (the normal state, as Figure 4-2 shows) a shorter tenor means lower compensation in Years 1 to 5 than the announced 10-year benchmark would deliver. The ERA's own worked example makes the point. On the ERA's assumed Year 1 swap curve, extended to six-to-nine-year tenors at the ERA's own slope, the average swap rate on the legacy book in Year 1 is 4.96 per cent under Option 1 and 4.73 per cent under Option 2: a difference of 22 bppa on 90 per cent of the book. The difference widens as the short swaps roll off and the five-year-capped tranches come to dominate the legacy book: 25 bppa in Year 2, 29 bppa in Year 3, 33 bppa in Year 4 and 40 bppa in Year 5.

122. Weighted by the legacy share, the difference in the total allowed return on debt is 20 bppa in each of Years 1 to 5. Table 5-1 sets out the full calculation, including the difference on the legacy book in each year, and Figure 5-2 plots it. The size of the difference depends on the six-to-nine-year swap rates assumed. If instead those rates are set at the levels implied, under the expectations hypothesis, by the ERA's own five-year rate at Year 1 and its assumed one-to-four-year rates at Year 6 (about 5.03, 5.11, 5.23 and 5.36 per cent) the Year 1 difference on the legacy book is about 8 bppa rather than 22, and the difference in the total allowed return on debt is about 7 bppa in each of Years 1 to 5 rather than 20 (Table 5-2). The extension affects the size of the difference in Years 1 to 5, not its direction.

Table 5-1: Allowed return on debt under the two options on the ERA's worked-example inputs (per cent)

| Year | Legacy weight | Legacy swap rate, Option 1 | Legacy swap rate, Option 2 | Difference on legacy book (bp) | Legacy DRP | Return on debt, Option 1 | Return on debt, Option 2 | Difference (bp) |
|---|---|---|---|---|---|---|---|---|
| 1 | 90% | 4.956 | 4.733 | 22 | 1.789 | 6.946 | 6.746 | 20 |
| 2 | 80% | 5.075 | 4.825 | 25 | 1.750 | 6.928 | 6.728 | 20 |
| 3 | 70% | 5.186 | 4.900 | 29 | 1.771 | 6.936 | 6.736 | 20 |
| 4 | 60% | 5.300 | 4.967 | 33 | 1.700 | 6.869 | 6.669 | 20 |
| 5 | 50% | 5.400 | 5.000 | 40 | 1.660 | 6.806 | 6.607 | 20 |
| 6 | 40% | 5.500 | 5.500 | 0 | 1.650 | 6.749 | 6.749 | 0 |
| 7 | 30% | 5.600 | 5.600 | 0 | 1.700 | 6.697 | 6.697 | 0 |
| 8 | 20% | 5.700 | 5.700 | 0 | 1.750 | 6.620 | 6.620 | 0 |
| 9 | 10% | 5.800 | 5.800 | 0 | 1.800 | 6.517 | 6.517 | 0 |
| 10 | 0% | – | – | – | – | 6.390 | 6.390 | 0 |
| Average | | | | | | 6.746 | 6.646 | 10 |

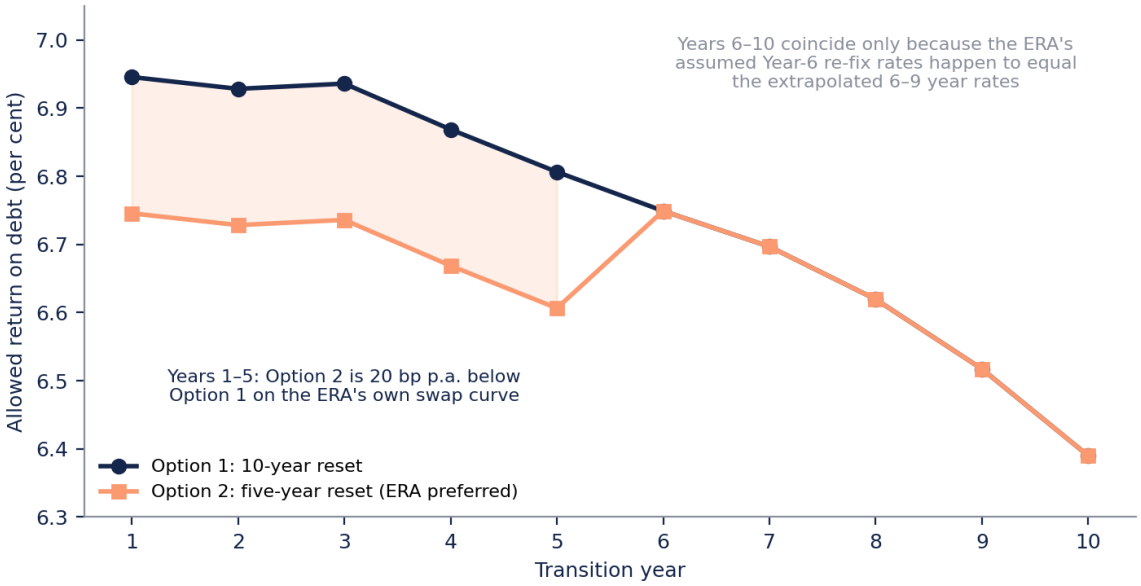
*Source: CEG replication and extension of the ERA's worked example. Years 6 to 10 coincide only because the CEG extension of the ERA's Year 1 curve (5.2 to 5.8 per cent at six to nine years) equals the ERA's assumed Year 6 re-fix rates.*

Table 5-2: The same comparison on the expectations-consistent extension of the ERA's Year 1 curve (per cent)

| Year | Legacy weight | Legacy swap rate, Option 1 | Legacy swap rate, Option 2 | Difference on legacy book (bp) | Legacy DRP | Return on debt, Option 1 | Return on debt, Option 2 | Difference (bp) |
|---|---|---|---|---|---|---|---|---|
| 1 | 90% | 4.814 | 4.733 | 8 | 1.789 | 6.819 | 6.746 | 7 |
| 2 | 80% | 4.916 | 4.825 | 9 | 1.750 | 6.801 | 6.728 | 7 |
| 3 | 70% | 5.004 | 4.900 | 10 | 1.771 | 6.809 | 6.736 | 7 |
| 4 | 60% | 5.088 | 4.967 | 12 | 1.700 | 6.742 | 6.669 | 7 |
| 5 | 50% | 5.146 | 5.000 | 15 | 1.660 | 6.679 | 6.607 | 7 |
| 6 | 40% | 5.182 | 5.500 | –32 | 1.650 | 6.622 | 6.749 | –13 |
| 7 | 30% | 5.232 | 5.600 | –37 | 1.700 | 6.586 | 6.697 | –11 |
| 8 | 20% | 5.290 | 5.700 | –41 | 1.750 | 6.538 | 6.620 | –8 |
| 9 | 10% | 5.356 | 5.800 | –44 | 1.800 | 6.473 | 6.517 | –4 |
| 10 | 0% | – | – | – | – | 6.390 | 6.390 | 0 |
| Average | | | | | | 6.646 | 6.646 | 0 |

*Source: CEG replication and extension of the ERA's worked example, with the Year 1 curve extended to six-to-nine-year rates of 5.03, 5.11, 5.23 and 5.36 per cent – the rates implied, under the expectations hypothesis, by the ERA's five-year rate at Year 1 and its assumed one-to-four-year rates at Year 6 ('Option 1 (exp ext)' and 'Comparison' sheets of the accompanying workbook). Years 6 to 9 favour Option 2 because the ERA's assumed Year 6 rates then exceed the six-to-nine-year rates Option 1 locked in at Year 1; the ten-year averages are equal.*

Figure 5-2: Allowed return on debt under the two options on the ERA's worked-example inputs




*Source: CEG replication and extension of the ERA's worked example.*

123. Twenty basis points on ATCO's benchmark debt of around $874 million is about $1.7 million a year, or about $8.7 million over the first access arrangement before discounting; on the expectations-consistent extension the corresponding figures are about $0.6 million a year and $3 million. Whether the lower compensation in Years 1 to 5 is made good in Years 6 to 9 depends entirely on the rates at which the surviving 40 per cent of the book is re-fixed at Year 6. On the ERA's own extension, under which the Year 6 re-fix rates happen to equal the six-to-nine-year rates that Option 1 would have locked in at Year 1, the ten-year totals differ by 10 bppa a year in Option 1's favour; on the expectations-consistent extension, under which the ERA's assumed Year 6 rates are exactly those the Year 1 curve implies, the ten-year totals are the same; and if rates at Year 6 turn out higher than the Year 1 curve implies, Option 2 pays more over the ten years. None of these outcomes can be known in advance, which is the point of section 5.3. What is not in doubt is the direction of the gap in Years 1 to 5, which depends only on the yield curve being upward sloping at the start of the transition; and the lower expected compensation in Years 1 to 5 is bought with an open position at Year 6 – the same trade-off of lower expected cost for reset exposure that defines the hybrid.

124. Nor can the ERA defend the lower compensation in Years 1 to 5 by pointing to its cheapness for consumers. The ERA has decided that the appropriate benchmark is a 10-year base rate; it says so at paragraph 498 and throughout section 8. If a shorter base-rate tenor is desirable because it is cheaper, that is precisely the case for retaining the hybrid permanently, which we have made in section 4. It is not a case for visiting a sub-five-year tenor briefly on the way to paying the 10-year rate forever.

## 5.3 The Year 6 open position

125. The five-year reset leaves 40 per cent of the book with an entirely open base-rate position at the boundary between the first and second access arrangements. The four legacy tranches issued in 2026 to 2029 must be re-fixed at Year 6 with one-to-four-year swaps at rates that cannot be known today. If the RAB has changed by then, so has that share: had the book halved by Year 6, the four surviving legacy tranches would make up 80 per cent of it; had it grown by half, 27 per cent.

126. In the ERA's workbook this is resolved by assumption. The ERA assumes Year 6 re-fix rates of 5.2, 5.4, 5.6 and 5.8 per cent at one to four years, against Year 1 rates of 4.0, 4.3, 4.5 and 4.8 per cent at the same tenors – that is, rates 100 to 120 basis points higher than at Year 1.[82] There is no analysis of what happens if rates at Year 6 are different. But the whole purpose of a gradual transition, on the ERA's account, is to avoid exactly this kind of exposure. The ERA's examination of actual debt data 'confirms that the hybrid trailing average debt approach can contribute to a step change in debt costs between access arrangements. This aligns with the swap rate reset at the time of an access arrangement determination',[83] and the ERA lists among the strengths of gradual transition that 'it avoids abrupt changes in debt costs and prices between access arrangements'.[84] The five-year reset deliberately preserves exactly one more such step, at Year 6, on 40 per cent of the book. The ERA acknowledges this when it lists as a weakness of the option that 'it may lead to increased volatility of debt costs over time, especially around reset time'.[85]

127. The Year 6 re-fix is also the point at which the two options diverge most in terms of replicability. Under Option 1 the benchmark entity's base-rate exposure is fully hedged on day one and remains so until every legacy tranche has matured; there is no open position at any time. Under Option 2 the entity that has replicated the benchmark through Years 1 to 5 arrives at Year 6 with 40 per cent of its book floating and must re-hedge in the averaging period before the second access arrangement, at whatever rates then prevail, in exactly the way it does today under the hybrid. Option 2 is, in substance, the hybrid continued for one more period on the surviving legacy tranches, followed by a compressed transition of one to four years. Whatever its merits, it is not a transition that removes the feature of the hybrid the ERA says it wants to remove.

## 5.4 The hedging cost allowance does not fit the five-year reset

128. Under both options the ERA applies its hedging cost allowance of 12.3 bppa 'only to the portion of the benchmark debt portfolio comprising tranches with swaps', so that the allowance declines mechanically with the legacy weight: 11.1 bppa of the total return on debt in Year 1, 4.9 bppa in Year 6, and nothing from Year 10.[86] Summed over the transition, the allowance is 55 basis-point-years under both options.

129. But the options do not require the same hedging. Option 1 requires nine swap contracts, on 90 per cent of the book, all executed at Year 1. Option 2 requires nine swap contracts on 130 per cent of the book: five at Year 1 on 90 per cent of the book and four more at Year 6 on the 40 per cent that survives (Table 3-1). The Year 6 re-hedge (a fresh set of four swap executions, with the associated credit, capital and execution charges) is funded, on the ERA's method, at 4.9 bppa of the total return on debt, less than half the Year 1 allowance, at the very moment the second round of transactions must be executed. The allowance is calibrated to the *stock* of legacy debt still carrying a swap, when the transaction costs it is meant to compensate are incurred on the *flow* of swaps executed. That mismatch is harmless under Option 1, where all swaps are executed once; it under-compensates Option 2 by construction.

82 ERA, *Appendix – Cost of debt calculation for the transition*, Table 2.

83 Attachment 4, paragraph 489.

84 Attachment 4, paragraph 508.

85 Attachment 4, paragraph 546.

86 Attachment 4, paragraphs 549 and 550; ERA worked example workbook, row 80.

## 5.5 The ERA's three reasons fail against its own principles

130. The ERA gives three reasons for preferring the five-year reset, each framed as better alignment with one of its guiding principles.[87] Each fails against the principle as the ERA itself stated it at paragraph 485.

131. **Avoidance of windfall gains or losses.** The ERA prefers the five-year reset because 'locking in swap rates for a shorter period may create less opportunities for higher windfall gains and losses if a network service provider chooses to remain unhedged'. That is a criterion premised on the firm departing from the benchmark. For a firm that replicates the benchmark the ranking is reversed: Option 1 leaves no residual base-rate exposure at all, while Option 2 forces an unhedged re-fix of 40 per cent of the book at Year 6. The reasoning also contradicts the ERA's own statement that 'it is not appropriate to compensate a regulated service provider for its actual financial structure'.[88] A benchmark cannot be designed around the possibility that a firm will not follow it; if it is, the firm that does follow it is the one that loses.

132. **Intergenerational equity.** The ERA defines this principle as consumers paying for the cost of debt 'broadly in line with when the debt is incurred, rather than being overly exposed to interest-rate cycles or regulatory resets'.[89] The five-year reset re-prices the base rate on the surviving legacy debt at a regulatory reset, at rates unrelated to when that debt was incurred – which is the opposite of the principle as stated. The ERA supports its preference by re-describing the principle as 'better alignment of current market costs, which may be more beneficial to consumers'.[90] That is not the principle at paragraph 485; it is a different principle, and one that (if it is a reason for anything) is a reason for the hybrid.

133. **Conceptual coherence of the benchmark.** The ERA defines this principle as ensuring the benchmark is 'internally consistent and not distorted to accommodate historical financing practices that diverge from it',[91] and then prefers the five-year reset because it 'better aligns with the historic implementation of the hybrid trailing average debt approach'.[92] In our view this is internally inconsistent: paragraph 485 defines coherence as not being distorted by historical practice, and paragraph 547 invokes coherence to prefer the option that is distorted by historical practice. Coherence with the destination benchmark (which has no swaps and no five-year resets) favours Option 1, under which every legacy tranche is fixed to the maturity that the destination benchmark itself assumes.

134. The two remaining principles do not assist the ERA either. On replicability, both options are replicable, but only Option 1 is replicable in a single set of transactions on day one with no open position thereafter. On regulatory certainty and stability, the ERA itself lists as strengths of Option 1 that 'it creates a smooth debt cost profile across a 10-year transition period', 'the annual changes are limited by the 10 per cent weight on each fixed swap debt contract', 'it is relatively easier and simpler to implement' and it 'provides a clear path for the 10-year transition period', and as weaknesses of Option 2 that it 'may lead to increased volatility of debt costs over time, especially around reset time'

87 Attachment 4, paragraph 547.
88 Attachment 4, paragraph 483.
89 Attachment 4, paragraph 485.
90 Attachment 4, paragraph 547.
91 Attachment 4, paragraph 485.
92 Attachment 4, paragraph 547.

and 'is structurally more complex and may be more difficult to implement'.[93] On the ERA's own account, Option 1 wins on the principle of certainty and stability.

## 5.6 The five-year cap cannot be explained by tenor or by practice

135. The only feature that distinguishes the five-year reset is the rule that no swap may extend beyond the current access arrangement. The ERA does not explain where this rule comes from, and we can identify only two candidate explanations, neither of which is available to the ERA.

136. The first is that the cap reflects a benchmark tenor of five years. It does not. The ERA's own paragraph 498 confirms that the benchmark portfolio is 10-year debt under both approaches, and the ERA applies a 10-year trailing average DRP (the DRP on 10-year debt) under both options. A benchmark that borrowed at five years could not consistently be compensated the credit spread on 10-year debt.

137. The second is that the cap accommodates the mixed hedging practices the ERA observed among the regulated pipelines when it examined their debt data.[94] If so, the benchmark is being set by reference to actual financing structures, which paragraphs 480 to 483 state it will not be, and the ERA's 'conceptual coherence' principle (not distorting the benchmark to accommodate historical practice) is being breached in the act of invoking it.

138. Neither branch is available, and the ERA has not offered a third.

## 5.7 The corollary: any reason for Option 2 is a reason for the hybrid

139. Each of the properties the ERA values in the five-year reset – a shorter base-rate tenor, greater 'responsiveness to the interest rate environment given the rate reset at the start of each access arrangement', and alignment 'with the hybrid debt approach for five-year resets to match the access arrangement period'[95] – is a property of the hybrid. If those properties make Option 2 better than Option 1, they make the hybrid better than the full trailing average, and the ERA should retain the hybrid. If, on the other hand, the ERA is right that a 10-year base rate is the better destination, then the option that gets there directly and monotonically, with no open position and no further resets, is better than the one that delays departure and reintroduces a reset on the way. The ERA can hold one of these positions but not both. Its explanatory statement holds both.

## 5.8 Replicability and implementation of the 10-year reset

140. Option 1 is straightforward to implement. In the averaging period before the start of the next access arrangement, the ERA observes the one-to-nine-year swap rates in exactly the way it now observes the five-year rate, and the benchmark entity executes nine pay-fixed swaps in the same window. The ERA's Table 2 of the worked example already provides the template; it needs only four additional tenors. The DRP on each legacy tranche, the annual update mechanism and the initial revenue path calculation are unchanged from the ERA's description of Option 2.[96] No second averaging period, no second suite of swaps and no Year 6 re-fix are required.

141. The ERA itself records that Option 1 is 'relatively easier and simpler to implement'.[97] Its only stated weaknesses are that Option 1 'is less responsive to market volatility and locks in all rates at one point

[93] Attachment 4, paragraphs 543 and 546.
[94] Attachment 4, paragraphs 487 and 488.
[95] Attachment 4, paragraph 545.
[96] Attachment 4, paragraphs 556 to 581.
[97] Attachment 4, paragraph 543.

in time' and 'is misaligned with the hybrid debt approach's consistency for five-year resets'.[98] The first is the design objective of the transition (fixing each legacy tranche's base rate to its maturity is what a full trailing average does) and the second is the corollary discussed above.

## 5.9 Conclusion on the second limb

142. If the ERA proceeds to a full trailing average, the transition should be the 10-year reset. It is the ERA's own simpler and cheaper-to-administer option. It is fully replicable in a single set of transactions on day one. It involves no open interest rate position. It moves the benchmark monotonically from its five-year starting point to its 10-year destination. And it is the transition that a benchmark efficient entity following the hybrid would actually implement, as CEG has said since 2014 and Chairmont advised the AER in 2015. The five-year reset, by contrast, moves the benchmark in the wrong direction, pays less than the announced destination benchmark in each of the first five years – by 7 to 20 bppa of the total return on debt on the ERA's own inputs, depending on the six-to-nine-year swap rates assumed – and does so only by leaving 40 per cent of the book open at Year 6, is under-funded for the hedging it requires, and is supported by reasons that contradict the ERA's own principles. None of this depends on whether the RAB grows, stays stable or declines; a growing or declining RAB only changes the size of the Year 6 open position relative to the book.

[98] Attachment 4, paragraph 544.

# 6 Conclusions

143. Our conclusions are as follows.

144. The ERA adopted the hybrid in 2015 because it is replicable, satisfies the present value condition exactly, has the lowest regulatory cost and, in the ERA's assessment at the time, better preserves the incentive to invest. None of those findings has been revisited. The ERA's reasons for change amount to a preference for an allowance that moves less between access arrangements; but that movement is the allowance tracking the benchmark entity's hedged cost of debt, the trailing average buys smoother prices with a lag of about five years behind market rates, and smoother prices can be delivered directly – by lengthening the averaging window, as the NZCC has done, or by NPV-neutral smoothing across access arrangements – while retaining the hybrid.

145. Above all, both benchmarks assume a stable RAB, and a gas network in transition cannot assume that. Its RAB may grow, stay broadly stable or decline, and it may do each at different times. Across that range the hybrid performs better than the trailing average. If the RAB grows, both benchmarks need a weighting scheme to keep the incentive to invest right, but only the hybrid can be hedged simply: foreseen growth can be hedged at the reset with a single forward-starting swap, leaving only the DRP, whereas under the trailing average the new debt is paid rates set before it was raised. If the RAB is stable, the hybrid provides a lower expected cost of debt for consumers of around 14 to 21 bppa net of hedging costs, a benchmark strategy that an issuer of ATCO's size can implement and an allowance reset to market rates at each reset. If the RAB declines, the hybrid needs nothing for the base rate, because its base rate is fixed on the actual portfolio, for five years at a time, with a swap that can be sized to the expected decline. The unweighted trailing average cannot be hedged at all in that case, because its allowance includes vintages that a business paying down debt never issues, and the gap extends to the base rate as well as the DRP for up to ten years. The ERA has said it will not weight, and the only weighting scheme developed in Australia deals with a declining RAB by assuming the business becomes a bond investor. The hybrid also provides greater regulatory flexibility and, because it can be hedged whichever way the RAB moves, regulatory stability. Investment incentives provide no reason to change: the divergence between the allowance and prevailing rates arises under both simple benchmarks and, if the ERA regards it as material, is addressed by weighting under either. The case for abandoning the hybrid has not been made, and a service provider that has implemented the hybrid should not be compelled to abandon it.

146. If the ERA nonetheless proceeds to a full trailing average, its preferred five-year reset should not be adopted. It moves the base-rate tenor in the wrong direction, starting below the hybrid and falling again at Year 6; on the ERA's own inputs it pays 7 to 20 bppa less than the announced destination benchmark in each of the first five years, a lower expected cost that is bought with reset exposure; it leaves 40 per cent of the book with an open base-rate position at Year 6, to be re-fixed at rates the ERA's workbook simply assumes; its hedging cost allowance does not fit the transactions it requires; and each of the three reasons the ERA gives for preferring it fails against the ERA's own principles for transition design. The 10-year reset – the ERA's own simpler option, fully replicable on day one, with no open position, moving monotonically to the destination – should be adopted instead.

147. Finally, every reason the ERA gives for preferring the five-year reset over the 10-year reset is a reason for preferring the hybrid over the trailing average. The ERA cannot consistently hold that a shorter, more responsive, five-yearly reset base rate is better for the transition but worse as the benchmark.

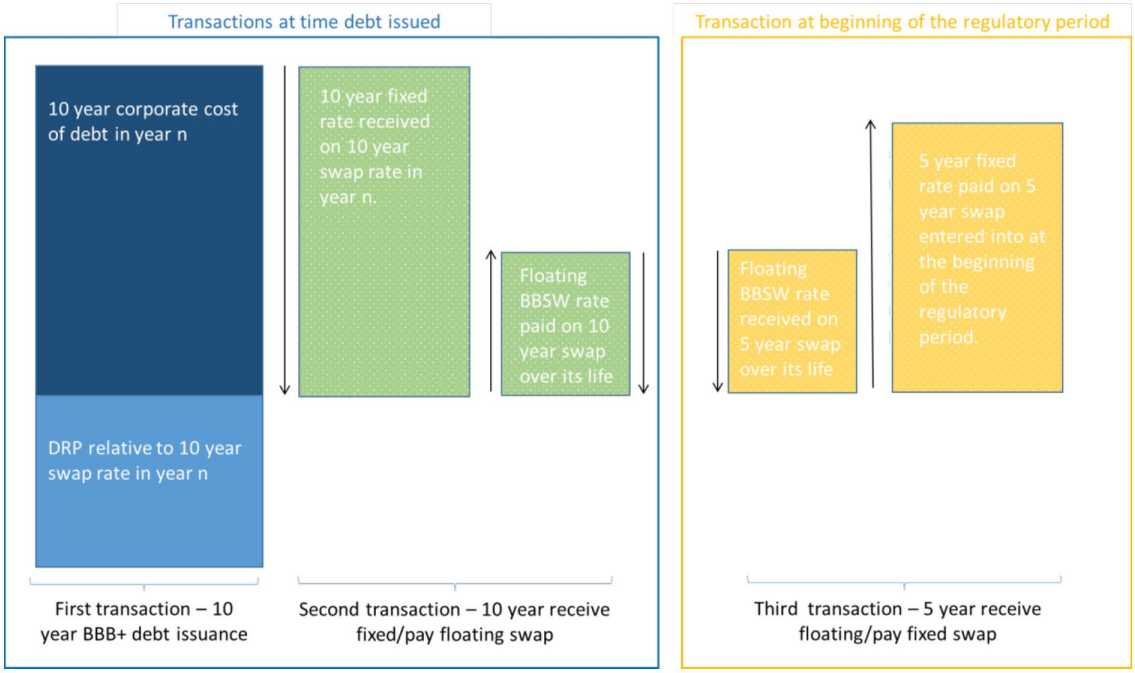
# Appendix A Mechanics of the hybrid and of a transition from it

## A.1 The swap strategy underpinning the hybrid

148. This appendix reproduces, from CEG's previous reports, a description of the mechanics of the swap strategy that underpins the hybrid, because those mechanics explain why the DRP is a trailing average under both benchmarks, why only the base rate is at issue in the transition, and why a benchmark entity that has followed the hybrid starts the transition with a floating base rate on its entire portfolio.[99]

149. Under the hybrid the benchmark entity maintains a portfolio of ten-year debts with evenly staggered maturities. It issues 10-year fixed-rate bonds and, at issuance, enters a 10-year receive-fixed/pay-floating swap, so that its net exposure on each bond is the floating bank bill rate plus a fixed DRP (the same result can be achieved directly by issuing floating-rate bonds). At the beginning of each access arrangement it enters a five-year pay-fixed/receive-floating swap on the whole portfolio, converting the floating base rate into a five-year fixed rate for the length of the access arrangement. Figure A-1 illustrates the three transactions for a single bond issued in year n.

Figure A-1: Mechanics of the swap strategy underpinning the hybrid




*Source: CEG, Efficient regulatory benchmarks, and transitions, for the cost of debt, August 2021, Figure 1.*

150. Moving from left to right in Figure A-1:

a. first, the firm issues a 10-year fixed-rate bond with a yield represented by the height of the first column – the sum of the 10-year swap rate (dark blue) and the DRP relative to the 10-year swap rate (light blue);

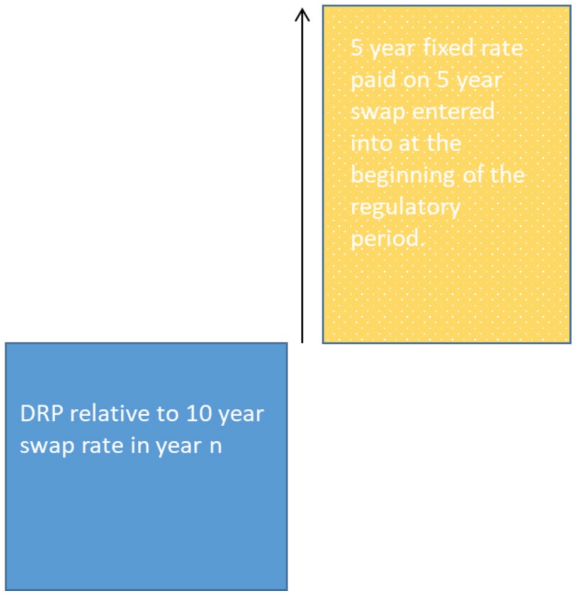
[99] CEG, *Cost of debt consistent with the NGR and NGL*, November 2014, section 3.2; CEG, *Efficient regulatory benchmarks, and transitions, for the cost of debt*, August 2021, section 3.1.

b. second, the firm immediately enters a 10-year swap under which it receives the 10-year fixed swap rate prevailing at that time and pays the floating three-month bank bill swap rate (BBSW) over the life of the bond (the green columns); and

c. third, at the beginning of each access arrangement, the firm enters a five-year swap under which it pays the five-year fixed swap rate prevailing at that time and receives BBSW (the yellow columns).

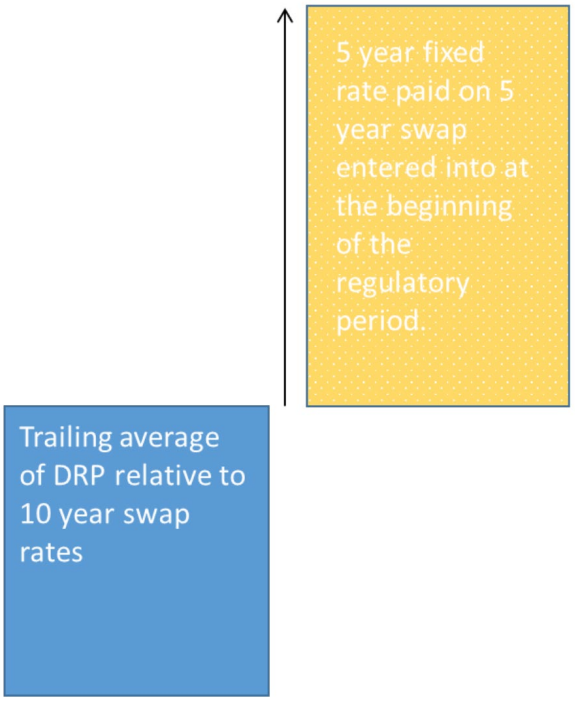
151. The floating BBSW legs of the two swaps cancel, and the 10-year fixed rate received on the first swap cancels the 10-year swap rate embedded in the bond yield. What remains is shown in Figure A-2: the DRP on the bond, fixed at issuance for the life of the bond, plus the five-year fixed swap rate set at the beginning of the access arrangement, plus the transaction costs of the swaps. Applied to every bond in the staggered portfolio, the cost of debt is the five-year swap rate plus a trailing average of the DRPs on the ten bonds in the portfolio (Figure A-3).

Figure A-2: Simplified mechanics of the swap strategy underpinning the hybrid




*Source: CEG, Efficient regulatory benchmarks, and transitions, for the cost of debt, August 2021, Figure 2.*

Figure A-3: Aggregate cost of debt under the hybrid




*Source: CEG, Efficient regulatory benchmarks, and transitions, for the cost of debt, August 2021, Figure 3.*

152. Two consequences follow. First, the DRP on each bond cannot be altered by any liquid derivative, so it is compensated as a trailing average under the hybrid and under the full trailing average alike; the choice of benchmark affects only the base rate. Second, for the five-year swap to be an effective hedge to the allowance it must be executed in the same averaging period that the ERA uses to set the allowance and must last only as long as the allowance is paid.[100] It follows that at the beginning of each access arrangement the entity's base-rate exposure on its entire portfolio is floating – which is the starting point from which any transition must begin.

## A.2 A replicable transition from the hybrid to a trailing average

153. An entity in that starting position that wished to move to a trailing average would enter, in the averaging period before the access arrangement, a set of pay-fixed swaps with tenors matched to the remaining life of each bond in its portfolio: one year on the bond maturing in a year's time, two years on the bond maturing in two years, and so on up to nine years (the tenth tranche being refinanced with 10-year fixed-rate debt). Having done so, its cost of debt is a synthetic trailing average – the average, across the ten tranches, of the DRP on each bond plus the swap rate for its remaining life – which then rolls forward exactly as a trailing average does, dropping the oldest tranche each year and replacing it with new 10-year fixed-rate debt at the prevailing rate.[101] This is the ERA's Option 1. Chairmont, advising the AER in 2015, reached the same conclusion: a transition path for the base rate is required, and it should reflect 'a series of 1–10-year swaps with maturities to coincide with the

[100] The rule that the swap is struck in the same averaging period as the allowance applies equally to a forward-starting swap used to hedge forecast growth.

[101] CEG, *Cost of debt consistent with the NGR and NGL*, November 2014, Appendix C; CEG, *Efficient regulatory benchmarks, and transitions, for the cost of debt*, August 2021, section 5.3.

annual partial allowance resets', whereas 'the DRP does not need to be transitioned because the NSP already has a staggered floating rate debt portfolio'.[102]

[102] Chairmont, *Cost of debt: Transitional analysis*, April 2015, pp. 8–9.

# Appendix B Replication and extension of the ERA's worked example

154. The tables in this appendix set out the calculations behind section 5 on the ERA's worked-example inputs. All values are in per cent unless otherwise stated.

Table B-1: Inputs to the ERA's worked example and CEG's extension

| Input | Value | Source |
|---|---|---|
| Swap rates at Year 1, tenors 1 to 5 years | 4.0, 4.3, 4.5, 4.8, 5.0 | ERA Table 2 |
| Swap rates at Year 1, tenors 6 to 9 years | 5.2, 5.4, 5.6, 5.8 | CEG extension |
| Swap rates at Year 6, tenors 1 to 4 years | 5.2, 5.4, 5.6, 5.8 | ERA Table 2 |
| DRP on legacy tranches, vintages 2021 to 2029 | 2.1, 1.6, 2.2, 1.9, 1.7, 1.5, 1.6, 1.7, 1.8 | ERA Table 3 |
| Yield on new 10-year debt, Years 1 to 10 | 6.00 rising by 0.05 each year to 6.45 | ERA Table 4 |
| Debt raising cost allowance | 0.165 | ERA |
| Hedging cost allowance (applied to legacy share) | 0.123 | ERA |
| Legacy weight, Years 1 to 10 | 90, 80, … , 0 | ERA Table 1 |

*Source: ERA, Appendix – Cost of debt calculation for the transition, Tables 1 to 4; CEG extension of the swap curve to six to nine years at the ERA's slope of 0.2 percentage points per year of tenor.*

Table B-2: Swap rate fixed on each legacy tranche under the two options (per cent)

| Legacy tranche (vintage) | Remaining life at Year 1 (years) | Option 1 swap tenor and rate | Option 2, Years 1 to 5 | Option 2, Years 6 to 9 |
|---|---|---|---|---|
| 2021 | 1 | 1 year, 4.0 | 1 year, 4.0 | matured |
| 2022 | 2 | 2 years, 4.3 | 2 years, 4.3 | matured |
| 2023 | 3 | 3 years, 4.5 | 3 years, 4.5 | matured |
| 2024 | 4 | 4 years, 4.8 | 4 years, 4.8 | matured |
| 2025 | 5 | 5 years, 5.0 | 5 years, 5.0 | matured |
| 2026 | 6 | 6 years, 5.2 | 5 years, 5.0 | re-fixed 1 year, 5.2 |
| 2027 | 7 | 7 years, 5.4 | 5 years, 5.0 | re-fixed 2 years, 5.4 |
| 2028 | 8 | 8 years, 5.6 | 5 years, 5.0 | re-fixed 3 years, 5.6 |
| 2029 | 9 | 9 years, 5.8 | 5 years, 5.0 | re-fixed 4 years, 5.8 |

*Source: CEG analysis of Attachment 4, paragraphs 520 and 532, on the inputs in the previous table.*

Table B-3: Hedging cost allowance implied by the ERA's method (basis points of total return on debt)

| Year | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Legacy weight (%) | 90 | 80 | 70 | 60 | 50 | 40 | 30 | 20 | 10 | 0 |
| Allowance (12.3 bp x legacy weight) | 11.1 | 9.8 | 8.6 | 7.4 | 6.2 | 4.9 | 3.7 | 2.5 | 1.2 | 0.0 |
| Swaps executed, Option 1 (share of book) | 90 | – | – | – | – | – | – | – | – | – |
| Swaps executed, Option 2 (share of book) | 90 | – | – | – | – | 40 | – | – | – | – |

*Source: ERA worked example workbook; CEG analysis.*

# Appendix C Data sources and methods

155. The historical interest rate data in this report are drawn from the following Reserve Bank of Australia statistical tables, downloaded on 15 September 2026:

    a. Table F2, Capital market yields – Government bonds: month-end yields on Australian Government bonds at two, three, five and 10 years, monthly from January 1969 (five-year yields from January 1972) to May 2013 (historical file) and from June 2013 to August 2026 (current file). Figure 4-2 is the difference between the 10-year and five-year series; the averages reported in section 4.3.3 are simple averages of the monthly differences over the periods stated.

    b. Table F3, Aggregate measures of Australian corporate bond yields – non-financial corporate bonds: month-end yields on BBB-rated non-financial corporate bonds at a 10-year target tenor, monthly from January 2005 to August 2026. Figure 4-1 compares each month's yield with the simple average of the latest 120 monthly observations; the first such average is available at December 2014.

156. Government bond yields are used in place of interest rate swap rates for the term premium analysis because they are available for a much longer period. The difference between five- and 10-year government bond yields closely approximates the difference between five- and 10-year swap rates because, on any given day, the swap spread at the two tenors is similar and the difference between the two spreads is relatively stable over time.

157. The replication and extension of the ERA's worked example use the inputs set out in Appendix B and follow the formulae at paragraphs 551 to 567 of Attachment 4. The weighted average tenor in Figure 5-1 counts each legacy tranche at the tenor of the swap applied to it in that year and each new tranche at 10 years, each tranche being 10 per cent of the book.

# Appendix D Hedging to each benchmark when the RAB is changing

## D.1 Purpose of this appendix

158. This appendix explains, in plain terms and with a worked example, how each benchmark performs when the RAB grows, stays stable or declines, and why a business can hedge to the hybrid's base rate whichever way the RAB moves, while it can hedge simply to an unweighted trailing average only when the RAB is stable. It is written for readers who are not treasury specialists; Appendix A sets out the swap mechanics in more detail.

## D.2 What 'hedging to the allowance' means

159. The return on debt allowance is a rate, set by the instrument, multiplied by the debt the benchmark entity is assumed to hold – the RAB multiplied by the benchmark gearing. A business is hedged to the allowance when its actual interest bill equals the allowance, so that there is no gap between them to begin with and a change in interest rates changes what it pays and what it receives by the same amount. Protection against future movements in rates is not enough on its own: a business can lock in the rates of today and still be left with a gap set by movements in rates in the past. The ERA's replicability principle requires that a prudent and efficient business be able to achieve this. If it cannot, movements in interest rates produce gains or losses for the business that have nothing to do with how efficiently it is run – which is the kind of windfall that the ERA's first transition principle is directed against.

## D.3 The two benchmarks when the RAB is stable

160. Under the full trailing average the allowance rate in any year is the average of the 10-year BBB yields of the last ten years, each with a weight of one-tenth. A business replicates it by holding ten equal tranches of 10-year fixed-rate debt and refinancing one tranche each year: its interest bill is then, by construction, the average of the last ten years' 10-year yields. It can achieve the same result with floating-rate debt and ten 10-year pay-fixed swaps, one entered each year on a tenth of the book; the point is the same.

161. Under the hybrid the allowance rate is the five-year swap rate at the start of the access arrangement plus the average of the DRPs of the last ten vintages. A business replicates it by borrowing in whatever form suits it, converting the base rate to floating, and entering one five-year pay-fixed swap on the whole book at the start of each access arrangement. Its base rate is then exactly the allowance's base rate for five years, and its DRP is (as under the trailing average) the average of the last ten vintages, provided it has rolled its book over one-tenth a year.

162. Both replications rest on the same assumption: that the book is stable and one-tenth of it was issued in each of the last ten years. When it is, the hybrid has the advantages set out in sections 4.3.3 and 4.3.4: a lower expected cost and a strategy that an issuer of ATCO's size can implement.

## D.4 A growing RAB

163. If the RAB grows, the business has to raise new debt, at whatever rates prevail when it raises it. Under the hybrid the allowance on that new debt is the five-year swap rate fixed at the start of the access arrangement. Under the trailing average it is the ten-year average. Neither need be the prevailing rate when the debt is raised. Both benchmarks therefore need a weighting scheme if growth is large, under which the new debt is compensated at prevailing rates, and either benchmark

can be weighted in this way (section 4.3.2). That is a point about investment incentives. On hedging, the two benchmarks differ.

164. Under the hybrid, the access arrangement forecasts the growth and the allowance is paid on that forecast, so at the reset the business knows how much new debt the allowance assumes and when. It can fix the base rate on that debt at the reset, in the same averaging period in which the allowance is set, with a forward-starting swap that starts when the debt is raised and ends at the next reset. For $100 million of growth in year 3 of an access arrangement, that is a three-year swap on $100 million starting two years after the reset; growth spread over several years can be covered by one swap whose notional steps up with the forecast path of the book. The rate locked in is a forward rate rather than the five-year rate the allowance pays. On the ERA's own Year 1 curve (4.0, 4.3, 4.5, 4.8 and 5.0 per cent at one to five years) the three-year swap starting in two years is about 5.5 per cent, against a five-year rate of 5.0 per cent, or about $1.6 million on $100 million over the three years; for growth of $100 million in each year of an access arrangement, the forward-starting swaps average about 35 basis points above the five-year rate, or around $5 million over the access arrangement. Both rates come from the same curve on the same day, so the difference is known at the reset: it is a matter of compensation, not of risk. At the next reset the new debt is simply part of the book that is re-fixed. What the business cannot do, under either benchmark, is hedge the DRP: the new debt carries the DRP of the day and the allowance pays a ten-year average.

165. Under the trailing average most of the allowance on the new debt was set before the debt was raised, and a swap cannot give the business those earlier rates without an upfront payment equal to the value of the difference. Once the growth is known, the most the business can do is lock in the rates of that day on the share of the new debt that the allowance treats as old. For $100 million of growth, that means nine forward-starting swaps of $10 million each, with terms of one to nine years, and fixing one tenth of the debt at the prevailing 10-year rate when it is raised and another tenth each year after that, as the allowance comes to treat it as new – and the same again for every year in which the RAB grows. That protects the business against movements in rates from the day the swaps are written, but it leaves the gap between those rates and the rates already in the average, which is set by how far rates have moved over the previous decade. The swaps also run up to nine years beyond the growth, into access arrangements for which there is no RAB forecast, and the trailing average provides no allowance for their cost. Section D.7 shows the effect in the worked example.

## D.5 A declining RAB: a worked example

166. Consider a business with a $1,000 million book at the 2040 reset, made up of ten tranches of $100 million issued in 2030 to 2039, one of which matures each year. We set the example at the first reset after the ERA's transition would be complete, so that the trailing average carries a full ten years of history; the dates are chosen for that reason alone and are not a forecast. During the transition that history builds up from 2030, because the transition re-fixes the base rate on the legacy tranches at 2030 swap rates (and, under the five-year reset, 40 per cent of them again at 2035 rates). The debt the business needs falls by $100 million a year from 2040 to $500 million in 2044 and is flat thereafter. All tranches issued up to 2039 carry a base rate of 3.0 per cent and a DRP of 1.5 per cent, an all-in yield of 4.5 per cent. By the 2040 reset, after the last of those tranches has been issued, 10-year rates have risen by two percentage points: new 10-year debt carries a base rate of 4.5 per cent and a DRP of 2.0 per cent, an all-in yield of 6.5 per cent, and the five-year swap rate is 4.5 per cent at the 2040 reset and again at the 2045 reset. The numbers are round and illustrative; it is the direction of the result that matters.

167. The business pays down debt in the only way a borrower can. From 2040 to 2044 it lets the maturing tranche run off and does not replace it; from 2045 it refinances maturing tranches to hold the book at $500 million. This is what a prudent treasurer would do under either benchmark.

168. Table D-1 shows the result under the trailing average. In 2044 the allowance rate is the average of the vintages 2035 to 2044 (five real ones at 4.5 per cent and five that were never issued, at 6.5 per cent) or 5.5 per cent, applied to debt of $500 million: $27.5 million. The business's actual cost is 4.5 per cent on the same $500 million: $22.5 million. The allowance exceeds the cost by $5.0 million in that year, and by $29.0 million over 2040 to 2049 as the phantom vintages enter the average and then, from 2045, as the business's real refinancing gradually catches up with it. Had rates fallen by two percentage points instead of rising, every figure would have the opposite sign: the business would have been under-compensated by $29.0 million.

169. Could the business have avoided this? Not by any transaction available to it. The gap arises because the allowance pays the rates of 2040 to 2044 on debt that the business borrowed at the rates of 2035 to 2039. Its old tranches carry a base rate of 3.0 per cent because that was the 10-year rate when they were issued, and no swap can change that without an upfront payment equal to the value of the difference: a swap is priced at the rates of the day on which it is written, not at the rates of 2035. Swaps can protect a business against movements in rates after the day it writes them. A business that foresaw the decline at the 2040 reset could have entered receive-fixed swaps on the part of its old debt that the allowance treats as replaced, and pay-fixed swaps each year on the vintages it does not issue (and, once it refinances again, receive-fixed swaps on the part of each new tranche that the allowance does not count), so that the floating legs cancel and later movements in rates move its cost and its allowance alike. But the receive-fixed swaps would have been written at the 2040 rate of 4.5 per cent, not at the 3.0 per cent its debt carries, so the programme locks the gap in rather than closing it. To have closed it, the business would have needed to know, when it borrowed in 2030 to 2039, how much of that debt it would need after 2039. In practice, therefore, an unweighted trailing average leaves a business whose RAB declines with a gain or loss set by the movement in rates over the previous decade, for as long as the old vintages remain in the average. Could the ERA fix this with a weighting scheme? Not with either of the schemes that have been put forward. The AER's scheme treats a fall in the debt requirement as if the business had invested the difference in BBB bonds at prevailing yields[103] and the ENA's variant leaves the unweighted average in place when the RAB is stable or falling.[104] The ERA has in any case decided that a weighted trailing average should not apply to Western Australian gas pipelines.[105]

170. Under the hybrid the base rate takes care of itself. At the 2040 reset the business enters a five-year pay-fixed swap whose notional is $900 million in 2040, stepping down by $100 million a year to $500 million in 2044 – an amortising swap, which banks write routinely against amortising loans and which costs no more per dollar of notional than a swap with a flat notional. Its base rate is then 4.5 per cent on exactly the debt it holds in each year, which is exactly what the allowance pays; at the 2045 reset the swap is re-written on the $500 million book at 4.5 per cent, and again the allowance and the cost coincide. (On a sloping swap curve the amortising swap rate would differ from the standard five-year rate by an amount known at the reset; on the ERA's steep example curve it would be about 14 basis points lower.) The only mismatch is in the DRP, which is compensated as a 10-year trailing average of vintages under both benchmarks and which the business cannot hedge under either. In 2044 the DRP allowance is the average of the 2035 to 2044 vintages, 1.75 per cent, against an actual DRP of 1.5 per cent: $1.25 million in that year and $7.25 million over the decade. That is a

[103] CEG, *Implementing a weighted trailing average cost of debt*, report for Energy Networks Australia, 18 December 2025.

[104] Attachment 4, paragraph 100, summarising AGIG, Submission to Discussion Paper, December 2025, pp. 11–12.

[105] Attachment 4, paragraph 176.

quarter of the trailing average's gap in this example, in which three-quarters of the rise in rates falls on the base rate, the more volatile of the two components.[106]

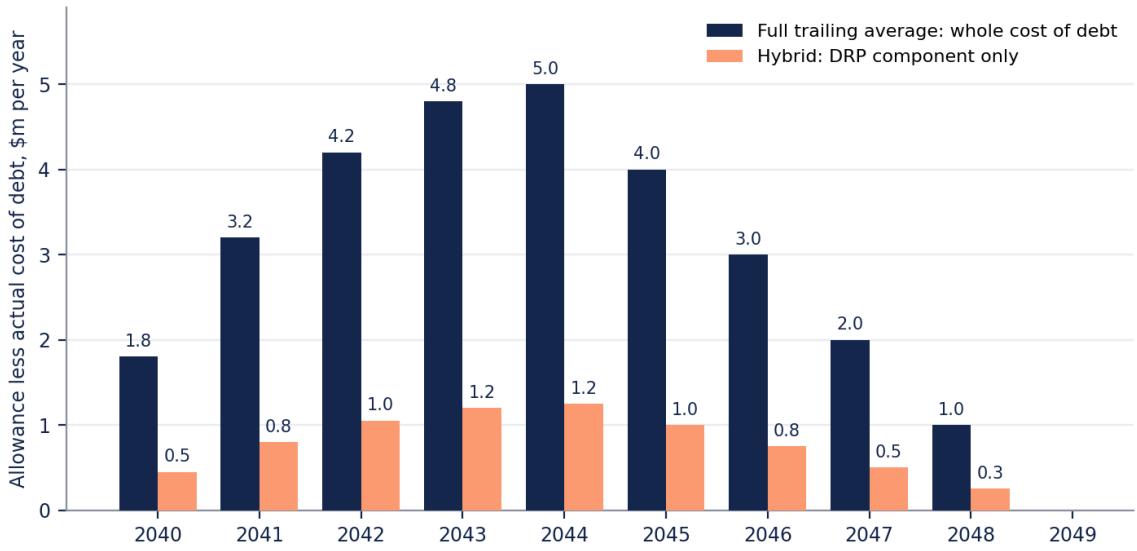
Table D-1: Allowance and actual cost of debt on a declining book: illustrative example ($ million and per cent)

| | | | Full trailing average | | | Hybrid (DRP component only) | | |
|---|---|---|---|---|---|---|---|---|
| **Year** | **Debt ($m)** | **Vintages held** | **Allowed (%)** | **Actual (%)** | **Gap ($m)** | **Allowed (%)** | **Actual (%)** | **Gap ($m)** |
| 2040 | 900 | 2031–2039 | 4.70 | 4.50 | 1.8 | 1.55 | 1.50 | 0.45 |
| 2041 | 800 | 2032–2039 | 4.90 | 4.50 | 3.2 | 1.60 | 1.50 | 0.80 |
| 2042 | 700 | 2033–2039 | 5.10 | 4.50 | 4.2 | 1.65 | 1.50 | 1.05 |
| 2043 | 600 | 2034–2039 | 5.30 | 4.50 | 4.8 | 1.70 | 1.50 | 1.20 |
| 2044 | 500 | 2035–2039 | 5.50 | 4.50 | 5.0 | 1.75 | 1.50 | 1.25 |
| 2045 | 500 | 2036–2039, 2045 | 5.70 | 4.90 | 4.0 | 1.80 | 1.60 | 1.00 |
| 2046 | 500 | 2037–2039, 2045–2046 | 5.90 | 5.30 | 3.0 | 1.85 | 1.70 | 0.75 |
| 2047 | 500 | 2038–2039, 2045–2047 | 6.10 | 5.70 | 2.0 | 1.90 | 1.80 | 0.50 |
| 2048 | 500 | 2039, 2045–2048 | 6.30 | 6.10 | 1.0 | 1.95 | 1.90 | 0.25 |
| 2049 | 500 | 2045–2049 | 6.50 | 6.50 | 0.0 | 2.00 | 2.00 | 0.00 |
| Total | | | | | 29.0 | | | 7.25 |

*Source: CEG illustrative calculation. Rates rise by two percentage points before the 2040 reset. Columns 4 to 6 are the full trailing average; columns 7 to 9 are the hybrid, under which the base rate is matched exactly and only the DRP is compensated on a trailing basis. Vintages from 2040 that were never issued enter the allowance averages but not the business's actual cost. 'Declining RAB' sheet of the accompanying workbook.*

[106] RBA statistical tables F2 and F3, monthly, January 2015 to August 2026: standard deviation of 1.2 percentage points for the 10-year CGS yield and 0.6 percentage points for the spread of the 10-year BBB yield to CGS (see also section 4.3.2).

Figure D-1: Allowance less actual cost of debt on a declining book: full trailing average and hybrid ($ million a year)




*Source: CEG illustrative calculation, as in Table D-1: a $1,000 million book falling to $500 million by 2044; 10-year rates two percentage points higher from the 2040 reset (1.5 in the base rate, 0.5 in the DRP), so that vintages from 2040 cost 6.5 per cent against 4.5 per cent on the old tranches. Totals: $29.0 million (trailing average) and $7.25 million (hybrid). With a fall in rates of the same size, both series are negative.*

## D.6 The same example with the RAB growing

171. Now run the same example the other way. The debt the business needs rises by $100 million a year from 2040 to $1,500 million in 2044 and is flat thereafter, so in each of those years it refinances the maturing tranche and raises a further $100 million, all at the higher rates (base rate 4.5 per cent, DRP 2.0 per cent). Table D-2 shows the result. Under the trailing average the allowance is still the equal-weighted average of the last ten vintages, but the business's actual portfolio is now over-weight in the new, dearer vintages rather than under-weight in them, so the allowance falls short of its cost by exactly the amounts by which it exceeded its cost in Table D-1: $5.0 million in 2044 and $29.0 million over the decade, with the sign reversed. This is the distortion the ERA described in 2015: the new debt is paid an average of the previous decade's rates rather than the rate at which it was raised (the hybrid's version of it, when rates move within an access arrangement, is in section D.7). A growing RAB and a declining RAB are mirror images under the trailing average, and a business cannot hedge to the allowance in either case.

172. Under the hybrid the DRP mismatch is likewise the mirror image of the declining case (–$7.25 million over the decade), and the base rate is matched, as it is in the declining case. The allowance pays the 2040 reset rate of 4.5 per cent on the whole book until 2044, including the extra $500 million raised over 2040 to 2044, and that is what the new debt costs: the business either borrows it at a floating rate of about 4.5 per cent or, having foreseen the growth, fixes its base rate at the 2040 reset with forward-starting swaps (at 4.5 per cent on the flat curve of the example; on the ERA's steep example curve, about 35 basis points above the five-year rate, an amount known at the reset). At the 2045 reset the whole $1,500 million is re-fixed at 4.5 per cent. There is no base rate gap, and the hybrid's total is the DRP gap alone, –$7.25 million against –$29.0 million under the trailing average. The hybrid's base rate is exposed only if rates move after the reset and the growth was not foreseen when the reset swap was written. Section D.7 sets out that case: if rates rise only after the 2040 reset, the business pays about 4.5 per cent on the new debt while being compensated at the 3.0 per cent set at

the reset, which is $7.5 million in 2044 and $22.5 million over 2040 to 2044, until the 2045 reset re-fixes the whole book and the mismatch disappears. Even then the two benchmarks come out about the same over the decade (–$29.0 million and –$29.75 million), the trailing average spreading its miss over ten years and the hybrid confining its base rate miss to five.

Table D-2: The same example with the RAB growing by half: allowance less actual cost of debt ($ million and per cent)

| | | Full trailing average | | | Hybrid | | |
|---|---|---|---|---|---|---|---|
| **Year** | **Debt ($m)** | **Allowed (%)** | **Actual (%)** | **Gap ($m)** | **DRP gap ($m)** | **Base rate gap on new debt ($m)** | **Total ($m)** |
| 2040 | 1,100 | 4.70 | 4.86 | –1.8 | –0.45 | 0.0 | –0.45 |
| 2041 | 1,200 | 4.90 | 5.17 | –3.2 | –0.80 | 0.0 | –0.80 |
| 2042 | 1,300 | 5.10 | 5.42 | –4.2 | –1.05 | 0.0 | –1.05 |
| 2043 | 1,400 | 5.30 | 5.64 | –4.8 | –1.20 | 0.0 | –1.20 |
| 2044 | 1,500 | 5.50 | 5.83 | –5.0 | –1.25 | 0.0 | –1.25 |
| 2045 | 1,500 | 5.70 | 5.97 | –4.0 | –1.00 | 0.0 | –1.00 |
| 2046 | 1,500 | 5.90 | 6.10 | –3.0 | –0.75 | 0.0 | –0.75 |
| 2047 | 1,500 | 6.10 | 6.23 | –2.0 | –0.50 | 0.0 | –0.50 |
| 2048 | 1,500 | 6.30 | 6.37 | –1.0 | –0.25 | 0.0 | –0.25 |
| 2049 | 1,500 | 6.50 | 6.50 | 0.0 | 0.00 | 0.0 | 0.00 |
| Total | | | | –29.0 | –7.25 | 0.0 | –7.25 |

*Source: CEG illustrative calculation, the mirror image of Table D-1: debt needed rises by $100 million a year from 2040 to $1,500 million in 2044; vintages from 2040 carry a base rate of 4.5 per cent and a DRP of 2.0 per cent, and the five-year swap rate is 4.5 per cent at the 2040 reset. The new debt is borrowed at a floating rate of about 4.5 per cent, or fixed at the 2040 reset with forward-starting swaps, so there is no base rate gap. Section D.7 shows the case in which rates rise only after the 2040 reset and the growth was not foreseen. 'RAB scenarios' sheet of the accompanying workbook.*

## D.7 When rates move, and whether the change was foreseen

173. The results in Tables D-1 and D-2 assume that rates had already risen by the 2040 reset, at which the change in the RAB begins. Table D-3 shows what happens if instead the five-year swap rate is still 3.0 per cent in the 2040 averaging period and rates rise immediately afterwards, and distinguishes between a change in the RAB that the business foresaw at the 2040 reset and one that it did not.

174. Three points stand out. First, when rates have moved before the change begins, the trailing average leaves a gap that nothing the business can do will close, while the hybrid leaves only the DRP. That is the usual case, because a ten-year average of rates almost always differs materially from current rates (Figure 4-1). Second, when the change is foreseen and rates move only afterwards, the business can protect itself under either benchmark, but the means are very different. Under the hybrid it takes a single amortising or forward-starting swap at the reset. Under the trailing average it takes the programmes of swaps described in sections D.4 and D.5 – swaps on the part of the debt that the allowance treats as belonging to other vintages, and further swaps each year as each new vintage enters the average – and even that closes the base rate gap in this example only because the rates of 2030 to 2039 happen to equal the 2040 swap rate. Third, when the change is not foreseen, both benchmarks miss by about the same amount over the decade, but under the hybrid the base rate miss

ends at the next reset. In none of the cases does the trailing average perform materially better than the hybrid.

Table D-3: Allowance less actual cost of debt over 2040 to 2049, by when rates rise and whether the change in the RAB was foreseen ($ million)

| Case | Declining RAB: trailing average | Declining RAB: hybrid | Growing RAB: trailing average | Growing RAB: hybrid |
|---|---|---|---|---|
| Rates rise before the 2040 reset (whether or not the change in the RAB was foreseen) | 29.0 | 7.25 | –29.0 | –7.25 |
| Rates rise after the 2040 reset; change foreseen; trailing average business enters the programmes of swaps described in sections D.4 and D.5 | 7.25 | 7.25 | –7.25 | –7.25 |
| Rates rise after the 2040 reset; change foreseen; no programme of swaps | 29.0 | 7.25 | –29.0 | –7.25 |
| Rates rise after the 2040 reset; change not foreseen | 29.0 | 29.75 | –29.0 | –29.75 |

*Source: CEG illustrative calculation. The first row is the case in Tables D-1 and D-2, in which the five-year swap rate is 4.5 per cent at the 2040 reset. In the other rows the five-year swap rate is 3.0 per cent in the 2040 averaging period and rates rise immediately afterwards, so that the 2040 vintage and floating rates from 2040 reflect the rise; all other inputs are as in Tables D-1 and D-2. In each case the hybrid business hedges the change it foresees at the 2040 reset with an amortising or forward-starting swap. In the last row, 22.5 of the hybrid's 29.75 arises in the base rate in 2040 to 2044 and ends at the 2045 reset. 'RAB scenarios' sheet of the accompanying workbook.*

## D.8 If the RAB falls faster than the debt can run off

175. The example in section D.5 assumes that the decline is known in advance and proceeds at the pace of natural run-off, 10 per cent of the original portfolio a year. If the RAB falls faster than that (say 15 per cent a year), letting debt run off is not enough, and the business ends up with more debt than the benchmark gearing implies. After five years it would hold $500 million against a requirement of $250 million. If it holds the surplus as cash, it pays the DRP and any bank margin on $250 million of debt that the allowance does not cover, about $3.75 million a year at a DRP of 1.5 per cent; if it buys bonds back, it realises instead the change in their value since issue. The DRP part of that cost is the same under every benchmark. It is a consequence of being over-geared relative to the benchmark, not of the choice between the hybrid and the trailing average, and neither benchmark solves it. What the choice of benchmark does affect is the base rate. Under the hybrid the excess bonds have been swapped to floating and the surplus cash earns floating, so the only fixed rate position on the excess is the part of the five-year swap that was sized to the slower decline that was expected, and that ends at the next reset. Under the trailing average the excess is 10-year fixed rate debt, which runs for up to ten years, and buying it back realises the change in its value since issue, base rate included. And under an unweighted trailing average the phantom vintage mismatch on the $250 million the business does need comes on top: in 2044, 5.5 per cent against 4.5 per cent on $250 million, or $2.5 million in that year.

## D.9 Summary

176. Table D-4 summarises the comparison.

Table D-4: Hedging to each benchmark on a stable, a growing and a declining portfolio

| | *Full trailing average (unweighted)* | *Hybrid* |
|---|---|---|
| Base rate compensation | Equal-weighted average of ten years of 10-year rates | Five-year swap rate at the start of each access arrangement |
| What replicates it on a stable portfolio | Ten equal tranches of 10-year fixed-rate debt, one refinanced each year (or a floating portfolio and ten 10-year swaps) | A floating portfolio and one five-year swap on the whole portfolio |
| Growing RAB | New debt is compensated at the ten-year average, not at the rate paid, and cannot be hedged simply: a weighting scheme is needed for investment incentives | New debt is compensated at the reset swap rate, not at the rate paid, but growth foreseen at the reset can be hedged then with a forward-starting swap, leaving only the DRP: a weighting scheme is needed for investment incentives |
| Declining RAB, at or below the pace of run-off | Cannot be replicated: the allowance includes vintages the business never issues; gap on the base rate as well as the DRP for up to ten years | One amortising five-year swap sized to the expected path of the portfolio; mismatch confined to the DRP |
| Declining RAB, faster than run-off | Excess debt relative to benchmark gearing; DRP and margin on the excess uncompensated (the same under both); the excess is 10-year fixed rate debt | The same excess debt cost; the only fixed rate position on the excess is the residual five-year swap, which ends at the next reset |
| Weighting schemes developed to date (declining RAB) | AER: treats a fall in the debt requirement as investment in BBB bonds; ENA/QTC: same as unweighted for a stable or falling RAB | Not needed for the base rate when the RAB declines; the DRP would need the same treatment as under the trailing average |
| Example: portfolio halving (or growing by half) over five years after 10-year rates have risen 2 pp | $29.0 million over-recovery when the portfolio halves and $29.0 million under-recovery when it grows (signs reverse if rates have fallen) | $7.25 million either way (DRP only); nil if the whole change is in the base rate |

*Source: CEG.*