Rate of Return Instrument Review

Response to AER's Draft Instrument and Explanatory Statement

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energy
Networks
Australia

Contents

1   Overview

Energy Networks Australia (ENA) welcomes the opportunity to provide a response to the AER's recent *Draft Rate of Return Instrument* and the associated *Explanatory Statement*.

The AER's finalisation of the 2022 Rate of Return Instrument (RoRI) is occurring across a period of unprecedented global market conditions and associated volatility in capital markets. The AER has previously positively recognised the importance of its future Instrument being capable of delivering robust rate of return estimates that match the market return required by investors in the individual determinations through which it is applied.

This is critically important given the 2022 RoRI will apply during the critical years of the energy transition. The AER will need to ensure that the RoRI provides sufficient returns to enable much-needed investment to facilitate the connection of renewables. This will help to address energy shortfalls (as identified in AEMO's 2022 *Electricity Statement Of Opportunities* published on 31 August 2022) and put downwards pressure on the wholesale price. Getting the settings wrong, or putting in place a RoRI that will not perform under the economic conditions that may arise, could lead to an energy transition that results in higher costs and risks for Australian energy customers. The draft 2022 RoRI requires modification in the ways explained in this submission to be fit to perform its critical role underpinning much-needed regulated network investment.

Context for final Instrument: providing a sustainable return to support needed investment

The 2018 Rate of Return Instrument encountered financial and market conditions which severely tested its settings. During periods of historically low Commonwealth bond rates the previous Instrument produced outcomes in network revenue determinations which were unprecedented – including allowed returns that resulted in negative net profit after tax across the period of the determination and cash allowances not sufficient to pay the benchmark firms interest bill. The 2022 Instrument may well encounter similar challenging market conditions, and this potential should inform its design.

A range of evidence highlights that current return on equity settings are capable of producing unsustainably low equity allowances. The Brattle report commissioned by the AER in 2020 demonstrated that the AER's allowed return on equity approach was producing outcomes that were by every metric lower than that of all comparable regulators that were examined.

Energy Networks Australia has commissioned Brattle to update these findings taking into account recently made international decisions. This updated report finds that on a comparable basis AER's equity risk premium allowances still fall well below all but one regulator examined, due to the AER's systematically lower parameter estimates (see Attachment A).

Against this background, the AER proposes an effective further material reduction in equity allowances, relative to its 2018 approach. If implemented, these proposals would move the AER further below commercial and regulatory benchmarks, at the same time as investment needs identified as urgent grow.

In the case of major transmission investments, consumers have been assessed as benefiting on average by $2.20 for every dollar of investment made. In contrast, delays in these projects arising due to financing constraints have the potential to impose significant consumer harm through increased wholesale energy charges.

Proposed change to term of equity: disruption of regulatory precedent

The AER is proposing to overturn every previous decision on the term of the risk-free for equity it has made since establishment, and effectively reduce the term for equity from 10 years to 5 years.

If implemented, this proposal would mean the AER would hold a position inconsistent with the approach adopted by every Australian regulator, the AER's own approach in estimating the cost of debt, and clear evidence of market practice (including with respect to independent expert reports on networks regulated by the AER).

The AER's proposed change occurs in precisely the opposite direction to a range of state-based regulators who have recently affirmed the standard 10-year approach. Internationally, where longer-duration liquid government bonds are available, use of terms between 10 and 30 years is common.

This change is being pursued in circumstances in which there is no agreement between multiple stakeholder groups on the conceptual and empirical basis for the proposed change.

One perverse impact of the proposed change would be to deliver customers relatively higher network charges in periods of financial crisis or recession than the current approach based on the more stable 10-year rate. As the potential of global recession looms from a range of international events, and cost of living pressures on Australian households and businesses rise, it is difficult to understand how this proposal can be assessed as delivering outcomes in the interests of consumers.

Analytical basis of proposed change to term of equity: new evidence

Since the draft Instrument was released, ENA has submitted for AER consideration important new evidence which directly addresses the primary basis for the proposed change in approach. In advice to AER, Dr Lally has advised that earlier work by Emeritus Professor Richard Schmalensee showed that satisfaction of the NPV=0 principle required a term-matching approach.

In an expert report already submitted Professor Schmalensee explains that this earlier work does not show that the NPV=0 principle requires that the term of the allowed return must match the length of the regulatory period. It also highlights that Dr Lally in his advice to the AER and previous reports has fundamentally misunderstood and misinterpreted the earlier Schmalensee paper. He further confirms that the appropriate regulatory task is for the regulator to set the allowed return equal to the return that real-world investors actually require. Finally, the expert report concludes that the alternative mathematical derivations set out in the AER's draft Explanatory Statement which are stated to not rely on Dr Lally's mathematical analysis, but to support the proposition of term-matching, adopt assumptions that cannot be defended.

These three findings in this new report have critical implications for the soundness of the analytical basis underpinning the draft proposal to move to a term-matching approach based on consistency with NPV=0 conditions, Dr Lally's advice to the AER, and the AER's own mathematical analysis of this issue. This submission also highlights other additional critical problems that have been found in the AER's alternative mathematical analysis.

The expert advice reinforces a fundamental conclusion of every previous AER decision: that matching the allowed return to the market cost of capital investors use completely satisfies the NPV=0 principle. Elements of the June draft Explanatory Statement re-interpreting the conditions for meeting NPV=0 represent a significant potential disruption to regulatory confidence, stability and predictability. Taken on their face, they suggest the implausible conclusion that every other infrastructure regulator in Australia,

as well as all across European and American markets, have misconceived their fundamental regulatory task.

Meeting legislative requirements and NPV=0 requires reflecting real-world investors' required returns

Drawing on guidance from the legislative framework being applied by the AER, and past considerations of key concepts within that framework, a movement to a term-matching approach is not a requirement, nor an implication of the NPV=0 principle.

This is because applying the conceptual framework of setting a rate of return for a benchmark efficient entity properly involves looking at the outcomes of a workably competitive market and making no assumptions about the regulated status of the benchmark entity. This is in direct conflict with the fundamental conceptual basis of the AER's draft proposals to move to 'term-matching'.

A critical consideration for the AER in this area is that should the AER move to implement a 'term-matching' approach in an environment where investors do (and continue to) estimate returns based on a 10-year approach, the NPV=0 principle will not be satisfied.

This will arise as the resulting allowed return in every year will, on average, be lower than investors' required return. This will mean the systematic compromising of efficient investment incentives over the nine year operation of the Instrument, negating the satisfaction of key elements of the Revenue and Pricing Principles and National Energy Objectives. That is, the long-term interests of consumers in efficient investment in, and operation and use of, network services will be undermined by distortions in investment signals, and pricing signals for network usage by customers.

ENA provides further responses to these issues in Section 4 of the submission and has sought to address each conceptual argument set out in the draft Explanatory Statement that are said to support a 5-year term (see Table 4, p.49).

Reaching a robust and unbiased market risk premium approach

In response to the AER's request for submissions in relation to Options 1 and 3b network businesses maintain the view adopted throughout the course of this review – and previous rate of return reviews – on the benefits in recognising the greater stability of overall cost of equity estimates than risk-free rates. ENA remains concerned about the robustness of the AER's preferred approach to unusual economic conditions, such as a return to the low-rate conditions that eventuated after the 2018 RoRI. This is particularly the case given the urgency of the energy transition – the stakes of a RoRI that breaks under certain conditions have never been higher.

Networks continue to prefer an approach that applies some material weight to an unbiased DGM approach – such as option 3b using the calibrated DGM or some other specification that produces estimates that are consistent with observed historical outcomes, on average. Any DGM specification that produces estimates that are systematically different from observed outcomes (i.e. the HER estimate) should not be used. The AER's proposed specification produces does this, producing estimates that are materially lower than observed outcomes, on average. This introduces a downward bias into allowed returns.

The draft Instrument's proposals in this area highlight a significant issue with the predictable and stable assessment of evidence in the current process.

Having identified in 2018 a number of issues that led to the AER giving no weight to the DGM evidence, the AER has rejected a specifically developed ENA approach that was tailored to addressing those AER issues, and reverted to the specification that was previously so problematic that it received no weight. No

reasoning has been provided as to this proposed shift in AER views, and there is no new evidence discussed. Indeed, the AER's key criticisms of the industry developed calibrated DGM approach apply equally to the AER's now preferred DGM specification.

Moving estimation of beta forwards towards a new approach

One of the most significant issues to be addressed through the 2022 review is the breakdown in data availability for, and robustness of, beta estimates reliant on listed Australian comparators. This was an entirely foreseeable possibility that was raised and regularly discussed even prior to the 2018 review.

Despite this, the draft Instrument proposes that a data set with a single live comparator should continue to receive predominant weight. This falls well short of regulatory best practice. Other Australian and international regulators have faced the same problem, and been proactive in development of international or other comparator sets to assist in estimating this key regulatory parameter. The AER's allowed equity beta is now implausibly lower (by 25%) than networks regulated under the same regulatory regime in Western Australia, and similar regimes in New Zealand, North America and Europe.

This highlights the urgent need for active steps by the AER to develop and consult on approaches to the incorporation of international evidence to beta estimates. Undertaking this work would also be consistent with the Independent Panel report recommendations. In the period prior to the final Instrument, the AER should move to ensure it attaches real weight to international beta evidence in its decision, to provide directional clarity on its approaches in this area.

Testing the robustness of the draft Instrument approach

Network businesses consider that there is no reasonable basis for the conclusion that RAB multiples provide any support for the adequacy of the AER's allowed return on equity.

An aggregated RAB multiple is only informative if a reliable disaggregation can be performed. Frontier's analysis of CEPA examination of the Spark Infrastructure and AusNet Services transactions has shown that CEPA's analysis is not a reliable disaggregation that can in any way inform the AER's rate of return considerations. For example, the presence of any significant 'premium' in the case of AusNet is wholly reliant on dismissing independent expert valuations of unregulated business units, and the substitution of improbably low estimates.

The AER's cross-checks in this area should, instead of further pursuing this flawed exercise undertaken by CEPA, incorporate consideration of the direct evidence of investors expected long-term equity returns that are provided in the same independent expert reports. These are well above the allowed returns which would result from the draft Instrument, and those provided by the 2018 Instrument.

Similarly, ENA considers that AER's rate of return estimation processes should systematically be informed by the estimation approaches, data and methods employed, and ways in which other economic regulators exercise their discretion. As the Independent Panel, and expert advice commissioned by the AER has indicated, this provides a potentially valuable tool. In particular, it would assist the AER to understand what is driving its allowed return on equity to be lower than that of comparable regulators, and determining whether any revision of the AER's approach might be warranted.

Next steps – towards a final Instrument that promotes the long-term interests of consumers

Significant choices lay before the AER as it finalises its Instrument. Networks are appreciative of the complexity and challenging nature of the task. We are also appreciative of the engagement of AER staff and Board in the significant consultation process undertaken to date.

Recognising the complexity and difficulty of the task, ENA has sought to:

» Consider the impact of key proposed approaches on the long-term interests of consumers, in a manner consistent with the framework required to be applied by AER (see **Impacts Summary Table** below)

» Bring significant new evidence on review relevant issues to the attention of the AER's staff and Board as early as possible

» Develop and take feedback on proposed alternative models and estimation methodologies which aim to genuinely address and engage with prior AER decisions and reasoning

» Focus on the outstanding review issues or design options as identified by the AER

» Put forward approaches and models that are well supported in theory and practice, building on either current or previous approaches of the AER and other similarly tasked bodies

Draft decisions play an important role in the AER's consultation processes. They provide a valuable opportunity to comprehensively 'stress test' the robustness of potential changes in AER approaches, through enabling all stakeholders the opportunity to provide further information, insights and feedback.

Regulatory confidence, transparency and predictability critically relies on the capacity of the AER to integrate the wide range of information and perspectives offered into a robust, high quality framework capable of underpinning billions of dollars of new and ongoing investment to support essential services for energy customers.

For this reason, a draft Instrument being capable of change based on further or fuller consideration of stakeholder perspectives and evidence provided to the AER, is a key condition for decisions that promote the long-term interests of current and future consumers.

Impacts Summary Table - Customer impacts of network positions and proposals – Rate of Return

Networks proposed approach	Impact on long-term interests of consumers
Retain 10-year term of cost of equity	Ensures efficient levels of network investment and usage, enabling customers to benefit from the right mix of network and non-network investments, maximising value from customers' investments in solar, storage, and enabling competitive wholesale prices and mitigating electricity shortfalls through timely connect of new remote renewable sources. Avoids consumers paying higher network charges than under the current approach at times of economic recession or financial crisis.
Use Calibrated Dividend Growth model to inform market risk premium estimates	Provides for greater stability in allowed return on equity estimates, and network charges. Provides a more forward-looking risk premium estimate, avoiding sole reliance on an untestable assumption that expectations exactly match long-term historical returns, improving the likely quality of the resulting rate of return estimate.

Assess the financeability impacts of Instrument on a benchmark basis as a key decision cross-check	Ensures rate of return decision is internally consistent, supporting an unbiased estimate which is consistent with efficient investment, operation and usage decisions. Where the estimate has these characteristics, it will serve to maximise the value derived by customers from the grid, and customer's own energy investments and choices (such as solar, storage and usage decisions).

2   Summary of key positions

This section summarises the key submissions of Energy Networks Australia.

2.1   Review context: Return on equity to support needed investment

» When considering the allowed return on equity, the relevant context is that:

— The Brattle report commissioned by the AER demonstrated that the AER's allowed return on equity (under the 2018 RoRI) was, by every metric, lower than that of all comparable regulators that were examined. Brattle concluded that the AER's approach was "not as effective" as that of other regulators.

— The independent expert valuation reports prepared as part of the recent Spark Infrastructure and AusNet Services transactions concluded that the current market cost of equity capital (with gearing at 60%) is 200 basis points higher than the allowance under the 2018 RoRI.

— The 2018 RoRI was not robust to the market conditions that followed its publication. For example, some key features of the 2020 SAPN decision were:

  a. An allowed return that produced negative NPAT; and

  b. A cash allowance that was not sufficient to pay the benchmark firm's interest bill.

» It is one thing to say that equity holders might receive a lower cash allowance now in lieu of a promise to recover that in the future via RAB indexation. It is a bigger step to ask equity holders to provide *more* equity to cover a shortfall in the return on debt allowance – with a promise that RAB indexation will provide the entire allowed return on equity plus recovery of the additional equity they are asked to contribute. Particularly during a period where record network investment is required.

» The 2022 draft RoRI now proposes to *reduce* the allowed return on equity relative to maintaining the 2018 approach.

» ENA questions whether now is the right time to be applying a further reduction to an allowed return on equity that is already below commercial and regulatory benchmarks.

» Networks are being asked to invest very material amounts of new capital to support and enable the decarbonisation of the Australian economy. The AEMO ISP estimates that consumers will receive $2.20 of benefits for every dollar of new network investment.

2.2   The term for the allowed return on equity

The important role of draft decisions

» ENA notes the important role that draft decisions play within the AER's consultation process. The draft decision ventilates any potential changes to the AER's regulatory approach, giving all stakeholders an opportunity to provide considered feedback. The AER then considers all relevant information before making its decision in the 2022 RoRI document.

» The AER has used previous draft decisions to ventilate potential changes. For example, in 2009 the AER used that part of the process to consider a potential change to the term of debt and equity, before considering all feedback and maintaining a 10-year term in its final decision. We consider that to be an example of a well-functioning regulatory system.

» In our view, the evidence to support a 10-year risk-free rate is compelling and we appreciate the opportunity to set out that evidence for the AER's consideration prior to making its decision on this important issue.

Setting and context

» The AER is considering a reduction in the allowed return on equity by effectively reducing the term of the risk-free rate from 10 years to 5. This potential change would be inconsistent with:

  – Every previous decision made by the AER;

  – The AER's approach to the allowed return on debt;

  – The approach adopted by every other Australian regulator;

  – The approach adopted in every independent expert report, including those for networks regulated by the AER;

  – The clear evidence of market practice, including the practice of infrastructure investors; and

  – The approach recommended by leading textbooks.

» The change is being considered in circumstances where:

  – The change has been driven by the AER and not stakeholders;

  – There is no new evidence or argument that has not been previously considered by the AER on many prior occasions; and

  – Record network investment is required over the coming decade to meet Australia's decarbonisation commitments and unlock cost savings for consumers

  – There is no agreement between multiple stakeholder groups on the conceptual and empirical basis for the change.

» Network investors are very concerned about:

  – The proposed change to a 5-year term, itself; and

  – The implications for the stability and predictability of the regime and confidence in the regulator.

» One implication of the proposed change is higher prices for consumers during deep recessions and financial crises, when the 5-year rate tends to be higher than the 10-year rate.

The nub of the issue

» The key question is whether the allowed return should be set to match the return that real-world investors actually do require or according to what the AER considers investors should require to compensate them for risk, based on the outworking of some mathematical analysis. The AER proposes that a 5-year risk-free rate should be sufficient over the course of each regulatory period and that anything more will result in over-compensation.

» Consider the case where all parameters remain fixed over time, and in each regulatory period the AER allows a 5-year return but investors require a 10-year return. In this case:

  – Investors will consider that NPV<0 for this regulated asset – because the allowed return in every year is lower than their required return; but

  – The AER proposes that investors should have discounted the cash flows using a 5-year risk-free rate, in which case they should have computed that NPV=0 for that asset.

ENA's primary submissions

» Our primary submissions are that:

- The appropriate regulatory task, consistent with NPV=0, is for the regulator to set the allowed return to match the market cost of capital – the rate of return that network investors require; and

- The mathematical analysis that is used to support a 5-year term is flawed, for reasons explained in this submission and the attached Schmalensee report (Attachment B).

The proper implementation of NPV=0 is to match the allowed return to the market cost of capital

» ENA submits that NPV=0 requires that the allowed return must be set to match the return that real-world investors actually do require.

» This is because the *raison d'etre* for NPV=0 is to incentivise efficient investment, which promotes the NEO and NGO. Efficient investment is incentivised by setting the allowed return to just match the market cost of capital that is required *by the investors* who will be making that investment. A change in what the AER considers investors should require will have no impact on the returns that investors actually do require. The AER has previously recognised that setting the regulatory allowance above or below the return that investors actually require will incentivise inefficient levels of investment in, and inefficient levels of use of, energy networks.

Why does the AER now consider a change to its long-standing approach?

» The June 2022 draft decision proposes two key reasons for the potential change in the AER's approach:

- A 5-year term is required to preserve consistency with the approach to regulatory inflation (for equity only; not for debt); and

- Even though the evidence shows that investors do use a 10-year risk-free rate, the AER concludes, from its mathematical analysis, that investors should use a 5-year risk-free rate, so that must be used otherwise they will be over-compensated. This is also expressed as the AER having a unique task – to ensure that NPV=0 is achieved.

Why the term for regulatory inflation is still irrelevant

» Regulatory inflation and the allowed return on equity are independent parameters that have different roles in the AER's regulatory framework, such that the term adopted for one has no implications for the other:

- The role of regulatory inflation is to 'take out what is expected to be put back in.' The term is set by the RFM, which 'puts back in' 5-years of inflation.

- The role of the allowed return on equity is to match the market cost of equity capital to provide network investors with the appropriate incentive for efficient investment.

» The AER's December 2021 *Omnibus Paper* concluded that the term for regulatory inflation had no relevance to the allowed return on equity (or debt), noting that:

- Its decision is informed by the advice from Dr Lally (including his mathematical analysis);

- The term for expected inflation is determined by RAB indexation in the RFM and not the term of the allowed return in the PTRM; and

- Adopting a 5-year term for inflation and a 10-year term for allowed returns results, in expectation, in the nominal rate of return and the real rate of return being achieved over the regulatory period.

» The AER's potential new proposed position is that 5-year inflation and a 10-year allowed return creates a 'mismatch' that must be corrected (but only for equity). The main problems with this new position are:

  − The new position in relation to equity is inconsistent with the AER's position in relation to debt;

  − The new position is not based on any new evidence since the working papers in which the AER concluded that the terms for inflation and equity are independent;

  − The new position is contrary to the AER's own expert advice;

  − There is no mathematical basis for a reversal in the AER's position; and

  − There is no logical basis for a reversal in the AER's position.

The NPV=0 principle has not changed since December 2021: It still requires a match to the market cost of capital

» Our view is that NPV=0 still requires that the allowed return must be set to match the return that real-world investors actually do require, as it has since the inception of the AER.

» We agree that the AER's role is to ensure that the compensation that network investors receive over each regulatory period is just sufficient to promote efficient investment. This is achieved by setting the regulatory allowance to match the return that network investors actually do require, not the return that the AER considers that network investors should find sufficient. This has always been the case, and it remains the case now.

The AER's first piece of mathematical analysis (pp. 103-104 of the *Explanatory Statement*)

» The AER sets out an equation that establishes that NPV=0 is achieved if the allowed return matches the return that investors require. There are two ways to achieve that equality:

  − Assume that investors require (or should require) a return that is equal to whatever the AER allows; or

  − For the regulator to set an allowed return equal to the return that real-world market investors actually do require.

» Professor Schmalensee from MIT, on whose work the Lally and AER maths is based, concludes that the way in which Dr Lally adopts the first of these approaches is "*an amazing bit of sleight of hand.*"[1]

» Professor Schmalensee also notes that the AER has adopted the first of these approaches (although only for the return on equity). He concludes that he has "*no idea how this assumption can be defended.*"[2]

The AER's second piece of mathematical analysis (pp. 109-110 of the *Explanatory Statement*)

» The AER sets out an equation that purports to show that NPV=0 is violated if the allowed return does not match the term of the regulatory period.

» This analysis considers the case where the investors' required return (i.e., the market cost of capital) changes from one regulatory period to the next.

» The AER updates the allowed return in the numerator of this equation to reflect the change in the market cost of capital, but does not update the discount rate in the denominator.

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[1] Schmalensee, R., July 2022, *Statement of Richard Schmalensee PhD to the Australian Energy Regulator*, p. 9.
[2] Schmalensee, R., July 2022, *Statement of Richard Schmalensee PhD to the Australian Energy Regulator*, pp. 9-10.

» Professor Schmalensee concludes that "*The cost of capital as assessed in period 1 is assumed by the AER to discount cash flows during period 2 even though, by hypothesis, it has changed between the two periods. I have no idea how this assumption can be defended either.*"[3]

The AER's elevation of its new interpretation of NPV=0

» In its previous decisions, and in the current *Explanatory Statement*,[4] the AER has interpreted the NPV=0 as setting the allowed return to match the return that real-world investors actually require. This creates the right incentive for efficient investment, which best promotes the NEO and NGO.

» The draft RoRI proposes a new interpretation of NPV=0 whereby a 5-year risk-free rate must be used because only that term will work cleanly in the AER's mathematical analysis which contains a simplifying assumption that could not hold in reality.

» Even if the AER's mathematical analysis was correct, this new approach would be problematic because it:

  – By design, breaks the nexus between NPV=0 and efficient investment (because network investment decisions are made with reference to the returns that network investors actually require), and therefore does not best promote the NEO and NGO; and

  – Elevates the conclusions from the AER's mathematical analysis above all other considerations.

2.3 Market risk premium

Overview

» ENA maintains the view adopted throughout the course of this review (and previous rate of return reviews) on the benefits in recognising the greater stability of overall cost of equity estimates than risk-free rates. We remain concerned about the robustness of the AER's approach to unusual economic conditions, one example of which is the low-rate scenario that eventuated after the 2018 RoRI.

Historical excess returns approach

» ENA agrees that:

  – Only arithmetic means should be used, and a clear statement about this could prevent this debate from continuing in 2026 and 2030; and

  – The Mathews (2019) estimates are unreliable and should receive no weight.

» ENA notes that the proposed basis for the HER approach is that the MRP that investors will expect/require (on average) in the future is what they have observed (on average) over the past 30 years. [5]

DGM approach

» A key requirement of any DGM estimate is that it must produce estimates that are unbiased over time. Any DGM specification that produces estimates that are systematically different from observed outcomes (i.e., the HER estimate) should not be used.

» In this regard:

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[3] Schmalensee, R., July 2022, *Statement of Richard Schmalensee PhD to the Australian Energy Regulator*, pp. 9-10.
[4] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 57.
[5] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, pp. 128-129.

- The calibrated DGM produces an unbiased average estimate by construction;
- By contrast, the AER's proposed specification produces estimates that are materially lower than observed outcomes, on average. This introduces a bias into allowed returns.

» This submission identifies a number of other problems with the AER's analysis of the DGM approach, including:

- Having identified in 2018 a number of issues that led to the AER giving no weight to the DGM evidence, the AER has rejected ENA's approach that addresses those issues, and reverted to the specification that was previously so problematic that it received no weight;
- There appears to be an error in the formula that the AER proposes to use for long-run growth;
- The proposed approach introduces unnecessary noise by first estimating the 10-year MRP and then making an unexplained adjustment, rather than simply estimating the 5-year MRP directly; and
- The AER's key criticisms of the calibrated DGM approach apply equally to the AER specification.

Total market return / Wright approach

» The choice between the HER and Wright approaches is not a binary one. Weight should be given to each estimate according to its relative strengths and weaknesses.

» A balanced assessment of the theoretical support for each approach would involve a symmetric weighing of the evidence. By contrast, the AER appears to apply an impossibly high standard of theory to the Wright approach, and none at all to the HER approach. For example, the HER estimates fall during periods of recession and financial crises which is inconsistent with theory and logic.

» The empirical evidence also supports weight being given to the Wright approach:

- There is compelling evidence of a negative relationship between MRP and risk-free rates over the last 30 years, which the AER has concluded is the period of most relevance. This evidence favours the Wright approach.
- The draft decision relies heavily on the stability tests conducted by Dr Lally. However:
  - Those tests do not relate to the 30-year period that the AER has concluded to be most relevant in forming investor expectations. Over the relevant period, the two approaches have similar stability.
  - In any event, the stability tests do not support weights of 100% and 0%, respectively; and
  - The AER's conclusions in relation to these stability tests are inconsistent with Dr Lally's recommendation that the AER should apply equal weight to the HER and Wright estimates.[6]

Other data sources

» ENA agrees that there is no useful role for:

- Survey responses; or

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[6] https://www.aer.gov.au/system/files/AER%20-%20Concurrent%20Evidence%20Session%203%20-%20Proofed%20transcript%20-%20February%202022.pdf, p. 66.

― Conditioning variables.

Continuing consultation

ENA notes that the draft RoRI is for the MRP allowance to be based on the HER method only. ENA remains committed to the incorporation of other relevant evidence in an unbiased manner and proposes that constructive consultation on this issue should continue after the 2022 RoRI with a view to producing an agreed method prior to the next RoRI.

2.4　　　Equity beta

An inadequate comparator set

» That the AER's comparator set has only a single live member is one of the most significant issues to be addressed by the AER during the 2022 RoRI review. As the set of domestic comparators evaporates towards zero and becomes more and more out of date, the AER must logically have less confidence in it.

» However, the draft RoRI proposes that the domestic data set, which is now materially smaller and materially more out of date than at the time of the 2018 RoRI, should continue to receive the same predominant weight.

» In our view, it is untenable for the AER to have effectively exclusive regard to a set of comparator firms, all but one of which no longer exist. This falls well short of regulatory best practice.

Are networks regulated by the AER really materially less risky than all others?

» Other Australian and NZ regulators have recognised the problem of a very small set of domestic comparators and have due regard to international comparators.

» The equity betas adopted by other regulators of electricity networks are 33% or more higher than the AER's beta estimate. The ERA adopts a (like-with-like) equity beta of 0.79 and all others adopt equity betas above 0.8. It is implausible that the networks regulated by the AER are so much less risky than those in Western Australia operating under the same regime and New Zealand.

Other regulators have been able to incorporate international evidence. There is still time for the AER to do so

» Throughout the current RoRI process the AER has undertaken to "lay the foundation" for how it would have regard to other relevant evidence as the domestic comparator set evaporates. Unfortunately, the draft decision lays no such foundation, providing no guidance at all on how the AER would deal with a potentially null set of domestic comparators in the future.

» We note the Independent Panel's recommendation for further urgent work in this area and reiterate our offer to work with the AER and other stakeholders to develop an approach for incorporating international evidence – similar to the way it has been incorporated by other Australian and NZ regulators.

» ENA considers the three and a half months that remain before the publication of the Final RoRI to be adequate time to properly incorporate the relevant international evidence, as other regulators have done.

2.5   Other parameters and approaches

» ENA supports the AER's proposed approach to benchmark gearing and the proposed estimate of 60%.

» ENA supports all aspects of the AER's approach to the allowed return on debt, including:

– The proposed credit rating of BBB+;

– The proposed benchmark term of debt of 10 years;

– Maintenance of the simple trailing average approach;

– Continued use of independent third-party data sources (RBA, Bloomberg and ThomsonReuters); and

– The AER's proposed changes to the allowed return on debt averaging period, although recognising that this will increase hedging costs for some networks.

» ENA maintains the view that gamma is properly interpreted as the market value of dividend imputation franking credits. However, ENA does not press this issue in this submission – in light of the number of high-priority issues to be resolved before the Final RoRI.

2.6   Cross checks

RAB multiples

» ENA considers that there is no reasonable basis for the conclusion that RAB multiples provide any support for the adequacy of the AER's allowed return on equity.

» A RAB multiple above 1 indicates only that investors are prepared to pay more than the current RAB for the sum of the allowed returns on the current RAB, incentive payments, unregulated assets, future projects, and all other sources of value.

» The aggregated RAB multiple is only informative if a reliable disaggregation can be performed.

» The CEPA analysis is not a reliable disaggregation that can be relied upon.

» ENA also notes that stakeholders and the AER's Panel have not had an opportunity to comment on how the AER might intend to have regard to the CEPA report. In addition to our concerns about the substance of that report, we also have concerns about the process in relation to it.

Recent transaction evidence / independent expert estimates of required returns

» Independent expert estimates of the market cost of equity capital have recently been prepared for two electricity network businesses that are regulated by the AER. Both report that the current market cost of equity capital is materially higher than the AER's current regulatory allowance.

» ENA continues to consider this to be highly relevant and informative evidence. This evidence, and ENA's detailed submissions in relation to it, were not addressed in the draft decision. In our view, this falls short of acceptable regulatory practice.

Comparable regulatory determinations

» ENA considers that the AER's estimation process might be informed by information about:

– The types of data that other regulators consider;

– The statistical and other methods that other regulators use to estimate parameters; and

– The way in which other regulators exercise their regulatory judgment.

— This information would be highly relevant in assisting the AER to understand what is driving its allowed return on equity to be lower than that of comparable regulators, and determining whether any revision of the AER's approach might be warranted.

Financeability analysis

» ENA supports the AER's draft decision that financeability analysis, performed on a benchmark basis, would be an appropriate cross-check on the allowed rate of return.

» ENA notes that:

— The financeability analysis presented by the AER indicates that 25% of NSPs analysed by the AER fail the financeability test.

— The target FFO to net debt threshold of 7% used by the AER in its financeability test appears to have been set unreasonably low, making the test too easy to pass. Raising the benchmark FFO to net debt threshold to 9% would result in 66% of NSPs considered by the AER failing the financeability test.

— It appears that some NSPs that pass the AER's test only do so because of higher depreciation allowances—not because the allowed rate of return is set to an appropriate level.

— All the electricity distribution networks subject to a recent draft determination by Ofgem achieve materially stronger credit metrics than nearly all of the NSPs regulated by the AER under the draft 2022 RoRI. This suggests further that the allowed rate of return under the draft 2022 RoRI is unreasonably low.

Scenario analysis

» Scenario testing should play a role similar to that of stress testing in the banking industry. That is, a range of plausible scenarios are examined and the outcomes from each are considered to see whether there are any plausible scenarios in which the model 'breaks.'

» We remain particularly concerned about the robustness of the allowed return on equity to a low-rates scenario such as eventuated after the 2018 RoRI. Not only were those allowances materially lower than those of comparable regulators,[7] but they also involved:

— An allowed return that produced negative NPAT; and

— A cash allowance that was not even sufficient to pay the benchmark firm's interest bill.

» Our view is that a regulatory approach that produces outcomes like these has failed and must be repaired. However, the proposed changes in the draft 2022 RoRI would result in *even lower* regulatory allowances in the low-rates scenario.

» We encourage the AER to make a clear statement in the final RoRI about:

— Whether it considers negative NPAT and a cash allowance that falls short of the benchmark firm's interest bill to be a reasonable outcome; and

— What alternative test it would propose to determine whether the outcome in a particular scenario is reasonable.

» The draft *Explanatory Statement* dismisses concerns about the regulatory allowance in such low-rates scenarios on the basis of aggregated RAB multiples:

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[7] Brattle, June 2020, *A Review of international approaches to regulated rates of return*.

- If the AER is of the view that it is acceptable to set an allowed return below the market cost of capital, so long as the value of unregulated assets, incentive payments and other things are sufficient to produce an aggregated RAB multiple above 1, it should make a clear statement to that effect.

- If the AER is not of that view, it should cease purporting to evaluate its allowed returns with reference to aggregated RAB multiples.

3 Review context: Return on equity to support needed investment

> **Key messages**
>
> » When considering the allowed return on equity, the relevant context is that:
>
> — The Brattle report commissioned by the AER demonstrated that the AER's allowed return on equity (under the 2018 RoRI) was, by every metric, lower than that of all comparable regulators that were examined. Brattle concluded that the AER's approach was "not as effective" as that of other regulators.
>
> — The independent expert valuation reports prepared as part of the recent Spark Infrastructure and AusNet Services transactions concluded that the current market cost of equity capital (with gearing at 60%) is 200 basis points higher than the allowance under the 2018 RoRI.
>
> — The 2018 RoRI was not robust to the market conditions that followed its publication. For example, some key features of the 2020 SAPN decision were:
>
>   c. An allowed return that produced negative NPAT; and
>
>   d. A cash allowance that was not sufficient to pay the benchmark firm's interest bill.
>
> » The 2022 draft RoRI now proposes to *reduce* the allowed return on equity relative to maintaining the 2018 approach.
>
> » ENA questions whether now is the right time to be applying a further reduction to an allowed return on equity that is already below commercial and regulatory benchmarks.
>
> » Networks are being asked to invest very material amounts of new capital to support and enable the decarbonisation of the Australian economy. The AEMO ISP estimates that consumers will receive $2.20 of benefits for every dollar of new network investment.

3.1 Return on equity allowances

When considering the AER's approach to the allowed return on equity, it is important to understand the context of the current review as follows:

» The 2018 RoRI was not robust to the market conditions that followed its publication. For example, some key features of the 2020 SAPN decision were:

— An allowed return that produced negative NPAT; and

— A cash allowance that was not sufficient to pay the benchmark firm's interest bill.

» The Brattle report commissioned by the AER demonstrated that the AER's allowed return on equity was, by every metric, lower than that of all comparable regulators that were examined and Brattle concluded that the AER's approach was "*not as effective*" as that of other regulators. Brattle reported to the AER that:

- The AER's allowed nominal return on equity is lower than that adopted by every other regulator for which a comparison could be made;[8]
- The AER's allowed real return on equity is lower than that adopted by every other regulator for which a comparison could be made. The closest allowed real return on equity is almost double the AER's allowance;[9]
- The AER's allowed nominal equity risk premium is lower than that adopted by every other regulator for which a comparison could be made. (This does not account for other regulators that set the allowed risk-free rate above the prevailing government bond yield.);[10] and
- The AER's allowed real equity risk premium is lower than that adopted by every other regulator for which a comparison could be made. (This metric is not affected by any cross-country interest rate differentials and is conservative in that it does not account for other regulators that set the allowed risk-free rate above the prevailing government bond yield.)[11]

» The independent expert valuation reports prepared as part of the Spark and AusNet transactions concluded that the market cost of equity capital at the time of those transactions (with gearing at 60%) was very materially higher than the regulatory allowance. The tables below compare the AER's allowed returns with independent expert estimates of the market cost of equity capital – all applied to data as at the time of each transaction.

Table 1: KPMG estimates of the market cost of equity capital: Spark Infrastructure transaction

	2018 RoRI approach	2022 draft RoRI approach	KPMG low	KPMG high
Risk-free rate	1.73%	1.19%	2.80%	2.80%
MRP	6.1%	6.4%	6.0%	6.0%
Equity beta	0.60	0.60	0.73	0.83
Return on equity	**5.39%**	**5.03%**	**7.17%**	**7.76%**

Source: Source: KPMG independent expert report, October 2021, Table 39, p. 105. Equity beta re-levered to 60% using AER re-levering approach. Risk-free rate taken as at date of KPMG report.

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[8] Brattle, June 2020, *A Review of international approaches to regulated rates of return*, Table 4, Row 3, p. 49.
[9] Brattle, June 2020, *A Review of international approaches to regulated rates of return*, Table 4, Row 9, p. 49. 2.42% vs. 4.19%.
[10] Brattle, June 2020, *A Review of international approaches to regulated rates of return*, Table 5, Row 4, p. 50.
[11] Brattle, June 2020, *A Review of international approaches to regulated rates of return*, Table 5, Row 9, p. 50.

Table 2: Grant Samuel estimates of the market cost of equity capital: AusNet Services transaction

	2018 RoRI approach	2022 draft RoRI approach	GS risk-free rate adjusted	GS MRP adjusted
Risk-free rate	1.8%	1.4%	3.1%	1.8%
MRP	6.1%	6.4%	6.0%	8.0%
Equity beta	0.60	0.60	0.81	0.81
Return on equity	**5.5%**	**5.2%**	**8.0%**	**8.3%**

Source: Grant Samuel, December 2021, Independent expert report for AusNet Services, Appendix 3, pp. 9-15. Equity beta re-levered to 60% using AER re-levering approach. Risk-free rate taken as at date of Grant Samuel report.

ENA submits that a useful part of the current review will be to gain an understanding of why the AER's regulatory allowance is lower than the allowances of other regulatory and commercial estimates.

3.2 The draft RoRI proposes an allowed cash return that is insufficient for the benchmark firm to pay its interest bill

At the time of the drafting of this submission, the draft RoRI proposes an allowed return on equity of 7.08%:

$$r_e = 3.0\% + 0.6 \times 6.8\% = 7.08\%.$$

The allowed return on debt, under the 10-year trailing average approach is approximately 4.65%. This results in a vanilla WACC allowance of 5.62%:

$$WACC = 0.4 \times 7.08\% + 0.6 \times 4.65\% = 5.62\%.$$

The current regulatory inflation forecast[12] is 3.05%. Thus, the allowed cash return is 2.50%:

$$Allowed\ cash\ return = \frac{1.0562}{1.0305} - 1 = 2.50\%.$$

However, the cash return that is required to pay the firm's nominal interest bill is 2.79%, being 4.65% × 0.60. That is, the allowed cash return is not sufficient to pay the nominal interest bill (albeit with a promise to be made whole over the next 50 years via RAB indexation). The shortfall must be made up by equity holders.

In terms of cash returns, debtholders receive the full nominal return (as per their loan contracts) and equity holders receive a cash return of -0.73%. Note that this reconciles with the total allowed cash return from above:

$$(-0.73\%) \times 0.40 + 4.65\% \times 0.60 = 2.50\%.$$

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[12] At the time of drafting this submission. To the extent that RBA inflation forecasts increase, the issue identified here becomes more pronounced.

That is, under the draft RoRI, the allowed return on capital is insufficient to pay the interest bill of the benchmark firm, with equity holders having to make up the difference, albeit with a promise to be made whole over the next 50 years via RAB indexation.

It is one thing to say that equity holders might receive a lower cash allowance now in lieu of a promise to recover that in the future via RAB indexation. It is a bigger step to ask equity holders to provide *more* equity to cover a shortfall in the return on debt allowance – with a promise that RAB indexation will provide the entire allowed return on equity plus recovery of the additional equity they are asked to contribute. Particularly during a period where record network investment is required.

We note that a regulatory allowance based on a 10-year risk-free rate and equity beta of 0.7 *would* currently be sufficient for the benchmark firm to pay its nominal interest bill.

3.3 Scale of required investment to support decarbonisation

The scale of required network investment to support Australia's decarbonisation commitments is unprecedented in the industry's history.

The Commonwealth government has set aside $20 billion in the "Rewiring the Nation" fund,[13] with this government funding designed to unlock the further $60 billion of private sector investment that will be required to upgrade the grid.[14]

This investment will be required to support the decarbonisation of the Australian economy. It is also forecast to provide material benefits for customers. For example, Project EnergyConnect alone is forecast to reduce South Australian residential power bills by $100 a year and save consumers in NSW a total of $180 million every year.

The AEMO 2022 Integrated System Plan (ISP):

» Forecasts $12.7 billion of actionable ISP projects (i.e., those it considers are critical for immediate development) with most requiring delivery before 2030,[15] and more forecast to be needed to support hydrogen production for domestic use in transport and firming the NEM, and for export. These projects are forecast to provide $2.20 of benefits to consumers for every dollar of investment.[16]

» Identifies 10,000 km of new transmission in the optimal development path (ODP);[17]

» Expects a two to three times faster exit of coal than previously forecast with 60% of capacity withdrawn by 2030[18], which:

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[13] https://alp.org.au/policies/rewiring_the_nation.
[14] https://keystone-alp.s3-ap-southeast-2.amazonaws.com/prod/61a966013f3c53001f975016-REPUTEX_The%20economic%20impact%20of%20the%20ALP's%20Powering%20Australia%20Plan_Summary%20Report.pdf.
[15] EMO, June 2022, *Integrated System Plan*, pp. 12-15.
[16] AEMO, June 2022, *Integrated System Plan*, p. 15.
[17] AEMO, June 2022, *Integrated System Plan*, p. 12.
[18] AEMO, June 2022, *Integrated System Plan*, p. 9.

- Hastens both the need for grid investment to integrate renewables, and the scale and timing of system strength investment to meet new obligations on TNSPs by the AEMC's 2021 system strength rule change, and

- Reflects projections predating Origin's announcement that it will close its Eraring coal-fired power station by 2025 and the recent Atlassian/Brookfield bid to acquire AGL and hasten its coal exit;

» Is already attracting criticism from some energy market participants for being conservatively low and slow in its planning of transmission augmentations, jeopardising both the attraction of renewable generation investment and customer price and reliability outcomes.[19]

On 31 August 2022, AEMO released the 2022 NEM Electricity Statement of Opportunities report. This highlighted the "urgent need" to progress transmission development to maintain a secure, reliable and affordable supply of electricity to homes and businesses. It pointed to a worsening forecast position around reliability gaps across the effective period of operation of the Instrument in New South Wales, Queensland and Victoria.

The AER has approved forecast network investment of around $19.1billion by electricity distribution networks in their current regulatory periods.[20] This is before accounting for investments these networks will need to make to:

» Deliver on their new service obligation for hosting DER following the AEMC's 2021 rule change;

» Facilitate the electrification of the transport sector; and

» Meet customers' increasing expectations for a more resilient power system amid increased severe weather events and fires.

The investment need and net customer benefits are undisputed among accountable agencies. Every market body or policy agency with accountability for energy outcomes has recognised the critical and growing role that new grid investment will have. We are seeing unprecedented levels of government policy support for network investment facilitation and expedition, premised on this effectively leveraging supporting private sector investment.

The chair of the AEMC and ESB has observed that while overall customer prices are expected to decline (due to increased supply of wholesale energy) network "*prices are going up and are expected to accelerate over the years ahead as significant new investments are needed to connect new renewables.*"[21]

Further discussion of the set of complementary and integrated network investments likely to be needed to secure the meeting of customer expectations across electricity and gas network infrastructure is set out in ENA's *Energy Vision: Networks delivering net zero*.

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[19] The Australian, 9 February 2022, Snowy Hydro warns of high costs and potential blackouts if AEMO's energy blueprint proceeds.
[20] AER, July 2021, *State of the Energy Market 2021*, p. 154.
[21] Anna Collyer, 29 November 2021, *Road to cheaper energy*, The Australian.

3.4   Is now the right time to be reducing allowed returns?

The AER's draft RoRI proposes a reduction in allowed returns relative to maintaining the approach under the 2018 RoRI. The 2022 draft RoRI proposes to maintain the 2018 approach in all respects except that the risk-free rate will be reduced to reflect the yield on 5-year government bonds.

ENA questions whether now is the right time to be applying a further reduction to an allowed return on equity that is already below commercial and regulatory benchmarks.

The proposed change is of material concern to investors for two reasons:

» It lowers the allowed return further below what would have been allowed if the 2018 RoRI had been rolled forward; and

» It undermines confidence in the AER and its regulatory framework given that the proposed change is inconsistent with:

– Every previous decision made by the AER;

– The approach adopted by every other Australian regulator;

– The approach adopted in every independent expert report, including those for networks regulated by the AER;

– The clear evidence of market practice, including the practice of infrastructure investors; and

– The approach recommended by leading textbooks.

ENA members are particularly concerned about the AER's disregard of the actual approach adopted by real-world network investors. This represents a significant departure from the AER's previous reasoning, where the 'market cost of capital' was taken to be the best unbiased estimate of the expected efficient return.

Indeed, ENA submits that it is difficult to conceive of a worse time for the AER to propose, or implement, such a change in its approach.

4 The term for the allowed return on equity

Key messages

<u>The important role of draft decisions</u>

» ENA notes the important role that draft decisions play within the AER's consultation process. The draft decision ventilates any potential changes to the AER's regulatory approach, giving all stakeholders an opportunity to provide considered feedback. The AER then considers all relevant information before making its decision in the 2022 RoRI document.

» The AER has used previous draft decisions to ventilate potential changes. For example, in 2009 the AER used that part of the process to consider a potential change to the term of debt and equity, before considering all feedback and maintaining a 10-year term in its final decision. We consider that to be an example of a well-functioning regulatory system.

» In our view, the evidence to support a 10-year risk-free rate is compelling and we appreciate the opportunity to set out that evidence for the AER's consideration prior to making its decision on this important issue.

<u>Setting and context</u>

» The AER is considering a reduction in the allowed return on equity by effectively reducing the term of the risk-free rate from 10 years to 5. This potential change would be inconsistent with:

  – Every previous decision made by the AER;

  – The AER's approach to the allowed return on debt;

  – The approach adopted by every other Australian regulator;

  – The approach adopted in every independent expert report, including those for networks regulated by the AER;

  – The clear evidence of market practice, including the practice of infrastructure investors; and

  – The approach recommended by leading textbooks.

» The change is being considered in circumstances where:

  – The change has been driven by the AER and not stakeholders;

  – There is no new evidence or argument that has not been previously considered by the AER on many prior occasions; and

  – Record network investment is required over the coming decade to meet Australia's decarbonisation commitments and unlock cost savings for consumers

  – There is no agreement between multiple stakeholder groups on the conceptual and empirical basis for the change.

» Network investors are very concerned about:

  – The proposed change to a 5-year term, itself; and

  – The implications for the stability and predictability of the regime and confidence in the regulator.

» One implication of the proposed change is higher prices for consumers during deep recessions and financial crises, when the 5-year rate tends to be higher than the 10-year rate.

The nub of the issue

» The key question is whether the allowed return should be set to match the return that real-world investors <u>actually do</u> require or according to what the AER considers investors <u>should</u> require to compensate them for risk, based on the outworking of some mathematical analysis. The AER proposes that a 5-year risk-free rate should be sufficient over the course of each regulatory period and that anything more will result in over-compensation.

» Consider the case where all parameters remain fixed over time, and in each regulatory period the AER allows a 5-year return but investors require a 10-year return. In this case:

— Investors will consider that NPV<0 for this regulated asset – because the allowed return in every year is lower than their required return; but

— The AER proposes that investors <u>should</u> have discounted the cash flows using a 5-year risk-free rate, in which case they <u>should</u> have computed that NPV=0 for that asset.

ENA's primary submissions

» Our primary submissions are that:

— The appropriate regulatory task, consistent with NPV=0, is for the regulator to set the allowed return to match the market cost of capital – the rate of return that network investors require; and

— The mathematical analysis that is used to support a 5-year term is flawed, for reasons explained in this submission and the attached Schmalensee report.

The proper implementation of NPV=0 is to match the allowed return to the market cost of capital

» ENA submits that NPV=0 requires that the allowed return must be set to match the return that real-world investors actually do require.

» This is because the *raison d'etre* for NPV=0 is to incentivise efficient investment, which promotes the NEO and NGO. Efficient investment is incentivised by setting the allowed return to just match the market cost of capital that is required *by the investors* who will be making that investment. A change in what the AER considers investors <u>should</u> require will have no impact on the returns that investors actually <u>do</u> require. The AER has previously recognised that setting the regulatory allowance above or below the return that investors actually require will incentivise inefficient levels of investment in, and inefficient levels of use of, energy networks.

Why does the AER now consider a change to its long-standing approach?

» The June 2022 draft decision proposes two key reasons for the potential change in the AER's approach:

— A 5-year term is required to preserve consistency with the approach to regulatory inflation (for equity only; not for debt); and

— Even though the evidence shows that investors <u>do</u> use a 10-year risk-free rate, the AER concludes, from its mathematical analysis, that investors <u>should</u> use a 5-year risk-free rate, so that must be used otherwise they will be over-compensated. This is also expressed as the AER having a unique task – to ensure that NPV=0 is achieved.

<u>Why the term for regulatory inflation is still irrelevant</u>

» Regulatory inflation and the allowed return on equity are independent parameters that have different roles in the AER's regulatory framework, such that the term adopted for one has no implications for the other:

— The role of regulatory inflation is to 'take out what is expected to be put back in.' The term is set by the Roll Forward Model (RFM), which 'puts back in' 5-years of inflation.

— The role of the allowed return on equity is to match the market cost of equity capital to provide network investors with the appropriate incentive for efficient investment.

» The AER's December 2021 *Omnibus Paper* concluded that the term for regulatory inflation had no relevance to the allowed return on equity (or debt), noting that:

— Its decision is informed by the advice from Dr Lally (including his mathematical analysis);

— The term for expected inflation is determined by RAB indexation in the RFM and not the term of the allowed return in the PTRM; and

— Adopting a 5-year term for inflation and a 10-year term for allowed returns results, in expectation, in the nominal rate of return <u>and the real rate of return</u> being achieved over the regulatory period.

» The AER's potential new proposed position is that 5-year inflation and a 10-year allowed return creates a 'mismatch' that must be corrected (but only for equity). The main problems with this new position are:

— The new position in relation to equity is inconsistent with the AER's position in relation to debt;

— The new position is not based on any new evidence since the working papers in which the AER concluded that the terms for inflation and equity are independent;

— The new position is contrary to the AER's own expert advice;

— There is no mathematical basis for a reversal in the AER's position; and

— There is no logical basis for a reversal in the AER's position.

<u>The NPV=0 principle has not changed since December 2021: It still requires a match to the market cost of capital</u>

» Our view is that NPV=0 still requires that the allowed return must be set to match the return that real-world investors actually do require, as it has since the inception of the AER.

» We agree that the AER's role is to ensure that the compensation that network investors receive over each regulatory period is just sufficient to promote efficient investment. This is achieved by setting the regulatory allowance to match the return that network investors actually do require, not the return that the AER considers that network investors should find sufficient. This has always been the case, and it remains the case now.

The AER's first piece of mathematical analysis (pp. 103-104 of the *Explanatory Statement*)

» The AER sets out an equation that establishes that NPV=0 is achieved if the allowed return matches the return that investors require. There are two ways to achieve that equality:

  – Assume that investors require (or should require) a return that is equal to whatever the AER allows; or

  – For the regulator to set an allowed return equal to the return that real-world market investors actually do require.

» Professor Schmalensee from MIT, on whose work the Lally and AER maths is based, concludes that the way in which Dr Lally adopts the first of these approaches is "*an amazing bit of sleight of hand.*"[22]

» Professor Schmalensee also notes that the AER has adopted the first of these approaches (although only for the return on equity). He concludes that he has "*no idea how this assumption can be defended.*" [23]

The AER's second piece of mathematical analysis (pp. 109-110 of the *Explanatory Statement*)

» The AER sets out an equation that purports to show that NPV=0 is violated if the allowed return does not match the term of the regulatory period.

» This analysis considers the case where the investors' required return (i.e., the market cost of capital) changes from one regulatory period to the next.

» The AER updates the allowed return in the numerator of this equation to reflect the change in the market cost of capital, but does not update the discount rate in the denominator.

» Professor Schmalensee concludes that "*The cost of capital as assessed in period 1 is assumed by the AER to discount cash flows during period 2 even though, by hypothesis, it has changed between the two periods. I have no idea how this assumption can be defended either.*"[24]

The AER's elevation of its new interpretation of NPV=0

» In its previous decisions, and in the current *Explanatory Statement*,[25] the AER has interpreted the NPV=0 as setting the allowed return to match the return that real-world investors actually require. This creates the right incentive for efficient investment, which best promotes the NEO and NGO.

» The draft RoRI proposes a new interpretation of NPV=0 whereby a 5-year risk-free rate must be used because only that term will work cleanly in the AER's mathematical analysis which contains a simplifying assumption that could not hold in reality.

» Even if the AER's mathematical analysis was correct, this new approach would be problematic because it:

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[22] Schmalensee, R., July 2022, *Statement of Richard Schmalensee PhD to the Australian Energy Regulator*, p. 9.

[23] Schmalensee, R., July 2022, *Statement of Richard Schmalensee PhD to the Australian Energy Regulator*, pp. 9-10.

[24] Schmalensee, R., July 2022, *Statement of Richard Schmalensee PhD to the Australian Energy Regulator*, pp. 9-10.

[25] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 57.

– By design, breaks the nexus between NPV=0 and efficient investment (because network investment decisions are made with reference to the returns that network investors actually require), and therefore does not best promote the NEO and NGO; and

– Elevates the conclusions from the AER's mathematical analysis above all other considerations.

4.1 The right time to consider a change in the term of the risk-free rate?

The AER has adopted a 10-year risk-free rate in every decision it has made since its inception. That is consistent with the approach adopted by:

» Every other Australian regulator;

» Finance practitioners;

» Independent expert valuation reports, including recent reports for networks regulated by the AER;

» Leading textbooks; and

» The AER in relation to the allowed return on debt – where the regulatory allowance is set to reflect the return required by real-world investors. The AER observes that the NPV=0 principle is supported by seeking to eliminate any mismatch between the regulatory allowance and the actual cost of debt.

The AER is now considering a change to the 5-year risk-free rate in circumstances where:

» Of all WACC parameters, a 10-year risk-free rate was the one issue for which there was broad support and predictability and stability of the regulatory approach; and

» There is no substantive new evidence or argument that has not been previously considered by the AER on several prior occasions.

ENA also notes that one of the important implications of the proposed change is that consumers will be asked to pay *more* than under the current approach during recessions and financial crises. The *Explanatory Statement* shows two pronounced periods – the major recession in the early 1990s and the peak of the GFC – where yield curves inverted such that the proposed new approach would increase consumer prices relative to the current approach. See Figure 1 below, reproduced from the *Explanatory Statement*.

Figure 1: Comparison between 10-year and 5-year allowed return on equity
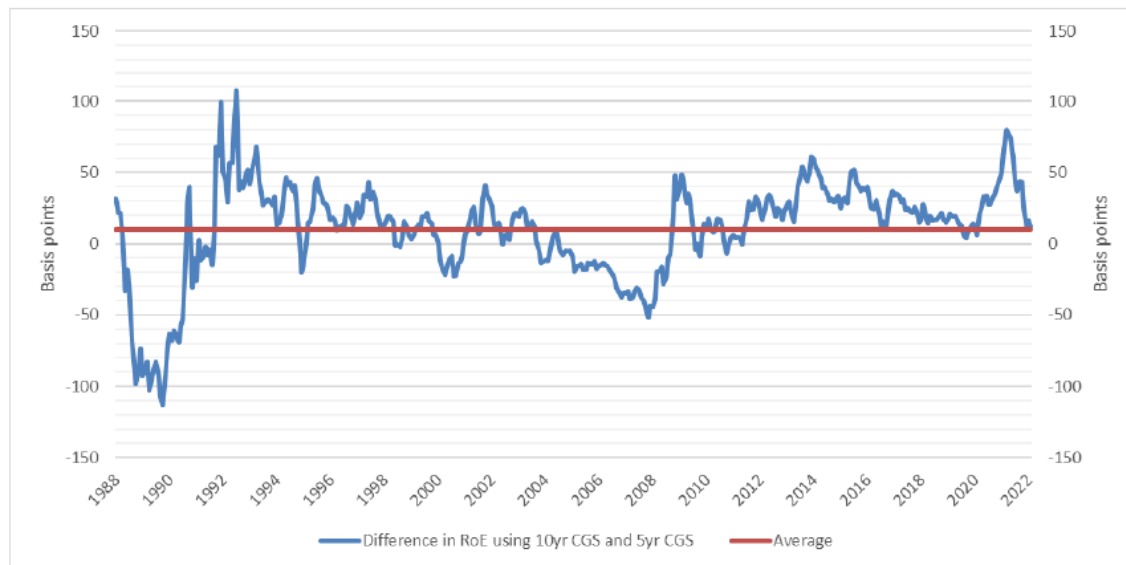
Source: AER, June 2022, Draft rate of return instrument: Explanatory statement, *Figure 6.3, p. 98.*

ENA questions whether now is the right time to be applying a further reduction to an allowed return on equity that is already below commercial and regulatory benchmarks – given the tremendous amount of network investment that is required over the next decade.

The potential change to a 5-year term is of material concern to investors for two reasons:

» It is inconsistent with the approach by which investors determine their required return; and

» It undermines confidence in the AER and its regulatory framework given that the proposed change is inconsistent with the observed market practice, the approach adopted by every other Australian regulator, and every previous decision made by the AER.

Indeed, it is difficult to imagine a worse time to propose such a change in approach.

4.2   The key question for every regulator

During the Concurrent Evidence sessions, the AER Chair neatly summarised the key question that every regulator must consider when determining the term of the risk-free rate:

> *I think one of the things we are struggling with is I think there is an alignment on the NPV neutrality principle; I think there may be a difference of views amongst the experts around how that is achieved. And one of the challenges I think we have then is to form a view, obviously, as to what - and the definition that Dinesh [Kumareswaran] has called out is around what investors require. And so then on the one hand we have Martin's [Lally] suggestion around obviously almost a resetting bond, which is a discount across the cash flows, and then we'll take the longer term rate because that will reflect the investors' financing costs or construction of equity costs. And so they are quite different positions, and you are almost arguing them on different grounds. There is no empirical data to bring those*

two points together, I guess, and that is one of the challenges that I'm hearing in the evidence.[26]

We agree entirely that the key question is whether NPV=0 should be achieved by:

» Setting the allowed return to match what real-world investors <u>do</u> require; or

» Setting the allowed return in accordance with some mathematical analysis that tells us what investors <u>should</u> require.

In the remainder of this chapter, we explain that:

» Every other Australian regulator and every previous iteration of the AER has had to answer this same question;

» Every other Australian regulator and every previous iteration of the AER has concluded that NPV=0 requires the allowed return to be set to match what real-world investors do require. The purpose of NPV=0 is to incentivise efficient investment (which is in the long-run interests of consumers) – from the perspective of the investors who are required to make that investment;

» The current AER's approach to debt is to set the allowed return to match what real world investors <u>do</u> require. The draft *Explanatory Statement* does not explain why the key question should be answered differently for equity;

» The current AER's interpretation of the mathematical analysis is incorrect. The maths does <u>not</u> imply that NPV=0 requires the use of a 5-year rate. In addition to the explanations in this chapter, we also note that:

– The current AER's interpretation of the maths suggests that NPV=0 is violated if the regulator sets the allowed return for every period in accordance with the return that investors actually require. This is incorrect. NPV=0 is satisfied if the allowed return always matches the market-determined cost of capital. This is equally the case for equity as it is for debt;

– The report from Professor Schmalensee (on whose work the maths is based) explains that he has "no idea" how the AER's analysis can be defended[27] and he describes steps within Dr Lally's mathematical analysis as "an amazing bit of sleight of hand"[28] and getting key issues "almost exactly backwards" [29]; and

– The careful and detailed analysis from Queensland Treasury Corporation (QTC) shows that Dr Lally's 'resetting bond' interpretation of regulatory cash flows is incorrect. The whole basis for the 5-year approach is that investors do not consider cash flows after the regulatory allowance re-sets, similar to a 'resetting bond.' But QTC shows that the yields on long-term floating rate bonds are higher than on shorter-term floating rate bonds – proof that investors do indeed look beyond the next re-set.

4.3   The rationale for the proposed change

ENA's understanding of the draft decision is that the AER is ventilating an approach whereby:

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[26] AER, February 2022, Transcript: Rate of return instruments, Concurrent evidence session 2, pp. 27-28.
[27] Schmalensee, R., July 2022, *Statement of Richard Schmalensee PhD to the Australian Energy Regulator*, pp. 9-10.
[28] Schmalensee, R., July 2022, *Statement of Richard Schmalensee PhD to the Australian Energy Regulator*, p. 9.
[29] Schmalensee, R., July 2022, *Statement of Richard Schmalensee PhD to the Australian Energy Regulator*, p. 7.

» The AER accepts that the commercial practice of real-world investors is to discount cash flows over the life of the regulated asset using a rate of return based on a 10-year risk-free rate;[30] but

» The AER considers that such an allowance would over-compensate investors, who *should* require a rate of return based on a 5-year risk-free rate for assets that are regulated by the AER. In particular, the AER considers that a 5-year risk-free rate should be sufficient to compensate investors for the risks they face, on the basis of the AER's mathematical analysis.

That is, rather than set the allowed return to match the return that real-world investors actually do require, the allowed return would be set according to what the AER considers investors should require as compensation for risk, based on the AER's mathematical analysis.

The draft decision highlights the centrality of the NPV=0 principle, and the nature of the AER's task, to its decision on this point. Thus, the question is whether the NPV=0 principle should be interpreted from the perspective of what investors actually do, or what the AER considers they should do, based on the AER's interpretation of its mathematical analysis.

To be clear on the implications of this point, there is no suggestions that real-world investors would change their approach based on the AER's analysis. Rather, there is a difference between the risks that investors do perceive and the returns that they do require as against the AER's new mathematical analysis of the risk and return that should be relevant to them.

The difference between these interpretations is most easily seen in a simple setting where:

» All CAPM parameters remain constant over time;

» The 10-year government bond yield is higher than the 5-year yield (which it is, on average);

» The AER sets the allowed return using the (lower) 5-year yield in every regulatory period; and

» Investors discount all cash flows using a discount rate based on the (higher) 10-year yield.

In this case:

» Investors will consider that NPV<0 for this regulated asset – because the allowed return in every year is lower than their required return; but

» The AER considers that investors should have discounted the cash flows using a 5-year risk-free rate, in which case they should have computed that NPV=0 for that asset.

However, the AER's views on the return that investors should require has no influence at all on the return that investors actually require. If investors actually require a 10-year return, but the AER sets the allowed return on the basis of a belief that investors should require a 5-year return, then investors will simply not commit capital to the firm—since the allowed return will, on average, be below the return they actually require.

This raises the question of whether:

» The NPV=0 principle should be applied from the perspective of real-world investors – setting the allowed return to just match the return that real-world investors actually require; or

» The NPV=0 principle should be applied from the perspective of what the regulator thinks investors should require.

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[30] The evidence of real-world practice was set out in detail in the ENA's March 2022 submission, and it is summarised further below. See also: AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 107.

The subsequent sections of this submission establish that:

» The AER's own consideration of the NPV=0 principle, and the AER's application of that principle to the allowed return on debt, are both consistent with setting the allowed return to match the actual return required by real-world investors; and

» Every other Australian regulator adopts a 10-year risk-free rate precisely because they are seeking to match the allowed return with the real-world commercial cost of capital – the actual return required by real-world investors.

4.4 The AER has previously concluded that the allowed return should be set to match the return that real-world investors actually require – to achieve NPV=0 and promote the NEO and NGO

Overview and key conclusions

This sub-section establishes that:

» The AER's previous decisions have all highlighted the importance of setting the allowed return to match the return that real-world investors actually require (i.e., the market cost of capital).

» That approach:

– Provides the appropriate incentive for efficient investment;

– Is consistent with the NPV=0 principle; and

– Best promotes the NEO and NGO, since efficient investment and prices that reflect efficient costs are in the long-term interests of consumers.

» The AER has previously concluded that, because there is clear evidence that real-world investors actually determine their required return using a 10-year risk-free rate, that approach is consistent with the NPV=0 principle and best promotes the NEO and NGO.

» The AER now proposes to reverse the position it adopted through to December 2021, overturning its longstanding regulatory precedent.

The real-world market cost of capital has been central to all of the AER's previous decisions

The AER's previous decisions have all highlighted the importance of setting the allowed return to match:

> *rates in the market for capital finance* [31]

which the AER terms the:

> *'market rate of return'* [32]

and the:

> *'market cost of capital.'* [33]

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[31] AER, December 2018, *Rate of Return Instrument, Final Decision, Explanatory Statement*, p. 33.
[32] AER, December 2018, *Rate of Return Instrument, Final Decision, Explanatory Statement*, p. 33.
[33] AER, December 2018, *Rate of Return Instrument, Final Decision, Explanatory Statement*, p. 33.

The reason the AER has always focussed on the actual return required by investors in the market is to promote efficient investment in line with the NEO and NGO. In particular:

» Setting the allowed return lower than the actual return required by real-world market investors creates a disincentive to invest as the firm is unable to pay the return that investors actually require; and

» Setting the allowed return above the actual return required by real-world market investors creates an incentive to make inefficient investment as the firm is able to pay investors a return above what they actually require.

In relation to the allowed return on equity, the AER has summarised its approach as follows:

> *We use the CAPM to estimate **how an investor will value** the potential returns from an investment in an infrastructure business with long-lived underlying assets. **Equity investors seek out efficient returns** for their diversified investment portfolio **over long-term investment horizons.**[34]*

In our view, it is not relevant that the allowed return might be consistent with some algebra (assuming that algebra is relevant and correct) or that it is consistent with the advice of a consultant who recommends a short-term risk-free rate. If the allowed return is below the return that real-world network investors actually require (i.e., the market cost of capital) there will be a disincentive to make efficient investment.

In all of its past decisions, the AER has sought to set the allowed return to match the actual return required by investors in the market:

> *Because the market for capital finance is competitive, an efficient service provider is expected to face competitive prices in the market for funds. Therefore, we consider **efficient financing costs are reflected in the prevailing market cost of capital** (or WACC) for an investment with a similar degree of risk as that which applies to a service provider in respect of the provision of regulated services. As Alfred Kahn stated, 'since the regulated company must go to the open capital market and sell its securities in competition with every other would-be issuer, there is clearly a market price (a rate of interest on borrowed funds, an expected return on equity) that it must be permitted and enabled to pay for the capital it requires'.*

> *We consider employing a rate of return that is commensurate with the prevailing market cost of capital (or WACC) is consistent with the zero NPV investment condition (see above). **We also consider economic efficiency more generally is advanced by employing a rate of return that reflects rates in the market for capital finance.** Similarly, Partington and Satchell interpret efficient financing costs as the opportunity cost of capital, which is **a market rate of return** for assets with a given level of risk.[35]*

The AER's June 2022 *Explanatory Statement* reinforces the view that the allowed return must match the return that is required by real-world investors by repeating the paragraphs above.[36] It is not clear why this approach would apply to all aspects of allowed returns other than the risk-free rate.

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[34] AER, December 2018, *Rate of Return Instrument, Final Decision, Explanatory Statement*, p. 127, emphasis added.
[35] AER, December 2018, *Rate of Return Instrument, Final Decision, Explanatory Statement*, p. 33, emphasis added.
[36] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 57.

The focus on the return that is required by real-world investors has led the AER to conclude that the RPP and NEO and NGO are best promoted by setting the allowed return to be commensurate with the efficient market cost of capital – the return that real-world market investors require from an investment in regulated assets:

> *An allowed rate of return that reflects the **efficient market cost of capital** will promote both **investment and consumption efficiency**.*[37]

The AER further endorsed the view that the appropriate objective is to set the allowed return equal to the required return in the market in its paper on the long-term interests of consumers:

> *Due to inevitable uncertainty, there is a risk that the estimated, expected rate of return will be higher or lower than the **market cost of capital**.*

> *If the expected rate of return deviates from **the market cost of capital** then the expected rate of return may not achieve the legislative objectives - it may not promote efficient investment in and use of the service provider's energy network for the long term interests of consumers. That is, there may be costs associated with the expected rate of return being higher or lower than **the market cost of capital**.*[38]

The AER has always concluded that a 10-year risk-free rate is consistent with the NPV=0 principle and the NEO and NGO

The NPV=0 principle has always been central to the AER's consideration of the term of the risk-free rate. For example, the 2018 RoRI confirmed that the AER's approach is to set the allowed return on capital in a way that is consistent with the NPV=0 principle:

> *As the regulatory regime is ex-ante, we consider **a rate of return that meets the objectives must provide ex-ante compensation for efficient financing costs. This is a zero net present value (NPV) investment condition**, which is described as follows:*

>> *The zero NPV investment criterion has two important properties. First, a zero NPV investment means that the ex-ante expectation is that over the life of the investment the expected cash flow from the investment meets all the operating expenditure and corporate taxes, repays the capital invested and **there is just enough cash flow left over to cover underlying investors' required return on the capital invested**. Second, by definition a zero NPV investment is expected to generate no economic rents. Thus, ex-ante no economic rents are expected to be extracted as a consequence of market power. The incentive for investment is just right, encouraging neither too much investment, nor too little.*

> *During the first concurrent evidence session, the experts agreed that setting an allowed return to achieve a zero NPV outcome achieves efficient investment incentives, and is in the long term interest of consumers.*[39]

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[37] AER, December 2018, *Rate of Return Instrument, Final Decision, Explanatory Statement*, p. 44, emphasis added.
[38] AER, May 2021, *Assessing the long-term interests of consumers*, p. 8, emphasis added.
[39] AER, December 2018, *Rate of Return Instrument Explanatory Statement*, p. 35, emphasis added.

That is, in the 2018 RoRI, the AER viewed its compliance with the NEO and NGO through the lens of the NPV=0 principle and set the allowed return on equity in a way that it considered to be consistent with the NPV=0 principle.

Within that context, the AER concluded that a 10-year risk-free rate should be adopted:

> *Our final decision is to maintain use of a 10 year term for the risk free rate. **We consider the use of a 10 year term will lead to an overall rate of return that will better contribute to the achievement of the NEO and NGO.** We consider a 10 year term is **consistent with the theory of the Sharpe-Lintner CAPM** which is a single period equilibrium model, estimating the returns an investor requires over a long-term investment horizon. **The 10-year term also reflects the actual investor valuation practices and academic works.**[40]*

That is, the reasons for the AER's adoption of a 10-year term include:

» Viewed through the lens of the NPV=0 principle, a 10-year term best contributes to the achievement of the NEO and NGO;

» It is more consistent with the theory of the SL CAPM;

» It reflects the actual practices of investors; and

» It best reflects well-accepted academic literature.

It is important to observe that the AER defines NPV=0 in the sense that:

> *there is just enough cash flow left over to cover **investors' required return** on the capital invested [41]*

and that the AER has observed that:

> *We find support for using a 10 year term in **actual investor valuation practices** [42]*

and that:

> *setting a rate of return using a 10 year term will provide for allowed returns on an investment in a regulated business that are comparable with the **investor valuations** of other stocks within the market with a similar degree of systematic risk. [43]*

That is, the adoption of a 10-year risk-free rate, reflecting the approach that real-world investors take when determining their required return on long-lived investments, is consistent with the AER's definition of the NPV=0 principle and (viewed through the NPV=0 lens) the AER has concluded that this contributes to best achieving the NEO and NGO.

4.5 The AER's approach to the allowed return on debt is to match the return that real-world investors actually require

The AER's approach to the return on debt is to set the regulatory allowance to match the real-world cost of the prudent and efficient debt management strategy that infrastructure investors adopt in practice.

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[40] AER, December 2018, *Rate of Return Instrument Explanatory Statement*, p. 126, emphasis added.
[41] AER, December 2018, *Rate of Return Instrument Explanatory Statement*, p. 35, emphasis added.
[42] AER, December 2018, *Rate of Return Instrument Explanatory Statement*, p. 127, emphasis added.
[43] AER, December 2018, *Rate of Return Instrument Explanatory Statement*, p. 127, emphasis added.

The AER observes that real-world infrastructure investors tend to issue fixed rate debt with a term of approximately 10 years on a staggered maturity basis. The allowed return on debt is then set to match the actual cost of servicing that debt – using data on the returns actually required by investors in the market.

In this regard, Dr Lally's recent advice to the AER is that:

> *in respect of the cost of debt, satisfying the NPV = 0 principle requires that the allowed cost of debt match that incurred by the benchmark efficient firm* [44]

and that NPV=0:

> *can only occur if the interest rate on debt incurred by the (benchmark efficient) firm matches that allowed by the regulator.* [45]

Dr Lally contemplates a rate-on-the-day allowance whereby the regulatory allowance is set equal to the 5-year spot rate at the time of each regulatory determination. This could be 'matched' by a business that issues all of its debt in a single 5-year tranche at the time of each determination such that the regulatory allowance matches the cost incurred. However, he rules out this approach on the basis that such a debt financing approach is not viable in practice – it would not be adopted by real-world networks and their investors:

> *this is not a viable debt policy for a (private-sector) firm because rollover of all of its debt at the same point in time would significantly expose it to opportunistic pricing by lenders and aberrations in the debt market at this time (debt markets freezing up or rates being freakishly high); all of this is called "refinancing risk."* [46]

Moreover, the draft RoRI notes how the NPV=0 principle requires a match between the regulatory allowance and the cost of debt – being the market rate of return required by debt investors. For example, the AER warns that any mismatch might affect the incentive for efficient investment and be inconsistent with the NPV=0 principle:

> *This mismatch might distort investment decisions and lead to an inefficient outcome.* [47]

> *This mismatch would generally lead to a departure from the NPV=0 condition.* [48]

ENA agrees with all of this analysis. In particular:

» The regulatory allowance should be set to match the market cost of capital incurred by a network; and

» What is required is a reasonable estimate of the cost that would feasibly be incurred in prudent commercial practice – approaches that would not be adopted in such practice are of no relevance to the setting of regulatory allowances.

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[44] Lally, April 2021, *The appropriate term for the allowed cost of capital*, p. 3.
[45] Lally, April 2021, *The appropriate term for the allowed cost of capital*, p. 23.
[46] Lally, April 2021, *The appropriate term for the allowed cost of capital*, p. 23.
[47] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 228.
[48] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 228.

ENA considers that these principles apply equally to debt and equity. This led to us making the following recommendation in our March 2022 submission:

> *Recommendation 1: The approach to debt and equity should be the same. For equity, like debt, the allowed return should be set to match the market cost of capital.*[49]

4.6 The approach of all other Australian regulators is to set the allowed return to match the return that real-world investors actually require

Overview and key observation

Every other Australian regulator uses a 10-year risk-free rate. Regulators adopt that approach to ensure that the allowed return matches the return that real-world investors actually require.

Economic Regulation Authority of WA

In its July 2022 draft RoRI decision, the ERA of WA clearly articulates the two approaches of setting the allowed return:

» Setting the allowed return according to what the regulator thinks investors <u>should</u> require from an asset subject to regulation; and

» Setting the allowed return according to what investors <u>actually do</u> require from an asset subject to regulation.

In this regard, the ERA states that:

> *The ERA considers that the term for equity depends on what rate a regulator is setting:*
>
> • *A regulatory rate – A rate that provides required returns according to regulatory settings and principles, and recognises resets for every regulatory period. Application of such a rate reflects one view of efficient costs under a resetting regulatory framework.*
>
> • *A competitive market rate – A rate that provides the expected returns of equity investors according to market conditions and practices for infrastructure assets, which is generally a long-term rate with a term exceeding the length of the regulatory period. Application of such a rate reflects one view that regulated assets have long lives and investors are concerned with cashflows over the life of the asset. This rate also uses the longest term generally available (10 years) for a proxy that investors would use to discount cashflows.*[50]

The ERA concludes that the correct approach is for the regulator to set the allowed return to match the return that real-world investors actually do require:

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[49] ENA, March 2022, *Rate of return instrument review: Response to AER's Final Omnibus and Information Papers,* p. 9.
[50] Economic Regulation Authority of WA, June 2022, *Explanatory statement for the 2022 draft gas rate of return instrument*, paragraph 590.

Having assessed both approaches, the ERA now considers that the weight of the evidence requires that it change its approach to match common market practice for long-lived assets and support a longer term market rate when setting the return on equity.

The ERA considers that a 10-year term for equity reflects the following advantages:

- *It recognises that efficient and prudent infrastructure companies require a long-term rate to reflect the long-term cashflows of their networks.*

- *It is consistent with standard practice adopted by market investors, valuation professionals, academics and practitioner textbooks.*

- *Recognises the reality of regulatory cashflows and returns being realised by equity investors over the life of the asset.*

- *Does not disadvantage regulated assets which have to compete for funding with unregulated infrastructure with similar risk. Regulated infrastructure investments must compete for equity capital with similar unregulated investments, for which the required return is typically based on a 10-year term for equity.*

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

- *The use of a 10-year term for equity is widely applied by Australian and international regulators. Regulators have generally accepted the argument that the term of equity should be a proxy for the life of the regulated asset. Given the long-term nature of infrastructure asset investment, regulators generally consider that a long-term rate better reflects the expectations of investors rather than a shorter term.*

Therefore, the ERA considers that investors consider long-term cashflows across multiple regulatory periods and expect to receive returns consistent with this perspective.

The ERA considers that should investors expect a longer -term return on equity, a shorter-term will lead to negative NPV outcomes. Setting a short-term rate would not best meet the NPV=0 principle, nor would it support efficient signals for both network owners or consumers. [51]

Queensland Competition Authority

The QCA also stresses the importance of setting the allowed return to match the return that real-world investors actually do require:

*We consider it is reasonable to use long-term Australian Government bonds based on a 10-year term to maturity. We consider **this approach reflects the requirements of investors and lenders who, in relation to long-lived infrastructure assets, will deploy equity over the entire life of the asset, rather than over any given regulatory period**. While we prefer a*

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[51] Economic Regulation Authority of WA, June 2022, *Explanatory statement for the 2022 draft gas rate of return instrument*, paragraphs 598-601.

long-term bond based on the life of the assets, 10 years is the longest-term bond available that is sufficiently liquid. [52]

Essential Services Commission of SA

ESCoSA also sets the allowed return to match the return that real-world investors actually do require, in line with the approach of other regulators:

[T]he 10-year term to maturity [on CGS for the risk-free rate] approximates the long-lived nature of the infrastructure assets being regulated. It is also in line with the term used by regulators and investment practitioners, and accommodates for the relatively limited liquidity of CGS that are well beyond a 10-year term to maturity. [53]

4.7 Why is the AER now considering a change to its long-standing approach?

The AER identifies two key reasons for considering a change to its long-standing approach to the term of the risk-free rate:

» The AER now considers that it may be important to align the terms used for regulatory inflation and the allowed return on equity (reversing its previous position that there was no relationship between these two items, and at the same time maintaining a 10-year term for the allowed return on debt); and

» The AER now considers that a 5-year term may better achieve the NPV=0 condition (reversing its longstanding position that a 10-year term best achieves NPV=0).

The AER provides the following explanation for the reversal of its approach to the term of the risk-free rate:

In this instance, we consider the change meets the required bar for change, because it will both better achieve the NPV=0 condition and also bring consistency to our approach. With respect to consistency, our revenue allowance including our approach to estimating inflation will be set consistently following this change. [54]

The following two sub-sections address each of these reasons proposed by the AER.

4.8 The (continuing) irrelevance of the approach to regulatory inflation

The AER's position to date

ENA's understanding of the AER's position, through to the time of our March 2022 submission, is that:

» The regulatory inflation estimate must be consistent with the NPV=0 principle;

» The allowed return on equity must be consistent with the NPV=0 principle; and

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[52] QCA, November 2021, *Rate of return review: Final report*, p. 83, emphasis added.
[53] ESCOSA, *SA Water regulatory determination 2020 – Final determination: Statement of reasons*, June 2020, p.218.
[54] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 14.

» Regulatory inflation and the allowed return on equity are independent parameters that have different roles in the AER's regulatory framework, such that the term adopted for one has no implications for the other.

While ENA agrees that both the regulatory inflation estimate and the allowed return on equity should be set in such a way that the NPV=0 principle is satisfied, it does not follow that the term over which regulatory inflation is estimated should be equated to the term of the allowed return on equity. Doing so does not ensure that the NPV=0 condition is met for both of these parameters. Satisfaction of the NPV=0 principle simply means that each of these parameters should be estimated (independently) in such a way that allowed return is set equal to the minimum return required by investors.

Throughout the current consultation process, the AER has stated that:

The term for expected inflation and the term for the rate of return should be independently assessed and do not need to align with each other.[55]

The AER has also stated that:

Our preliminary view was that the terms for the return on equity, return on debt and expected inflation should be set independently based primarily on the NPV=0 principle. If they are the same value, it should be the result of analysis rather than explicit requirement,[56]

And the AER's position as at December 2021 was that its:

Preferred position is that the terms of equity, debt and inflation do not have to be the same.[57]

The rationale for independence of regulatory inflation and allowed return on equity

The reason why "the term for expected inflation and the term for the rate of return should be independently assessed and do not need to align with each other" is that they each play a different role in the AER's regulatory framework.

Specifically, within the AER's regulatory framework:

» The AER first estimates the required return on equity. Consistency with the NPV=0 principle requires that the allowed return on equity is set to match the market return that is required by equity investors. Since real-world investors determine their required return using a 10-year risk-free rate, that is the term that must be adopted; and

» The AER then estimates the expected value of RAB indexation and reduces the allowed cash flows by that amount to avoid any double-counting. Consistency with the NPV=0 principle requires that what is 'taken out' must equal what is expected to be 'put back in.' Since what is 'put back in' is inflation over 5 years, that same term must be used to determine what is 'taken out.'

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[55] AER, May 2021, *Term of the Rate of Return: Draft Working Paper*, p. 32.

[56] AER, September 2021, *Term of the rate of return & Rate of return and cashflows in a low interest rate environment: Final Working Paper*, p. 21.

[57] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 40.

Advice provided to the AER

In advice provided to the AER's 2020 review of regulatory inflation, Lally (2020)[58] noted that the AER had previous considered two contradictory rationales for the role of the regulatory inflation parameter:

» Regulatory inflation might be thought about as ensuring that what is taken out of allowed revenues in the PTRM is equal to what is expected to be put back in via RAB indexation in the RFM; or

» Regulatory inflation might be thought about as converting nominal allowed returns into real returns.

> *The AER (2020, pp. 10-12) offers contradictory rationales for the inflation deduction in the revenue equations. Initially, it argues that the deduction in (say) equation (2) is to offset (on average) the inflating of the RAB in equation (1). It then asserts that the deduction is to convert the nominal WACC in these revenue equations to a real WACC and, given its use of the ten-year WACC, it therefore estimates the expected inflation rate over ten years so that the terms match. The claim concerning conversion from nominal to real is not correct; conversion would require division in accordance with the expectation version of the Fisher formula rather than subtraction. The correct rationale is that noted first by the AER.[59]*

It is important to note that Dr Lally (2020) identified that the two rationales are contradictory. Indeed, they are mutually exclusive in that it is impossible to achieve both simultaneously. The regulatory framework must *either* 'take out what is expected to be put back in' *or* convert nominal returns to real returns.

In its review of regulatory inflation, the AER was very clear that the first interpretation is adopted in the AER's regulatory framework. Thus, the term of inflation is determined by the RFM and must be set to five years – 5-year inflation must be deducted because that is what is 'put back in.'

In this regard, the AER stated that:

> *We consider that using a term that matches the regulatory period will ex-ante match expected inflation over the regulatory period, an**d that this is a better approach than matching the 10 year term of the rate of return. This ensures that in expectation, the nominal rate of return and real rate of return is achieved over the regulatory period**.[60]*

The AER went on to explain this rationale in more detail, noting its reliance on the advice from Dr Lally:

> *Having regard to the advice from Dr Lally and submissions on our discussion paper, we have reached the view that an inflation term matching the regulatory period is likely to result in the best estimates of expected inflation. In particular, we consider that adopting an inflation term that is the same length as the relevant regulatory period (typically, 5 years) would, in expectation match RAB indexation over the regulatory period. **This is desirable because service providers will in expectation receive the same allowance during RAB indexation in the RFM as the amount (expected inflation) deducted from total revenue in the PTRM.** Thus, service providers are expected to receive the nominal return set in the rate of return instrument over the regulatory period.[61]*

In summary, the AER has clearly stated that:

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[58] Lally, M., 8 July 2020, *Review of the AER's inflation forecasting methodology*.
[59] Lally, M., 8 July 2020, *Review of the AER's inflation forecasting methodology*, p. 5.
[60] AER, October 2020, *Regulatory treatment of inflation: Draft position*, p. 62, emphasis added.
[61] AER, October 2020, *Regulatory treatment of inflation: Draft position*, p. 62, emphasis added.

» Its decision is informed by the advice from Dr Lally (presumably including his mathematical analysis);

» The term for expected inflation is determined by RAB indexation in the RFM and not the term of the allowed return in the PTRM – because the role of regulatory inflation in the AER's process is to 'take out what you expect to put back in'; and

» Adopting a 5-year term for inflation and a 10-year term for allowed returns results, in expectation, in the nominal rate of return and the real rate of return being achieved over the regulatory period.

Dr Lally also provided very clear advice to the AER that a 5-year term should be used for inflation (to match what is taken out to what is expected to be put back in) regardless of the term adopted for the allowed return on capital. He specifically notes that there is no 'inconsistency' in adopting a 5-year term for inflation even if the AER were to adopt a 10-year term for the allowed return:

> *Furthermore, even if the AER used the ten-year WACC, it does not follow that it should estimate expected inflation over the same period.* [62]

Dr Lally also sets out some mathematical derivations to demonstrate the point. He concludes that his mathematics "unambiguously requires" that the term for inflation must match the period of RAB indexation, independent of however the AER might set the allowed return on equity. [63]

That is, Dr Lally's well-known and consistent support for adopting a 5-year allowed return has nothing at all to do with regulatory inflation.

The AER has recently recognised Dr Lally's advice about the independence of the term of the allowed rate of return and regulatory inflation, but has then stated that:

> *Dr Lally said that his conclusion on the equity term and the term of expected inflation are separable consequences of the NPV=0 principle.* [64]

But the AER then goes on to say that:

> *However, if we questioned his conclusions on the equity term, this may also lead us to question his conclusions on the term of expected inflation.* [65]

In our view, each piece of advice provided by Dr Lally should be evaluated on its merits. Dr Lally's advice and reasoning in relation to regulatory inflation and return on debt is the same as ours, but we disagree with his advice and reasoning in relation to the term for the return on equity – explaining our reasons in detail in this submission. In our view, it would be inappropriate to conclude that one must either endorse all of Dr Lally's advice or none of it.

The potential reversal in the AER's position since December 2021

Sometime during the first half of this year, the AER considered a reversal in its position on the independence of the terms for regulatory inflation and the allowed return on equity. The AER is now considering an approach where:

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[62] Lally, M., July 2020, *Review of the AER's inflation forecasting methodology*, p. 6.
[63] Lally, M., July 2020, *Review of the AER's inflation forecasting methodology*, p. 7.
[64] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 114.
[65] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 114.

» The term for the allowed return on debt is independent of the term for regulatory inflation; but that

» Consistency requires that the term for the allowed return on equity must be the same as for regulatory inflation.

The position that the AER is now considering is that:

> *Matching the equity term to the length of the regulatory period is consistent with how we set the term of expected inflation. The same mathematics we relied on in determining the term of expected inflation applies in the case of return on equity.* [66]

And:

> *We consider that aligning the term of return on equity and the term of expected inflation would mitigate the mismatch between the inflation expectations embedded in the allowed (nominal) return on equity and the expected inflation in the PTRM.* [67]

And also:

> *In broader terms, we consider that the NPV=0 condition is central to our framework. Therefore, following the NPV=0 principle and matching the equity term to the length of a regulatory control period would promote consistency with our decision on the term of the expected inflation.* [68]

No basis for the change in approach regarding regulatory inflation

In our view, there is no basis for the AER's proposed change in approach regarding the relevance of regulatory inflation. During the *Review of Regulatory Inflation*, two potential roles for inflation were identified:

» The regulatory inflation parameter could play the role of extracting that part of the nominal allowed return that is due to expected inflation; or

» The regulatory inflation parameter could play the role of 'taking out' what the AER expects to 'put back in' via RAB indexation.

In the former case, the terms must be aligned between regulatory inflation and the allowed return. The CRG advocated this approach.

In the latter case, the term for regulatory inflation is determined by RAB indexation in the RFM and is independent of the term for the allowed return.

The AER ultimately concluded that the correct role of regulatory inflation is to ensure that the AER takes out what it expects to put back in. That is, the AER rejected the approach advocated by the CRG whereby there is an alignment between the terms of regulatory inflation and allowed returns.

Any change to the role of the regulatory inflation parameter would require an appropriate consultation process, which has not occurred.

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[66] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 14.
[67] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 114.
[68] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 113.

Moreover, it would be internally inconsistent to argue that the role of the regulatory inflation parameter is to extract that part of the nominal allowed return that is due to expected inflation – for equity only and not for debt.

Analysis of the AER's new position

A summary of the AER's previous position on term issues, and the position being ventilated in the draft decision as we understand it, is set out in Table 3 below.

Table 3: Potential change in AER positions on regulatory inflation since December 2021

AER position as at December 2021	AER draft position in June 2022
Term for regulatory inflation is independent of the term for allowed returns.	Term for allowed return on equity must match regulatory inflation. Term for allowed return on debt remains independent of regulatory inflation.
Term for regulatory inflation is determined by RAB indexation in the RFM and not allowed returns in the PTRM.	Term for allowed return on equity must match the term for inflation.
Accepts Dr Lally's advice (and mathematical analysis) on the independence of terms for inflation and rate of return – given their different roles in the AER's process.	Rejects Dr Lally's advice (and mathematical analysis) on the independence of terms for inflation and rate of return – given their different roles in the AER's process.
5-year inflation and 10-year allowed return ensures nominal and real return are delivered, in expectation, over the regulatory period.	5-year inflation and 10-year allowed return creates a 'mismatch' that must be corrected (but only for equity).
5-year inflation and 10-year allowed return is consistent with NPV=0.	5-year inflation and 10-year allowed return is inconsistent with NPV=0.
Consistent positions on equity and debt.	Inconsistent positions on equity and debt.

Source: AER, October 2020, Regulatory treatment of inflation: Final position*; AER, June 2022,* Draft rate of return instrument: Explanatory statement*.*

In our view, there are several problems with a potential reversal of the AER's position on this issue:

» It is not based on any new evidence.

The potential reversal of the AER's position has not been made in response to new evidence. Rather, the AER is considering an approach whereby the existing body of evidence supports the opposite conclusion to the one the AER had adopted until the end of 2021. Such an approach would do little to foster confidence in the stability and predictability of the regulatory regime at a time when record investment is required.

» <u>It is contrary to expert advice.</u>

The clear advice that the AER has received from Dr Lally is that the terms for regulatory inflation and allowed returns are entirely separate and the term for one has no implication for the term of the other. Of course, it is open to the AER to reject the expert advice that it has commissioned on any particular issue, however, that would require an explanation of why the AER considered that advice to be erroneous or why the AER otherwise disagreed with it.

This is particularly so in circumstances where the regulator had initially adopted a position consistent with that advice and then proposed to reverse that position.

The draft RoRI materials do not contain an explanation of why the AER now rejects the expert advice it has commissioned on this issue.

» <u>It is inconsistent with its position in relation to the allowed return on debt.</u>

The AER's potential new position appears to be that:

– The term for the allowed return on debt is independent of the term for regulatory inflation; but that

– Consistency requires that the term for the allowed return on equity must be the same as for regulatory inflation.

The draft RoRI materials contain no explanation of why the 'consistency' with the term for regulatory inflation that now seems to be required applies to equity but not debt.

» <u>There is no mathematical basis.</u>

The draft RoRI materials state that:

The same mathematics we relied on in determining the term of expected inflation applies in the case of return on equity. [69]

ENA cannot understand the basis for this statement and is concerned that it does not provide stakeholders with any clear insight into the reasoning process applied by the AER.

The mathematics that pertains to the AER's approach to regulatory inflation simply establishes that the NPV=0 principle requires that what is 'taken out' must equal what is expected to be 'put back in.' Since what is 'put back in' is inflation over 5 years, that same term must be used to determine what is 'taken out.'

What is expected to be 'put back in' is entirely independent of the allowed return on equity – it is instead based entirely on RBA inflation forecasts. Consequently, what is 'taken out' is entirely independent of the allowed return on equity.

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[69] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 14.

Moreover, Dr Lally has clearly advised the AER that his mathematical analysis establishes that the term for regulatory inflation would be the same irrespective of the term used for the allowed return – given that its role is "to offset (on average) the inflating of the RAB."[70]

Thus, there appears to be no basis for the statement that there is any mathematical link between the terms for inflation and allowed returns. We note that the AER appears to have discovered the mathematical link since December 2021, and that the author of the mathematical analysis has advised the AER that there is no such link.

» There is no logical basis for the potential reversal in the AER's position

We do not follow the logic that, because the NPV=0 principle is applied to inflation and equity, the same term must apply to both to 'promote consistency.'

Rather, the NPV=0 principle requires that each parameter is estimated in a way that is consistent with its role in the regulatory framework:

− For inflation, what is required is an estimate of what is expected to be put back in via RAB indexation;

− For debt, what is required is an estimate of the cost of servicing the prudent and efficient debt portfolio; and

− For equity, what is required is an estimate of the market cost of equity capital – not the return that a flawed mathematical analysis suggests should be required.

Moreover, the suggestion that the terms for inflation and equity must be equal to "promote consistency" does not hold in relation to the allowed return on debt. The *Explanatory Statement* does not explain why there should be a match between the terms for inflation and equity, but not for debt.

4.9 Why the NPV=0 principle has not changed since December 2021

Two interpretations of the NPV=0 principle

The AER now proposes that a 5-year term for the allowed return on equity may be more consistent with the NPV=0 principle.

There are two interpretations of the NPV=0 principle as it relates to the allowed return on equity:

» The allowed return on equity should be set to match the market cost of equity capital – the return that real-world investors actually require; or

» The allowed return on equity should be set to reflect the return on equity capital that the regulator considers that investors should require.

The AER has consistently adopted the 'market cost of equity' interpretation of NPV=0

We noted in section 4.4 above that:

» The AER has adopted a 10-year risk-free rate in every decision it has issued since its inception; and

» The AER placed very considerable weight on the NPV=0 principle throughout its 2018 RoRI process, concluding that a 10-year term best promoted the NEO and NGO.

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[70] Lally, M., July 2020, *Review of the AER's inflation forecasting methodology*, p. 5.

All previous AER decisions set the term of the risk-free rate to match the approach adopted by real-world investors.

The AER's approach is to set the allowed return on debt to match what investors actually require – to be consistent with the NPV=0 principle

We noted in section 4.5 above that the AER's approach to the return on debt is to satisfy the NPV=0 principle by setting the regulatory allowance to match the real-world cost of the prudent and efficient debt management strategy that infrastructure investors adopt in practice.

The AER has previously concluded that 5-year inflation plus a 10-year allowed return produces NPV=0

In its final decision for the review of regulatory inflation, the AER concluded that a 5-year term for inflation and a 10-year term for the allowed return supports the NPV=0 principle.[71]

Other regulators

Every other Australian regulator adopts a 10-year term to match the approach adopted by real-world investors. These other regulators consider it appropriate to adopt the 'market cost of equity' interpretation of NPV=0.

For example, the ERA has recently noted the importance of setting the allowed return to match the "competitive market rate" that investors actually require in order to commit capital to a regulated network and not a "regulatory rate" that reflects what the regulator considers that investors should require.[72] In this regard, the ERA has recently stated that one of the key advantages of using a 10-year term is that it:

> *Meets the NPV=0 principle. If the goal is to **match the regulatory allowance to the market cost of capital** (i.e. the return that investors require) the term should be set to **match the practices of investors**. A 10-year term for equity supports efficient financing costs over multiple regulatory periods.*[73]

The QCA also highlights the importance of setting a regulatory allowance to match the return required by real-world investors, who deploy capital for the long-run, not 5 years at a time:

> *We consider it is reasonable to use long-term Australian Government bonds based on a 10-year term to maturity. We consider **this approach reflects the requirements of investors and lenders who, in relation to long-lived infrastructure assets, will deploy equity over the entire life of the asset, rather than over any given regulatory period*.[74]

Why does the AER now consider whether NPV=0 requires a different approach?

We noted in section 4.4 above that the AER had adopted a consistent approach since its inception through to December 2021. In all of its decisions, the AER has adopted a 10-year risk-free rate to match

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[71] AER, October 2020, *Regulatory treatment of inflation: Final position*, pp. 46-48.
[72] Economic Regulation Authority of WA, June 2022, *Explanatory statement for the 2022 draft gas rate of return instrument*, paragraph 590.
[73] Economic Regulation Authority of WA, June 2022, *Explanatory statement for the 2022 draft gas rate of return instrument*, paragraphs 598-601, emphasis added.
[74] QCA, November 2021, *Rate of return review: Final report*, p. 83, emphasis added.

the approach adopted in the market by network investors. The AER has always considered that this approach:

- » Provides the appropriate incentive for efficient investment;
- » Is consistent with the NPV=0 principle; and
- » Promotes the NEO and NGO, since efficient investment and prices that reflect efficient costs are in the long-term interests of consumers.

The AER provides two types of rationale for its proposed change in approach – conceptual and mathematical, and we deal with each in turn over the remainder of this section. The AER's rationale seeks to explain why network investors should require a 5-year return – why a 5-year return should be sufficient to incentivise efficient investment.

By contrast, our view is the same as that of every other Australian regulator and every previous AER decision – the proposed rationale for what network investors should do is irrelevant. We have very clear evidence of what network investors actually do, and the regulatory allowance should be set in accordance with that, as it is for debt. In our view, this evidence is conclusive of the position to not alter the current approach.

Nevertheless, in the remainder of this section, we explain why it is entirely appropriate for network investors to adopt a 10-year term, identifying the critical problems in the range of reasons provided in the *Explanatory Statement*.

The AER's conceptual arguments to support a 5-year term

The June 2022 *Explanatory Statement* sets out a number of conceptual arguments that are used to support the use of a 5-year term that are summarised in Table 4 below. These are all explanations for why network investors should require a 5-year return – why a 5-year return should be sufficient to incentivise efficient investment.

Table 4: New conceptual arguments said to support a 5-year term

Rationale from draft decision	ENA response
The AER's regulatory task (setting allowed returns 5 years at a time) is different from that performed by network investors (discounting cash flows over the life of the assets). (pp. 94, 107)	The correct regulatory task is to ascertain the market required rate of return. All other regulators have concluded that the appropriate regulatory task is to set the allowed return to match the market cost of equity capital that is actually required by real-world network investors. There is clear evidence that real-world network investors require a return on equity based on the 10-year risk-free rate in every 5-year regulatory period. The appropriate regulatory task is for the AER to ask, at the beginning of every regulatory period, what is the return that real-world market investors currently require? The answer to that question always involves the 10-year rate, and not a 5 year rate. This supports the use of a 10-year term.

Under the expectations theory, network investors would expect to receive their required 10-year return over two regulatory periods if the AER allows a 5-year return in each period. (p. 100; Box 6.1)	We do not agree that network investors can be made whole by receiving a return based on the 5-year risk-free rate when they require one based on the 10-year risk-free rate. The AER assumes that network investors think (or <u>should</u> think) about returns in 10-year blocks – they require a particular return over two regulatory periods and then re-set for the next two, and so on. However, all available evidence points to network investors thinking about equity investment in perpetuity, as is logical for an equity holding. They continually update their assessment of required returns as market conditions change – always using a 10-year risk-free rate. They are made whole only if they expect that the regulatory allowance *in each period* will match their required return in that period, which will reflect the 10-year risk-free rate at that time. That is, network investors require a return based on the 10-year risk-free rate over the first regulatory period, plus an expectation that the allowed return in the next regulatory period will reflect the 10-year rate at that time.
Network investors "would" or "do" not require the term premium in the 10-year risk-free rate because allowed returns are re-set every 5 years. (p. 100)	It is clear that real-world network investors <u>do</u> use a 10-year risk-free rate. What the AER appears to suggest is that it thinks that network investors "should" use a 5-year rate instead. The AER assumes that network investors need not think beyond the current 5-year regulatory period. However, even though the allowed return re-sets every 5 years, investors will continue to hold network assets for a very long time, so they do think about risks well beyond the current regulatory period. Similarly, although floating rate bonds re-set periodically, longer-term bonds require higher yields.

Dr Lally is not the only person who recommends a 5-year risk-free rate. Prof. Davis also recommended a 5-year risk-free rate in 2003. (p. 101)	The analysis in Davis (2003) leads him to conclude that the allowed return on debt must also be set to the term of the regulatory period.[75] Since that conclusion has now been universally rejected, the analysis that leads to it must also be rejected. Davis (2003) was prepared prior to the AER being constituted. It was available to, and rejected by, every previous iteration of the AER. Davis (2013) has subsequently recommended that, if the MRP is computed relative to the 10-year rate, it is "appropriate" to use a 10-year risk-free rate in the CAPM.[76] We note that the AER has done this in all its decisions to date.
A 5-year term is consistent with NPV=0 whereas a 10-year term is not. (p. 102)	The AER's previous decisions have been made on the explicit basis that a 10-year term is consistent with NPV=0 because that matches the market cost of equity capital – the actual practice of network investors. All other regulators adopt a 10-year term on the basis that it is consistent with NPV=0. They do not adopt a long-term as some sort of approximation or aiming up, they adopt a long term to be consistent with the market practice. A 10-year term is consistent with NPV=0 from the perspective of investors – it matches the return that network investors actually require. The contention that a 5-year term is consistent with NPV=0 rests on the AER's understanding of the mathematical analysis that is shown to be flawed in this submission and the Schmalensee report.

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[75] Davis, K., August 2003, *Risk Free Interest Rate and Equity and Debt Beta Determination in the WACC*, Report for the ACCC, p. 12.
[76] Davis, K., December 2013, *The debt maturity issue in access pricing*, p. 17.

Investors should discount each cash flow over the term of that cash flow. (pp. 107-108)	The observed practice of network investors is to discount all cash flows using a base 10-year risk-free rate. If the regulatory allowance matches that approach, NPV=0 will be achieved. Even if investors did discount near term cash flows at a lower rate and later cash flows at a higher rate, always using a 5-year allowed return would not achieve NPV=0. This is because, for more distant cash flows, investors would expect to receive an allowance based on the 5-year rate at the time, but then discount that allowance using a long-term rate. For example, consider a cash flow 20 years in the future. If an investor expects that allowed cash flow to be based on the prevailing 5-year rate at that time, and then discounts that cash flow at the prevailing 20-year rate, as suggested, it will on average result in NPV<0.
Independent experts use different terms depending on the life of the assets. (pp. 108-109)	If an asset had a 5-year life, it would be appropriate to use a 5-year discount rate. But the benchmark firm has a much longer life. In the same way, a 5-year bond would be valued using a 5-year rate. But a longer-term bond would be valued using a higher rate, even if the bond is a floating one with regular resets. The AER has misconstrued its observation that the Grant Samuel valuation of AusNet assumes that risk-free rates will increase over time. Grant Samuel made that assumption in forecasting the AER's allowed cash flows in its "DCF model" appendix. A separate appendix, titled "Selection of discount rate" shows that Grant Samuel has applied the same constant discount rate to all forecasted cash flows.

There is some academic support for the use of a shorter-term risk-free rate. (p. 112)	The academic evidence overwhelmingly supports a 10-year (or longer) risk-free rate. The Explanatory Statement contains a partial quote from the Brealey-Myers textbook.[77] However, the remainder of that passage considers the practice of real-world financial managers and observes that "Most use a long-term risk-free rate in the CAPM formula."[78] That textbook also cites a journal article that recommends that "It is important to note that the maturity of the Treasury bills and bonds used should correspond to the time horizon of the project." [79] A survey of companies, advisers and textbooks concludes that the universal practice is to use a term of 10 years or longer.[80] The standard cost of capital reference book observes that "Many financial analysts today use the 20-year US government bond yield to maturity as of the effective date of valuation when valuing a business or a long-term investment because it most closely matches the often-assumed perpetual lifetime horizon of an equity investment."[81]

Source: *AER, June 2022,* Draft rate of return instrument: Explanatory statement*.*

Overview of the AER's mathematical analysis to support a 5-year term

In its draft RoRI materials, the AER states that it has "relied on Dr Lally's modelling" [82] in reversing its position on the term for the required return on equity. The AER then goes on to provide its own mathematical analysis, which differs from the analysis provided by Dr Lally. [83]

Before considering the technical merits of the analyses relied upon by the AER in the draft RoRI materials, it is important to step back and consider what any mathematical analysis is capable of establishing. Mathematical analysis can be used to show that:

» If investors require a return based on a 5-year risk-free rate, and the AER allows a return based on a 5-year rate, the NPV=0 condition will be satisfied;

» If investors require a return based on a 10-year risk-free rate, and the AER allows a return based on a 10-year rate, the NPV=0 condition will be satisfied; and

[77] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 112.
[78] Brealey, R., S. Myers and F. Allen, *Corporate Finance*, 12th ed., McGrawHill Education, New York, p. 228.
[79] Jagganathan, R., J. Liberti, B. Liu and I. Meier, 2017, "A firm's cost of capital," *Annual Review of Finance and Economics*, 9, 259-282.
[80] Brotherson, W., K. Eades, R. Harris and R. Higgins, 2013, "Best practices in estimating the cost of capital: An update," *Journal of Applied Finance*, 15-33, Table 2, p. 20.
[81] Pratt, S. and R. Grabowski, 2014, *Cost of capital: Applications and examples*, 5th ed., Wiley, p. 94.
[82] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 102.
[83] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, pp. 109-110.

» If investors require a return based on one term, and the AER allows a return based on a different term, the NPV=0 condition will not be satisfied.

In our view, this is clear without mathematical analysis. It leads back to a choice of whether the AER should set the allowed return to match the return that investors actually require (the market cost of capital) or something else.

In the remainder of this sub-section, we consider the two sets of mathematical analysis that are highlighted in the draft RoRI materials and we explain why we consider the AER's analysis to be incorrect. In the subsequent subsection, we summarise the opinions of Professor Richard Schmalensee from the Massachusetts Institute of Technology (MIT). Professor Schmalensee is a renowned regulatory economist whose papers have been cited over 30,000 times. His expertise and credentials are beyond question. His famous 1989 paper is said to be the basis of Dr Lally's analysis of this issue. In particular, Dr Lally's papers have cited the 1989 paper as 'showing' that satisfying the NPV=0 condition requires the term of the rate of return to match the regulatory period. Professor Schmalensee has prepared an expert report in this matter, which addresses this claim and is highly critical of both sets of mathematical analysis on which the AER proposes to rely.

In relation to the AER's first piece of mathematical analysis (pp. 103-104 of the *Explanatory Statement*):

» The AER sets out an equation that establishes that NPV=0 is achieved if the allowed return matches the return that investors require. There are two ways to achieve that equality:

  – Assume that investors require (or should require) a return that is equal to whatever the AER allows; or

  – For the regulator to set an allowed return equal to the return that real-world market investors actually do require.

» Our view is that NPV=0 should be achieved by setting the regulatory allowance to match the return that real-world network investors actually require. In the same way that other regulators do. And in the same way that the AER has done in its previous decisions. And in the same way that the AER does in relation to debt.

» Professor Schmalensee concludes that the way in which Dr Lally adopts the first of these approaches is:

  an amazing bit of sleight of hand.[84]

» Professor Schmalensee also notes that the AER has adopted the first of these approaches (although only for the return on equity). He concludes that he has:

  no idea how this assumption can be defended.[85]

In relation to the AER's second piece of mathematical analysis (pp. 109-110 of the *Explanatory Statement*):

» The AER sets out an equation that purports to show that NPV=0 is violated if the allowed return does not match the term of the regulatory period.

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[84] Schmalensee, R., July 2022, *Statement of Richard Schmalensee PhD to the Australian Energy Regulator*, p. 9.
[85] Schmalensee, R., July 2022, *Statement of Richard Schmalensee PhD to the Australian Energy Regulator*, pp. 9-10.

» This analysis considers the case where the investors' required return (i.e. the market cost of capital) changes from one regulatory period to the next.

» The AER updates the allowed return in the numerator of this equation to reflect the change in the market cost of capital, but does not update the discount rate in the denominator.

» We show that NPV=0 is always achieved if the regulator sets the allowed return to match the market cost of capital in all of its decisions. Indeed, that is the very definition of NPV=0.

» Professor Schmalensee concludes that:

The cost of capital as assessed in period 1 is assumed by the AER to discount cash flows during period 2 even though, by hypothesis, it has changed between the two periods. I have no idea how this assumption can be defended either.[86]

The AER's first set of mathematical analysis

The AER sets out some algebra, beginning with the following equation: [87]

$$E[r_1] = \frac{E[V_1] - V_0 + E[CF_1]}{V_0}.$$

This equation defines the expected return over the 1-year regulatory period to be whatever the regulator allows.[88] It says nothing about the adequacy of that allowance. If the regulator allows a high cash flow, the expected return is high and if the regulator allows a low cash flow the expected return is low.

The AER then rearranges this formula as follows:[89]

$$V_0 = \frac{E[CF_1] + E[V_1]}{1 + E[r_1]}.$$

This equation is tautologically true. It says that discounting the regulator's allowance at the regulator's allowed return gets us back to where we started. This equation holds whether the regulator's allowed return is 1% or 20%. It tells us nothing about the adequacy of the allowed return or about what investors might reasonably require. The two equations above presented by the AER are not a 'proof' of anything.

The AER then goes on to say that:

The CRG suggested that Dr Lally assumed that the discount rate ($E[r_1]$ in our notation) is a 5-year rate, instead of demonstrating it is indeed the case. We do not consider such demonstration is required. By definition, the expected return is linked to the period over which it is expected to be received. To re-establish Dr Lally's result, we would start by using the above formulas to evaluate the expected return over a regulatory control period. If the

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[86] Schmalensee, R., July 2022, *Statement of Richard Schmalensee PhD to the Australian Energy Regulator*, pp. 9-10.
[87] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 103.
[88] Note that the regulatory allowance has two components – a cash flow allowance and change in end-of-period value of the RAB.
[89] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, equation 1, p. 104.

length of the regulatory control period is 5 years, then the discount rate in formula (1) is the expected return over the 5-year regulatory control period. [90]

This passage neatly summarises the key flaw in the AER's analysis on this point.

The AER interprets $E[r_1]$ as the return that investors require. It is not. In the above analysis, $E[r_1]$ represents the regulator's allowed return over the regulatory period, as demonstrated in the first of the above equations. The CRG has made this same point to the AER in the passage cited above.

If one mistakenly re-defines the regulator's allowed return to be equal to the investor's required return, one will mistakenly conclude that the allowed return is commensurate with what investors require. The logic becomes circular in the following way:

» Regulator allows 5% return.

» Define this to be $E[r_1]$.

» Re-interpret $E[r_1]$ as the investors' required return, concluding that investors require a return of 5%.

» Conclude that the regulator's allowed return of 5% meets what investors require.

The circularity of this reasoning means that the equations above do not lead to a useable conclusion. We know how investors <u>do</u> determine their required return – they use a 10-year risk-free rate. The AER will either allow a return commensurate with the clear evidence of what investors actually require (as all other Australian regulators do, as the AER has always done, and as the AER still does for debt) or not.

The AER's second set of mathematical analysis

The AER presents some further mathematical analysis to investigate whether a 10-year equity term can be consistent with the NPV=0 principle. [91]

This analysis purports to show that, if investors really do require a 10-year return, and the AER allows a 10-year return, NPV=0 will not be satisfied. That is, if investors really do require a 10-year return, there is no way the AER can set an allowed return to be consistent with the NPV=0 principle. The AER concludes that:

> *The above example is not based on Dr Lally's modelling approach and instead assumes the modelling assumptions consistent with the valuation practices described in stakeholder submissions. The example demonstrates that, even under those assumptions, setting the allowed rate of return on equity to the expected return required by investors over a longer period than the time between resets would not generally satisfy the NPV=0 condition.* [92]

The problem with this analysis is as follows:

» The AER considers the case of two regulatory periods.

» For the first regulatory period, investors form their required return using a 10-year risk-free rate and the AER sets the allowed return accordingly. This is all consistent with NPV=0.

» For the second period, market conditions change and the 10-year risk-free rate changes.

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[90] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 105.
[91] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, pp. 109-110.
[92] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 110.

- » The AER applies the new risk-free rate to its regulatory allowance, but not to the investors' required return!
- » Because there is now a wedge between the regulatory allowance and the required return, NPV=0 fails.
- » But had the AER properly recognised that the investors' required return had changed – indeed, that is the very reason for changing the allowed return – the maths would demonstrate that NPV=0 is maintained. That is, whenever the regulatory allowance is set to match investors' required return, NPV=0 is maintained. We demonstrate this point below and the report from Professor Schmalensee makes the same point.

The NPV=0 consistency of setting the term of the risk-free rate to investor expectations

All of the previous sub-section is a moot point because setting an allowed return to match what investors require is consistent with NPV=0. Our view is that, if investors require a 10-year return, the AER should allow that – as the AER has always done, and as every other regulator does.

Equity investors do not value regulated networks by discounting cash flows over 5 years or even 10 years. They consider regulated assets to be very long-lived assets and invest equity capital in perpetuity. We adopt Dr Lally's notation, where the current value of the RAB is A, the firm reinvests the depreciation allowance each year so that the RAB remains unchanged over time, investors require a return of k which is based on a 10-year risk-free rate, and where the regulator sets the allowed return to match what investors require. If the investor's required return (matched by the regulatory allowance) is constant over time, the present value of the regulatory allowance is equal to the current RAB, and NPV=0 holds:

$$V_0 = \frac{Ak}{(1+k_1)} + \frac{Ak}{(1+k)^2} + \frac{Ak}{(1+k)^3} + \cdots = A.$$

But what happens if investors know that, after the end of the first 1-year regulatory period:

- » Their required return on equity will change from say k_1 to $\widetilde{k_2}$ to reflect the new 10-year risk-free rate at that time, where $\widetilde{k_2}$ is not known at Time 0; and
- » The allowed return will change to match the new required return, whatever that might turn out to be?

In this case, the valuation formula would be as follows:

$$V_0 = \frac{Ak_1}{(1+k_1)} + \frac{A\widetilde{k_2}}{(1+k_1)(1+\widetilde{k_2})} + \frac{A\widetilde{k_2}}{(1+k_1)(1+\widetilde{k_2})^2} + \cdots = A.$$

Note that the investors do not need to know what the new required return might be, or even have any particular expectation about what it might be. All they need to know, for NPV=0 to hold, is that the allowed return will be set equal to the required return in all future regulatory periods.

The above proof then holds recursively for any subsequent changes to required and allowed returns.

Thus, NPV=0 is supported by the regulator – in every regulatory period – by setting the allowed return to match the return that investors require.

4.10 The role of the modelling framework developed by Schmalensee (1989)

The June 2022 draft decision makes many references to the mathematical framework submitted by Dr Lally.[93]

Dr Lally has made essentially the same submission on this point to all of the AER's rate of return review processes and to the processes of other Australian regulators. In every case, he has provided a set of algebraic derivations based on the framework of Schmalensee (1989).[94] For example:

» In the current review process, Dr Lally has advised the AER that:

*A fundamental requirement of regulation is the NPV = 0 principle, i.e., at the time a firm invests in regulated activities, the present value of its future cash flows must be equal to its initial investment. **Schmalensee (1989) shows** that satisfying this principle requires that, at the commencement of each regulatory cycle (when the allowed cost of capital is set), the term to which the allowed cost of capital relates matches the term of the regulatory cycle.*[95]

» Similarly, Dr Lally has recently advised the ERA of WA that:

*A fundamental requirement of regulation is the NPV = 0 principle, i.e., at the time a firm invests in regulated activities, the present value of its future cash flows must be equal to its initial investment. **Schmalensee (1989) shows** that satisfying this principle requires that, at the commencement of each regulatory cycle (when the allowed cost of capital is set), the term to which the allowed cost of capital relates matches the term of the regulatory cycle. Lally (2004) extends this to the situation in which cost and volume risks are present, and revaluation risks arising from the use of DORC methodology; the conclusion is the same.*[96]

» In the 2013 and 2018 review processes, the AER considered (and rejected) advice commissioned in a 2012 report from Dr Lally. That report sets out some algebra that purports to establish that the NPV=0 principle requires the term to be set to the length of the regulatory period and then proposes that:

*This analysis is a simplified version of that in **Schmalensee (1989)** and Lally (2004).*[97]

» The Lally (2004) paper that is referenced above states that:

Schmalensee (1989) shows *that the period to which the allowed rate relates should match the regulatory period.*[98]

In our July 2021 submission, we noted that Schmalensee (1989) does not establish that NPV=0 requires term matching:

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[93] See, for example, AER, June 2022, *Draft rate of return instrument: Explanatory statement*, pp. 102-105.
[94] Schmalensee, R., (1989), "An expository note on depreciation and profitability under rate-of-return regulation," *Journal of Regulatory Economics*, 1, 293-298.
[95] Lally, M., April 2021, *The appropriate term for the allowed cost of capital*, p. 7, emphasis added.
[96] Lally, M., April 2022, *The appropriate term for the allowed cost of equity*, p. 4, emphasis added.
[97] Lally, M., August 2012, *The risk-free rate and the present value principle*, p. 6, emphasis added.
[98] Lally, M., 2004, "Regulation and the choice of the risk-free rate," *Accounting Research Journal*, 17(1), p. 18, emphasis added.

Dr Lally's current report cites Schmalensee (1989)[73] as establishing that the NPV=0 principle requires that the term of the discount rate must match the term of the regulatory period. However, Schmalensee (1989) is not a paper about the term of the discount rate. The object of that paper is a demonstration of what Schmalensee calls the depreciation "invariance proposition" whereby all depreciation methods are consistent with the NPV=0 principle so long as the allowed return is equal to the efficient cost of capital. Schmalensee does not consider the question of term matching and does not weigh up the advantages and disadvantages of that approach – he makes a point about alternative depreciation methods. That is, there are two key issues with the Schmalensee framework – it requires that the allowed return must match the efficient cost of capital, and it establishes that different depreciation methods are perfectly consistent with the NPV=0 principle. Neither of these propositions support, or in any way relate to, Dr Lally's advice to the AER that it should match the term of the risk-free rate to the length of the regulatory period.[99]

ENA has commissioned and submitted to the AER a report from Professor Schmalensee, an eminent Emeritus Professor of Economics at the Massachusetts Institute of Technology (MIT). Professor Schmalensee's report makes two main points:

» Schmalensee (1989) does not show that the NPV=0 principle requires that the term of the allowed return must match the length of the regulatory period. Rather, Professor Schmalensee explains that he has "no idea" how the AER's mathematical analysis can be defended[100] and he describes steps within Dr Lally's mathematical analysis as "an amazing bit of sleight of hand"[101] and that analysis getting key issues "almost exactly backwards."[102] That is, there are fundamental problems with the mathematical analyses presented by both Dr Lally and the AER; and

» The appropriate regulatory task is for the regulator to set the allowed return equal to the return that real-world investors actually require.

In relation to Dr Lally's mathematical analysis, Professor Schmalensee states that:

In an amazing bit of sleight of hand, Dr. Lally then asserts that in order for V_0 [the present value of future cash flows] to equal I [the initial capital investment], so that NPV=0 is satisfied, the ρs [investor required returns] must be set equal to the rs [regulator's allowed returns]. He does not note that replacing the rs with the ρs, as in equation (6) above from Schmalensee (1989), accomplishes the same thing in a much more logical fashion. [103]

That is, NPV=0 can be achieved either by:

» The regulator setting allowed returns to match the market-determined cost of capital ; or by

» Investors changing the return that they require to match what the regulator allows.

In relation to the AER's first set of mathematical analysis, Professor Schmalensee states:

The AER (2022) offers two defenses of the same Lally proposition. The first (pp. 103-104) essentially starts from the first equality in equation (8)[104] and assumes an all-equity firm. It argues that the ρs [investor required returns] should be set so that V_0=I and NPV=0 is

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[99] ENA, July 2021,*The term of the rate of return*, pp. 36-37.
[100] Schmalensee, R., July 2022, *Statement of Richard Schmalensee PhD to the Australian Energy Regulator*, pp. 9-10.
[101] Schmalensee, R., July 2022, *Statement of Richard Schmalensee PhD to the Australian Energy Regulator*, p. 9.
[102] Schmalensee, R., July 2022, *Statement of Richard Schmalensee PhD to the Australian Energy Regulator*, p. 7.
[103] Schmalensee, R., July 2022, *Statement of Richard Schmalensee PhD to the Australian Energy Regulator*, p. 9.
[104] $V_0 = \frac{[\rho_1 I + D_1] + E(V_1)}{(1+r_1)}$.

satisfied. It is being assumed, however that r_1, the expected return on equity in period 1, is unaffected by regulatory decisions and that it may accordingly differ from the firm's market-determined cost of capital in that period. I have no idea how this assumption can be defended. [105]

That is, Professor Schmalensee identifies the same point that we raised above and that has also been raised by the CRG.[106] We also note that the AER has assumed that investors will require a 5-year return, independent of any evidence about what investors actually require, and that such an assumption has no basis.

In relation to the AER's second set of mathematical analysis, Professor Schmalensee states:

The AER's second defense (pp. 109-110) uses a two-period numerical example, the core of which can be explained using the notation and framework adopted here.   The hypothesis is that the first period allowed rate of return, ρ_1, is set equal to the firm's long-term cost of capital, the economic rate of return that investors require, as assessed at time zero. At the start of period 2, the regulator decides that the long-term cost of capital has changed to ρ_2, and the allowed rate of return is adjusted accordingly. In the notation above, the AER advances the following equation for V_0 under these assumptions:

(9)
$$V_0 = \frac{\rho_1 I + D_1}{(1+\rho_1)} + \frac{\rho_2(I-D_1)+(I-D_1)}{(1+\rho_1)^2}.$$

Comparing equations (6)[107] and (9), the difference is that the cost of capital as assessed in period 1 is assumed by the AER to discount cash flows during period 2 even though, by hypothesis, it has changed between the two periods. I have no idea how this assumption can be defended either. [108]

That is, Professor Schmalensee identifies the same point that we raised above. At the beginning of period 2:

» The AER updates its allowed return, consistent with the market cost of capital at that time; but

» Investors do not require the market cost of capital at that time (a clear contradiction of the very definition) but somehow still require the return that was current 5 years ago.

Professor Schmalensee makes the same point that we have made above. NPV=0 is met by setting the allowed return to reflect the market cost of capital in every period.

If capital market conditions make it appropriate to set the allowed rate of return in period 2 equal to ρ_2, it is appropriate to use that rate to discount period 2's end-of-period returns back to the start of that period. It is then appropriate to use the allowed rate of return in period 1, ρ_1, to discount those discounted returns, along with period 1's end-of-period returns back to period zero.

[105] Schmalensee, R., July 2022, *Statement of Richard Schmalensee PhD to the Australian Energy Regulator*, p. 9.
[106] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 105.
[107] $NPV_R = -I + \frac{X_1}{(1+\rho_1)} + \frac{X_2}{(1+\rho_1)(1+\rho_2)} = -I + \frac{\rho_1 I + D_1}{(1+\rho_1)} + \frac{\rho_2(I-D_1)+(I-D_1)}{(1+\rho_1)(1+\rho_2)}.$
[108] Schmalensee, R., July 2022, *Statement of Richard Schmalensee PhD to the Australian Energy Regulator*, pp. 9-10.

Moreover, this NPV=0 result holds even if ρ_2 is unknown at the beginning of the first period. All that is required is that it is known that the regulator will set the allowed return equal to ρ_2 (the market-determined required return) whatever that turns out to be.[109]

4.11 The AER's elevation of its new interpretation of NPV=0

We have noted above that, in its previous decisions, the AER has linked the NPV=0 principle to the NEO and NGO. The AER's rationale is that the long-term interests of consumers are advanced by creating just the right incentive for efficient investment. The incentive for efficient investment is, in turn, created by setting the allowed return equal to the market cost of capital – the actual return required by real-world network investors. As real-world investors use a 10-year risk-free rate, the AER has on every occasion concluded that setting the regulatory allowance on the same basis is consistent with the NPV=0 principle, will create the right incentive for efficient investment, and will best promote the NEO and NGO.

All other Australian regulators have reached the same conclusion.

In its June 2022 draft decision, the AER proposes a potential change to its interpretation of NPV=0 – that a regulatory allowance based on a 5-year risk-free rate is sufficient compensation for network investors. This conclusion appears to be based primarily on the AER's reconsideration of the mathematical analysis that it has considered many times before.

Thus, there is a tension between the AER's new interpretation of its mathematical analysis and the observed market practice of investors. There is clear evidence that investors use a 10-year rate. But the AER now concludes that a 5-year rate should be used.

This breaks the link between NPV=0 and efficient investment and (consequently) the NEO and NGO. That is, the AER's previous interpretation of NPV=0 (and that currently adopted by other Australian regulators) is that the allowed return should be set to reflect the market cost of capital actually required by investors. The AER is now considering a different interpretation of NPV=0 that is inconsistent with the actual practice of real-world investors. Since it is those investors that are required to provide investment, the new interpretation of NPV=0 is not linked with efficient investment.

The new interpretation of NPV=0 does not incentivise efficient investment because it does not reflect the return that real-world investors actually require. Thus, the AER's new interpretation of NPV=0 does not promote the NEO and NGO because it does not incentivise efficient investment.

Implicit in the draft proposal is that (flawed) conclusions from its mathematical analysis should potentially be elevated above everything else, including the achievement of the NEO and NGO by incentivising efficient (real-world) investment.

This contrasts with the 2018 RoRI where the AER concluded that:

» The SL CAPM estimates the returns an investor requires over a long-term investment horizon;

» The 10-year term is a sufficiently long investment term to serve as a proxy for the long-lived assets under regulation; and

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[109] Schmalensee, R., July 2022, *Statement of Richard Schmalensee PhD to the Australian Energy Regulator*, p. 6.

» The 10-year term is consistent with actual investor valuation practices and academic works, and comparable with the investor valuation practices used to value other stocks within the market with a similar degree of systematic risk.

Such factors are directed at identifying what real-world network investors would actually require by way of returns. Such an approach is consistent with both the NEO/NGO and the RPP, which refer to concepts such as promoting efficient investment in the regulated business, providing effective incentives for efficient investment, providing returns commensurate with risks, and seeking to avoid potential under-investment. That is, the legislative tests are focused on real-world concepts of investment, incentives and risk, rather than mathematical formulae (even if such formulae were interpreted correctly).

ENA submits that it is not a plausible or sustainable proposition that every previous AER and every other Australian regulator has undertaken the wrong task. We submit that the AER should reconsider its proposed change to the term of the risk-free rate.

4.12   QTC analysis of a re-setting bond

The QTC submission to this review process addresses the claim that the regulatory setting is analogous to a floating rate bond where the base coupon rate re-sets to the prevailing 5-year government bond yield every 5 years.

This leads the AER to conclude that the current 5-year yield should be used as the proxy for the risk-free rate as investors have not locked in any return beyond the current 5-year period:

> *With 5-year resets, investors in regulated assets do not bear the risks associated with locking in the rate of return beyond a 5-year regulatory control period. Therefore, compensation for these risks is not part of the opportunity cost of equity capital and would not be necessary to attract investors.*[110]

However, network investors *have* locked in their *investment* beyond the current 5-year regulatory period even though the allowed return has not been locked in. That is, a network investment does not end with a final exit payment at the end of the 5-year period (like a 5-year bond). Rather, the capital remains invested for the next 5-year period, and the following one, and so on.

To take the bond analogy, consider two cases:

» A standard 5-year bond that is paid out in full at the end of the 5-year period; and

» The same 5-year bond, but where the investor is automatically reinvested back into the same instrument (with a re-set rate) for the next 5 years, and the next, and the next for several decades.

Both finance theory and common sense suggest that investors will require a higher return from the second instrument than from the first – because the first instrument ceases at the end of 5 years whereas the second continues on.[111]

Alternatively, from the perspective of the borrower – the first instrument involves a requirement to repay in full at the end of 5 years whereas the second involves no requirement to repay the face amount for a very long time. Thus, the first involves refinancing risk, whereas the second does not. This would be reflected in the respective rates.

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[110] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 100.
[111] Of course, the owner of the longer-term instrument is free to sell it at the end of the first 5-year period. But the price of that sale would reflect the long-term nature of that instrument.

That is, a long-term bond that re-sets every 5 years will not have the same yield as a bond that is paid out in full at the end of 5 years.

The QTC submission demonstrates how this differential can be quantified. QTC estimates the yield on a synthetic long-term bond where the coupon re-sets to the prevailing 5-year government bond yield every 5 years. The results are summarised in Figure 2 below.

Figure 2: Margin between 25-year re-setting bond and 5-year government bond
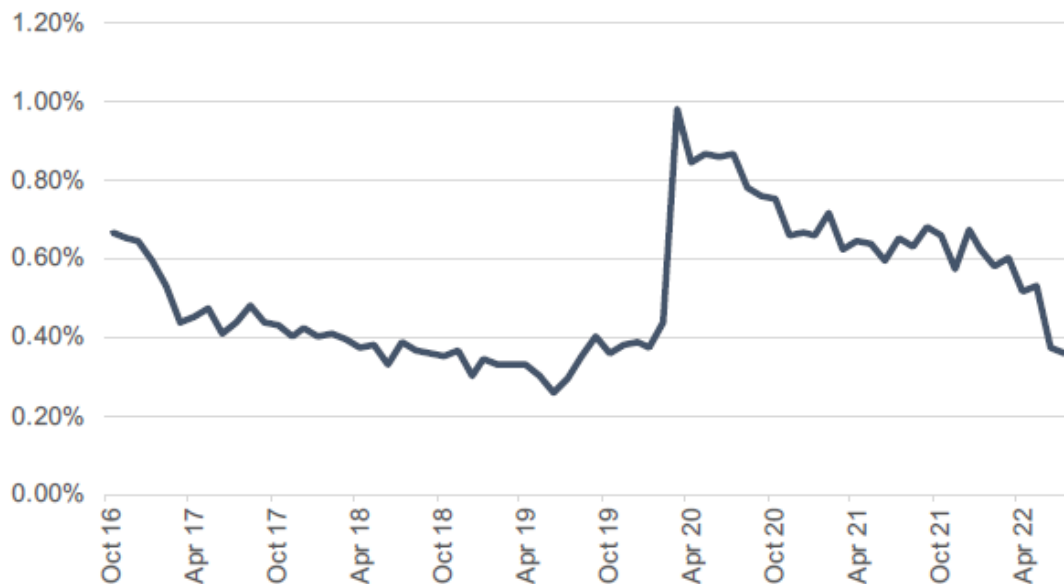
Source: QTC submission.

Figure 2 shows, and QTC reports, that the margin that must be paid on the long-term re-setting bond, relative to a standard 5-year bond, averages 51 basis points. Over the same period, the average differential between the 10-year and 5-year government bond yield is 44 basis points.[112]

That is, the AER's contention is that an investor would require a 5-year return where rates are re-set every 5 years, independent of the term of the investment. The contention is that the required return is determined by the period between re-sets and not the life of the total investment. Such a contention is inconsistent with finance theory and the empirical evidence compiled by QTC.

4.13   Applying guidance from the legal framework for the Instrument

In making the 2022 RoRI under the NEL and NGL, the AER is expressly required to:

» only make the RoRI if the AER is satisfied that it will, or is most likely to, contribute to the achievement of the NEO/NGO to the greatest degree; and

» have regard to the Revenue and Pricing Principles (RPP).

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[112] And QTC also reports that the correlation between those two series is 0.49.

The NEO/NGO focus attention on efficient investment in, and efficient operation and use of, services for the long term interests of consumers of electricity/natural gas with respect to price, quality, safety, reliability and security of supply.

The six detailed RPP require consideration of issues relating to:

» ensuring a reasonable opportunity for service providers to recover at least their efficient costs;

» the provision of effective incentives to promote economic efficiency in relation to investment, provision of services and use of assets;

» the regulatory asset base;

» ensuring returns are commensurate with regulatory and commercial risks;

» the costs and risks of potential under- and over-investment; and

» the costs and risks of potential under- and over-utilisation of regulated assets.

The Australian Competition Tribunal (Tribunal) has previously highlighted that the NEO/NGO and RPP operate together. The NEO/NGO are not inconsistent with, and do not override, the RPP – rather the assumption in the regulatory regime is that the two are complementary, and the NEO/NGO are served by having regard to (all of) the RPP. [113]

In its draft decision, the AER has applied its own 'guiding principle' (formulated in the Position Paper *Rate of Return and assessing the long term interests of consumers*) in informing its decision making and developing the draft RoRI, namely: "*an unbiased estimate of the expected efficient return, consistent with the relevant risks involved in providing regulated network services*".

The AER has said that it considers the NEO, NGO and the long term interests of consumers are best served through this guiding principle.[114] While the AER states that it does not "*see the guiding principle as supplanting or adding to [its] legislative objectives*", but rather as "*an aid in applying the legislation*",[115] the NEO/NGO and RPP are referred to infrequently in the AER's specific reasoning in relation to the return on equity.

Perhaps more acutely, in deciding on the appropriate approach to determine the rate of return, and the return on equity in particular, the AER appears to be at risk of effectively abandoning a detailed consideration of requirements of the RPP in favour of the 'NPV=0 principle', which is referred to repeatedly throughout the Explanatory Statement as being "*central to [the AER's] rate of return work*"[116] and "*central to [the AER's] framework*".[117] The AER states that achieving NPV=0 is relevant to satisfying the RPP that a service provider should be provided with a reasonable opportunity to recover at least the efficient costs incurred in providing regulated services.[118]

When given a stable meaning and correctly interpreted, the NPV=0 principle is an appropriate consideration, and its satisfaction a desirable economic outcome. It cannot, however, be used to create a simple formulaic test which effectively supplants or replaces the contents of the NEO/NGO and RPP.

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[113] *Applications by Public Interest Advocacy Service Ltd and Ausgrid* [2016] ACompT 1 at [537] and [787].
[114] Position paper, p1.
[115] Explanatory Statement, p6.
[116] Explanatory Statement, pp102 and 109.
[117] Explanatory Statement, p113.
[118] Explanatory Statement, pp50-1.

ENA is concerned that this is a material risk in proposal to move to a term-matching approach, in rejecting a longstanding approach to determining the return on equity (which is also now used - or proposed to be used - by all other Australian economic regulators) primarily on the basis that it (supposedly) fails the NPV=0 condition.

As discussed, when correctly interpreted, the current approach used does not fail the NPV=0 condition. This is consistent with the reasoning of other regulators with the same task (WA ERA), other regulators across Australia and the views of leading regulatory economic experts.

These issues are expanded upon further below.

Satisfaction of the NPV=0 principle and regulatory framework guidance

At an overall level, ENA is concerned that if the AER chose to make a sharp change to its current practice and interpretation of the NPV=0 principle, it would risk not best fulfilling its legislative responsibilities – which are to make the RoRI that will best contribute to the achievement of the NEO/NGO and, in doing so, to have proper regard to all of the RPP, rather than making decisions based primarily on the satisfaction of stylised formulae.

In the draft Explanatory Statement, the AER puts forward a draft position that the satisfaction of the NPV=0 principle contributes to the achievement of the NEO and NGO[119] and posits that:

» the use of a 10-year equity term does not satisfy the NPV=0 condition;[120]

» if anything other than the term of the regulatory period is used to estimate the return on equity, the NPV=0 "*condition is not met, and investors are not correctly compensated for risk*";[121] and

» the AER's proposed change in term will "*better achieve the NPV=0 condition*" and, without that change, the approach "*will not best achieve the NEO and NGO and there is a risk of material economic distortions*".[122]

The AER seeks to demonstrate these conclusions through the use of both Dr Lally's and its own stylised examples and equations which have been discussed above.[123]

Such conclusions and analysis seem to be predicated on the assumptions that:

» the only way the NEO and NGO can be achieved is through the precise satisfaction of the NPV=0 condition; and

» at least when it comes to the return on equity, there is only one possible term (being the length of the regulatory period) that satisfies that condition (notwithstanding the AER's reliance on the NPV=0 principle in its regulatory decision for at least the past 7 years and its conclusion that a 10-year term best satisfies the NEO and NGO[124]).

This suggests a black and white answer to the legislative criteria that can be tested by mathematical equations.

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[119] Explanatory Statement, p102.
[120] Explanatory Statement, p102.
[121] Explanatory Statement, pp14 and 94.
[122] Explanatory Statement, pp14 and 94.
[123] Explanatory Statement, sections 6.2.1.5 and 6.2.1.7.
[124] See, for example, Explanatory Statement for the 2018 RoRI, p88.

Such an approach, however, is not consistent with the legislative framework, previous consideration of these issues by the Tribunal, or some of the AER's own reasoning in this draft Instrument (not to mention its previous decisions).

The legislation expressly acknowledges that satisfaction of the NEO and NGO, and the RPP, is not an exercise in precision and certainty. This is evident in several respects:

» the NEO/NGO and RPP themselves require the balancing of competing interests (such as prices for consumers and incentives for investment);

» the NEO/NGO and RPP are focused on future outcomes, which cannot be predicted with certainty;

» the reference in the first RPP to providing service providers with "*at least the efficient costs*" of providing reference services. This language suggests that there may be a range of potential outcomes that satisfy this RPP. In stark contrast, one of the AER's stated reasons for rejecting the use of a 10-year term for the return on equity is that doing so may "*result in NSPs recovering above… the efficient costs of providing regulated services, assuming other things are equal*",[125] which is precisely what is contemplated by this RPP;

» the imprecision inherent in the RPP themselves (for example, the requirement to have regard to commercial and regulatory risks, and the risks of under- and over-investment and under- and over-utilisation); and

» the express acknowledgement in s18I of the NEL and s30D of the NGL that there is not necessarily any single rate of return that achieves the NEO/NGO as the AER's task is to make a RoRI that contributes to achievement of the NEO/NGO "*to the greatest degree*".

This is consistent with comments previously made by the Tribunal. In *Application by ActewAGL Distribution* [2017] ACompT 2, in the context of the return on debt, the Tribunal found that (emphasis added):

» the NPV=0 principle was a criterion that should be satisfied "*to the greatest degree practicable*" in the approach used to assess the rate of return;[126]

» applying the NPV=0 principle "*presents difficulties*" and "*some approximation is inevitable*" when applying mathematical analysis with simplifying assumptions to a much more complicated entity with "*a large number of assets of different values, ages and remaining operating lives, [that] will change in value and composition over time*";[127] and

» in the decision in question, there were shortcomings and inconsistencies in the AER's approach to NPV=0 that "*tend[ed] to vitiate some of the reasoning it used to reach its conclusions*".[128]

The analysis and formulae relied upon by the AER in the draft decision (both Dr Lally's and its own) also make various simplifying assumptions, and ENA submits that the AER's reasoning in the 2022 RoRI draft decision demonstrates similar shortcomings and inconsistencies as identified previously by the Tribunal.

Further, the AER's own reasoning in the draft Instrument appears inconsistent.

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[125] Explanatory Statement, p102.
[126] At [155].
[127] At [175]-[176].
[128] At [180]-[182].

In the passages quoted above, the AER suggests that *only* a return on equity estimated over the regulatory period can satisfy NPV=0 (and therefore the NEO and NGO), and that the use of any other term will result in "*material economic distortions*"[129] and an unacceptable "*mismatch*" with the term of expected inflation.[130]

However, elsewhere in its draft decision, the AER refers to aspects of its decision (including the return on equity) that would "*better satisfy*" or "*best achieve*" the NPV=0 condition and/or the NEO and NGO. The AER also says that the task of determining a rate of return "*is not one that can be undertaken mechanically*" but "*requires the exercise of judgement looking to future outcomes*".[131] This language suggests a pragmatic realisation that there may in fact be a range of potential approaches that could satisfy the principle and the legislative tests, consistent with the legislative considerations and authority discussed above.

For these reasons - noting that properly implemented the NPV=0 principle *is* satisfied by the use of the current approach - it is inappropriate for the AER to reject outright the suitability of a 10-year term for the return on equity solely on the basis of its assessment that the NPV=0 condition is not met (itself a highly contested claim) through the use of stylised equations. The AER's analysis does not properly demonstrate that a 10-year return on equity cannot contribute to the achievement of the NEO and NGO, or that the use of a 5-year return on equity does, and does so to a greater degree.

The benchmark efficient entity and a workably competitive market

While the concept of the benchmark efficient entity (BEE) is no longer mentioned expressly in the NEL/NGL or NER/NGR (other than in respect of the estimated cost of corporate income tax in the NER/NGR), it still (rightfully) forms the basis of the AER's rate of return framework in the RoRI.

The AER says that the "*building blocks – return on capital, return of capital, operating expenditure and tax – reflect the expected costs that would be incurred by a benchmark efficient business operating the network*"[132] and that the AER is estimating "*a benchmark rate of return… rather than determining the returns of a specific service provider based on all of its specific circumstances*".[133]

However, the AER's approach to the return on equity in the draft decision departs from these principles, and from the legislative requirements that require the AER to have regard to factors such as the efficient costs of providing the services, incentives that will promote efficient investment, the commercial risks involved in providing the services, and the risks of under-investment.

In the context of the return on equity, such factors direct attention to what investors in the BEE would require by way of returns, how investors quantify such returns, and what is the best proxy to use in estimating such returns.

That is, the legislative tests are focused on real-world concepts of investment, incentives and risk (although in the context of the hypothetical BEE), rather than mathematical formulae.

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[129] Explanatory Statement, pp14, 31, 94 and 297.
[130] Explanatory Statement, pp114.
[131] Explanatory Statement, p52.
[132] Explanatory Statement, p7.
[133] Explanatory Statement, p55.

Consistent with these principles, the AER's reasons for continuing to use a 10-year term for the return on equity in the 2018 RoRI included that:

» the SL CAPM estimates the returns an investor requires over a long-term investment horizon;

» the 10-year term is a sufficiently long investment term to serve as a proxy for the long-lived assets under regulation; and

» the 10-year term is consistent with actual investor valuation practices and academic works, and comparable with the investor valuation practices used to value other stocks within the market with a similar degree of systematic risk.

Such an approach is also supported by various decisions of the Federal Court (Court) and Tribunal. For example, the Tribunal said in Application by ActewAGL Distribution that the "*2012 Rule Amendments did not… change the previously understood cost concepts – that the returns on equity and debt were estimates of the long-run returns on those components of capital costs*" (emphasis added).[134]

While the AER still concedes that *"[a]ctual investor valuation practices appear to be consistent with using long-term government bonds. In the case of Australia these are 10-year CGS"*,[135] it then goes on in the 2022 RoRI draft Instrument to determine the return on equity in a manner that is inconsistent with actual investor practices or requirements in favour of a term that satisfies its stylised NPV=0 equations.

The AER's justification for this change in approach includes that:

» its "*practice of resetting the allowed rate of return on equity at each regulatory determination affects the profile and riskiness of regulatory cash flows*", which in turn "*impacts the expected return investors require*". It says further that "*matching the term of the allowed return on equity to the length of the regulatory period better aligns our regulatory allowance with the… risks borne by the investors*";[136] and

» the exercise it is undertaking[137] is different to that of a market practitioner performing a business valuation, hence market practice is no longer determinative. It states that:

…we do not estimate the allowed rate of return to be used as a discount rate for a business valuation over a long investment horizon. In our building block model, by construction, the market value of a regulated business is equal to its book value, RAB, as long as we ensure NPV=0. We estimate the allowed rate of return to be able to evaluate the return on capital building block and then the maximum allowed revenue of a regulated business. Further, at any regulatory determination we only estimate a 'snapshot' of cashflows – revenue allowances for a single regulatory control period (typically, 5 years) – rather than cashflows for an entire asset life.[138]

That is, the AER has created the material risk of allowing its NPV=0 objective to override the requirement of the NEO/NGO and RPP, by its draft analytical framework leading it to abandon any consideration of what investors in the BEE may actually do or require in favour of satisfaction of its simplified mathematical proofs.

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[134] [2017] ACompT 2 at [72].
[135] Explanatory Statement, p107.
[136] Explanatory Statement, p94.
[137] Which has not changed since the 2018 RoRI.
[138] Explanatory Statement, p107.

The AER also says that "*evidence does not appear to show that investors would in practice require the same (per year) return over a one-year or 5-year period as they do over 10 years or 50 years*"[139] and that "*based on both corporate finance theory and commercial evidence, it appears unlikely that the investors' required return would be invariant to the length of the period over which this return is expected to be recovered*".[140]

The AER is therefore effectively setting the return on equity on the assumption that investors in the BEE are only investing over a 5-year period (or a period equivalent to the regulatory term) and only have an expectation of a return on their investment over the upcoming regulatory period. This is notwithstanding the AER's previous recognition (and the various submissions made to the AER in this process, including from its own Consumer Reference Group[141]) that investors in the BEE are long-term investors, and the NEO, NGO and RPP require regard to be had to the requirements of such investors.

The Federal Court has held that is not "*not appropriate to characterise the benchmark efficient entity as either a regulated or an unregulated entity*". Rather, the BEE "*must be efficient and it must face "a similar degree of risk" as that which applies to the particular service provider in question in relation to the provision of standard control services" and "the attribution of the relevant "efficiency"… is to be gauged by the disciplines of a workably competitive market (ie, an unregulated market)*".[142]

The Court said in the same decision that: "*The required benchmarking is with respect to the efficiency of financing and risk management practices that are to be expected according to the disciplines of a workably competitive market. The correct approach to estimating the return on debt is by reference to the efficient financing costs of a benchmark efficient entity, rather than the actual financing costs of the particular service provider.*"[143]

The Court also endorsed relevant previous statements of the Tribunal and other courts, such as:

» the Tribunal's description of the economic foundations of the regulatory regime in *Application by ElectraNet Pty Limited (No 3)* (emphasis added):

The national electricity objective provides the overarching economic objective for regulation under the Law: the promotion of efficient investment in the long term interests of consumers. Consumers will benefit in the long run if resources are used efficiently, i.e. resources are allocated to the delivery of goods and services in accordance with consumer preferences at least cost. As reflected in the revenue and pricing principles, this in turn requires prices to reflect the long run cost of supply and to support efficient investment, providing investors with a return which covers the opportunity cost of capital required to deliver the services.[144]

» the Tribunal's summary of the AER's unchallenged submissions in *Envestra Limited (No 2)* regarding the recovery of "legitimate costs":

… Legitimacy, according to the AER is informed by the NGO and, in particular, means costs that would be incurred in a "workably competitive market". The requirement for replication of a workably competitive market outcome is said to be derived from the intent of the regulatory framework.…[145]

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[139] Explanatory Statement, p108.

[140] Explanatory Statement, p109.

[141] Explanatory Statement, pp60-61, 105, 301-302.

[142] *Australian Energy Regulator v Australian Competition Tribunal (No 2)* [2017] FCAFC 79 at [537].

[143] [2017] FCAFC 79 at [533].

[144] [2008] ACompT 3 at [15].

[145] [2012] ACompT 3 at [183].

» the High Court's comments on the "very similar progenitor under the then applicable gas regime" in *East Australian Pipeline Pty Ltd v Australian Competition and Consumer Commission* (emphasis added):

> *The context and purpose of the Code is well understood, not least because the objectives of the legislation are articulated in the legislation itself in considerable detail. <u>The Code as a whole provides for a regulatory regime of a kind which is "a surrogate for the rewards and disciplines normally provided by a competitive market".</u> Competitive pressures in a market stimulate efficiency of production and resource allocation, they stimulate efficient investment decisions and they minimise costs. No party disputed the fact that the regulatory process set out in the legislation was directed to eliminating monopoly pricing whilst nevertheless <u>providing a rate of return to pipeline owners, commensurate with a competitive market</u>.*[146]

The Tribunal has also confirmed previously that the use of prevailing rates in the market is consistent with the consideration of the NPV=0. In *Application by SA Power Networks*, it said (emphasis added):

> *…The objective is to implement the requirement that the ARORO be achieved by the determination of the allowed rate of return. That requirement comes from a view that <u>the outcomes in workably competitive markets are to be emulated by reference to the efficient financing costs of a benchmark efficient entity for the service provider in question. The conventional view (which the Tribunal accepts) is that that involves a forward-looking cost of capital, which in turn implies the use of prevailing, or current, rates in the market; and that that in turn implies an NPV = 0 test.</u> And all that comes back to use of the prevailing cost of capital leading to prices and revenues that provide the right incentives for the BEE to invest efficiently and for its services to be used efficiently, as they would be in a workably competitive market.*[147]

All of these authorities and principles focus attention on the rate of return reasonably required by investors in the hypothetical BEE (which is neither necessarily regulated or unregulated) operating in a workably competitive market, not on rates of return that satisfy theoretical equations.

In particular, there is no evidence (and none has been provided by the AER) that investors in the BEE (which is not necessarily a regulated entity) only have an expectation of a return on equity over a single regulatory period, or that a return measured over that period is commensurate with the commercial risks and returns in a workably competitive market and the expectations of investors in that market. The fact that the rate of return is reset at the end of each regulatory period is a function of the regulatory regime, and does not have any impact on these considerations.

This highlights that drawing on guidance from the legislative framework, and the interpretations of key concepts within that framework

» a movement to a term-matching approach is not a requirement, or implication of the NPV=0 principle, when framework guidance is considered

» applying the conceptual framework of setting a rate of return for a benchmark efficient entity (BEE) properly involves looking at the outcomes of a workably competitive market and making no assumptions about the regulated status of the BEE, which is in direct conflict with the conceptual basis of the AER's draft proposals to move to 'term-matching'.

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[146] (2007) 233 CLR 229 at [18].
[147] [2016] ACompT 11 at [158].

4.14 Consideration of AER assessment criteria and ENA submission

Table 4 below examines the proposed change to a 5-year term against the AER's assessment criteria.

Our conclusion is that the proposed change is not supported by these criteria.

ENA submits that a 10-year risk-free rate should be maintained in the 2022 RoRI.

Table 5: Assessment of proposed 5-year term against AER criteria

Assessment Criteria	Alternative assessment
1. Where applicable, reflective of economic and finance principles and market information *(a) estimation methods and financial models are consistent with well-accepted economic and finance principles and are informed by sound empirical analysis and robust data.*	The draft proposal for 'term-matching' does not reflect: • Standard principles and approaches as outlined in corporate finance textbooks • Market information (i.e. the observed actual market practice of market participants with strong financial incentives to accurately value cash-flows) • The NPV=0 principle taken from the perspective of actual or potential providers of finance The estimation method selected is based on empirical analysis which has been identified as wrong, not founded on - or consistent with - the analytical frameworks claimed, and to reply on assumptions which cannot be defended (see Schmalensee report).
2. Fit for purpose *(a) the use of estimation methods, financial models, market data and other evidence should be consistent with the original purpose for which it was compiled and have regard to the limitations of that purpose* *(b) promote simple over complex approaches where appropriate.*	A significant element of the estimation method adopted for the appropriate term of equity has been based on a systematic and identified misunderstanding of the core implications of an academic paper by Schmalensee for applying NPV=0. Schmalensee's report highlights the limitations of the purpose of his work – with its primary focus on depreciation, which has been claimed to stand for propositions which it does not support relating to the term of the allowed rate of return. The proposed change in approach involves moving away from standard regulatory practice, on the basis of a series of algebraic formulas, underpinned by a series of hypothetical and contested assumptions. These formulas and derivations have been questioned by CRG, ENA, and other stakeholders and experts. No additional knowledge of algebra is required to retain the current approach, consistent with stability, predictability and regulatory precedent. A further complication arising from a proposal to move to term-matching is the new requirement for additional estimations of multiple illustrative MRP estimates, and methodologies to account for different regulatory period lengths. No other Australian regulator has considered this complexity appropriate.

3. Implemented in accordance with good practice *(a) supported by robust, transparent and replicable analysis that is derived from available credible datasets.*	The NPV=0 analysis underpinning the proposal to change to 'term-matching' has been identified as: • Based on a fundamental and sustained misunderstanding of the implications of the 1989 Schmalensee academic paper for the term of the rate of return • Mathematically wrong, with terms changing across equations with no coherent justification • Based on assumptions that cannot be defended By contrast, there is no credible contesting of the empirically observed dataset that investors required return on equity is based on periods of at least 10 years. Additionally, the AER Consumer Reference Group has identified that key claimed outputs of the mathematical equations said to support term match appear to be effectively pre-determined input assumptions, implying a circularity in the entire analysis.
4. Models are based on quantitative modelling that is sufficiently robust and avoids arbitrary filtering *(a) based on quantitative modelling that is sufficiently robust as to not be unduly sensitive to errors in inputs estimation* *(b) based on quantitative modelling which avoids arbitrary filtering or adjustment of data, which does not have a sound rationale.*	The models employed to support the draft proposal have been identified as: • Arbitrarily filtering out the actual findings of the original work said to be a key basis for the change (i.e. by Professor Schmalensee's indicating the implications attributed to his 1989 paper are "wrong" and that the interpretation of the paper was "almost exactly backwards") • being 'fundamentally inconsistent' with Schmalensee (1989) despite claiming to merely 'extend' this framework • being sensitive to errors – in that the draft proposal is sensitive to a starting error about what the requirements of equity investors in committing capital are (i.e. an assumption that investors are protected by 'interest rate risk' through the length of the regulatory period)
5. Where market data and other information is used, this information is *(a) credible and verifiable (b) comparable and timely (c) clearly sourced.*	Market data is available for both 5 and 10 year terms of equity, however, adoption of other regulatory periods may result in the AER needing to undertake other interpolation or estimation in a manner not consistent with this criteria. Other information (i.e. Professor Lally's term matching advice to the AER and other regulators, and the AER's subsequent conclusions on that, and its own mathematical derivations) which has underpinned the proposal to change approaches has been shown to be 'fundamentally inconsistent' with the source material, or reliant on flawed assumptions, casting doubt of the verifiability of this information.

6. Sufficiently flexible as to allow changing market conditions and new information to be reflected in regulatory outcomes, as appropriate.	The proposal to term-match increases – compared to the current approach – the likelihood that individual customers will pay higher network charges through recessions and financial crises. This occurs because the inversion of the yield curve present in these periods (where a 5-year rate will produce a higher cost outcome for consumers) will be reflected in network charges over the subsequent 5+ years. ENA is not aware of any consumer preference research that would support this outcome, compared to stability of the regulatory approach.
7. The materiality of any proposed change.	In its 2013 rate of return review, in maintaining a 10-year term the AER indicated that "*the difference in the overall rate of return between a ten year and five year return on equity is unlikely to be material*". (*Explanatory Statement* for the 2013 Rate of Return Guideline, p. 49.) Thus, the dollar impact of such a change is unlikely to meet the threshold bar for change. ENA's view, however, is that the AER's rationale for such a change creates very material concerns. The draft RoRI proposes an approach that is inconsistent with all prior AER decisions and with the approach of all other Australian regulators. But the most material concern is that the AER's new rationale is that the actual market cost of capital – the return actually required by network investors – is not relevant to the AER's deliberations.
8. The longevity or sustainability of new arrangements.	The best objective indication of the longevity or sustainability of the new arrangement is likely to be the experience where other regulators have adopted similar approaches. Each of IPART, QCA and WA ERA have chosen to trial a 5 year term-matching based approach in the past. Each has now chosen to revert to a 10 year approach. The average duration of their application of a 5-year approach is between 1 and 2 rate of return review cycles. Contrary to the reasoning provided by the AER, the approach is not consistent with the contents of standard corporate finance textbooks, or regulatory economics. The failure of the draft approach to correctly reflect the term of equity actually required and employed by real-world investors means that it creates material risk of violating the regulatory economic 'NPV=0 principle' at any given time.

5   Market risk premium

Key messages

<u>Overview</u>

» ENA maintains the view adopted throughout the course of this review (and previous rate of return reviews) on the benefits in recognising the greater stability of overall cost of equity estimates than risk-free rates. We remain concerned about the robustness of the AER's approach to unusual economic conditions, one example of which is the low-rate scenario that eventuated after the 2018 RoRI.

<u>Historical excess returns approach</u>

» ENA agrees that:

— Only arithmetic means should be used, and a clear statement about this could prevent this debate from continuing in 2026 and 2030; and

— The Mathews (2019) estimates are unreliable and should receive no weight.

» ENA notes that the proposed basis for the HER approach is that the MRP that investors will expect/require (on average) in the future is what they have observed (on average) over the past 30 years. [148]

<u>DGM approach</u>

» A key requirement of any DGM estimate is that it must produce estimates that are unbiased over time. Any DGM specification that produces estimates that are systematically different from observed outcomes (i.e. the HER estimate) should not be used.

» In this regard:

— The calibrated DGM produces an unbiased average estimate by construction;

— By contrast, the AER's proposed specification produces estimates that are materially lower than observed outcomes, on average. This introduces a bias into allowed returns.

» This submission identifies a number of other problems with the AER's analysis of the DGM approach, including:

— Having identified in 2018 a number of issues that led to the AER giving no weight to the DGM evidence, the AER has rejected ENA's approach that addresses those issues, and reverted to the specification that was previously so problematic that it received no weight;

— There appears to be an error in the formula that the AER proposes to use for long-run growth;

— The proposed approach introduces unnecessary noise by first estimating the 10-year MRP and then making an unexplained adjustment, rather than simply estimating the 5-year MRP directly; and

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[148] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, pp. 128-129.

– The AER's key criticisms of the calibrated DGM approach apply equally to the AER specification.

Total market return / Wright approach

» The choice between the HER and Wright approaches is not a binary one. Weight should be given to each estimate according to its relative strengths and weaknesses.

» A balanced assessment of the theoretical support for each approach would involve a symmetric weighing of the evidence. By contrast, the AER appears to apply an impossibly high standard of theory to the Wright approach, and none at all to the HER approach. For example, the HER estimates fall during periods of recession and financial crises which is inconsistent with theory and logic.

» The empirical evidence also supports weight being given to the Wright approach:

– There is compelling evidence of a negative relationship between MRP and risk-free rates over the last 30 years, which the AER has concluded is the period of most relevance. This evidence favours the Wright approach.

– The draft decision relies heavily on the stability tests conducted by Dr Lally. However:

• Those tests do not relate to the 30-year period that the AER has concluded to be most relevant in forming investor expectations. Over the relevant period, the two approaches have similar stability.

• In any event, the stability tests do not support weights of 100% and 0%, respectively; and

• The AER's conclusions in relation to these stability tests are inconsistent with Dr Lally's recommendation that the AER should apply equal weight to the HER and Wright estimates. [149]

Other data sources

» ENA agrees that there is no useful role for:

– Survey responses; or

– Conditioning variables.

Continuing consultation

» ENA notes that the draft RoRI is for the MRP allowance to be based on the HER method only. ENA remains committed to the incorporation of other relevant evidence in an unbiased manner and proposes that constructive consultation on this issue should continue after the 2022 RoRI with a view to producing an agreed method prior to the next RoRI.

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[149] https://www.aer.gov.au/system/files/AER%20-%20Concurrent%20Evidence%20Session%203%20-%20Proofed%20transcript%20-%20February%202022.pdf, p. 66.

5.1　Background and context for this submission

ENA September 2021 submission

In our September 2021 submission, we proposed that:

» Material weight should be applied to the forward-looking DGM evidence and we proposed that a calibrated DGM approach should be used to ensure that the DGM estimate is unbiased, relative to the HER estimate over the same period; and

» The historical evidence should be assessed using the hybrid approach recommended by CEPA, whereby material weight is given to the HER and Wright estimates, each of which makes different assumptions about the relationship between the MRP and the risk-free rate.

In that submission, we stated that we consider that the first-best approach would be for the AER to use its judgment in having regard to all relevant evidence when selecting a risk-free rate and MRP at the time of each determination. We noted, however, that this approach is not permissible under the binding instrument legislation.

Consequently, we proposed a second-best approach whereby the MRP allowance could be updated in a mechanical way to reflect changes in the risk-free rate during the term of the RoRI. This updating would reflect the weights applied to the various MRP estimation approaches.

AER December 2021 Omnibus Paper

In its December 2021 *Omnibus Paper*, the AER rejected the ENA proposals on MRP. The *Omnibus Paper* instead set out a number of options that the AER planned to take forward into the next stage of its consideration. Among the options left open by the AER, the two most viable appeared to be:

» **Status quo** – the 2018 approach, where the AER would use the HER approach to estimate a fixed MRP such that the resulting figure would be codified into the RoRI and used in every determination made under it; and

» **Option 3b** – where the AER would give some weight to the DGM evidence, updated at the time of each determination.

ENA March 2022 submission

In our March 2022 submission, we maintained our views about the best approach to estimating the MRP. However, we accepted that the AER had rejected that approach and has narrowed its consideration down to a small number of approaches to take forward in the process. Consequently, our submission focussed on providing our views on each of the methods that remained the focus of AER considerations.

In particular, we noted that the remaining methods under consideration gave particular prominence to the HER and DGM approaches. Our submission therefore focussed on how to obtain the best possible estimates from those two approaches:

» In relation to the HER estimate, we proposed that the arithmetic mean should be used and that the work of Mathews (2019) was of such low quality that it should be afforded no weight; and

» In relation to the DGM estimate, we proposed that it was vital to ensure that the DGM estimate was unbiased, relative to the HER estimate over the same time period. We again proposed our calibrated DGM as a way of ensuring that the DGM approach did not introduce a bias.

Our submission concluded by recommending that the AER might consider giving at least some weight to the Wright estimate of the MRP, as applied by other regulators and as recommended by CEPA.

AER June 2022 draft RoRI

The AER's draft RoRI proposes that the status quo approach will be maintained for the 2022 RoRI – the HER estimate will be computed at the time of the RoRI and the resulting figure will be adopted in every determination made under the 2022 RoRI.

The draft RoRI also provides more detail on 'Option 3b' to enable stakeholders to "see how the approach would operate" in the event that the AER changed its mind between the draft and final RoRIs.[150]

The structure of this section

ENA's views on this issue remain unchanged and we continue to be concerned about allowed returns in a 'low rate' scenario. We note that, in the two years after the 2018 RoRI, interest rates fell dramatically and unexpectedly such that the allowed return on equity in the AER's 2020 decisions was implausibly low. We remain concerned that the current draft RoRI is even less robust to such a scenario given that it reduces the allowed return on equity relative to the 2018 RoRI.

Nevertheless, we accept that the AER has adopted a different view and we seek to make this submission responsive to the AER's stated position. In this regard, we have structured our submissions in this section in four parts:

» First, we provide our views about **how to obtain the best possible HER estimate**, given that the AER's draft decision is to apply 100% weight to that estimate under the status quo approach. We agree with the AER's position in the draft RoRI that the arithmetic mean should be used and that Mathews (2019) should be disregarded.

» Second, we provide our views about **how to obtain the best possible DGM estimate**, given that the AER has set out how that approach would have been implemented if the AER had been persuaded to depart from the status quo approach. We maintain our view that it is vital that the DGM estimate does not introduce a bias into the MRP allowance. It must be the case that the average DGM estimate is equal to the HER estimate over the same time period. Our calibrated DGM is one way of ensuring that the DGM approach does not introduce a bias. If the AER elects to adopt a different specification, it must be subjected to the same unbiasedness test.

» Third, we consider the reasonableness of applying 100% weight to the HER estimate while giving no weight at all to the Wright estimate in light of the available evidence in reports commissioned by the AER.

» We conclude by setting out our recommendations for the final RoRI.

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[150] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 133.

5.2   The best possible HER estimate

The appropriate historical period

The panel appointed by the AER to review the draft RoRI notes that the HER estimate has increased since the 2018 RoRI. [151] The panel notes that the AER has applied the same approach as the 2018 RoRI, updating to reflect more recent data. This has resulted in the HER estimate increasing from 6.1% to 6.5% (relative to a 10-year risk-free rate). The panel notes the materiality of that change due to the period from 1988 being relatively short by international standards:

> *Because the overall data period (1988 onwards) is relatively short compared to standard international practice when using the HER method, adding four years of data in this instance has a relatively large effect on the MRP estimate. [152]*

To put these estimates into perspective, Table 6 below summarises the HER estimates from the 2018 and draft 2022 RoRIs.

Table 6: AER HER estimates of MRP (10 years)

Start year	2018 RoRI (%)	2022 Draft RoRI (%)
1883	6.3	6.4
1937	6.0	6.2
1958	6.6	6.7
1980	6.5	6.8
1988	6.1	6.5

Table 6 shows that, in the 2018 RoRI, the allowed MRP was at the lower end of the HER estimates. Indeed, the 6.1% figure from the 1988 period was materially lower than the 6.5% and 6.6% figures from the 1980 and 1958 periods.

At present, the 1988 figure of 6.5% is the median among the estimates that the AER reports. It remains materially lower than the 6.8% and 6.7% figures from the other two most recent periods.

Thus, there is no evidence that the 1988 period might be currently producing estimates that are out of line with the estimates produced by longer periods.

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[151] AER Panel, August 2022, *Independent panel report: AER draft Rate of Return Instrument*, pp. 26-28.
[152] AER Panel, August 2022, *Independent panel report: AER draft Rate of Return Instrument*, p. 27.

When using HER estimates, there is a trade-off between having sufficient data for statistical reliability and having recent/representative data. This is an issue about which there is no guidance from theory, so judgment is required. The QCA has consistently adopted the period since 1958 on the basis that the quality of data improved at that point and it represents an appropriate balancing of statistical reliability and recency. The AER has adopted a different view, preferring the period since 1988. The 1958 period continues to produce a higher figure, although the gap between the two estimates has reduced since 2018.

In our view, the key message from Table 6 is that the AER's approach of using the period since 1988 remains conservative in that it continues to produce an estimate below that of the next two most recent periods.

As time passes, the relative influence of each additional year will decrease and the difference between the various estimates will also tend to decrease. The alternative is for the AER to adopt a longer historical period now to immediately increase the sample size – an approach that would currently produce a higher allowance.

The panel also contemplates the possibility that the four additional years since 2018 might be somehow special and less representative of future expectations. [153]

Our very strong submission is that it would not be appropriate for the AER to contemplate picking and choosing data points to omit from its HER calculations. The whole point of the HER approach is to obtain an estimate of the long-run average MRP that has occurred in the Australian market. Every data point contributes equally to that exercise.

Omitting data points that someone might consider to be unusual or anomalous is a slippery slope indeed. Who determines what is 'unusual'? On what basis? If we remove any data that is considered to be 'unusual' the final estimate will obviously simply confirm whatever we considered to be 'usual.' In this case, why would there be any need to consider the data at all? We could just adopt the figure that we already knew to be 'usual.'

The panel also notes that, over the last few years, government bond yields have been affected by central bank quantitative easing programs. [154] However, the panel appears to be unaware that the AER has already considered that issue in some detail and concluded that:

> *We remain of the view that a nominal return for 10 years can still be achieved with a minimum amount of risk by buying and holding the 10 year Commonwealth Government Securities until maturity. The ability for investors to receive this return does not change if additional demand is introduced from the Central Bank, if there is additional supply produced by Federal Government to enable stimulus or from increased demand from Banks due to Basel III liquidity requirements. [155]*

Thus, if the government bond yield has remained an appropriate proxy for the risk-free rate, it cannot simultaneously be an inappropriate proxy when estimating historical excess returns.

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[153] AER Panel, August 2022, *Independent panel report: AER draft Rate of Return Instrument*, pp. 26-28.
[154] AER Panel, August 2022, *Independent panel report: AER draft Rate of Return Instrument*, pp. 26-28.
[155] AER, May 2021, *Rate of return and cashflows in a low interest rate environment*, p. 28.

Furthermore, to the extent that central bank interventions have created any distortions, those distortions would have occurred to the (estimates of) the risk-free rate—since the target of the RBA's were government bonds, not equity stocks. Hence, if the panel's concern is to be addressed, the key question is not whether the MRP observations over the recent historical period should be used and interpreted as usual, but whether the risk-free rate over the recent historical period should be used and interpreted as usual — and if not what might the implications be for MRP?

The AER has already considered this issue and concluded that, notwithstanding recent RBA interventions that affected the yields on Commonwealth Government Securities (CGS), observed CGS yields remain an appropriate proxy for the risk-free rate. For instance, the AER noted in final working paper on Term of the rate of return & Rate of return and cashflows in a low interest rate environment that:

> *…almost all market practitioners use CGS as a proxy for the risk free rate, and that CGS can be bought on the open market and held to achieve the stated return to maturity. While, factors such as additional demand from the Central Bank or additional supply produced by the Federal Government to enable stimulus may affect the price, it does not change the underlying characteristics of the CGS as an effective proxy.[156]*

And that:

> *We do not consider that RBA interventions in the longer term CGS market affects the appropriateness of using the CGS as the proxy for the risk-free rate.[157]*

In other words, the AER appears to have already considered the matter of financial market distortions raised by the panel and concluded that no change of approach is required. The panel appears to have been unaware that the AER has already deliberated on this issue and reached a landing on it.

Finally, we note that the panel has suggested that the AER obtain expert advice in relation to central bank liquidity expansion and the potential future normalisation of central bank balance sheets.[158] In light of the above submissions, we see no utility in such an exercise for the narrow purpose of estimation of MRP or a narrow set of parameters. Any such advice should be holistic and consider in comprehensive detail potential and actual interlinkages between all elements of the AER's parameter considerations and cross checks. ENA considers that the examination of this issue and testing of conclusions prior to the final Instrument is unlikely to be feasible.

In our view, the options that are open in relation to HER estimates are:

» Maintain reliance on the period from 1988;

» Apply weight to different historical periods (noting that the two most recent periods currently produce higher estimates); or

» Adopt fundamental changes to the way the historical data is assessed. As such changes have not been foreshadowed to any stakeholders, they would need to be considered via an appropriate consultation process.

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[156] AER, September 2021, *Term of the rate of return & Rate of return and cashflows in a low interest rate environment*, Final working paper, p. 76.
[157] AER, September 2021, *Term of the rate of return & Rate of return and cashflows in a low interest rate environment*, Final working paper, p. 77.
[158] AER, May 2021, *Rate of return and cashflows in a low interest rate environment*, p. 29.

Our preference is to use the period from 1958 for the same reasons as the QCA adopts that period. This is a period that is long enough to provide statistical reliability, consists exclusively of reliable data that is not subject to alternative estimates, and for which does not vary materially with the introduction of each additional year of data.

Arithmetic vs. geometric returns

ENA endorses the AER's conclusion that:

> *For our purposes, we think that the arithmetic mean is likely to produce a result that is most consistent with our task. This is because the expected arithmetic mean is better at measuring all possible states, whereas geometric averages assume one path of history. [159]*

ENA also endorses the AER's approach to giving zero weight to geometric means when compiling the HER estimate. [160]

The AER has correctly noted that the question of arithmetic vs. geometric means has "been running for many years." [161] Given that the 2018 RoRI, and now the 2022 RoRI, apply zero weight to geometric means, we consider this an ideal opportunity to settle the issue so that it does not have to be dealt with again in 2026 and 2030 and beyond. This would simply require a clear statement from the AER that its HER estimate will be based on the arithmetic mean only – confirming the practice of the AER in 2018 and now 2022.

As we noted in our March 2022 submission, we consider that the evidence on this point is compelling. Leading textbooks and case studies prepared by professors at Harvard, Stanford, MIT, Wharton and London Business School not only report that they recommend the use of arithmetic means, but explain why it is wrong to use a geometric mean for the purpose of estimating forward-looking expected returns.

However, we note that the AER appears to leave the door open for future debate on this issue:

> *However, we do acknowledge that the arithmetic average is likely to be subject to a small upward bias. Therefore, we have reviewed both sets of averages before settling on a value.[162]*

Our view is that the geometric mean is irrelevant unless:

» There is some form of compounding in the AER's process, which there is not. (We note that no one has ever challenged this proposition for as long as the arithmetic vs. geometric debate has been running); or

» There is serial correlation in the historical return series.

In relation to serial correlation, there are two issues:

» There is no evidence of any serial correlation before the AER; and

» We noted in our March 2022 submission[163] that it would be inconsistent and illogical for the AER to:

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[159] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 134.
[160] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 134.
[161] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 133.
[162] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 134.
[163] ENA, March 2022, *Rate of return instrument review: Response to AER's Final Omnibus and Information Papers,* p. 79.

- Have regard to serial correlation when computing the HER estimate (i.e., by applying some weight to the geometric mean); but

- Have no regard to that same serial correlation when setting the allowed return on equity (That is, by using the HER estimate as the AER does – not changing the estimate according to whether the excess return in the prior year was above or below average to properly reflect serial correlation. For example, negative serial correlation would imply that the expected return, and therefore the regulatory allowance, is higher in regulatory periods immediately after a 'down' year).

That is, the forward-looking expected return is either a function of the recent historical return for both purposes, or for neither.

The draft RoRI materials do not engage with this aspect of our submission.

For the reasons set out above, our view is that there is no basis for any weight to be applied to the geometric mean, and the final RoRI is an ideal opportunity to end this issue.

The Mathews data and approach

The AER's July 2021 *Equity Omnibus* paper drew attention to a discussion paper by Mathews (2019). [164] [165]

Our March 2022 submission identified a number of quite fundamental issues with the Mathews approach and noted that the author himself recommends that the data source currently used by the AER should be preferred to his. [166]

ENA considers that the work of Mathews (2019) falls well short of the standard required to be of any use in this regulatory process and welcomes the AER's decision to give it no weight. [167]

5.3 The best possible DGM estimate

DGM estimate must be unbiased to meet the NPV=0 criterion

In our view, the most important feature of any DGM estimate is that it must be unbiased over time. Any DGM specification that produces estimates that are systematically different from observed outcomes (i.e. the HER estimate) should not be used. For example, the AER's proposed specification of the DGM produces estimates that are materially lower than observed outcomes, on average. This would introduce a bias into allowed returns.

The AER proposes that the unconditional HER estimate can be interpreted as a forward-looking MRP in the sense that the best estimate of the average future MRP is the average past MRP.[168] In particular, the AER concludes that the best estimate of the average future MRP is 6.5% (relative to a 10-year risk-free rate). The AER's proposed specification of the DGM, however, produces estimates that are systematically lower than 6.5% – so they would introduce a bias.

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[164] Mathews, T., 2019, *The Australian equity market over the past century*, RBA Bulletin. Pp. 167-171.

[165] Mathews, T., 2019, *The Australian equity market over the past century*, RBA Research Discussion Paper, RDP 2019-04.

[166] Mathews, T., 2019, *The Australian equity market over the past century*, RBA Research Discussion Paper, RDP 2019-04, p. 32, emphasis added.

[167] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 129-130.

[168] AER, December 2018, *Final Rate of Return Instrument: Explanatory Statement*, p. 128.

In statistical terms, the *Law of Iterated Expectations* requires that the mean of the conditional estimates (i.e., the average DGM estimate) must equal the unconditional estimate (the HER estimate). This simply requires that any DGM estimate must be unbiased, relative to observed outcomes.

The ENA's calibrated DGM is constructed to ensure that the average DGM estimate equals the HER estimate – that is the whole point of our calibrated DGM. Yet this is not the only way of ensuring that the DGM estimate is unbiased. The important point is that whatever specification might be selected for the DGM, it must be unbiased in that the average DGM estimate equals the HER estimate. Any DGM approach that does not have this property will introduce a bias into the allowed MRP such that the NPV=0 condition will be violated.

There is no clear basis for the reversion to the AER's previous specification of the DGM

The AER developed a preferred specification of the DGM during its 2013 Guideline process and gave its DGM estimates material weight during that process.

In 2018, the AER decided that it had such diminished confidence in its DGM estimates that they would have no impact at all on the allowed MRP. The primary reasons the AER cited for its diminished confidence were:

» A concern that the DGM estimates might be biased, for example, from systematically optimistic analyst dividend forecasts or 'sticky' dividends; and

» A concern that the DGM estimates are sensitive to the long-run growth rate, and there is no single agreed approach for determining that growth rate.

ENA engaged with the AER's concerns and developed the calibrated DGM as a good faith attempt to address them. The calibrated DGM has the dual benefits of:

» Producing an unbiased estimate – by construction, the average DGM estimate is equal to the HER estimate over the same period; and

» The long-run growth rate is determined as part of the calibration process, so requires no separate estimation.

Even though the concerns expressed by the AER were so severe that the DGM received no weight in 2018, and even though the calibrated DGM addresses those concerns, the AER proposes that it now favours its previous DGM specification.

We note that the draft RoRI is for the AER to continue to apply zero weight to the DGM evidence and to rely exclusively on the HER estimate. But the AER has stated that its preferred approach, if it had decided to give some weight to the DGM evidence, would have been to revert to its previous specification of the DGM.

ENA does not understand why the AER would propose a return to the specification that, only a few years ago, was of such concern that it was afforded no weight at all – particularly in light of the fact that we have developed a specification that addresses the very issues that were of primary concern to the AER. While clearly ENA supported the originally specified calibrated DGM for the reasons given – a strong area of member concern is also to understand the reasons for a significant change in regulatory posture, in the absence of any new public analysis.

The AER's proposed DGM specification fails the unbiasedness test

As set out above, the NPV=0 principle requires that the average DGM estimate must equal the HER estimate over the same period. The specification proposed by the AER fails that unbiasedness test, as summarised in Table 7 below.

In particular, the AER's proposed DGM approach, applied over the 1988-2021 period, produces an average estimate approximately 100 basis points below the HER estimate.

Thus, if any weight is applied to the AER DGM estimate, the allowed MRP will (on average) be lower than the HER estimate. This violates the NPV=0 condition if investors expect/require an average MRP equal to the HER estimate, as the AER suggests.

By contrast, the calibrated DGM is constructed to ensure unbiasedness.

Table 7: Average MRP estimates 1988 - 2021

MRP period	HER estimate	Average AER DGM estimate	Average calibrated DGM estimate
5-year MRP	6.8%	5.8%	6.8%
10-year MRP	6.5%	5.5%	6.5%

Source: AER and ENA calculations.

The current estimates from each of these approaches is summarised in Table 8 below.

Table 8: Current MRP estimates as at June 2022

MRP period	HER estimate	AER DGM estimate	Calibrated DGM estimate
5-year MRP	6.8%	5.7%	6.9%
10-year MRP	6.5%	5.5%	6.6%

Source: AER and ENA calculations.

The estimate of long-run growth must be an estimate of long-run growth

The AER's preferred 3-stage specification requires an estimate of growth in dividends beyond year 11. As there is no direct estimate of that very long-run growth in dividends, the AER proposes to base its estimate on long-run GDP growth.

Two potential estimates of long-run GDP growth are considered:

» Estimates of GDP growth over the next 40 years, available in the Commonwealth Government *Intergenerational Reports*; and

» Estimates of GDP growth from Years 6-10, available in *Consensus Economics* forecasts.

In our view, the *Intergenerational Report* estimates should be preferred – as they are long-run estimates, whereas the *Consensus Economics* estimates are not.

We require an estimate of growth from Year 11 and beyond in perpetuity. The estimate from the *Intergenerational Report* approximates this long-run figure. However, the *Consensus Economics* forecasts are for a period *within* the second stage of the AER's specification. Those estimates are for a period exclusively prior to when the third stage even commences.

The AER's Panel has highlighted the need to test the Consensus Economics forecasts against actual outcomes.[169] In this case, the AER proposes to use the Consensus Economics forecasts for GDP growth in years 6-10, after subtracting an adjustment of 1%, as a proxy for average corporate dividend growth over years 11 and beyond. This would involve a regression of the CE forecast (minus 1%) on average dividend growth over the period beginning 11 years in the future. We agree that such empirical evidence is an important consideration for the reasons set out in the following sub-section.

Importantly, whatever approach is taken for estimating long-run growth, the AER must ensure that the resulting MRP estimates are unbiased. Some method must be adopted to ensure that the average of the DGM estimates is equal to the HER estimate or a bias will be introduced.

The deduction for new equity is inconsistent with the observed evidence

The AER has proposed to adopt an estimate of long-run dividend growth by subtracting 1% from an estimate of long-run GDP growth. In our view, there are three fundamental problems with this approach:

» When that approach is applied to the 1988-2021 period, it produces an average MRP estimate materially below the HER estimate for the same period. That is, the approach produces an estimate that is downwardly biased;

» The AER is proposing to use the wrong adjustment formula, or at least one that is inconsistent with the preferred specification that the AER has adopted in all previous decisions. Whereas the AER now proposes to estimate long-run growth as:[170]

$$g = (1 + (r - 0.01)) \times (1 + \pi) - 1,$$

the formula adopted in all of the AER's previous estimations of the DGM since 2013 is:

$$g = \big((1 + r) \times (1 + \pi) - 1\big) - 0.01.$$

» The deduction of 1% is based on a dated academic paper, Bernstein and Arnott (2003).[171] That paper purports to show that the growth in dividends per share has fallen short of the growth in GDP, on average over a long historical period. However, there are a number of problems with that conclusion:

– Previous submissions to the AER have established that the conclusion that dividend growth has fallen short of GDP growth is true only for data from the earlier part of last century. From 1990

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[169] AER Panel, August 2022, *Independent panel report: AER draft Rate of Return Instrument*, p. 33.
[170] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 149.
[171] Bernstein, W. and R. Arnott, 2003, "Earnings growth: the two percent dilution," *Financial Analysts Journal*, 47-55.

(when central banks began targeting inflation), the growth in dividends per share has been equal to (or slightly higher than) the growth in GDP.[172]

— No reason has been proposed for why investors would expect the relationship between growth in GDP and dividends per share to be materially different over the next 30 years than what has been observed over the last 30 years.

— The notion that dividend growth must be capped at GDP growth or else the corporate sector will account for a growing proportion of total economic activity over time has no material effect.[173] For example, dividends from listed companies are currently represent somewhat less than 5% of total GDP.[174] If GDP grows at 5% p.a. and dividends grow at 6% p.a., it will take 50 years before corporate dividends represent even 8% of total GDP. It is not at all unreasonable that the share of the economy that consists of listed companies might increase by 3% over the course of 50 years.

The AER's proposed approach has no basis and is incorrectly described in the *Explanatory Statement*

The AER is proposing to implement the DGM in a most unusual way. What is required is an estimate of the MRP relative to the prevailing 5-year risk-free rate – the risk-free rate that will be used in the CAPM. However, the AER proposes to:

» Estimate the MRP relative to the prevailing 10-year risk-free rate; and

» Add the historical average difference between the 10-year and 5-year risk-free rates.[175] Note that:

— The draft decision indicates that the 10-year MRP will be reduced rather than increased. The AER has indicated to us that this is an error.[176] Because the 5-year MRP will be higher on average, the adjustment will involve an addition; and

— The draft decision refers to an adjustment based on the historical HER estimates, but the only difference between these estimates is the risk-free rates that are used.

This introduces an unnecessary mis-match between the MRP and the risk-free rate that it is paired with in the CAPM formula.

The DGM approach produces an estimate of the total market return at the time of the estimation. The standard approach is to then deduct the prevailing risk-free rate to obtain an estimate of the prevailing MRP.

The draft decision, however, proposes to subtract the prevailing 10-year risk-free rate, adjusted by the historical average difference between the 10-year and 5-year risk-free rates. We do not understand why the AER does not deduct the prevailing 5-year risk-free rate in the usual manner.

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[172] See, for example, SFG, 2015, *Alternative versions of the dividend discount model and the implied cost of equity*, https://www.aer.gov.au/system/files/Essential%20Energy%20-%20Attachment%207.10_Alternative%20versions%20of%20the%20dividend%20discount%20model%20and%20the%20implied%20cost%20of%20equity%20-%202014.pdf and HoustonKemp, 2018, Forecasting dividend growth, https://www.aer.gov.au/system/files/Attachment%203%20-%20HoustonKemp%20-%20DGM%20Memorandum.pdf.

[173] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 147.

[174] GDP of $2.2 trillion from ABS; ASX-listed dividends of $100 billion from Refinitiv.

[175] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 151.

[176] Email from Mr E Smith to ENA, 30 August 2022.

Moreover, the proposed approach fails the simple test that, for a firm with a beta of 1, the allowed return should equal the expected return on the market portfolio.[177] Thus, it is inconsistent with the CAPM itself.

In our view, a better and more standard approach would be to estimate the DGM relative to the prevailing 5-year rate – rather than a mixture of current and historical risk-free rates of different terms. Such an approach would preserve the key benefit of the DGM approach – prevailing and consistent estimates of the risk-free rate and MRP.

We see no benefit in the noise that is introduced under the proposed approach and the rationale for it is not explained in the draft decision. We note that this whole issue vanishes if the AER were to maintain a 10-year risk-free rate.

The criticisms of the calibrated DGM are unwarranted

The draft RoRI materials identify two concerns with the calibrated DGM approach:

» The volatility and range of estimates over the 1988-2021 period; and

» The implied growth rate required to calibrate to the HER estimate.

The AER states that:

> *We accept the underlying premise of the calibrated model, but we do not think the results produced by the model can be credibly applied to our rate of return. In particular:*
>
> • *The MRP estimated from the model exhibits extreme volatility from 0.40% in September 1989 to 12.05% in October 2020.*
>
> • *The terminal long-term nominal growth in dividends used to calibrate the model of 6% is well above other current estimates of long-term dividend growth, including Australian Treasury forecasts for long-term nominal GDP growth of 5%.[178]*

In relation to the volatility of estimates over the 1988-2021 period, we make two observations. The first is that the AER's preferred specification of the DGM generates estimates that are equally volatile. Figure 3 below plots the AER DGM estimates of the MRP alongside the calibrated DGM estimates. That figure shows that:

» The two series exhibit the same volatility. Indeed, they track very closely together with the calibrated DGM producing slightly higher estimates than the AER specification – such that the calibrated version is unbiased relative to the HER estimate over the same period, whereas the AER estimate is not.

» The AER specification produces negative estimates early in the sample period (where government bond yields were particularly high).

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[177] For a firm with a beta of 1, the proposed approach will produce an allowed return equal that differs from the expected return on the market portfolio by the difference between (a) the current difference between the 5-year and 10-year risk-free rates, and (b) the historical average difference between the 5-year and 10-year risk-free rates.

[178] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 145.

**Figure 3: AER vs. calibrated DGM estimates of MRP**
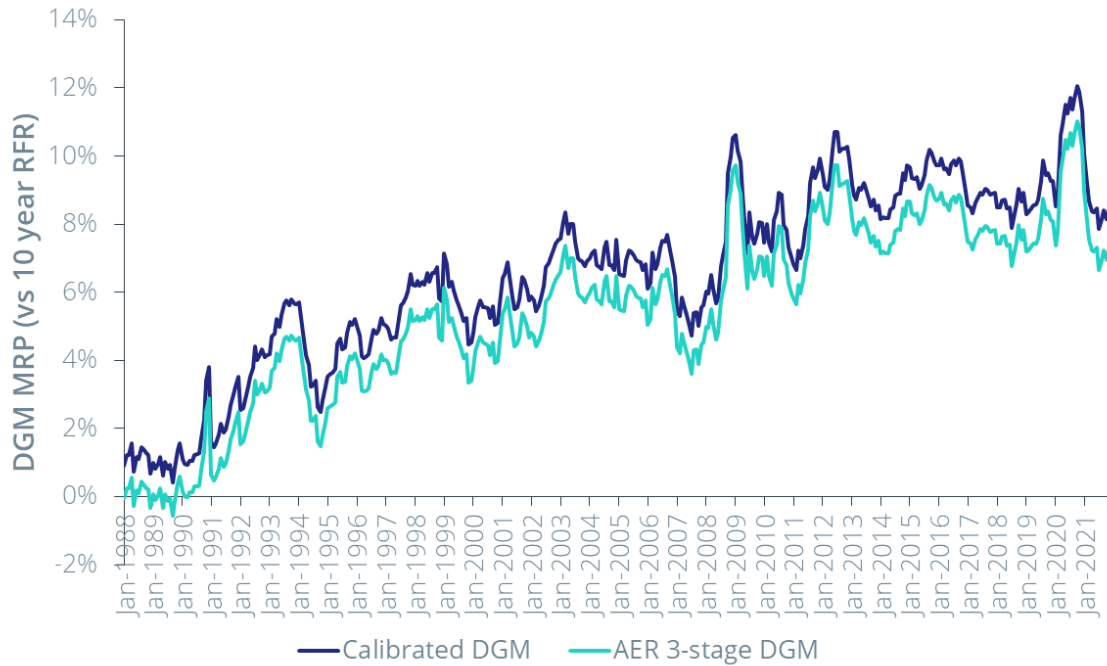
Source: ENA calculations.

Our second observation is that what is most relevant to networks and consumers is not volatility in the MRP, but volatility in the allowed return on equity. Figure 4 below shows that both versions of the DGM (AER and calibrated) produce an allowed return on equity that is much more stable than the HER approach.

Relative to the DGM estimates, the HER approach produces materially higher allowed returns during periods of high interest rates and materially lower allowed returns during periods of low interest rates. The greater stability in the DGM estimates results in the implied MRP changing in a way that absorbs/offsets some of the volatility in risk-free rates.

Figure 4: DGM vs. HER approaches to the allowed return on equity

Legend:
— Calibrated DGM, 10-year tenor   — AER 3-stage DGM, 10-year tenor
- - - HER, 10-year tenor
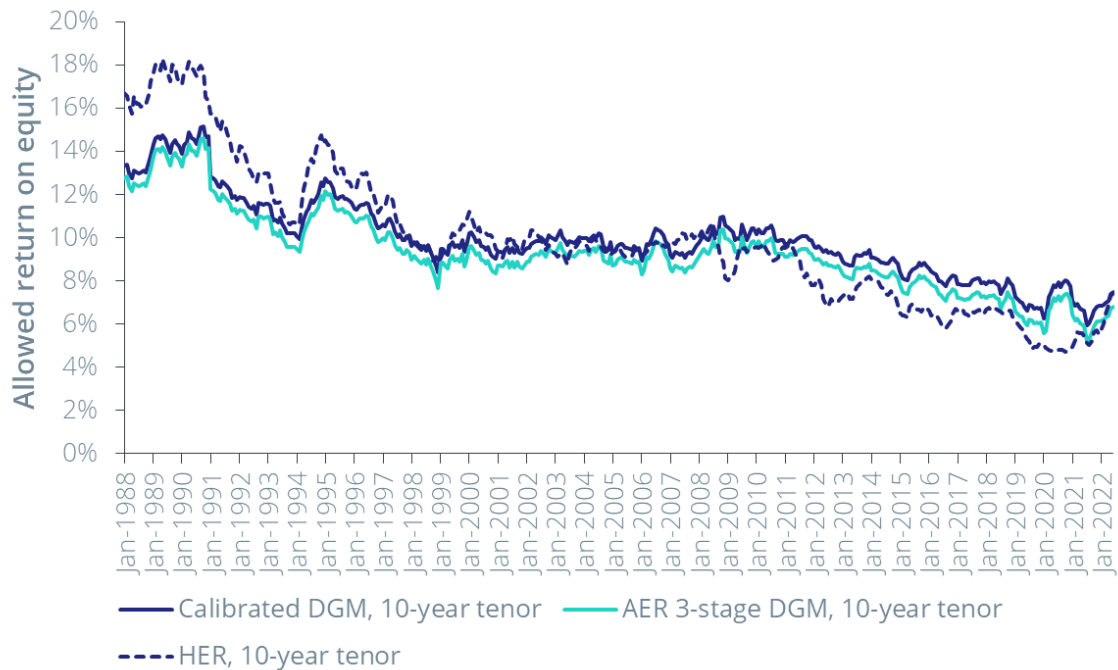
Source: ENA calculations of allowed return on equity for a firm with an equity beta of 0.6.

For these reasons, we consider the AER's criticism of the calibrated DGM on the basis of volatility to be unwarranted.

The AER's second criticism of the calibrated DGM is that the long-term growth rate that is required to match the HER estimate over the relevant period is higher than "other current estimates of long-term dividend growth." [179] However, the AER has not provided any estimates of long-term dividend growth, but rather estimates of GDP growth and assumptions about what this might imply for dividend growth. We have addressed that issue in relation to the proposed deduction for new equity above – over meaningful timeframes, the issue is not a material factor.

The calibrated DGM selects a long-term growth figure to ensure that the DGM estimate is unbiased – that it produces the same MRP estimate as the HER approach, on average. If a different growth figure is adopted, some other adjustment would be required to ensure that the DGM approach produces an unbiased estimate of the MRP, consistent with the HER estimate on average.

The asymmetric treatment of the calibrated DGM

The calibrated DGM is an honest and good faith attempt to address the stated concerns that the AER expressed during the 2018 RoRI review. It does not debate the validity of those concerns or question the basis for them. It seeks to address them. It should also be clear to the AER that significant work has gone

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[179] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 145.

into developing the calibrated DGM. The AER has raised some new concerns in its draft decision, which we have sought to address above.

By contrast, the draft RoRI appears to give material weight to various CRG submissions that have not been exposed to any serious critical assessment.

For example, the draft RoRI states that:

We also recognise the concerns raised by the CRG over the calibrated DGM. They note that the calibrated DGM 'decouples' the DGM result from the long-term growth rate.[180]

This statement is not factually correct. There is no 'decoupling' from the long-run growth rate at all. The calibrated DGM has a long-run growth rate playing precisely the same role as in the AER's DGM specification.

The only difference is that the calibrated DGM uses a different approach to *estimate* the long-run growth rate. Under the calibrated DGM, the long-run growth rate is estimated using the AER's HER estimate, whereas the AER estimates the long-run growth rate using GDP forecasts.

It may be that the AER meant to say that the CRG is concerned that the calibrated DGM 'decouples' from GDP forecasts. But that would be the opposite of the concern expressed by the AER and the CCP[181] in 2018. The key concern then was that there was no way to objectively estimate long-run dividend growth (e.g., by 'coupling' it to GDP), which made the DGM estimates subjective with the potential to produce biased outcomes.

The draft RoRI also states that:

The analysis conducted by Woollahra Partners suggests there is at least one independent variable short in the regression model – leading to potential for omitted variable bias and future analysis. As a result, investigation is useful.[182]

However, the AER does not say whether it agrees with this assessment or indicate what weight (if any) has been applied to it. In the event that this point has had some influence on the AER's consideration of the calibrated DGM we make the following points in response:

» There is no regression model in any DGM calculation. The model does not seek to minimise the sum of squared errors, but rather finds the unique discount rate that precisely equates the present value of futures dividends to observed stock prices. The DGM does not seek to fit a regression line of best fit to a sample of data points, but rather provides an exact fit to a single independent variable at a single point in time. For this reason, it makes no sense to consider a regression model that may be one variable short, or indeed that any more variables might be required.

» Woollahra Partners do not suggest that "there is at least one independent variable short in the regression model" as the AER suggests. Rather, Woollahra Partners present some general diagnostic advice that applies to regression models generally:

*We have summarised some considerations relating to accompanying diagnostics for regression results and sensitivities for ongoing model refinement. **If** visual inspection of the*

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[180] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, pp. 145-146.
[181] Consumer Challenge Panel, September 2018, Submission to the AER, pp. 59, 64.
[182] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, pp. 145-146.

regression residual plots indicates they are correlated with the independent variables this **may** *suggest potential for omitted variable bias in the model.*[183]

Thus, the AER's characterisation of this submission goes well beyond what is actually said in the submission itself.

Alternative approaches to calibration to ensure unbiasedness

We note that there are other ways of calibrating the DGM to ensure that it produces estimates that are unbiased on average.

For example, we have constructed an alternative specification in which we:

» Use the AER's 3-stage DGM specification to estimate the MRP every month from 1988 to the present;

» For each month, we adopt the estimate of long-term nominal GDP growth from the then prevailing Commonwealth Treasury *Intergenerational Report*. For months prior to the first *Intergenerational Report* we adopt the Treasury forecast from the first of those reports; and

» In the final step, we adjust all estimates by the same amount to ensure that the mean DGM estimate equals the mean HER estimate over the same period.

That is, it is relatively straightforward to (a) align dividend growth to GDP growth; (b) allow for GDP growth expectations to vary over time; and (c) calibrate the DGM estimates to the HER estimates to ensure unbiasedness and symmetry.

We would welcome the opportunity to share this model with the AER and to answer any questions in relation to it.

No Panel consideration

The Panel's report contains no mention at all of the calibrated DGM or of the importance of ensuring that any DGM estimate is symmetric and unbiased relative to the HER estimate. Indeed, there is no evidence that the Panel is even aware of the calibrated DGM.

The calibrated DGM was the centrepiece of the MRP submission made on behalf of all network businesses in the NEM. It was developed in good faith as an honest attempt to address the key concerns that the AER expressed in relation to its own specification of the DGM in the 2018 RoRI.

Our March 2022 submission contains a two-page section titled *Issues for consideration by the Independent Panel*. That section seeks to draw the Panel's attention to the importance of our submissions on the calibrated DGM:

> *ENA has proposed a 'calibrated DGM' approach to estimating the prevailing, forward-looking MRP. This approach adopts the AER's preferred DGM specification, with a small modification to address the issues raised by the AER in 2018.*
>
> *Since the DGM approach has a strong theoretical basis and provides useful evidence about the forward-looking MRP, the AER should have regard to it. DGM specifications that are*

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[183] Woollahra Partners, March 2022, *Dividend growth model results*, p. 12, emphasis added.

economically sensible and which address the AER's previous concerns (such as the calibrated DGM) should be used to inform the MRP allowance.[184]

The fact that the Panel report does not even acknowledge the existence of this work raises serious questions over the value of this element of the Independent review process.

ENA does not understand how an effective or targeted Panel review process could result in a report that produces several pages of analysis about the number of decimal places to which gamma should be rounded, but does not address one of the key issues in this review.

5.4 The 'Wright' estimate of MRP

HER vs. Wright is not a binary choice

There are two approaches for extracting an estimate of the MRP from historical stock return data – the HER and Wright approaches. Each approach has strengths and weaknesses relative to the other. There is no requirement for the AER to make a binary choice in selecting one or the other of these approaches. Rather, both approaches provide relevant evidence and both should be given weight in line with their relative strengths and weaknesses.

Assumptions underpinning estimates from historical data

Our March 2022 submission noted CEPA's advice that assumptions are required for both the HER and Wright approaches:

For the historic approaches, an implicit assumption is required: for the "Ibbotson" [HER] approach it is an implicit assumption that the MRP is stable, whereas for the "Wright" [fixed TMR] approach it is an implicit assumption that it varies inversely with the RfR. Regulators place weight on historic measures of the MRP in determining the cost of capital, and an assumption – implicit or explicit – is therefore required. [185]

That is, when implementing the CAPM:

$$E[r_i] = r_f + \beta_i\big(E[r_m] - r_f\big)$$

using the historic approaches:

» The HER approach requires the <u>assumption</u> that $E[r_m] - r_f$ is constant over time; and

» The Wright approach requires the <u>assumption</u> that $E[r_m]$ is constant over time in real terms.

The CAPM itself provides no guidance about any such assumption because it is a one period model. Under the CAPM, both $E[r_m] - r_f$ <u>and</u> $E[r_m]$ are constant over the single period that is contemplated by the model. Consequently, what is required is theoretical guidance outside the CAPM and empirical evidence.

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[184] ENA, March 2022, *Rate of Return Instrument review: Response to AER's Final Omnibus and Information papers*, p. 145.
[185] CEPA, June 2021, *Relationship between RFR and MRP*, p. 4.

The Independent Panel's confusion about the CEPA report

The CEPA report notes that there are three ways to use and interpret the historical data – the HER approach, the TMR/Wright approach, and a hybrid approach whereby some weight is given to each. CEPA recommends that material weight should be given to the Wright approach:

> *The evidence indicates that the second two alternatives [Wright and hybrid] cannot be ruled out, and may provide better estimates of the forward looking MRP consistent with the AER's duty.* [186]

However, the Panel mistakenly interprets this advice as a recommendation to consider a mix of the HER and DGM evidence, not understanding it to be a recommendation in support of the Wright approach.[187]

Theoretical guidance: An asymmetric treatment

Our March 2022 submission noted CEPA's advice that the theoretical support for the Wright approach is as strong as that for the HER approach:

> *There also appears to be as strong a theoretical basis for the argument that the RfR and the MRP are perfectively negatively correlated (the "Wright" approach) as there is for the argument that the RfR and total equity market returns are perfectly positively correlated (the fixed MRP approach).* [188]

CEPA further explains that, when considering the historical data, there is "no good evidence" to support the assumption of a constant MRP.[189] This leads CEPA to advise that an approach that has real regard to estimates from the Wright approach (either alone, or in combination with the HER approach) might provide a better estimate of the MRP:

> *Our assessment is that (i) **there is acceptance that MRP is not stable** and (ii) it is possible that there is an inverse relationship between the forward looking MRP and the RfR, and (iii) **there is no good evidence that the MRP should be assumed to be independent of the RfR, the current implicit assumption of the AER's approach**, and (iv) there is no conclusive theoretical basis for an assumption of independence or dependence.*

> - *In judging evidence on MRP using historic data, the AER can choose whether to use:*
> - *An assumption that the MRP is fixed (current approach)*
> - *An assumption that the TMR is stable ("Wright approach")*

> *An approach that has regard to both measures. This could be for example a weighted average of the two measures, that assumes that the MRP is related to the RfR, but the relationship is not one to one.*

> *Our review of international regulators demonstrates that regulatory processes can accommodate any of these approaches. The data to implement these for Australia is available.*

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[186] CEPA, June 2021, *Relationship between RFR and MRP*, p. 44.
[187] AER Panel, August 2022, *Independent panel report: AER draft Rate of Return Instrument*, p. 32.
[188] CEPA, June 2021, *Relationship between RFR and MRP*, p. 14.
[189] CEPA, June 2021, *Relationship between RFR and MRP*, pp. 6-7.

*The evidence indicates that **the second two alternatives cannot be ruled out, and may provide a better estimate of the forward looking MRP consistent with the AER's duty**. We suggest that consideration of these options, and the evidence that would be necessary to decide between them is undertaken as part of the 2022 RORI process. [190]*

During the Concurrent Evidence sessions, a number of experts made the point that there is no real basis for giving material weight to the HER approach and zero weight to the Wright approach. For example, Dr Lally advised that:

I would say to you, "All methods are imperfect. So choose a set of methods that you think are, for all their imperfections, worth putting weight on, and then equally weight those methods." And the set of methods that I would recommend is not only historical averaging and the dividend growth model, but this Wright estimator. [191]

Similarly, Dr Mirrlees-Black advised that:

*…is the historic MRP the right metric to measure or should we be measuring total market returns? Is that a better measure of a structural economic variable? **And I think that there's evidence that the real total market return is at least as good and weight should be placed potentially on both of those**.[192]*

The AER has acknowledged that it has received submissions setting out a theoretical foundation for the Wright approach, and for the observed negative relationship between MRP and risk-free rates over the last 30 years. However, the AER concludes that the theoretical foundation that has been provided is insufficient:

We acknowledge that stakeholders have put forward a theoretical basis, but it is not at a sufficient level for us to recognise a negative relationship. [193]

However, the AER does not subject its preferred HER estimate to the same standard in the *Final Omnibus* paper or the draft *Explanatory Statement*.

We are unaware of any theoretical basis for a constant MRP. In fact, the HER estimate would seem to be quite inconsistent with theory and logic. For example, the HER estimate tends to *fall* in circumstances where risk premiums *rise* sharply.

For example, a deep recession, the GFC, a global pandemic, or a war and energy crisis in Europe are all associated with rising risk premiums. However, the HER estimate *falls* in such circumstances due to the decline in stock prices.

A balanced assessment of this issue would weight up the theoretical support for each approach in a symmetric manner according to the weight of evidence. By contrast, the AER appears to apply an

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[190] CEPA, June 2021, *Relationship between RFR and MRP*, pp. 6-7, emphasis added.
[191] https://www.aer.gov.au/system/files/AER%20-%20Concurrent%20Evidence%20Session%203%20-%20Proofed%20transcript%20-%20February%202022.pdf, p. 66.
[192] https://www.aer.gov.au/system/files/AER%20-%20Concurrent%20Evidence%20Session%203%20-%20Proofed%20transcript%20-%20February%202022.pdf, p. 51.
[193] AER, December 2021, *Overall rate of return, equity and debt omnibus: Final working paper*, p. 63. See also, AER, June 2022, *Draft rate of return instrument: Explanatory statement*, pp. 157-159.

impossibly high standard of theory and empirical evidence to the Wright approach, and none at all to the HER approach.

Moreover, the tendency of the HER estimate to move in the opposite direction to forward-looking risk premiums stands in stark contrast to the following claim:

> *Using a fixed MRP will result in the total return on equity moving in line with the risk-free rate. The risk-free rate moves in line with economic conditions, meaning our return on equity will also tend to move with the base cost of money because it varies with changing market conditions.* [194]

In our view, any suggestion that the HER approach produces MRP estimates that are in line with market conditions as they change from time to time is wrong. HER estimates, by construction, *fall* during periods of recession and financial crisis. An implication of this approach is that - all other things held constant – investor risk aversion *declines* in period of crisis or recession, which is not an outcome supported by observation or empirical evidence.

Empirical evidence

Our March 2022 submission summarised the compelling empirical evidence of a negative relationship between the MRP and risk-free rates over the last 30 years. We also noted that CEPA reached the same conclusion in its advice to the AER. This result is consistent with the Wright approach and inconsistent with the HER approach.

The draft decision refers to a number of stability tests that the AER has commissioned from Dr Lally.[195] However, those tests are all based on data back to 1883. By contrast, the AER's proposed HER figure is based on data from 1988 because the AER considers that investors are likely to expect/require a future MRP in line with what they have observed over that period. [196] In our view, there can be no serious challenge to the proposition that there has been a negative relationship between the MRP and risk-free rate over the last 30 years. As we noted in our March 2022 submission, the relevant literature has moved well past any debate about whether such a negative relationship exists, to explanations about why it has occurred.

Thus, to the extent that investors use the past 30 years to inform their expectations about the future, it would seem that the observed negative relationship would be embedded in their expectations. It would be odd for investors to have regard to the mean MRP over the last 30 years, but to ignore evidence about the negative relationship from the same data set.

Moreover, because the AER relies on data from 1988, that is the period over which stability should be tested – not another period on which the AER does not rely. But even if one accepts that the longer period *is* relevant, the tests do not support placing 100% weight on the HER estimate and 0% weight on the Wright estimate. That would only be appropriate if the excess returns were perfectly stable and the real return estimates were highly variable. But the AER's own Figure 7.7[197] shows that is not the case.

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[194] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 128.
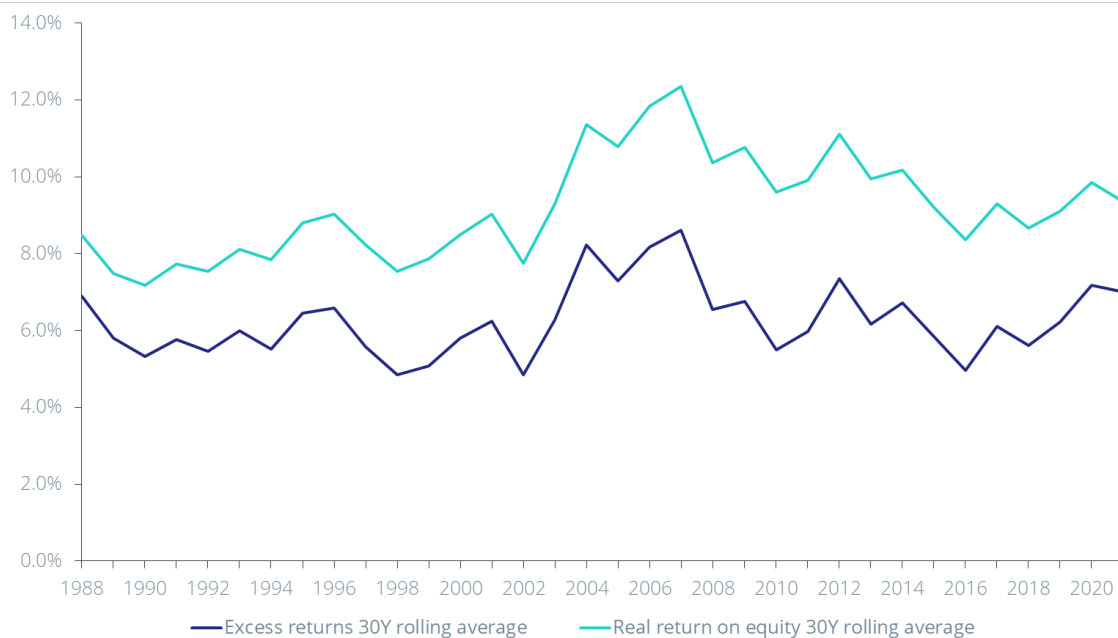[195] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 131.
[196] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, pp. 129, 131.
[197] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, Figure 7.7, p. 160.

The AER's use of this evidence to support 100% and 0% weights would seem to be inconsistent with this evidence, and with Dr Lally's recommendation that the AER should apply equal weight to the HER and Wright estimates.[198]

Finally, given that the AER proposes to apply primary weight to the historical period from 1988-2021, that is the relevant period for any tests of stability. The excess returns and real returns series – for the period that forms the basis of the AER's allowance – are displayed in Figure 5 below.

Figure 5: Excess and real returns: 1988-2021

Source: Data for AER, June 2022, Draft rate of return instrument: Explanatory statement*, Figure 7.7, p. 160.*

Figure 5 shows that the pattern of excess returns and real returns is almost indistinguishable over the relevant period. It certainly does not support the conclusion that one approach should receive 100% weight and the other 0% weight on the basis of their relative stability.

5.5   Other data sources

Survey responses

ENA endorses the AER's proposal to give no weight to any of the survey responses set out in Table 7.6 of the Draft Decision.[199]

We have previously expressed the view that the information contained in those surveys is of such low quality that it should not be relied upon.

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[198] https://www.aer.gov.au/system/files/AER%20-%20Concurrent%20Evidence%20Session%203%20-%20Proofed%20transcript%20-%20February%202022.pdf, p. 66.
[199] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, Table 7.6, p. 153.

We also note that:

» It is only the most recent edition of each survey that could be relevant. ENA does not understand why the AER would include surveys that are a decade out of date in this table; and

» If the survey data were to be relied upon, it is important that the survey responses on the risk-free rate should also be considered. It would be highly misleading to give weight to survey responses on MRP, but to ignore the fact that those same respondents tend to pair their MRP estimates with a risk-free rate materially higher than the prevailing government bond yield.

Conditioning variables

ENA agrees with the AER's conclusion that conditioning variables should have no direct role in estimating the MRP.[200]

In our view, there are two key problems with the approach to conditioning variables that has been considered by the AER:

» The choice of variables considered

In our view, the relevant literature suggests that the most informative conditioning variable is the short-term risk-free rate, which is not included among the variables considered by the AER.

» The comparison undertaken by the AER

The approach considered by the AER is to compare the current level of each conditioning variable with its mean over some historical period. The historical period considered by the AER includes the GFC and European debt crisis periods – where the conditioning variables spiked to levels that are orders of magnitude above their 'usual' levels. This means that the variables tend to be below their means approximately 90% of the time. This runs the risk of the evidence being misconstrued to support an allowed MRP being set below the long-run average 90% of the time – which would introduce a clear bias.

5.6   ENA's proposed approach

In response to the AER's request for submissions in relation to Options 1 and 3b, our view is that:

» We maintain the view adopted throughout the course of this review (and indeed previous rate of return reviews) on the benefits in recognising the greater stability of overall cost of equity estimates than risk-free rates. We remain concerned about the robustness of the AER's approach to unusual economic conditions, such as the low-rate scenario that eventuated after the 2018 RoRI.

» For this reason, our preference is for an approach that applies some material weight to an unbiased DGM approach – such as option 3b using the calibrated DGM or some other specification that produces estimates that are consistent with observed outcomes, on average.

» In our view, maintaining unbiasedness is more important than reducing volatility. Consequently, Option 3b should be implemented using a specification of the DGM that produces unbiased estimates that are consistent with observed outcomes, on average.

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[200] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, pp. 153-156.

6   Equity beta

Key messages

An inadequate comparator set

» That the AER's comparator set has only a single live member is one of the most significant issues to be addressed by the AER during the 2022 RoRI review. As the set of domestic comparators evaporates towards zero and becomes more and more out of date, the AER must logically have less confidence in it.

» However, the draft RoRI proposes that the domestic data set, which is now materially smaller and materially more out of date than at the time of the 2018 RoRI, should continue to receive the same predominant weight.

» In our view, it is untenable for the AER to have effectively exclusive regard to a set of comparator firms, all but one of which no longer exist. This falls well short of regulatory best practice.

Are networks regulated by the AER really materially less risky than all others?

» Other Australian and NZ regulators have recognised the problem of a very small set of domestic comparators and have due regard to international comparators.

» The equity betas adopted by other regulators of electricity networks are 33% or more higher than the AER's beta estimate. The ERA adopts a (like-with-like) equity beta of 0.79 and all others adopt equity betas above 0.8. It is implausible that the networks regulated by the AER are so much less risky than those in Western Australia operating under the same regime and New Zealand.

Other regulators have been able to incorporate international evidence. There is still time for the AER to do so.

» Throughout the current RoRI process the AER has undertaken to "lay the foundation" for how it would have regard to other relevant evidence as the domestic comparator set evaporates. Unfortunately, the draft decision lays no such foundation, providing no guidance at all on how the AER would deal with a potentially null set of domestic comparators in the future.

» We note the Independent Panel's recommendation for further urgent work in this area and reiterate our offer to work with the AER and other stakeholders to develop an approach for incorporating international evidence – similar to the way it has been incorporated by other Australian and NZ regulators.

» ENA considers the three and a half months that remain before the publication of the Final RoRI to be adequate time to properly incorporate the relevant international evidence, as other regulators have done.

6.1   An inadequate comparator set

ENA notes that the AER's proposed approach is to maintain reliance on a domestic comparator set that now consists of a single live firm. The proposed approach is to use international comparators as a cross check only and to have no real regard to the betas that are allowed by comparable regulators.

We maintain the view set out in our March 2022 submission that:

> *The fact that the AER's comparator set will have only a single live member at the time of the 2022 RoRI is clearly one of the most significant issues to be addressed by the AER during the 2022 review period. As the set of domestic comparators evaporates towards zero and becomes more and more out of date, it must logically receive less weight relative to the other evidence that is available.[201]*

In our view, there is no proper basis for maintaining the same weight on a comparator set that has now almost entirely evaporated and for which the dead firms have become even more out of date.

We maintain the view that the equity beta should be determined after having proper regard to all relevant evidence including a set of comparator firms that include more than one live firm, and the approaches and estimates adopted by comparable regulators performing the same task.

6.2   Equity betas adopted by comparable regulators

Equity betas allowed by comparable regulators

In our September 2021 and March 2022 submissions we examined the re-levered equity beta estimates for the set of comparable regulators that was considered in the Brattle report that was commissioned by the AER. We noted that the AER had incorrectly performed the re-levering exercise and we provided the correct figures as in Table 9 below.

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[201] ENA, March 2022, *Rate of return instrument review: Response to AER's Final Omnibus and Information Papers,* p. 95.

Table 9: Corrected international regulatory beta allowances

Regulator	Original equity beta	Gearing	Correct re-levered equity beta
ACM	0.74	50%	0.93
FERC	0.84	60%	0.84
ARERA	0.71	44%	0.99
NZCC	0.6	42%	0.87
NZCC*	0.65	42%	0.94
Ofgem	0.76	55%	0.86
Ofgem*	0.71	55%	0.80
Ofwat	0.71	54%	0.81
Ofwat (CMA)	0.76	54%	0.87

*Source: Equity betas re-levered in the standard manner by multiplying by (1-gearing) and dividing by 0.4. Comparator firms taken from the Brattle report commissioned by the AER, as published in AER, December 2020, International regulatory approaches to rate of return: Final working paper, p. 26. * represents that an adjustment was made in the Brattle Report to produce a better like-with-like comparison – see AER, December 2020, International regulatory approaches to rate of return, Table 5, pp. 26-27.*

We note that the corrected equity betas are all above 0.8.

We also note that the ERA has recently published its own draft RoRI – being precisely the same task under precisely the same legislation and Rules as that undertaken by the AER. The ERA has adopted an equity beta (re-levered to 60%) of 0.79.

Thus, the equity betas adopted by regulators of electricity and gas network businesses are as summarised in Table 10 below.

Table 10: International regulatory beta allowances: Electricity and gas networks

Regulator	Re-levered equity beta
FERC	0.84
NZCC	0.87-0.94
Ofgem	0.80-0.86
ERA of WA	0.79
AER (Draft RoRI)	0.60

Source: Table 9; ERA, June 2022, Draft RoRI; AER, June 2022, Draft RoRI.

Moreover, an equity beta of 0.7 (re-levered to 60%) is adopted by regulators of water utilities in Queensland, NSW, Victoria, and South Australia.

It cannot be the case that:

» The electricity and gas networks that are regulated by the AER are materially less risky than those in New Zealand to the east and WA to the west (where the form of regulation is exactly the same); and

» The electricity and gas networks that are regulated by the AER are materially less risky than water utilities that operate in the same jurisdictions.

AER rationale for having no regard to comparable regulators

The AER proposes to have no regard to the equity betas adopted by comparable regulators. The key reason for this position is that other regulators use data and methods that differ from that used by the AER:

> *We also considered other regulators' approaches in Australia and observe that there are differences between our approach and approaches adopted by other regulators (such as ERAWA), which may have contributed to the difference in our beta values.*
>
> *Given the differences between our approach and that of other regulators, we maintain our view that our beta estimates are not directly comparable with that of other regulators.[202]*

Indeed, other regulators *do* use different data and methods than the AER. Notably, other regulators tend to use live firms rather than dead ones and comparator sets that have more than one live firm.

We have already addressed this point in our March 2022 submission as follows:

> *ENA notes that the possible identification of different approaches for estimating the required return on equity, including the different application of regulatory judgment, is one*

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[202] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 191.

of the primary reasons for considering the approaches of other regulators. The extent to which other regulators use different types of data or different methods and approaches, and the extent to which other regulators apply their judgment in different ways, is relevant information that would assist in explaining, for example, why it is that the AER's return on equity allowances are lower than those of all comparable regulators.

Logically, there would be no point in restricting consideration to only those entities that examine the same data with the same methodologies and exercise regulatory judgment in the same way because that would produce the same outcomes. Knowing that the AER is the only regulator that uses its specific approach and the only regulator that sets such low return on equity allowances is the whole point of performing this sort of cross-check.[203]

In our view, the equity betas adopted by regulators of comparable electricity and gas network businesses is highly relevant evidence. Comparable regulators performing the same task for other electricity and gas networks is highly relevant evidence under any reasonable interpretation. ENA encourages the AER to have regard to this relevant evidence in the final RoRI. Section 6.4 documents that the Independent Panel makes a similar point.

6.3   International evidence

The AER reports equity beta estimates for a set of international comparator firms, as set out in Figure 6 below. That figure shows that the current international evidence supports an equity beta very materially higher than the AER's proposed allowance of 0.6 (marked in red on the figure).

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[203] ENA, March 2022, *Rate of return instrument review: Response to AER's Final Omnibus and Information Papers,* p. 138.

Figure 6: International equity beta estimates and AER proposed beta
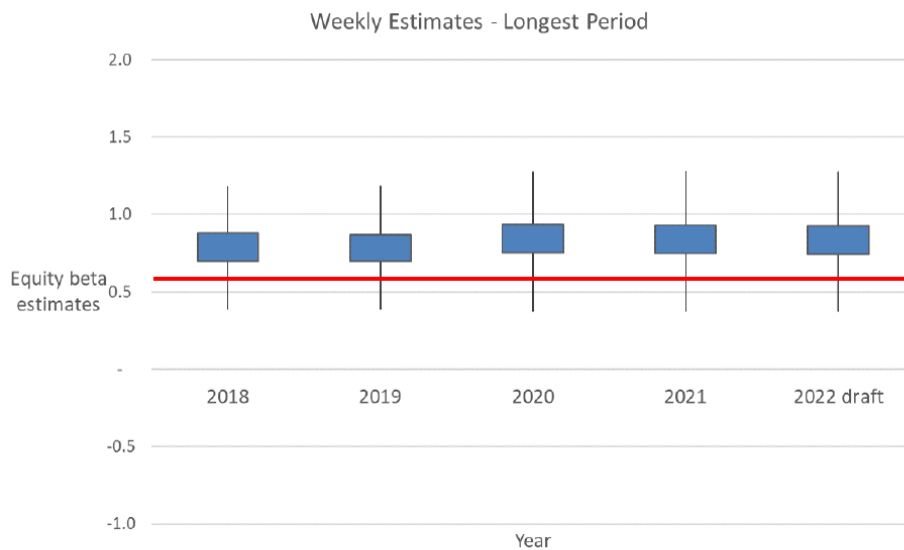
Source: AER, June 2022, Draft rate of return instrument: Explanatory statement, Figure 8.2, p. 172. AER draft equity beta allowance marked in red.

However, the AER proposes to have limited regard to international comparators, using that information as a crosscheck only. The AER explains that it has not yet been able to properly consider how the international evidence might be used, even though its domestic comparator set is now down to a single live observation:

> *We acknowledge stakeholder concern that our domestic comparator set has diminished significantly. We think international energy firms may potentially offer a more viable solution than alternatives such as domestic infrastructure firms. However, there are complex issues with using international energy firms as comparators and more work is needed in this area.[204]*

Our March 2022 submission noted that other Australian regulators *have* been able to properly consider the international evidence. For example, the QCA has recently stated that:

> *We consider that continuing to use an international sample of firms (alongside domestic firms) is preferable, as relying purely on Australian firms to form comparator sets for the entities subject to our regulatory regime is problematic. We are not confident that there are a sufficient number of listed Australian firms for us to draw upon in order to determine reasonable betas. In particular, any industry sample would comprise a very small number of firms, which could result in beta estimates fluctuating by large margins from review to review. This does not provide regulatory predictability.*
>
> *An advantage of using a larger sample of firms is that the impact of any one seemingly anomalous beta estimate is not significant when taking an average or median beta from all*

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[204] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 182.

the firms in the sample. This would not be the case when relying on a very small sample of firms. The potential loss of comparator firms from delisting as a result of mergers and acquisitions would only exacerbate the above issues. [205]

The QCA has also concluded that, although there are some differences between international and domestic firms, the international firms are likely to be broadly similar in terms of their risk profile:

Despite these differences, we would expect many of the international energy firms to have broadly similar operational risks as a regulated energy business operating in Australia, such as Jemena or Ausgrid. [206]

And further that:

This arrangement is not dissimilar to regulated energy businesses in Australia that operate transmission and distribution infrastructure within specified areas as monopolists. [207]

The QCA has also observed that a number of international regulatory regimes share many of the same key features as the Australian framework:

Additionally, while there may be differences in regulatory frameworks across countries, we generally find that most international regulated energy businesses are regulated in such a manner that allows them to recover their efficient costs, including a return on capital commensurate with the risks they face. Many businesses are allowed to recover costs where they depart from forecast levels and some have 'decoupling' mechanisms that allow the business to recover revenue independent of volume—similar in effect to a revenue cap. [208]

IPART has also concluded that a broad sample of firms, including international firms, should be included in the comparator set:

We agree that a broad sample method is more objective, more likely to yield statistically reliable estimates, and more resistant to problems caused by companies dropping out of the sample over time (for example, because they become de-listed). [209]

In our March 2022 submission, we noted that the ERA was proposing to broaden its comparator set to include international firms. The ERA's draft RoRI now applies material weight to international comparators. We note that the ERA has been able to incorporate this relevant evidence in response to the significant reduction in domestic evidence within the RoRI timeframes.

The ERA had highlighted the obvious problems of having a comparator set with only a single live firm:

The ERA holds some concern with the use of such a small sample, including that:

- *A forward-looking equity beta requires live firms that can incorporate information into prices, where historical estimates cannot incorporate information due to being delisted.*

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[205] QCA, December 2021, *Rate of return review: Final report*, pp.71-72.
[206] QCA, December 2021, *Rate of return review: Final report*, p.72.
[207] QCA, December 2021, *Rate of return review: Final report*, p.72.
[208] QCA, December 2021, *Rate of return review: Final report*, pp.72-73.
[209] IPART, February 2018, *Review of our WACC method: Final report*, p.7.

- *A sample that is largely reflective of one firm deviates from a benchmark approach to an actuals approach.*

- *A sample largely reflective of one firm also may be statistically unreliable.* [210]

The ERA also noted its concern that the one remaining comparator – APA Group – may be de-listed in the future leaving a null set. [211]

The ERA then identified a number of advantages of broadening its comparator set to include international firms:

The ERA considers that the international sample option has the following advantages:

- *An extended sample size could result in equity beta estimates that are more reliable and less sensitive to individual equity beta estimates of the Australian energy network sample.*

- *Using international samples could be a more robust approach over time, given the decreasing number of listed Australian energy networks.*

- *Other regulators have been using international comparators for their equity beta estimation, largely driven by the difficulty in finding a sufficient number of comparable businesses to estimate equity beta using a purely domestic sample.* [212]

The ERA further noted that, where regulators have regard to international firms, they all estimate beta in the standard way via regression analysis against the local market index. None use an international CAPM. None make any formal mathematical adjustments for any perceived differences between markets. Rather, all use regulatory judgment to give some real regard to the relevant international evidence.

The ERA then concluded that:

On balance, given the smaller Australian domestic sample, as a working view the ERA considers that examining both domestic and international listed energy networks may be useful when estimating the equity beta for Australian energy networks.

The ERA proposes to use the following method:

- *To use a domestic CAPM model for each country to estimate the equity beta.*

- *The use of an international CAPM would introduce complexity without substantial benefits as it relies on stronger assumptions than the domestic CAPM*

- *To only include firms where the majority of the observations are present in the estimation window.*

- *Consistent with the manner in which domestic equity beta estimates are unlevered and re-levered to the benchmark gearing level, international equity beta estimates will also undergo the same procedure.* [213]

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[210] ERA, December 2021, *2022 gas rate of return instrument review: Discussion Paper*, p. 72.
[211] ERA, December 2021, *2022 gas rate of return instrument review: Discussion Paper*, p. 73.
[212] ERA, December 2021, *2022 gas rate of return instrument review: Discussion Paper*, p. 75.
[213] ERA, December 2021, *2022 gas rate of return instrument review: Discussion Paper*, p. 76.

The ERA has adopted its proposed approach in full in its draft Rate of Return Instrument, concluding that:

The ERA considers that market circumstances necessitate the examination of international energy networks in the benchmark sample.[214]

That is, the ERA, performing the same task under the same timetable as the AER, has developed a sensible method for the incorporation of international evidence – to add to the one remaining domestic comparator.

6.4   Panel assessment and recommendations

The panel appointed by the AER to review the draft RoRI has made a number of recommendations that are consistent with the above submissions.

For example, the Panel observes that the evidence that appears to receive the most weight in the AER's assessment of equity beta is the empirical estimates for Spark Infrastructure and AusNet Services. This is problematic because:

» There are only two firms on that list;

» Neither of those companies are currently listed;

» Both were affected by takeover speculation and sale processes over recent years; and

» Both had beta estimates that changed materially during the Covid period.

This led the Panel to recommend that the AER should consider a broader range of evidence. The Panel:

encourages the AER to consider a wide a (sic) group of proxies and alternative sources of insight. [215]

The Panel specifically noted the relevance of international evidence, and the importance of incorporating that evidence prior to the final determination:

it is critical that the AER complete, as soon as possible, an analysis of alternative methodologies for estimating beta including, but not limited, to use of international comparators…Ideally, that work would be undertaken prior to the final determination. [216]

The Panel also identified the relevance of other Australian infrastructure businesses:

In addition, to drawing insights from beta estimates for regulated international companies, the possibility of using risk and return data derived from Australian infrastructure stocks was also raised. The Panel believes that these opportunities should be given consideration. [217]

The Panel also noted the importance of having regard to the practice of other regulators, particularly those engaged in precisely the same task as the AER:

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[214] Economic Regulation Authority of WA, June 2022, *Explanatory statement for the 2022 draft gas rate of return instrument*, paragraph 1044.

[215] AER Panel, August 2022, *Independent panel report: AER draft Rate of Return Instrument*, p. 39.

[216] AER Panel, August 2022, *Independent panel report: AER draft Rate of Return Instrument*, pp. 40-41.

[217] AER Panel, August 2022, *Independent panel report: AER draft Rate of Return Instrument*, p. 40.

> *Given the data constraints that the AER faces, however, the Panel supports the use of a wide range of inputs including practices of other regulators.* [218]

Remarkably, however, the Panel did not engage with the evidence that every other comparable regulator has adopted an equity beta in the order of 0.8 or above (with 60% gearing). In our view, this is clearly important and relevant evidence that is hard to reconcile with the AER's materially lower allowance.

The Panel also recommends that the AER consider how real-world network investors assess risk:

> *By engaging actively with funds who regularly review potential investments in unlisted infrastructure assets, the AER could enhance its understanding of the way in which risk is assessed by major investors in the sector.* [219]

We agree that the actual practices of network investors is highly relevant evidence. As we explain in section 4, The NPV=0 principle is achieved, and the NEO/NGO is best promoted by setting the allowed return equal to the return that real-world investors actually require.

Finally, we note that the Panel has recommended that the AER consider "the impact of macroeconomic factors on parameter estimates" [220] and that:

> *The AER's consideration of potential anomalies in the beta estimate [e.g., due to both primary comparators being affected by takeover bids] could be improved by the inclusion in the ES of beta estimates for APA.*[221]

In this regard, Table 11 below shows that both of those considerations would lead to a higher beta estimate. In particular:

» The estimates for Spark and AusNet were both materially higher immediately prior to the period affected by sales process and Covid; and

» The 'control' estimates for APA – the lone remaining comparator – are all materially higher than for Spark and AusNet.

Thus, if any weight is given to these recommendations from the Panel, the result would be an increase in the equity beta allowance – towards the level adopted by all other regulators of comparable firms.

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[218] AER Panel, August 2022, *Independent panel report: AER draft Rate of Return Instrument*, p. 41.
[219] AER Panel, August 2022, *Independent panel report: AER draft Rate of Return Instrument*, p. 41.
[220] AER Panel, August 2022, *Independent panel report: AER draft Rate of Return Instrument*, p. 39.
[221] AER Panel, August 2022, *Independent panel report: AER draft Rate of Return Instrument*, p. 39.

Table 11: Domestic equity beta estimates

Estn. Date	Longest			10 years			5 years		
	APA	AST	SKI	APA	AST	SKI	APA	AST	SKI
Apr-18	0.67	0.39	0.45	0.70	0.40	0.43	1.04	0.76	0.60
Dec-19	0.69	0.41	0.46	0.82	0.63	0.50	1.06	0.74	0.63
Apr-22[222]	0.69	0.35	0.44	0.86	0.45	0.48	0.84	0.27	0.45

Source: ENA calculations.

6.5 The way forward

In December 2021, the AER acknowledged that its domestic comparator set now consists of one live firm and that there is a real prospect that in the near future there may be no listed comparator firms at all. This led the AER to undertake to lay the foundation for how it would propose to estimate beta in future decisions. For example, the December 2021 *Information Paper* stated that:

> *We acknowledge that we need to lay the foundation for future reviews to consider ways in which other information may be used.* [223]

And the *Final Omnibus Paper* stated that:

> *We acknowledge that it is likely that the number of live comparator firms may decline further in future and we need to consider suitable approaches to lay the foundation for future reviews.* [224]

As noted above, the Panel has also identified the importance of the AER considering a broader range of evidence when estimating equity beta.

Unfortunately, despite the issues of emerging risks of data limitations being raised throughout the 2018 RoRI process, the AER has not laid any foundation for future reviews in the material published with the draft 2022 RoRI.

Rather, the AER has re-applied the approach and estimate from the 2018 RoRI and explained that it has made no progress on how other evidence may be used (beyond the one remaining domestic comparator) because there are "complex issues" that are involved.[225]

ENA remains of the view that the current domestic comparator set, consisting of a single live firm, is an inadequate basis for determining the allowed equity beta.

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[222] Apr-22 estimates for AST and SKI use data up to the time those forms were delisted.
[223] AER, December 2021, *Rate of return: Information Paper*, p. 22.
[224] AER, December 2021, *Rate of return: Overall rate of return, equity and debt omnibus*, p. 19.
[225] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 182.

We note that other Australian regulators have been able to incorporate international evidence into their processes for determining equity beta in timely and sensible ways. In contrast, the Panel notes that the AER's consideration of international evidence is "so limited" that any implication that it has played any real role in the AER's decision is "problematic." [226]

And we reiterate ENA's offer to work with the AER and other stakeholders to develop an approach for incorporating international evidence – similar to the way it has been incorporated by other Australian regulators.

ENA considers the months that remain before the publication of the Final RoRI to be adequate time to properly incorporate the relevant international evidence.

6.6   Low-beta bias

ENA maintains the views on low-beta bias set out in our submission of March 2022, but does not press that issue in this submission in light of the number of high-priority issues to be resolved before the Final RoRI.

By way of example, Levi and Welch (2017) have noted that low-beta stocks have outperformed even high-beta stocks over the last 50 years, as summarised in Figure 7 below.

It seems implausible that:

» Investors would form their expectations about MRP according to what they observed, on average, over the last 30-50 years; but that
» Investors would disregard the same data over the same historical period when forming their expectations about the returns on low-beta stocks relative to other stocks.

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[226] AER Panel, August 2022, *Independent panel report: AER draft Rate of Return Instrument*, p. 39.

Figure 7: Returns on high-beta and low-beta stocks
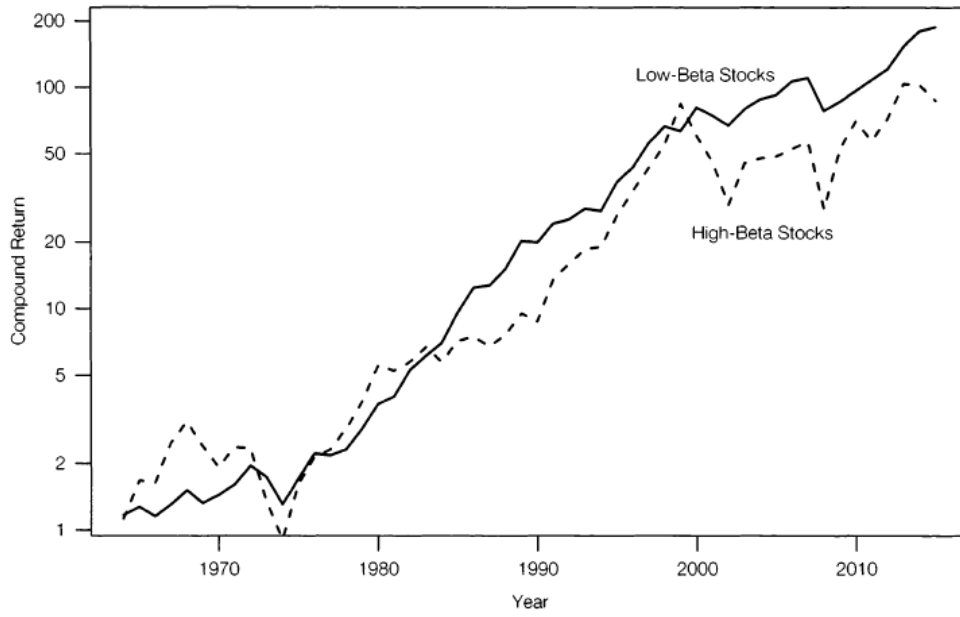
Source: Levi, Y. and I. Welch, 2017, Best practice for cost of capital estimates, Journal of Financial and Quantitative Analysis, 52 (2), 427-463, Figure 4, p. 460.

7   Other parameters and approaches

Key messages

» ENA supports the AER's proposed approach to benchmark gearing and the proposed estimate of 60%.

» ENA supports all aspects of the AER's approach to the allowed return on debt, including:

– The proposed credit rating of BBB+;

– The proposed benchmark term of debt of 10 years;

– Maintenance of the simple trailing average approach;

– Continued use of independent third-party data sources (RBA, Bloomberg and ThomsonReuters); and

– The AER's proposed changes to the allowed return on debt averaging period, although recognising that this will increase hedging costs for some networks.

» ENA maintains the view that gamma is properly interpreted as the market value of dividend imputation franking credits. However, ENA does not press this issue in this submission – in light of the number of high-priority issues to be resolved before the Final RoRI.

7.1 Gearing

ENA agrees with the AER's proposed gearing estimate of 60%.

ENA supports the AER's approach of:

» Estimating gearing for the benchmark firm;

» Estimating gearing on a market value basis; and

» Having regard to gearing estimates over a period of time.

ENA maintains the view that hybrid securities that have features that economically akin to debt should be included as debt.

7.2 Credit rating

ENA agrees with the AER's proposed benchmark credit rating of BBB+.

ENA supports the AER's approach of:

» Determining the benchmark credit rating from evidence on the actual credit ratings of comparator entities. (For completeness, we remain strongly opposed to any framework in which the benchmark credit rating is adjusted to reflect a change in the assumed term of debt).

7.3 Term of debt

ENA agrees with the AER's proposed benchmark term of debt of 10 years.

ENA supports the AER's approach of:

» Determining the term of debt in line with observed market practice and independent of the term adopted for regulatory inflation.

ENA maintains the view that:

» Hybrid securities that have features that economically akin to debt should be included as debt;

» In any future analysis, the AER should recognise that networks that have had recent changes in ownership are likely to have temporarily shorter-term debt that should not be included when estimating the average term of debt issued by regulated networks; and

» Any change in the benchmark term of debt would require an appropriate transition mechanism to be put in place.

7.4 Trailing average approach

ENA agrees with the AER's proposed maintenance of a simple trailing average approach.

We specifically note our continuing strong support for this approach in circumstances where the prevailing rate is now above the trailing average.

In this context, we note the importance of a regulatory approach that is symmetric over market cycles and which remains stable and predictable over time.

ENA considers further consultation is required on how the AER's rate of return allowance and other regulatory settings might support the commercial viability of major new projects identified as efficient and required through the relevant system planning processes.

7.5 Return on debt data sources

ENA agrees with the AER's proposed approach of using independent third-party data sources to estimate the required return on debt, and using the EICSI data as a "sense check" only.

ENA supports the AER's conclusion that:

» The current EICSI data provides no evidence of material and persistent outperformance;[227]

» The required return on debt should be estimated using independent third-party data sources; and

» There is no reason to change the set of third-party data sources, given the very close match to the average cost of debt in the network data.

We note that the panel appointed by the AER to review the draft RoRI has suggested that the AER might give further consideration to reversing roles – using the EICSI data as the primary source and the independent third-party data sources as the cross-check.[228]

In this regard, the Panel does not seem to have a full and complete appreciation of the history of this issue, and the very detailed consultation that has occurred over several years. The key points that have emerged are that:

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[227] AER, December 2021, *Rate of return: Information paper*, p. 201.
[228] AER Panel, August 2022, *Independent panel report: AER draft Rate of Return Instrument*, p. 45.

» There is no evidence of any outperformance (neither significant nor persistent). The yields actually paid by networks almost exactly match the independent third-party estimates for the same instruments.

In this regard, the AER has indicated that the mean like-with-like outperformance is a negligible 4 basis points with a standard deviation in the order of 15 basis points.[229] This is negligible in every sense.

» The AER's estimates of the average term of debt are slightly lower than the 10-year benchmark. However, this result is reversed if:

– Shorter-term debt issued by networks as bridging finance when a network is purchased is removed; or

– Long-term subordinated debt issued by several networks is included in the calculation.

In summary, there is no evidence of persistent or expected outperformance. Networks do not systematically issue debt at a yield below that of the independent third-party benchmark. And any difference in term is explained entirely by the necessity of issuing short-term debt after a transaction and by the AER's exclusion of a relevant form of debt.

In any event, if a difference in term *was* identified, and if it *was* material and sustained, the appropriate response would be for the AER to adjust the term parameter and not solve for an implied credit rating.

This point has been the subject of significant consultation over a period of some years and stakeholders generally agree that evidence about the term parameter should not be the basis for an adjustment to the credit rating parameter.

Moreover, there are material advantages in continuing to use independent third-party data sources, rather than a system in which each network's own debt management practice feeds back into its regulatory allowance.

On all of these points we maintain the views set out in our March 2022 submission.

ENA recommends that:

» The approach set out in the draft RoRI should be maintained in the 2022 final RoRI:

– There would be material ramifications for confidence in the regulatory framework if the AER were to engage in a detailed consultation process over many years, issue a draft decision that maintains the use of an independent third-party benchmark with the general support of stakeholders, and then reverse its approach in the final RoRI; and

– If the AER is contemplating such a change, there should be a consultation process to provide stakeholders with an opportunity to make submissions in response to the AER's proposed new reasons for such a change.

» The AER should continue to collect the EICSI data and evaluate how it might be best used as part of its considerations in the 2026 RoRI process.

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[229] https://www.aer.gov.au/system/files/AER%20-%20Concurrent%20Evidence%20Session%201%20-%20Proofed%20transcript%20-%20February%202022.pdf, at pp. 31-32.

7.6 Allowed return on debt averaging period

ENA supports the AER's proposed changes to the averaging period for the allowed return on debt.

In our September 2021 submission,[230] we noted the AER's proposal to move the end of the return on debt averaging period forward by one month. We suggested that the beginning of the averaging period should also be moved forward by one month to ensure that an averaging period of up to 12 months would be available.

We note that this proposed change has been adopted in the draft RoRI such that the return on debt averaging period now runs from 17 to 5 months prior to the commencement of a regulatory year and we support the proposed extension to a 12-month period.

We do, however, note that this change to the return on debt averaging period will result in increased costs for some networks. In this regard, we maintain our previous submission as follows:

> *ENA notes that many networks have swap portfolios with instruments designed to rollover in periods that they expected to be able to nominate an averaging period. Placing a new restriction on when an averaging period can be nominated may be disruptive to those businesses, and/or add cost (e.g., may cause them to put in place temporary hedging strategies and/or bear more risk than they otherwise would). The AER should carefully consider whether the additional costs levied on networks justify the benefits of its proposal.*[231]

7.7 Gamma

ENA maintains the view that gamma is properly interpreted as the market value of dividend imputation franking credits. Our view is that gamma is properly estimated as the value of franking credits relative to the value of the dividends and capital gains that they replace. Our view is that it is only this interpretation that is consistent with the NPV=0 principle.

However, ENA does not press this issue in this submission – in light of the number of high-priority issues to be resolved before the Final RoRI.

ENA notes the importance that the Panel has ascribed to the number of decimal places to which gamma is rounded - a concern previously considered at some length by the prior Panel in 2018.[232] This clearly highlights potential scope for improving the focus and effectiveness of the Panel assessment process. Our preference is to focus on issues that have actually been raised by stakeholders and which are important.

ENA agrees with the Panel that it would be appropriate to estimate each component of gamma to three decimal places and to then round the product to two decimal places. We recommend that the AER follows that approach such that a 2026 Panel might not be again distracted by such a minor issue.

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[230] ENA, September 2021, *Estimating the cost of debt*, pp. 29-30.
[231] ENA, September 2021, *Estimating the cost of debt*, pp. 29-30.
[232] AER Panel, August 2022, *Independent panel report: AER draft Rate of Return Instrument*, pp. 46-49.

8   Cross checks

Key messages

RAB multiples

» ENA considers that there is no reasonable basis for the conclusion that RAB multiples provide any support for the adequacy of the AER's allowed return on equity.

» A RAB multiple above 1 indicates only that investors are prepared to pay more than the current RAB for the sum of the allowed returns on the current RAB, incentive payments, unregulated assets, future projects, and all other sources of value.

» The aggregated RAB multiple is only informative if a reliable disaggregation can be performed.

» The CEPA analysis is not a reliable disaggregation that can be relied upon.

» ENA also notes that stakeholders and the AER's Panel have not had an opportunity to comment on how the AER might intend to have regard to the CEPA report. In addition to our concerns about the substance of that report, we also have concerns about the process in relation to it.

Recent transaction evidence / independent expert estimates of required returns

» Independent expert estimates of the market cost of equity capital have recently been prepared for two electricity network businesses that are regulated by the AER. Both report that the current market cost of equity capital is materially higher than the AER's current regulatory allowance.

» ENA continues to consider this to be highly relevant and informative evidence. This evidence, and ENA's detailed submissions in relation to it, were not addressed in the draft decision. In our view, this falls short of acceptable regulatory practice.

Comparable regulatory determinations

» ENA considers that the AER's estimation process might be informed by information about:

    – The types of data that other regulators consider;

    – The statistical and other methods that other regulators use to estimate parameters; and

    – The way in which other regulators exercise their regulatory judgment.

» This information would be highly relevant in assisting the AER to understand what is driving its allowed return on equity to be lower than that of comparable regulators, and determining whether any revision of the AER's approach might be warranted.

Financeability analysis

» ENA supports the AER's draft decision that financeability analysis, performed on a benchmark basis, would be an appropriate cross-check on the allowed rate of return.

» ENA notes that:

— The financeability analysis presented by the AER indicates that 25% of NSPs analysed by the AER fail the financeability test.

— The target FFO to net debt threshold of 7% used by the AER in its financeability test appears to have been set unreasonably low, making the test too easy to pass. Raising the benchmark FFO to net debt threshold to 9% would result in 66% of NSPs considered by the AER failing the financeability test.

— It appears that some NSPs that pass the AER's test only do so because of higher depreciation allowances—not because the allowed rate of return is set to an appropriate level.

— All the electricity distribution networks subject to a recent draft determination by Ofgem achieve materially stronger credit metrics than nearly all of the NSPs regulated by the AER under the draft 2022 RoRI. This suggests further that the allowed rate of return under the draft 2022 RoRI is unreasonably low.

Scenario analysis

» Scenario testing should play a role similar to that of stress testing in the banking industry. That is, a range of plausible scenarios are examined and the outcomes from each are considered to see whether there are any plausible scenarios in which the model 'breaks.'

» We remain particularly concerned about the robustness of the allowed return on equity to a low-rates scenario such as eventuated after the 2018 RoRI. Not only were those allowances materially lower than those of comparable regulators,[233] but they also involved:

— An allowed return that produced negative NPAT; and

— A cash allowance that was not even sufficient to pay the benchmark firm's interest bill.

» Our view is that a regulatory approach that produces outcomes like these has failed and must be repaired. However, the proposed changes in the draft 2022 RoRI would result in *even lower* regulatory allowances in the low-rates scenario.

» We encourage the AER to make a clear statement in the final RoRI about:

— Whether it considers negative NPAT and a cash allowance that falls short of the benchmark firm's interest bill to be a reasonable outcome; and

— What alternative test it would propose to determine whether the outcome in a particular scenario is reasonable.

» The draft *Explanatory Statement* dismisses concerns about the regulatory allowance in such low-rates scenarios on the basis of aggregated RAB multiples:

— If the AER is of the view that it is acceptable to set an allowed return below the market cost of capital, so long as the value of unregulated assets, incentive payments and other things are sufficient to produce an aggregated RAB multiple above 1, it should make a clear statement to that effect.

8.1   RAB multiples and recent transaction evidence

The aggregated RAB multiple reflects many things

The RAB multiple is generally defined as:

$$RAB\ multiple = \frac{Enterprise\ value}{RAB}.$$

In theory, the RAB multiple would equal 1 if, and only if:

1. The enterprise value reflected only the present value of allowed revenues on the current RAB, assuming that the current allowance remains fixed in perpetuity; and

2. The regulator's allowed return matched the market cost of capital – the return required by real-world investors.

Thus, observed RAB multiples can provide information about the adequacy of the allowed return, only if the $Enterprise\ value$ reflects only (1) above.

However, it is well-known that the enterprise value reflects many things other than (1) above, including:

1. Any additional present value arising from anticipated future increases in regulatory allowances (e.g., towards those allowed by comparable regulators);

2. The present value of anticipated incentive payments generated on current and future RAB assets or efficiencies from effective organisation and management within the firm;

3. The present value of revenue generated from unregulated assets;

4. The net present value of any forecasted or *planned* future investments, plus the 'real option' value of *potential* future investments;

5. The net present value of any difference between the trailing average regulatory allowance for the return on debt and the spot borrowing rate to be paid by a potential purchaser; and

6. Any tax benefits associated with a particular transaction.

Thus, before any conclusion at all can be drawn from RAB multiples, the additional items listed above (and anything else that is embedded into the enterprise value) must be subtracted.

If the proper disaggregation is not performed, we are essentially comparing the market value of a number of assets with the regulatory book value of only one of them. Nothing useful can be deduced from that exercise unless we know something about the value of the 'other' assets.

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[233] Brattle, June 2020, *A Review of international approaches to regulated rates of return*.

By way of analogy, trying to interpret the aggregated RAB multiple is akin to asking a shopper to state the combined value (to them) of all of the items in their basket, dividing by the cost of bananas, and then trying to draw conclusions about whether bananas are fairly priced.

The AER has recognised that disaggregation is required

The *Final Omnibus* paper indicated that the AER did not propose to use RAB multiples in any deterministic way, but rather as a potential trigger for further investigation:

> *Our preliminary position is that RAB multiples may be useful as a trigger for further investigation into the regulatory framework. This follows from our 2018 position. However, it is unlikely to be able to provide conclusive information on the rate of return unless properly adjusted for the influence of other possible factors. [234]*

The AER explained that the reason for this approach, as adopted in the 2018 RoRI, is that the RAB multiple reflects many things other than the adequacy of the allowed return:

> *This was because of the difficulty in disaggregating the information contained in RAB multiples meant it could not be used to reliably determine the degree of correspondence with the allowed rate of return. [235]*

This led the AER to commission CEPA to perform the required disaggregation of the RAB multiples for the two recent transactions involving Spark Infrastructure and AusNet Services.

The CEPA disaggregation

CEPA provided their 'disaggregation' report, and associated spreadsheet models, to the AER on 10 May 2022.[236] CEPA's approach was to construct a valuation model to reconcile to the $Enterprise\ value$ observed in the Spark and AusNet transactions. This model could then be used to disaggregate the $Enterprise\ value$ among the various sources of value. Those sources of value not relevant to the current RAB could then be deducted, leaving an informative multiple whereby the market value of the existing RAB could be compared with the regulatory value of the existing RAB. (That is, where the value of bananas is compared with the cost of bananas).

ENA considers that the CEPA report is of such poor quality that its conclusions cannot be reasonably relied upon.

The problems with the CEPA report, and corrections to them, are set out in the Frontier Economics report commissioned by ENA and provided to the AER on 27 May 2022.[237]

For example, CEPA correctly identifies that the value of unregulated assets must be deducted from the aggregated enterprise value. A key source of unregulated revenue for AusNet is its Development and Future Networks (DFN) business. CEPA estimates the value of this business at $370 million (mid-point estimate) and deducts that figure from the aggregated enterprise value.

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[234] AER, December 2021, *Overall rate of return, equity and debt omnibus: Final working paper*, p. 130.
[235] AER, December 2021, *Overall rate of return, equity and debt omnibus: Final working paper*, p. 129.
[236] CEPA, May 2022, EV/RAB multiples, Report for the AER.
[237] Frontier Economics, May 2022, Analysis of RAB multiples.

By contrast, in its independent expert report prepared for the AusNet transaction, Grant Samuel adopts an estimate of $3,150 million (mid-point estimate). That is, the Grant Samuel estimate is more than 8 times higher than the CEPA estimate.

The Frontier Economics report shows that the Grant Samuel valuation is based on detailed modelling and analysis, performed in accordance with the relevant legislation and ASIC guidelines. [238]

Making this one change to the CEPA analysis reduces the disaggregated RAB multiple to 1.06.

The Frontier Economics report identifies three other adjustments to be made to the CEPA analysis:

» Including the independent expert estimate of the value of tax benefits arising from the transaction, rather than assuming them to be zero;

» Assuming that the value of the network is maintained over time, rather than reducing to zero over 50 years; and

» Removing the assumption (made with no reason provided) that the aggregate RAB multiple would reduce over time.

Making these three changes reduces the disaggregated RAB multiple to 0.87.

We note that a disaggregated RAB multiple less than 1 is consistent with the AER's allowed return on the existing RAB being lower than the market cost of capital (i.e., the return required by real-world investors). This is consistent with the independent expert reports for both Spark and AusNet, which indicate that the market cost of equity capital is materially higher than the AER's allowed return.

The approach in the draft RoRI

The June 2022 draft decision again notes that the $Enterprise\ value$ reflects many things[239] and that the AER has consequently commissioned CEPA to perform the required disaggregation task. [240]

The draft decision does not mention the existence of the Frontier Economics report or the ENA or AusNet submissions that raise significant issues with the CEPA analysis. Those reports and submissions conclude that the recent transaction evidence, interpreted in a balanced way, indicates that the AER's allowed return on equity is materially below the market cost of equity capital.[241]

Rather, the draft decision states that:

> *In addition to reviewing raw RAB multiples, we have been undertaking work to disaggregate some of the components implicit in RAB multiples. We recently published a report prepared by CEPA undertaking this analysis. We have not yet had the opportunity to test the findings of the CEPA work with stakeholders and so have not given it weight in this draft decision.[242]*

That is, having recognised (again) that RAB multiples are affected by many things, and that it had commissioned a study to properly account for those things, the AER noted that its draft decision does not reflect that work.

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[238] Frontier Economics, May 2022, Analysis of RAB multiples, pp. 4-6.

[239] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 266.

[240] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 266.

[241] https://www.aer.gov.au/publications/guidelines-schemes-models/rate-of-return-instrument-2022/initiation.

[242] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 266.

In our view, the proper approach would have been for the AER to have no regard to RAB multiples until the proper analysis of them could be considered. However, the AER *has* given weight to aggregated RAB multiples:

> *The parameters maintained for the 2022 Instrument are supported when we consider RAB multiples, given that network businesses have been consistently trading at a price range that represents RAB multiples of 1.2 to 1.6 since the 2018 Instrument and recent takeover offers indicate RAB multiples of 1.5 to 1.7.* [243]

And also:

> *We note that an independent report by Grant Samuel dated 21 December 2021, refers to a RAB multiple for the Brookfield acquisition of Ausnet of between 1.53x and 1.61x. We think this acquisition activity indicates strong investor interest in the assets we regulate.* [244]

In this passage the AER quotes the RAB multiple including unregulated assets. It is very clear that unregulated assets must be removed when interpreting RAB multiples, and the Grant Samuel report duly presents a RAB multiple after excluding unregulated assets. However, the draft decision ignores the relevant figure, adds back the value of unregulated assets, and interprets the aggregated figure as providing support for its current allowed return.

This is even more remarkable in light of the fact that the same Grant Samuel report concludes that the market cost of equity capital is materially higher than the AER's regulatory allowance.

In our view it is entirely unreasonable and highly misleading for the AER to:

» Compare the market value of regulated plus unregulated assets to the regulatory RAB – an obvious apples-with-oranges comparison;

» Ignore the disaggregated RAB multiple published in the Grant Samuel report;

» Ignore the fact that the Grant Samuel report concludes that the market cost of equity capital is materially higher than the AER's regulatory allowance; and

» Conclude that there is material in the Grant Samuel report to support the AER's allowed return.

Why no reliable conclusions can be drawn from the aggregated RAB multiple

Our March 2022 submission provided the following simple explanation for why no conclusions can be drawn from the aggregated RAB multiple. Consider the scenario in which the properly disaggregated RAB multiple is less than one (say 0.9), but where there is material value from other sources (such as unregulated assets) so that the overall RAB multiple is 1.4. That is, the regulatory allowance on the current RAB falls materially short of the required return of investors, so that the present value of the regulatory allowances is less than the current RAB and NPV<0. However, the total present value of other sources equals 50% of the RAB so that the overall RAB multiple is 1.4.

In summary, although the buyer would only be prepared to pay an amount less than the RAB for the stream of allowed returns, it would be prepared to pay more than the RAB for the whole package of benefits available.

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[243] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 260.
[244] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 265.

In this case, it would be clearly misleading to suggest that the aggregated RAB multiple of 1.4 indicates that the regulator's allowed return is more than adequate.

There is no way of determining how much of the aggregated enterprise value pertains to other sources (such as unregulated assets) without performing the disaggregation. So, nothing about the adequacy of the regulatory allowance can be gleaned from the RAB multiple until the proper disaggregation has been performed.

But surely high RAB multiples must indicate that there is no shortage of investment capital?

Continue to consider the above scenario in which the properly disaggregated RAB multiple is 0.9, but where there is material value from other sources (such as unregulated assets) so that the overall RAB multiple is 1.4.

Our March 2022 submission noted that there are two possible ways to interpret such evidence:

- » One view is that this is evidence of the inadequacy of the current level of allowed returns. Because the present value of regulatory allowances is less than the current RAB, the NPV=0 criterion is violated. This implies that the regulatory allowance should be increased.

- » The alternative view is that the current regulatory allowance is sufficient to attract investment into the Australian network sector, so there is no problem with the current level of regulatory allowance That is, the inadequate regulatory allowance is offset by value in unregulated assets and other sources of value.

The draft decision appears to adopt the second interpretation. However, there are two quite fundamental problems with that interpretation:

- » First, this interpretation is entirely inconsistent with the NPV=0 principle that underpins the AER's regulatory framework. It is also inconsistent with the AER's statements about how the NEO and NGO are best promoted by setting the allowed return to the best possible estimate of the market cost of capital at the time of each decision.

- » Second, under this interpretation it would be entirely rational for the purchaser to pay a RAB multiple of 1.4 when purchasing the business, but then to face a strong disincentive against investing anything more into regulated assets for as long as the current regulatory allowance remains in place. This would manifest as transactions occurring at such multiples while, at the same time, discretionary network investment into regulated assets falls (or requires some form of government or other subsidy in addition to the regulatory allowance).

ENA submits that the first interpretation above should be adopted – RAB multiples indicate that the current regulatory allowance is sufficient to attract the required capital investment only if the disaggregated RAB multiple is 1 or above. If there is no accurate basis for disaggregating the total RAB multiple, it is impossible to know whether it is above or below 1. In this case, the RAB multiple has no informative value at all – not even as an 'informal sense-check.'

Panel observations

The panel appointed by the AER to review the draft RoRI also identifies the importance of properly decomposing RAB multiples before they can be usefully interpreted:

If it is to be used to inform decisions on the cost of capital considered alone, the RAB multiple must be decomposed using evidence that attempts to quantify the extent to which the ratio is affected by the above issues, and to remove the effects from sources other than the cost of capital estimate. [245]

This leads the Panel to recommend that the AER:

Expedites the process of consulting on and using the decomposition of RAB multiples and completes it before the RORI is finalised. [246]

In this regard, the Panel notes that incentive payments are one important source of value that must be removed as part of the decomposition. [247]

We agree that RAB multiples must be properly disaggregated before they can be usefully interpreted.

8.2 Evidence from recent independent expert reports

Relevant evidence from the KPMG and Grant Samuel reports

Our March 2022 submission noted that some useful evidence about what goes into RAB multiples can be drawn from the recent independent expert reports commissioned as part of the sale processes for Spark Infrastructure and AusNet Services.

In both cases, the independent expert has performed a discounted cash flow valuation exercise. This involves forecasting expected cash flows, estimating the required return on capital, and computing the present value of those cash flows. The present value of those cash flows represents the independent expert's estimate of the fair value of the business. These independent expert reports are a key feature of the sale process and play an important and influential role in the decision-making of the parties to the transaction. Whereas the buyer and seller may apply somewhat different valuation assumptions, the independent expert valuation report provides very useful and relevant evidence about what goes into the assessment of enterprise value.

The independent expert's estimate of the current enterprise value can be divided by the current RAB and expressed as an overall RAB multiple.

The RAB multiple has value only to the extent that it provides information about the adequacy of the current regulatory allowance for the return on capital. As noted above, the aggregated RAB multiple provides no useful information unless it can be disaggregated into its component parts. The recent independent expert reports do not provide sufficient information to perform such a disaggregation. However, they do provide a direct estimate of the current required return on capital – the market cost of capital – that is directly relevant to the AER's task.

For example, the KPMG independent expert report prepared for the Spark Infrastructure transaction provides estimates of the current market cost of equity capital as set out in Table 12 below. The table shows that the KPMG estimates of the market cost of capital are materially higher than the AER's regulatory allowance at that time.

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[245] AER Panel, August 2022, *Independent panel report: AER draft Rate of Return Instrument*, p. 52.
[246] AER Panel, August 2022, *Independent panel report: AER draft Rate of Return Instrument*, p. 56.
[247] AER Panel, August 2022, *Independent panel report: AER draft Rate of Return Instrument*, p. 54.

Table 12: KPMG estimates of the market cost of equity capital

	AER (2018 RoRI)	KPMG low	KPMG high
Risk-free rate	1.73%	2.80%	2.80%
MRP	6.1%	6.0%	6.0%
Equity beta	0.60	0.73	0.83
Return on equity	**5.39%**	**7.17%**	**7.76%**

Source: Source: KPMG independent expert report, Table 39, p. 105. Equity beta re-levered to 60% using AER re-levering approach. AER current risk-free rate is the yield on 10-year government bonds taken as at date of KPMG report. Note that KPMG adopts an above market risk-free rate in lieu of a prevailing MRP estimate.

This implies that KPMG has computed a disaggregated RAB multiple that is less than one. By definition, if regulatory allowances are generated using one rate of return and then discounted back to present value using a significantly higher rate of return, the present value must be less than the RAB.

But it is unnecessary to consider the implications for RAB multiples because we already have a direct comparison of allowed and required returns.

Similarly, the Grant Samuel independent expert report prepared for the AusNet Services transaction provides estimates of the market cost of capital as at December 2021. Grant Samuel adopt a two-step approach. The first step is to implement a mechanistic version of the CAPM. We show below that this produces post-tax WACC estimates in the range of 4.2% to 4.5%. The second step is to recognise that the mechanistic CAPM produces implausibly low estimates of the cost of equity capital in the prevailing market conditions such that an adjustment is required. In this regard, Grant Samuel states that:

> *Strict application of the CAPM at the present time (using current parameters) gives results that are arguably unrealistically low and understate the true cost of capital (primarily because of extremely low government bond rates). While the broad expectation is that government bond rates across the globe will remain extremely low for several years as the world economy seeks to recover from the impacts of the COVID-19 pandemic. The discount rates produced by CAPM do not seem to accord with how investors set their expected returns and are often inconsistent with other measures such as the Gordon Growth Model (which is based on observable dividend yield plus a long term growth rate).*
>
> *Some academics and valuation practitioners consider it to be inappropriate to add a "normal" market risk premium (e.g. 6%) to a temporarily depressed bond yield and therefore advocate that a "normalised" risk free rate should be used. This practice has become increasingly common among broker analysts with an assumed risk free rate of around 2.5% not uncommon. Assuming a risk free rate of 2.5% would result in a CAPM*

WACC of 4.8-5.1%. Alternatively, there is some evidence that risk premiums are higher when risk free rates are lower (i.e. implying a more stable overall cost of equity).[248]

This leads Grant Samuel to conclude that:

Having regard to these matters, Grant Samuel has adopted a discount rate (WACC) in a range around 5.0% for AusNet's electricity and gas business operations.[249]

and that:

it is equivalent to a cost of equity of 7.0%).[250]

As Grant Samuel are unclear about the extent to which its final adopted WACC is the result of an increase to the risk-free rate or to the MRP, both are considered in Table 13 below. In that table, the first two columns represent Grant Samuel's mechanistic implementation of the CAPM. The third column shows that increasing the CAPM risk-free rate to 3.1% would produce a return on equity of 7% and a WACC of 5%, as adopted by Grant Samuel. The final column shows that increasing the CAPM MRP to 8% would reconcile with the final cost of capital figures adopted.

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[248] Grant Samuel, December 2021, *Independent expert report for AusNet Services*, Appendix 3, pp. 14-15.
[249] Grant Samuel, December 2021, *Independent expert report for AusNet Services*, Appendix 3, pp. 14-15.
[250] Grant Samuel, December 2021, *Independent expert report for AusNet Services*, Appendix 3, pp. 14-15.

Table 13: Grant Samuel WACC estimates

	GS low	GS high	Risk-free rate adjustment	MRP adjustment
Risk-free rate	1.8%	1.8%	3.1%	1.8%
MRP	6.0%	6.0%	6.0%	8.0%
Equity beta	0.6	0.7	0.65	0.65
Return on equity	5.4%	6.0%	7.0%	7.0%
Return on debt	4.3%	4.3%	4.3%	4.3%
Gearing	50%	50%	50%	50%
Tax	30%	30%	30%	30%
Post-tax WACC	**4.2%**	**4.5%**	**5.0%**	**5.0%**

Source: Grant Samuel, December 2021, Independent expert report for AusNet Services, Appendix 3, pp. 9-15.

To obtain a return on equity allowance that is comparable with the AER's regulatory allowance, it is necessary to re-lever the equity betas to reflect 60% gearing. The AER's standard re-levering approach is applied in Table 14 below. Consistent with the KPMG report, the Grant Samuel report implies that the market cost of equity capital is very materially higher than the AER's allowance.

Table 14: Grant Samuel estimates of the market cost of equity capital

	AER (2018 RoRI)	GS risk-free rate adjusted	GS MRP adjusted
Risk-free rate	1.8%	3.1%	1.8%
MRP	6.1%	6.0%	8.0%
Equity beta	0.60	0.81	0.81
Return on equity	**5.5%**	**8.0%**	**8.3%**

Source: Grant Samuel, December 2021, Independent expert report for AusNet Services, Appendix 3, pp. 9-15. Equity beta re-levered to 60% using AER re-levering approach.

Our March 2022 submission proposed that these independent expert reports provide direct evidence of the material inadequacy of the current level of the allowed return on equity.

No response in draft decision

The AER's June 2022 draft decision does not respond to our submission about these market estimates of the market cost of equity capital. In our view, this is highly relevant evidence. We have recent independent expert estimates of the market cost of equity capital. These are direct estimates of the rate of return that real-world investors require to invest in energy networks.

Panel recommendations

The panel appointed by the AER to review the draft RoRI provides the following recommendation:

> *The AER completely discounts the use of practitioners' discount rates as a crosscheck. The primary reason given is that there 'may be issues with comparability and methodology' (ES page 279). As an example, it says that practitioners 'may use a long-run or blended risk-free rate rather than our current approach of the prevailing risk-free rate'.*

> *The issue that the crosschecks are designed to test is whether there is anything about the overall estimate of the cost of capital produced by the AER that is inconsistent with unbiased investment incentives given the NPV=0 goal. If it were the case that the firms making these investments and their investors systematically estimate a higher cost of capital than the AER then that would indicate a potential problem, whatever the reason for that difference. In our view it is not sufficient for the AER to discard evidence on the overall rate of return because it does not fit with the AER's own chosen methodology. The crosschecks are designed to test whether the chosen methodology has resulted in the wrong outcome, so discarding checks because they use a different methodology is not an appropriate test.*

> *We encourage the AER to consider the evidence from practitioner discount rates in this broader way. For example, some stakeholders have mentioned expert evidence on the cost of capital given in Australian regulatory proceedings that are directly related to the AER's mandate, and also the outcomes of those proceedings. It would be helpful if the AER could*

We agree that this is clearly relevant evidence to which the AER should have regard.

8.3   Comparable regulatory determinations

The draft *Explanatory Statement* reiterates the AER's preliminary position in the *Final Omnibus* paper that other regulators' rate of return determinations should have no role in informing the overall rate of return. The main reasons given by the AER in the *Final Omnibus* paper for disregarding evidence from comparable regulators were the following:

» Other regulators may adopt different methodologies and exercise their judgment in a different way when estimating the return on equity; and

» Whereas the AER's decisions need to contribute to the achievement of the NEO and NGO, other regulators may have a different objective, which may affect their return on equity estimates.

ENA explained in its March 2022 response to AER's *Final Omnibus* and Information Papers why it disagrees with both of these reasons cited by the AER, and why the rate of return determinations made by other comparable regulators do provide useful cross-checks on the AER's determination. Specifically, ENA explained that:[252]

» The extent to which other regulators use different types of data or different methods and approaches, and the extent to which other regulators apply their judgment in different ways, is relevant information that would assist in explaining, for example, why it is that the AER's return on equity allowances are lower than those of all comparable regulators. There is no value in restricting consideration to only those entities that examine the same data with the same methodologies and exercise regulatory judgment in the same way because that would produce the same outcomes. Knowing that the AER is the only regulator that uses its specific approach and the only regulator that sets such low return on equity allowances is the whole point of performing this sort of cross-check.

» The suggestion that other regulators may have a different objective also has little to support it. The AER has stated that the NEO and NGO are best supported by using the best estimate of the market cost of capital – the return that investors require to commit capital to the regulated firm. This would seem to be a common objective among regulators – that they would seek the best possible estimate of the market cost of capital and consequently the required return on equity at the time of their decision.

The draft decision fails to engage with any of the ENA's submissions on this issue; it simply restates, without further explanation or discussion, the AER's December 2021 preliminary position.

ENA maintains its view that the rate of return determinations by other comparable regulators does provide a useful cross-check on the AER's rate of return determinations. As the AER has acknowledged, financial capital is internationally mobile. If the AER sets the allowed rate of return for regulated energy networks well below what investors could earn by committing capital to regulated businesses in other

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[251] AER Panel, August 2022, *Independent panel report: AER draft Rate of Return Instrument*, p. 56.
[252] ENA, March 2022, *Rate of return instrument review: Response to AER's Final Omnibus and Information Papers,* section 12.2.

jurisdictions, capital will naturally flow elsewhere, and NSPs will be unable to attract the capital required to make efficient network investments in Australia.

Section 8.1 above has established that far from demonstrating the adequacy and reasonableness of the AER's rate of return determinations, the evidence from recent transactions and RAB multiples suggests strongly that the AER's rate of return allowances are too low, relative the return investors actually require.

Updated Brattle analysis

Brattle's June 2020 report, which was commissioned by the AER, showed that AER's allowed return on equity was, by every metric, lower than that of all comparable regulators that were examined and Brattle concluded that the AER's approach was "not as effective" as that of other regulators.[253]

Given that the original Brattle report was completed more than two years ago, ENA engaged Brattle to update its analysis to provide a comparison between the return on equity implied by AER's draft RoRI and the return on equity determinations of other relevant regulators. The results of that updated analysis, summarised below in Table 15, are largely consistent with Brattle's findings in 2020.

Brattle's updated analysis shows that the return on equity allowance in the draft RoRI is lower than the return on equity allowance set by almost every other regulator surveyed (the exception being the Dutch regulator, ACM). Brattle concludes that:

> *The return on equity consistent with the proposed method in the AER's draft 2022 RORI is lower than most of the recent decisions of international regulators we have reviewed. Looking to the CAPM inputs, the regulator in the Netherlands (the ACM) and AER stand out as having the lowest market return (the sum of the risk-free rate and the MRP). Because these two inputs typically move in somewhat opposing directions, a heavy reliance on a historical MRP combined with very low risk-free rates (at the time of the decisions) leads to a low cost of equity estimate. As the AER also has one of the lowest beta estimates, the equity premium is lower than that of all regulators but the ACM. Simply put, other regulators have higher betas or higher risk-free rates or higher MRPs, whereas the AER is among the lowest on all three, leading to a lower authorised return on equity than other regulators.[254]*

Brattle goes on to explain that it considers that the rate of return determinations by other regulators are relevant cross-checks on the AER's rate of return decisions:

> *More broadly, we note that the AER appears to have given little or no weight to evidence about methods used by international regulators and little or no weight to evidence about rates of return authorised by other regulators. It is true that different regulators use different methods for determining the authorised rate of return. However, in our view, all of the regulators are fundamentally engaged in the same task of estimating the required market-based cost of capital for owning and operating regulated infrastructure—ie, the opportunity cost of capital—necessary to compensate and therefore incentivise efficient*

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[253] Brattle, June 2020, A Review of international approaches to regulated rates of return.
[254] Brattle, September 2021, International rate of return methods—recent developments, pp. iii-iv.

investment in new infrastructure assets when needed. Therefore the different methods and their results are potentially informative, at the least as cross-checks.[255]

Table 15: Recent return on equity decisions by the AER and comparable regulators overseas

Regulator	Nominal return on equity	Real return on equity
AER (draft 2022 RoRI)	5.90%	3.90%
ACM (Netherlands)(2022)	3.15%	
FERC (USA)(2021)	9.21%	
STB (USA)(2021)	12.03%	
ARERA (Italy)(2022)		5.38%
NZCC (NZ)(2022)	7.84%	
Ofgem (UK)(2021)		4.55%
Ofwat (UK)(2021)		4.73%

Source: Brattle, September 2021, International rate of return methods—recent developments, Table 2, p. 11.

Brattle's updated analysis compared the return on equity estimate of 5.90% published in the draft *Explanatory Statement* against the return on equity allowances set by several regulators overseas. That indicative return on equity figure of 5.90% was estimated using a nominal risk-free rate of 1.82%, which was derived using market data to February 2022. Since then, the risk-free rate has increased materially.

As at 30 August 2022, the (5-year) risk-free rate had increased to 3.20%, producing nominal return on equity estimate of 7.28%, and a real return on equity estimate of 3.51%,[256] under the draft 2022 RoRI method. These estimates are lower than all of the return on equity decisions by other regulators presented in Table 15, except ACM's. ENA therefore notes that Brattle's overall findings from its updated analysis would remain unchanged, even if the latest estimate of the risk-free rate were taken into account.

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[255] Brattle, September 2021, International rate of return methods—recent developments, p. iv.
[256] This real return on equity is estimated assuming an inflation forecast of 3.64%, derived using the RBA's August 2022 Statement on Monetary Policy.

8.4 Financeability tests

The AER's *Final Omnibus* paper acknowledged that:

> *We acknowledge that financeability tests can help assess whether a hypothetical entity with a capex program, gearing and level of risk, reflected in our rate of return allowance, can raise debt at the credit rating consistent with the benchmark credit rating.* [257]

ENA considers that this is the key role of financeability tests – to determine whether the regulatory allowance to the benchmark firm supports the credit rating that is assumed when deriving that allowance. It is difficult to see how a regulatory allowance that is internally inconsistent could represent the best unbiased estimate of the cost of capital, or how it could support the NPV=0 principle.

If financeability tests are conducted on a notional benchmark firm and confirm that the allowed returns are likely to support the assumed credit rating, they have served their purpose. Their role is to identify those special cases in certain market conditions where internal inconsistency problems arise.

In our March 2022 submission we stated that:

> *ENA remains of the view that any financeability test should be applied to the benchmark firm. The relevant financial metrics (e.g., FFO/Net Debt ratio, interest coverage, gearing as defined by ratings agencies) would be routinely computed in a slightly augmented version of the PTRM.* [258]

The draft *Explanatory Statement* provides no response to this submission, so we repeat it here.

Our view is that the relevant financial metrics for the benchmark firm should be derived in the PTRM as a standard part of every regulatory determination. This is a straightforward process of simply collecting the relevant variables from within the PTRM.

AER's financeability analysis in the draft 2022 RoRI

The draft *Explanatory Statement* explains that the AER has repeated the financeability analysis performed by the AER when it developed the 2018 RoRI. The AER summarised its analysis and key findings as follows:

> *In 2018 we calculated FFO to net debt for each of the businesses we regulate. We did these calculations based on our benchmark gearing of 60% because we wanted to test our benchmark rather than the actual position of each business. This analysis showed variation across businesses, but 21 out of 29 were able to meet the 7% rule of thumb.*
>
> *We repeated this analysis for our final working paper using 2021 data. The results showed 24 of the 32 firms met the 7% rule of thumb, as seen in Table 0.3 below. These results suggest that financeability has not deteriorated under the 2018 Instrument. Higher depreciation and revenue adjustments seem to have offset the decline in return on equity.* [259]

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[257] AER, December 2021, *Overall rate of return, equity and debt omnibus: Final working paper*, p. 124.

[258] ENA, March 2022, *Rate of return instrument review: Response to AER's Final Omnibus and Information Papers,* p. 139.

[259] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 24.

ENA agrees with the AER's approach of performing the financeability test on a benchmark basis, for the reasons explained above. However, ENA has a number of concerns about the AER's analysis, and the conclusions the AER draws from it:

» Firstly, the AER notes that 24 out of 32 NSPs met the 7% FFO to net debt "rule of thumb" target adopted by the AER. This means that 8 NSPs (i.e., 25% of the sample) did not achieve the threshold and therefore effectively failed the financeability test. ENA considers that failure of the financeability test by such a large proportion of NSPs does not support the AER's apparent conclusion that there is no financeability concern to be addressed.

» Secondly, it is not clear that the 7% rule of thumb FFO to net debt threshold is appropriate. The AER has clarified to ENA in correspondence since the publication of the draft decision that selection of the 7% threshold was a matter judgment by the AER, and was informed by a Moody's sector comment that was released shortly after the publication of the draft 2018 RoRI.[260] That Moody's document presented, for seven regulated NSPs (of varying credit ratings) the minimum FFO to net debt ratio that, if breached, could trigger a ratings downgrade. The lowest of these ratios was 7%. Hence, it appears that the AER has selected the lowest FFO to net debt ratio applied by Moody's (for a very small sample of NSPs) that might identify a financeability concern. This has the effect of making the financeability test exceptionally easy to pass. Given that the AER has not selected a 'representative' FFO to net debt ratio, ENA cannot understand how the 7% FFO to net debt ratio adopted by the AER could reasonably be described as a "rule of thumb" or a 'benchmark' target ratio that is suitable for application in a benchmark financeability test.

To demonstrate how sensitive the outcomes of the financeability test are to the FFO to net debt target threshold selected by the AER, ENA notes that had the AER adopted a target ratio of 9% rather than 7%, then 66% of NSPs in the AER's sample (21 NSPs in total), not 25%, would have failed the financeability test.

» Finally, the AER explains that one reason that a relatively large number of NSPs pass the financeability test is because higher depreciation allowances "seem to have offset the decline in return on equity." ENA notes that increasing the depreciation allowance for an NSP simply reprofiles (brings forward the recovery of) future revenues in an NPV-neutral way. This would not in any way address a situation where an NSP's allowed rate of return has been set too low relative to the return required by its investors (which would result in an NPV<0 outcome). In other words, the results of the financeability test should not give the AER comfort that the rate of return produced by the draft 2022 RoRI is reasonable. This is because some NSPs may have only 'passed' the financeability test because they were the beneficiaries of higher depreciation allowances. A true assessment of whether the draft 2022 RoRI is producing reasonable rate of return allowances if the financeability test could strip out the effect of higher depreciation that might otherwise mask a financeability problem.

Comparison to financeability outcomes in a recent Ofgem decision

On 29 June 2022, Ofgem published its RIIO-2 draft determinations for electricity distribution businesses. As a matter of course, Ofgem assessed the financeability of each of the electricity distribution businesses

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[260] Moody's, 14 July 2018, *Proposed changes to Australia's regulatory rules are credit negative for regulated energy networks*, Sector Comment.

subject to its draft determination. Ofgem performed its financeability test on a benchmark basis (as the AER has sought to do), adopting a benchmark gearing of 60% (consistent with the benchmark gearing used by both Ofgem and the AER to set rate of return allowances). The results of the Ofgem's financeability test are presented below in Table 16.

It is striking that every single one of the 14 electricity distribution networks subject to Ofgem's draft determination was able to achieve an FFO to net debt ratio that exceeded 11%. By contrast, only five of the 32 networks assessed by the AER under the draft 2022 RoRI was able to achieve an FFO to net debt ratio of 11% or more.[261]

ENA considers that this is further evidence that the allowed rate of return under the draft 2022 RoRI is unreasonably low.

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[261] AER, December 2021, *Overall rate of return, equity and debt omnibus: Final working paper*, Appendix B, Table 21, pp. 145-146.

Table 16: Financeability test results from Ofgem's RIIO-ED2 draft determinations

Licensee	Base case totex			High case totex		
	Adjusted AICR	FFO/net debt	Credit rating	Adjusted AICR	FFO/net debt	Credit rating
ENWL	1.30	11.4%	Baa1	1.31	11.3%	Baa2
NPgN	1.30	12.0%	Baa1	1.28	11.5%	Baa1
NPgY	1.39	11.9%	A3	1.37	11.4%	Baa1
WMID	1.43	12.9%	A3	1.42	12.5%	A3
EMID	1.42	12.5%	A3	1.39	11.8%	Baa1
SWALES	1.37	11.1%	Baa1	1.35	10.7%	Baa1
SWEST	1.41	11.1%	A3	1.39	10.7%	Baa1
LPN	1.43	13.2%	A3	1.41	12.8%	A3
SPN	1.42	13.2%	A3	1.41	12.9%	A3
EPN	1.43	13.4%	A3	1.41	12.9%	A3
SPD	1.40	12.8%	A3	1.39	12.5%	Baa1
SPMW	1.40	12.2%	A3	1.39	11.9%	Baa1
SSEH	1.40	11.5%	Baa1	1.36	10.2%	Baa2
SSES	1.39	11.8%	Baa1	1.38	11.1%	Baa2

Source: Ofgem, 29 June 2022, RIIO-ED2 Draft Determinations – Finance Annex, Table 20, p. 73.

Lack of proper consideration of financeability in the Panel Report

Financeability tests are a key issue in the current regulatory setting and have been the subject of one of the key themes of the current RoRI review. This is not reflected in the Panel Report, which devotes a single sentence to this important topic. We reiterate our concern that the Panel does not seem to be aware of the regulatory history and context or which issues are of key concern to stakeholders. Our view is that this aspect of the RoRI process should be urgently reviewed.

8.5   Scenario testing

ENA notes the analysis of various scenarios that is set out in the draft Explanatory Statement.[262]

Our view is that scenario testing should play a role similar to that of stress testing in the banking industry. That is, a range of plausible scenarios are examined and the outcomes from each are considered. For each scenario, the AER would determine whether it considered the outcome to be reasonable, such that the RoRI is robust to that scenario.

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[262] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, Section 11.2.1.8, starting on p. 285.

By way of example, our view is that a scenario that results in an allowed return that produces a negative NPAT and for which the cash allowance is insufficient to pay the firm's nominal interest bill (as was the case in some market conditions under the 2018 RoRI) should be a source of concern. This would be an indication that the RoRI is not robust to that scenario.

We encourage the AER to make a clear statement in the final RoRI about:

» Whether it considers negative NPAT and a cash allowance that falls short of the benchmark firm's interest bill to be a reasonable outcome; and

» What alternative test it would propose to determine whether the outcome in a particular scenario is reasonable.

In our view, there is lower value in producing a range of scenarios in the absence of some guidance as to what would be required to trigger further examination, or AER reflection on the scenario outcomes. Otherwise, the scenario analysis has no real effect and simply reduces to the role of illustrating what will happen in different scenarios.

Consistent with our previous submissions, we remain particularly concerned about a low-rate scenario, such as eventuated after the 2018 RoRI. We note that the allowances provided in the AER's 2020 decisions fell well short of any reasonable commercial benchmark. Not only were those allowances materially lower than those of comparable regulators,[263] but they also involved:

» An allowed return that produced negative NPAT; and

» A cash allowance that was not even sufficient to pay the benchmark firm's interest bill.

A regulatory approach that produces outcomes like these has failed and must be repaired.

Remarkably, the proposed changes in the draft 2022 RoRI would result in *even lower* regulatory allowances in that same low-rates scenario. For example, Figure 8 below shows that the allowed return on equity for the 2020 SAPN and Jemena decisions would have been even lower under the approach proposed in the draft 2022 RoRI.

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[263] Brattle, June 2020, *A Review of international approaches to regulated rates of return*.

Figure 8: Comparison of allowed returns under 2018 RoRI and draft 2022 RoRI
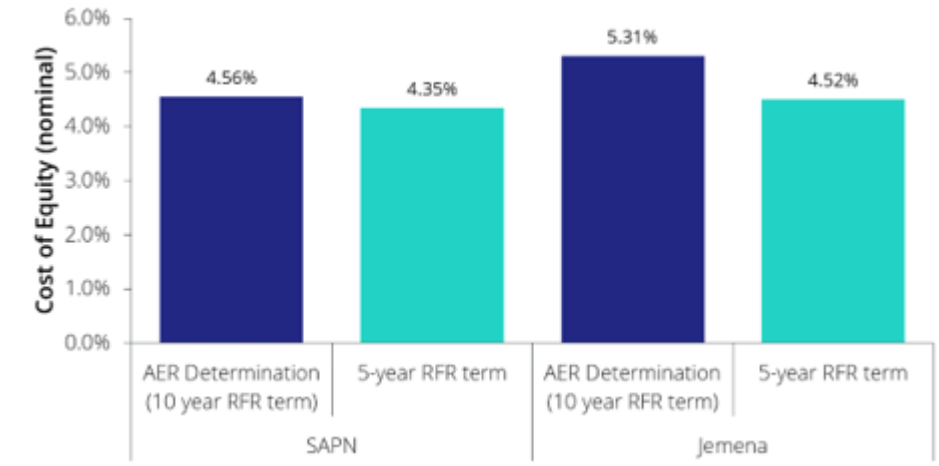
Source: AER decisions, ENA calculations.

Figure 8 below shows that the allowed return on equity under the draft 2022 RoRI would have been up to 80 basis points lower than the corresponding allowance under the 2018 RoRI.

Figure 9: Comparison of allowed returns under 2018 RoRI and draft 2022 RoRI
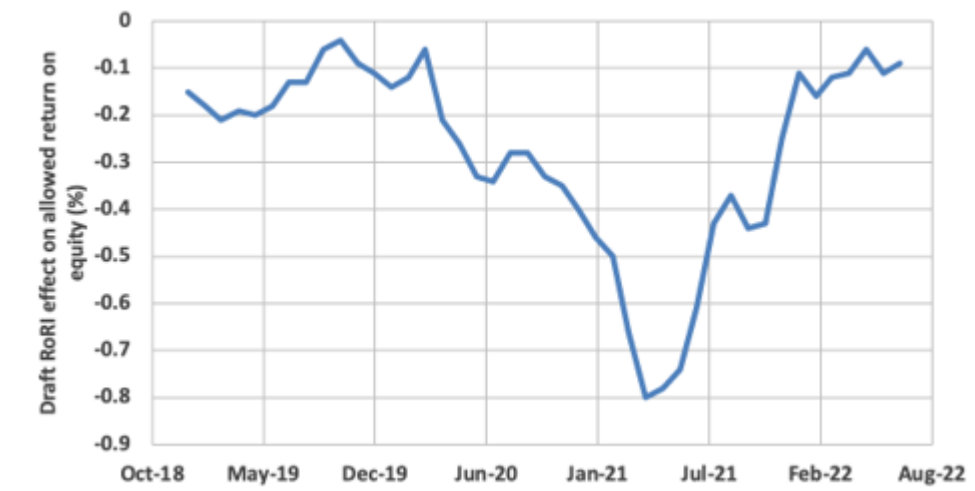
Source: AER decisions, ENA calculations.

Our view is that the 2018 RoRI was not robust to the low-rates scenario that eventuated and that the draft 2022 RoRI is even more problematic in this regard.

The draft Explanatory Statement dismisses concerns about the regulatory allowance in such low-rates scenarios on the basis of RAB multiples:

> *We note that the 2018 Instrument was applied during periods of low interest rates and low inflation. During this time, we note that demand from investors, as measured in our RAB multiples in Figure 11.1, actually increased. This gives us confidence that the 2022*

Instrument would, given our proposal to use the same approach for risk-free rate and MRP, also be reasonable.[264]

This passage was apparently written prior to the AER's recent decision to <u>not</u> use the same approach for the risk-free rate.

But in any event, the reliance on aggregated RAB multiples is entirely unfounded. It is also inconsistent with the AER having engaged CEPA to compute disaggregated RAB multiples.

As we have demonstrated above, it is entirely possible that:

» The AER's allowed return on equity is materially lower than the market cost of equity capital; while simultaneously

» The aggregated RAB multiple is materially greater than 1 because it also reflects the value of unregulated assets, incentive payments and efficiencies, and other things.

Indeed, this is precisely the case for the recent Spark and AusNet transactions, as demonstrated above.

If the AER is of the view that it is acceptable to set an allowed return below the market cost of capital, so long as the value of unregulated assets, incentive payments and other things are sufficient to produce an aggregated RAB multiple above 1, it should make a clear statement to that effect.

If the AER is not of that view, it should withdraw the above statement in the final *Explanatory Statement* and cease erroneously evaluating its allowed returns with reference to aggregated RAB multiples.

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[264] AER, June 2022, *Draft rate of return instrument: Explanatory statement*, p. 292.

9 Appendix A: Status of ENA March recommendations

Recommendation	ENA March 2022 submission	Draft RoRI response
Term issues		
1	Separate term for inflation and allowed return on capital.	Rejected.
2	Term for debt and equity should reflect what investors require.	Accepted for debt. Rejected for equity.
3	Maintain 10-year trailing average approach.	Accepted.
4	A high bar for change should be applied to the term of the risk-free rate.	Rejected.
5	The approach to debt and equity should be the same – set the allowed return to match the market cost of capital.	Rejected.
6	The case for a 5-year term for equity does not bear scrutiny.	Rejected.
7	A 10-year term should be maintained for the allowed return on equity.	Rejected.
Market risk premium		
8	Geometric means should receive no weight.	Accepted.
9	Mathews (2019) should receive no weight.	Accepted.
10	Material weight should be applied to sensible specifications of the DGM.	Rejected.
11	Material weight should be applied to the Wright approach, in line with the recommendations from consultants and experts.	Rejected.
12	Do not explicitly rely exclusively on the HER approach.	Rejected.
13	Do not effectively rely exclusively on the HER approach.	Rejected.

14	Have real regard to all relevant evidence.	Rejected.
15	Have no regard to survey evidence.	Accepted.

Equity beta

16	Use a long data period (10 years).	Accepted (longer period adopted).
17	Unsafe to rely on a data set with a single live comparator.	Rejected.
18	Have regard to the approaches adopted by other comparable regulators.	Rejected.
19	Have regard to the evidence of low-beta bias.	Rejected.
20	Have regard to all relevant evidence, including international comparators.	Rejected.

Allowed return on debt

21	Retain independent third-party data sources.	Accepted.
22	Rule out asymmetric adjustments based on EICSI.	Accepted.
23	Do not apply a weighted trailing average – that will not address the commercial viability of major new projects.	Accepted.

Cross checks

24	Have no regard to RAB multiples unless they have been properly disaggregated.	Rejected.
25	Have regard to recent independent expert estimates of the market cost of equity.	Rejected.
26	Have regard to what comparable regulators do.	Rejected.
27	Perform a financeability assessment on the benchmark firm.	Accepted – in progress.
28	Conduct and publish scenario testing.	Accepted – in progress.

10 Appendix B: Stakeholder themes and implications for final decision

This appendix reflects on some of the possible implications of key stakeholder themes emerging at the 1st stakeholder forum on the draft Rate of Return Instrument held in July.

Stakeholder theme	Implications for AER rate of return Instrument design and methodology
Significantly greater focus on issues of consumer perspectives on the market is required	The AER process commenced with dedicated process mapping the way to maximise the long-term interests of consumers in setting the rate of return, and reached an approach focused on reaching an 'unbiased estimate'. ENA supports this AER Position Paper conclusion.
'Efficient operation and use of' networks assets has not received sufficient attention in the review process	This issue is an important consideration for the review. The implications of this element of framework guidance was discussed in the 2018 final Instrument, in AER Pathways papers as well as in the context of the AER determining how best to set the rate of return in the long-term interests of consumers. ENA supports the key conclusions reached in this area by the AER on the balancing of risks and costs of over and underinvestment, and the importance of efficient economic signals for the operation and use of network assets. A factor contributing to the efficient operation and use of network services is economically efficient pricing signals, based on an appropriate unbiased rate of return. A measure or approach which lowers the rate of return below the level required to promote efficient investment and usage signals does not unambiguously serve to promote the efficient operation and use of network services.
ECA analysis of projected network costs to 2030 should form part of AER's considerations	The underlying drivers of some projected increases in network charges further into the period examined appears to be a normal assumed resetting of risk-free rates in individual reviews in the future. It is unclear whether this provides any particular information that is relevant to the underlying approaches or choices under discussion in the draft Instrument, except as recognising changed market conditions since the previous regulatory determinations, which were made in many cases at near record low risk-free rates. ENA has suggested the presentation of forward scenarios focused on the period of the Instrument, based on the recent actual experiences of European

	regulatory bodies, as well as third party government sources, such as the Commonwealth Treasury's forward estimates, or scenarios modelled in Treasury intergenerational reports.
Risk assessment should be based on consumers and investors perspectives	This issue has been addressed through the AER's consideration of the relevant Revenue and Pricing Principles and NEO/NGO.
If the AER considers market conditions for investors, it should also consider current conditions for consumers	These considerations would arise in the AER's assessment of risks and costs of under and over utilisation, and the efficient operations and use of the relevant infrastructure. ENA in unaware of specific example in which the AER has not considered these perspectives – appropriately balanced by considerations of the long-term impact of the Instrument's settings, the potential variability in market conditions for customers and investors over this time.
Higher inflation and further cost of living pressures to come should be considered by the AER in determining a rate of return	As above. Consumer perspectives through the review have previously highlighted that a 'long-term' rate of return 'looking through' cycles should be provided. This is not consistent with adjusting the rate of return asymmetrically to reflect prevailing (and forecast to be relatively shorter-term) changes in price levels that are forecast to be present in the initial year of an Instrument with an effective life of 9 years.