

The term of the rate of return

Response to Draft AER Working Paper

2 July 2021

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1 Overview

Key messages

- » The long-term interests of consumers are best served by setting the regulatory allowance to match the market cost of capital.
- » ENA agrees that the terms for expected inflation and for the returns on debt and equity capital should be assessed independently and do not need to align with each other.
- » ENA proposes that the 10-year trailing average approach to setting the allowed return on debt should be maintained:
 - That approach is consistent with efficient market practice;
 - A 10-year term is also consistent with the relevant network debt data (WATMI); and
 - Maintaining the current approach avoids a set of highly complex transition mechanisms.
- » ENA proposes that a 10-year term should be maintained for the risk-free rate:
 - ENA agrees with the approach adopted in the 2018 Rate of Return Instrument (RoRI), where the AER considered the National Electricity Objective and National Gas Objective through the lens of the NPV=0 principle and concluded that a 10-year risk-free rate was appropriate;
 - This issue has been considered several times before and there have been no new developments and no new evidence since the last consideration that would warrant a change of approach;
 - A 10-year term is consistent with efficient market practice, consistent with the theory of the Sharpe-Lintner Capital Asset Pricing Model (CAPM), and best reflects well-accepted academic literature; and
 - Regulatory allowances should be set on the basis of the returns that real-world investors *do* require, not on the basis of assumptions and derivations about what academic experts might think they *should* require.

1.1 Early consideration of an important issue

Energy Networks Australia (ENA) strongly endorses the Australian Energy Regulator's (AER) approach in commencing consultation on the 2022 Rate of Return Instrument (2022 RoRI) at this early stage. This approach provides an opportunity for thorough stakeholder engagement and proper analysis of approaches and evidence. ENA welcomes the opportunities provided to engage with the AER and other stakeholders, including through interactive forums, throughout this process.

ENA notes that the AER indicated in its Review of Regulatory Inflation that it would consider term issues as part of its process for the 2022 RoRI. As part of that review, the AER has published a draft working paper in May 2021 and conducted a stakeholder forum on 15 June 2021. During the stakeholder forum, a general consensus emerged that:

- » No stakeholders are actively promoting any constraints between the terms adopted for regulatory inflation and the allowed return on debt and equity capital;
- » No stakeholders are actively promoting any change in the AER's approach of adopting a 10-year term when setting the allowed return on debt and equity capital; and
- » All stakeholders observed that maintaining the current approach to the term of the allowed return on debt would avoid the complexity of implementing a new transition mechanism part-way through the current transition mechanism.

Consequently, ENA considers that the appropriate action is for the AER to 'lock away' its adoption of a 10-year term when setting the allowed return on debt and equity capital so that this issue does not need to be reconsidered as part of the ongoing RoRI process. This would provide an opportunity for stakeholders and the AER to focus limited resources on issues more clearly subject to different views and is consistent with the objective of the initial pathways to 2022 process.

The remainder of this submission explains why ENA considers a 10-year term to be appropriate for the allowed return on debt and equity capital and in the long-term interests of consumers.

1.2 Context for this review

In ENA's submission of 9 October 2020, it was noted that the 2022 RoRI review is being undertaken in highly unusual market conditions where government bond yields had fallen to historical lows before being driven even lower by unprecedented central bank interventions. The AER itself has acknowledged this point in a companion draft working paper:

*we agree that we are in a low interest rate environment.*¹

ENA's 9 October 2020 submission noted that this has resulted in the allowed real return on equity falling to 2.35%, having been reduced by 24% in the 2018 RoRI, due to a reduction in the allowed equity risk premium, and by a further 36% due to subsequent falls in government bond yields. ENA also noted that the AER's allowed return on equity had fallen well below the allowances of other comparable regulators. For example, we noted that Brattle (2020) reports that the closest allowance for the real return on equity made by a comparable regulator is nearly double the allowance in the AER's most recent decisions.²

Within this context, the 2022 RoRI is being developed at a time when significant investment in network infrastructure is required to support the transition in Australia's energy sector.

The AER's draft working paper on the *Term of the Rate of Return* invites comment on two potential further reductions to the AER's allowed returns – the potential shortening of the terms used when determining the allowed returns on debt and equity capital.

Both of these issues had been apparently settled by the AER after considerable investigation in previous reviews:

¹ AER, Rate of return and cashflows in a low interest rate environment, Draft working paper, May 2021, p. 3.

² Brattle reports that Ofwat's real return on equity allowance is 4.19% and Ofgem's allowance is 4.80%. The AER reports that the change in the approach to estimating regulatory inflation its recent draft decision will increase the real allowed return on equity by 35 basis points to 2.70%, still materially below that allowed by other comparable regulators.

- » The AER has adopted a 10-year term for the allowed return on debt in every decision it has made to date, confirming that approach in its 2009 Statement of Regulatory Intent, 2013 Rate of Return Guideline, and 2018 Rate of Return Instrument; and
- » The AER has adopted a 10-year term for the allowed return on equity in every decision it has made to date, confirming that approach in its 2009 Statement of Regulatory Intent, 2013 Rate of Return Guideline, and 2018 Rate of Return Instrument.

In addition, Australian regulatory practice has generally been converging on 10-year terms, with the most recent movements in practice occurring away from alternative shorter terms.

1.3 Evaluation framework is the long-term interests of consumers

ENA notes that the NEO and NGO are centred around the long-term interests of consumers. Our companion submission on *Allowed Returns in a Low Rate Environment* explains why we consider that the long-term interests of consumers are best promoted by setting the regulatory allowance for the return on capital equal to the best possible estimate of the market cost of capital.³

That is, the long-term interests of consumers are best served by setting the regulatory allowance to reflect the efficient cost of debt and equity finance required by real-world investors. This approach creates the proper incentives for efficient investment in, and efficient utilisation of, network assets.

In our view, best reflecting the market cost of capital should be the guiding principle when setting the allowed return on capital.

Throughout this submission we consider which approach best reflects the market cost of capital – the rate of return that real-world investors actually require. Our view is that this approach best promotes the long-term interests of consumers.

1.4 Summary of ENA position

ENA endorses strongly the AER's approach of addressing, and hopefully settling, a number of issues prior to the more formal RoRI process throughout 2022.

ENA submits that no strong case for changing the term underpinning the return on debt or equity has been made. There are also no stakeholder calls to make a change to either (as was apparent at the 15 June public forum). Therefore, the term issues raised in the draft working paper can usefully be settled immediately at this stage of the process.

In summary:

- » ENA agrees with the AER's analysis and conclusions that there is no requirement for the same terms to be adopted for expected inflation and the allowed returns on debt and equity. Rather, each parameter must be estimated in a way that reflects the role of that parameter within the AER's framework.
- » ENA submits that the term for the allowed return on debt should remain at 10 years for the following reasons:
 - A 10-year term is consistent with standard commercial practice, and therefore best reflects the market cost of capital.

³ See particularly Section 2 of that submission.

- A 10-year term (or longer) is consistent with standard regulatory practice.
- A 10-year term is consistent with the industry debt data (WATMI).
- Stability and predictability of the regulatory approach is valued by all stakeholders, as evidenced by the feedback provided to the AER by stakeholders during the 15 June public forum. In this regard, ENA notes that the AER has adopted a 10-year term in every decision to date and has confirmed that approach in its 2009, 2013 and 2018 rate of return reviews. ENA agrees with the AER's reasoning and conclusions in these decisions, and notes that no new analysis or evidence has emerged since 2018 that suggests the AER should change its approach.
- It is common for networks that target a 10-year term to issue somewhat shorter-term debt on some occasions and somewhat longer-term debt on other occasions (due to market conditions, availability, market appetite, and management of refinancing risk). Consequently, it is important to consider the term of debt from a longer-term perspective rather than as at a point in time.
- An approach whereby the assumed term of debt is changed in each RoRI would result in a highly complex system of nested transitions such that each network would have a unique set of three transitions in place at any point in time.
- » ENA submits that the term for the allowed return on equity should remain at 10 years:
 - A 10-year term is consistent with standard commercial practice for long-lived assets, and therefore best reflects the market cost of capital.⁴
 - A 10-year term (or longer) is consistent with standard regulatory practice.
 - No change to finance theory or practice has occurred since the AER's previous decisions on this matter.
 - Stability and predictability of the regulatory approach is valued by all stakeholders. In this regard, ENA notes that the AER has adopted a 10-year term in every decision to date and has confirmed that approach in its 2009, 2013 and 2018 rate of return reviews. ENA agrees with the AER's reasoning and conclusions in these decisions.
 - The only rationale for a shorter-term appears to be the commissioned report from Dr Lally. However:
 - » Dr Lally's view has been well-known and consistent since 2004. The AER has considered that view in its three previous rate of return reviews and elected consistently to not adopt them.
 - » Dr Lally's algebraic derivations rely on the assumption that the market value of the regulated firm is equal to the RAB at the end of every regulatory period, which is implausible.
 - » In the text of his latest report, Dr Lally indicates that his conclusions would also follow under the assumption that investors expect the value of the regulated firm to be equal to the RAB at the end of every regulatory period, which is equally implausible.
 - » This submission explains why ENA considers that a 5-year term for the allowed return on equity is not consistent with the NPV=0 principle and why a 10-year term is.

⁴ Noting that there are many examples of firms issuing even longer-term debt when that can be arranged.

- As investors determine their required rate of return using a 10-year term, adopting a 10-year term does not violate the NPV=0 principle. Rather, adopting a 10-year term satisfies the NPV=0 principle.
- At the AER’s stakeholder forum held on 15 June 2021, the Consumer Reference Group (CRG) presented a framework that it considered the AER should apply to the matters raised in the term of the rate of return working paper. ENA agrees that this is a useful framework in which to consider these matters. We have considered this framework as it applies to the AER working paper positions on term for the allowed return on debt and term for the allowed return on equity and analysed the main design choices set out in the Working Paper within this framework. This analysis is set out in table format in the Appendix, which summarises points explained throughout this document.

2 Use of independent terms for forecast inflation and return on debt and equity

Key messages

- » ENA agrees with the AER's conclusion that the term for expected inflation and the term for the rate of return should be assessed independently and do not need to align with each other.
- » Similarly, the return on debt and the return on equity should be assessed independently and do not need to align with each other.

2.1 The term for expected inflation and the allowed return on capital are independent

ENA agrees with the AER's conclusion 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.⁵

We also note that this conclusion is consistent with our submission to the AER's Review of Regulatory Inflation:

ENA notes that the AER seeks to set the regulatory inflation parameter so that the deduction from allowed revenues in the Post Tax Revenue Model (PTRM) is equal to the expected value of Regulatory Asset Base (RAB) indexation in the Roll Forward Model (RFM). ENA refers to this as the 'take out what you expect to put back in' framework. Under this framework, 5-year inflation is 'put back in,' so 5-year inflation must be 'taken out.' That is, the term of the inflation parameter is determined by the RFM and not the Rate of Return Instrument (RoRI) or any other rate of return parameter.⁶

In summary, ENA's view is that there is no relationship between the term used for expected inflation and the term used to determine the allowed return on capital. Rather, the term should reflect the role of each parameter within the AER's regulatory framework.

The role of the inflation parameter is to "take out what you expect to put back in." What is "put back in" is actual inflation over five years. Consequently, what is "taken out" must be expected inflation over five years.

By contrast, the role of the allowed return on capital is to compensate for the efficient cost of capital. Consequently, the regulatory term should reflect the efficient cost of capital – the term that is used in the market when setting the returns that are required on debt and equity capital. There is no link between

⁵ AER, Term of the Rate of Return: Draft Working Paper, May 2021, p. 32.

⁶ ENA, Review of the Regulatory Treatment of Inflation: Response to AER Draft Position, p. 5.

the efficient cost of capital in financial markets and the mechanics of the AER's treatment of regulatory inflation within the PTRM.⁷

2.2 The term for the allowed return on debt and the allowed return on equity are independent

ENA agrees with the AER's conclusion that:

*The term for the rate of return on debt and the return on equity should be independently assessed and do not need to align with each other.*⁸

ENA considers that there is no requirement for the allowed return on equity and the allowed return on debt to be based on the same term.

In both cases, the term that is adopted should reflect the efficient market cost of capital.

For example, if the AER determines that a prudent and efficient approach is to issue 10-year debt on a staggered maturity basis, it is appropriate for the regulatory allowance to reflect the cost of that approach.

In this regard, ENA agrees with the AER that the 10-year trailing average approach reflects the cost of efficient debt financing practice:

*This approach means that the allowed return on debt more closely aligns with the efficient debt financing practices of regulated businesses.*⁹

Similarly, if the evidence suggests that investors in the market determine the efficient cost of equity capital using a 10-year risk-free rate, that is what should be adopted when setting the regulatory allowance.

In this regard, the AER explains the role of the CAPM within its regulatory framework 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.*¹⁰

Thus, if the evidence suggests that investors use a 10-year risk-free rate when determining the potential returns from an investment in an infrastructure business with long-lived underlying cash flows, that is what should be adopted when setting the regulatory allowance.

⁷ That is, the AER first estimates the efficient nominal cost of capital. It then turns to how that return will be delivered – providing part of it as a cash return via the regulatory allowance and part of it via RAB indexation. The second step is independent of the first, and simply requires that the two components of the allowed return add up (in expectation) to the efficient nominal cost of capital estimated in the first step.

⁸ AER, Term of the Rate of Return: Draft Working Paper, May 2021, p. 32.

⁹ AER, December 2013, Final Rate of Return Guideline: Explanatory Statement, p. 12, emphasis added.

¹⁰ AER, December 2018, Rate of Return Instrument Explanatory Statement, p. 127.

3 The term for the allowed return on debt

Key messages

- » The benchmark efficient financing assumption that forms the basis of the allowed return on debt must be one that is viable for a network to implement. However, the approach of adjusting the credit rating to account for a perceived difference in the term of debt results in a benchmark debt management approach that is not viable to implement and is therefore not an appropriate regulatory benchmark.
- » ENA agrees that the allowed return on debt should reflect the cost that would be incurred each year under the assumed efficient debt financing practice.
- » ENA agrees that the trailing average approach reflects the efficient debt financing practice, and that this approach should be retained.
- » ENA considers that there is no evidence to suggest that the benchmark approach of issuing 10-year debt on a staggered maturity basis has become inefficient since 2018, such that a change in approach is warranted. Consequently, ENA submits that the 10-year trailing average allowed return on debt should be maintained.
- » ENA considers that the appropriate use of the network debt data (WATMI) data is to identify whether the actual term of debt issued by networks differs from the allowed term in a significant and sustained way for the bulk of networks.
- » The WATMI currently indicates an average term at issuance of close to 10 years.
- » Under the AER's trailing average framework, every change to the debt term would require a new transition mechanism to be put in place. An approach that re-sets the assumed term of debt at the time of each RoRI would create a system of nested transitions, such that each network would be part-way through a set of three different transition mechanisms at any point in time.

3.1 The assumed efficient debt financing practice must be viable: a credit rating adjustment is not

Lally (2021, p. 25) advises the AER that the assumed efficient debt financing strategy that forms the basis of the allowed return on debt will only satisfy the NPV=0 principle if that assumed strategy is “viable.”

Dr Lally defines a viable debt policy as follows:

*A viable debt policy means feasible and not so inefficient that firms would avoid it.*¹¹

That is, the assumed efficient debt financing strategy must be one that networks could feasibly implement and which networks might reasonably consider implementing. This is consistent with the NPV=0 principle in the sense that there is a match between the regulatory allowance and the cost incurred by a benchmark efficient firm.

¹¹ Lally, April 2021, The appropriate term for the allowed cost of capital, p. 25.

Put another way, a debt management strategy that no network could, or would, ever adopt would not be an appropriate regulatory benchmark – because that approach would inevitably result in a disparity between the regulatory allowance and the benchmark efficient cost.

In this context, ENA notes that one of the potential uses of the EICSI data is not consistent with a viable debt management approach. Suppose, by way of example, that the AER concluded that the EICSI data indicated that networks tended to issue 8-year BBB+ debt,¹² but that the AER adopted a regulatory benchmark of 10-year A rated debt. In this case, the regulatory allowance would be based on an assumed debt management strategy that is not viable – because the benchmark network could not issue A rated debt.

Dr Lally provides similar advice to the AER:

The AER proposes to use this EICSI data over an observation window (the 2018-2022 period) to alter the weights on the currently employed ten-year BBB and ten-year A indexes for corporate bond DRPs (currently 2/3 and 1/3 respectively) so that the resulting weighted average over these two DRPs matches the average DRP in the EICSI data over the observation window, and then to apply these new weights in its existing process for determining the ten-year trailing average DRP.

In response, the ENA (2020b, paras 4-8) argues that the difference between the average DRP observed in the EICSI data and that in the currently employed data is attributable purely to the regulated businesses having an average term on their debt of less than ten years and therefore the appropriate course of action by the AER would (at most) be to reduce its benchmark debt term within the context of its current process. I agree, providing the difference referred to by the ENA is purely due to debt term and the evidence in ENA (2020b, Figure 2-3) is consistent with that.

The ENA (2020b, paras 9-11) also argues that the AER's proposal would involve effectively changing the benchmark credit rating to reflect evidence that instead related to the debt term, thereby producing a new benchmark credit rating that differed from the observed ratings of energy network businesses. I agree.¹³

Consequently, ENA submits that adjusting the credit rating, where the reason for the adjustment is a perceived difference between the observed term and the 10-year benchmark, results in a benchmark debt management approach that is not viable and therefore should not be used. The benchmark efficient financing assumption that forms the basis of the allowed return on debt must be one that is viable for a network to implement.

3.2 The form of the allowed return on debt should reflect efficient market practice

The regulatory allowance should match the efficient cost of debt

ENA submits that the objective of this component of the regulatory task is to set the regulatory allowance to reflect the costs that would be incurred under a prudent and efficient debt financing practice.

¹² ENA does not consider that such a conclusion can be reasonably drawn from the EICSI data. This is adopted here solely for the purposes of illustration.

¹³ Lally, April 2021, The appropriate term for the allowed cost of capital, pp. 46-47.

In this regard, the AER reports that Dr Lally has advised that:

In respect of satisfying the NPV=0 principle, the [allowed] return on debt must match that incurred by the benchmark efficient firm.¹⁴

This principle of setting the allowed return on debt to match the efficient financing costs of the benchmark efficient firm is widely accepted. For example, in its 2013 Rate of Return Guideline, the AER adopted a 10-year trailing average allowance because it considered that approach to best reflect the efficient financing practice:

*This approach means that the allowed return on debt **more closely aligns with the efficient debt financing practices of regulated businesses.**¹⁵*

ENA notes that:

- » The major energy user and consumer representatives that originally proposed the trailing average approach did so on the basis of better matching the regulatory allowance to the benchmark efficient costs;^{16 17}
- » Consumers have, and will continue to, benefit from lower volatility in the return on debt allowance; and
- » Consumers will continue to benefit from the current low rates as the trailing average rolls forward over the next 10 years.

In summary, there appears to be broad agreement with the notion that, in relation to the return on debt, the regulatory allowance each year should be commensurate with the efficient cost of debt.

The trailing average allowance reflects an efficient approach and should be retained

ENA agrees that the trailing average approach reflects efficient debt financing practice, and that this approach should be retained.

ENA notes that the practice of issuing long-term debt on a staggered maturity basis is the standard approach adopted by firms with long-lived capital assets. The AER noted that its 10-year trailing average approach is consistent with this efficient debt financing practice:

We propose to apply a trailing average portfolio approach to estimate the return on debt. This approach means that the allowed return on debt more closely aligns with the efficient debt financing practices of regulated businesses and means that prices are likely to be less volatile over time. The trailing average would be calculated over a ten year period. The annual updating of the trailing average should also reduce the potential for a mismatch between the allowed return on debt and the return on debt for a benchmark efficient entity.¹⁸

¹⁴ AER, May 2021, Term of the Rate of Return: Draft Working Paper, p. 30.

¹⁵ AER, December 2013, Final Rate of Return Guideline: Explanatory Statement, p. 12, emphasis added.

¹⁶ Energy Users Rule Change Committee Rule Change Request, supporting report, by CEPA, October 2011, Estimating the debt margin, p. 9, emphasis added.

¹⁷ Major Energy Users, October 2012, MEU Response to AEMC Draft Rule Change Amendments, p. 13, emphasis added.

¹⁸ AER, December 2013, Final Rate of Return Guideline: Explanatory Statement, p. 12, emphasis added.

The AER has also committed to retain the 10-year benchmark term for the duration of the transition to the trailing average approach:

In moving to a trailing average approach we consider that we are committing to a debt term for the period nominated. To change the benchmark debt term in response to updated debt portfolio information would not be conducive to regulatory stability.¹⁹

Victorian gas distribution businesses, for example, will not finish transitioning to the trailing average until 2028. Consequently, a change in the benchmark term part-way through the current transition period would not promote regulatory predictability.

ENA submits that the trailing average approach remains the efficient debt financing practice, and that this approach should be retained.

Section 3.3 of this submission explains why any change to the current approach would require a transition to the new approach. Such a transition would require a re-shaping of the benchmark efficient debt portfolio, which would come at a cost to the benchmark efficient firm.

ENA agrees with the AER's preliminary conclusion to retain the trailing average approach

ENA agrees with the AER's conclusion that the term that should be adopted for the allowed return on debt depends on the determination of efficient debt financing practice in the long run. ENA also agrees with the AER's conclusion that the trailing average approach should be maintained for the purpose of setting the allowed return on debt:

We have been advised that the term of debt depends on the form of the return on debt. We propose to maintain the trailing average approach for the return of debt. Given the preliminary view to maintain the trailing average, we are considering matching the term for the return on debt to that of an efficient firm's borrowing.²⁰

3.3 Application of the NPV=0 principle to the allowed return on debt

Matching the regulatory allowance to the benchmark efficient cost

ENA agrees with the AER's interpretation of the advice that it has received from Dr Lally in relation to the NPV=0 principle as it relates to the allowed return on debt:

In respect of satisfying the NPV=0 principle, the [allowed] return on debt must match that incurred by the benchmark efficient firm.²¹

As noted above, ENA considers that this 'matching' should be implemented by the regulator determining what it considers to be the prudent and efficient debt financing practice and then setting the regulatory allowance to match the efficient costs incurred under that approach. That is, the long-term interests of consumers are best promoted by setting the regulatory allowance to reflect the market cost of capital.

In this regard, Dr Lally confirms that the standard 10-year trailing average approach is consistent with the NPV=0 principle:

¹⁹ AER, 2013, Rate of Return Guideline Explanatory Statement, p. 137, emphasis added.

²⁰ AER, May 2021, Term of the Rate of Return: Draft Working Paper, p. 32.

²¹ AER, May 2021, Term of the Rate of Return: Draft Working Paper, p. 30.

*A fourth possible means of matching the allowed and incurred interest rates on debt would be for the regulator to set the allowance for the entire cost of debt in accordance with an annually-adjusted trailing average cost over N years (TA approach), and for firms to align their borrowing with this by borrowing for N years and staggering the maturity dates. For example, if the TA allowance were equally weighted over the last ten years, the firm would borrow so that 10% of its debt matured each year. **Since it is viable for firms to act in this way, and firms generally do so** (AER, 2009, pp. 151-154), **this would satisfy the NPV = 0 test.** Of course, firms could choose not to do this but the NPV = 0 test would be satisfied because it would be entirely feasible for them to align their borrowing with the regulatory allowance.²²*

However, Dr Lally also contemplates that the NPV=0 principle would be supported by a range of other regulatory allowances, so long as (a) the allowance is capable of being replicated by networks, and (b) the allowance reflects the standard commercial practice of issuing debt on a staggered maturity basis as a means of managing refinancing risk. That is, the assumed benchmark efficient financing policy must be “viable” as explained above.

For example, if a trailing average allowance of (say) six years is deemed to satisfy both requirements, it would be deemed to be consistent with the NPV=0 principle.

It follows from Dr Lally’s reasoning that if, after having deemed a 10-year trailing average to be efficient, the AER were to deem a 6-year trailing average to be efficient in the future then a viable transition between a 10-year and a 6-year trailing average would need to be implemented – such that networks would be able to replicate the transition from the 10-year to the 6-year trailing average.²³

NPV=0 requires more than an implementable financing strategy

A regulatory allowance that is based on a debt management approach that cannot be implemented by a network could not reasonably be described as being prudent or efficient, or as being reflective of the market cost of capital. Thus, ENA agrees that the allowed return on debt should match the cost that would be incurred under a debt management approach that could feasibly be implemented by a network – the assumed debt management approach must be one that is viable for networks to implement.

However, it is not sufficient that the debt management approach be one that a network could possibly implement. Not all implementable debt management strategies are prudent and efficient and not all are reflective of the market cost of capital.

ENA considers that satisfaction of the NPV=0 principle also requires that the AER select what it considers to be the most prudent and efficient debt financing approach based on observed market practice. The regulatory allowance should then be set to reflect the efficient costs that would be incurred under that approach.

ENA considers that:

- » The objective of the NPV=0 principle is to ensure that what networks receive, and what consumers pay, matches the efficient cost of providing the service; and therefore

²² Lally, April 2021, The appropriate term for the allowed cost of capital, p. 25, emphasis added.

²³ In reality, debt is not held to maturity before being refinanced as the regulatory benchmark assumes. Rather, debt must be refinanced at least six months prior to maturity. It is important to reflect the costs of this early refinancing in the allowance for debt issuance costs.

- » A regulatory allowance that differs from the efficient cost violates this objective – even if a firm would be able to replicate that allowance.

3.4 The term for the allowed return on debt

Proper interpretation and use of the WATMI data must consider why a network might have departed from the regulatory benchmark

Under an incentive-based regulatory framework, the regulator sets the allowed return on debt to reflect the costs associated with efficient practice.

Some networks currently seek to closely replicate the 10-year staggered maturity debt strategy that underpins the AER's current regulatory allowance. However, there are a number of reasons why a network might depart, from time to time or for some period, from the benchmark efficient approach that underpins the AER's current allowance:

- » **Temporary responses to periods of market dislocation** - The issuance of shorter-term debt can occur as a temporary response to market dislocation. As noted above, it is common for Australian networks to adopt a 10-year debt target as part of their financing policy. But this does not mean that these firms always issue debt with precisely 10 years maturity. Firms will sometimes issue shorter-term debt and then seek to lengthen the average term back to 10 years by issuing longer-term debt. This variation around the 10-year average is affected by the market demand for debt at different tenors, which varies over different market conditions. For example, there is relatively less market appetite for long-term debt during financial crises and global pandemics. In addition, the benchmark estimates are based on relatively liquid corporate bonds, whereas networks are not always able to achieve rates that reflect such liquidity. Again, a network with a target 10-year maturity may issue bonds with slightly shorter terms in some periods and slightly longer terms in others.
- » **Transaction related requirements** - Shorter-term debt might also be issued as a temporary component of the financing package required when a network is privatised or sold to a new owner. For example, in order to most quickly match the AER's efficient benchmark, a new owner would put in place a debt portfolio that consists of 10% 1-year debt, 10% 2-year debt, and so on. In one year, the first tranche would mature and it would be replaced by 10-year debt, and so on. In this manner, after 10 years the network would be financed in a way that matches the AER's 10-year trailing average allowance. The result is that, until 10 years has passed, the network will have debt with an average maturity (at issuance) of less than 10 years. In practice, it is not feasible to put in place 10 such tranches, so it is common to secure bridging debt to make the bid unconditional. After financial close, the firm can then put in place a transitional debt structure, which will then take 10 years to reach steady state. The same can apply to an existing firm that secures debt finance for a major capital project.

In practice, individual networks are also free to employ whatever debt financing practice they choose, including practices that the regulator might consider to be inefficient. Under incentive-based regulation, the individual network bears all of the risks associated with any such departure from the benchmark efficient approach. Consumers only ever pay in accordance with the costs that are deemed by the AER to be efficient.

To illustrate this, consider an example where a regulator determines that the prudent and efficient approach involves the issuance of 10-year debt. Also suppose that a number of networks adopt precisely that practice, but that some networks issue shorter-term debt, departing from the efficient benchmark. If

interest rates rise steeply then a network with shorter term debt will see their costs rises faster than their compensation as more than the benchmark assumed amount of debt is refinanced at higher interest rates (and vice versa). Such departures may be part of a deliberate strategy of a network to adopt a more aggressive financing practice and to bear the entirety of the risk associated with that practice.

In summary, there are at least four reasons why a network might issue debt with a term less than the 10-year benchmark:

- » **Temporary responses to periods of market dislocation** - As part of a debt issuance strategy that preserves the 10-year benchmark on average (e.g. shorter-than-target debt might be issued during periods of market disruption, with longer-than-target debt being issued at other times);
- » **Transaction-related transition to matching benchmark** - After a recent transaction, or in relation to a major capital project, as the network transitions towards a 10-year trailing average portfolio;
- » **Business-specific departure from benchmark** - As part of a deliberate debt strategy that involves the network weighing up potential benefits against the additional risk that they would bear; or
- » **Change in target debt term for network** - Because the network considers that shorter-term debt has become more efficient than longer-term debt and has adjusted its steady-state target debt financing term downwards accordingly.

ENA submits that the first three reasons should not be the basis for any change in the allowed term of debt. Rather, the allowed term of debt should only be changed if there is clear evidence that the currently adopted term no longer represents the efficient steady-state financing practice.

Suppose, for example, that the AER concludes at some point in time that the prevailing industry average WATMI is less than 10 years. This should not be the basis for an automatic change to the AER's allowed term of debt – because the shorter term might be the result of one or more of the first three reasons above. Moreover, the industry average WATMI may be dragged down by a small subset of NSPs adopting a short-term debt strategy for the fourth reason above, even though most NSPs have a WATMI of around 10 years or more. In this circumstance, the AER would need to consider carefully whether, and how, the behaviour of a subset of NSPs should influence the industry average benchmark.

ENA considers that the appropriate use of the WATMI data is to identify whether the actual term of debt issued by networks differs from the allowed term in a significant and sustained way. If a significant and sustained difference is documented, the AER should then investigate the credible potential reasons for such a difference.

The AER should not make any change to the allowed term unless it was satisfied that the reason for the significant and sustained difference was due to networks changing their steady-state term target. In making this assessment, the AER would need to consider what weight to give to those networks that were targeting a shorter tenor vis-à-vis those that are targeting a 10-year tenor.

The AER would also have to satisfy itself that such a different target term of debt was efficient. This would involve establishing that the first three reasons above did not have a significant effect on the calculated WATMI.

WATMI data supports retention of the 10-year term

Aside from the conceptual points raised above, the WATMI data currently supports the retention of a 10-year term. That is, the departures from the issuance of long-term debt are few and they tend to be associated with temporary financing structures that have been put in place after recent privatisations.

ENA has engaged CEG to compute the WATMI for different sets of the network data and the results are summarised in Table 1 below.

Table 1: WATMI for different sets of network data

	30 June 2018	30 June 2019	30 June 2020
Excluding subordinated debt			
All firms	8.5	8.9	8.8
NSW firms excluded	8.9	9.1	8.9
Including subordinated debt			
All firms	9.3	9.7	9.5
NSW firms excluded	10.1	10.2	10.0

Source: CEG.

Table 1 shows that:

- » The WATMI is very close to 10 years. This is particularly the case where subordinated debt is included in the analysis. Even if subordinated debt is excluded from the analysis, the WATMI is close to 10 years. It is not clear why subordinated debt should be excluded. The AER has not explained why the issuance of subordinated debt would be inefficient or imprudent for an NSP; and
- » The WATMI is higher if NSW firms, which have been recently privatised, are excluded. Following the sale of those networks, the businesses refinanced their debt and did so by constructing portfolios of staggered maturities of debt. As the tranches of shorter-term debt mature, they will be replaced by longer-term debt such that following a period of transition the NSW businesses will hold debt with an average maturity that is very close to 10-years. The snapshot of the WATMI at the present time reflects the transition to steady-state debt portfolios dominated by long-term debt that these businesses are undergoing. The current WATMI does not recognise the long-term debt portfolios that the businesses are transitioning to, post-sale.

ENA submits that:

- » Subordinated debt should be included in the analysis. This would be internally consistent as the AER has historically included subordinated debt when setting benchmark gearing. Dr Lally also supports this position (see below); and
- » The short-term debt that is issued temporarily as part of transaction financing should be excluded from the analysis for the reasons set out above.

In relation to the inclusion of subordinated debt, ENA notes that Dr Lally has advised the AER that:

The ENA (2020b, para 28) argues that the average DRP in the EICSI data should include subordinated debt because it includes the senior debt that the excluded subordinated debt supports. If the EICSI data were being used to directly set the allowed DRP for the regulated businesses, I would agree, otherwise use of the average DRP in the EICSI data to generate

*the allowed DRP for regulated businesses would fail to match the costs of these businesses in aggregate.*²⁴

Consequently, ENA submits that the WATMI currently indicates that networks, on average, issue debt with a 10-year term.

Transition arrangements would be extremely complex

We now consider the transition arrangements that would be required if the AER decided to set the term of debt, in each RoRI, equal to the WATMI observed over the previous few years. This would require each network to embark on a new transition arrangement in every determination.

For example, networks are currently in the midst of a transition to the 10-year trailing average approach that the AER deemed to be efficient in its 2013 Guideline and 2018 RoRI. If the AER were to change the assumed term in its 2022 RoRI, networks would have to begin transitioning to the new regulatory benchmark after their next determination. This transition approach would take 10 years – until the last tranche of the current 10-year debt had expired.

If the AER then changed the benchmark term again in its 2026 RoRI, based on the updated WATMI at that time, another transition to the new term would begin.

Thus, each network would have three transitions partly completed at any point in time.

The unfortunate result of this potential complexity would be:

- » Departure from the objective of the RoRI setting a single clearly applied benchmark rate of return calculated on a consistent basis; and
- » A lack of transparency and clarity for stakeholders around the underlying basis for the allowed returns of individual firms.

An alternative to this set of complex transitions would be for the AER to only change its approach to setting the allowed return on debt when there was clear and sustained evidence that the benchmark debt financing approach, on which that allowance is based, could no longer be considered to be prudent and efficient.

By way of analogy, the AER considers gearing over 5-year and 10-year periods to reflect the fact that a firm with 60% target gearing may have actual gearing above or below 60% from time to time. It would be complex and disruptive and provide no benefit for the AER to switch its gearing assumption from time to time – because the market cost of capital depends on target gearing rather than spot gearing at a point in time. Similarly, a firm with a target debt maturity of 10 years might have an actual average debt maturity above or below 10 years from time to time. It would be even more disruptive for the AER to vary its term of debt assumption from time to time as that would create great complexity in terms of transition mechanisms.

ENA submits that there is no clear evidence that an infrastructure service provider issuing 10-year debt on a staggered maturity basis could now be considered to be inefficient. In this regard, ENA notes that it is standard for infrastructure companies to issue long-term debt (10 years or more) on a staggered maturity basis.

²⁴ Lally, M. August 2012, The risk free rate and the present value principle, p. 51.

Little change for any 5-year regulatory period

ENA also notes that a change from the current 10-year term to (say) a 9-year term would have a very small price impact over the next regulatory period for each network.

For example, in the first year of the next regulatory period, the allowed return on debt would be based on 9 tranches of historical 10-year debt and one tranche of new 9-year debt (instead of a new tranche of 10-year debt). Thus, the only difference would be in relation to the yield on 9-year instead of 10-year debt applied to 10% of the debt portfolio.

The small impact on allowed returns would have to be weighed against the complexity of an approach that re-sets the assumed term, and begins yet another transition path, at the time of each RoRI. In addition, any positive or negative impact would need to be weighed against the transactional costs of implementation and regulatory monitoring.

4 The term for the allowed return on equity

Key messages

- » The key decision for the AER to make in this area is the term of the risk-free rate.
 - » The AER has considered this issue several times before (2009, 2013 and 2018 rate of return reviews) and has adopted a 10-year risk-free rate in every one of its decisions to date.
 - » In its 2018 review, the AER considered the NEO and NGO through the lens of the NPV=0 principle and concluded that a 10-year risk-free rate was appropriate. ENA agrees with that assessment.
 - » The AER also noted that a 10-year term:
 - Reflects the actual practices of investors;
 - Is more consistent with the theory of the SL CAPM; and
 - Best reflects well accepted academic literature.
- ENA supports these conclusions and findings made by the AER in its previous reviews.
- » Because investors determine their required rate of return using a 10-year term, adopting a 10-year term does not violate the NPV=0 principle. Rather, adopting a 10-year term satisfies the NPV=0 principle.
 - » A 10-year risk-free rate (or longer) is also standard regulatory practice.
 - » The analysis and derivations presented in the report from Dr Lally are based on assumptions that do not hold in practice and which are inconsistent with the observed practices of market participants. They reflect an assessment of the return that investors should require (according to Dr Lally's assumptions and derivations) rather than the return that investors do require (based on market observations).
 - » Current market conditions associated with non-traditional monetary policy actions undertaken by the RBA since March 2020 raise additional questions about whether the 5-year government bond yield is an appropriate risk-free proxy at this time.

4.1 The key issue is whether a 5-year or 10-year risk-free rate should be used

The key decision is the term of the risk-free rate

ENA acknowledges that the SL-CAPM will be used to determine the allowed return on equity in the 2022 RoRI. Within this context, the draft working paper considers two approaches for estimating the risk-free rate parameter – the yield on 5-year and the yield on 10-year government bonds.

Having determined the term of the risk-free rate, the market risk premium must be estimated in an internally consistent manner. For example, if a 10-year risk-free rate is adopted, the MRP must be estimated as the premium to that same 10-year risk-free rate. ENA agrees with the AER's observations on this point:

We note that if we were to change the term of equity, the estimation of the MRP parameter may be affected. This was noted in a number of expert reports and is because the estimation

of historical excess returns and dividend growth model outputs require the use of a risk-free rate estimate. Matching to the length of the regulatory period would entail the use of a five-year risk free rate (compared to the current use of a ten-year rate) which would typically increase the resulting MRP estimate.²⁵

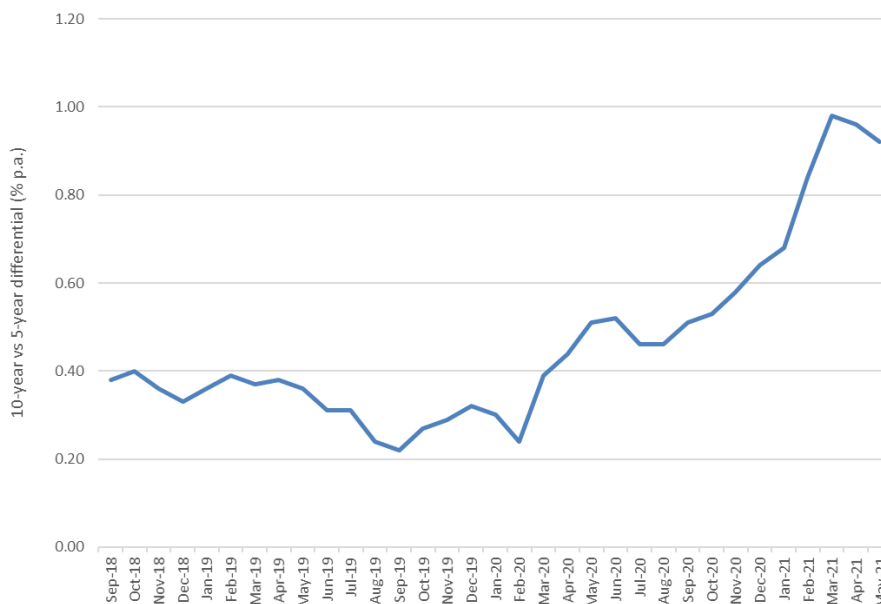
The equity beta parameter is independent of the term that is adopted for the risk-free rate. To be clear, it is econometrically appropriate to estimate beta using historical periods that are independent of the term adopted for the risk-free rate. This is because of the data limitations and potential noise arising from the use of smaller datasets when estimating beta.

Thus, the key issue to be determined is the term of the risk-free rate, which must then be used consistently when determining the allowed MRP.

The current differential is exacerbated by RBA market interventions

The historical average of the differential between 5-year and 10-year government bond yields has averaged approximately 50 basis points. The current differential is approximately double that historical average, as shown in Figure 1 below. Indeed, the current differential is among the highest on record, with other large differentials occurring during the 1991-92 recession and during the 1983 recession, a period which also involved very high experienced and forecast levels of inflation.

Figure 1: CGS 10-year vs. 5-year differential



Source: Reserve Bank of Australia.

The current differential occurs in the context of the RBA's co-ordinated bond purchasing program. As part of its quantitative easing program, the RBA is purchasing government bonds in order to reduce the

²⁵ AER, Term of the Rate of Return: Draft Working Paper, May 2021, p. 44. On this point, the AER also refers to the GasNet Decision of the Australian Competition Tribunal at pp. 12-13.

yield below where it would otherwise be set by the market. The RBA has announced a specific target of driving the yield on 3-year government bond yields to 0.1%, being the same as the current cash rate.

Although this quantitative easing program has affected yields of all maturities, the interventions have been more focussed at the shorter end of the yield curve.

ENA queries whether now may be an especially inappropriate time to consider a departure from the AER's long-held approach of adopting a 10-year risk-free rate. Such a departure may increase the risk of future AER rate of return determinations being affected by the ongoing effect of such RBA policies. In this regard, the Deputy Governor of the RBA has recently stated that:

*The general assessment of the research literature is that it is the stock of central bank bond purchases that matters rather than the flow. That is, it is the total size of the purchases that affects bond yields and financial conditions including the exchange rate, rather than how many bonds the central bank is buying each week. Clearly the two are closely related. But one important implication of this is that the **stimulus remains in place even when the bond purchase program finishes. The stimulus only begins to unwind as the bonds that the central bank has bought mature.***²⁶

The ongoing effect of the RBA intervention was confirmed in a recent RBA investigation into the impact of its bond-buying program:

*The evidence suggests that bond purchases serve to hold yields lower than they would have otherwise been **over an extended period**; this is also the evidence from studies of quantitative easing (QE) programs in other countries.*²⁷

The above analysis indicates that the unprecedented RBA intervention is expected to have an ongoing effect throughout the entire period of the 2022 RoRI. There also remains the significant possibility of this intervention being expanded or continued through the next several years. This reinforces questions of whether this is the most appropriate time to consider a change to the long-standing approach to estimating the risk-free rate.

4.2 The AER has consistently adopted a 10-year risk-free rate

The AER has always adopted a 10-year risk-free rate

Stability and predictability of the regulatory approach is valued by all stakeholders, but does not supplant the overriding objective of setting the allowed return to best reflect the market cost of capital. In this regard, ENA notes that the AER has adopted a 10-year risk-free rate in every decision it has made to date, citing consistency with market practice as one of the reasons for adopting that term. The AER affirmed its use of a 10-year risk-free rate in its:

- » 2009 Statement of Regulatory Intent;
- » 2013 Rate of Return Guideline; and
- » 2018 Rate of Return Instrument.

²⁶ Guy Debelle, 6 May 2021, Shann Memorial Lecture, <https://www.rba.gov.au/speeches/2021/sp-dg-2021-05-06.html>, emphasis added.

²⁷ Finlay, R., D. Titkov and M. Xiang, June 2021, An initial assessment of the Reserve Bank's bond purchase program, *RBA Bulletin*, p. 19, emphasis added.

A 10-year risk-free rate is consistent with the NPV=0 principle and the NEO and NGO

The AER's draft working paper suggests that one possible rationale for change in this area is a new focus on the regulatory concept of NPV=0. This would be an understandable reason for renewed focus on this area, and close review of alternative approaches, were NPV=0 considerations absent from past AER decisions in this area. However, this consideration was central to the 2018 RoRI, where the AER specifically considered the issue through the lens of the NPV=0 principle, and concluded that a 10-year term best promoted the NEO and NGO.

In particular, 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 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.²⁸

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.**²⁹*

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;
- » A 10-year term is more consistent with the theory of the SL CAPM;
- » A 10-year term reflects the actual practices of investors; and

²⁸ AER, December 2018, Rate of Return Instrument Explanatory Statement, p. 35, emphasis added.

²⁹ AER, December 2018, Rate of Return Instrument Explanatory Statement, p. 126, emphasis added.

- » A 10-year term best reflects well-accepted academic literature.

In relation to consistency with the theory of the SL CAPM, the AER explained that the standard approach is to adopt a term that reflects the life of the assets:

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. Although reinvestments may be [made] more frequently, they are still being made with reference to a long-term equilibrium rate of return. This will reflect the excess return required for bearing the systematic risk of the investment over the return on a long-term riskless asset.³⁰

The AER then noted that the standard approach adopted by market practitioners, and advocated in the academic literature, is a 10-year term:

We find support for using a 10 year term in actual investor valuation practices, and academic works. The 2013 and 2017 KPMG market practitioner surveys indicate around 85 per cent of practitioners use 10 year CGSs as a proxy for the risk free rate. Academic works by Pratt & Grabowski (2010), and Damodoran (2008) also argued that 10 year CGS yields were appropriate proxies for the risk free rate, as they reflect the long-term nature of the underlying assets.³¹

For example, the leading Berk and DeMarzo textbook indicates that

*When discounting risk-free cash flows we **match the maturity of the interest rate to that of the cash flows**. It is common to do the same when applying the CAPM...For example, where valuing a long-term investment with an indefinite horizon, such as a stock, most financial analysts report using the yields of **long-term (10-30 year) bonds** to determine the risk-free interest rate.³²*

In addition, ENA notes that the well-known McKinsey corporate valuation manual also recommends the use of long-term bonds:

Use longer-term bonds; they will be better in line with the time horizon of corporate cash flows.³³

The AER also concluded that a 10-year term would produce a valuation that is consistent with investor market valuations of similar stocks:

We consider 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.³⁴

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

³⁰ AER, December 2018, Rate of Return Instrument Explanatory Statement, p. 127.

³¹ AER, December 2018, Rate of Return Instrument Explanatory Statement, p. 127.

³² Berk, J. and P. DeMarzo, 2020, Corporate Finance: Global 5th edition, pp. 447-448, emphasis added.

³³ Koller, T., M. Goedhart and D. Wessels, 2015, Valuation: 6th University Edition, Wiley, p. 290.

³⁴ AER, December 2018, Rate of Return Instrument Explanatory Statement, p. 127.

*there is just enough cash flow left over to cover **investors' required return on the capital invested***³⁵

and that the AER has observed that:

*We find support for using a 10 year term in **actual investor valuation practices***³⁶

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.***³⁷

That this, the adoption of a 10-year risk-free rate, reflecting the approach that 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 achieving the NEO and NGO.

ENA agrees with the AER's analysis of the term of the risk-free rate in the 2018 RoRI, as summarised above. Section 4.8 below explains why ENA considers that the AER's previous rejection of the arguments in favour of a 5-year term remain valid.

4.3 The framework for the AER's previous decisions: set the regulatory allowance to match the market cost of capital

The previous section notes that a key rationale for the AER's adoption of a 10-year risk-free rate is the need to set a regulatory allowance that is consistent with the market cost of capital.

This principle of setting the allowed return equal to the required return in the market is important because:

- » Setting the allowed return equal to the commercial required return creates the proper incentive for efficient investment in the regulated asset:
 - Setting the allowed return lower than the required return creates a disincentive to invest as the firm is unable to pay the return that investors require; and
 - Setting the allowed return above the required return creates an incentive for inefficient investment as the firm is able to pay investors a return above what they require; and
- » Setting the allowed return equal to the commercial required return creates the proper incentive for efficient operation of the regulated assets:
 - Setting the allowed return lower than the required return creates an incentive to extract 'savings' from the operation of the regulated assets in the short run; and
 - Setting the allowed return above than the required return blunts the incentive to operate the regulated asset efficiently in that excess allowed returns can be used to cover inefficient expenditure, while still providing investors with the returns that they require.

³⁵ AER, December 2018, Rate of Return Instrument Explanatory Statement, p. 35, emphasis added.

³⁶ AER, December 2018, Rate of Return Instrument Explanatory Statement, p. 127, emphasis added.

³⁷ AER, December 2018, Rate of Return Instrument Explanatory Statement, p. 127, emphasis added.

The AER reached a similar conclusion in its 2018 RoRI, noting that the Revenue and Pricing Principles (RPP) include reference to the incentives for efficient investment in, and utilisation of, energy networks:

*Regard should be had to the economic costs and risks of the potential for under and over **investment** by a regulated service provider in the relevant system.*

*Regard should be had to the economic costs and risks of the potential for under and over **utilisation** of the relevant system.*³⁸

The AER went on to note that setting the allowed return too low would lead to inefficient underinvestment and overutilization of assets, and vice versa if the allowed return was set too high.³⁹

The AER concluded that market data has a core role in balancing the principles set out in the RPP as a means of best promoting the NEO and NGO.

Market data is particularly important because it provides insights into the actual returns that real-world investors require from capital invested in networks. Thus, market data is important in determining whether a particular regulatory allowance is likely to incentivise over- or under-investment and utilisation of regulated assets:

*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.*⁴⁰

The Independent Panel in the 2018 review process drew the AER's attention to the fact that the RPP includes reference to the efficient level of investment in regulated assets, but also to the efficient level of utilisation of regulated assets. In response to this observation, the AER noted that efficient investment and efficient utilisation are essentially opposite sides of the same coin:

- » If the allowed return is set too high, there is an incentive for over-investment in networks and prices would be higher than the efficient cost such that networks will tend to be under-utilised; and
- » If the allowed return is set too low, there is an incentive for under-investment in networks and prices would be lower than the efficient cost such that networks will tend to be over-utilised:

³⁸ AER, 2018, Rate of Return Instrument, Final Decision, Explanatory Statement, p. 30, emphasis added.

³⁹ AER, 2018, Rate of Return Instrument, Final Decision, Explanatory Statement, pp. 30-31, emphasis added.

⁴⁰ AER, 2018, Rate of Return Instrument, Final Decision, Explanatory Statement, p. 33, emphasis added.

We agree with the Independent Panel that achieving the legislative objectives requires more than just efficient investment in energy networks, but also requires efficient use of energy network services. An allowed rate of return that is too high (low) will, all else equal, contribute to prices that are too high (low). This effect on prices may discourage (encourage too much) use of network services. It may also encourage consumers to overinvest (underinvest) in downstream investments, such as upgrading to more energy efficient appliances. It may also encourage (discourage) disconnection from the grid and investment in stand-alone power systems. For business consumers, the effect on energy network prices may be passed through to the prices of other goods and services, creating further distortions to efficiency in downstream markets.⁴¹

This 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 cost of capital – the return that real-world market investors require from an investment in regulated assets:

*In this context, for the allowed rate of return to contribute to the achievement of the legislative objectives **it should reflect the efficient cost of capital**. If it does, then it will (all else equal) promote both efficient investment in, and efficient use of, energy network services.*

*An allowed rate of return that reflects the **efficient market cost of capital** will promote both **investment and consumption efficiency**.⁴²*

ENA agrees 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.

The AER has recently endorsed that approach 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.⁴³

ENA agrees that the allowed return should be set to equal the best possible estimate of the market cost of capital at the time of each decision. Such an approach ensures that network investors receive compensation for their required returns and that consumers pay no more than the efficient cost of the service that is provided to them. As the AER has explained above, such an approach to setting the allowed return on capital creates the proper incentives for efficient investment in, and efficient utilisation of, energy networks – all of which is in the long-term interests of consumers.

⁴¹ AER, 2018, Rate of Return Instrument, Final Decision, Explanatory Statement, pp. 39-40.

⁴² AER, 2018, Rate of Return Instrument, Final Decision, Explanatory Statement, p. 44, emphasis added.

⁴³ AER, May 2021, Assessing the long-term interests of consumers, p. 8.

Since there is very clear evidence that real-world market investors determine required returns with reference to a 10-year risk-free rate, that is the approach that should be used to set regulatory allowances.

4.4 A 10-year risk-free rate is standard market practice – including for regulated assets

The dominant practice of market practitioners and valuation professionals is to set the term of the risk-free rate to 10 years on the basis that this is the longest easily observable term for Australian government bonds.

This practice is consistent with the view that infrastructure investments, including those subject to regulation, are long-lived investments with a long period over which cash flows are uncertain. It is also consistent with the view that regulated infrastructure investments must compete for equity capital with similar unregulated investments, for which the required return is typically based on a 10-year risk-free rate.

For example, the standard approach used in independent expert valuation reports is to set the risk-free rate equal to the yield on 10-year government bonds. These reports usually contain a statement to the effect that the use of a 10-year term assumption is standard practice among valuation professionals in Australia.

Importantly, independent valuation experts uniformly adopt a ten-year term when determining the risk-free rate for infrastructure assets, including regulated infrastructure assets across a range of different industries.

For example, in its 2014 report for Envestra Ltd, a firm that owns and operates regulated gas distribution networks, Grant Samuel noted that:

The ten-year bond rate is a widely used and accepted benchmark for the risk-free rate. Where the forecast period exceeds ten years, an issue arises as to the appropriate bond to use. While longer term bond rates are available, the ten-year bond market is the deepest long-term bond market in Australia and is a widely used and recognised benchmark. There is a limited market for bonds of more than ten years. In the United States, there are deeper markets for longer term bonds. The 30-year bond rate is a widely used benchmark. However, long term rates accentuate the distortions of the yield curve on cash flows in early years. In any event, a single long-term bond rate matching the term of the cash flows is no more theoretically correct than using a ten-year rate. More importantly, the ten-year rate is the standard benchmark used in practice.⁴⁴

In its 2010 report for Prime Infrastructure, a business that included the DBCT coal terminal regulated by the QCA and WestNet rail regulated by the ERA, Grant Samuel included the passage above and also noted that:

Ten-year bonds are the accepted market benchmarks globally and are typically used as a proxy for the long-term risk-free rate where the forecast period exceeds ten years and there is no liquid market for longer term bonds.⁴⁵

⁴⁴ Grant Samuel Independent Expert Report for Envestra Ltd, March 2014, Appendix 3, p. 4.

⁴⁵ Grant Samuel Independent Expert Report for Prime Infrastructure Ltd, October 2010, Appendix 1, p. 7.

In its 2017 report for DUET Ltd, a business that owns and operates gas and electricity distribution networks, including a mix of regulated and unregulated assets, KPMG stated that:

*...the risk-free rate is calculated with reference to Australian government securities with a ten-year term to maturity.*⁴⁶

Similarly, in its 2015 report for Energy Developments Ltd, a business that owns and operates a number of unregulated electricity generation assets, Deloitte used the yield on 10-year government bonds on the basis that:

*The frequently adopted proxy for the risk-free rate is the long-term Government bond rate.*⁴⁷

Incenta (2013)⁴⁸ also concludes that the dominant commercial practice is to use a 10-year term for the risk-free rate:

*In conclusion, we recommend using a 10-year risk free rate for estimating the cost of equity, and for this rate to be applied consistently to estimate the market risk premium...our view is based on achieving consistency with the practice of valuation professionals for whom the use of a 10-year term for the risk-free rate is widespread, and consistency with our observations of how investors actually value regulated infrastructure assets.*⁴⁹

The KPMG 2017 Valuation Practice Report⁵⁰ sets out the results of a survey of corporations, valuation practitioners, fund managers, private equity and infrastructure investors, and investment bankers. The survey indicates that 85% of respondents adopt a risk-free rate based on the yield on 10-year government bonds. No respondents adopt a risk-free rate based on a shorter-term government bond. The remaining respondents adopt a “house view”⁵¹ that is otherwise unexplained. In addition, more than 80% of respondents agreed that “the risk-free rate should be adjusted to a duration that matches the life of the asset.”⁵²

In summary, even if the appropriate benchmark is a regulated asset and the appropriate allowed return is one that reflects any effects of regulation itself, the evidence above suggests that investors use a 10-year risk-free rate when determining the required return on *regulated* assets.

In the stakeholder forum held on 15 June 2021, network shareholders indicated that a 5-year risk-free rate is not used in practice – that investors and analysts and valuation experts all adopt a 10-year term when valuing networks.

⁴⁶ KPMG Independent Expert Report for DUET Ltd, March 2017, p. 174.

⁴⁷ Deloitte Independent Expert Report for Energy Developments Ltd, September 2015, p. 57.

⁴⁸ Incenta, 2013, Term of the risk-free rate for the cost of equity, June.

⁴⁹ Incenta (2013), p. 13.

⁵⁰ Available at: <https://assets.kpmg/content/dam/kpmg/au/pdf/2017/valuation-practices-survey-2017.pdf>.

⁵¹ KPMG 2017 Valuation Practices Survey, p. 10.

⁵² KPMG 2017 Valuation Practices Survey, p. 11.

4.5 A 10-year risk-free rate (or longer) is standard regulatory practice

A 10-year risk-free rate is standard Australian regulatory practice

The AER's draft working paper documents that the only Australian regulator that does not adopt a 10-year risk-free rate for all regulated firms is the ERAWA, which adopts a 10-year rate for rail firms and a 5-year rate for gas networks.⁵³

Some Australian regulators previously adopted a 5-year risk-free rate, but have since determined that a 10-year rate would be more consistent with their regulatory task because it better reflects the long-lived nature of the assets and the standard commercial practice. For example, IPART changed to a 10-year risk-free rate in its 2013 WACC Review and has adopted a 10-year rate in all subsequent decisions. In that decision, IPART noted that:

We agree with stakeholder views that increasing the TTM from 5 years to 10 years for all industries is more consistent with our objective for setting a WACC that reflects the efficient financing costs of a benchmark entity operating in a competitive market.

Evidence indicates that asset-intensive firms with long-lived assets operating in a competitive market seek to raise debt with a maturity of 10 years or longer. A recent survey by Brotherson et al (2013) on firms' practice in estimating the cost of capital shows that firms and financial advisors unanimously responded that they use bond maturities of 10 years or longer.⁹ Further, investors seeking to invest in utilities, whether regulated or unregulated, have investment and financing horizons longer than 10 years.⁵⁴

Similarly, in its assessment of Queensland Rail's 2020 draft access undertaking, the QCA moved from applying a 5-year term to maturity for estimating the risk-free rate (which it has adopted in previous regulatory decisions) to applying a 10-year term.⁵⁵ In making this change, the QCA noted that other regulators have generally accepted the argument that the term of the bond should be a proxy for the life of the regulated asset. It considered that a longer-term bond may also better reflect the expectations of investors, given the long-term nature of infrastructure asset investment.

We acknowledge that we have undertaken extensive analysis on term-matching. However, we are no longer convinced that term-matching provides for an overall return on investment that is commensurate with the commercial and regulatory risks involved for regulated entities. As such, we have decided to adopt a 10-year bond term to estimate the risk-free rate, as part of our bottom-up WACC assessment.⁵⁶

Other Australian regulators adopt similar reasoning for their use of a 10-year risk-free rate. For example, in its 2020 determination for SA Water, ESCOSA noted that a 10-year term was consistent with the long-lived nature of the assets and with the standard commercial approach:

[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

⁵³ AER, Term of the Rate of Return: Draft Working Paper, May 2021, Table 1, p. 19. ERAWA adopts different terms for the risk-free rate due to different legislative frameworks for rail and gas regulation.

⁵⁴ IPART, *Review of WACC Methodology, Final Report*, December 2013, pp. 12-13.

⁵⁵ QCA, *Decision – Queensland Rail 2020 draft access undertaking*, February 2020, p. 41-42.

⁵⁶ QCA, *Decision – Queensland Rail 2020 draft access undertaking*, February 2020, p. 41-42.

*regulators and investment practitioners, and accommodates for the relatively limited liquidity of CGS that are well beyond a 10-year term to maturity.*⁵⁷

Similar reasoning was also applied by the Industry Panel that was formed to review the ICRC's 2013 decision for Icon Water. The Industry Panel adopted a 10-year term to maturity for both debt and equity on the basis that the term should approximate the life of the assets being financed. It put forward three reasons:⁵⁸

- » The efficient debt management practice is to finance long-term assets using long-term debt. Since water utilities largely have long-lived assets, an efficient firm would seek to borrow funds with as long a term-to-maturity as possible to minimise refinancing risk;
- » The expected returns on long-lived investments are more closely reflected in long-term bond yields. Evidence shows that asset-intensive firms with long-lived assets operating in a competitive market tend to raise debt with a maturity of 10 years. Financial advisers typically estimate the cost of capital using bond maturities of 10 years or longer. From investors' perspectives, those seeking to invest in asset intensive firms usually have investment and financing horizons much longer than the standard 5-year regulatory period; and
- » The term-to-maturity of the risk-free rate used in the calculation of the cost of debt should be consistent with the assumption used when calculating the cost of equity. In this regard, the Industry Panel noted:

*When calculating the cost of equity, companies and financial analysts usually adopt a 10-year government bond yield as the risk-free rate and that the calculation of the MRP is also usually estimated by reference to a 10-year government bond yield.*⁵⁹

In all subsequent decisions, the ICRC has followed the Industry Panel and applied a 10-year term for both debt and equity.

Regulators overseas adopt a risk-free term of at least 10 years

The AER's draft working paper documents that regulators overseas tend to adopt a risk-free rate with a term of at least 10 years.⁶⁰ Where longer term government bond yields are available, regulators tend to adopt a risk-free rate with a longer term. For example, a number of international regulators use 15-year, or 20-year, or 30-year risk-free rates. The New Zealand Commerce Commission was the only international regulator identified to use a 5-year risk-free rate. The practice of Australian and international regulators is summarised in Table 2 below.

⁵⁷ ESCOSA, *SA Water regulatory determination 2020 – Final determination: Statement of reasons*, June 2020, p.218.

⁵⁸ Industry Panel, *Review of the Independent Competition and Regulatory Commission's 2013 Price Determination for regulated water and sewerage services in the ACT – Draft Report*, December 2014, p.164-165.

⁵⁹ Industry Panel, *Review of the Independent Competition and Regulatory Commission's 2013 Price Determination for regulated water and sewerage services in the ACT – Draft Report*, December 2014, p.165.

⁶⁰ AER, *Term of the Rate of Return: Draft Working Paper*, May 2021, Table 2, p. 21.

Table 2: Term of risk-free rate adopted by comparable regulators

5 years	10 years	15-30 years
ERA WA (Gas)	AER	Ofgem
NZCC	ACCC	Ofwat
	IPART	CMA
	QCA	FERC
	ICRC	STB
	ESCOSA	
	ESCV	
	ACM	

Source: Brattle (2020); AER draft working paper.

UK regulators use government bonds with terms greater than 10 years as a proxy for the risk-free rate. For example, in its most recent decision, Ofwat considered 10-year and 20-year government bonds:

*We considered evidence from both nominal and RPI linked gilt yields at 10 and 20 year maturities to construct estimates of the risk-free rate at our chosen 15-year investment horizon.*⁶¹

In its recent review of Ofwat’s PR19 decision, the UK Competition and Markets Authority considered a range of evidence with terms between 10 and 20 years:

*We set the bottom of the RFR estimate range as the 6-month average of the UK 20-yr ILG. We set the top of the range as the 6-month average of the IHS iBoxx £ Non-Gilt AAA 10+ and 10-15 indices.*⁶²

In its most recent decision, Ofgem considered a number of government bond yield estimates, all with terms of 20 years, noting that:

⁶¹ Ofwat, PR19 Final Decision, p. 29.

⁶² UK CMA, PR19 Final Decision, Paragraph 9.241.

The CAPM allows us to estimate investor expectations by combining three parameters (the risk-free rate, equity beta, and Total Market Returns). In line with recommendation 2 from the UKRN Study, we estimate each of these three parameters using long-term tenors or long-runs of outturn data.⁶³

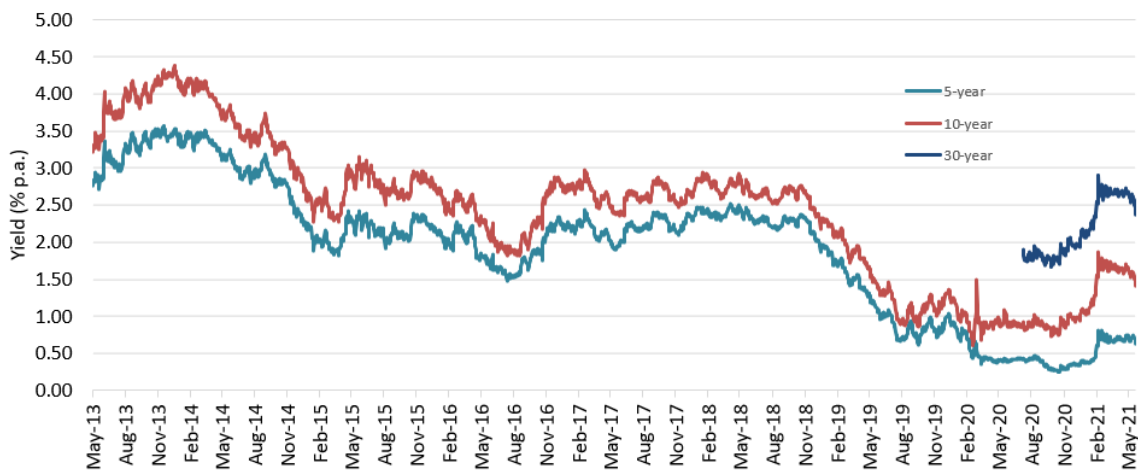
In the US, FERC adopts the yield on 30-year US Treasury bonds⁶⁴ and STB adopts the yield on 20-year US Treasury bonds.⁶⁵

4.6 Features of the market for Australian government bonds

Australian government bonds with a maturity of 30-years have traded for approximately a year. The yields on those bonds are contrasted with the yields on 10-year and 5-year government bonds in Figure 2 below.

ENA submits that this, and future RoRI processes, should involve consideration of the potential relevance of this new evidence, particularly in light of the practices of international regulators in relation to these longer-term bonds.

Figure 2: Yield on 5, 10 and 30-year Australian government bonds



Source: RBA.

ENA also notes that trading in the 5-year government bond has a number of features that raise questions about its suitability as a reliable proxy for the CAPM risk-free rate.

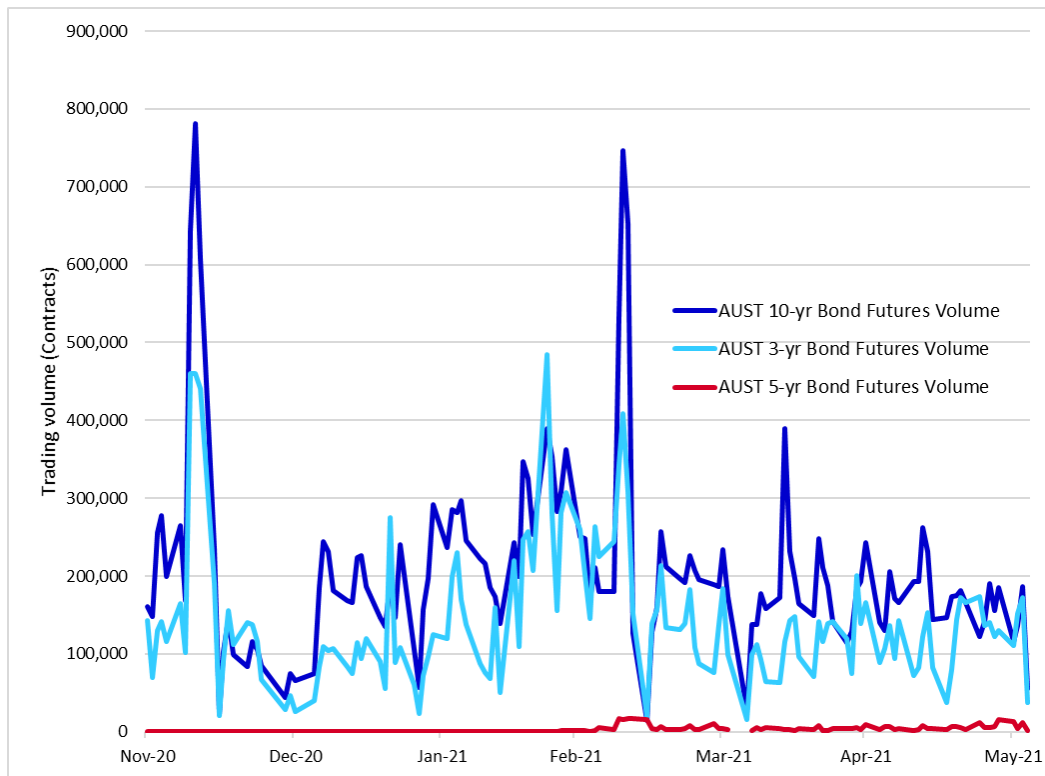
For example, there is significantly more interest and trading in the 10-year bond, and instruments related to it, than for the 5-year bond. Figure 3 below shows that the trading in Australian government bond futures contracts (a proxy for market interest in the underlying bond) occurs almost entirely in 3-year and 10-year bonds, with consistently negligible futures volume in the 5-year bond. That is, the 3-year and 10-year bonds are key reference rates in the Australian market. The 5-year bond is not.

⁶³ Ofgem, *RIIO -2 Decision, Paragraph 3.11.*

⁶⁴ Brattle, pp. 86, 93.

⁶⁵ Brattle, p. 99.

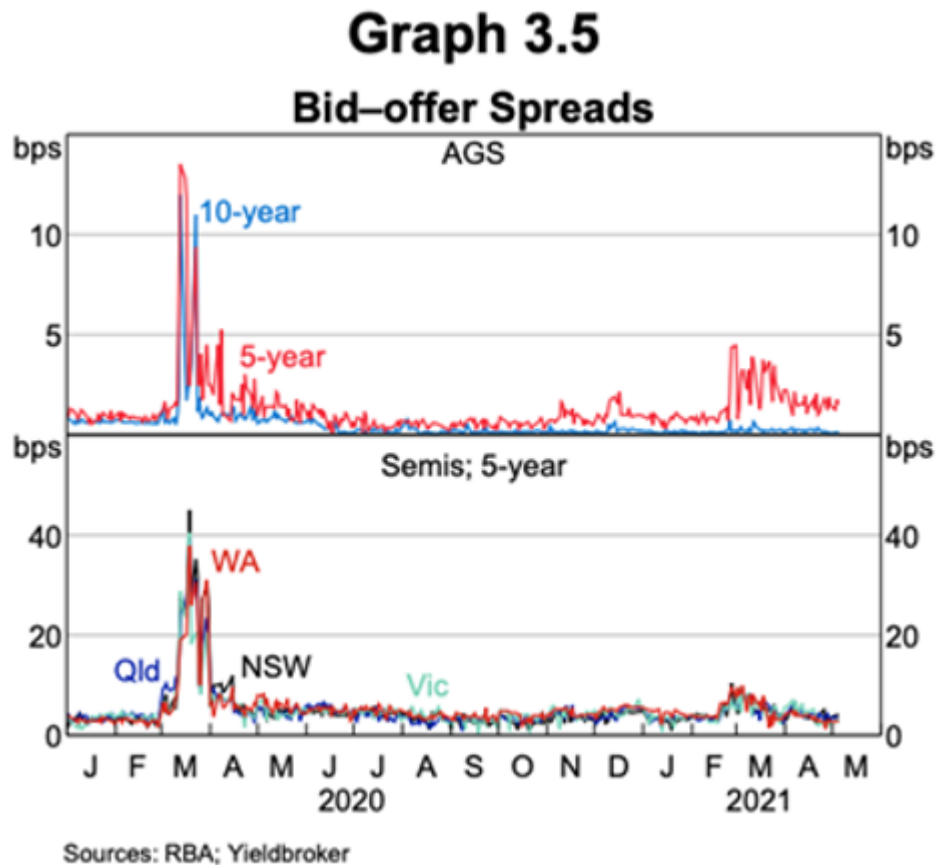
Figure 3: Australian bond futures volumes



Source: Bloomberg.

Similarly, the RBA has identified that bid-offer spreads are orders of magnitude higher for 5-year bonds relative to 10-year bonds, as illustrated in Figure 4 below. This suggests that 5-year government bonds are more thinly-traded than 10-year government bonds, resulting in more variability in observed prices (and consequently rates) due to trading variation within the bid-offer spread.

Figure 4: Australian government bonds bid-offer spreads



Source: Reserve Bank of Australia, May 2021 Statement of Monetary Policy, Graph 3.5, p. 45.

4.7 Report from Dr Lally

Overview: The NPV=0 principle is not supported by a 5-year term

The AER's draft working paper interprets the report from Dr Lally as establishing that the term of the risk-free rate must be set to five years in order to satisfy the NPV=0 principle.⁶⁶ This section of our submission establishes why that interpretation is incorrect.

Rather, as the AER has previously recognised, the NPV=0 principle requires that the allowed return is just enough to cover the required return of investors:

*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 investors' required return on the capital invested.***⁶⁷

⁶⁶ AER, May 2021, Term of the Rate of Return: Draft Working Paper, p. 30.

⁶⁷ AER, December 2018, Rate of Return Instrument Explanatory Statement, p. 35, emphasis added.

The overwhelming evidence set out above is that investors currently determine their required return with reference to the 10-year risk-free rate. Thus, the NPV=0 criterion requires that the allowed return should be set to reflect investors' required return on the capital invested, which is determined with reference to the 10-year rate. Such an allowance would provide investors with a return that is just equal to what they require, which would preserve all of the correct incentives, as set out above.

In summary, ENA submits that the NPV=0 principle is achieved by:

- » Setting the allowed return on equity in accordance with the return on equity that market investors actually do require (i.e. so that "there is just enough cash flow left to cover investors' required return on the capital invested"); rather than
- » Setting the allowed return on equity in accordance with the return on equity that Dr Lally suggests investors should require – based on his assumptions and algebraic derivations.

The origins of the Lally approach to term-matching

In all previous rate of return reviews, Dr Lally has advised the AER that the term of the risk-free rate should be set to match the length of the regulatory period in order to be consistent with the NPV=0 principle, and Dr Lally has provided the same advice to other Australian regulators over many years. In none of those past reviews has the AER adopted Dr Lally's advice.

Dr Lally's past advice to the AER is his 2004 academic paper⁶⁸ that has been cited 11 times; 9 times by Dr Lally himself and twice by authors explaining why they disagree with his conclusions:⁶⁹

- » Hall (2007)⁷⁰ explains why he disagrees with Lally (2004) and concludes that "*For long-lived assets, benchmarking against the yield-to-maturity on long-dated Government securities results in a far closer approximation of the appropriate return than the use of short-term rates.*"
- » Marsden (2009)⁷¹ also explains why he disagrees with Lally (2004) and concludes that a 5-year risk-free rate is inconsistent with normal commercial practice, the matching principle, mitigation of refinancing risk, competitive market practice, mitigation of regulatory risk, and internal consistency.

Dr Lally's 2007⁷² paper has also arguably failed to gain significant traction among academics or practitioners, being cited only 13 times, 5 by Dr Lally himself.

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

⁶⁸ Lally, M., 2004, 'Regulation and the Choice of the Risk Free Rate', *Accounting Research Journal*, vol. 17 (1), pp. 18-23.

⁶⁹ https://scholar.google.com.au/scholar?start=0&hl=en&as_sdt=2005&scioldt=0,5&cites=9283071250510302940&scipsc=

⁷⁰ Hall, J., 2007, Comment on Regulation and the Term of the Risk Free Rate: Implications for Corporate Debt, *Accounting Research Journal*, 20, 2, pp. 81-86.

⁷¹ Marsden, A., 2009, Comments on the Commerce Commission's Approach to Estimate the Cost of Capital.

⁷² Lally, M., 2007, 'Regulation and the term of the risk-free rate: Implications for corporate debt,' *Accounting Research Journal*, vol. 20 (2), pp. 73-81.

⁷³ Schmalensee, R., 1989, 'An expository note on depreciation and profitability under rate-of-return-regulation,' *Journal of Regulatory Economics*, 1, pp. 293-298.

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.

Previous reliance on a known end-of-period asset value

In his 2012 advice to the AER, Dr Lally was clear about his assumption that the market value of the firm at the end of each regulatory period is known with certainty at the beginning of each regulatory period:

*...the output price will be reset to **ensure** that the value at that time of the subsequent payoffs on the regulatory assets equals the regulatory asset book value prevailing at that time*⁷⁴

such that the:

*...payoffs at time 4 [the end of the regulatory period in his example] are **certain**.*⁷⁵

It is this assumption that is critical to Dr Lally’s conclusion that the term of the risk-free rate should be matched to the length of the regulatory period; without this assumption, Dr Lally’s key conclusion would not be obtained.

In a 2013 report, Dr Lally explained further that, because the end of period market value is certain, the current value of the firm can be computed as the present value of the allowed cash flows throughout the regulatory period plus the known market value at the end of the regulatory period. In this context, there is no need to consider any cash flows beyond the end of the current regulatory period, because their value is encapsulated in the known market value of the firm at the end of the regulatory period:

*At the end of the first year [the end of the regulatory period in his example], the regulated business will therefore receive $V_1 = \$50m$ plus revenues to cover regulatory depreciation of $\$50m$ and the cost of capital for the first year of $\$100m(.05)$. **Since this sum is known at the beginning of the first year it can be valued using the prevailing risk-free rate.***⁷⁶

The AER’s rejection of Dr Lally’s certainty assumption

The AER’s 2013 Guideline Explanatory Statement noted correctly that the Lally NPV=0 argument rests on the assumption that the end-of-period value is known from the outset, and that such an assumption may be violated in practice:

...the assumption is that the investor receives a cash payment equal to the RAB in the final year of the regulatory control period. While under certain assumptions, the market value of

⁷⁴ Lally, M. August 2012, The risk free rate and the present value principle, p. 14, emphasis added.

⁷⁵ Lally, M. August 2012, The risk free rate and the present value principle, p. 10, emphasis added.

⁷⁶ Lally, M., October 2013, Response to submissions on the risk-free rate and the MRP, Report for the Queensland Competition Authority, p. 47, emphasis added.

*equity is equal to the residual value of the RAB, **these assumptions may not hold in reality.***⁷⁷

This was one of the reasons stated for rejecting Dr Lally's recommendation of a 5-year risk-free rate. The AER's 2018 RoRI Explanatory Statement also notes that the Lally NPV=0 argument rests on the assumption that the end-of-period value is known from the outset, and that such an assumption may be violated in practice:

*...the issue with using a term equal to the length of the regulatory control period, is it **requires the assumption that the full recovery of the residual value of the RAB (in cash) at the end of the term is guaranteed.** The ability of regulated businesses to over or under perform their allowed rate of return and other allowances, and the volatility of the stock market make it difficult to say whether (and to what extent) Lally's assumptions would **hold in reality.***

The uncertainty in the initial investment being (fully) recoverable was also highlighted by the ENA, in a report produced by Incenta:

*...investors are unlikely to evaluate regulated assets with reference to a five year bond because – unlike the case of the bond – **the residual value at the end of each five year period is inherently risky.** This is because the residual value is not returned in cash, but rather comprises a 'value' whose recovery remains at risk from future regulatory decisions and changes in the market (both technological changes and changes to customer preferences).*

*Based on the evidence before us, we consider it reasonable to use a 10 year term rather than move to a 5 year term.*⁷⁸

Response of Dr Lally to the AER's 2018 critique

Lally (2021) begins with a restatement of Dr Lally's previous advice in which the market value of the firm at the end of the regulatory period is *assumed* to be known with certainty at the beginning. This is set out in Equation 4 (p. 8) where V_1 (the market value of the firm at the end of the regulatory period) is assumed to be known to be equal to the RAB at that time.

Dr Lally then contests the AER's previous rejection of that assumption as follows:

*In response to this kind of reasoning in Lally (2012), the AER (2018, page 130) asserts that this reasoning assumes recovery of the asset book value in cash at the end of the first regulatory period. No such assumption appears in equation (4); to the contrary, the equation explicitly recognizes that the payoff at the end of the first regulatory period is the market value then of the business and that this would equal the contemporaneous regulatory book value of its assets.*⁷⁹

That is, Dr Lally allows that he has assumed that the market value of the assets must certainly equal the RAB at the end of the regulatory period, but queries the notion that this certain value would be available in the form of "cash." The form in which this value might be available, however, is irrelevant. The

⁷⁷ AER, August 2013, *Better regulation – Explanatory statement: Draft rate of return guideline*, p. 183, emphasis added.

⁷⁸ AER, December 2018, *Rate of Return Instrument, Final Decision, Explanatory Statement*, p. 130, emphasis added.

⁷⁹ Lally, M., May 2021, *The appropriate term for the allowed cost of capital*, pp. 8-9.

problem is with the assumption that the market value of the business “would equal the contemporaneous regulatory book value of its assets,” which is precisely the content of Equation 4 in Lally (2021).

The report from Dr Lally then goes on to say that:

The AER (2018, page 130) also suggests that the above proof assumes that the value of the regulated assets at the end of the current regulatory period is known now for certain, and asserts that this is not true because of volatility in the stock market. However nothing in the above proof precludes the fact that the values of other assets are volatile.⁸⁰

This contention also appears to miss the central element of the AER’s concern. The volatility of other assets is irrelevant in this case. The AER’s point is that there can be no guarantee that the equity of regulated firms, which trades on the stock market, will precisely equal the RAB at the end of each regulatory period – as the derivations in Dr Lally’s report assume.

Dr Lally’s 2021 position on end-of-period market values

Dr Lally’s 2021 report to the AER acknowledges that, in reality, the market value of the firm may differ from the RAB – due, the report contends, to errors made by the AER:

Nevertheless, it is possible that the value of the regulatory assets at the end of the first regulatory cycle (V_1) may not be equal to the contemporaneous regulatory book value of the assets, because the regulator may err at time 1 in setting the revenues for the second regulatory cycle, and this possibility has not been recognized in equation (3) in the above analysis.⁸¹

The report goes on to conclude that Dr Lally’s previous conclusions still follow so long as investors expect the market value of the firm to equal the RAB at the end of each regulatory period.⁸²

The basis of Dr Lally’s previous positions is that the market value of the regulated firm is certain to equal the RAB at the end of each regulatory period. In this case, there is no need to contemplate any cash flows beyond the end of the regulatory period and the firm can be valued as the sum of the present values of the net cash flows during the regulatory period and the RAB at the end of the regulatory period. Since these cash flows cover a five-year period, they can be discounted using a 5-year rate.

The reality is that the market value of the regulated firm is not equal to the RAB at the end of every regulatory period, so investors do not value regulated firms in accordance with the methodology within the formulas in Dr Lally’s report. In particular, the value of the firm at the end of the regulatory period will not be assumed to be equal to the RAB,⁸³ but will instead reflect the present value (at that time) of all expected future cash flows. It is for this reason that investors value regulated firms by forecasting cash flows many years into the future and by discounting those long-lived cash flows using a long-term discount rate. For example, it is well-known that the investor bid models for the NSW network assets were structured in this way, as are the calculations of the values of unlisted networks that are performed from time to time.

⁸⁰ Lally, M., May 2021, The appropriate term for the allowed cost of capital, pp. 8-9.

⁸¹ Lally, M., May 2021, The appropriate term for the allowed cost of capital, p. 9.

⁸² Lally, M., May 2021, The appropriate term for the allowed cost of capital, p. 9.

⁸³ More specifically, the market value of equity in the firm is not certain to be equal to equity’s share of the RAB at the end of the regulatory period.

Dr Lally (2021) proposes that the expected market value of the firm is equal to the RAB at the end of each regulatory period. Dr Lally suggests that, under this new assumption, it would again be possible to value the regulated firm as the sum of the present values of the net cash flows during the regulatory period and the RAB at the end of the regulatory period – the only difference being that a higher discount rate would now be required to reflect the possibility that the value at the end of the regulatory period may turn out to differ from the RAB.

That is, the only change to Dr Lally’s previous advice and papers is that the (known) end-of-period RAB now represents the expected present value (as at that time) of all future cash flows, rather than the certain present value (as at that time) of all future cash flows. There would still be no need to contemplate any cash flows beyond the end of the current regulatory period.

ENA submits that there are some fundamental problems with this new proposal:

» **The new assumption is as implausible as the one it replaces**

Investors do not expect the market value of the firm to equal the RAB at the end of each regulatory period. Indeed, no one expects that as there is no real-world basis for such an expectation. The proposition that investors would always expect the market value of the regulated firm to be equal to the RAB at the end of every regulatory period is just as implausible as the previous assumption that investors know the market value is equal to the RAB at the end of the regulatory period. The AER’s Investor Reference Group would be well-placed to test this proposition. Indeed, the well-known approach of investors is to forecast the future cash flows of the business and to discount those cash flows using the long-term discount rate that is deemed to be appropriate as at the date of the valuation. There is no reason to expect that this exercise would produce a market value equal to the RAB at the end of each regulatory period.

Indeed, the RAB itself is not known with certainty at the end of each regulatory period as the amount of actual capital expenditure, and the regulatory acceptance of any overspend, is uncertain.

Moreover, the whole basis of an incentive-based regulatory regime is to encourage businesses to outperform quality and efficiency benchmarks. An investor who was anticipating any out-performance or under-performance after the valuation date would not expect the market value of the firm to equal the RAB.

Dr Lally’s assumption also requires that investors expect the regulatory allowance in all future periods to precisely equal their required return, or that any discrepancies have a NPV of zero. Note that Dr Lally’s assumption is not that the AER seeks to set regulatory allowances in an unbiased manner, or even that it does set allowances in an unbiased manner. Rather, his assumption is about what investors expect.

ENA considers that it is an important aspect of good regulatory practice for the regulator to be clear about any assumptions on which its regulatory allowances are based.

» **The ‘floating rate bond’ analogy does not work**

As noted above, Dr Lally’s previous analyses have been based on the notion that the regulated firm can be valued like a 5-year bullet bond – whereby the owner receives a payment each year and a guaranteed value (equal to the RAB) at the end of the fifth year.

Dr Lally now recognises that the certainty assumption does not hold and instead suggests that:

[T]he valuation problem for a regulator is like that for an unregulated business terminating in five years' time, or a floating rate bond whose coupon rate is reset every five years.⁸⁴

However, even if the regulated asset could be considered to be a perpetual bond with 5-yearly rate resets, that would not imply that the prevailing 5-year rate should be used when determining the required return. This is because a perpetual bond with 5-yearly resets would be priced at a material margin above the prevailing 5-year spot rate. Failing to reflect this margin in the cash flows, which is the outcome under term-matching, will produce a negative NPV, violating the NPV=0 principle.

» **Regulated firms are not valued the way Dr Lally's report assumes**

Under Dr Lally's new assumption, regulated firms could be valued by summing the present values of the remaining net cash flows of the current regulatory period and the end-of-period RAB.

However, it is well-known that investors do not value regulated firms in that way. That is, investors clearly do not think it reasonable to assume that the expected market value of the firm is equal to the RAB at the end of the regulatory period when valuing assets or determining required returns.

In the stakeholder forum held on 15 June 2021, network shareholders indicated that a 5-year risk-free rate is not used in practice – that investors and analysts and valuation experts all adopt a 10-year term when valuing networks.

» **The new approach in Lally (2021) would require an uncertain and immeasurable adjustment to beta**

Dr Lally notes that his new approach would require a higher discount rate to reflect any systematic component of the risk that the value of the firm might differ from the RAB at the end of each regulatory period. It is not clear how that risk would be quantified in the case of a regulator that revises its approach to setting allowed returns every four years.

ENA conclusions on the 2021 Lally report in relation to the term of the risk-free rate

ENA submits that the AER would be wrong to conclude that the term of the risk-free rate must be set to five years in order to be consistent with the NPV=0 principle.

Rather, ENA agrees with the AER's previous analysis that, when viewed through the lens of the NPV=0 principle, a 10-year term best contributes to the achievement of the NEO and NGO – for all of the reasons set out in Section 4.2 above.

4.8 Response to AER's reasons for matching the length of the regulatory period

Overview

The draft working paper (pp. 38-43) sets out a number of reasons for supporting a term of equity that matches the length of the regulatory period that the AER has drawn from its review of other regulators' practice and expert reports.

Before considering each of these reasons in turn, ENA notes that the vast majority of:

⁸⁴ Lally, M., May 2021, The appropriate term for the allowed cost of capital, p. 3.

- » Regulators adopt a term of 10 years or longer—as acknowledged by the AER in the draft working paper; and
- » Experts, including market practitioners, authors of independent expert valuation reports, standard finance textbooks (both academic and practitioner) and authors of broker research reports adopt a term of 10 years or longer.

In this context, it is important to note that the support for matching the length of the regulatory period comes from Dr Lally and Professor Davis (who also assumes that the market value of the firm equals the RAB with certainty at the end of each regulatory period,⁸⁵ and who concludes that term matching should also apply to debt⁸⁶) and one of the ten Australian economic regulators.

Reason 1: Term matching satisfies the NPV=0 condition

ENA makes the following observations in relation to the claim that term matching satisfies the NPV=0 condition:

- » Section 4.2 above establishes that the adoption of a 10-year risk-free rate, reflecting the approach that investors take when determining their required return on long-lived assets, is consistent with the AER’s 2018 definition of the NPV=0 principle and (viewed through the NPV=0 lens) the AER has concluded that this contributes to achieving the NEO and NGO. ENA agrees with the AER’s analysis on this point in the 2018 RoRI and notes that there have been no subsequent changes to either the NPV=0 principle or the NEO/NGO.
- » Section 4.7 above explains why the various algebraic derivations in the Lally reports do not establish that term matching is required to support the NPV=0 principle – even if one accepts the implausible assumptions on which those derivations are based.
- » ENA submits that the NPV=0 principle, and the NEO and NGO, are best achieved by setting the allowed return on equity such that:

*there is just enough cash flow left over to cover investors’ required return on the capital invested.*⁸⁷

Since there is clear evidence of:

*support for using a 10 year term in actual investor valuation practices*⁸⁸

it follows that a 10-year term would be consistent with the NPV=0 principle. That is, the NPV=0 principle simply requires the regulator to set the allowed return to reflect the

*rates in the market for capital finance*⁸⁹

because:

⁸⁵ Davis, K., August 2003, Risk-free interest rate and equity and debt beta determination in the WACC, Prepared for the ACCC, p. 8.

⁸⁶ Davis, K., December 2013, The debt maturity issue in access pricing.

⁸⁷ AER, December 2018, Rate of Return Instrument, Final Decision, Explanatory Statement, p. 35.

⁸⁸ AER, December 2018, Rate of Return Instrument, Final Decision, Explanatory Statement, p. 127.

⁸⁹ AER, December 2018, Rate of Return Instrument, Final Decision, Explanatory Statement, p. 33.

*efficient financing costs are reflected in the prevailing market cost of capital.*⁹⁰

It is therefore critical to recognise that adopting a 10-year term does not violate the NPV=0 principle. Rather, adopting a 10-year term satisfies the NPV=0 principle.

A 5-year risk-free rate is not used by investors, it does not reflect the rates in the market for capital finance nor the prevailing market cost of capital. Consequently, the AER should not adopt a 5-year term for the risk-free rate. Doing so would violate the NPV=0 principle because a 5-year term assumption would produce an allowed rate of return that is inconsistent with the return actually required by equity investors.

Reason 2: The yield curve is upward-sloping

The second reason identified by the AER is that the yield curve is upward-sloping. This appears to be another way of re-stating the NPV=0 argument above – if the 5-year rate should be used, but the (higher) 10-year rate is adopted, investors would be over-compensated.

ENA's response to this argument is that the 10-year rate should be used because that reflects "rates in the market for capital finance" and consequently "efficient financing costs" as explained above. That is, the use of a 10-year rate would not over-compensate investors because it would just match their required return.

This argument highlights a difference between the return that investors do require (which is clearly based on a 10-year risk-free rate) and the return that Dr Lally suggests they should require, based on certain assumptions and derivations. That is, the suggestion is that a 5-year return should be adequate, so the requirement of a 10-year return is excessive. ENA submits that it is the return that investors do require that is relevant to the implementation of the AER's task.

It is also relevant to note here that the AER determines the allowed return on equity at the beginning of each regulatory period. Part of that return is provided to equity holders during the regulatory period and the remainder is provided over the remaining life of the assets, as RAB indexation produces future regulatory allowances.⁹¹ Thus, the value of the firm always depends on the long-run expected future cash flows.

Finally, ENA notes that, under the SL CAPM, there is no yield curve because the CAPM is a one-period model. That is, under the SL CAPM there can be no difference between the 5-year and 10-year rates because there cannot be two 5-year periods for investors to consider. ENA considers it to be unsafe and conceptually flawed to use a feature that is assumed away by a model to determine how that model should be implemented. Of more relevance is how the model is actually implemented in practice, and the evidence on that point is clear.

Reason 3: The allowed return on equity is akin to a floating rate bond with 5-yearly re-sets

This appears to be another way of restating the two arguments above. The draft working paper notes that the basis of this argument is that Dr Lally "advised that the correct discount rate to use would be the five-year rate because that was the length of the regulatory period."⁹²

⁹⁰ AER, December 2018, Rate of Return Instrument, Final Decision, Explanatory Statement, p. 33.

⁹¹ In some recent AER decisions, none of the return on equity is provided during the regulatory period; all of it coming over the remaining life of the assets via the effects of RAB indexation.

⁹² AER, May 2021, Term of the Rate of Return: Draft Working Paper, p. 30.

The point here appears to be, again, that there is a difference between the return that investors do require (which is clearly based on a 10-year risk-free rate) and the return that Dr Lally suggests they should require, based on assumptions and derivations. ENA's views on this point have already been made clear.

ENA disagrees with the proposition that the allowed return on equity is akin to a floating rate bond with 5-yearly re-sets. Dr Lally's explanation of this point (pp. 20-21) re-states the central point in all of his previous submissions to the AER. Under the assumptions in Dr Lally's report, the value of the regulated firm as at the end of the regulatory period, is known with certainty from the beginning of the regulatory period. Consequently, there is no reason to consider any cash flows beyond the current regulatory period.

ENA agrees with the AER's previous analysis that the end-of-period market value of the firm is not known with certainty, and consequently derivations that are based on that assumption are not useful.

It is also not the case that the allowed return on equity is provided as a series of cash flows during the regulatory period. Rather, as explained above, only a portion of the allowed return on equity is provided during the current regulatory period. The balance of the allowed return on equity is provided over the course of the remaining life of the assets and will depend on the level of the regulatory allowance in each of those future periods. This is quite unlike a floating rate bond with 5-yearly re-sets.

As noted above, even if the regulated asset could be considered to be a perpetual bond with 5-yearly rate resets, that would not imply that the prevailing 5-year rate should be used when determining the required return. This is because perpetual bonds with 5-yearly resets are priced at a yield that is materially higher than the prevailing 5-year spot rate.

Reason 4: The New Zealand Commerce Commission (NZCC) uses a 5-year risk-free rate

The AER identifies the NZCC as a single regulator overseas that adopts a 5-year risk-free rate. As noted in Section 4.5 above, the standard approach among international regulators is to adopt a risk-free rate with a term of 10 years or even longer. Thus, a review of the practice of other comparable regulators would appear to be an argument against a 5-year risk-free rate.

Moreover, the NZCC sets the allowed return on capital at the 67th percentile of its WACC distribution. This system of setting the allowed return above the mid-point estimate is a key part of the New Zealand regulatory framework, and has the effect of lifting the 'effective' risk-free rate (along with other WACC parameters). The AER, by contrast, has chosen not to adopt an 'aiming up' framework and so should apply caution in applying individual decision elements which are implemented in concert with specific measures to avoid the risks and costs of underestimates of the rate of return.

Reason 5: There is a difference between market practice and the regulatory task

This is another way of re-stating the argument that the term of the risk-free rate should not be set according to the return that investors do require (which is clearly based on a 10-year risk-free rate), but rather according to the return that Dr Lally's theoretical framework suggests they should require, based on assumptions and derivations.

ENA submits that the AER was correct in its 2018 assessment of the regulatory task in relation to this issue, as summarised in Sections 4.2 and 4.3 above. ENA agrees with the AER's conclusion that:

*In this context, for the allowed rate of return to contribute to the achievement of the legislative objectives **it should reflect the efficient cost of capital**. If it does, then it will (all else equal) promote both efficient investment in, and efficient use of, energy network services.*

*An allowed rate of return that reflects the **efficient market cost of capital** will promote both **investment and consumption efficiency**.⁹³*

ENA agrees that the Revenue and Pricing Principles 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. Since there is very clear evidence that real-world market investors determine required returns with reference to a 10-year risk-free rate, that is the approach that should be used to set regulatory allowances. That is, when real-world investors perform marking-to-market valuations, they do so by forecasting future cash flows and discounting at a 10-year (or longer) rate.

The way investors value regulated networks illustrates that market practice is precisely aligned with the regulatory task. Specifically, investor valuation models typically forecast the AER's regulatory allowances over many future regulatory periods. That is, investors forecast AER regulatory allowances and then discount those cash flows at what they consider to be an appropriate rate of return. The AER's task is to set regulatory allowances for each year and the market practice is to estimate the present value of those same regulatory allowances.

Moreover, the draft working paper also states that:

The uncertainty with the value of an asset at the end of its life is mentioned as a reason against matching the term of equity to the length of the regulatory period. However, we note that capital expenditure (once approved) is added to the RAB. It is shielded from writedowns and allow the return of capital (depreciation), return on capital and associated operating expenditure. Therefore, investors can reasonably expect that they will be able to recover their investment over the life of the assets.⁹⁴

This does not imply that investors would be certain, or would expect, that the market value of the firm is equal to the RAB at the end of each regulatory period. Rather, investors take all of the relevant features of the regulatory regime into account when forecasting future cash flows over the long-term future. That is, market investors do not stop forecasting cash flows at the end of the regulatory period because they do not consider the end-of-period RAB to be a relevant estimate (neither certain nor expected) of the market value of the firm at that time.

Reason 6: Court and tribunal judgments

The draft working paper notes that various courts and tribunals in a range of jurisdictions have held that it is open to regulators to adopt a 5-year risk-free rate.⁹⁵ Of course, the same can be said about a 10-year risk-free rate. ENA submits that this provides no useful guidance. The issue here is which term produces the best estimate of the efficient cost of capital. ENA is unaware of any suggestion that the AER might be constrained to adopt a particular term.

⁹³ AER, December 2018, Rate of Return Instrument, Final Decision, Explanatory Statement, p. 44, emphasis added.

⁹⁴ AER, May 2021, Term of the Rate of Return: Draft Working Paper, p. 43.

⁹⁵ AER, May 2021, Term of the Rate of Return: Draft Working Paper, p. 43.

Moreover, regardless of what various courts and tribunals have determined is open to a regulator, it is an unambiguous fact that nearly all regulators in Australia have chosen to adopt a 10-year term, and several have consciously switched from the use of a 5-year term to a 10-year term once they have considered carefully the arguments for and against each of those options.

5 Appendix A: Response to AER questions

Question 1: Should the term for expected inflation match the term for the rate of return?

ENA considers that there is no relationship between the term used for expected inflation and the term used to determine the allowed return on capital.

The term should reflect the role of each parameter within the AER's regulatory framework.

The role of the inflation parameter is to "take out what you expect to put back in." What is "put back in" is actual inflation over 5 years. Consequently, what is "taken out" must be expected inflation over 5 years.

By contrast, the role of the allowed return on capital is to compensate for the efficient cost of capital. Consequently, the regulatory term should reflect the efficient cost of capital. There is no link between the efficient cost of capital in financial markets and the mechanics of the AER's treatment of regulatory inflation within the PTRM.

Question 2: Should the term for equity match the term for debt?

ENA considers that there is no requirement for the allowed return on equity and the allowed return on debt to be based on the same term.

In both cases, the term should reflect the efficient market cost of capital.

For example, if the AER determines that a prudent and efficient approach is to issue 10-year debt on a staggered maturity basis, the regulatory allowance should reflect that cost.

Similarly, if the evidence suggests that investors in the market determine the efficient cost of equity capital using a 10-year risk-free rate, that is what should be adopted in the regulatory allowance.

Question 3: Should the term for the return on equity align to the regulatory control period (typically five years) or a longer period more consistent with the life of the underlying asset life (e.g. ten years)?

ENA considers that a 10-year risk-free rate should be adopted, consistent with standard commercial and regulatory practice, and with the AER's decisions in 2009, 2013 and 2018.

ENA agrees with the AER's analysis of this point in its 2018 review, where the AER considered the NEO and NGO through the lens of the NPV=0 principle and concluded that a 10-year risk-free rate was appropriate.

ENA also agrees with the AER that:

- » A 10-year term is more consistent with the theory of the SL CAPM;
- » A 10-year term reflects the actual practices of investors; and
- » A 10-year term best reflects the well-accepted academic literature.

ENA also notes that a 10-year risk-free rate (or longer) is standard regulatory practice and that longer-term government bonds are currently available in the Australian market.

Question 4: What is the appropriate form for the return on debt for businesses we regulate?

ENA considers that the regulator should determine what it considers to be the prudent and efficient debt financing practice that would be adopted by a benchmark efficient network and set the allowed return on debt each year to reflect the cost that would be incurred under that approach.

This practice ensures that the regulatory allowance matches the efficient cost of debt, which is consistent with the NPV=0 principle.

ENA agrees with the AER that the trailing average approach should be retained, as that approach reflects efficient debt financing practice. It is an approach that can be replicated by networks if they desire, and provides smooth and predictable prices for customers, and revenues for networks, compared to the hybrid and on the day approaches.

Question 5: What is the appropriate term of debt given the form of the return on debt?

ENA submits that there is no evidence to suggest that the benchmark approach of issuing 10-year debt on a staggered maturity basis has become so imprudent or inefficient since 2018 that a change in approach is warranted.

There has been no change to the long-lived nature of the assets held by networks nor to the market practice of owners of long-lived capital assets issuing long-term debt on a staggered maturity basis.

Moreover, ENA submits that the weighted average term to maturity index (WATMI) currently indicates an average term at issuance of close to 10 years among networks regulated by the AER.

Consequently, ENA submits that the 10-year trailing average allowed return on debt should be maintained.

Question 6: Should our index of network debt costs (EICSI) and the corresponding WATMI be used to adjust the benchmark debt term?

ENA considers that the appropriate use of the WATMI data is to identify whether the actual term of debt issued by networks differs from the allowed term in a significant and sustained way. If a significant and sustained difference is documented, the AER would then investigate the reasons for such a difference. The AER would make no change to the allowed term unless it was satisfied that the reason for the significant and sustained difference was due to networks demonstrably considering that shorter or longer-term debt had become a more efficient approach to managing their debt portfolios.

As there is judgement required to assess whether a sustained change in benchmark efficient financing practices has occurred, the WATMI should not be used in a mechanical way to re-set the term of debt at the time of each RoRI.

The WATMI is affected by some debt issuances that do not reflect the efficient steady state financing practice. For example, shorter-term debt might be issued:

- » As part of a deliberately aggressive debt strategy that involves the network weighing up potential benefits against the additional risk that they would bear;

- » As a temporary response to market dislocation, whereby the 10-year benchmark is preserved on average but where some deviation from that target level occurs from time to time; or
- » After a recent transaction, as the network transitions towards a 10-year trailing average portfolio.

None of the above issuances provide relevant evidence about the efficient debt financing practice of a benchmark efficient network, but all are reflected in the WATMI.

Question 7: What transitional arrangements would be required if a change in the debt term is implemented?

ENA submits that, under the AER's trailing average framework, every change to the debt term would require a new transition mechanism to be put in place. The time taken to complete each transition is the maximum of the old and new terms.

A transition to any new assumed term of debt would be required for the same reasons as the current transitions (that the networks are part-way through). In particular, the benchmark firm would take some time to transition from the previously assumed efficient approach to the new efficient approach. It would be impossible for any firm to go back in time to construct a trailing average portfolio that is consistent with a new assumed term. Consequently, switching to a new term would not be 'viable' in Dr Lally's terminology and would therefore be inappropriate.

An approach that re-sets the assumed term of debt at the time of each RoRI would create a system of nested transitions, such that each network would be part-way through a set of three different transition mechanisms at any point in time.

6 Appendix B: Response to the CRG assessment framework

At the AER’s stakeholder forum held on 15 June 2021, the Consumer Reference Group (CRG) presented a framework that it considered the AER should apply to the matters raised in the term of the rate of return working paper. ENA has considered this framework as it applies to the working paper positions on term for the allowed return on debt and term for the allowed return on equity in the table below. This table summarises points explained throughout this proposal.

Framework consideration	Shortening the term for the allowed return on debt	Shortening the term for the allowed return on equity
<p>Does the AER position have a firm theoretical basis?</p>	<ul style="list-style-type: none"> » Yes, but only if there is clear evidence that a term shorter than 10 years is consistent with efficient debt financing practice. » ENA agrees with the AER that the term of debt should align with the efficient debt financing practice. However, as noted below, the available evidence of that practice does not support a shorter term at this time. 	<ul style="list-style-type: none"> » No. The AER points to Dr Lally’s application of the NPV=0 condition to support setting the term of equity to the length of the regulatory period. However, as explained below, Dr Lally’s analysis and derivations are based on assumptions that do not hold in practice and which are inconsistent with the observed practices of market participants. His views have not been accepted in the literature nor widely adopted by regulators. » A 5-year term is less consistent with the theory of the SL CAPM, and does not reflect the actual practices of investors.
<p>Can the proposal be applied effectively and efficiently in practice?</p>	<ul style="list-style-type: none"> » Yes and no. The proposal could be applied, but it is questionable whether doing so would be efficient. » It is possible for a change in debt term to be implemented by networks in practice by issuing debt at shorter tenures. However, for the reasons noted above, it is unclear whether this would be efficient given the long-lived nature of energy infrastructure assets. » There are also questions about whether a transition is needed to adjust from one term to another. 	<ul style="list-style-type: none"> » No. The AER could reduce the term of the risk-free rate and lower the allowed return on equity accordingly. But it would remain the case that real-world investors would continue to form required returns with reference to the 10-year (or longer) rate. In this case, the regulatory allowance would be neither efficient nor reflective of the market cost of capital.

Framework consideration	Shortening the term for the allowed return on debt	Shortening the term for the allowed return on equity
	<p>Under the AER’s trailing average framework, every change to the debt term would require a new transition mechanism to be put in place. An approach that re-sets the assumed term of debt at the time of each RoRI would create a system of nested transitions, such that each network would be part-way through a set of three different transition mechanisms at any point in time.</p>	
<p>Are the circumstances necessitating the proposal clear?</p>	<ul style="list-style-type: none"> » No. There is no evidence to suggest that the benchmark approach of issuing 10-year debt on a staggered maturity basis has become inefficient since 2018 such that a change in approach is warranted. There has been no change to the long-lived nature of the expected cash flows of networks nor to the market practice of owners of long-lived capital projects issuing long-term debt on a staggered maturity basis. » The WATMI currently indicates an average term at issuance of close to 10 years when subordinate debt is included. 	<ul style="list-style-type: none"> » No. Nothing has changed in the relevant theory or in market practice to warrant a change from the AER’s approach. » The AER has considered this issue many times before (2009, 2013 and 2018 rate of return reviews) and has adopted a 10-year risk-free rate in every one of its decisions to date. » The case for changing the term for forecast inflation to 5 years (which the AER recently adopted) says nothing about what the term should be for the return on equity.
<p>Are the consequences of the proposal clear?</p>	<ul style="list-style-type: none"> » Yes. This will lower the return on debt when there is an upward sloping yield curve. » A mechanical adoption of the WATMI at the time of each RoRI would embed a circularity in which the WATMI would continually change as a number of networks change their debt management approach to match the new regulatory allowance. This risks incentivising businesses to depart from debt terms that would otherwise be efficient financing 	<ul style="list-style-type: none"> » Yes. This will lower the return on equity when there is an upward sloping yield curve. » Current market conditions associated with non-traditional monetary policy actions undertaken by the RBA since March 2020 mean this will have a marked difference due to the effects of these interventions on 5-year yields. » This significantly increases the risk that the return on equity allowances falls below the true cost of equity if a 5-year term is assumed, thereby

Framework consideration	Shortening the term for the allowed return on debt	Shortening the term for the allowed return on equity
	<p>practices in a workably competitive market.</p> <p>» This departure from efficient practice may also undermine efficient investment and operating decisions of networks.</p>	<p>undermining efficient investment and operating decisions of networks.</p>