

16 February 2021

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

Sent via email: publicsubmissions@erawa.com.au

Dear Mr Edwell,

WA Economic Regulation Authority Discussion Paper – 2022 Gas Rate of Return Instrument

Energy Networks Australia appreciates the opportunity to make a submission to the WA Economic Regulation Authority's consultation on the Discussion Paper for the *2022 Gas Rate of Return Instrument*.

Energy Networks Australia (ENA) is the national industry body representing Australia's electricity transmission and distribution and gas distribution networks. Our members provide more than 16 million electricity and gas connections to almost every home and business across Australia.

ENA supports the development of a 2022 Gas Rate of Return Instrument which is based on a careful and balanced evaluation of relevant market evidence and data, consideration of changing market circumstances, and a regard to the practice of comparable regulatory bodies in Australia and overseas.

These features will promote the long-term interests of consumers by providing the most efficient signals for network investment and use over the economic life of the relevant gas network assets.

The importance of this priority is reinforced by recent analysis commissioned by the Australian Energy Regulator that current Australian regulatory equity allowances fall below that of many other potential destinations for investments in regulated energy network infrastructure.

Estimation of cost of equity – more forward-looking estimation approaches

Both [Cambridge Economic Policy Associates](#) and the [Brattle Group](#) have identified some key elements of international practice which are not currently reflected in AER or ERA approaches to the estimation of cost of equity. These include:

- the fuller incorporation of more forward-looking evidence into cost of equity estimates; and

- application of some decision weight to other models such as the dividend growth model.

ENA has made [specific submissions](#) to the AER's extended 'Pathways to 2022 Rate of Return Instrument' review process around how the AER could implement these findings in particular adjustments to the current regulatory approach, to ensure estimates under the AER's Instrument are forward-looking at the time of the relevant network determination.

In the context of the ERA's current review, there may also be further opportunity to consider and recognise wider international practices in this area, noting that we recognise that ERA already adopts some specific approaches and methods which differ from the AER in reaching a final return on equity estimate. ENA considers the ERA's review is an opportunity to incorporate these wider findings of Brattle and CEPA, specifically in a revised proposed approach to the estimation of the market risk premium.

With the assistance of Frontier Economics, Australian energy network businesses have recently developed and put forward a fully specified 'calibrated dividend growth model' which is capable of being used to update MRP estimates either at the commencement of each Instrument, or through the life of the instrument. This calibrated DGM model provides for the MRP to better reflect prevailing conditions in the market for funds, resulting in an estimate which is more forward-looking than simple reliance on historical equity returns as a proxy for forward-looking expectations.

A key element of this 'calibrated DGM' is that it is capable of being parameterised and calibrated such as to be consistent with any regulators previous estimate of the MRP (for example 6.1%, in the case of the AER's 2018 Instrument). This provides confidence that its outcomes reflect subsequent directional changes in risk premiums in a manner which is less sensitive to a range of possible input assumptions – an issue previously identified as a potential barrier to greater use of the DGM.

A copy of this model and a supporting user guide can be found [here](#), and we would be pleased to provide any further requested information on the model at any time.

Term of the risk-free rate

The ERA notes in its Discussion Paper that it proposes to continue to apply a 5-year term of estimation of the allowed return on equity.

ENA considers that only a 10-year term assumption will deliver outcomes which are consistent with the long-term interests of consumers as outlined in the National Gas Objective, and the Revenue and Pricing Principles guiding ERA decisions in this area.

The use of a 10-year (or greater) term of equity:

1. **Best satisfies the key 'NPV = 0' principle** – by better reflecting the reality of future recovery of sunk network capital costs over a multi-decade period beyond

a single regulatory period, a point which was central in ERA's recent Dampier-to-Bunbury gas pipeline decision.

2. **Follows CAPM theory and finance practice** – by being consistent with theory underpinning the single-period Sharpe-Lintner CAPM and academic literature
3. **Matches the real-world application of the CAPM** – including by commercial market practitioners operating in a highly competitive marketplaces which feature clear incentives for adoption and refinement of best-practice valuation and capital allocation decisions
4. **Applies common regulatory practice** – including of the practice of Australian and international regulators undertaking comparable access pricing tasks, noting that no comparable international regulator currently applies a 5 year term assumption without other mechanisms which have the effect of providing a separate specific uplift to account for potential risks of under-estimation.

Further materials on these matters are set out in ENA's recent submission to the AER's Draft Working Paper on term of the risk-free rate issue, [here](#).

In addition, ENA will be submitting further detailed discussion of these issues in a forthcoming submission responding to the AER's Final Omnibus Working Paper. A copy of this will be provided to the ERA on 11 March.

ENA further notes this issue has been the subject of significant discussion at the recent AER Expert Sessions (see further detail [here](#)) – with a clear majority of experts indicating that they either did not see a case for - or considered there were substantial and as yet unaddressed risks in - movement to a 5-year rate.

Estimation of beta – use of international comparators

The Discussion Paper highlights the ERA's proposed approach to future proof the estimation of beta, using Australian and international data.

The importance of this issue has been reinforced by recent market transactions which have resulted in the removal of the two significant remaining Australian listed comparators. Reliance on the small number of relevant network comparators provided by the presence of some listed Australian network infrastructure firms in the past will clearly not be viable in the future.

Network businesses commend the recognition by the ERA of these developments and the need to proactively develop response options. ENA supports the development of a revised beta sample set which includes comparable international firms capable of improving the reliability and robustness of the final beta estimate. ENA look forward to further clarity and discussion around the precise methodology or approaches the ERA proposes to employ.

Market Risk Premium estimate – role of geometric and arithmetic means

The ERA Discussion Paper indicates its current approach is to apply at least some weight to the highest estimate of the geometric mean of historical market returns in reaching its final market risk premium estimate.

ENA strongly disagrees with any weight being applied to the geometric mean when using historical data to estimate a forward-looking expected return. This view is consistent with standard financial theory, as evidenced by very clear statements on the issue in the 2020 editions of the two leading finance textbooks.

The two leading finance textbooks are *Corporate Finance* by Professors Berk and DeMarzo and *Principles of Corporate Finance* by Professors Brealey, Myers and Allen. The current editions of both contain clear explanations of why the arithmetic mean must be used, and why it is mathematically and conceptually incorrect to use the geometric mean when using historical data to estimate a forward-looking expected return.

Berk and DeMarzo (2020) conclude that:

We should use the arithmetic average return when we are trying to estimate an investment's expected return over a future horizon based on its past performance.¹

Similarly, Brealey, Myers and Allen (2020) conclude as follows:

Moral: If the cost of capital is estimated from historical returns or risk premiums, use arithmetic averages, not compound annual rates of return.²

Consistent with the views of leading textbooks and HBR cases, Dr Lally has advised that the arithmetic return must be used and that the geometric return is inconsistent with the NPV=0 principle. Dr Lally presents a detailed analysis to evaluate whether each form of average is consistent with the NPV=0 principle and concludes that:

The geometric mean fails this test whilst the arithmetic mean will satisfy it if annual returns are independent and drawn from the same distribution. So, if historical average returns are used, they should be arithmetic rather than geometric.³

ENA considers that the evidence is compelling that the arithmetic mean of the historical average MRP solely should be used to estimate the historical average MRP. Leading textbooks and case studies prepared by Professors at Harvard, Stanford, MIT, Wharton and London Business School not only report that they recommend the use of

¹ Berk, J. and P. DeMarzo, 2020, *Corporate Finance*, 5th global edition, Pearson, p. 368.

² Brealey, R., S. Myers and F. Allen, 2020, *Principles of Corporate Finance*, 13th edition, McGraw-Hill, p. 170.

³ Lally, M., 2012, *The cost of equity and the market risk premium*, p. 32. Moreover, historical excess returns must be independent and drawn from the same unconditional distribution to support an historical mean estimate.

arithmetic means, but explain why it is wrong to use a geometric mean for the purpose of estimating forward-looking expected returns.

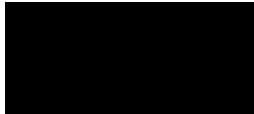
Finally, ENA supports the ERA undertaking additional stakeholder engagement as it moves towards its draft Gas Rate of Return Instrument.

In this regard, the ENA highlights the substantial multi-stage process undertaken by the AER across 2021 to develop and test preliminary positions across the set of rate of return issues. ENA would be pleased to be an active participant in any future enhanced consultative steps.

If you wish to discuss any of the matters raised in this letter further, please contact Mr Garth Crawford, General Manager, Economic Regulation, on



Yours sincerely,



Andrew Dillon
Chief Executive Officer