3 September 2021

Mr Warwick Anderson
General Manager, Network Finance and Reporting
Australian Energy Regulator
By email: RateofReturn@aer.gov.au

Dear Mr Anderson,

Re: Response to AER RORI Omnibus papers

As you are aware, the Network Shareholders Group (**NSG**) comprises a mix of Australian and foreign investors with significant and ongoing capital invested in Australian electricity network assets that are subject to the Australian Energy Regulator's (**AER**) Rate of Return Instrument (**RORI**). We are AMP Capital, AustralianSuper, CDPQ, HRL Morrison & Co, IFM Investors, Macquarie Infrastructure and Real Assets, OMERS, and Spark Infrastructure. Our electricity network assets serve consumers in New South Wales (**NSW**), South Australia (**SA**) and Victoria (**VIC**).

We play a critical role in ensuring public policy and regulatory processes for Australia's future infrastructure investments are well-informed and carefully consider conditions in financial capital markets. In turn, this supports necessary and efficient capital investment to ensure that government infrastructure and policy commitments can deliver improvements to the lives of all Australians.

The RORI underpins significant investments across the entire energy sector in Australia. An instrument that does not reflect efficient costs will deter capital flows into vital network infrastructure. This will potentially have significant long-term consequences for the resilience, reliability, adequacy, and sustainability of Australia's energy system which is undergoing a fundamental transition.

A rate of return that is set too low has the potential to put Australian governments' energy transition plans at serious risk. The uplift in investment required to deliver the additional transfer capacity to connect new renewable generation, support distributed energy resources and electrification of transportation, and deliver lower prices and choice to customers is significant. Inefficient network investment will unnecessarily increase customer costs[1] and consumers will ultimately bear the cost of getting the rate of return estimate wrong.[2]

We provided the AER with a submission on 2 July 2021 addressing issues raised in previous AER papers related to assessing the long-term interest of consumers, the term of the rate of return, the impact on the rate of return of cashflows in a low interest rate environment and consultation on the 2022 instrument process. Therefore, we have not sought to repeat the views expressed on those issues in this submission. It appears, however, that the AER is yet to consider and respond to the important comments and material submitted previously, and we look forward to the AER responding to all our comments in the next phase of this review.

In this submission, we focus our comments on the AER's July 2021 series of papers on the overall rate of return, debt, and equity. Our comments reflect several key principles:

- We support a high bar for change but note that the AER's 2018 RORI does not provide the right starting point and change is required to address material differences with market practice.
- Market practice is the most critical input to ensure a regulator's estimate is not too low nor too high, neither of which will benefit consumers over the long-term. The expectations of independent valuation experts, equities analysts and private investment firms drive 'real world' capital flows and therefore must carry significant weight in assessing whether regulated returns reflect the efficient cost of capital.

1 Energy Security Board, The Health of the National Electricity Market, Volume 1, 2020, p.43.
2 AER, Assessing the long-term interests of consumers, Position Paper, May 2021, pp.8-9.

- A stable and predictable regulatory framework reduces the required cost of capital for investors. Regulatory stability increases certainty for investors who 'invest through the cycle' and are focused on sustainable, fair long-term returns, which is in the interest of consumers. Therefore, a change to the benchmark or the approach should follow an assessment of a sustained change in efficient practice or efficient costs – not just reflect changes in current estimates that may be transitory.
- Cross checks including financeability assessments provide an important tool to guide the use of regulatory discretion and instil confidence that the AER's estimates are the best unbiased estimates. This is required to ensure that the returns set will not have adverse consequences for consumers and investors by attracting either too much or too little capital to support future energy requirements.

Improving the estimate of the return on equity

The NSG does not view the 2018 RORI as the right starting point against which the 2022 RORI should be assessed. We remain of the view that the 2018 RORI does not adequately compensate investors for the risks faced by Network Service Providers (**NSPs**) and produces an overall allowed return that is less than the efficient cost of capital. Equity returns are globally uncompetitive and are not supported by differences in regulatory frameworks between jurisdictions. Ultimately, these lower returns are unsustainable and if left unchanged, will impact negatively on the efficient level of investment and lead to a worse long-term outcome for consumers.

The estimate can be improved by:

- **Ensuring contemporary risk is reflected in returns** – the equity beta estimate should reflect contemporary risk and be adjusted in line with changes in systematic risk. It should give greater weight to more contemporary data, less weight to the longest-dated series and remove obsolete data points. Changes between RORI periods should take account of changes in estimates when the same methodology is adopted but also have regard to risk premiums that might be applied by market practitioners.
- **Ensuring the equity risk premium is consistent with that required by investors in NSPs** – this can be achieved by either 'normalising' the risk free rate (**RFR**) when matched with a historical market risk premium (**MRP**) or by adjusting the historical MRP for current and forecast conditions when adopting a spot RFR. In a low interest rate environment as currently exists, this would be expected to produce an MRP higher than the 2018 RORI when applied to the current spot 10-year Commonwealth Government Securities (**CGS**).

Retain current approach to estimating the efficient cost of debt

The AER's proposed methodological changes for estimating the efficient cost of debt will not produce a better estimate than the current approach. The AER's current benchmark approach is simple, enduring and leaves financing risk with investors while ensuring that consumers pay no more than the efficient cost of debt.

The proposed changes would trigger complicated transition arrangements and implementation costs and introduce further instability in the regulatory regime. The AER should provide evidence to demonstrate that this approach improves financeability and produces a better estimate than the current methodology.

We do not see how the proposed changes to the approach to estimating debt will lead to a better estimate:

- The Energy Industry Credit Spread Index (**EICSI**) is neither a benchmark approach that reflects efficient financing practices, nor is it an actual approach that reflects actual financing costs.
- Using the EICSI to effectively replace an efficient benchmark credit rating increases complexity, volatility and risk while reducing transparency and replicability for no obvious benefits. If, however, EICSI is used to set the benchmark yield, it must reflect efficient practice and efficient costs and recognise and compensate for all debt costs or financing instruments, including hybrid securities. The lack of replicability of this approach makes it nearly impossible to test whether the allowance would be sufficient to maintain investment grade or provide an accurate estimate of the efficient cost of debt.

- If EICSI is used as a cross-check to inform the benchmark, or to compare allowances with actual costs, it must reflect all instruments used to finance the regulatory asset base (**RAB**) and be adjusted to remove any discount or surcharge associated with a related party and unregulated services.
- The AER's proposal to change the weighting in the trailing average ignores the dominant financing practices of issuing debt as it comes due and the timing of matched hedging. Further, it moves away from a benchmark approach to a firm specific approach that cannot take account of contingent projects or major ISP projects because that information would not be available at the time.

In the absence of evidence that the proposed changes provide a more accurate estimate of the efficient cost of capital, the AER should retain the current benchmark approach based on a simple trailing average portfolio of debt strategy. It should continue to adopt a benchmark gearing of 60%, a 10-year term for debt and the current yield blend consistent with a BBB+ benchmark credit rating.

There is a danger under the proposed approach that the yield may fall below that required to support an investment grade credit rating. This should prompt a thorough investigation into the impact of this on the long-term interests of consumers given the financial risk that would logically flow. The approach and assumptions must demonstrate that an investment grade expectation (as required in the UK), or an expectation of internal consistency with RORI settings are capable of being achieved.

Cross checks are critical to demonstrate the estimate is the best unbiased estimate

The AER's approach to estimating the efficient cost of capital may seek to reflect economic theory, but the parameter estimates ultimately rely on the significant use of discretion. Cross checks can provide confidence that the final overall estimate and use of regulatory discretion in arriving at that estimate is the best unbiased estimate and sufficient to attract capital. We support the AER using the following cross checks:

1. **Market analyst and valuation expert estimates** are the most critical cross check to the regulatory task of estimating the efficient cost of capital because these drive the allocation of capital.
    - In making decisions about required equity returns (and therefore capital investment), investors rely on the independent estimates of equities analysts and expert valuation firms.
    - Regulatory returns that are lower than these estimates are unlikely to attract efficient levels of investment, thus negatively impacting the long-term interests of consumers.
    - Regulatory returns that are higher may mean customers pay more than necessary.
2. **Financeability assessments** are a simple way to demonstrate that regulatory discretion has been exercised in a way that supports internal consistency of decisions and enables a benchmark efficient NSP to maintain the benchmark efficient credit rating underpinning the efficient cost of debt estimate. If a benchmark entity adopting the AER's benchmark assumptions cannot meet finance metrics, that entity is not provided with an opportunity to earn the return set out in the AER's binding RORI.
    - It is incorrect to assume that a benchmark entity can take countermeasures to support its credit rating that do not otherwise impact its actual equity returns.
    - It is inconsistent with the regulatory framework and illogical to expect a benchmark regulated entity to be cross-subsidised by the revenue, balance sheet or credit rating halo of a related party or unregulated services.
3. **Actual investment levels and trends** can inform expectations of the impact of changes in regulatory returns on investment and incentives for investment. Together with service performance information, they can assist in projecting the longer-term impacts of a change in returns on service, risk, and prices. Efficient levels of investment in networks facilitate lower overall prices and support subsequent decisions of consumers to use and invest in delivered energy. Investment levels will be impacted by commitments to the continued safe operation of networks, and mandatory obligations, however, discretionary investment levels are likely to be informative to understand impacts of allowed regulatory returns.

4. **Information on the returns allowed by other regulators** in Australia and internationally provide relevant cross checks as these returns represent the outcomes applied for entities with commensurate risk.
5. **Discount rates applied in the Integrated System Plan (ISP)** determine the cost and benefits of the significant investment required to deliver the optimal development path that maximised market benefits and delivers significant saving to customers. A gap between the regulated return and the discount rate could alter the net benefits and deter the flow of capital to these important investments.

Transaction multiples (RAB, EV/ EBITDA) are of no value in testing the overall rate of return. These multiples include revenue from unregulated services and unregulated businesses and do not recognise the costs and value that might be particular to the firm, corporate structure or tax status that is unrelated to the regulated NSP or provision of regulated services. We note that transaction multiples are commercially sensitive and, in our experience, not publicly disclosed by an acquiror or its target. Therefore, when reported publicly, these multiples are inherently unreliable as they can be influenced intentionally by the interests of the usually undisclosed source and be based on a range of varying methods, assumptions and opinions.

The use of the range of cross checks suggested above provides accountability and confidence in the RORI outcomes and reduces the risk that the AER's decisions do not provide the right incentives for efficient investment in the long-term interests of consumers. We do not consider that a lack of precision is sufficient justification to ignore a cross check given it is one of a set of tools used to assess the overall appropriateness of the rate of return provided by the primary method. However, cross checks should relate entirely to the benchmark entity and not be affected by issues related to the specifics of a firm or unregulated services, revenues, or costs. The importance of cross checks and transparency is heightened in the absence of any other mechanism available to regulated NSPs to seek review or recourse in the event of errors or poor decisions.

We welcome the AER's decision to put forward assessment criteria that can be used to evaluate evidence and to exercise regulatory judgement. These criteria should be applied consistently to all evidence and regulatory proposals including those put forward by the AER itself. We believe that some of the AER's proposed changes do not perform well against the criteria and hence should not be adopted. Equally we have put forward proposed changes (such as to cost of equity) which we believe perform well against the suggested criteria, which the AER should consider.

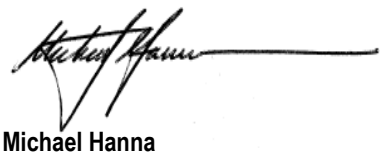
Regards

Rick Francis
Managing Director
Spark Infrastructure

Christopher Curtain
Managing Director, Australia
OMERS Infrastructure

Jean-Etienne Leroux
Managing Director – Australia & New Zealand, CDPQ

Nik Kemp
Head of Infrastructure
AustralianSuper



Michael Hanna
Head of Infrastructure – Australia
IFM Investors

Michael Cummings
Global Co-Head of Asset Management
AMP Capital

Kieran Zubrinich
Senior Managing Director
Macquarie Infrastructure and Real Assets

Steven Fitzgerald
Head of Asset Management
HRL Morrison & Co

Attachment A: Response to specific issues

Gearing

AER preliminary position: consider adjusting gearing to more closely align with market data.

- **NSG position**: only adjust gearing in response to change in the efficient benchmark, support the continued use of a benchmark gearing of 60%.

We support the continued use of a benchmark gearing of 60%.

The AER's preliminary position to adjust gearing to align with the latest estimates from market data is a change from its 2018 RORI benchmark approach. We support a high bar for change that results in a change to the benchmark only if there has been a material change in estimates or a material change in efficient practice.

The AER has historically adopted a benchmark gearing level of 60% based on the observed gearing ratios of listed Australian energy networks over time. The AER's own consultants advised that the expected rate of return does not vary significantly with changes in gearing and that gearing across service providers varies materially and appears relatively volatile through time.[3] The average of market estimates hides significant volatility rather than supports efficient practice.

We do not consider that there is sufficient evidence that the benchmark gearing rate has changed. The observed reduction is likely to reflect short term movements in market data for a small number of firms and reflect transient issues such as ownership changes and market conditions including deteriorating financeability. Further, the market estimates of gearing presented by the AER do not include all debt instruments, which would likely result in a higher gearing ratio if included.

We are concerned about the implications of changing the benchmark gearing at each RORI to reflect movements in market estimates, particularly where NSPs alter their positions to match the benchmark which results in an entirely circular process. Changing the benchmark gearing at each RORI does not deliver stability, predictability, or sustainability; it also creates the need for consequential changes to other parameters.

Hybrid securities should be treated as debt and included in estimates of gearing as is market practice. These instruments are treated as debt for accounting and tax purposes and the equity quality is confined to achieving a more favourable credit rating. This in turn supports lower costs for all other debt instruments. It is inappropriate and inconsistent to accept the lower cost of debt supported by hybrids while excluding the cost associated with achieving this lower outcome.

3 Overall rate of return, Draft working paper, July 2021, p.29.

Imputation credits

AER preferred position: distribution rate for imputation credits obtained through the use of ASX50 firms, utilisation rate from ABS wealth data, pending investigation of ATO data.

- **NSG position**: we do not consider that ASX50 provides a reasonable proxy for establishing a benchmark; support AER further investigating use of ATO data to inform the utilisation rate in a transparent manner.

AER preliminary position: Assume that foreign non-resident investors assign no value to imputation credits.

- **NSG position**: we support the assumption that foreign non-resident investors assign no value to imputation credits.

We support the AER further investigating use of ATO data to inform the utilisation rate in a transparent manner

We do not consider that the ASX50 provides a reasonable proxy for establishing a benchmark. Regulated NSPs are not typically listed or owned by listed firms and there is currently only one NSP in the ASX50.

In the AER's 2018 RORI process we supported the use of ATO data of directly observable value of imputation credits and that the distribution rate assumption should include firms that are comparable to the benchmark NSP (and which are not necessarily listed). We remain of the view that the estimate of the efficient distribution and utilisation rates for the benchmark NSP can be improved by revisiting the comparability of the firms included in the data set.

In principle, investigating the ATO data further and adopting directly observable redemption values is likely to produce a better estimate. However, it is difficult to comment more definitively in the absence of understanding what the data says and how it is to be used.

We support the AER's preliminary position to assume that foreign non-resident investors assign no value to imputation credits. However, we note that under the AER's approach, the value to investors of imputation credits is irrelevant. The issue is whether they are redeemed. Therefore, directly observable data from ATO is preferable and more likely to allow changes such as the increase in foreign ownership (and reduced redemption rate) to flow through to returns.

Debt

AER preferred position: include only pure debt instruments in the EICSI, excluding hybrids, working capital and bridging loans, any instrument with a term under 12 months and any instrument not used to finance RAB.

- **NSG position**: we do not support blending the debt yield based on the EICSI or excluding instruments to finance the RAB.

AER preliminary position: EICSI is to be used directly to determine the benchmark blend of A and BBB bonds.

- **NSG position**: we do not support a change to weight the debt yield between A and BBB data by the EICSI. This is not consistent with the AER's stated position to use a benchmark approach and provides no information about efficient debt practice or efficient debt costs.

AER seeking views: weighting trailing average approach by capex spending.

- **NSG position**: we do not support changing the weighting of the trailing average from the current simple average approach.

We do not support blending the debt yield based on the EICSI, and if used for comparison or cross check purposes should not exclude instruments used to finance the RAB

The AER is proposing to substitute its current approach of adopting a 1/3:2/3 blend of A and B yield from third party providers with using the EICSI to weight the yield between A and BBB data. This is a significant change from the 2018 RORI that will not produce a better estimate of the efficient cost of debt and is not supported by rationale or evidence.

The AER is proposing to use the index in two ways: to provide a comparison between the debt benchmarks and actual debt costs and to set the benchmark debt yield somewhere between A and BBB for the benchmark NSP.

If used to set the benchmark debt yield, the AER's proposed approach removes any link between the benchmark assumptions of 10 year debt and BBB+ credit rating. It instead substitutes an index comprising the costs of a mix of some debt instruments with different terms and subject to different credit ratings and excludes the costs of other debt instruments also used to finance the RAB. This proposed approach cannot be characterised as a benchmark cost or pass-through approach as the EICSI does not represent efficient debt costs or all actual debt costs. Further, it unnecessarily increases the risk to investors of not recovering efficient costs and increases the risk that consumers will bear the cost of poor financing practices.

There is a danger in the proposed approach that the yield falls below that which would support an investment grade credit rating. This should prompt a thorough investigation into the impact of this on the long-term interests of consumers given the financial risk that would logically flow. If there was an investment grade expectation (as required in the UK), or an expectation of internal consistency with RORI settings when applied to the benchmark entity, then the approach and assumptions must demonstrate that these objectives can be met.

For these reasons, we do not support the AER using the index to set the benchmark debt yield. If, however, the AER concludes that the index is to represent the efficient debt cost of the regulated NSP, then it needs to consider all instruments used to finance the RAB and adjust for any discounts or premiums applied due to the credit rating, balance sheet or liquidity of parents, subsidiaries, or related businesses, including unregulated.

Even if used for comparison or cross-check purposes only, rather than to set the benchmark debt yield between BBB and A, the EICSI needs to be further refined as it does not currently present an accurate picture of actual costs incurred. Specifically, it does not:

- include the incurred cost of all debt instruments.
- adjust for differences between inflation forecasts built in to the AER's debt allowance and market expectations as reflected in the debt costs, which was a significant issue during the 2014-2019 period.

- adjust for discounts or premia that would not occur if the regulated NSP was a stand-alone business providing only regulated services or the bump in credit rating associated with a hybrid instrument.

The treatment of hybrids reveals the deficiency in not capturing all debt costs. Although hybrids are characterised as having both debt and equity qualities, they are treated as debt for accounting and tax purposes and the only equity benefit is to support a favourable in credit rating assessment. Therefore, excluding hybrids when comparing actual debt costs or informing benchmarks captures the benefit of the hybrid (a higher credit rating) in lowering debt costs, but excludes the cost of achieving the lower costs. The NSPs must have an opportunity to recover at least their efficient costs (under the NEL and NGL). If some debt costs are not included in the index, then the regulatory framework must compensate them for it elsewhere.

Significant issues remain over the appropriate calculation of the EICSI and whether it is an effective tool for representing actual debt costs for comparative purposes or representing actual debt practice for informing the benchmark. These concerns have been raised by the ENA but remain unaddressed.[4] The index does not reflect a benchmark term, gearing or credit rating.

We also note that EICSI is based on a data set collected over a limited period that is insufficient to determine whether there has been a sustained movement in efficient financing costs away from those reflected in the current benchmark approach.

The AER's proposed approach will also increase volatility, complexity and risk while reducing predictability and replicability. Given the range of issues associated with the data, whether it is fit for purpose and the need for significant adjustments, there is significant doubt about how this approach passes the AER's criteria, provides a better estimate of the efficient cost of debt or would be in the long-term interests of consumers.

The weighting of the trailing average should not change from a simple average to reflect capital spending

The AER's proposal to weight the trailing average to reflect capital spending is a significant change from the 2018 RORI. We do not support this change because it does not meet the high bar for change, does not reflect a change in efficient practice or efficient cost, it reduces stability, predictability and sustainability while increasing volatility, and has not been shown to provide a better unbiased estimate.

The AER should retain its current simple equal weighting approach as this provides an allowance better matched with a benchmark entity that seeks to finance one tenth of its debt each year. Although, the benchmark entity may be assumed to include additional capital expenditure each year, the amount, and proportion will vary for each entity depending on where the entity is at in its investment cycle. Refinancing activity (and costs) is dominated by existing debt and matched hedging. Therefore, debt allowances under this approach would not necessarily better match debt costs even for a specific, rather than benchmark, firm despite the additional complexity introduced. If this approach is being introduced to support the financeability of major ISP and contingent projects, it should be shown to do so, for example, by assessing the impact on financeability. Introducing this change in a low interest rate environment could exacerbate the financing challenges facing NSPs. We also note that information on major ISP and contingent projects is unlikely to be available at the time an NSP determination would be made.

The AER should explain how this approach improves the accuracy of the estimate and has been considered against its own assessment criteria.

4 For example, tenor weighting, tenor matching, exclusion of instruments as outlined in the ENA's submission to the AER's Energy Network Debt Data Draft Working Paper, 14 August 2020, and subsequent memo in response to the AER's final working paper dated 18 December 2020.

Equity

Overview

The AER proposes to maintain its approach to estimating the cost of equity using the standard Sharpe-Lintner CAPM model which requires an estimate of the equity beta and MRP and a proxy for the RFR.

The AER's 2018 RORI methodology had the effect of reducing the equity risk premium, resulting in equity returns lower than those required by the market. Its sole reliance on the spot 10 year CGS also resulted in significant further reductions in equity returns following the 2018 RORI as bond rates fell. However, the equity returns required by investors did not fall, resulting in an increasing gap between the regulated returns available for investing in network assets and those required by investors.

Equity returns were reduced even further by the growing divergence between the AER's forecast of inflation and market expectations of inflation. While we welcome the AER's adjustment to its inflation forecasting methodology to ensure an inflation forecast more in line with expectations, regulated returns remain materially lower than returns required by the market.

The extraordinary market conditions since the 2018 RORI have laid bare the significant disconnect between the RORI methodology and changes in the efficient cost of capital. The RORI should aim to deliver the best estimate of the efficient cost of capital in all market conditions and build in mechanisms that enable this to occur.

While we support a high bar for change, the bar must be set at an appropriate starting point. We do not consider the approach to estimating equity beta and applying a historical estimate of MRP to a spot RFR provides an appropriate starting point. Further, this approach is not consistent with the market practice of capital providers, independent valuers, or equities analysts.

We support changes to the AER's approach to ensure that:

- the equity beta estimate is the best estimate of contemporary risk and enables changes in risk to flow through to ensure it is reflected in the regulated return for NSPs, and
- the relationship between the RFR and MRP is appropriately normalised for forward looking expected market conditions over the life of the investment.

There is clear evidence that the regulated return is less than the returns required to attract capital as presented in Table 1 and Figure 1 below. For example, Morgan Stanley reported that Australia is ranked in the third-quartile for relative attractiveness of investing in regulated networks and ranked second lowest at 1.6% on the allowed pre-tax weighted average cost of capital (**WACC**) adjusted for inflation and government bond yields to account for sovereign risk.[5]

5 Morgan Stanley, Utilities Global Lens: Where to invest in Regulated Utilities Amidst Global Macro Environment, April 2021, pp.3;11.

Table 1: Relative attractiveness of regulated utilities by region – ranked by quartile

	DDM Analysis		Multi Factor Analysis			
Region/Country	**Net equity return**	**DDM ranking**	**Score**	**Multi factor ranking**	**Average combined ranking**	**Quartile**
Europe	6.2%	2	5.7	3	2.5	1st
Hong Kong	4.9%	4	6.7	1	2.5	1st
United States	4.5%	6	5.7	2	4.0	2nd
India	7.4%	1	3.1	7	4.0	2nd
Australia	5.3%	3	3.8	6	4.5	3rd
South East Asia	3.9%	7	5.3	4	5.5	3rd
South Korea	4.7%	5	2.6	8	6.5	4th
Brazil	2.3%	8	4.6	5	6.5	4th

Notes: for net equity returns and the Multi-Factor Analysis Score, higher numbers are better. For rankings, lower numbers are better. Data as of 26/3/2021. Based on Eikon, IMF and Morgan Stanley estimates.

Figure 1: Allowed pre-tax WACC (adjusted for inflation and sovereign risk)

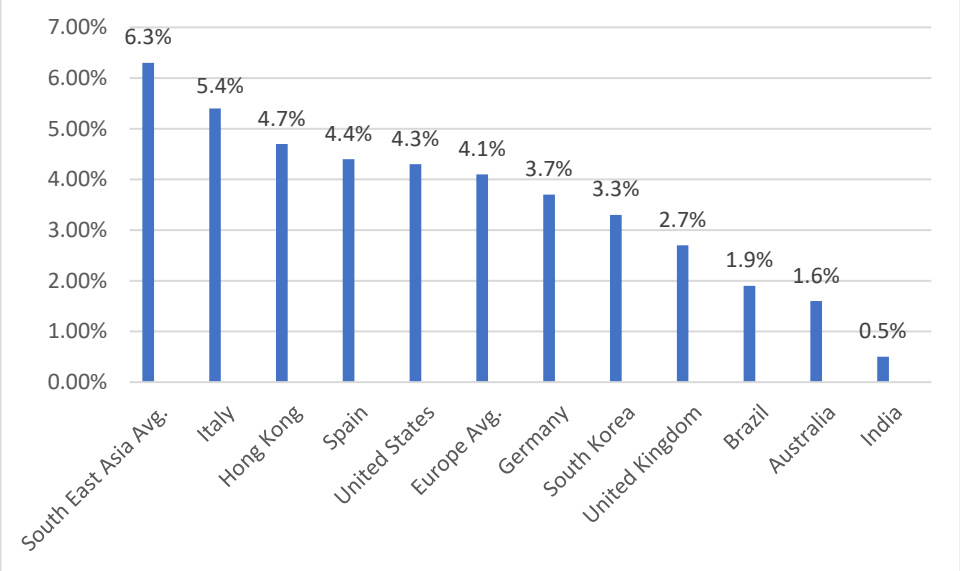


Table 2 is reproduced from a Brattle Group presentation which highlighted that the AER's 'outlier' approach led to an equity return (equity premium) lower than seven other regulators in the UK, US, NZ, Italy, and Netherlands.[6]

Table 2: Brattle Group calculated equity premiums

	AER	ACM	FERC	STB	ARERA	NZCC	OFGEM	OFWAT
Decision year	**2020**	**2016**	**2020**	**2018**	**2019**	**2019**	**2019**	**2019**
Nominal RFR	1.03%	1.28%	2.70%	3.02%		1.12%		
Real RFR	-1.24%				1.89%		-0.75%	-1.39%
Equity premium	3.66%	3.74%	7.35%	10.84%	3.88%	4.75%	5.55%	5.58%

Notes: Equity and debt premiums calculated as the difference between authorized return on equity (or debt) and regulator's determination of the RFR. All figures relate to energy transport utilities except STB (rail) and OFWAT (water).

It is in the interests of consumers that regulated returns are sufficient to attract capital to support efficient levels of investment that will provide the right levels of service at the lowest cost. Otherwise, the efficiently priced capital will flow to other jurisdictions which offer appropriately priced risk adjusted returns.

Equity beta

AER preliminary position: use a comparator set of nine Australian firms to estimate equity beta.

AER preferred position: give the greatest weight to equity beta estimates from the longest estimation period.

➢ **NSG position**: we do not support the AER's current approach to estimating equity beta, which does not compensate for changes in systematic risk.

The AER's proposed approach does not provide a contemporary estimate of risk nor allow changes in risk to flow through to returns

The AER is not proposing to change its approach to estimate equity beta. In the 2018 RORI process, the NSG noted the increasing risks that were not being compensated for in the regulated rate of return such as regulatory, sovereign, technological climate change and low inflation risk. These risks have continued to grow as regulated equity returns have fallen. Examples include:

- increased regulatory and political interference in energy system coupled with less accountability, avenues for review and transparency
- diverging jurisdictional approaches to decarbonisation that have far ranging impact on Australian economy as a whole
- technological advancements disrupting transport, hospitality, retail, telecommunications, and energy sectors
- unprecedented bushfires, floods and more volatile weather patterns impacting on resilience of essential infrastructure assets, agricultural and building industries.

6 The Brattle Group, International Approaches to Regulated Rates of Return, September 2020, p.11.

In response, the AER confirmed that compensation for changes in systematic risk will flow from changes in the estimate of equity beta. However, its methodology prevents changes in systematic risk being reflected in regulated returns. In particular, the AER's current method for estimating equity beta:

- includes estimates that do not provide information about contemporary risk or changes in risk due to obsolete data of long delisted firms,
- gives greatest weight to equity beta estimates from the longest estimation period which prevents recent and prevailing changes in risk from appropriately impacting on the estimate, and
- adopts an equity beta range and point estimate that is not responsive to directional changes (or other appropriate benchmarks) in estimates.

NSG has previously outlined its concerns with the AER's approach in the 2018 RORI process, including that it ignores more recent changes in systematic risk. While the AER at that time noted some increase in estimates since the 2013 Guidelines, it stated that overall empirical results, particularly the longest estimation period, supported a value of less than 0.7.[7] It did not accept the view of some stakeholders that the empirical results supported a value of 0.7 or more, even though its own estimate for the most relevant firms (AST and SKI) over the most recent five years was 0.72. [8] Despite the data supporting the retention of 0.7 (or higher) at the time, the AER adopted a point estimate in the range that was lower. The Brattle Group have since confirmed that the AER's equity beta estimate is below all the other regulators reviewed.[9]

We note that the Brattle Group identified that most regulators use a shorter time frame to estimate equity beta to give greater weight to current financial conditions.[10] This is consistent with market practice. For example, Rob Koh outlined that his practice was to estimate equity beta using a short time series of three years, consistent with ensuring that the estimates appropriately represent prevailing risk and can provide valuable insight on changes in risk as signalled by the market.[11]

All risks must be accounted for within the framework – whether through equity beta, cash flows, or the regulatory framework. The method for estimating equity beta should enable the contemporary risks and changes in risk to trigger a change in the returns required commensurate with that risk.

These issues can be addressed by giving greater weight to more contemporary estimates and including only live firms. This is consistent with market and regulatory practice and the Brattle Group's recommendation to give greatest weight to estimates from the last 3-5 years.[12] We note however, that a small sample size may require the use of a longer period.

The small sample size of comparable live firms, and small number of observations gives rise to concerns about the reliability of estimates. This can be addressed by including a broad basket of international comparator firms. Market practitioners and other regulators regularly use international comparator firms where there are insufficient local firms, and this approach was considered to have merit by the Brattle Group.[13] It may still be appropriate to place greater weight on the more comparable domestic firms, but this should not invalidate the use of all other firms.

The AER could also consider adopting additional risk premiums to address risks that businesses face above and beyond those reflected in the equity beta estimates. This approach is also adopted frequently by market practitioners.[14] This includes allowing for the risks associated with uncertainty regarding future regulatory

---

7 AER, 2018 Rate of Return Instrument - Explanatory Statement, December 2018, p.143.
8 AER, 2018 Rate of Return Instrument - Explanatory Statement, December 2018, p.143.
9 The Brattle Group, International approaches to regulated rates of return, June 2020, p.57.
10 The Brattle Group, International approaches to regulated rates of return, June 2020.
11 Rob Koh, Morgan Stanley, AER forum, 16 September 2021.
12 The Brattle Group, International approaches to regulated rates of return, presentation to AER forum, 16September 2020, p.17.
13 The Brattle Group, International approaches to regulated rates of return, presentation to AER forum, 16September 2020, p.45.
14 See Attachment A for examples of market estimates and estimation approaches of market practitioners.

determinations which valuers believe is not sufficiently captured in market data (particularly as the risk has increased over time).

We look forward to the AER demonstrating how a change in risk between any two RORI instruments is captured and how significant an increase (or decrease) in risk must be before it has any impact on the estimate.

The relationship between the MRP and RFR

AER seeking comments: consider the potential for a relationship between the MRP and RFR, whether the dividend growth model might be used to inform the relationship between the MRP and RFR and whether an appropriate implementation method is available.

- **NSG position**: we support acknowledging a relationship between the MRP and RFR and giving weight to DGM estimates of MRP to replicate the adjustments made by market practitioners.

We support consideration of the relationship between the MRP and the RFR

The AER's position is a change from the AER's 2018 RORI but one that is warranted because the previous approach was not supported by theory or practice.

During the 2018 RORI process, most experts agreed that there was a relationship between the MRP and RFR in estimating the cost of equity that lay somewhere between a constant MRP or constant total market returns (**TMR**). Experts also agreed that forward looking information such as dividend growth model (**DGM**) estimates, surveys, and historical excess return (**HER**) information should be used to estimate the MRP.

Neither market practitioners nor valuation experts adopt a short-term RFR with a long-term MRP. Instead, they match a long-term RFR (or blend) with a long-term MRP, adjust the MRP or include an additional risk factor reflecting the difference between spot and long-term RFR.

However, in the 2018 RORI, the AER adopted an approach which:

- estimated a historical MRP giving no weight to forward looking DGM or analyst estimates
- matched a historical (long-term) MRP with a spot RFR
- rejected the notion that there was a relationship between the RFR and MRP by setting a constant MRP during the period
- nevertheless, set the start point by applying a lower MRP to a lower RFR, at odds with any theory or practice.

This was a significant change compared to prior periods when the AER:

- prior to 2013, accepted an inverse relationship and estimated an MRP using forward looking data that moved in the opposite direction to bond rates
- in the 2013 rate of return guideline, also recognised an inverse relationship and used forward looking data to apply a constant MRP that increased when bond rates fell.

The 2018 RORI is the outlier. It should not form the starting point from which a high bar for change should be adopted.

Market practice of analysts and valuation experts make corresponding adjustments to the MRP and RFR depending on the methodology that guides the flow of capital. Therefore, in estimating the MRP and RFR for the purposes of estimating the efficient cost of equity required to attract capital, the AER should adopt a consistent approach by either:

- matching a historical MRP with a RFR that reflects historical averages,

- matching a spot RFR with an MRP that has been appropriately adjusted for expectations in differences between current conditions and the longer term 'steady state', or
- an appropriate combination of the above.

To be consistent with theory and practice, this could be implemented by the AER:

- establishing a TMR for the period based on a historical MRP matched with a historical RFR which is then set for the period, or
- maintaining a spot 10 year CGS as the proxy for the RFR with significant weight given to forward looking estimates from the DGM and analyst surveys as well as adjustments adopted by analysts and valuation experts to set a constant MRP.

We note that these approaches improve stability, predictability and sustainability and reduce volatility between RORI and regulatory periods which essential for low cost efficiently priced capital to flow to the sector in a sustainable manner.

In the absence of understanding how the start point is set, it is difficult to comment on a dynamic relationship because that relationship needs to be matched to the method used to set the starting point. The start point is critical to the relationship. Nevertheless, if implemented in an unbiased manner in a low interest rate environment, we expect that the MRP must increase compared to the 2018 RORI even under the AER's current approach because:

- market estimates of the required return are higher than the 2018 RORI delivers,
- HER estimates have increased,
- DGM estimates have increased, and
- adopting analyst estimates of MRP cannot ignore the corresponding adjustments to the RFR or equity beta to 'normalise' returns for the long-term during short term volatility.

There is no information, evidence or theory that would support an MRP at the same or lower level than adopted in the 2018 RORI. As a result, it cannot reasonably reflect the best unbiased estimate of the efficient cost of equity.

If the AER is to change its methodology again, then it needs to pay careful attention to market practice in determining market estimates of the cost of equity and rely on the advice of experts and finance practitioners. In our submission of 2 July 2021, we presented information on market practice in valuing equity and the relationship between the MRP and RFR. This information supports the use of a 'normalised' RFR and an adjusted MRP.

We note that the AER's consultant CEPA concluded that the MRP applied by independent experts was commonly 6% with no adjustment for the falling RFR over the period (2013 to 2021). However, looking at the CEPA data suggests that the MRP varied between 6% and 8% (and as high as 8.3%) over that period and the RFR adopted was not always a spot 10 year rate but rather a longer term bond (up to 30 years) and could also include a specific adjustment above the RFR of as much as 60 basis points.[15] Independent Expert Reports released after 2018 and during the period of RBA intervention in the bond market, reported that an MRP of 6% was more likely to be matched with a longer term bond rate or blend of long-term average and spot.[16] This is consistent with our analysis of Independent Expert Reports in 2020 which commonly normalised the RFR to be approximately 3% and were matched with a MRP of between 6% and 7.5%.[17] These references also support a longer rather than shorter term for estimating equity and investigating the use of a longer term bond rate as a proxy for the RFR.[18]

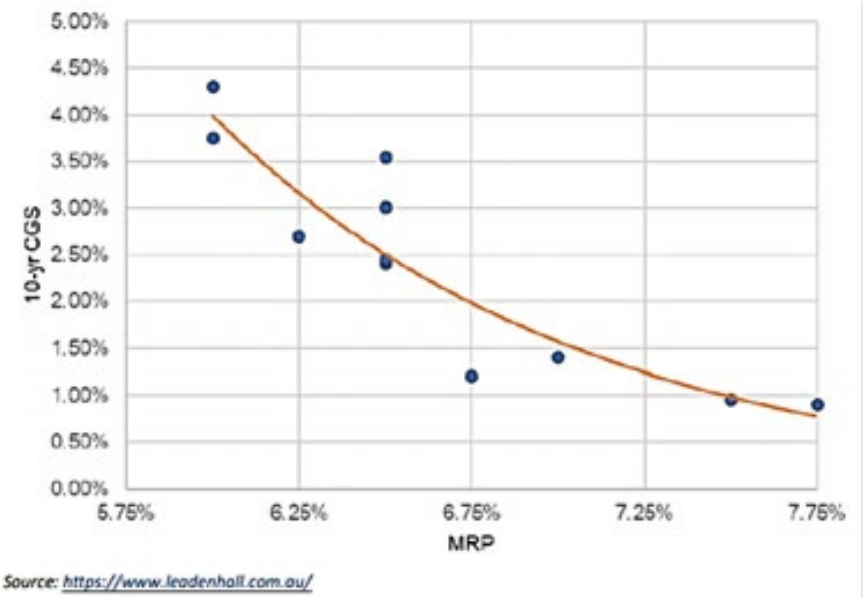
We have included at Attachment B, a table presenting Independent Reports and assumptions regarding the MRP and RFR. Our general observation of this data is that:

15 CEPA, Relationship between the RFR and MRP, 16 June 2021, p.15.
16 CEPA, Relationship between the RFR and MRP, 16June 2021, p.56.
17 NSG presentation, June 2021.
18 CEPA, Relationship between the RFR and MRP, 16June 2021, p.18.

- market practice is to normalise the RFR when an historical MRP approach is retained,
- alternatively, a longer-term RFR is considered if no normalisation is applied (more often a 20-year tenor), and
- when spot rates are adopted as a proxy for the RFR, the MRP is in almost all cases estimated on a forward-looking basis only.

Figure 2 from Leadenhall suggests that a higher starting point at the current 10 year CGS spot rate should be considered for the MRP.[19]

Figure 2: MRP and 10-year CGS yield pairings (June 2013-June 2020)



Overall, the MRP varies between 5-8%, with a market practice preference to consider the upper end of the range when the spot RFR is used and lower end of the range when RFR is normalised.

Market surveys released in 2020 and 2021 present results that support an overall cost of equity in Australia of between 8-10%.[20]

The AER has indicated that it has access to equity analyst reports that include market approaches to costing equity. We recommend that the AER present a full set of information available from market practitioners and independent reports that includes the approach adopted when matching the MRP with the RFR and any related equity beta adjustments and the conclusions drawn from that information in its next consultation paper. This will assist stakeholders in understanding how the AER has used market information and practice in its decision-making process to assess whether:

- its estimate is the best unbiased estimate of an efficient return on equity and
- its theoretical view of returns on equity enables capital to be attracted given market analyst and valuation expert views that guide the flow of capital.

19 Queensland Treasury Corporation, Submission to the QCA 2021 Rate of Return Review, January 2021, p.17.

20 See Pablo Fernandez Survey: Market Risk Premium and Risk Free Rate used for 88 countries in 2021, June 2021 and Chartered Accountants Business Valuation Practice Survey, November 2020.

Cross checks and financeability assessments

AER preliminary position: measures of financeability cross checks are not used directly when setting the rate of return but are used to inform the overall return on equity point estimates.

- **NSG position**: we support use of cross checks to inform rather than directly set the overall return on equity point estimates and to guide the use of discretion in estimating individual parameters to ensure that the overall rate of return that is not too high or too low

AER seeking views: on the use of cross checks.

- **NSG position**: we support use of market analyst and valuation expert estimates, financeability assessments, investment levels and trends and information on the returns allowed by other regulators and market bodies.

Cross checks are important to build confidence that the AER's estimate is the best estimate, and does not have adverse impacts

The NEL and NGL contemplate that returns will impact on investment, incentives and therefore the long-term interests of consumers, so a framework for assessing this should feature in the 2022 RORI process.

The AER exercises significant discretion in choice of data sets, weights, ranges, and point estimates. Cross checks and financeability assessments are an important tool to guide the AER's use of discretion when estimating parameters such as debt yield, equity beta and market risk premium and to demonstrate impacts of its decisions on incentives, investment, and long-term interests of consumers. They enable both the AER and stakeholders to have confidence that the parameters estimated will produce an overall rate of return that will enable NSPs to attract the necessary capital and enable them to remain financeable on benchmark terms.

Assumptions should not be determined in isolation, hence if changes are made and discretion exercised, the impact on other assumptions and outcomes must be re-assessed. Cross checks are important to assess the historical and expected outcomes.

Relevant cross checks should include market practitioner and valuation expert estimates, financeability assessments, investment levels and trends, spending against efficient allowances, and past and projected service levels and prices and comparisons with other regulators. We have provided information on market practice for estimating the cost of equity and comparisons to other regulators in our section on equity. We also provided comments on financeability assessments in our submission on 2 July 2021. We have elaborated on, rather than duplicated, these comments in this submission.

Investment levels and trends are highly relevant

The NEL and NGL frameworks are based on ensuring a return that is commensurate with risk, sufficient to attract capital and supports efficient investment.

The rate of return drives investor decisions about whether to provide and allocate capital to support network investment proposals. As investors operating in international financial markets, we caution that any further reduction in the rate of return is likely to further reduce investors' willingness to deploy capital to the Australian energy market in a timely and sustained manner, and to shift the focus and attention of investors to opportunities in other sectors and offshore.

Investment in energy networks is at an all-time low, but future investment requirements are expected to be significant over the next decade. To date the focus appears to have been on the need to avoid the risk of over investment in energy networks. Little attention has been given to the risk of under investment in energy networks caused by a rate of return that is below the efficient cost of capital and unable to compensate for the rising risk associated with large greenfield network projects and changing nature of investments, amid new technologies.

The failure of the regulatory framework to provide efficient risk adjusted returns has meant that some large-scale infrastructure investments have required government support in the form of underwriting and government backed financing instruments. The financing of Project Energy Connect by the Clean Energy Finance Corporation is a case in point. There is a risk that investment in networks will not keep pace with requirements over the next few years if equity returns are not restored to be consistent with efficient costs. Government should not need to step in to support those investments if returns are sufficient.

A rate of return that is set too low has the potential to put Australian governments' energy transition plans at serious risk. Economic efficiency needs to have regard to the long-term impact that efficient network investment will have on facilitating more renewables in the system and cheaper wholesale energy prices, as well as supporting the investment required to underpin broader energy transition in the Australian market. Inefficient network investment will unnecessarily increase customer costs[21] and consumers will ultimately bear the cost of the regulator getting the rate of return estimate wrong.[22]

The AER should draw on information on investment trends and consider the impact of a change in the regulated return on investment and incentives for investment. The relationship between investment and returns may not be direct, however, similarly to other comparative information, the explanatory value of the information should be investigated and taken into consideration as appropriate.

The regulated return should support the investment required under the Integrated System Plan

We note that the Australian Energy Market Operator **(AEMO)** recently released its inputs, assumptions, and scenarios report to support the development of the ISP.[23] These inputs and assumptions are the foundations of assessing the optimal development path that will maximise the net market benefits and deliver savings to consumers. The net benefits are assessed based on a cost benefit assessment that adopts a discount rate that is appropriate for the analysis of private enterprise investment in the electricity sector across the national electricity market **(NEM).** AEMO engaged Synergies Economic Consulting (**Synergies**) to provide appropriate discount rate assumptions.

The discount rate recommended by Synergies is a weighted-average cost of capital (WACC) estimate reflecting an average investor view about the required return on investment in the NEM. It includes a lower bound based on recent regulated WACC determinations for NSPs and an upper bound based on a more risk-sensitive view (including generation and storage investments). This discount rate reflects a rate required for private investors to deliver the investment required in the ISP. Any gap between the rate assumed in the ISP and that provided for investing in regulated networks could affect the ability to attract capital and deliver the ISP investments. The 2020 ISP included additional investment of more than $20 billion so the capital required is significant.

AEMO adopted a central estimate of 5.5% (pre-tax real WACC)[24] which compares to the AER's estimate of 2.2%. It adopted a higher risk sensitive WACC (upper band) of 7.5% with sensitivity to be included at 10%.[25] Synergies also reviewed discount rates adopted by other statutory bodies around Australia, including infrastructure Australia, which all cluster around 7%. Synergies noted that this rate has become entrenched and reflects higher historical government bond rates. There is a significant gap between the AER's current estimated return and that adopted by AEMO as required to attract capital to the deliver the ISP. Synergies acknowledged the difference between its estimate and the AER's 2018 RORI but retained the view that its estimate reflected a discount rate consistent with private sector investments in the NEM. Synergies emphasised the importance of adopting a discount rate that was consistent with the net social benefit because it would be consistent with achieving productive use of scarce resources (economic efficiency) and the National Electricity Objective.[26]

---

21 Energy Security Board, The Health of the National Electricity Market, Volume 1, 2020, p.43.
22 AER, Assessing the long-term interests of consumers, Position Paper, May 2021, pp.8-9.
23 AEMO, 2021 inputs, Assumptions and Scenarios Report, July 2021.
24 Notably, this discount rate assumed a MRP of 8.2% applied to a 10-year spot rate of 1.63%.
25 AEMO, 2021 inputs, Assumptions and Scenarios Report, July 2021, pp.104-105.
26 Synergies Economic Consulting, Discount rates for use in cost benefit analysis of AEMO's 2022 Integrated System Plan, A report prepared for AEMO, July 2021, p.3.

In developing the discount rate and approach to the MRP, Synergies considered that a long-term view was required for investors in infrastructure over the life of the plan,

> *Incorporating the Wright approach in the assessment of the market risk premium addresses the potential concern that our central and upper bound discount rates are too low because they are reliant on a historically low risk free rate and hence are not reflective of an investor's perspective in making long-term investments in the Australian electricity sector today and into the future. In practice, it is not possible to forecast with perfect foresight what cost of capital investors will be targeting over the course of the ISP planning period. However, we consider that our approach to estimating the market risk premium that assumes a relatively stable long-term view of required equity returns is a reasonable one. The lower bound regulated cost of capital estimate does not reflect this longer-term perspective.*[27]

Financeability assessments are critical to achieving long-term interests of consumers including to support Australia's energy transition

The AER has indicated that it is aiming for an unbiased estimate of the expected efficient return, consistent with the relevant risks involved in providing regulated network services. However, it has also acknowledged that 'setting the expected rate of return is not a precise science and involves uncertainty and judgment'.[28]

Recognising this imprecise science and the risks of getting it wrong,[29] financeability assessments are used by many regulators around the world to test the reasonableness of rate of return estimates, including regulators in the United Kingdom and, in Australia, (for example IPART in the context of water regulatory decisions). Indeed, OFGEM in the United Kingdom has an explicit legislative duty to assess "the need to secure that licence holders are able to finance the activities which are the subject of obligations imposed".[30]

Financeability assessments are critical to achieving the long-term interests of consumers. They provide:

- a lead indicator of the sufficiency of returns to attract capital to undertake efficient investment;
- an important forward looking cross check on the reasonableness of the return estimate given the decisions (and exercise of discretion) in estimating parameters (e.g., MRP, equity beta and matched gearing and credit rating assumptions); and
- the basis for demonstrating consistency and sufficiency in the estimate for a deemed ring-fenced benchmark entity. A regulated entity has no ability to raise additional revenue and, if the AER's estimate of return on debt and return on equity is efficient, it cannot raise equity (because a lower return than the efficient return would not attract capital) or will incur inefficiently higher cost debt.

The AER's consideration of financeability is also critical to Australia's energy transition. The Australian Energy Market Commission's **(AEMC)** April 2021 determination on the rule changes proposed by TransGrid and ElectraNet recommended a review of options to support the timely and efficient delivery of transmission projects critical to supporting a reliable, secure, low cost and low emission energy future including matters such as financeability. The AEMC has previously expressed the view that commercial concerns associated with major transmission projects need to be considered, and that the AER is best placed to consider financeability and risk compensation in its RORI review.[31]

We support the AEMC's view that issues related to the financeabilty of major transmission projects should be considered in the context of a TNSP's overall RAB and not consider actual businesses, capital structure, actual debt

---

27 Synergies Economic Consulting, Discount rates for use in cost benefit analysis of AEMO's 2022 Integrated System Plan, A report prepared for AEMO, July 2021, p.32.
28 AER, Assessing the long-term interests of consumers, Position paper, May 2021, p.2.
29 ibid, pp.8-9.
30 https://www.legislation.gov.uk/ukpga/1989/29/section/3A.
31 AEMC, Transmission Planning and Investment Review, Consultation paper, 19 August 2021, p.35.

costs or profitability.[32] The AER should not be considering the ability to draw on options outside the regulatory framework (referred to as 'countermeasures' by the AER) to finance investment.

The issue is not whether capital can be raised but rather whether capital can be raised at the AER's estimate of the efficient cost of capital. If the parameter estimates adopted by the AER are reasonable, then the benchmark entity should be able to achieve and maintain financeability metrics. If it cannot, there may be an issue with the parameter estimates (and use of discretion in formulating those estimates).

It may be reasonable also to consider whether there are circumstances where it would be reasonable for the benchmark entity to not achieve the financeabilty metrics, for example, where there is a 'growth' phase. However, if it is efficient to undertake the investment, that investment should earn the regulated return (not a lower return due to the need to adopt higher gearing or kick in more equity).

The regulatory framework should not assume that regulated firms have other options available to achieve financeability

The AER has referred to the limited value of financeability assessments given that the firm would be expected to take countermeasures to protect their credit profiles. However, this is untrue of a regulated firm in the context of the benchmark efficient firm framework. The regulated firm has no alternative source of revenue or balance sheet on which to implement a countermeasure:

- If a regulated business is required to change gearing, that gearing should be used to estimate the efficient cost of capital in the RORI. Otherwise, this reduces the return to equity investors below the efficient cost of equity set. If it is efficient for a different gearing to be adopted, the return provided must be consistent with that gearing assumption. Otherwise, the return is not commensurate with the risk of the higher gearing level.
- If it is unable to maintain a credit rating, this increases the efficient cost of debt. If not recognised in the estimate of the efficient cost of debt, this results in a transfer of equity returns to servicing debt, again reducing the expected return below the regulated return set out in the binding RORI.

The success of a countermeasure relies entirely on features of the unregulated related party. This would require a regulated business to draw on the revenues and balance sheet of unregulated services or a related party to enable it to provide regulated services at the efficient cost. These options may not be available to all regulated entities, or available to the same extent, i.e., the impact of a State Government credit rating for non-privatised entities. This is inconsistent with the revenue and pricing principles and contravenes the principle underpinning ringfencing requirements that regulated service revenue should not subsidise unregulated services and vice versa.

32 AEMC, Transmission Planning and Investment Review, Consultation paper, 19 August 2021, p.35.

ATTACHMENT B: INDEPENDENT REPORTS, VALUATION EXPERTS, ANALYSTS AND MARKET SURVEYS

	Date	MRP	Rf
Independent Reports			
Independent Report (Deloitte)	13/08/2021	7.0% Based on current share market values and assumptions regarding future dividends and growth + estimate also has regard to the spreads observed on domestic and foreign corporate bonds and equity market volatility)	1.65% Spot RFR with the 10-year Australia Government bond rate as proxy)
Independent Report (KPMG)	07/03/2017	6.0% Long-term view	4.0% Blend of the spot rate and a forecast long-term Australia Govt bond yield
Independent Report (Leadenhall)	31/12/2020	7.0%-7.5% Forward looking approach with contemporaneous MRP	0.97% Does not normalise RFR, but uses market observed RFR with contemporaneous assessment of MRP
Independent Report (Korda Mentha)	28/04/2015	6.0%-6.5% Use historical risk premia as a proxy since expected premia is not directly observable phenomena	5% Normalised RFR assumption based on long-term expectation level
Independent Report (Grant Thornton)	30/09/2019	6% Historical risk premium over a period of 20 to 80 years	3.5% 10-year Govt Bond yield used as proxy, assumption based on daily nominal average yield over a historical period of 10 years
Independent Report (EY)	19/10/2020	6.0% Based on empirical studies over a period up to 100 years in Australia	3.25% Long-term RFR estimate by including a non-asset specific risk premium to the 10-year Australia Govt Bond yield

	Date	MRP	Rf
Independent Report (KPMG)	30/06/2018	6% Based on market survey and academic articles. Also considers specific risk premium apart from MRP such as low geographical diversification and regulatory risk amongst other things	2.9% Yield on longest Govt bond maturity (15 years) disclosed by Bloomberg
Independent Report (Grant Samuel)	April 2019	8.7% Includes 2.7% risk premium due to depressed bond yield	2.2% 10-year CGS
Independent Report (Grant Samuel)	August 2020	6% Long-term view	3% 200 basis points 'normalisation' adjustment
Independent Report (FTI Consulting)	June 2020	7.5% Tax adjusted based on midpoint of market practice range of 7% to 8% (NZ companies)	RFR adjusted each year
Independent Report (Calibre Partners)	July 2020	6% Long-term view	2.98% Long-term average to maintain consistency between the RFR and MRP
Independent Report (Lonegran Edwards and Associates)	June 2020	6.5% Long-term view	3% 'Normalised' based on blend of historical average and spot rate
Valuation experts			
Valuation expert A	2021	6.0%	2.3% Spot 20-year Australian government bond
Valuation expert B	2021	6%	3.0% 10-year CGS plus 'normalisation' adjustment
Valuation expert C	2021	6.5% Long-term estimate	2.9% Representing long-term RFR

Analyst Reports			
Analyst Report (Citi)	11/02/2020	5.0% (Long-term estimate)	5.0% (In line with long-term estimate)
Analyst Report (BofA)	13/05/2021	7% (Through-the-cycle estimate)	1.5% Through-the-cycle estimate
Analyst Report (Credit Suisse)	11/02/2021	6.0% (Long-term estimate)	3.0% (In line with long-term estimate)
Analyst Report (Macquarie)	10/08/2021	6.25% (Long-term estimate)	2.6% (In line with long-term estimate)
Market Surveys			
Market Survey (Chartered Accountants)	November 2020	Most analysts adopted a MRP > 6% **Cost of equity in Australia at June 2020 – majority between 8% and 10%,**	Most practitioners adopt a value between 2% and 4%
Market Survey (Pablo Fernandez)	June 2021	6.3% (Australian median of market practitioners) 6.4% (average) **Cost of equity – average 9%, median 8.8%**	2.6% (average)