AUSTRALIAN ENERGY REGULATOR

AER Public Forum

2026 Rate of Return Instrument (RORI) Review

Eligible Experts' Report

4 December 2025

Acknowledgement of Country

We acknowledge the First Peoples of the lands from which you are coming from today across Australia. We recognise their continuing connection to land, sea, waterways, sky and culture and pay our respects to all elders past and present.

Agenda

Time	Duration	Item	Presenter
9:30	5 mins	Welcome	Lynne Gallagher (AER)
9:35	25 mins	Eligible Experts' report – key findings	David Johnstone, Dinesh Kumareswaran, Graham Partington (Eligible Experts)
10:00	55 mins	Eligible Experts' responses to stakeholders' pre-submitted questions	Eligible Experts
10:55	5 mins	Closing	Lynne Gallagher

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Eligible Experts' Report – Key Findings

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Equity beta

Johnstone: Equity Beta

- It's ultimately a cost of service model where:
  - the cost of equity is a theoretical estimate emulating a market required return
  - the cost of debt approximates the actual cost incurred
- The cost of equity is based on CAPM concepts (beta and a market risk premium)
- The CAPM is widely misinterpreted (has been for 60 years)
  - idiosyncratic cash flow risk (e.g., risk of asset stranding) should be priced ex ante
  - regulatory risk must be priced (and may be the risk that most concerns NSPs)

  NSP beta is higher when regulatory risk (of lower allowed revenue) is higher, and conversely
- The task is confusingly circular – how do we compensate NSPs for risk that we impose (or eliminate) ?
- Regulators must inevitably depart from free market emulation
  - if there is an unexpected cost (e.g. cost overrun) a post hoc pass through of most of the cost can occur

Johnstone: Transporting betas from another country

- A firm's beta is endogenous within its local market:
  - a utility that produces the same cash flows can have different betas in two different markets
  - it helps greatly to understand the underlying determinants of beta
- $\beta_j = \left(\frac{\Lambda_j}{\Lambda_M}\right)\left(\frac{1-\kappa\,\Lambda_M}{1-\kappa\,\Lambda_j}\right)$ where Λ_M and κ are market characteristics and $\Lambda_j = \frac{cov(C_j,C_M)}{E[C_j]}$ is the Lintner ratio of the firm's cash flow covariance with market to its mean cash flow.
- κ is the market's inherent risk aversion and $\Lambda_M = \frac{var(C_M)}{E[C_M]}$ is the Lintner ratio of the market in aggregate
- Transporting betas across markets requires similar market parameters Λ_M and κ
- Noisy historical beta estimates are inevitable, wherever from (e.g. from what market or what time period)
- If international betas are higher, consumers will in aggregate pay much more

  …… so it will end up a matter of what's reasonable rather than one of objective empiricism

Kumareswaran: Equity beta comparators

- As we now have just 1 listed domestic comparator, it is untenable for the AER to continue to rely on just domestic comparators to set the equity beta allowance.
  - The only viable alternative is to use listed energy networks overseas.
  - Similar to approach used by other regulators—including ERA, NZCC, IPART, QCA—who face a similar shortage of domestic comparators.
- International energy networks may be imperfect comparators, and stock index composition varies across countries. But there is no way to adjust for these differences objectively and transparently.
  - AER itself has ignored some of these differences in the past.
- Selection of comparators:
  - Approach proposed by AER looks broadly fine – focus on listed energy networks in other developed economies, subject to passing liquidity and data sufficiency requirements.
  - Use largest and broadest possible sample to improve statistical reliability and dampen influence of outliers (similar to ERA and NZCC).
- How should the international evidence be used?
  - Don’t assume existing estimate of 0.6 is ‘correct’ – determined using very limited empirical evidence.
  - Don’t assume true beta is constant – not supported by empirical evidence or the AER’s past determinations.
  - A priori reasoning is unreliable and rests on strong assumptions that are not transparent.
  - Recommend not having separate ‘domestic’ and ‘international’ estimates and weighting between these.
  - Pool together estimates for the domestic and international comparators – relative weights will be transparent and reflect the fact that most of the available evidence comes from overseas.

Kumareswaran: De-levering/re-levering

- Agree with AER that current assumption of zero debt beta will upwardly bias equity beta estimate if average gearing of comparators < benchmark gearing.
- Recommend using positive debt beta estimate when de-levering and re-levering.
  - Setting the benchmark gearing ratio = average gearing of comparator sample would introduce significant complexity into the revenue setting process
- Estimate debt beta by examining empirical literature and recent regulatory precedent.
- Debt beta difficult to estimate reliably. An overestimate of the debt beta will downwardly bias the equity beta estimate. To reduce this risk, err towards the lower end of the debt beta range.

Partington: Equity Beta

- Assessing Beta without comparators: A priori average = 0.59
- Hypothesis: International proxies give a beta equal to the beta of Australian NSPs
  - Test the hypothesis with a validation study and statistical test.
- Problems with international comparators:
  - Matching firms, different assets, operations, cost structure, financial structure, regulation …etc.
    - Spaniels or Spaniels and Great Danes – Adding filters can improve the matching BUT…
  - Different capital markets – different composition, different volatility (variance).
  - Different tax systems – Imputation v Classical
- Differences in leverage
  - Theory for supply of debt and demand for debt, empirical evidence, and common sense, show that there is an inverse relation between leverage and asset beta.
  - Leverage differences between firms fundamentally invalidate unlevering and relevering beta.

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Weighted trailing average

Johnstone: Weighted trailing average

- Theoretical market rates versus actual incurred interest rates:
  - Theoretical market interest rate depends on debt beta
  - Intuitively, debt beta is near zero (i.e., NSP debt is to date at least “as good as risk-free”)
  - Like equity beta, debt beta is arguable but consumers greatly affected
- Incurred interest costs calculated case-by-case or by a typical NSP pattern of borrowing expressed as a trailing average
- Hard to argue against costs incurred contingent on tests of prudence/efficiency
- If the allowed revenue from a trailing average is lower than current rates, there is no incentive to borrow and hence less investment, but the converse applies equally.
- A trailing average methodology has to put weight on current financing needs at current rates
- No formula or borrowing pattern will be objectively correct for all NSPs, however
  - smoothing the cost to consumers is essential
  - revisiting the formula whenever NSPs or consumers are dissatisfied makes work and adds uncertainty
  - complicated formulae are undesirable and too open to fiddling
- The end goal is to reward NSPs for efficient operations and wealth creating investments made prudently

Kumareswaran: Weighted trailing average

- Agree with the AER's rationale for trailing average (rather than rate-on-the-day) allowance – creates better incentives for efficient investment by compensating NSPs for their efficient interest expenses.
- Agree with the AER's proposal to apply a weighted trailing average approach
  - Simple trailing average may disincentivise efficient investment if (a) NSP must raise a lot of new debt to finance large investments at prevailing rates, and (b) prevailing rate ≠ simple trailing average allowance
- Implementation:
  - Agree with applying a transition from rate-on-the-day approach to simple trailing average over 10 years. But AER's proposed transition is far too complex.
  - Recommend the debt transition that AER adopted when switching from rate-on-the-day approach to trailing average approach in 2013.
  - Apply weighted trailing average to all NSPs. Results in more accurate compensation for benchmark efficient interest expenses and eliminates potential incentives for gaming.
  - Recommend an NPV-neutral true-up to ensure NSP is compensated using an allowance that reflects actual rather than forecast capital expenditure. Avoids NSP being over/undercompensated due to difficulty in forecasting capital expenditure accurately.
  - True-up would preserve, rather than distort incentives for efficient investments under the CESS.
  - True-up can be implemented easily with minor modifications to CESS model. No need for a separate true-up model.

Partington: Predictable problems with the trailing average cost of debt

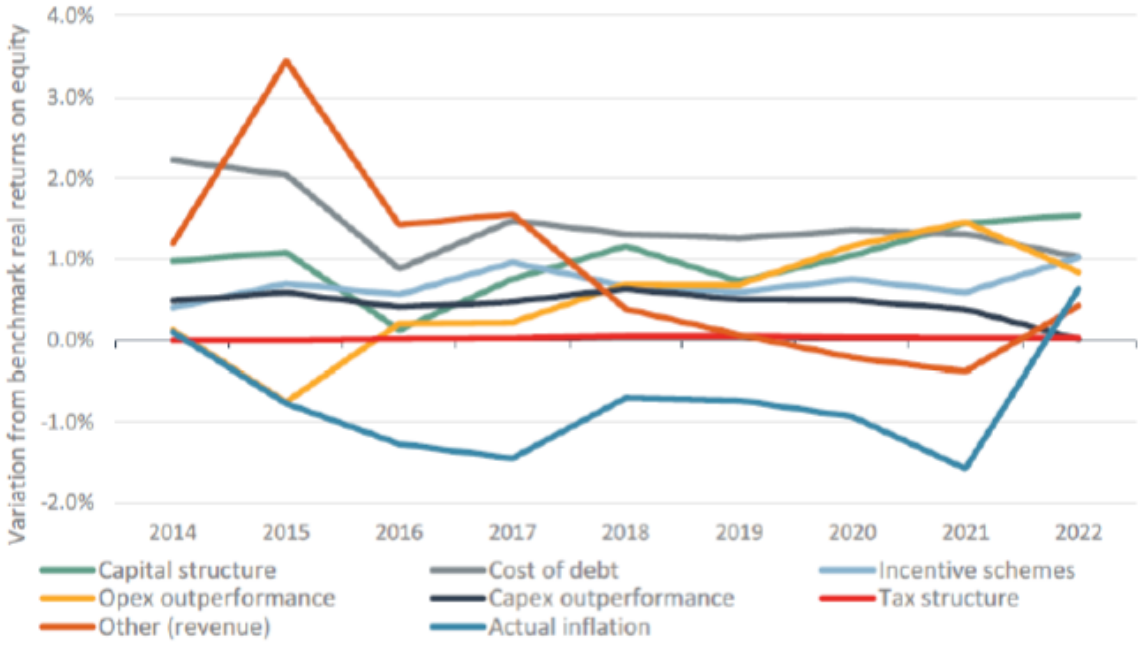
When current interest rates are above historic rates:

- The benchmark for debt costs is likely to be so tight as to be unreasonable, or impossible for NSPs to meet it.
- There is an incentive not to raise debt finance, and this constrains investment in capital projects
- The allowed ROI is too low and so:
  - NSPs are not fully compensated for their costs
  - There is a reduction in the market value of the RAB
  - There is an incentive for underinvestment
  - Credit ratings may be threatened
  - The AER's WACC is not appropriate for use as a discount rate in discounted cash flow calculations.
- Expect lobbying from NSPs
- Vice-versa for interest rate falls

Partington: Is the trailing average a success?

- Price stability?
- Tight control on debt costs?
- Good for consumers?
- Good investment incentives?
- Alternatives:
  - Return to “on the day”
  - Allow trailing average on existing RAB & “on the day” on new investment
  - Allow actual interest costs subject to a reasonableness test
  - AER alternative (cost of service) detailed RAB roll forward model
  - Use the asset beta in the CAPM

- Contribution to real returns on regulated equity (NSP performance report AER 2023)
- Cost of debt (light grey line) consistently a major or the major source of outperformance



Source: Electricity NSP performance report AER 2023.

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Third party yield curves

Eligible experts' opinion

- We support the AER's proposal to reinstate the use RBA yield curve data to set the allowed return on debt, by using spread to swap data obtained from either Bloomberg or Refinitiv to extrapolate the corporate bond yields published by the RBA to 10-year tenor yields.
- This would reduce the risk of shocks to any one of the individual curves and would mitigate against the risk that any one of the curves may cease to be published.

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Stakeholders' submitted questions

Stakeholders' questions (ENA)

- **Question 1:** If the AER's objective is 'aiming for the best possible estimate in an environment of uncertainty, based on the best available information' can the experts provide their view on whether the AER should give 0.6 any special status once new evidence is considered? Could an AER process risk being subject to 'status quo bias' through any such approach? (see AER Assessing the long term interests of consumers Position paper, May 2021, p.10)

- **Johnstone:** There is as much or more uncertainty in using betas from another country. Giving weight to the current 0.6 a pejorative like "status quo bias" does not change the innate noise in beta estimation. Trying to make beta objective is a type of psychological bias that can also be given a name from psychology.

- **Kumareswaran:** No, the current estimate of 0.6 should not be given any special status, including as a useful prior. I don't regard that estimate as reliable because it suffers from the same problem (i.e., too small a sample of domestic comparators) that the AER now seeks to address by considering international comparators.

- **Partington:** 0.6 is the existing benchmark for domestic NSPs. Consistent with a-priori reasoning. Reason/evidence of change? Weight for new evidence, f(relevance and quality). Overseas estimates for network betas? Relevant evidence? Underlying hypothesis: same population, overseas network betas = the betas of Australian NSPs. That is a hypothesis that should be tested. Status quo bias = regulatory stability.

Stakeholders' questions (ENA)

- **Question 2:** Can Associate Professor Partington set out how he has reached his 'a priori' asset beta estimate of 0.4 and clarify that under his 'Solution 4', 0.4 is the figure that would be used? (see Eligible Experts' report paragraphs [174-176], p.30, and paragraphs [444-446])
- **Partington:**
- **a)** Introspection on priors.
  - Prior = f(experience, observation, reflection).
  - Decades of experience.
  - Ex-post consistent with my equity beta estimates.
- **b)** Solution 4: Asset beta used directly in CAPM.
  - 0.4 is a sensible prior, but is it acceptable?
  - Empirically unlever historical NSP equity betas.
  - Asset betas more stable

Stakeholders' questions (ENA)

- **Question 3:** Other comparable regulators, independent experts preparing reports in relation to networks regulated by the AER, and previous iterations of the AER have all adopted asset betas that are more consistent with the evidence from international comparators than with the AER's current allowance. What do the experts make of this evidence?

- **Johnstone:** No one knows how well betas transport across countries nor is there much evidence comparing the frequency distributions of betas in different markets. Beta of a given firm's cash flow depends on which market the firm is in (it is affected by other activities in that market, the market's risk aversion, regulation etc.)

- **Kumareswaran:** The AER should consider the possibility that the existing estimate of 0.6—rather than being a reliable estimate—is the artefact of significant statistical noise and sampling error, resulting from a shrinking sample of comparators. It is striking that the equity beta allowance has fallen (from 1.0 to 0.6) as the size of the domestic comparator sample has fallen.

- **Partington:** "A provision of endless apparatus, a bustle of infinite enquiry and research, or even the mere mechanical labour of copying, may be employed, to evade and shuffle off real labour, —the real labour of thinking." Sir Joshua Reynolds 1784. Empirical data as a defence. Judicious judgement, or misjudgement, or pressure, or regulatory capture?

Stakeholders' questions (ECA)

- **Question 4:** In the Eligible Experts' report, "utility" appears 28 times while "monopoly" appears once. Unlike regulated 'energy utilities', network monopolies are protected from most risk relevant to estimating beta. How do members of the Eligible Experts propose to filter the set of international and domestic regulated utilities so that the remaining firms are comparable to pure-play network monopolies operating in Australia?

- **Johnstone:** This is new territory and few people understand the underlying theory. Lintner (1965) showed that two assets have the same beta if and only if they have the same ratio of cash flow covariance to cash flow mean. If beta is useful then its underpinnings need to be better understood (BTW there is no "pure play").

- **Kumareswaran:** Such a filtering task is impractical and likely to result in too small a sample to derive statistically reliable estimates. The best the AER can hope to do is exclude firms that derive the majority of their revenues from non-network activities—as the AER has proposed in the Discussion Paper.

- **Partington:** An intractable problem. More filters proposed ➡ possible null set. Less filters ➡ a mixture of Spaniels and Great Danes. Even with good matching of firms, there is a mismatch of equity markets.

Stakeholders' questions (ECA)

- **Question 5:** While noting the persistence and magnitude of outperformance, Partington (page 423) limits his comments in the context of the trailing average cost of debt to interest costs. The AER's return on regulated entity (RoRE) figure quoted shows the impact of gearing is also significant and the biggest single impact is the 'inflation rate variation' to the cost of debt. NSPs have outperformed the AER's assumptions about gearing and the cost of debt and have made substantial windfalls from inflation. How should the AER take this cross-check information into account during this review so that the playing-field is tilted back towards consumers?

- **Johnstone:** Inflation all gives NSPs a guaranteed return on assets as if they paid the current (CPI'd up) book value. These are sunk costs and unregulated businesses don't get this guarantee. The benefits in ROR etc. from inflation is part of why NSPs have attracted private capital and privatization.

- **Kumareswaran:** The treatment of regulatory inflation is an important issue but is beyond the scope of the RORI review. Under incentive regulation, NSPs are free to deviate from the benchmark gearing ratio and may consequently generate higher/lower returns than the allowance. Those consequences (including a change in risk exposure) are a matter for shareholders. The AER should not adjust the rate of return parameters in response.

- **Partington:** Inflation: large gains 2023, but otherwise a generally negative effect. Is observed persistent outperformance for other variables due to efficiency, random windfalls, or overly generous allowances? If the latter allowances should be tightened. For gearing see the next answer.

Stakeholders' questions (CRG)

- **Question 6:** The AER's network performance reports highlight significant and consistent (and persistent) outperformance of the regulated rate of return. Not all of this outperformance is attributable to lower realised costs of opex and debt, or rewards under the AER's incentive schemes. A significant proportion arises from something the AER calls "capital structure". (a) How has this outcome been accounted for in your advice to the AER? (b) From a consumer perspective, does this outperformance represent a fair reward for efficiencies or should this outperformance gains be shared more equitably?

- **Johnstone:** NSPs have geared up, not only to build more RAB but to leverage the regulated return on RAB. Like banks, they are safe enough to carry large debt to equity. Other business would do same if safe enough.

- **Kumareswaran:** It is incorrect to characterise this as 'outperformance'. When NSPs deviate from the benchmark gearing ratio, they take on more/less risk than is assumed by the benchmark and consequently achieve higher/lower returns than the allowance. The ex post returns simply reflect the risk taken on by the NSP.

- **Partington:** Generally, leverage affects risks and returns to shareholders but not operating performance. Except when the trailing average cost of debt (TACD) is used. TACD > r_d, increase leverage, increase RAB, increase operating revenue and net profit. A problem of the TACD.

Stakeholders' questions (CRG)

- **Question 7:** High inflation has led to substantial windfall gains for networks through the approach to accounting for inflation in the cost of debt (using a forecast inflation rate to derive a real interest rate, and then indexing allowed revenue to actual inflation). Do you believe this outcome aligns with the intent of the regulatory framework, and if not should any reforms to the treatment of inflation be considered as part of the RORI review?

- **Johnstone:** Most other business are harmed by inflation. If we want to say that NSPs are risky, and that beta needs to be higher (the unspoken intent of NSPs pushing for foreign comparisons) they should be risky.

- **Kumareswaran:** As above, the treatment of regulatory inflation is an important issue, but is beyond the scope of the RORI and the issues we have been asked to address.

- **Partington:** As above.

Stakeholders' questions (CRG)

- **Question 8:** The entire debate about how to estimate beta only arises because we have a regulatory framework that relies on the CAPM. If there is no readily agreed way to estimate beta in the absence of sufficient local data (as per the Eligible Experts' report), has the time come for the AER consider alternative approaches to the CAPM by the time of the 2030 RORI? If so, would that change the Experts' view on the approach the AER should take in the 2026 RORI?

- **Johnstone:** CAPM tunneled its way into this role via S.C. Myers in 1969 in a US regulation hearing. It looks scientific but asks regulators to forget that they drive the betas they "objectively" observe. Logical circularity causes confusion and lets in all sorts of gaming (e.g., lobbying for US betas that are generally higher).

- **Kumareswaran:** The question seems to presume that use of international data is unviable. I disagree—and so do many other regulators (and valuation experts) who use international data to estimate beta. I agree that the CAPM has shortcomings. But perhaps it is best to leave issues for the 2030 RORI review to the 2030 RORI review.

- **Partington:** This is a question worthy of consideration, and while it lies outside the ambit of our review, some comments are possible. Limited options, other asset pricing models infeasible, ditto implied cost of capital models, cost of debt plus a fixed premium begs the question of how to set the premium, ditto certainty equivalent models, using the asset beta has the advantage of greater stability of asset betas.

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Closing

How you can have your say

Next steps

- Submissions on AER Discussion Paper and Eligible Experts' Report due by 5pm (AEST) **19 December 2025**
- Submissions should be emailed to: rateofreturn@aer.gov.au

Today's slidepack will be uploaded to the AER's website

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Thank you