Eligible Experts' responses to stakeholders' questions

Stakeholder	Stakeholder's Question	Eligible Experts' Response
1. Energy Networks Australia (ENA)	Should, on a benchmark basis, the Rate of Return Instrument support cashflows or allowances consistent with the AER's final assumed credit rating? Why or why not?	• **Johnstone:** Internal consistency says that the credit rating assumed by AER should be enabled by the AER's RORI, but cash revenue won't do that if benchmark NSP leverage is too high. • **Kumareswaran:** Although the issue of financeability raised in this question was not covered within the Eligible Experts' joint report, I provide a response to it because the AER has previously used financeability assessments as a cross-check on its RORI decisions. • Yes. Suppose an NSP has geared up exactly in line with the benchmark gearing ratio, and its expenditure is exactly in line with the Post-tax Revenue Model (PTRM). In these circumstances, if the allowed cash flows are insufficient to support the benchmark credit rating assumed when setting the allowance, then there is an internal *inconsistency* in the regulatory decision. The AEMC set this out very clearly in its 2024 financeability rule change decision. • Note, if the NSP maintains gearing exactly in line with the benchmark gearing ratio, then too much leverage cannot be the explanation for a deterioration in the credit rating. The explanation must be the insufficiency of cash flows. The only appropriate solution in these circumstances is an adjustment to the regulatory cash flows—in particular, the allowed return on equity or regulatory depreciation. If the deterioration in credit rating is industry-wide, the problem is more likely to be that the allowed return on equity is too low.

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		• **Partington:** When interest rates rise and the trailing average cost of debt is used to compute the RORI, the result may be reduced cash flows that threaten credit ratings. The question then, is whether the regulator should take steps to increase cash flows, or whether the shareholders who benefited from increased cash flows in periods when interest rates had fallen should contribute more equity. • In general, I am not in favour of adjusting the allowed cash flows based only on a few financial ratios, since a significant part of credit rating assessments are based on qualitative factors. Therefore, such ratios should be considered in conjunction with the credit rating agencies' own analyses, such as those contained in their assessment of the rating outlook. It would also be important to consider whether any problem was too little cash flow, or too much leverage.
	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 do not 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. This is what prompted the Economic Regulation Authority (ERA) in Western Australia to abandon exclusive reliance on domestic comparators in its

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		2022 RORI and to rely instead on a sample of domestic and international comparators. • I note that it is also incorrect to assert that 0.6 is the only equity beta point estimate we have based on evidence from domestic comparators. As explained at para 288 of the Eligible Experts' joint report, during the 2018 RORI review, both the AER and ERA relied exclusively on domestic comparators, and considered exactly the same empirical evidence on the betas of those domestic firms. While the AER settled on a point estimate of 0.6, the ERA adopted an equity beta point estimate of 0.7 assuming a benchmark gearing ratio of 55%. That would be equivalent to an equity beta estimate of 0.79 if re-levered using a benchmark gearing ratio of 60%. In other words, another regulator that examined exactly the same evidence on domestic comparators as the AER concluded that the evidence supported a point estimate of 0.79, not 0.6. • Moreover, the ERA maintained an equity beta estimate of 0.7 (assuming a benchmark gearing ratio of 55%) in its 2022 RORI. That is, the ERA concluded that the international evidence supported the allowance it had adopted by reference only to evidence from domestic comparators in 2018. • **Partington:** The fundamental question here is what is the "best available information"? Is it the existing estimate, or new evidence, or some combination of the two? In considering the weight to be given to new evidence, this depends on the quality of the evidence and its relevance. The new evidence in the question is undefined. Without considering the specific nature of new evidence it is not possible to say

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		what weight, if any, that it should be given. If, for example, the new evidence was a stable statistical relationship between NSP betas and the betas of other Australian listed entities then that should be given some weight. • If the new evidence is overseas estimates for network betas, then it is an open question whether this is relevant evidence. There is an underlying hypothesis that overseas network betas and the betas of Australian NSPs are drawn from the same population. That is a hypothesis that should be tested. • It is clear that 0.6 is the existing benchmark for domestic NSPs and so far I have seen no evidence that this value has changed, and it is consistent with my a-priori reasoning. With respect to status quo bias, is that not synonymous with regulatory stability, which it seems all stakeholders consider desirable.
	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:** I simply asked myself what do I think is the most likely value for the asset beta of NSPs? The answer was an asset beta of about 0.4. This is my prior, it is the product of experience, observation and reflection. With more than five decades of experience in finance and a decade and a half observing network regulation there is plenty of relevant experience to draw on. It was not chosen with explicit reference to my prior estimates of NSP equity betas, but it turns out to be reasonably consistent with those estimates. • Under my Solution 4, using the asset beta in the CAPM, I was not necessarily envisaging using my estimate of 0.4, although I think that would be a sensible number to use. As Professor Johnstone argues,

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		such choices are likely to arise from discussion, negotiation, and debate. I expect NSPs would very likely argue for a higher figure, and consumers would probably argue for a lower figure. A source of empirical evidence would be to use the historical data and unlever the equity betas for Australian NSPs. I would expect asset betas for NSPs to be relatively stable and more stable than equity betas for NSPs which can change due to variations in leverage.
	Are the only possibilities arising from a 'validation' study that AER beta estimates 'were wrong all along' or that comparators do not provide 'good' estimates? How is it possible to know this without effectively assuming the correctness of one or other estimates 'a priori'? (see Eligible Experts' report paragraph [218] and p.37.)	• **Johnstone:** The idea of "beta" is to approximate the return on equity required by investors in a regulated NSP. Beta and CAPM are the instrument used to make or guide that estimate. This is not scientific measurement in the sense that there is a true physical quantity like length for which expert technicians will reach the same objective measure. Ultimately there is no objectively agreeable beta, so NSPs and consumers will always contest the regulator's estimate. The regulator uses beta estimation to get a starting point at which point regulatory judgement and argument/negotiation take over. • **Kumareswaran:** As I understand it, the validation study proposed by Associate Professor Partington would involve conducting a formal hypothesis test. If one were testing the equality of the beta distributions (as opposed to the means of the distributions), then the null hypothesis would be that there is no difference between the distribution of the estimated Australian and international betas. Any such test would need to be conducted carefully, accounting for the following considerations: • We do not have 'observations' of betas – we only have statistical estimates of betas, which themselves have a range of uncertainty around them. The hypothesis test should not treat

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		uncertain point estimates as though they were certain parameter values. In other words, the test would need to account for how much the range of uncertainty around each beta estimate contributes to the overall beta distribution for each sample; and • There are far fewer Australian comparators than there are international comparators. The smaller the sample, the greater the uncertainty around the true distribution of the underlying population, all else remaining equal. This would need to be factored into any hypothesis test performed. • **Partington:** The whole point of my comment is that these are the alternative conclusions to be reached if the estimates differ, and you do not assume the correctness of one or other of the estimates a priori. • The underlying hypothesis here is that these are two samples drawn from the same population and the alternative hypothesis is that they are drawn from different populations. A statistical test of the beta values for the two samples, such as the Mann Whitney U test, or the *t* test, can be undertaken to determine whether we reject, or fail to reject, the null hypothesis of equality of the values for the beta estimates. If the null hypothesis is rejected the estimates are different at some generally accepted level of statistical significance. You are then left to conclude that either the comparators are poor proxies for Australian NSP betas, or alternatively that the Australian NSP estimates were wrong to begin with. • If we have failed to find a statistically significant difference, the correct interpretation is that we have failed to reject the null hypothesis. However, the nature of hypothesis testing is that we have not proved the

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		estimates to be equal. A further issue is the power of the test; a weak test can fail to reject the null hypothesis even if it is false. However, if there is no significant difference, then there is a basis to proceed with the use of overseas comparators.
	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 declined. • **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. It is easier to collect data than to think carefully about what you are doing. Action often seems better than reflection. Also, the use of empirical data as evidence is a defence against criticism, even if that data is not as self-evidently relevant as it seems. As I say in footnote 28 of the report: "Is it a judicious choice, or misjudgement? Is it responding to pressure, or is it regulatory capture?" I expect the regulators believe it is judicious choice, but belief and reality

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		do not always coincide, and I expect there was a lot of pressure from the NSPs. • As I explain in my report, given an inverse relationship between asset beta and leverage, lower leverage for overseas NSPs implies higher asset betas. My question is: would NSPs be so keen on the evidence from international comparators if the asset beta estimates for overseas comparators were lower than for domestic NSPs?
	If a weighted trailing average approach is to be introduced, do the experts agree that the AER's existing approach for transitioning from rate-on-the-day debt to trailing average debt (used since 2013) should be preferred to the new approach set out in the Discussion Paper? Can the experts comment on the complexity and the likely costs of managing a debt portfolio in the manner implied by each of these mechanisms?	• **Johnstone:** Complexity is to be avoided, especially when there is no one right answer. Consistency over time favors sticking with the existing method of trailing average calculation. NSPs may do well from this or not so well and will decide how much effort they should put into achieving a lower cost of debt than that for which they are granted revenue. • **Kumareswaran:** Yes, for the reasons explained in section 3.3.2 of the Eligible Experts' joint report, I think the debt transition adopted by the AER since 2013, when it switched from the rate-on-the-day approach to the trailing average approach, would be preferable to the debt transition proposed in the Discussion Paper. • **Partington:** It is clear from my report that I believe that the simple equally weighted trailing average has undesirable properties. Therefore, I would prefer no transition back to a simple equally weighted trailing average. If, however, a transition is to be undertaken then a simpler transition is likely to be preferable to a more complex transition. • With regard to the management of debt portfolios, there is no necessary connection between the cost of capital and the management of an

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		NSP's debt portfolio. NSPs are free to choose to manage their debt portfolio in whatever way suits them. The evidence suggests that from 2013 onwards they managed their debt portfolio in a way that generated substantial profits relative to the AER's equally weighted benchmark. This is entirely consistent with their fiduciary duty to their shareholders. • If NSPs wish to hedge the cost of debt as calculated by the AER that is entirely a matter for them. Is their fiduciary duty best served by hedging, or by taking the risk that they can outperform the benchmark by adopting a different debt management strategy? Replicating the strategy of the AER's benchmark might be a safe option for management, but it is a myth that the cost of capital must be defined consistent with NSPs' debt management strategy.
2. Energy Consumers Australia (ECA)	**International comparators and equity beta** Context: In the EEJR, "utility" appears 28 times while "monopoly" appears once. Unlike regulated 'energy utilities,' network monopolies are protected from most risk relevant to estimating beta. Question: How do members of the EEJR 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:** Most utilities involve some element of monopoly, hence the need for regulation. However, I accept the broader point of the question that selecting a well-matched set of networks is likely to be an

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		intractable problem and that Australian NSPs are low risk entities. To improve the matching I suggest a range of additional filters, which I expect will be resisted since they may result in a null set of comparators. However, the information in those filters will be of interest in its own right, in identifying similarities and differences between networks both domestically and internationally. • Even if it proved possible to get good matches between domestic and international networks, there is still the problem that you also need to match equity markets with respect to composition and variance of returns. And this can rarely, if ever, be done.
	Value of cross checks to test the impact of different variables on debt financing costs and equity returns Context: 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. Question: NSPs have outperformed the AER's assumptions about gearing and the cost of debt and have made substantial windfalls from	• **Johnstone:** Inflation 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 favor. The benefits of a rate of return on sunk costs increasing with 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:** Aspects of performance variation were not part of our brief, but the trailing average cost of debt was. However, I will make two comments in respect of performance variation. With respect to inflation,

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	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?	2023 had large gains, and there were small gains in 2022, otherwise the impact of inflation was generally negative. • With respect to other sources of variation in RoRE, in most cases there was persistent outperformance. This naturally raises the question of how much of the out performance is due to continuing efficiency gains, how much to random windfalls, and how much to overly generous allowances, or some combination thereof? If overly generous allowances, then allowances should be tightened. With respect to the cost of debt, I suggest outperformance is due to an overly generous allowance, but the allowance is now naturally tightening due to a rise in interest rates. With respect to other sources of outperformance, I do not have the data to make an informed judgement. • Issues relating to gearing I discuss in answer to the next question.
3. Consumer Reference Group (CRG)	**A. Overall rate of return questions** **A1:** 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?	• **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 businesses would do the same if safe enough in cash flow and hence sure to be able to meet the loan repayments. • **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:** Our brief was to examine the allowed rate of return on investment (RORI) with particular reference to the AER's discussion

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	b. From a consumer perspective, does this outperformance represent a fair reward for efficiencies or should this outperformance gains be shared more equitably?	paper. This latter is what we decided to focus on and so the only aspect of outperformance that I considered was the cost of debt. However, as I discuss below there is interaction between the trailing average cost of debt and capital structure. • I understand that the AER's label capital structure means leverage. In the case of electricity networks capital structure has given rise to outperformance, but in the case of gas networks the effect has been underperformance. • Outperformance or underperformance from capital structure arises from divergence from the assumed leverage benchmark of 60%. In general, leverage should be a matter for the NSP's, with variation in leverage affecting the risks and expected returns to shareholders rather than affecting operating performance. If the AER used the on the day approach to determining the RORI, then it would be appropriate to simply set the benchmark cost of debt and let NSPs determine the level of leverage appropriate to themselves. • The trailing average cost of debt, however, complicates things. When the trailing average cost of debt is above the current cost of debt the incentive is to increase leverage and increase the RAB. Thereby increasing revenue and net profit. This increases the shareholders' expected return without much, if any, increase in their risk. The incentive reverses when the current cost of debt is above the trailing average cost of debt. Thus, the use of the trailing average cost of debt induces a relation between leverage and operating performance. • I think it is clear from my report that consumers have not fared well from the use of the trailing average cost of debt to date. Given a reversal in

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		the interest rate regime consumers might hope to fare better in the future. However, depending on any reweighting of the trailing average and the extent of new investment such hopes may not be realised.
	A2: 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 businesses 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 it is beyond the scope of the RORI and the issues we have been asked to address. • **Partington:** Consideration of the rate of inflation and indexing of the RAB is merited, but it lies outside the ambit of our review.
	A3. 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 ingratiated 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 that 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; it has been shown repeatedly in the finance literature to perform poorly empirically.

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		• Stakeholders should be free to propose alternative models for consideration by the AER if they wish. However, I do not think it would be appropriate to alter my advice to the AER in relation to the 2026 RORI in anticipation of alternative models that stakeholders (or the AER) may or may not propose for consideration in 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. The options seem limited as other asset pricing models are infeasible without market prices. Implied cost of capital models perform poorly and in the case of the dividend growth model, this effectively is a regression on the index with a negative slope. In any event, implied cost of capital models require market prices. The cost of debt plus a fixed premium begs the question of how to set the premium. The certainty equivalent model does discounting at the risk-free rate which is attractive, it is also attractive theoretically. The problem is determining the certainty equivalent cash flows. Using the CAPM with asset betas has the attraction of the greater stability of the asset beta relative to the equity beta, but the value of the asset beta is likely to be contentious.
	A4. With the exception of APA with its limited regulated revenues, all other networks have been delisted. Australia seems to be unique in this regard. What role, if any, do you think or suspect the regulatory framework played in motivating this mass delisting of energy	• **Johnstone:** There is a long term safety and regularity in NSP returns that resembles bonds. The regulator is obliged to ensure that NSPs stay committed to their task and to productive new investment, a kind of quasi-government stewardship over their investment that is obviously attractive to the big investors. Their investment is bound to be both safe and to grow. It includes obvious growth options that make it more valuable. They could re-list but they seem not ready to give up what

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	networks? How might your ideas or suspicions be tested?	they trust they have. Comparisons over time of their profitability and growth with unregulated businesses would be instructive. • **Kumareswaran:** The situation described in the question is not all that unique. As far as I am aware, Great Britain has only two listed firms that own energy networks and New Zealand has only one. Both countries (like Australia) have a much larger number of regulated NSPs. • Most of the private investors that have taken ownership stakes in Australian NSPs in recent years are large institutional investors or sovereign wealth funds that seek long-term returns from assets such as regulated energy networks, either to match their long-term liabilities or to satisfy their long-term investment strategies. Such investors typically have large capital pools with which to invest and, therefore, do not need to raise additional equity through public listing. • **Partington:** Companies going private is not really part of the RORI review. However, the question is relevant to the extent that such privatisation was mentioned by Professor Johnstone. • Companies go private because it is believed to provide opportunities to increase value, to reduce the costs of disclosure and public scrutiny and sometimes to increase leverage. NSPs may have gone private for any, or all, of these reasons. • It is likely to be the case that they have attracted investors who are long-term holders of the stock and who do not require the liquidity of an exchange listing for the shares. It is also likely that the NSPs consider they can raise sufficient new equity without a public share issue. A stable, low risk, and consistently profitable regulatory environment

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		involving investment in long lived assets may well be attractive to investors with long maturity liabilities which they wish to match with long maturity assets, pension funds, for example.
	B. Beta **B1.** It seems there is general agreement among the experts that there is no 'true' value of beta – meaning that every estimate is an artefact of the data and methodology applied to derive it. The choice of data and methodology relies on the AER's "regulatory judgement". But these judgements cannot be proven objectively to be right or wrong " – a reality agreed by all the experts. Given there is no objectively verifiable value of beta, and given there is no way to validate the AER's regulatory judgement, doesn't Occam's Razor imply the most efficient and transparent approach to estimating beta is the one that relies on the fewest regulatory judgements by the AER?	• **Johnstone:** CAPM beta is forward looking, it's a forecast (of the relevant cash flow parameters). Historical data estimates are used only to proxy for it. If the estimate based on data looked ridiculous, it would be discarded, so data does not trump other considerations. Ultimately data gives a proxy and the regulator uses that estimate when it's agreeable and reasonable. • **Kumareswaran:** There is a true value of beta. The problem is that it cannot be observed; it can only be estimated with uncertainty. The question is, what is the most reliable way to derive that estimate? I think it is better to rely more on data and empirical evidence (even if imperfect) than judgment. Too much judgment leads to unpredictable and opaque regulatory decisions that can undermine confidence in the regulatory framework. Confidence in the regulatory framework is essential if we want NSPs to respond properly to incentives. • **Partington:** In general, the more objective the measurement and the fewer and more transparent the judgements involved, the better. However, there are choices that must be made in both estimating and using beta, so some regulatory judgement is inevitable.
	B2. When assessing the sources of systematic risk against the design features of the regulatory framework, there can be no doubt that networks are heavily shielded from most	• **Johnstone:** NSP beta should be at the extreme low of listed companies. CAPM tells us that every time the NSPs are granted a near certain extra sum of cash, the total cash flow mean increases with no

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	sources of systematic risk. Does this not suggest that the regulated value of beta for networks can be expected to reside at the very lower end of the distribution of all sectoral betas measurable on the local market? (NOTE: this is **not** suggesting the AER's estimate of beta should be calculated using another sectoral estimate of beta. It only suggests that the AER should identify the distribution of betas of other sectors and then set its estimate at the low end of this distribution.)	change in its covariance. Thus, its beta should reduce further. The converse is also true. • This point of CAPM principle is hard wired in CAPM (see the paper by David Johnstone published by the AER). I suggest that anyone interested in understanding the direct link between the regulatory settings and the NSP's beta must understand this logic. It was explained in Lintner's original CAPM paper. See also the paper by Wharton academics Lambert, Leauz and Verrechia published in 2007 in The Journal of Accounting Research. That paper upset many people but was published in the end, against much unrest, because it was mathematically and logically correct. No one has previously bought this CAPM corollary into the regulatory debate. • **Kumareswaran:** I agree that NSPs are lower risk than the average firm in the market. However, I do not think there is a reliable way of deriving a beta estimate for NSPs by reference to the distribution of beta estimates for firms in other sectors. The judgments required to follow such an approach would be highly arbitrary and impossible to justify objectively. In my view, beta estimates of firms in other sectors provide no useful information on the true betas of NSPs. No regulator I know of adopts such an approach. • **Partington:** The view that NSPs are inherently low risk is consistent with the view I express in my report and the empirical data on utilities that I cite from Damodaran. Regulated utilities such as NSPs are low risk and are likely to be at the lowest end of the distribution of risk metrics, such as the asset beta. NSPs are also likely to have a relatively low equity beta, but not necessarily the lowest equity beta because of

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		the substantial leverage that many NSPs use. Thus, I would expect the equity beta for NSPs to be at the lower end of the sectoral distribution of betas, but not necessarily at the lowest end of this distribution.
	B3. For David Johnstone: You seem to be arguing that non-systematic (or industry-specific) risks – most prominently, regulatory risk – can alter the calculation of beta because of the impact on a firm's expected future cash flow. You refer to this as a problem of "intrinsic circularity". If in recent years the AER has extended further protections against cashflow uncertainty* then, all else being equal, would this intrinsic circularity imply beta should be lower than in the past?	• **Johnstone:** If a business (any business, not just NSP) obtains a new source of low beta cash, its new beta is the weighted average of old and new and hence lower. e.g., say the firm discovers that its new firm-specific technology works and will generate significant new cash. Its mean cash flow goes up but its covariance does not change much (because the successful technology is idiosyncratic and not dependent on the economy). Yes, this is the circularity problem. Each time the AER resets the cash flow parameters of the NSP (either the mean or the covariance with the market) the NSP's beta also changes.
	B4. For Dinesh Kumareswaran: Your arguments in support of using international comparators appears to rest on (1) it's an approach used by other regulators, and (2) it's a practical way forward in light of the insufficiency of local data. However, there are a lot of things other regulators do which the AER does not do (and vice versa) – so it's not really a strong reason. More importantly, is it really a practical way forward? After all, it introduces a lot of complexity into the	• **Kumareswaran:** I am not arguing that the AER should use international evidence *because* other regulators do. My main point is that, in a second-best world, where the choices are between (a) ad hoc rules of thumb, (b) strong assumptions that the current estimate of 0.6 is appropriate forevermore, or (c) primary reliance on international data, the last option is the best. I simply observe that many other regulators in a similar situation have made that same choice—to demonstrate that the AER would not be an outlier if it were to follow a similar approach. Yes, using data (as the AER has done to date) is more complex than simply assuming a number. But surely just assuming a number, or

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	estimation of the return on equity. This complexity lowers regulatory transparency (or rather, comprehensibility) and therefore stakeholders' ability to hold the regulator accountable for its decision. How have you judged that the benefit of including international data outweighs the downside that comes with increased complexity and arbitrary decision-making by the regulator?	applying judgment in lieu of empirical evidence, would lower regulatory transparency more?
	C. Return on debt and weighted trailing average **C1.** The AER has framed the debate about whether or not to apply a weighted trailing average in part on the risk that in moving closer to a "cost-of-service" approach it may weaken incentives for efficient financing. From a consumer perspective, maintaining such incentives only has value if the AER in practice is able to observe and adjust for efficient financing practices so that consumer share in the benefits. Noting that the key return on debt parameters (60 per cent gearing, BBB+ credit rating, 10 year trailing average approach) have not changed since 2018, and apart from the question of whether to weight the trailing average, the AER is not anticipating any change this time, do you consider there is	• **Johnstone:** The cost of service approach applied to debt (rather than a theoretical beta based market cost approach) conducted with tests for prudent borrowing, is agreeable and straightforward, at least until it has to be measured. I favor reliance on a benchmark structure with a sharing arrangement for any highly material ex post under/overperformance. • **Kumareswaran:** The best evidence I am aware of that addresses this question is the AER's analysis of the Energy Infrastructure Credit Spread Index (EICSI) during the 2022 RORI review. As I noted at paras 501 and 502 of the Eligible Experts' joint report, when the AER compared (on a like-with-like basis) the actual credit spreads paid by NSPs to the allowed credit spread: • The average outperformance over the period January 2014 to June 2024 was just 2.5 basis points, a very immaterial amount; and

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	evidence that the AER is capturing financing efficiencies for consumers? Or have we arrived at an "equilibrium" benchmark efficient financing approach?	• The average outperformance over the period January 2014 to June 2024 was just 2.5 basis points, a very immaterial amount • This suggests to me that the benchmark return on debt allowance that has been applied by the AER since 2014 has, in general, been (to borrow a phrase from Associate Professor Partington) a 'tight benchmark'. However, the question is whether this benchmark will produce the right incentives for efficient investment going forward, when some NSPs may need to raise significant debt to finance very large investment programs? For the reasons explained in section 3.3 of the Eligible Experts' joint report, I think that a weighted trailing average allowance may provide better incentives for efficient investment, going forward, than the simple trailing average allowance. • **Partington:** It should be clear from my report that I have a low opinion of the equally weighted trailing average as a benchmark for efficient financing. It should be equally clear from my report that I consider that the application of the equally weighted trailing average so far has involved substantial extra costs for consumers. • To date, the equally weighted trailing average has been a loose benchmark. Now as interest rates have risen, the benchmark is starting to tighten, and there are predictable calls for change. • Any reweighting to accommodate higher interest rates will add costs for consumers, relative to the prices they would experience if the equally weighted average was maintained.

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		• Clearly, the evidence so far is that the AER has not been capturing financing efficiencies for consumers. Equally clearly, we do not yet have an efficient benchmark, let alone an efficient equilibrium. • Moving closer to a cost-of-service model would not be such a problem if a tight benchmark were established for the allowed interest cost. Given the actual interest costs incurred since the introduction of the trailing average cost of debt, ex-post consumers would have been better off under an actual cost of service model.
	C2. The AER proposes to include a transition based on shorter term debt tranches if it implements the weighted trailing average, in order to minimise refinancing risk. Mr Kumareswaran comments[1] that the AER's proposed transition is "overly complex" and that it "is doubtful that any NSP would actually be able to match the regulatory allowance set using this approach". Instead he suggests an approach that continues to use ten year debt (although most of this debt is retired before the ten years has elapsed) to minimise the number of tranches of different tenors that the benchmark efficient entity would have to raise. In general terms:	• **Johnstone:** I see the AER approach as unnecessarily complex. There has been such a transition already that did not have all the cost and room for dispute as the AER's suggested new approach. NSPs can manage actual debt refinancing either to (i) minimize actual cost of debt, or (ii) maximize outperformance relative to the benchmark. It is likely that neither would remain consistently in the long term. • **Kumareswaran:** As the Discussion Paper notes, the debt transition proposed by the AER could involve "up to 55 overlapping debt tranches at any one time, each with its own benchmark rate of return and weight"—to transition debt raised to finance capital expenditure over a 10-year period. I find it difficult to believe that any NSP would in practice finance itself in this way to match the regulatory allowance set by the AER. The debt issuance costs associated with doing so would likely be prohibitive – especially for NSPs undertaking multiple large investment programs.

1 Expert report, p. 63.

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	a. Do you consider that an efficient entity in such a scenario would utilise different tenors of debt to help it reduce refinancing risk associated with raising a particularly large amount of debt in one year? b. Do you consider that raising ten year debt only to retire most of it before ten years has elapsed would in general be a more efficient approach than utilising shorter-tenor debt (which would typically carry a lower interest rate)? How might the AER test this hypothesis?	• I have suggested the transition the AER applied from 2013 onwards because it has already been implemented successfully for all NSPs regulated by the AER. That transition would also involve issuing fewer tranches of debt, so would avoid significant debt issuance costs, and would be simpler to implement than the transition proposed by the AER. • **Partington:** The RORI as its name implies is intended to give the allowed rate of return on investment (assets). It is not called the allowed rate of return on financing. The use of the required rate of return on debt and equity is just a convenient way of measuring the required return on assets. It is the cash flow from the assets that provide the cash to service the financing. Thus, the issued securities inherit the risk return characteristics of the assets. Causality flows from assets to financing, not the other way around. As I explained earlier, it is a myth that the cost of capital must be defined consistent with NSPs' debt management strategy. The cost of capital will be determined by the nature of the assets. • I am not arguing that financing choices are unimportant. Clearly, it makes sense to manage refinancing risk by having debt of different tenors. Also financing choices can have side effects on the cost of capital under some circumstances. However, the effects of financing choices on the cost of capital are generally second-order effects. • As a consequence of the foregoing, I have long regarded debates about matching the financing strategy to the cost of capital, or the necessity of hedging the cost of debt, as something of a red herring. However, once the AER moved from using the market's current cost of debt to the use

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		of a trailing average cost of debt, they gave greater weight to the red herring, since their debt allowance defined a financing strategy. • Some, possibly many, NSPs will make the choice to hedge, at least partially, the AERs, trailing average cost of debt. In which case it will be easier to hedge a simple transition than a complex one. However, hedging is a choice, it is not mandatory. Neither in my view is any particular financing strategy relevant to determining what the required return on investment (assets) should be.
4. CRG (public forum question)	**For Dinesh Kumareswaran:** If the extra returns are due to higher actual gearing, then the benchmark credit rating is likely too low, since that is derived from actual credit ratings, which are based on actual gearing. Do you agree?	• **Kumareswaran:** In general, I agree that there should be consistency between the benchmark gearing and benchmark credit rating assumptions adopted by the AER. The problem is that there is currently no good evidence on how the actual gearing of the NSPs compares to the benchmark gearing ratio. Hence, the observations in the AER's annual Network Performance Reports (which I think is what this question alludes to) that NSPs have generated higher returns by adopting capital structures that differ from the benchmark gearing ratio are, unfortunately, misleading. This point requires further explanation: • The benchmark gearing ratio adopted in the RORI was primarily determined by considering what the AER referred to as the 'market value' of gearing of the nine domestic comparator firms – consistent with finance theory.[2] That is, the numerator of the gearing ratio was computed using the book value of the comparator's debt, and the denominator was computed as the sum of the book value of debt and

[2] For a discussion of this, see AER, Rate of Return Guideline, Explanatory Statement – Appendices, December 2013, Appendix 7.

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		the market capitalisation of the firm. The latter is important because market capitalisation is only available for listed firms. Since the nine domestic comparators were listed on the Australian stock market, market capitalisation data were available for those companies. • The AER has maintained this approach whenever it has reviewed its estimate of the benchmark gearing ratio. It is noteworthy that some stakeholders have previously proposed that the AER should determine the benchmark gearing ratio by reference to NSPs' debt-to-RAB ratios (i.e., the so-called 'book value' approach). However, the AER has consistently affirmed (correctly in my view) that it should rely on the market value of gearing rather than the book value of gearing, because the former is more consistent with finance theory.[3] Hence, the benchmark gearing ratio of 60% primarily reflects the AER's assessment of evidence on the market value of gearing. • However, in the annual Network Performance Reports, the AER measures NSPs' capital structures using the debt-to-RAB ratio.[4] In other words, in those reports, when the AER compares NSPs' actual capital structure to the benchmark gearing ratio and concludes that some NSPs have adopted gearing ratios above the benchmark gearing ratio, the AER is making an apples-with-oranges comparison. In the annual Network Performance Reports, the AER seems to be effectively assuming that an NSP's market value is proxied by its RAB. This is a

[3] Again, see AER, Rate of Return Guideline, Explanatory Statement – Appendices, December 2013, Appendix 7.

[4] This is explained very clearly in AER, Electricity network performance report, September 2021, p. 70.

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		strong assumption, which the AER itself has rejected previously when declining to adopt the book value approach to measuring gearing. • In fact, we have no idea whether (on the basis of an apples-with-apples comparison) NSPs have in fact adopted a different capital structure to the benchmark gearing ratio, because none of the NSPs (except those owned by APA Group) are listed anymore. • If it were the case that NSPs have adopted a different market gearing ratio than the benchmark gearing ratio, then I would agree with the AER's explanation that the resulting impact on returns reflects the risk exposure associated with adopting a different capital structure.[5] The key point though is that there is no evidence either way that NSPs have adopted actual capital structures (on a market value basis) that differ from the benchmark gearing ratio.
5. New Zealand Commerce Commission (public forum question)	**For Graham Partington:** Understand your concerns about the incentives to increase leverage / expenditure when prevailing rates are lower than a TACD allowance. Would you view this as a problem as well for an "on-the-day" approach as prevailing rates drift away from the regulatory allowance throughout the regulatory period? If so, do you think this is partially mitigated by a more frequent reset of	• **Partington:** Yes, if the prevailing interest rates drift away from the initial on the day rate then this could cause problems. The solution would be annual updates for the cost of debt, ideally with updates for equity also, but the latter is more difficult. Of course, there would likely be a chorus of complaints about the difficulty of hedging and infeasible financing strategies. However, hedging is a choice it is not mandatory. Similarly, the financing strategy story, as I explain in other answers, I regard as a red herring.

[5] See, for example, AER, Electricity network performance report, September 2021, p. 68.

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	the regulatory allowance to match these new rates?	