Network of Illawarra Consumers of Energy

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AER Rate of Return Instrument 2022– Term and Financeability

July 2021

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Summary

This submission is made by the Network of Illawarra Consumers of Energy (NICE), a recently formed entity advocating for the energy transition to a net-zero carbon future to be managed with the interests of consumers at heart. In it, we respond to the Australian Energy Regulator's (AER) consultations on the term of instruments to be used to determine components of the Allowed Rate of Return (ARoR) and issues that have been raised about cashflows in a low interest rate environment.

The determination of the ARoR is a matter of judgement, and there is no 'scientific' mechanism that can substitute for this judgement and provide a clear choice for the AER. It is important to move away from discussion of the ARoR as if we are financing a single large project rather than determining the return necessary for a business which is actively making capital management decisions on a continual basis.

The foundational principle of the 'Building Block Model' (or the RAB model in its original UK formulation) is the guarantee of Financial Capital Maintenance (FCM). So long as the two equations that define the model (captured in the PTRM and the RFM) are followed, any schedule of depreciation will deliver FCM.

The terms used for the underlying series used to develop return on equity and debt should be the same. The use of the same term as the estimate of expected inflation is preferable but this is less important than alignment of the terms for both forms of capital. There is no reason to move away from the ten-year term and the ten-year trailing average approach for return on debt, and therefore ten years should continue to be used for return on equity.

We are experiencing a low inflation environment, but there is nothing artificial about it. It is the consequence of rate targeting by the RBA given effect by RBA market interventions. However, as negative real risk-free interest rates appear to be inconsistent with any understanding of interest, we do support the inclusion of a floor to the level at which return on equity can be set.

The alignment between return on debt and return on equity should also not only apply to the term of the underlying series used for estimation, but also to the application of the trailing average approach to return on equity. If remaining cashflow impacts if they are an impediment to financeability can be addressed by allowing accelerated depreciation, but no financeability metrics or tests should be introduced.

The responses in this submission address the matters in the Draft Working Papers and we reserve judgement on all of them until the final RoRI is made. The AER's decision on the ARoR is a 'decision as a whole' and rests on judgement on the interaction of components used to derive a value of the ARoR as much as it does on the judgement about each element.

Contents

Glossary

AEMC	Australian Energy Market Commission
AER	Australian Energy Regulator
ARoR	Allowed Rate of Return
ASX	Australian Stock Exchange
Beta	Parameter used in the CAPM to determine the relative volatility of a financial return compared to the market return
Black CAPM	A version of the Black CAPM that says the zero-Beta asset earns a margin over the risk free rate.
Building Block Model	The UK RAB Model as adopted by Australian regulators (Victorian Office of the Regulator General, IPART and AER)
CAPM	Capital Asset Pricing Model
Collective	The collective of energy ministers that has previously gone by the names of the Ministerial Council on Energy, the Standing Committee on Energy and Resources, and the COAG Energy Council but now apparently is the National Cabinet Energy Committee and the Energy Ministers Meeting
CPI	Consumer Price Index (Australian measure of inflation)
CPI-X	Australian implementation of the UK RPI-X regulatory framework
CRG	Consumer Reference Group
DNSP	Distribution Network Service Provider
ECA	Energy Consumers Australia
ECSS	The Energy Consumer Sentiment Survey conducted by Energy Consumers Australia
FCM	Financial Capital Maintenance
IPART	Independent Pricing and Regulatory Tribunal (NSW regulator)
MRP	Market Risk Premium – used in the CAPM to measure the amount by which the return on a market portfolio of assets exceeds the risk free rate.
NEL	National Electricity Law
NewReg	A project conducted jointly by the AER, Energy Networks Australia and Energy Consumers Australia to explore a less combative revenue determination process.
NICE	Network of Illawarra Consumers of Energy
PUC	Public Utility Commission
PTRM	Post-Tax Revenue Model
RAB	Regulatory Asset Base
RAB Model	An approach to regulation first introduced by Ofwat in 1992 as a replacement for RPI-X to ensure Financial Capital Maintenance
RBA	Reserve Bank of Australia
RFM	Roll Forward Model
RIIO	Revenue = Incentives+Innovation+Outputs; form of economic regulation in the UK introduced as an extension of the RAB Model
RORI	Rate of Return Instrument
RPI	Retail Price Index (UK measure of inflation)
RPI-X	Form of incentive regulation introduced in the UK as utilities were privatised
STPIS	Service Target Performance Incentive Scheme

TFP	Total Factor Productivity, used to determine X in some versions of CPI-X or RPI-X price caps
WACC	Weighted Average Cost of Capital

Introduction

NICE

The Network of Illawarra Consumers of Energy (NICE) is a recently formed informal network advocating for the energy transition to a net-zero carbon future to be managed with the interests of consumers at the heart.[1] This necessary transition needs to occur at least cost to consumers while maintaining reliability and security of energy services, appropriate consumer protections for essential services and a just transition for affected workforces.

We believe there is a role for regionally based advocacy within the context of nationally consistent energy policy. The choice and options for energy supply do differ by geographic region having regard to different climatic conditions affecting demand and supply options, and different risk factors impacting on resilience planning. This submission has been prepared by David Havyatt who is the sole author.[2]

We appreciate the opportunity to comment on two papers released by the Australian Energy Regulator (AER) as part of its making the 2022 Rate of Return Instrument (RoRI). The two papers are the *Rate of return: Term of the rate of return - Draft working paper* of May 2021 (the Term Paper) and the *Rate of return and cashflows in a low interest rate environment - Draft working paper* of May 2021 (the Cashflow Paper and together the Papers). As these are the first working papers in the series that NICE has commented on, we have combined them into one submission because there are general issues in relation to the RoRI that we wish to comment on.

The submission has two substantive sections. The first covers the background to the current consultation. In this section we emphasise the role of judgement in determining the Allowed Rate of Return (ARoR) and the importance of the AER in not being seduced into believing that some accepted theory of finance that can determine the appropriate value. We then explain how the investment decision of the firm needs to be understood as an ongoing process of capital management rather than as a single decision about an investment. We also explain how other elements of the regulatory framework contribute to achieving the balance between price and service quality that current and future consumers desire.

In the second substantive section we consider the issues raised in the Papers. In brief we believe the term for underlying instruments for both debt and equity should be ten years, that the trailing average approach be introduced for equity and that a minimum real return on equity be set. We do not support the introduction of financeability tests but do support allowing regulated businesses to vary their depreciation schedules to manage cashflows.

Any questions on this submission should be directed to [redacted]

[1] The network has not yet started actively recruiting participants.
[2] Mr Havyatt was employed as Senior Economist at Energy Consumers Australia from October 2015 to August 2020. For the avoidance of doubt, nothing in this submission is the position of Energy Consumers Australia.

Background

The ARoR critically depends on 'Judgement'

The Allowed Rate of Return (ARoR), which is also referred to by the means by which it is derived, i.e. the Weighted Average Cost of Capital (WACC) (see NEL s18I(4)) was the most heavily disputed element of energy network revenue determinations. As part of its review of the Limited Merits Review framework the Collective of Energy Ministers (the Collective)[3] decided to place the determination of the Allowed Rate of Return in a binding instrument to be made periodically.[4]

The author was a member of the Consumer Reference Group (CRG) for the making of the 2018 RoRI. The author was also interviewed for the Brattle report on stakeholder feedback on the 2018 process.[5] The Brattle report included a comment that was clearly a critique of the expert selected by Energy Consumers Australia, being:

> *Some stakeholders raised the issue with experts not being well informed about the process, impeding their ability to provide constructive opinions. It was important that all experts should be committed to the task at hand within the terms of the prevailing paradigm; however, this did not appear to be the case. Stakeholders noted that having an expert questioning the prevailing paradigm was not an appropriate use of time or useful to advance the debate.*

These stakeholders have possibly not studied sufficient philosophy of science to understand that Thomas Kuhn introduced the concept of a 'paradigm' to explain why the 'falsification' theory of Karl Popper was a misdescription of science. Kuhn noted that scientists held to theories long after the first empirical 'anomalies' were observed, these paradigms only succumbing to change under a scientific 'revolution.' Paul Feyerabend later expanded this observation to note that this state of applying theories despite contravening empirical evidence was universal, coining the phrase 'Anything Goes.' This epistemological relativism has since been adopted by many 'critical theory' studies that bedevil the social sciences.[6]

The criticism, in this case, is particularly unfounded as the analysis that was being made was not outside the prevailing paradigm but was within it. The position advanced was that those using the Capital Asset Pricing Model (CAPM) were misusing it. The source of the misuse is that the cashflows of a regulated business do not exist independently of regulatory decisions. This has

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[3] As the relevant meeting of Energy Ministers has previously had three names and now officially meets as two separate entities, NICE refers to all of its incarnations as the Collective of Energy Ministers, and the Collective.
[4] See https://energyministers.gov.au/publications/binding-rate-return-guideline-1 Somewhat bizarrely there subsequently was no need for making the instrument binding since the Australian Government acted unilaterally to abolish Limited Merits Review (LMR) by the simple device of stopping the Australian Competition Tribunal (ACT) from hearing reviews.
[5] https://www.aer.gov.au/system/files/Stakeholder%20Feedback%20on%20the%20AERs%20Process%20for%20the%202018%20Rate%20of%20Return%20Instrument.pdf
[6] See Kuhn, TS 1962, *The structure of scientific revolutions*, University of Chicago press. Feyerabend, P 1975, *Against method*. Popper, K 1959, *The logic of scientific discovery*, Routledge. Popper,K. 1963, *Conjectures and refutations: The growth of scientific knowledge*, Routledge.

two consequences. The first is a kind of impossibility result, the regulator can only observe in market returns investors' expectations of the regulator's decision. The second goes more to the actual theory of CAPM as a mean-variance model, as a decision of the regulator to increase the expected return without changing the variance should reduce the associated asset Beta. This latter point means that consideration of the allowed rate of return should not occur independently of other decisions in the regulatory model, such as the operation of incentive schemes.[7]

Ultimately no recourse can be found for the regulator in theory or empirical studies that will clearly identify the 'right' allowed rate of return. The AER concedes this point in the Papers writing in the Cashflows Paper:

> *Estimating the rate of return is a complex task. We estimate the returns required by investors in view of the risks associated with energy network companies compared to their other investment opportunities. We make this judgement by examining a broad range of evidence including financial market data, models of financial returns, the latest investment knowledge and the views of all stakeholders.*

And writing in the Term Paper:

> *Estimating the rate of return is difficult and contentious. It requires regulatory judgement to assess the complex and sometimes conflicting evidence; and to engage with finance theory, academic literature and market practice. There is no one 'right answer' to be found.*

The AER is using a series of Working Papers to analyse some of the 'sometimes conflicting' evidence and various theories by breaking up the decision into a series of component parts. This approach presents a significant risk. How the AER decides on the use of a model, for example, has implications for other issues that can be raised.

In the current context the decisions made in the *Rate of return CAPM and alternative return on equity models Final working paper*[8] preclude some of the subsequent that has occurred in the Cashflow Paper and the public forum. The AER does not accept the Black CAPM and its claim that the zero Beta asset has a higher return than the Government bond rate. The AER does not accept the Wright approach and its speculative conclusion that there is an inverse relationship between the risk-free rate and the Market Risk Premium (MRP).[9]

In the essential tension between breaking the analysis into tractable work objects and reaching a 'decision as a whole', we believe the AER should not regard any position on a component as 'final' until it is making a decision on the whole instrument.

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[7] See Johnstone, D & Havyatt, D 2021, 'Sophistry and high electricity prices in Australia', *Critical Perspectives on Accounting*, vol. In press for the detail of this critique.
[8] https://www.aer.gov.au/system/files/CAPM%20and%20alternative%20return%20on%20equity%20models%20-%20Final%20working%20paper%20-%2016%20December%202020.pdf
[9] That the 'Wright approach' occupies so much time in regulatory proceedings is inconsistent with the lack of published academic support for the thesis. It looks like the ultimate argument from self-interest.

Why the ARoR matters

In both papers the AER provides the traditional arguments about why the ARoR matters. If it is too high investors in regulated network businesses will be over-compensated for risk and managers will have an incentive to over-invest in network assets. These result in current and future consumers paying too much for energy services. If it is too low investors will be under-compensated for risk and so managers will be unable to attract capital necessary to maintain quality (which we use to include technical quality of the supply (e.g., voltage, gas pressure), customer service, reliability, and safety) and consumers will suffer.

Put more simply the ARoR needs to be set at the level which promotes the long-term interests of consumers by ensuring prices are as low as possible while delivering the quality of service which consumers are willing to pay for. The CRG for the 2018 RoRI noted that the results from Energy Consumers Australia's *Energy Consumer Sentiment Survey (*ECSS) revealed that consumers were far happier with the quality of their services than they were with the value for money. In its final decision the AER noted the evidence that consumers were more concerned about price and were prepared to risk some reduction in reliability for lower prices.

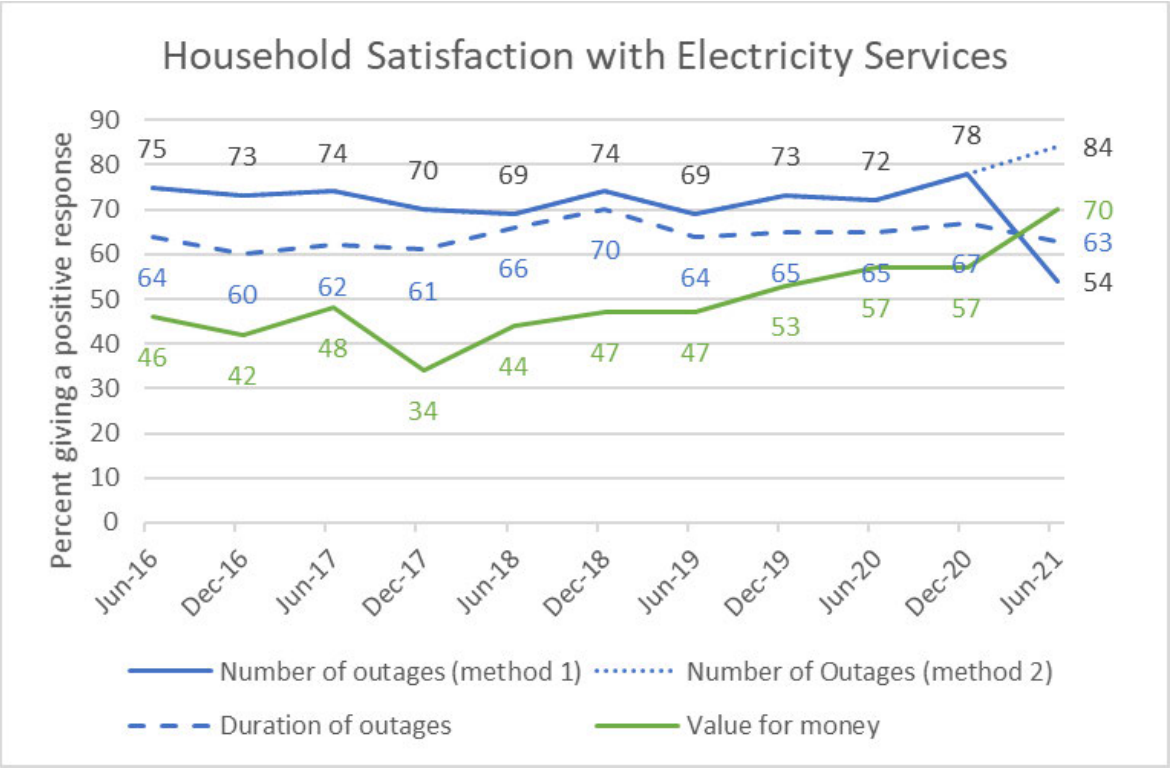

Figure 1: Household satisfaction with price and reliability of electricity supply.

Keen followers of the ECSS will note that since 2018 there has been a growing satisfaction with value for money as prices have declined without much change to satisfaction with reliability. Figure 1 provides the proportion of consumer respondents giving a positive response to questions about their satisfaction with value for money, number of outages and duration of

outages for electricity.[10] A case can be made that the balance between price and reliability has been addressed.

However, it is not only the ARoR that performs the function of ensuring appropriate reliability. Firstly, the regulated businesses are presented with an opportunity to earn rent by improving the efficiency of their operations (reducing costs) and secondly the businesses have an opportunity to be directly compensated for making improvements in quality (through STPIS and other Small Scale Incentive Schemes such as the Customer Service Incentive Scheme introduced as part of NewReg at AusNet).

NICE has proposed in our submission to the Australian Energy Market Commission (AEMC) on Distribution Network Service Provider) DNSP charging for export that we see benefit in relaxing the rules component of incentive schemes and instead allowing the incentive schemes that apply to be negotiated between a DNSP and its consumers. How these incentive schemes are designed then has implications for the ARoR, a scheme that is symmetrical in upside and downside risk and reward will increase variance of cashflows and require an increases cost of equity. A scheme that is asymmetrical and is biased towards paying an incentive with no change to the ratio of variance to expected revenue will require a lowering of the ARoR.

Capital Management

We note that the AER refers to the need of the regulated businesses to raise new capital to finance investment. This is misleading.

The regulated businesses are not really making decisions about raising new capital for new investments, they are mostly making ongoing marginal decisions about capital management. This includes rolling over debt finance and determining how much of the return on and of capital to return to shareholders in dividends or share buy backs.

That only one electricity network is directly listed on the ASX makes it hard to have any visibility of these decisions. In general, if the regulated firms have information that could inform the regulatory process and they do not make it freely available then one can reasonably infer that the information does not support any case they might make. We apply this principle in the case of the regulated businesses – there is some advantage they receive from not being listed that has a direct impact on regulatory decision making.

Of course, the networks could (or maybe should be required to) publish financial accounts as if they were listed entities.

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[10] Data drawn from Energy Consumers Australia's ECSS https://ecss.energyconsumersaustralia.com.au/downloads/ Note that prior to June 2021 the question on number of outages was asked of all respondents, whereas in June 2021 it was only asked of households who said they had had an outage. The graph method 1 is the raw ECSS data, method 2 manufactures a comparative number by assuming all households that had no outage were satisfied with the number of outages.

The Purpose of the Building Block Model

Regulation of utilities by independent commissions is an artform developed in the United States since the first Public Utilities Commission (PUC) was created in Wisconsin in 1907. Following on from the *Hope* case this framework settled into the familiar rate of return (or cost of service) regime we know today.

The core elements of this regime are periodic rate cases requested either by the utility or the consumer advocate (a function located inside executive government). (For reasons of information asymmetry rate cases are more frequently requested by the utility.) The PUC sets rates for each service. *Hope* introduced the 'end results doctrine' that 'determined that any method of regulation that results in a balancing of the interests of customers and stockholders is permissible.' The focus turned from valuing the assets of the utility to using the depreciated historic costs and then determining prices that provided 'the utility the opportunity to recover its actual legitimate or prudent costs plus a fair return on capital investment as measured by the cost of obtaining capital in a competitive capital market.' [11]

The calculation of the Total Revenue Requirement is simply the same equation we call the Building Block Model – Revenue = Return on (Depreciated Historic Cost) assets +Return of capital (Current Period Depreciation) + Operating Costs +Taxes.

When the UK led those regions that had employed Government ownership as the form of regulatory control of utilities through privatisation, they introduced the 'price cap' regime that is variously described as 'CPI-X', 'RPI-X' and 'incentive regulation.' It isn't the only regulatory regime that provides for incentives – indeed as early as 1967 Baumol had observed that regulatory lag in rate of return regulation provided an incentive for cost saving and in 1970 Kahn observed that all regulatory regimes create incentives.[12]

The 'architect'[13] of the scheme Stephen Littlechild was motivated by several factors, foremost of these was a desire to avoid 'burdensome and costly' rate of return regulation. A secondary reason applied particularly to telecommunications was the ability to only regulate that part of the business (local telephony) that would not be subject to competition.[14]

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[11] McDermott, K 2012, 'Cost of service regulation in the investor-owned electric utility industry', Edison Electric Institute, pp. 3-4.
[12] Baumol, WJ 1967, 'Reasonable Rules for Rate Regulation: Plausible Policies for an Imperfect World.', in A Phillips & OE Williamson (eds), *Prices: Issues and Theory, Practice, and Public Policy*, University of Pennsylvania Press, Philadelphia pp. 108-23.
Kahn, AEAE 1970, 1971, *The economics of regulation : principles and institutions*, vol. 2 volumes in 1, MIT Press.
[13] AS Littlechild himself notes the RPI-X proposal was actually a scheme originally designed by merchant bankers working for BT – see
Littlechild, S 2003, 'The birth of RPI-X and other observations', paper presented to The UK Model of Utility Regulation London
Littlechild, S 2014, 'RPI-X, competition as a rivalrous discovery process, and customer engagement–Paper presented at the Conference The British Utility Regulation Model: Beyond Competition and Incentive Regulation?', *Utilities Policy*, vol. 31, pp. 152-61.
[14] Littlechild, S 1983, Regulation of British Telecommunications' Profitability: Report to the Secretary of State, Department of Industry, London.

While the prospect of RPI-X convinced the Thatcher Government that it could proceed to privatisation of other utilities without the need for costly rate of return regulation.[15] That proved not to be the case. As Stern has noted the size of the UK regulators has grown dramatically and, more importantly, the challenge of resets. As he notes[16]:

> *Resetting in an RPI-X price cap e with the associated need to consider explicitly the cost (and value) of capital e has led to the rise in models which are probably best considered as a form of forward-looking, incentive-based rate of return regulation.*

The development to accommodate resetting was the RAB model, first developed by Ofwat in 1992.[17] The RAB model was specifically introduced to ensure Financial Capital Maintenance (FCM) though UK regulators continued to regard their regulatory model as RPI-X until the introduction of RIIO.[18]

In Australia both the Office of the Regulator General in Victoria and IPART in NSW adopted the RAB model as developed in the UK labelling it the 'building block approach.'.[19] IPART explicitly contrasted it to the 'TFP approach' where X is simply determined by measuring industry wide Total Factor Productivity improvement. The requirements of both forms of CPI-X were considered by the Expert Panel on Energy Access Pricing who noted that 'A potential obstacle under the existing legislative framework to the development of TFP-based control setting methods…is that such a method may not satisfy the requirements…to provide a reasonable opportunity for [an] operator to recover the efficient costs of providing services.'[20]

The current legislation only specifies that a 'form of CPI-X control' be used, the Rules impose the obligation to use the building block approach. The building block approach itself is captured in two simple equations.[21] The first (that underpins the Post Tax Revenue Model or PTRM) is exactly the Total Revenue Requirement as it appears in US rate of return regulation:

$$R_t = r_t K_{t-1} + O_t + D_t$$

Where:

> R_t is the maximum allowed revenue in period t,
> r_t is the allowed regulated rate of return or "cost of capital" in period t,

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[15] Parker, D 2009, The Official History of Privatisation Vol. I: The formative years 1970-1987, Routledge.
—— 2012, The Official History of Privatisation, Vol. II: Popular Capitalism, 1987-97, Taylor and Francis.
[16] Stern, J 2014, 'The British utility regulation model: Its recent history and future prospects', *Utilities Policy*, vol. 31, pp. 162-72.
[17] Bolt, C 2014, 'UK experience of utility regulation since 2003 and outlook', *Utilities Policy*, vol. 31, pp. 173-7.
[18] See https://www.ofgem.gov.uk/energy-policy-and-regulation/policy-and-regulatory-programmes/rpi-x20-review
[19] ORG-Vic 1998, 2001 Electricity Distribution Price Review - Consultation Paper No.1: Framework and Approach, Office of the Regulator-General, Victoria.
IPART 1999, Regulation of Electricity Network Service Providers: Incentives and Principles for Regulation - Discussion Paper, Independent Pricing and Regulatory Tribunal of New South Wales.
[20] Beale , R, Houston, G, Kenny, P, Morton, E & Tamblyn, J 2006, Expert Panel on Energy Access Pricing: Report to the Ministerial Council on Energy.
[21] Biggar, D 2004, 'Incentive regulation and the building block model', paper presented to Australian Conference of Economists, Sydney, Australia, https://editorialexpress.com/cgi-bin/conference/download.cgi?db_name=ACE2004&paper_id=133.

K_t is the closing "regulatory asset base" for period t,
O_t is the operating expenditure and
D_t is the "depreciation" or "return of capital".

For the sake of simplicity, we are considering taxes an operating cost – otherwise they simply need to be another addition.

The second equation guarantees Financial Capital Maintenance and 'rolls forward' the regulatory asset base (and hence is captured in the Roll Forward Model (RFM)):

$$K_t = K_{t-i} + I_t + D_t$$

Where:

I_t is the capital expenditure in period t.

This specification of the model has been laid out to demonstrate that any schedule for depreciation will ensure Financial Capital Maintenance.

Response to the Papers

Term

The AER in its 2018 RoRI adopted a ten-year term for both estimates of return on equity and return on debt, at which stage a ten year term had been chosen for estimating expected inflation. Consequent to the change the AER is considering whether consequent, or other, changes should be made to the terms used in estimating the ARoR.

The AER has posed seven questions on this topic. These questions and our shorthand responses appear below. The reasoning will follow.

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

We think ideally they should, but other considerations are a higher priority.

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

Yes.

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

It should be longer and should be ten years.

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

The current approach.

Question 5: what is the appropriate term of debt given the form of the return on debt (in your response to question 3)?

Ten years

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

No

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

There should be no transitional arrangements.

Our reasoning runs in reverse order to the way the questions have been asked. We begin by repeating the observation in the background that the businesses aren't primarily raising new finance for new projects, they are continually engaged in a process of capital management.

Ultimately these are long lived investments and the individual capital raising decisions are based on a question of whether it is debt or equity that should be raised. While clearly short-term financing needs (i.e., evening out cashflow) might require some short-term debt instruments these mostly arise in relation to a cost element which is not included in the PTRM, (i.e., the cost of financing changes in cashflow.)

While an economic purist would argue that a 'point in time' estimate of the ARoR was appropriate for a single investment, this is not the case for businesses managing capital on an ongoing basis where the much, if not the majority, of capital expenditure is on replacement of depreciated assets. It is this realisation that justifies the trailing average approach to the cost of debt…the business is continually rolling over debt and increasing or decreasing debt in relatively small amounts.

Since the introduction of the trailing average approach to the cost of debt we believe there is a significant evidentiary hurdle to be cleared before any change can be made to this arrangement, especially the term. We don't think that case has been made especially since the EICSI and the WATMI can equally well be used simply to determine what ten-year series best aligns with the observed debt activity.

This provides the reasoning for responses to questions four, five, six and seven.

Turning now to the question of the return on equity, we note that the AER continues to favour an 'on the day' approach. This is inconsistent with our observation that the businesses are primarily engaged in capital management not raising new investments for new network investment. Accordingly, we believe the trailing average approach used for cost of debt should also be applied to cost of equity and the same term used for both, which we have previously argued should remain ten years.

This need to implement the same trailing average approach for equity as is used for debt therefore provides our reasoning for the answers to questions two and three.

Finally, it was our position that the term for expected inflation should stay aligned to the terms used rate of return. However, this was a one-way relationship. There is no reason at all why the term for rate of return should be aligned to the changed term for expected inflation.

Cashflows in a Low Interest Rate Environment

The AER has not posed specific consultation questions on this topic. At the start of the Cashflow Paper they do state three rhetorical questions which we will respond to in turn.

Q1. Are we in a low interest rate environment?

> Clearly we are in a low interest rate environment. It is not outside the bounds of experience but is significantly lower than has been the case when previous rate of return decisions were made.
>
> These rates are not, however, 'artificial' as used in the title of the paper by Frontier Economics for some Victorian DNSPs. Importantly they are rates determined by the interventions of the RBA. It has been suggested by Energy Networks Australia[22] that interest rates are determined by markets saying:

[22] https://www.energynetworks.com.au/news/energy-insider/2021-energy-insider/the-fall-of-bonds-never-say-never-again/

> *The risk-free rate is supposed to be a market determined rate, yet the RBA currently holds 20 per cent of all government bonds and it expects to own about 30 per cent by later this year.*

The risk-free rate is still determined by markets, and the price applied by that market is determined by supply and demand characteristics. Historically that has been determined by supply characteristics, but now by demand characteristics. But where we are today is no different to where we have been at any time since the RBA was given a remit to target an inflation band – the RBA targets an interest rate and participates in the market to achieve that outcome.

It is worth noting here that the RBA is taking these steps because of its desire to return inflation back to the target band. That the RBA would take such steps has previously been outlined in Energy Consumers Australia and NICE submission in expected inflation.

While these rates are neither artificial nor potentially unusual, they do appear to potentially defy logical explanation. This is particularly the case where they result in negative real interest rates. Such rates aren't consistent with the underlying theory of interest, that consumers have a time preference for current consumption[23].

Q2. What are the consequences of interest rates being low?

Low (risk free) interest rates clearly imply that money is cheap and typically businesses in competitive markets use such periods to bring forward investment and households bring forward expenditure. Indeed, it is the desire to induce such behaviour that motivates central banks to lower interest rates.

For regulated businesses where revenue (prices) is regulated using any version of a building block formula the business will experience a lower than average cash flow. Businesses in competitive markets do not face this constraint, their prices do not rise and fall with interest rates. While this is partially explained by theory that prices are set to equal short run marginal costs, in practice prices at equilibrium do include recovery of fixed costs. As described above these businesses use excess cash flows during low interest periods to either invest more or return capital to shareholders. In periods of high interest rates, they reduce capital expenditure.

The equivalent behaviour for a regulated firm during periods of low interest rates if they wish to maintain cashflows is to bring forward depreciation and use the excess cash (that is, not required to compensate shareholders for return on capital or new investment) as a capital distribution (a share buyback).

The fundamental question is whether the AER will or should allow the networks to accelerate depreciation. As we noted earlier, any depreciation schedule will deliver

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[23] As first developed by Fisher, interest is an expression of time preference or human impatience. A negative interest rate implies humans would overall prefer to obtain goods in the future over the present. See Fisher, I 1930, *The Theory of Interest*, 1974 Reprint edn, Augustis M Kelley, Clifton.

Financial Capital Maintenance (which the AER describes as the NPV=0 criterion). In the Cashflow Paper the AER writes:

> *While bringing forward cash flows to address financeability may be net present value neutral, we are concerned such an approach results in current consumers paying for more of the regulatory asset than they consume in a present value sense, while future consumers will pay less. This raises intergenerational equity considerations.*[24]

The AER also notes that allowing firms to accelerate depreciation has resulted in worsening financeability metrics in future years.

The AER position is, however, wrong on both counts. While the approach to depreciation means that the same amount is recovered from consumers (in real terms) for the return **of** capital (depreciation) current consumers pay more for return **on** capital as the undepreciated proportion is so much higher.

Secondly, the regulatory accounts and the actual financial accounts of the entity are completely different. The question of whether accelerated depreciation improves financeability in the future depends entirely on what the regulated business does with the extra cash that is generated.

Q3. Does this suggest that there is something that needs to be addressed?

The regulatory regime is constructed to guarantee Financial Capital Maintenance. So long as the ARoR reflects the cost of finance for the regulated businesses there is no problem. The issue of cashflows may be significant for individual businesses, but they should be allowed to reschedule their depreciation allowance to deal with this. But this should not be linked to attempts to measure financeability by use of metrics applied to regulatory accounts.

We do acknowledge the point that we are in a particular low interest rate environment. NICE does believe that interest rates so low as to present negative real interest rates are indicative of an environment that is behaving abnormally. Accordingly, we do believe there is merit modifying the RoRI to specify that there is a floor on the real risk-free rate to be used in calculating return on equity. While the AER maintains the estimates of MRP and Beta to be in the upper end of their scales, this lower bound should be zero. If the AER determines that the estimates of MRP and Beta should move more to the midpoint of estimates, then the lower bound could conceivably move up to the point such that the final return on equity was never lower than had the high points on the estimate been applied to a zero real risk-free rate.

There is no great science involved in reaching this formulation, it just seems to be a pragmatic way of avoiding an outcome of requiring network investors to receive returns that are based on rates that have no logical interpretation.

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[24] This is also the reasoning for RAB indexation as it results in the real amount of an asset that is depreciated is the same for each year of the asset.

Moreover, we suggest that a more careful analysis of the investment and capital management decision making of regulated businesses would see the AER free to move to a trailing average return on equity to match the trailing average return on debt.

Conclusion

This submission proposes the following responses to the issues under consideration:

1. The term to be used both debt and equity series used to derive estimates should be ten years.
2. Both debt and equity returns should be applied on a ten-year rolling average basis.
3. The AER should consider a floor (lower bound) for the real rate of return on equity that would be no less than the rate of return on equity if the real risk-free rate is zero.
4. There should be no financeability measures introduced.
5. Regulated businesses should be able to adjust their depreciation rates in response to cashflow concerns.

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