Review of the rate of return guideline
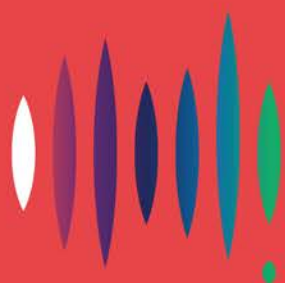## Response to the AER Issues Paper
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The current rate of return guideline could lead to systematic overcompensation of network businesses and may not be reflective of the significant risk mitigation that is provided by the regulatory framework.

Introduction

Energy Consumers Australia (ECA) is the national voice for residential and small business energy consumers. Established by the Council of Australian Governments (COAG) in 2015, our objective is to promote the long-term interests of consumers with respect to price, quality, reliability, safety and security of supply.

We welcome the opportunity to respond to the Australian Energy Regulator (AER) issues paper for the *Review of the rate of return guidelines* (Issues Paper) (AER, 2017a).

The AER has also released a position paper for the *Review of the rate of return guidelines— Process for the guideline review* (Position Paper) (AER , 2017b). The AER indicates in the Position Paper that the responses to the Issues Paper will be used to determine matters for consideration in detail through the 'concurrent evidence sessions'. In this submission, we consequently focus our attention on the matters that we think warrant the most attention in that phase of the review. This does not mean that we do not foresee prospect for a divergence of views between stakeholders on the other matters.

The return on capital at the current allowed rate of return constitutes 50 to 60 percent of the allowed revenue for regulated businesses. As an example, the return on capital for Ausgrid in the 2014-19 final distribution determination was 56 percent of total allowed revenue ($4,397M of $7,867M using simple addition). A halving of the rate of return would result in a 30 percent reduction in allowed revenue, and return of capital would decline to be 40 percent of allowed revenue (2,198M of $5,463M). (AER, 2015b)

The AER's review of the guideline is being conducted in the expectation that necessary legislation to make the guideline binding will be in place by the time the review is completed.

In our review of the AER's 2013 guideline, we note that the AER took a particularly conservative view in the approach to determining the rate of return. Where ranges of possible estimates have been identified, the AER has chosen point estimates at the top of the range.

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ECA encourages the AER to re-engage with the material that informed its 2013 review and the extent to which the approach has overcompensated network businesses.

In this submission, we first consider the appropriateness of the AER's proposed incremental approach. We note that the contentious items have been dealt with through tribunal and court processes in recent years – in particular the transition to trailing debt averaging and the value of gamma – and the AER says should not be considered in this review.

However, in our consideration of the current guideline we have identified opportunities for some more fundamental changes in determining the allowed rate of return, some of which may require rule changes. Where these require rule changes there is insufficient time for these to be made to underpin a new guideline. A further review immediately after the new guideline is finalised would allow for more fundamental review.

The Issues Paper poses eleven questions for consideration in the review. We address six of these (two on achievement of objectives, one on gearing and three on rate of return on equity). This does not mean that ECA is not interested in the remaining questions, only that we consider these six questions need to be resolved first.

Following our consideration of the incremental approach, we address in detail the extent to which the current approach achieves (or doesn't achieve) the legislative objectives by delivering the best possible outcomes for energy consumers. We believe the limited data available supports the view that the current approach is not supporting the objectives.

As a prelude to consideration of gearing and the rate of return on equity, we then devote a section to further consideration of the interpretation of a 'benchmark efficient entity.' We propose that the AER should place less reliance on the outcomes in markets and instead ask more fundamental questions about the value in the market of well managed pure utility stocks.

We also consider gearing settings and how the current approach may be overcompensating networks.

Finally, we explore the approach to rate of return on equity, and the need to revisit the prevailing interpretation which, in our view, is over-compensating networks.

ECA is also a member of the Consumer Reference Group (CRG), where we hope to explore these issues and test options for the new guideline with the AER and other stakeholders in a collaborative and open way. Discussions about these matters can quickly become bogged down in complexity, and given the financial implications, highly contentious. It is important that all stakeholders remain focussed on the ultimate objective of affordability and service outcomes for consumers, and strong financially secure networks, through this process.

This submission is ECA's alone. We look forward to the opportunity to further consider and refine our thinking through the CRG process.

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The 'incremental approach'

The complexity of the issues

In the Issues Paper the AER notes that it is taking an approach of identifying key issues for review rather than a 'blank slate' approach of reviewing every aspect of the rate of return guideline. This is referred to as an 'incremental approach' and the paper says that this was broadly supported by industry and consumer advocates at a public forum in September 2017.

The current (2013) Guideline (AER, 2013a) was developed through an extensive consultation process. The 28-page document was supported by a 182-page explanatory statement (AER, 2013b) which in turn had 215 pages of appendices (AER , 2013c). This multi-layered documentation in turn extensively references arguments and positions advanced in submissions and previous processes.

At recent sessions for the CRG, the AER advised that the most complete description of the approach could be found in the Final Determination of the Ausgrid Distribution Determination 2014-19. The part of this determination that relates to Rate of Return (Attachment 3 of the Determination) runs to 562 pages. (AER, 2015a)

Notwithstanding the complexity of the underlying documentation, it is not practically possible for a regulated business or a consumer advocate to apply the current Guideline in such a way as to identify the value of the nominal vanilla WACC that the AER will apply in a determination. For the revised Guideline to become a 'binding guideline', it is essential that it can be applied in an unambiguous way by the regulated businesses, the regulator, consumers and other stakeholders.

The AER assessment of the issues

The Position Paper refers to three specific elements incorporated into the process to provide confidence to industry and consumers in the revised guideline. These are the Independent Panel's review of the draft guideline, the concurrent evidence sessions and the consumer reference group.

The Independent Review Panel is expected to be engaged after the AER makes its draft decision. The proposed terms of reference '*would ask the panel to assess whether we have undertaken an effective review process; engaged with the material before us with an open mind; and have reached a decision that is supported by our stated reasons and the information available to us.*' (AER , 2017b, p. 11)

ECA supports these terms of reference. We are concerned, however, that the documentation of the incremental approach may not be sufficient for the Independent Review Panel to appropriately provide this report. For the new Guideline to be binding, the Independent Review Panel will need to be endorsing the AER's decision making for the entire document, not just those that may have been revised. In our view, the AER will need to provide to the panel reasons for all the decisions that constitute the guideline, not just the outcome of the matters included in the incremental review.

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Therefore, we consider that in conjunction with the incremental approach, the AER should prepare a revised comprehensive description of the matters that are generally considered to be settled.

ECA did not exist at the time of the last review. Looking at the AER website, it appears that the AER commissioned expert reports only at the time of making the draft decision. We are presuming that this is not the approach being considered in the current review and that any expert advice on which the AER proposes to rely will be published prior to, and subject to challenge during, the concurrent evidence sessions.

Finally, we suggest that an additional stage be incorporated into the review process. Currently the process involves a Draft Decision being published in May and a concurrent process of review by the independent panel and receipt of submissions on the draft. We suggest that it is more appropriate to redescribe the publication in May as being a Directions Paper in which the AER's disposition on the substantive issues is outlined. The AER should seek submissions on the Directions Paper and incorporate changes motivated by these submissions to issue a Draft Decision in October. The Draft Decision should then be subject to review by the independent review panel.

The effectiveness of the current approach

The Issues Paper first contemplates the extent to which the current approach to setting the allowed rate of return has delivered outcomes that are in the long-term interests of consumers and achieved the other relevant objectives. In this section, we explore the underlying objective of the regulatory framework and the role that the rate of return guideline plays within it.

The National Energy and Gas Objectives

The AER as the economic regulator of the electricity and gas network businesses is bound in the exercise of its function by the relevant laws and rules. The laws are the National Electricity Law (NEL) and National Gas Law (NGL). The rules are the National Electricity Rules (NER) and National Gas Rules (NGR).

The overarching objectives of the Laws are specified in the National Electricity Objective (NEO) and National Gas Objective (NGO). These have a common form that the *objective of the law* is *the promotion of efficient investment in, and operation and use of,* the services *for the long-term interest of consumers with respect to price, quality, safety, reliability and security of supply.*

Given the fundamental importance of this concept to energy market regulation, ECA considered the relationship between efficiency and the long-term interests of consumers in a paper in 2016 (ECA, 2016). In this paper, we demonstrate that these concepts amount to, in simple terms, an outcome where current and future consumers pay no more than they need to for the quality, reliability, safety and security of supply they want.

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This framing of the legislative intent was specifically referenced when amendments to the process for AER revenue determinations and Limited Merits Review were introduced in 2013.

> *The changes to the National Electricity Law and National Gas Law that will be introduced with the passing of this Bill will be key in ensuring consumers do not pay more than necessary for the quality, safety, reliability and security of supply of electricity and natural gas under the national energy laws.*[1]

The AER is required to perform or exercise its functions or powers in a manner that will or is likely to contribute to the achievement of the national objectives (NEL s16((1)(a) & NGL s28(1)(a)) and when making a reviewable regulatory decision, where there are alternatives, make the decision that the AER is satisfied will or is likely to contribute to the achievement of the national objectives to the greatest degree (NEL s16(1)(d)(i) & NGL s28(1)(b)(iii)(A)).

The Rules then set out the requirements on the AER to perform the economic regulation function (Chapters 6 and 6A of the NER, Part 9 of the NGR). In making the Rules the AEMC is required to only make Rules that will contribute to the achievement of the relevant objective.

The question emerges of the relationship between the requirement for the AER to exercise of its functions or powers to contribute the achievement of the NEO or NGO, and its requirement to follow the Rules. This question is particularly relevant to the consideration of the Guideline. The overarching objective has to be the achievement of the NEO and the NGO and the effective application of the Rules by the AER needs to be interpreted in this context.

More on Efficiency

The word 'efficiency' has a defined meaning in economics. Most specifically a market outcome is said to be efficient if no one could be made better off without making someone worse off. It has attendant concepts of static efficiency and dynamic efficiency, allocative and productive efficiency, and the (delightfully named) X-efficiency.

The adjective is then ascribed to other terms like 'efficient investment', 'efficient financing costs' or a 'benchmark efficient entity.' One word – undefined in the laws – is asked to do a lot of work.

The general business interpretation of the word 'efficient' is about getting the most output for the least amount of input.[2] An 'efficient entity' is then an entity that couldn't be producing more output for its level of inputs, or could not be producing the same output with less inputs. In financial terms, these

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[1] The Hon. J.R. RAU (Enfield—Deputy Premier, Attorney-General, Minister for Planning, Minister for Industrial Relations, Minister for Business Services and Consumers) South Australia House of Assembly 26 September 2013
[2] 'Efficient' achieving maximum productivity with minimum wasted effort or expense https://en.oxforddictionaries.com/definition/efficient

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are both measured in dollar values, though there are approaches to efficiency that measure non-monetary inputs and outputs.[3]

Using this definition, an 'efficient financing cost' is the least payment to investors for the funds raised. 'Efficient investment' is investing the least amount to provide the desired services.

In the consideration of the rate of return, an additional use of the concept of efficiency is made. It is assumed that capital markets are 'efficient.'[4] This is problematic territory. The use of the word 'efficient' in the Efficient Market Hypothesis relates to the use of information – it states that the market price of an asset incorporates all the information available to the market about that asset. It does not, however, tell you that the market is 'efficient' in the sense of properly pricing the asset.

Most specifically if there is an informational deficit – information that would change the price were it available to the market – then the assets would have different prices. The most spectacular example of where markets failed was the pricing of derivatives (mostly Collateralized Debt Obligations) that led to the Global Financial Crisis. The markets were not properly informed of the risk of these assets and so they were overpriced – the risk of which they were uninformed was the potential correlation of risk between the underlying assets. This assumption of market efficiency is relevant to the discussion of the rate of return on equity later.

The Revenue and Pricing Principles

In addition to the objectives, the laws specify an additional constraint on both the rule making powers of the Australian Energy Market Commission (AEMC) and the functions of the AER through the Revenue and Pricing Principles (RPP) (NEL s7A & NGL s24).

The primary requirement introduced through the RPP is that:

> *A service provider should be provided with a reasonable opportunity to recover at least the efficient costs the service provider incurs in—*
>
> *(a) providing the [regulated services]; and*
>
> *(b) complying with a regulatory obligation or requirement or making a regulatory payment.*

The RPP place a constraint on the rule maker and the regulator to ensure that the service provider is not under compensated for the provision of services. However, it provides a far more explicit and under-estimated additional function.

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[3] Date Envelopment Analysis is an example of these kinds of approaches.
[4] The AER formulation is "In relation to efficient financing practices, we consider that in efficient capital markets all firms operate on the capital frontier. All firms should be priced efficiently and able to access capital at the cost which reflects the risks they face and which investors consider should be priced." (AER, 2013b, p. 38)

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Using our rule-of-thumb definition of 'efficient', we can view efficient costs as they relate to operating expenses as being the lowest cost for the relevant output. For return on capital efficient costs arise by applying efficient financing costs to the capital expenditure base of the business.

Determining the efficiency of new capital expenditure is not so simple. Capital expenditure made by the regulated firms is almost entirely a sunk cost – although some expenditure may not be. For example, the purchase of land for a depot or building is capital expenditure in a tradable asset but the investment in poles, wires and pipes is mostly not. Efficiency in this regard then depends on how much is invested and the timing of the investment. But the only point at which a decision can be made that he investment is efficient is the point at which it is made.

A specific item of capital expenditure can only be determined to be an efficient cost at the time that it is made. If circumstances change (demand reduces, technological change results in a reduction in the cost of equipment) so that were the decisions to be made in a later period the expenditure would be lower, the cost that was actually incurred doesn't suddenly become inefficient.

Consequently, the RPP operate as a quite explicit guarantee that the service provider is entitled to a reasonable opportunity to recover the capital expenditure that was efficient at the time it was incurred. This, unfortunately, has to include any expenditure required as a consequence of decisions made by Ministers on reliability standards.

The second requirement of the RPP require that there should be incentives for firms to be more efficient:

> A [service provider] should be provided with effective incentives in order to promote economic efficiency with respect to [regulated services] the [service provider] provides.

This is provided for in different ways, most notably via the service provider retaining a share of the savings it makes when it finds cheaper ways to do things. There are also additional explicit incentive schemes.

The Allowed Rate of Return Objective

A specific rule of relevance to the guideline is the subordinate objective referred to as the Allowed Rate of Return Objective (ARORO) (NER 6.5.2 (c) & 6A.6.2 (c) and NGR 87(3)).

The objective can be generally stated as:

> The <u>allowed rate of return objective</u> is that the rate of return for a [service provider] is to be commensurate with the efficient financing costs of a benchmark efficient entity with a similar degree of risk as that which applies to the [service provider] in respect of the provision of the [regulated services].

The word 'efficient' gets a double work-out in this objective. It is unclear why it is necessary to say that we are concerned with the *efficient* financing costs

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of an *efficient* entity. There would appear to be no way that the entity could be efficient unless it had efficient financing costs.

There are two additional words that require some analysis here. The first is 'commensurate.' The requirement is that the rate of return used in the building block for revenue determination is commensurate with the financing cost of the efficient entity. This is a very precise usage. While the RPP only require that the provider has the opportunity to recover at least its efficient costs, 'commensurate with' is not a one-sided constraint. It means that the rate of return should be the same as that applying to an efficient entity.[5]

The second word is 'benchmark.' It seems that the interpretation placed on this by the AER is that it refers to existing entities. This is not the standard English definition that refers only to a standard used for comparison.[6]

In the ARORO it is technically used as an adjectival noun. The 'efficient benchmark entity' could be interpreted as identifying one or more providers that is efficient and using it as the benchmark. Given the small number of listed providers the AER uses the entire pool as benchmark entities without particular regard to their efficiency. Using 'benchmark' to refer to an artificially constructed entity would allow the inclusion of a consumer price constraint in the analysis. The constructed benchmark entity could be one that produced real reduction in prices.

This aspect of the ARORO is particularly relevant in later sections where we discuss the rate of return for equity.

How these factors interact

The application of the NEO and NGO remind us that the over-arching objective is to provide consumers with the services they require at the least possible cost. The RPP add a constraint to that objective – it cannot be achieved by denying the service provider the opportunity to recover its efficient costs.

The RPP also acknowledge that the provider has to be able to recover costs imposed by regulation, such as reliability standards.

The RPP go further than that and specifies that the service provider is explicitly protected from demand and technical obsolescence risk. This explicit reduction in risk should be reflected in the calculation of the rate of return and it will be our contention later that it is not.

The RPP also require that there are incentives for efficiency.

The ARORO has a very different function. The strict reading of the ARORO is that it delineates that the determination of the allowed rate of return is not an area in which there should be an incentive for outperformance. It does not establish the efficient financing costs of an efficient entity as the floor for the allowed rate of return – it specifies a ceiling which is that the efficient

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[5] 'Commensurate' Corresponding in size or degree; in proportion. https://en.oxforddictionaries.com/definition/commensurate

[6] 'Benchmark' A standard or point of reference against which things may be compared. https://en.oxforddictionaries.com/definition/benchmark

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financing cost of an efficient entity is a constraint within which the provider needs to operate in realising the incentives from increased efficiency.

The Issues Paper introduces the section on the allowed rate of return by saying:

> *The regulatory framework provides energy networks with an allowance to cover the costs they are expected to incur when financing capital investments in their networks. This allowance is called the 'allowed rate of return'.*
>
> *We set the rate of return based on a benchmark, rather than the actual costs of individual businesses. Hence, network businesses have incentives to finance their business as efficiently as possible.* (AER, 2017a, p. 13)

ECA submits that this is not the right way to interpret the ARORO. The objective is not to set the rate of return based on a benchmark so that the provider can outperform the rate of return by the way it is financed – the intention is that the rate of return is a constraint so that the provider has maximum incentive to generate higher returns by efficiency in its investments and its operations. As will be discussed later the focus is on the risks of the asset, not the characteristics of the owner of the assets.

Assessing the outcomes of the rate of return guideline

ECA considers the outcomes of the current rate of return guideline can be assessed in three ways; its consistency with the incentive framework overall, the incentives to invest and outturn profitability.

Consistency with the incentive framework

In the section above, we outline the interaction between the ARORO and the RPP.

It is the clear intention of the regulatory framework that providers should be able to obtain higher returns on shareholder equity than the allowed rate of return, however, these higher returns should only come from improved investment and operating efficiency.

As will be discussed in more detail below, ECA believes the 2013 Guideline has established an allowed rate of return that is higher than the efficient financing cost. In addition, we believe the approach to benchmarking gearing is providing an excessive tax allowance enabling a network business to achieve a rate of return higher than the allowed rate without any efficiency gain.

Incentive to prefer capital expenditure

The Issues Paper notes:

> *If the rate of return is set too low, the network business may not be able to attract sufficient funds to be able to make the required investments in the network and reliability may decline. Alternatively, if the rate of return of return (sic) is set too high, the network business may seek to spend too much and consumers will pay inefficiently high prices.* (AER, 2017a, p. 10)

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We agree with this observation. The consequence of these observations is that if networks have an incentive to over-invest then the rate of return is set too high.

The ACCC in its Retail Electricity Pricing Inquiry: Preliminary Report (ACCC, 2017) observed that:

> *As network operators receive a guaranteed return on their assets, there is an incentive to invest in more assets which can lead to over-investment if the rate of return is set too high. Further, network operators are less likely to seek alternatives to investing in new assets if there are no incentive schemes in place to reduce investment.*

That report also observed that capacity utilisation has declined from 56 percent in 2006 to 45 percent in 2015. (ACCC, 2017, p. 111) This would seem to be a strong evidence that there has indeed been over investment.

In its submissions to the AER review of electricity prices (ENA, 2017a) and the NSW Parliamentary into electricity demand, supply and prices (ENA, 2017b) Energy Networks Australia (ENA) observed that a driver of network costs had been "perceived incentives to prefer capital expenditure over operating expenditure." The submissions observed that "[i]n 2012, regulatory changes were made to incentivise capital efficiency; increase use of demand management; allow excessive capital expenditure to be excluded by the Regulator."

Despite the suggestion by ENA that the 'perceived' bias has been rectified by the regulatory changes introduced in 2012, the AEMC in its *Electricity Network Economic Regulatory Framework Review: 2017 Report* observed that:

> *Recent and ongoing changes to the economic regulatory framework sought to strengthen incentives to network businesses to seek alternatives to traditional network solutions. However, some stakeholders have raised concerns there is an inherent bias for network businesses to prefer capital expenditure over operating expenditure. A report commissioned by the COAG Energy Council in July 2015 articulated the view that the guaranteed rate of return on the RAB could create an overwhelming incentive for network businesses to continue focussing on building new network over and above other more efficient technology based solutions.* (AEMC, 2017, p. 63)

Providers claim that the bias is because the incentive to be more efficient in relation to capital expenditure is less than the incentive for being more efficient in relation to operating expenditure. The solution many promote is the 'total expenditure' or 'totex' model. (CEPA, 2016). The proposal to use totex, however, only results in the building block model needing to include another 'benchmarked' parameter of the efficient weighting between the two. This then becomes another challenge for estimation, with a risk of over-compensating networks if chosen incorrectly.

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The AEMC has also flagged in its 2017 Report that its 2018 review of the regulatory framework will also consider the total expenditure approach.

ECA believes the primary basis a firm has for favouring capital expenditure over operating expenditure is that the regulated rate of return it can obtain on capital expenditure is in excess of its financing cost.

Profitability analysis

To determine the extent of the deviation of the current approach from the objectives requires information on either profitability or on market valuation. If a provider's market valuation is in excess of the Regulatory Asset Base (RAB) then the market is valuing the future cash flows of the business (revenue minus operating expense) higher than the value of RAB times the rate of return.

The Australian Financial Review reported that the purchasers of Ausgrid valued the business at 1.4 times the value of the RAB. (Thompson, Macdonald, & Moullakis, 2016) The same paper estimated Transgrid was sold for a RAB multiple of 1.5 to 1.65. (Boyd, 2015) Reuters reported that the Endeavour sale valued the entity at 1.6 times its RAB. (Kaye & freed, 2017)

There are three possible sources of the discrepancy. The first is that the provider has become more efficient and has lowered costs. The second is that the rate of return has been set to reflect a level of risk much higher than investors perceive. The third is that there are other distortions. The same principles would apply to profitability analysis.

The first of these is 'real' outperformance and socially useful outperformance. Consumers actually want providers to outperform in this way. The second is an outcome that is inconsistent with all the objectives. The third is more problematic, but it is quantifiable. It includes effects such as the building block model overestimating tax expense. This is in turn is linked to the determination of the allowed rate of return (through the assumptions of gearing) but could be addressed outside the rate of return.

What we do not have is a rigorous, backward looking assessment about the nature of the outperformance is being achieved. Undertaking this analysis should be a priority for the AER going forward.

In our submission to the AER's current review of profitability measures for regulated network businesses, we have encouraged the AER to move to immediately modify the Regulatory Information Notices to gather the additional information to institute profitability reporting. We have also encouraged the AER to ask the networks to voluntarily provide historic information so that the AER can analyse the outcomes of current revenue determinations. (ECA, 2017)

Summary

On the available evidence Energy Consumers Australia concludes that the current approach to setting the allowed rate of return is not consistent with the relevant objectives. We believe the rate of return is set in excess of the efficient financing costs of an efficient entity.

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In the remainder of this submission we will focus on the two areas that we think are contributing most to this over estimation of the rate of return; the gearing ratio and the rate of return on equity. Before we provide that analysis, we return to the consideration of the definition of the 'benchmark efficient entity.'

The benchmark efficient entity

The AER's approach

The ARORO requires that the allowed rate of return is commensurate with the efficient financing cost of a benchmark efficient entity. The benchmark efficient entity is to have a similar degree of risk as that which applies to the distribution or transmission service provider in respect of the provision of regulated services.

The AER in the Explanatory Statement to the 2013 Guideline outlined the AER's approach and reasons (AER, 2013b, pp. 32-45). The AER has adopted a single benchmark across all the regulated services and to adopt the conceptual definition the benchmark efficient entity that is 'a pure play, regulated energy network business operating within Australia.'

ECA agrees that (given the interpretation that 'benchmark entity' refers to existing businesses) these remain appropriate choices. We note that to the extent the question of whether the benchmark entity was a regulated entity was a matter for consideration by the Australian Competition Tribunal in the review of NSW electricity determinations, it was in the very narrow sense of how that was applied to the question of the transition to trailing average return on debt.

In determining that a single benchmark should be used, the AER concluded that the risks faced by gas and electricity service providers in delivering the regulated services are the same. We agree with the AER's conclusion; these are and will continue to be low risk investments and the rate of return should reflect that.

In particular:

- Differences in demand risk are mitigated by the regulatory regime through the revenue or price setting mechanism (form of control). In particular, under a revenue cap, where forecast quantity demanded differs (higher or lower) from actual quantity demanded, in subsequent years price adjustments (up and down) are made to enable the approved revenue to be received by the service provider;

- Under a price cap, service providers may mitigate the risk of forecast error by restructuring tariffs, such that higher fixed charges are set to offset demand volatility.

- Electricity distribution and gas service providers are able to propose the form of control they employ —revenue cap, price cap, or any variation thereof.

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- With respect to competition risk, the AER considered that by virtue of being regulated, these service providers effectively face a very limited increase in risk due to competition.

These factors not only indicate that the risks are the same, they also indicate that both gas and electricity service providers face a very low risk on future cash flows.

The AER observed that it chose a regulated business to reflect the risks of the regulated providers for the following reasons:

- Regulated service providers are typically not exposed to competition from other firms (in the case of distribution and some transmission businesses) or exposed to limited competition (in the case of regulated transmission businesses). The limited competition may alter the relevant (systematic) risk profile when compared with an unregulated firm.

- Regulated service providers can earn more stable cash flows relative to most unregulated businesses. These cash flows are regularly updated at resets to reflect required revenue (including changes due to shifts in demand and expenditure drivers) and therefore have similar business risks. Regulated service providers are also provided with some protection to their cash flows during regulatory control periods (e.g. pass through provisions and reopeners).

- Regulated service providers may align their business practices to the regulatory regime. This may lead to a different risk exposure than that faced by an unregulated firm.

To this list ECA would add the explicit guarantee afforded to the service providers through the RPP. To an extent this is a more formal restatement of the protection from competition, but it is also a protection from the risk of technological obsolescence.

In recent times electricity distribution networks have suggested they face an increased risk due to 'competition' from distributed energy resources. More technically this is a substitution risk, not a competition risk — the distribution networks remain natural monopolies. The extent to which consumers can choose to substitute is, however, no greater than the risk already faced by gas distribution businesses; gas has long been a 'fuel of choice.' The AER has, correctly in our view, distinguished between this risk and its financial consequence in the cash flows of the regulated providers.

The AER has also determined that the benchmark entity is one operating in Australia. We agree with the AER that this is an appropriate decision given the impact of the regulatory regime, tax laws, industry structure and broader economic environment in determining the risks to which the providers are exposed.

Distinguishing assets from owners

The AER also discussed 'other factors' including that the risks should be based on the risks of the assets not the risks of the business that holds

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those assets. ECA agrees with this observation but would also make a couple of additional points.

The efficient financing costs of the assets should reflect the characteristics of the assets. As the AER has outlined the consequence of the assets being regulated is that the cash flows from the assets are secured by the regulatory framework. Subject to prudent management the regulated assets generate a stable cash flow. These are assets often referred to as 'utility stocks' because of their low risk and stable returns.

Unfortunately, board and management training has seen the widespread adoption of the mantra that 'the purpose of the firm is to maximise shareholder value.' A complete analysis and critique of this simple phrase is beyond the scope of this paper. The adoption of that position however results in boards and management under estimating the value of utility stocks.

One person who didn't was Frank Lowy, the very successful Australian shopping centre owner and developer who has announced the sale of his overseas Westfield operations for $32 billion. In a profile in 2002 *The Economist* wrote of Lowy:

> *His big idea came much later, once he understood that the shopping-centre business really consists of two different types of income stream. One is rental income from the ownership of properties – not very risky, and so ideal for investors such as pensioners. The other comes from the construction and management of the centres. This is more volatile, and so attracts a different kind of investor. Financial theory suggests that offering these two income streams separately to the capital markets should lower the overall cost of financing the shopping centres. That cost advantage, in a nutshell, is what now helps Westfield to outgun its rivals. (Economist, 2002)*

There is a great deal of capital available in Australia through domestic superannuation funds for utility stocks. However, unlike pension funds in Canada for example, Australian superannuation funds face risk on their investors moving their superannuation portfolio. Consequently, while they value the stable utility cash flows they generally are reluctant to have a high exposure to a single illiquid asset.

Despite the availability of this pool of finance there are very few listed entities whose business is the operation of regulated networks. A range of factors have resulted in this. The first is that for vendors of the assets (state governments) the lowest transaction cost is obtained through a trade sale rather than a new listing (an Initial Public Offer or IPO). The second is that the operation of the regulatory regime has provided rates of return well in excess of the cost of capital for large overseas investors.

The consequence of this is that there are few listed Australian service providers, and those that are have mixed assets. The finance theory that informed Lowy's approach suggests that the only reason for a regulated business to enter competitive markets is to leverage their market power. A

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subject for different processes, is the focus that the owners of the regulated networks have in entering competitive markets.

Consequently, not only is there a very limited pool of listed entities holding regulated assets, the entities that do so are not structured to provide efficient financing costs for the regulated assets.

In making the 2013 Guideline the AER also explicitly considered the question of whether a different benchmark entity should be used for government-owned service providers. ECA agrees with the AER that the financing costs of the parent entity are not the relevant criteria in defining the benchmark efficient entity. The only relevant consideration is the nature of, and risks to, the cash flows generated by the assets.

We should not, however, ignore the overarching policy question of why the underlying policy preference in the NEM is to privatise these assets. Given that the assets can be financed more cheaply by the Government, a simple move from public to private ownership would increase prices for consumers. The expectation of policy is that the efficiency gains available from privatisation would outweigh the increased finance costs. This will not occur if the allowed rate of return is excessive.

The existence of the benchmark efficient entity

Having decided that the benchmark efficient entity should be a pure play, regulated energy service provider operating in Australia, the AER has identified a very short list of businesses to be used in benchmarking. (AER , 2013c, p. 128) These businesses have been used to estimate both the gearing ratio and the appropriate equity risk premium for the rate of return.

There are three issues with the use of these businesses as benchmarks.

The first is that they are mostly not pure play regulated businesses and ECA is unclear on how the AER has approached the task of stripping from the market data the consequence of these firms not being pure play providers of regulated services.

The second is that it is unclear to what extent the AER has assessed that each of the entities is 'efficient.' In a framework of incentive regulation, the future cash flows of an inefficient business are potentially higher than the cash flows from an efficient business because there is more headroom to bank incentives from increased efficiency.

The third is that the historic returns of the listed entities would include any incentives already received from becoming more efficient. It is, after all, the expectation of incentive regulation that the service providers will obtain returns higher than the allowed rate of return. Consequently, historic returns should be higher than the actual cost of equity. It is unclear what effort the AER has made to strip out from historic financial performance the consequence of incentive payments.

These factors all indicate the severe limitations in using empirical results as the primary tool for determining the efficient financing costs of a benchmark efficient entity.

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In our comments on both gearing ratio and return on equity we will advocate for less reliance on the empirical benchmarks and more on fundamental analysis of the risks faced by a pure play regulated energy service provider in Australia.

The gearing ratio

The benchmark gearing ratio is of fundamental importance to the determination of allowed revenue. Its primary significance is its use in determining the proportions of return on debt and return on equity in the overall rate of return.

In the next section of this submission we explain why the rate of return on equity should be much lower and closer to the return on debt, reducing the impact of the gearing ratio in determining the overall rate of return.

However, the gearing ratio is also used by the AER to determine the tax allowance. It is assumed in the Post Tax Revenue Model (PTRM) that the service provider has a tax deduction for interest equal to the outcome return on debt (rate of return on debt * debt).

To use the Ausgrid final distribution determination as an example, a move from a gearing ratio of 60% to a ratio of 80% would reduce the tax allowance by $204 million and the return on capital by only $89 million. (AER, 2015b)

At its simplest, the total value of an enterprise is equal to the sum of debt and equity. In standard accounting retained profit and asset revaluations re reflected in equity. The difficulty emerges when we recognise the difference between the market value of the business and the book value of the business.

Regulated businesses have been sold at prices that are 1.4 to 1.6 times the value of the regulatory asset base. The listed regulated businesses typically have sharemarket valuations of at least 1.3 times the value of the regulatory asset base.

This means that in the following equation:

$$EV_m = M * RAB$$

Where

M = the 'RAB multiplier'

the value of M is greater than 1.

The market value of debt can in theory be different to the book value of debt. If the firm has raised debt finance offering a specified interest rate and market conditions change so that new debt can be raised at lower interest rates, then a holder of the debt instruments could sell the instruments for more than they paid for them because the cash flows to the new holder could still be higher than the flows from the same amount of new debt instruments.

In the 2013 Guideline the AER states:

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> *We consider that we should apply greater weight to the estimate of gearing using the market value (as opposed to a book value). The use of market values is consistent with the efficient market theory. This theory indicates that the current market value of a company's debt and equity reflects all relevant information. However, there are limitations in calculating the market value of debt as debt is traded infrequently. Therefore, we have used the book value of gearing as a proxy for the market value of gearing.* (AER , 2013c, p. 129)

We understand this to mean that the AER has estimated the gearing by dividing the book value of debt by the enterprise value of the company. The AER then applies that gearing to the RAB to determine the benchmarked level of debt of the business.

If we assume that the RAB is $100, and that the business has debt with a book value of $78. Let's also assume that the RAB multiplier is 1.3 so the enterprise value of the business is $130. The benchmark gearing will then be estimated as $78/$130 = 0.6.

When this gearing is used to determine the 'efficient' debt level of the entity it is multiplied by the RAB to give a value of debt of $60. That is, the entity for whom the efficient debt level of debt was $78 is estimated to have an efficient debt level of $60. If the actual debt of $78 was compared to the RAB the gearing would be estimated as 0.78.

We stress that this is only our understanding of the process followed by the AER. As the worked example for Ausgrid above shows if the gearing for an efficient entity is 80 per cent rather than 60 percent the effect of using the latter figure has more than twice the impact in the tax allowance than it does in the return on capital.

If we are mistaken in our analysis, the point remains that the AER could be clearer in the way it explains how it derived the gearing estimate. If we are not mistaken the approach adopted by the AER has been overestimating revenue by an amount in the range of three to five percent.

The return on equity

The AER's approach

The current Guideline is not as clear as it could be about the approach to estimating the rate of return on equity used to develop the overall rate of return.

The AER approach uses the Sharpe-Lintner Capital Asset Pricing Model (CAPM) as a 'foundational model' and the Black CAPM and the Dividend Growth Model to 'inform' foundation model parameter estimates. In addition, a further eight sources are used to 'inform' the parameters and another five to inform the overall return on equity. (AER, 2013a, pp. 13-14)

ECA appreciates that the AER has adopted this approach due to the controversy around the use of the various models. However, we have four major concerns about the approach.

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Excessive data

The first concern is the lack of clarity about how such a wide variety of information is being assessed and combined. Participants in regulatory processes favour estimating parameters by determining a range of values, but in the end only one value (a point estimate) can be included in the equations used to generate the allowed revenue.

The addition of further data does not make this process simpler or even more accurate. What it has done in the application of the 2013 Guideline is leaving service providers with little clarity about the point estimates to be used until the AER has made its daft determination.

Mixing Models

The value estimated by one model is not a substitute for a value estimated in a different model.

A first principle of econometrics is that the model being estimated should have explanatory value; the structure of the equation matters. (Judge, Griffiths, Carter Hill, Lutkkepohl, & Lee, 1985) Different 'models' are not just different approaches to estimation, the same words in different models refer to different things. They are incommensurable. (Oberheim & Hoyningen-Huene, 2016)

A simple example is the empirical estimation of own price elasticity of demand. This can be estimated assuming either a straight-line demand or a constant elasticity demand curve (among others). If you apply the value derived from an estimation to a model that is based on the other type of demand curve you will obtain erroneous results – the estimated values are incommensurable.

Market returns are greater than efficient financing costs

The third concern is that market estimation is not measuring the efficient financing cost of an efficient entity.

The challenge for the regulation of natural monopoly businesses is to provide a return sufficient to attract the necessary investment in the asset. The approach to estimating this rate of return from market data is based around an assumption of the efficiency of financial markets. This is not the same as the 'efficient market hypothesis' which states that the price of an asset reflects all the information available. It is the more usual efficiency argument that the price of assets will be based on costs.

This is the assumption that the financial markets will only provide just enough return for the business to operate. This assumption is inconsistent with the perception that the purpose of the firm is to maximise shareholder value.

In the very specific case of regulated network businesses, the future cash flows of the business are primarily determined by the regulator. Under well-functioning incentive regulation, the business will have the opportunity to earn a higher rate of return by outperforming on efficiency improvement. How will the market value the business?

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Market investors do not analyse the firm's regulatory proposal in detail. They will assume that current cash flow compared to asset value is a good indicator of future performance. Any estimation of the return on equity will be no less than the sum of the rate of return required to attract investors plus the outcome from incentive regimes.

In other words, even if we had a perfect tool to estimate the market's evaluation of the rate of return on equity of the firm it would still be higher than the rate of return that should be applied as the efficient financing cost of an efficient entity.

The equity risk premium may not be able to be estimated

Our final issue is that the controversy over estimation approaches raises concerns about there being any value in any technique based on estimation of observed market data.

The theory of asset pricing and hence the cost of capital is well developed. It is based on the theory that the investor is choosing to substitute a set of future cash flows over the value of their investment today. The return required by the investor for certain future assets is the 'risk-free' interest rate. The future cash flows are uncertain and so the investor requires an additional return to cover this uncertainty.

Investors in the market can buy a wide range of assets (a diversified portfolio) and the uncertainty inherent in different assets can be spread out so that the only risk the investor faces is the economy wide risk – fundamentally the so-called 'business cycle'. Individual assets may be more or less uncertain than the market as a whole, and this is thought to be reflected in the correlation of the volatility (price movements) between the asset class and the market.

The CAPM is based on this simple conception that the rate of return can be decomposed into risk-free rate, market risk premium and asset beta.

The existence of other models indicates that the explanatory value of this model has been severely questioned.

The AER appears to adopt a compromise position. It concludes that the Sharpe-Lintner CAPM (SLCAPM) is the best of a bad bunch, but doesn't rule out being 'informed' by the other models. An alternative approach is to reject any method of empirical estimation as being flawed and use a direct risk-based approach.

The application of the AER approach

A complete description and defence of the application of the AER approach is given in the Ausgrid final decision (AER, 2015b).

Having observed that "several service providers submitted responses that appeared to suggest our foundation model approach simply entailed applying the SLCAPM as a single formula without considering whether the final output was commercially realistic" the AER provided a summary of how they thought this mischaracterised the application of the approach. The decision noted:

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- Most equity beta estimates clustered around 0.5. If the SLCAPM had been applied mechanistically, 0.5 would have been a reasonable equity beta estimate to have adopted. However, international estimates and the theory of the Black CAPM informed the selection of a point estimate of 0.7.

- If evidence from the DGM had been dismissed, an MRP no greater than 6.0 per cent would have been chosen. Having relied on evidence from DGMs, an MRP was applied that was greater (50 basis points) than indicated by the other evidence.

- Given the parameters above, if the SLCAPM had been applied mechanistically, this would have produced an indicative return on equity of 6.55 per cent at the time of the draft decision. As it was, an indicative return on equity of 8.1 per cent was applied in the draft decision.

- The difference of 155 basis points cannot be treated as a mechanistic application of one formula.

After justifying the choice of the SLCAPM and reporting the various estimates obtained, the decision outlines the AER's choice of range and point estimates.

For the Market Risk Premium (MRP), the AER concludes that the range is 5.1 to 8.6 percent. The AER then notes "Given the uncertainty in MRP estimation, we must exercise our regulatory judgement to determine the MRP point estimate from within the range." The AER adopted 6.5 percent.

The AER noted historical excess returns provide a range of 5.8 to 6.4 per cent if calculated using arithmetic averages, and a range of 3.9 to 4.9 per cent if calculated using geometric averages. The AER's consultants (McKenzie and Partington) advised that 'the unbiased estimator of the MRP lies between the arithmetic average and the geometric average'.

For the equity beta, the AER adopted an equity beta point estimate of 0.7 from a range of 0.4 to 0.7 for a benchmark efficient entity. The AER begins its assessment with a conceptual analysis that beta is less than 1.0, that the returns for regulated firms vary less than the market as a whole. The AER then reports on the extensive analysis that provides the range of 0.4 to 0.7.

The Black CAPM appears to be a case where theoretical elegance outweighs empirical confirmation. The AER's commentary on the Black CAPM states:

> *Our use of the Black CAPM in informing the equity beta point estimate is supported by recent advice from our expert consultants, McKenzie and Partington. In their 2014 (and 2015) report, McKenzie and Partington considered that while the empirical implementation of the Black CAPM is problematic, the theory underlying the Black CAPM may have a role in informing the equity beta estimate. McKenzie and Partington noted there is considerable uncertainty in how the Black CAPM theory should be applied to a SLCAPM equity beta estimate. However, they considered the theory underlying the*

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> *Black CAPM does not necessarily support an uplift to the equity beta estimate used in the SLCAPM.*
>
> *On the basis of the available information, we consider that the theoretical principles underpinning the Black CAPM cannot indicate a specific value for the equity beta. However, we consider this information supports an equity beta point estimate above the best empirical estimate implied from Henry's 2014 report, and is not inconsistent with an equity beta estimate towards the upper end of our empirical range.*

That is, the Black CAPM is a model incapable of providing an empirical estimate, but because the theory is elegant the point estimate must be chosen from the top of the range. If something is incapable of providing empirical estimates it should not be used in any way in the determination of a value, even if it is only to argue that the point estimate should be at the top of a range.

The AER also notes international estimates for energy companies lying in the range 0.3 to 1.0. It remains unclear how when the benchmark efficient entity is an Australian entity these international estimates have any relevance. As the range fully encompasses the Australian range, it would appear to be a confirmation of the range, not a rejection of it.

The AER's final defence for the choice of the point estimate was the argument of consistency and predictability, writing:

> *Further, we are mindful of the importance of providing stakeholders with certainty and predictability in our rate of return decisions, which we consider is consistent with the achievement of the allowed rate of return objective. The Guideline was developed, in part, to provide regulatory certainty for stakeholders under the new rules framework, and allow for our decisions to be reasonably predictable. It was also developed following consultation and analysis. The AEMC and stakeholder submissions to the 2012 rule change process accepted these views. The final Guideline expanded on the draft Guideline to include input parameter estimates for our foundation model as of December 2013. We did this in response to submissions from stakeholders, particularly service providers, seeking greater certainty of process.*

The choice of the equity beta at the top of the range is inconsistent with the 2012 advice received by the AER's consultants – noted in the 2013 Guideline Explanatory Statement – from McKenzie and Partington (2012, p. 23):

> *This report was asked to prepare a response to three questions. The first question was whether there are conceptual or theoretical grounds to expect that the benchmark firm has an equity beta below 1.0? A close examination of the components of systematic risk clearly suggests the answer to this question is in the affirmative. In fact, one would expect the beta to be among the lowest possible and this conclusion would apply equally irrespective as to whether the*

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> *benchmark firm is a regulated energy network or a regulated gas transmission pipeline.*

In summary, the decision and evidence used by the AER is as follows:

Figure 1: Summary of equity risk premium estimates (Source: AER , 2013c)

Parameter	Range	Point estimate recommended by AER expert	Point estimate chosen
Market Risk Premium	5.1-8.6	6.0	6.5
Beta	0.4-0.7	0.5	0.7
Equity Risk Premium (MRP * beta)	2.04-6.02	3.0	4.55

At the time of the decision the risk-free rate was 2.55 percent (which is based on an on the day approach) and so the nominal post-tax return on equity allowed was 7.1 percent. The use of the point estimate recommended by experts would have resulted in an allowed return on equity of 5.55 percent.

Substituting a rate of return on equity of 5.6 percent in the Ausgrid decision reduces total revenue over five years by $482 million which is a six percent reduction.

ECA notes that the AER regards rate of return on debt as a 'floor' to the allowed return on equity. With the adoption of the trailing average approach this value is updated each year, but was 6.40 percent for the first year.

Persistent low risk-free interest rates are distorting this comparison. However, we question the underlying assumption that it should be presumed that the efficient financing of regulated network assets should require high gearing ratios. There is a strong case that the low risks of the network businesses suggest they could be primarily equity financed. This is our consideration in the next subsection.

The risk exposure to equity holders

The energy market objectives, the RPP and the ARORO all provide a framework that the return to investors in regulated network assets should be no more than required to attract the investment.

The central proposition of the CAPM is that investors require something above the risk-free rate to compensate them for their risk. Typically, debt investors require a lower rate of return than equity investors because they are secured by the underlying assets of the business.

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The regulated network business equity investors, however, do not face this risk. Their future cash flows are under-written by the regulatory framework and enshrined in legislation.

As McKenzie and Partington note:

> *Unfortunately, the use of the securities as an instrument to measure the required return (cost of capital) has led to confusion. In particular, it can lead to the mistaken belief that it is the financing package that determines the required return. A moment's thought will reveal that this implies that the investment inherits the characteristics of the portfolio of securities issued to finance the investment. That is, the risk of the investment (assets) is determined by the risk of the securities.*
>
> *Clearly it is the other way around. The risk of the portfolio of securities (but not individual securities) and the risk of the portfolio of assets are the same. The portfolio of securities inherits the risk characteristics of the assets. Ultimately, all the cash flow that goes to service the securities has to be the cash flow that the assets generate. There is no cash flow from anywhere else - no assets means no cash flow. As such, the expected return and risk for the portfolio of issued securities has to match the expected cash flow and risk of the assets.* (McKenzie & Partington, 2013, p. 6)

Businesses face two kinds of risk, business risk and financial risk. The components of these risks for regulated network businesses are shown in Figure 2 below.

Figure 2: Summary of potential risk factors (Source: McKenzie and Partington and Frontier citing Frontier)

Business risks	Financial risks
Demand risk	Refinancing risks
Input price risk	Interest rate reset risk
Cost volume risk	Default risk
Suppliers risk	Financial counterparty risk
Inflation risk	
Competition risk	
Stranding risk	
Political/regulatory risk	
Other business risks	

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As we have discussed earlier the standard CAPM identifies the overall undiversifiable market risk (which depends on macroeconomic outcomes) and then assesses the assets systemic risk.

In making the 2013 Guideline, the AER has analysed the extent to which these risk factors are common between the electricity and gas networks, and the extent to which network risk would deviate from market risk. (AER, 2013b, pp. 36-43). In doing so they drew heavily on the work of McKenzie and Partington (2013). Consistent with the CAPM, this analysis is focussed on determining the extent to which there is a systematic difference in the risk faced by these firms. However, it can also be used to assess risk.

The conclusion of the AER and McKenzie and Partington is that the network businesses are largely isolated from business risks, including the business risks that would track macroeconomic conditions. The firms provide an essential service into a market with a very inelastic demand. The operation of the PTRM provides a real return so the businesses are isolated from Illiquidity risk and inflation risk. They do not face stranding risk, demand risk or competition risk as the regulatory regime provides determined cash flows.

The political/regulatory risk is inherently low. Sovereign risk for investing in Australia is negligible.

Financial risks are also mostly low. The networks face negligible default risk as the revenue from their major customers (retailers) is supported by a revenue protection regime under the rules.

The biggest risk the businesses face is the consequence of debt being denominated in nominal terms while the overall enterprise return is guaranteed in real terms. The appropriate risk management strategy for this risk is to reduce gearing.

In its discussion of gearing the AER has observed:

> *In theory, the optimal debt to equity ratio is the point at which business value is maximised, where the marginal benefits just offset the marginal cost of debt. However, while an optimal capital structure theoretically exists, the actual optimal value of debt and equity for any given business is dynamic and dependent on a number of business specific factors.* (AER , 2013c, p. 126)

ECA believes that an alternative approach to determining the rate of return on equity should be explored. The rate of return on equity for regulated network businesses could be addressed by a bottom-up determination of an appropriate risk premium over the risk-free rate. In this way machinery of estimation of parameters with doubtful theoretical justification using opaque and contested techniques can be dispensed with.

We accept that the prospect of a thorough review of the underlying principles determining the rate of return is unlikely to be completed through this review. Consequently, such a fundamental reform needs to be contemplated at the conclusion of this review.

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Forward approach to determining the rate of return on equity

We return to the more limited scope of the current review and the determination of the rate of return on equity within the current framework.

The whole discussion in this section provides ECA's response to the three questions posed in the discussion paper on the topic of the rate of return for equity. In making our submission we note and acknowledge the AER's intention and observation in the Issues Paper that:

> *We will consider all material relevant to estimating the equity beta and market risk premium, and evaluate the current weighting of relevant material going forward. Whilst this is important to the process, most of the information and academic knowledge around this material changes slower than the empirical data and as such our current approach is likely to reflect most of that information.* (AER, 2017a, p. 26)

We believe that for the rate of return guideline to be binding, it will need to be prescriptive so that the only empirical input required to determine the rate of return for equity is the risk-free rate.

In the discussion of the estimation of the beta point estimate we outlined our methodological objection to any use of the Black CAPM in the determination of beta. Further we believe that greater weight should be placed on the observations of McKenzie and Partington about the very low levels of risk faced by the network businesses (and indeed the reasons why these assets face significantly lower risk than overall market risk). Subject to any additional empirical analysis provided by the AER we believe that there is no basis for an asset beta any higher than 0.5.

Similarly, we have a methodological objection to the use of the Dividend Growth Model to inform the Market Risk Premium (MRP). Further we believe that subject to any further empirical analysis the point estimate should be set closer to the mid-point of the historical range.

The historical data at the time of the 2013 review provided a range of 5.8 to 6.4 per cent if calculated using arithmetic averages and a range of 3.9 to 4.9 per cent if calculated using geometric averages. Based on the AER's consultant's advice that 'the unbiased estimator of the MRP lies between the arithmetic average and the geometric average' this data provides a range of 4.85 to 5.65 and an appropriate point estimate of 5.25 percent.

Conclusion

The cost of regulated networks is a significant contribution to the final price of energy faced by Australian consumers. That cost is in turn heavily dependent on the allowed rate of return used in revenue determinations and access arrangements.

The achievement of the NEO and NGO – that current and future consumers pay no more than they need to for the services they want – is therefore heavily dependent on the decision the AER makes on the allowed rate of return. This guideline is also expected to become a binding guideline.

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Accordingly, while we support the incremental approach being adopted, we encourage the AER in publishing its decision to publishing a single final determination that does not require other documents (such as the draft decision) to be accessed to understand the basis of the decision.

Finally, we have advocated in this submission that the current guideline is significantly in error in establishing an excessive rate of return which has resulted in excessive profitability of network businesses. ECA believes that regulated networks should be able to achieve returns higher than the allowed rate of return on certain strict conditions. They should do so, however, by driving ongoing efficiency improvement and by being rewarded through incentive schemes for delivering service outcomes that consumers want.

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Response to the AER Issues Paper
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References

ACCC. (2017). *Retail Electricity Pricing Inquiry: Preliminary Report .* Australian Competition and Consumer Commission .

AEMC. (2017). *Electricity Network Economic Regulatory Framework Review: 2017 Report .* Australian Energy Market Commission.

AER . (2013c). *Better Regulation Rate of Return Guideline: Explanatory Statement Appendices.*

AER . (2017b). *Review of the rate of return guidelines— Process for the guideline review: Position paper.* Australian Energy Regulator.

AER. (2013a). *Better Regulation: Rate of Return Guideline.* Australian Energy Regulator.

AER. (2013b). *Better Regulation Rate of Return Guideline: Explanatory Statement .* Australian Energy Regulator.

AER. (2015a). *Final Determination: Ausgrid distribution determination 2015-16 to 2018-19 : Attachment 3 Rate of Return.* Australian Energy Regulator.

AER. (2015b). Final Decision Ausgrid Distribution Determination - Ausgrid 2015 - PTRM - Distribution. Retrieved from https://www.aer.gov.au/system/files/AER%20Final%20decision%20Ausgrid%20distribution%20determination%20-%20Ausgrid%202015%20-%20PTRM%20-%20Distribution_1.xlsm

AER. (2017a). *Review of the rate of return guidelines: Issues paper.* Australian Energy Regulator.

Boyd, T. (2015, November 25). *Three big lessons from the $10.3b TransGrid sale.* Retrieved from afr.com: http://www.afr.com/brand/chanticleer/three-big-lessons-from-the-103b-transgrid-sale-20151125-gl80ga

CEPA. (2016). *Future Regulatory Options for Electricity Networks.* Cambridge Economic Policy Associates Pty Ltd. Retrieved from http://www.energynetworks.com.au/sites/default/files/cepa-ena_future_regulatory_options_for_electricity_networks_august_2016.pdf

ECA. (2016). *Interpreting the long term interests of consumers.* Energy Consumers Australia. Retrieved from http://energyconsumersaustralia.com.au/publication/interpreting-the-long-term-interests-of-consumers-2/

ECA. (2017). *Profitability measures for regulated network businesses: Response to the AER Discussion Paper.* Energy Consumers Australia. Retrieved from http://energyconsumersaustralia.com.au/publication/profitability-measures-regulated-network-businesses-submission/

Economist. (2002, June 1). 'Mall Content' . *The Economist.*

ENA. (2017a). *Inquiry into Retail Electricity Supply and Pricing - response to the issues paper.* Energy Networks Association. Retrieved from http://www.energynetworks.com.au/sites/default/files/accc_electiricity_retail_supply_and_pricing_final.pdf

ENA. (2017b). *Inquiry into Electricity Demand, Supply and Prices in New South Wales: Response to Select Committee Inquiry.* Energy Networks Australia. Retrieved from http://www.energynetworks.com.au/sites/default/files/20171016_ena

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December 2017

_submission_to_the_nsw_legislative_council_inquiry_into_electricity
_supply_demand_and_prices_in_nsw_final.pdf

Judge, G. G., Griffiths, W. E., Carter Hill, R., Lutkkepohl, H., & Lee, T.-C.
(1985). *The Theory and Practice of Econometrics* (2nd ed.). Wiley.

Kaye, B., & freed, J. (2017, May 11). *Australian-led group pays $5.6 billion
for NSW energy grid, foreigners in back seat.* Retrieved from
reuters.com: https://www.reuters.com/article/us-australia-utilities-
privatisation/australian-led-group-pays-5-6-billion-for-nsw-energy-
grid-foreigners-in-back-seat-idUSKBN18700T

McKenzie, M., & Partington, G. (2012). *Estimation of the Equity Beta
(Conceptual and Econometric Issues) for a Gas Regulatory Process
in 2012.* The Securities Industries Research Centre of Asia-Pacific
(SIRCA) Limited. Retrieved from
https://www.aer.gov.au/system/files/RBP%20gas%20transmission%
202012%20-%20Equity%20Beta%20report%20-
%20McKenzie%20and%20Partington%20%28Public%29%20-
%203%20April%202012_0_0.pdf

McKenzie, M., & Partington, G. (2013). *Risk, Asset Pricing Models and
WACC.* The Securities Industry Research Centre of Asia-Pacific
(SIRCA) Limited.

Oberheim, E., & Hoyningen-Huene, P. (2016). *The Incommensurability of
Scientific Theories.* (E. N. (, Ed.) Retrieved from The Stanford
Encyclopedia of Philosophy (Winter 2016 Edition),:
https://plato.stanford.edu/archives/win2016/entries/incommensurabili
ty/

Thompson, S., Macdonald, A., & Moullakis, J. (2016, October 20). *Ausgrid
price explained; 1.41-times RAB.* Retrieved from afr.com:
http://www.afr.com/street-talk/ausgrid-price-explained-141times-rab-
20161020-gs6pah

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