ROR

CRG

Rate of Return Consumer Reference Group (CRG)

Submission to the Australian Energy Regulator - Response to the Rate of Return Draft Decision

Consumer reference group

September 2018

Contents

Executive summary

The CRG position – in brief

- The 2013 Rate of Return Guideline (2013 Guideline) was too generous to networks – the exercise of judgement by the Australian Energy Regulator (AER) resulted in a weighting towards ensuring investment, with less consideration of the impacts on and risks to consumers of unnecessarily high prices, which are now very apparent.
- Specifically – in determining the parameter values for beta, Market Risk Premium (MRP) and gamma and the assessment of the appropriate credit rating, the AER's judgement was weighted towards ensuring investment.
- The AER's challenge in making the 2018 Rate of Return Guideline (2018 Guideline) is to recognise that the 2013 decision resulted in a rate of return that is too high and to consider the implications of current evidence.
- In exercising judgement, and in describing how it has been done, it is not possible to identify the impact of each component of the evidence on the decision. Were such a process to be possible the AER would be applying a formula, not judgement. To suggest that the Draft Decision[1] is not supported by an assessment of the current evidence compared to 2013 is not appropriate and fails to acknowledge the regard the AER has to setting the overall rate of return.
- The reliance on the Sharpe-Lintner capital asset pricing model (SL CAPM), should be supported by a feedback or correction mechanism (performance evaluation framework), to provide an empirical means to make an *ex post* assessment of whether or not a prior decision was correct. This would ensure that:
    - o the allowed Rate of Return (ROR) meets the National Electricity Objective (NEO), the National gas Objective (NGO) and Revenue and Pricing Principles (RPP);
    - o consumers pay no more than they should for the efficient delivery of services; and
    - o networks do not earn excessive profits.
- The use of very limited market data to populate the SL CAPM is fraught with risk, including that of error reinforcement.

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[1] The Draft Decision includes https://www.aer.gov.au/system/files/AER%20-%202018%20Rate%20of%20return%20guideline%20review%20-%20Draft%20guidelines-%2010%20July%202018.pdf and https://www.aer.gov.au/system/files/AER%20-%20Draft%20rate%20of%20return%20guidelines-%20explanatory%20statement%20-%20%2010%20July%202018_0.pdf

- The CRG argued the above in its May 2018 submission[2] and believes the settings it proposed then (now adjusted to reflect data available via the Draft Decision[3]) are based on strong evidence and correct interpretation of the foundation model. The CRG's May 2018 submission did not seek to arrive to arrive at definitive answers on each of the settings, rather it encouraged the AER to take into account the perspectives and matters it raised and to exercise its judgement accordingly[4]. The CRG suggested that the AER should justify why it would choose parameter values other than those which delivered the lowest costs to consumers.
- The CRG acknowledges the AER's explanations and justifications in its Draft Decision, in particular the need to maintain investor confidence, but contends that investor expectations need to be re-set.
- The Draft Decision is a modest (incremental) step in the right direction and is acceptable as long as it is part of a downward process which corrects the overly generous (to networks) 2013 settings. A more comprehensive review of the ROR Guideline is required with the resulting process informed by actual earnings returns as evidenced via a rigorous reporting regime, with greater consumer input.

The guideline review process

In its Review of the Rate of Return Guidelines Issues Paper[5] the AER outlined its approach to the review, being an incremental approach, a position which was broadly supported at the public forum held on 18 September 2017.

In its May 2018 submission to the AER responding to evidence sessions, discussion papers and transcripts the CRG noted that this review has raised further concerns about the use of the Capital Asset Pricing Model and encouraged the AER to undertake a more fundamental review of the approach to determining the allowed

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[2] https://www.aer.gov.au/system/files/Consumer%20Reference%20Group%20submission.pdf

[3] The Draft Decision provided a significant amount of new information which updated that which formed the basis of analysis in our May 2018 submission, as well as clarifications of a number of issues. This response has therefore been updated accordingly to take account of that new information. For example, new information was provided on:
- the proportions of regulated and unregulated revenue for the cohort of firms providing the equity beta which led to a more accurate value;
- the approach to setting the geometric average of MRP from the 135 years of data to geometric averages for 5 year periods and then arithmetically averaging these;
- the values of the Debt Risk Premium (DRP) , which meant that the Equity Risk Premium (ERP) had to be increased to ensure that there was a reasonable premium for the ERP over the DRP; and
- network profitability data.

[4] https://www.aer.gov.au/system/files/Consumer%20Reference%20Group%20submission.pdf, p36

[5] AER - Review of the Rate of Return Guidelines Issues Paper: October 2017, p7

ROR as soon as the first binding instrument is made, including a performance evaluation framework.

The CRG has nonetheless participated actively in the current review which has not stepped beyond the boundaries of being incremental.

The CRG notes the regular commentary that an incremental review implies that only new evidence should be used to inform changes to the 2013 decision. The CRG is very concerned that there is an assumption that "new evidence" should be limited to just that used to derive the parameters used in setting the rate of return. The CRG considers that "new evidence" must be interpreted more widely and include assessments of outcomes seen in the market (eg asset sales, changes in patterns of capital expenditure, actual costs incurred for debt, growth in the regulated asset base, rates of utilisation, historical network financial performance, etc) and consumer appetite for reliability risk. This evidence on the rate of return as a whole is then part of the information the AER has to consider when reviewing individual parameters.

The CRG believes that the AER's Draft Decision, particularly in relation to the key parameter values beta, Market Risk Premium and gamma, represents a step towards addressing the currently over generous returns afforded to networks. The CRG contends that the AER could, and should, have gone further to address that situation, however we acknowledge that in applying its judgement the AER has sought to balance consumer outcomes with other factors including investor confidence.

The CRG has also reviewed the report prepared by the Independent Panel[6]. The Independent Panel was established by the AER to "review its Draft Guidelines as a means of promoting stakeholder confidence in the review process and confidence that the Final Guidelines are capable of achieving the national gas and electricity objectives"[7]. The CRG notes the Independent Panel's (the Panel) conclusion that the AER has undertaken an extensive consultation and engagement process. The Explanatory Statement has set out in significant detail the evidence, analysis and conclusions that the AER has reached in determining each of the rate of return parameters, and the value of imputation credits, to form an overall estimate of the rate of return.

The Panel identified a number of areas where clarification of the AER's explanations and reasoning supporting its approach to various issues will result in the Guidelines being supported by sound reasoning, based on the available information, such that it is capable of promoting achievement of the national gas and electricity objectives.[8]

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[6] https://www.aer.gov.au/system/files/Independent%20Panel%20Report%20-%207%20September%202018.pdf

[7] Ibid, page I

[8] Independent Panel Covering Letter to AER 7 September
https://www.aer.gov.au/system/files/Independent%20Panel%20Report%20-Covering%20Letter%20-%207%20September%202018.pdf

We welcome these comments by the Panel and note that a number of them will be relatively straight-forward for the AER to address. In reviewing the recommendations we endorse the Panel's observation that:

> *The Panel has concluded that the Explanatory Statement should be largely self-contained. A diligent reader should be able understand the Explanatory Statement without prior knowledge of the 2013 Guidelines or submissions by stakeholders in the past five years. The Explanatory Statement should clearly set out all relevant reasoning, evidence and calculations with clear and specific references to other relevant documents that are publicly available.*[9]

We believe the majority of the Panel's recommendations primarily serve this purpose.

Another group of recommendations relate to the ways the AER may be able to use additional information in the future, and greater clarity will do more to facilitate that process. We note that both our May 2018 submission and this submission encourage the AER to commence its next review as soon as this review is completed to address some of these issues.

There is a further group of recommendations that go to the treatment of the Black CAPM. One particular aspect of this is reconciling the conclusion that the AER has diminished confidence in the Black CAPM but failing to fully implement the consequence of that decision due to a concern with maintaining investor confidence.

A fourth group of recommendations relate to imputation credits, where we note that the Panel queries why the AER has felt constrained to use low dividend distribution rates and low imputation utilisation rates.

We regard the Panel's last recommendation as its most important and significant one. The Panel clearly agrees with the AER that it is not sufficient to merely consider the estimation of the individual parameters, but to also consider how those parameters work together in the overall rate of return. It is only the overall rate of return that can be assessed against the achievement of the objectives of the energy laws.

In making that assessment we have interpreted the decision as having given some weight to consumer preference for a higher reliability risk in return for lower prices. Consumer preferences should matter in considering how to promote their long-term interests.

The recommendations (using the numbering on pages v to vii of the Independent Panel's report) fall into these simple groups as outlined in the table below.

Group of issues	Recommendation No.
Straight forward addition of well-established and available theory or evidence to improve comprehension.	1, 2, 5, 8, 9, 10, 11, 12, 13, 14, 15, 18, 20, 21

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[9] Independent Panel Report, page II

Use of evidence that the industry enjoys the benefits of dividend imputation.	24, 25, 26, 27, 28, 29
Matters that are more relevant to future reviews	3, 4, 22, 23,
Further explanation for having diminished confidence in the Black CAPM	7, 16, 17, 19,
Overall rate of return	30

We will expand on the matters relating to Beta, the Black CAPM and imputation later in this submission.

The CRG also notes that the Independent Panel highlights a number of inconsistencies within the AER draft decision. The CRG agrees that this is the case and provides four more examples of where such internal inconsistency occurs. These are detailed in section 5.2 of this submission.

CRG May 2018 submission – re-cap

In its May 2018 submission the CRG strongly contended that the key objective of economic regulation is to ensure the regulated network monopolies do not earn excessive (inefficient and unfair) profits on their investments. The allowed rate of return is the mechanism by which network investors obtain a return for their investment, and therefore this objective is meant to be achieved through the ROR Guideline. We contended that the current Guideline is not meeting this objective.

The CRG pointed out that Australian energy consumers share in a regulatory compact with network businesses that provides those businesses a guarantee of the right to recover their efficient costs on the condition that consumers are not over-charged for network services. To fulfil its obligations to both parties under the compact, the AER must set the allowed rate of return at an efficient level. For the last decade consumers have not been getting the outcomes they deserve in this process and are paying prices that are too high, driven in part by an allowed ROR that has erred on the side of promoting investment rather than promoting efficiency.

While there is no formal mechanism for testing whether the Guideline serves the long term interests of consumers, the CRG observed that available evidence demonstrates the objectives are not being met.

Over the last decade the combined Regulatory Asset Base (RAB) of the electricity distribution networks has almost doubled while network utilisation has declined from just under 60 per cent to just over 40 per cent. Despite these changes, network businesses are continuing to enjoy strong earnings and are trading at multiples of 1.3

to 1.6 of the RAB. The return on assets data recently released by the AER[10] confirms this view.

Conversely, there is no evidence of under-investment resulting in a decline in network reliability.

The CRG acknowledges the fact that there are differences between the individual networks on the extent of these changes, and that RAB growth has to some extent plateaued since 2014. However, consumers justifiably expect continuous performance improvement and plateauing asset bases is not consistent with declining consumption.

The CRG suggested there are four reasons why the current Guideline does not meet the objectives:

• The level of risk faced by the regulated network businesses afforded by the rules is not reflected in the 2013 Guideline. The consequence is significant; for example consumption volume risk is not borne by the electricity networks.

• The companies the AER draws its market data sample from do not represent benchmark efficient entities (BEEs), as these companies operate both regulated and non-regulated businesses, and are not representative of the BEE.

• There is no data on actual returns against which to compare modelled returns so as to allow the AER to make informed judgements under the Guideline for future periods. Previous decisions are reinforced by the use of market data that themselves reflect previous decisions, as identified in the Evidence Sessions.

• The Black version of the Capital Asset Pricing Model (CAPM) and the Dividend Growth Model (DGM) used in the Foundation model (2013 Guideline) result in an excessive allowance for the equity risk premium.

In combination, those issues have resulted in a substantial over-estimation of the efficient rate of return, which is inconsistent with the NEO/NGO and the Revenue and Pricing Principles.

That over-estimation is the starting point for the current review.

Information made available since our May 2018 submission

Recent regulatory proposals submitted to the AER by NSW electricity networks, against a backdrop of the current ROR Guideline Review and the potential for a reduction in the allowed ROR, show material projected RAB growth.

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[10] See Return on Assets – summary data – September 2018 available at https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/profitability-measures-for-electricity-and-gas-network-businesses

Further, APA Group's acceptance in August 2018 of a $12.98 billion takeover offer from a consortium led by Hong Kong's CK Infrastructure, representing a Regulated Asset Base (RAB) multiple of 1.6, after the AER had delivered its Draft Decision on ROR, is not indicative of investor concerns over the allowed rate of return on regulated assets being too low as the following chart (Figure 1) from the Australian Financial Review[11] highlights:

Figure 1 – RAB multiples
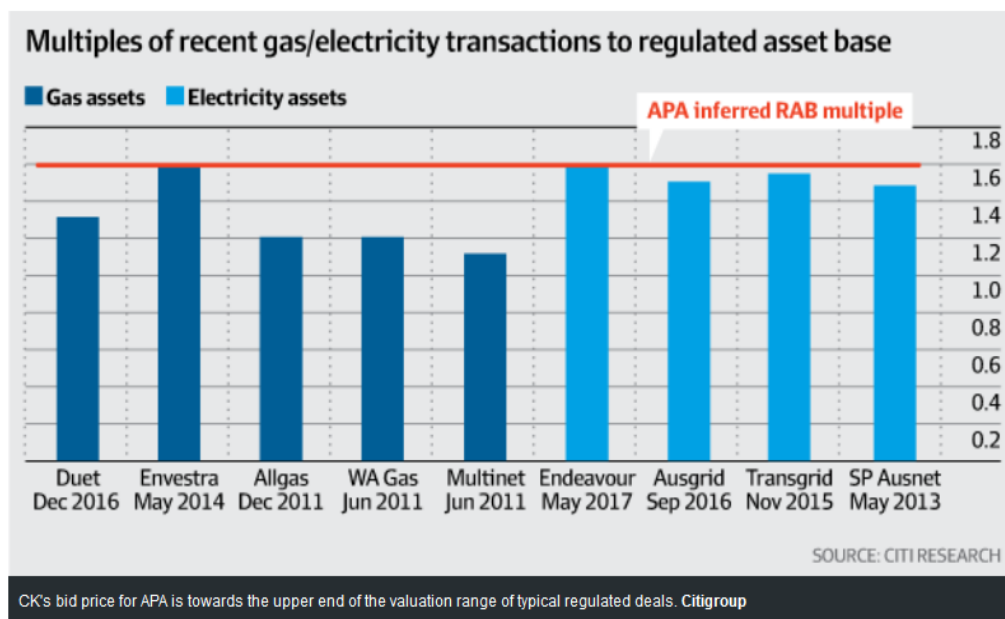
We acknowledge that much of APA's revenues are from unregulated assets and that the consequence of the draft guideline on their overall revenues will be small. However, APA is also the business that generates most of the beta values at the top end of the range of observed values.

The recently released data of the financial performance of the electricity networks[12] implies that the current rate of return has delivered on average across all networks a return on assets (including incentives) of about 130-140 bp[13] above the rate of return set by the AER; this is much greater than the reduction in the rate of return implied by the Draft Decision. The CRG observes that the network profitability data, while

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[11] 13th August 2018

[12] https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/profitability-measures-for-electricity-and-gas-network-businesses

[13] This average data is based on an annual basis using the geometric average over the 4 year period

not conclusive, provides a view that the networks are more profitable than implied by the rate of return set by the AER at regulatory resets.

At the same time, there is no evidence of under-investment resulting in a decline in network reliability, safety, security or quality of supply, rather, the converse is the case.[14].

The CRG suggests that actual financing costs compared to the allowed ROR contribute to excessive profits earned by network companies, which result from the excessive ROR allowed in the 2013 Guideline.

The CRG notes the Energy Network Association (ENA)'s reference[15] to an underspend in actual capex compared to allowed capex and notes that there is currently no analysis available which examines in detail the reasons for under investment compared to allowed investment and suggests that over estimates of demand forecast and the application of capex incentive schemes can be expected to be the major contributors.

The CRG refers to the comments it makes in section 2.3 of this submission where it is pointed out that the capex incentive scheme provides a reward to networks for under spending capex allowances and therefore to over-claim those allowances in order to maximise the opportunity for increased rewards from the regulatory bargain.

Engagement with ENA and Investor Reference Group (IRG)

Prior to the CRG and ENA's May 2018 submissions representatives of both bodies met on a roughly fortnightly basis.

The CRG's position was essentially that rate of return is too high, not reflective of the low level of risk faced by investors in regulated network companies, and has been over an extended period.

The ENA held a contrary view and the two parties set out to establish a productive working relationship and to endeavour to seek common ground on ROR issues wherever possible.

The details of the CRG and ENA's arguments are contained in their respective May submissions.

The CRG and ENA engagement was of only four months duration and therefore provided limited time to address differences in views. Accordingly there was no closure of the different perspectives on most elements of the ROR, but the parties

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[14] For example, see **www.aer.gov.au/networks-pipelines/network-performance/transmission-performance-data-2006-2017**

[15] AER public forum 2 August 2018, Initial Network Sector Perspectives, slide 7

gained insight into each other's rationale and perspectives. It is however the CRG's observation that the ENA has not embraced the CRG's underlying message.

CRG representatives met with IRG representatives on one occasion prior to May. There has been a subsequent telephone conference between the CRG and IRG and the discussion indicated that more consultation between these two groups could lead to some greater commonality of views.

The CRG's message to the IRG was the same as presented to the ENA, but with an emphasis on what the CRG sees an alignment between our interests – maintaining the value of the assets we have each invested in.

Discussions between the CRG and the ENA have continued since the May 2018 submissions and since the AER's Draft Decision. The CRG sees value in maintaining an ongoing dialogue, with the expectation that insights into each other's perspectives might progress to understanding and then, and possibly with more time and information, different viewpoints being reconciled.

Draft Decision – consumer impacts and risks

The CRG notes that for some consumers, electricity is already unaffordable, and observes that the cost of networks services is the single largest element in the cost of electricity. Even if the Draft Decision is applied, residential and business consumers will continue to face very real pressures from electricity prices which include greater than efficient costs. Current hardship and disconnection rates will remain or increase as the effect of a lack of wages growth and fixed low incomes continues to bite.

Consumers will continue to face unreasonable cost burdens associated with energy supply and to bear considerable risk to supply in the case of residential consumers and business viability for many small to medium enterprises (SMEs) as well as for large energy consumers exposed to international competition.

Self-generation is an emerging viable alternative for many consumers, but not for vulnerable consumers. An increase in the level of self-generation, driven by unnecessarily high electricity prices, will translate to even higher prices for vulnerable customers.

The consumer impact of the Draft Decision would be to deliver a bill reduction of around $40 pa on the average domestic retail electricity bill of $1,600 pa. That reduction of around 2.4% could be significantly greater if the AER's exercise of judgement were to give greater consideration to consumer outcomes and less consideration to the need to provide investment incentives.

The CRG contends that every component of the energy cost price stack must be the absolute minimum representation of efficient costs and must be tackled vigorously.

The AER has determined values of 0.6 for equity beta, 6.0 for MRP and 0.5 for Gamma and a reduction in the cost of debt, but it should give more consideration to consumer outcomes when exercising its judgement.

In doing so, consideration of the parameter ranges derived by the CRG from the market data point to equity beta of 0.4 to 0.5, a Market Risk Premium of 4.0 to 5.0, gamma close to 1 and debt at a credit rating of broad A. These parameters would deliver a reduction in retail residential electricity bills of some 5.9% or a saving of nearly $100 pa.

Under the 2013 Guideline settings, the nominal ROR is around 6.68%[16], which delivers a notional return to the networks of $6.3 billion pa to the regulated gas and electricity networks overall which have a RAB of around $95 billion.

Using the Draft Decision settings (MRP = 6.0, equity beta = 0.6, gamma = 0.5 and debt includes one third of broad A credit rating), the reduction from the 2013 settings is around 4.8%, giving a reduction in network revenues and saving to consumers of some $510 million pa.

Using the CRG recommended settings of MRP = 5.0 (high end of the range 4.0-5.0), equity beta = 0.5 (high end of the range of 0.4 -0.5), gamma = 0.9 and broad A credit rating, the reduction from the 2013 settings is around 11.8%, a reduction in network revenue and a corresponding further saving to consumers of some $740 million pa.

CAPM parameter values

The use of market data

The AER has expressed a view that it should use market data as its primary source of data to inform the CAPM parameter values. While the CRG agrees with the sentiment expressed by the AER, it also recognises that the market data has to be applicable to the task. The CRG considers the AER could, and should, have applied the market data differently. Consumers are concerned that the market data is being applied in a way that delivers an outcome which is more favourable to the networks than it needs to be, providing an excessive reward to networks and incentives to over-invest and is therefore not in the long term interests of consumers.

There are two major concerns about the use of market data:

- Firstly, market data used does not reflect the reality of the structure of the Benchmark Efficient Entity (BEE) in that the market data reflects firms that have varying amounts of their revenue from regulated assets, with perhaps half of the cohort of firms used to inform the BEE having more than 50% of their revenues from unregulated sources. This affects the valuation of equity beta, gearing and credit ratings
- Secondly, the use of market data on returns (MRP) assumes that the only returns are derived from the allowed rate of return. In fact, regulated

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[16] Derived from excel file "sensitivity matrix" available at https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/review-of-rate-of-return-guideline/consultation
This model is used for all calculations of input parameter changes throughout this submission

> networks get their rewards from the MRP (via the return on equity) <u>plus</u> from incentive schemes, under-run of the allowances for cost of debt and taxation, and from selling access to the shared assets for unregulated revenue. As noted above, the impact of these elevates, on average, the actual rate of return by 130-140 bp[17] above the rate of return set by the AER, which across all AER regulated networks equates to a cost to consumers of some $1300 million pa

The AER acknowledges that there is an expectation that networks will benefit from under-runs of the cost of debt and taxation (the import of incentive regulation) and from selling access to shared assets. Further, as the inputs to the incentive schemes of opex, capex and reliability are set from independent assessments of these allowances, these incentive schemes are weighted towards earning a bonus rather than not, and this assessment is supported by the network profitability data released recently.

The CRG is not mounting an argument for a form of regulatory undertaking, that the firms should be punished for out-performance. We are only drawing the distinction between the evaluation by the market of the total returns of the business versus the allowed rate of return that forms a component of those total returns. In particular, we note that the returns on the regulated assets are less volatile than the returns from the incentive schemes.

To apply the measured MRP which includes revenue from all sources to the firms used to derive the measure, to regulated networks, overstates the equivalent position of the networks. Recognizing this overstatement the AER should use a lower MRP than that measured from market data. To be consistent, either the measured MRP needs to be discounted or there should be no revenue from other sources allowed to the networks from the incentives.

Equity beta

The AER has set an equity beta at 0.6, a reduction from the 2013 setting of 0.7. The CRG considers that this value is overstated and should be closer to 0.4.

The main driver for the CRG to recommend a lower value for equity beta lies with the source of the data. The market data used to calculate the equity beta is based on a small cohort of firms from which the data is drawn[18] and the data comes from firms with significant amounts of unregulated revenue. Unregulated services would be subject to greater risk than regulated services (ie firms with unregulated services would have a higher equity beta than those providing regulated services), so there is a need to adjust for the degree of regulation as the BEE is supposed to provide just regulated services.

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[17] This average data is based on an annual basis from the geometric average over the 4 year period

[18] This might be even lower in the future should the proposed acquisition of APA by CKI consortium secure government and regulatory approval

The CRG has analysed the equity betas after adjusting for the regulated versus unregulated services provided by the firms in the cohort and the outcome is that using the same cohort as that used by the AER, a 100% regulated firm would have an equity beta of 0.4 and a 100% unregulated firm would have an equity beta of 0.75. This is consistent with the observation that all energy transport firms have effective monopolies for the services they provide.

A report by the South Australian Centre for Economic Studies (SACES) attached to this submission provides convincing support for the AER Draft Decision not to use the Black CAPM and low beta bias concerns to increase the point estimate of equity beta.

Market risk premium (MRP)

The AER has set the MRP at 6.0, a reduction from the 2013 setting of 6.5. The CRG considers that this value is grossly overstated and could be less than 4.0.

The AER has assumed that the estimation of the MRP should be based on the arithmetic mean of average of annual historical excess returns (HER) measured over the last 135 years with equal weighting given to data from the 19th century as to the 21st century. Bearing in mind how the HER for the early years of the ASX accumulation series was "created"[19], the CRG has a view that assigning equal weighting has little validity, especially after noting that the MRP has evidenced a decline (albeit relatively small) over the last 135 years.

The report from SACES questions the use of arithmetic averaging of annual historic excess returns, especially as the AER itself notes that such an approach will result in an overestimate of the outcome. SACES points out that the annual averaging approach used by the AER is merely "convention" rather than being based in reality and that an investment is commonly made over more than one year[20]. SACES also observes that a more logical period for averaging returns would reflect the 10 year basis used for setting the risk free rate.

The AER comments that its Post Tax Revenue Model (PTRM) is applied on an annual basis and uses this to support its continued use of arithmetic averaging. The CRG considers that this does not reflect the reality of the term over which investments are made

The AER takes a different approach in estimating expected inflation where the geometric average over ten years is calculated using RBA forecasts for the first two years and the RBA target mid-point for the other eight. The basis for this is the use of a ten-year tenor for other values, especially the risk free and debt rates.

The PTRM uses an annualised rate from ten-year data to do annual calculations. Inside the model the annual rate is used to convert full end-of-year data to an

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[19] The earlier data in the series is not directly measured but calculated from the multiple stock exchanges that existed before the ASX was formed and before the creation of indices.

[20] The networks regularly point to their investments being made over 40 years or more

equivalent monthly investment profile. Further, the regulated business doesn't have its revenue allowance determined by the annual calculation, instead the five years of revenue are combined into a five-year net present value which is then smoothed. The net present value in turn is derived from the WACC (ROR) and at the very least therefore the underlying values should be derived from a five year investment horizon.

On this basis the CRG recalculated the HER as an investment compounding over a 5 year period by using the geometric mean over the 5 year investment period and then arithmetically averaging the 5 year geometric means over the entire period of the data; for periods of 2 years and 10 years. The results are depicted in Table 1 below:

Table 1 – MRP comparison

Period	AER MRP (Geo)	AER MRP (Arith)	CRG MRP (Arith of 2 year Geo)	CRG MRP (Arith of 5 year Geo)	CRG MRP (Arith of 10 year Geo)
1883-2017	0.050	0.063	0.055	0.050	0.048
1937-2017	0.042	0.060	0.049	0.045	0.044
1958-2017	0.042	0.065	0.051	0.044	0.041
1980-2017	0.043	0.064	0.052	0.047	0.041
1988-2017	0.045	0.060	0.054	0.048	0.044
2000-2017	0.044	0.061	0.050	0.046	0.045

Source: CRG based on AER data, including the effect of imputation (theta = 0.6)

The outcome of this analysis shows that the approach to averaging in the Draft Decision delivers a higher than reasonable assessment for MRP based on the market data.

The CRG considers that the geometric averaging data therefore indicates MRP lies in the range of 4.0 to 5.0 percent, with data over the longer periods that draw upon reliable data pointing to a value at the lower end of that range.

SACES comments on the appropriateness of using the Dividend Growth Model (DGM) for informing the MRP in its advice in the attached report, suggesting there is no theory or evidence that MRP varies inversely with bond rates and that the assumptions needed for the DGM that have to be made regarding the inputs are questionable. SACES observes that, while time-varying models for assessing MRP (such as DGM) are reasonable in principle, they have had little success in convincingly outperforming simple averages of historic data. These conclusions support the AER and CRG views that neither of the DGM nor the Wright approach have validity in informing the value of the MRP

Equity risk premium analysis

To test our calculations for MRP and equity beta, the CRG analysed the equity risk premium resulting from the values of the MRP and the equity beta it considers appropriate against the debt risk premium. Based on historic premiums for ERP over DRP and making adjustments for the credit rating to reflect broad A credit rating, the ERP should exceed the DRP but by a small amount to reflect the nature of the risks faced by the BEE. This is supported by an MRP not exceeding 5.0 and an equity beta of not exceeding 0.5.

Gearing, regulated revenue and credit rating

Gearing and credit rating are independently estimated by the AER using market data from a small cohort of firms and make no allowance for the degree of regulated revenue the firms have.

The CRG considers that gearing, credit rating and proportion of regulated revenue are closely intertwined and cannot be assessed independently as occurs in the Draft Decision. When the three elements are combined, the CRG considers that for the BEE (ie having no unregulated revenue) with 60% gearing, the credit rating would be broad A rather than BBB+, leading to a result further reducing the cost of debt below that set in the Draft Decision.

Risk free rate

The AER has set the risk free rate based on 10 year CGS but provides no reasoning, other than potentially having a lower volatility than 5 year terms. The CRG considers that the AER's arguments about the PTRM used to support using arithmetic averages of excess returns to estimate the MRP would suggest the use of 5 year CGS, i.e. the same term as the regulatory period.

The CRG recognises that changing the risk free rate would result in a need to recalculate the market risk premium, but this can be readily done. There are no other parameters that would be affected. Alternatively the AER could accept our reasoning for the use of an arithmetic average of ten year geometric averages for the MRP.

Gamma

The AER has set the value for gamma at 0.5, as set in the 2013 Guideline, but an increase from 0.4 used by the AER more recently. The CRG considers that this value is grossly understated and could be 0.9 or higher.

The value proposed by the CRG reflects a distribution rate similar (or higher) to that proposed by Lally and the AER, and a utilisation rate of unity. The CRG considers that as all other financial inputs used to set the ROR parameters (market risk premium, equity beta, risk free rate, gearing, cost of debt, etc) are based on an assumption that financing comes from Australian sources, so too should the assessment of the utilisation rate.

Summary of CAPM parameters

Whilst the CRG accepts the AER approach to use exogenous market data to inform its input parameters for the SL CAPM to generate the ROR, the CRG is concerned that in many instances the use of the market data has not been adjusted to reflect the uses to which it has been put, to derive point estimates into the ROR formula. By not applying the market data correctly the Draft Decision delivers an outcome that results in consumers paying an unnecessary premium to the networks for the provision of the services needed to transport electricity and gas to where it is needed.

While broadly supportive of using the SL CAPM to set the return on equity for this review, the CRG considers that the Draft Decision delivers parameters that do not result in the most efficient cost structure as is required by the NEL and NGL. Specifically, the CRG considers, while maintaining the concept of an incremental review, based on the market data adjusted for:

- proportion of regulated revenue;
- additional rewards allowed from incentive schemes, cost of debt and tax, and use of shared assets;
- investment rewards compounding over 5 year regulatory periods;
- inter-relationship between proportion of regulated revenue, gearing and credit rating;
- greater logic in setting the risk free rate;
- a distribution rate that reflects the practices of a firm only providing regulated services; and
- consistency between setting the cost of debt, MRP, equity beta and utilisation rate;

the parameters to be used in setting the ROR should be as depicted in Table 2 below:

Table 2 – CRG adjustment to ROR parameters/ranges

Market risk premium (based on 10 year CGS)	5.0
Equity beta	0.5
For a BEE with 60% gearing, a credit rating	Broad A
Gamma	0.9

Exercising judgement

The CRG notes at page 20 of the Draft Decision Explanatory Notes –

> *"There is a balance involved in having regard to these principles"* (the Regulatory and Pricing Principles) and *"We aim to determine a rate of return and a value for imputation credits that will provide the appropriate investment incentives that will lead to neither over nor under investment in assets, and achieve an appropriate balance of sustainable long term consumer outcomes in respect of price, quality, safety, reliability and security of supply".*

The CRG contends that the AER has historically adopted a cautious approach (erring in favour of investment risk over price outcomes and risks to consumers) in determining this balance.

In moving the balance more towards price outcomes and risks to consumers we also note that the AER's ongoing concern for 'investor confidence' is constraining further movement.

The response from networks to the Draft Decision suggests that the AER's concern for investor confidence and the associated constraint on reducing the allowed ROR further is not recognized by network owners and investors.

Price outcomes to consumers

Assigning parameter values assessed as reasonable by the CRG and delivering outcomes most favourable to consumers would result in bill reductions totalling in the order of around 11.8%.

Under the 2013 Guideline settings, the nominal ROR is around 6.68%[21], which delivers a notional return of $6.3 billion pa to all the gas and electricity networks regulated by the AER, which have an asset base (RAB) of around $95 billion

Using the Draft Decision settings (MRP = 6.0, equity beta = 0.6, gamma = 0.5 and debt includes one third of broad A credit rating), the reduction from the 2013 settings is around 4.8% giving a reduction in network revenues and corresponding saving to consumers of $510 million pa across all networks regulated by the AER.

In contrast, using the CRG settings of MRP = 5.0 (high end of the range 4.0-5.0), equity beta = 0.50 (high end of the range 0.4 -0.5), gamma = 0.9 and broad A credit rating, the reduction from the 2013 settings is around 11.8% giving a reduction in network revenues and corresponding saving to consumers of $1250 million pa.

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[21] Derived from AER spreadsheet excel file "sensitivity matrix" available at https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/review-of-rate-of-return-guideline/consultation. This model is used for all calculations of input parameter changes throughout this submission

Under the Draft Decision consumers are being asked to pay around $740 million pa. more than what the CRG conservatively estimates to be efficient costs. [22]

Broader review

As stated in our May 2018 submission, the CRG notes that this review has raised further concerns about the use of market estimates, the increasing paucity of data to inform the BEE and associated finance theory, and we encourage the AER to commence a more fundamental review of the approach to determining the allowed ROR as soon as this first binding instrument is made. This needs to include a performance evaluation framework and a feedback loop to inform on the efficacy of the rate of return settings.

The primary purpose of such a framework is to provide empirical evidence that the allowed ROR delivers actual outcomes which meet the NEO, NGO and RPP; in particular that consumers pay no more than they should for the efficient delivery of services.

Conclusion

The CRG is of view that it has demonstrated that the allowed Rate of Return could and should be significantly lower than what the AER has determined in its Draft Decision.

The ROR allowed in the 2013 Guideline did not reflect the low risk status of network companies and over compensated both beta and MRP parameters, as well as being too generous in estimating gamma. That over compensation must be corrected in the 2018 Guideline, as well as consideration of any reduction in the ROR arising from assessing the evidence now available.

The CRG nonetheless accepts that the AER must consider other, broader issues, including investor confidence and the desirability of its decision being capable of acceptance.

On that basis, the CRG could accept the AER's Draft Decision, but only if this decision is seen as the first step in a downward progression over time.

The benefit of the Draft Decision by way of energy bill reductions is of real value to those consumers who are most struggling with their energy costs. For most consumers the reduction of around 2.4% or ~$40 per year on the average retail residential electricity bill, is only a small down payment on the further reductions that are required.

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[22] If the bottom of the CRG ranges were used, the saving is about 15%

The CRG is accordingly surprised that the networks have not found the decision capable of acceptance.

The bill reduction delivered by the Draft Decision can be considered in the context of the bill reductions which the ACCC suggests[23] are possible as a result of implementing the recommendations of its Retail Electricity Pricing Inquiry-Final Report, which do not include any ROR reductions. In NSW for example, those savings attributable to the network component amount to $174 pa on a retail bill of $1,697 (page xv).

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[23] ACCC - Retail Electricity Pricing Inquiry-Final Report, June 2018.

1.   Introduction

1.1   Review process

In its Review of the Rate of Return Guidelines Issues Paper[24] the AER outlined its approach to the review, being an incremental approach, a position which was broadly supported at the public forum held on 18 September 2017.

In its May 2018 submission the CRG noted that this review has raised further concerns about the use of the Capital Asset Pricing Model and encouraged the AER to undertake a more fundamental review of the approach to determining the allowed ROR as soon as the first binding instrument is made, including a performance evaluation framework.

The CRG has nonetheless participated actively in the current review which has not stepped beyond the boundaries of being incremental.

The CRG notes the regular commentary that an incremental review implies that only new evidence should be used to inform changes to the 2013 decision. The CRG is very concerned that there is an assumption that "new evidence" should be limited to just that used to derive the parameters used in setting the rate of return. The CRG considers that "new evidence" must be interpreted more widely and include assessments of outcomes seen in the market (eg asset sales, changes in patterns of capital expenditure, actual costs incurred for debt, growth in the regulated asset base, rates of utilisation, historical network financial performance, etc) and consumer appetite for reliability risk. This evidence on the rate of return as a whole is then part of the information the AER has to consider when reviewing individual parameters.

The CRG has also reviewed the report prepared by the Independent Panel[25]. The Independent Panel was established by the AER to "review its Draft Guidelines as a means of promoting stakeholder confidence in the review process and confidence that the Final Guidelines are capable of achieving the national gas and electricity objectives"[26]. The Independent Panel has identified four issues that we think are relevant to a future review. These are:

Recommendation 3

Explain more clearly:

- why the AER intends to disregard RAB multiples

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[24] AER - Review of the Rate of Return Guidelines Issues Paper: October 2017, p7

[25] https://www.aer.gov.au/system/files/Independent%20Panel%20Report%20-%207%20September%202018.pdf

[26] Ibid, page I

- how and when the 'monitoring' and 'gauging' of RAB multiples will take place, what questions the AER will seek to answer, and what actions the AER will take once it has answered those questions.

Recommendation 4

Explain more clearly why the AER has singled out debt from the other building blocks in suggesting that profitability may inform decisions on the cost of debt.

Recommendation 22

Investigate the possibility of:

- expanding the scope of future debt information collection to include characteristics on the stock of debt, as well as recent issuances

- making more of the Chairmont detail available in the Explanatory Statement for the Final Guidelines, while respecting the commercially sensitive nature of the source data.

Recommendation 23

Adopt a proactive approach to improving the quality and relevance of dividend drop off studies and expanding the number of listed companies to be included in the distribution rate study beyond the Top 20.

It is our view that the AER has indicated that it will consider RAB multiples and network profitability in future reviews and that it does not have the data to do so for this review. The approach to improving debt data and a proactive approach to improving dividend drop-off studies can also only be prospective.

1.2   CRG participation

The purpose of the CRG is to provide a central point of contact for individual consumers or small consumer groups to coordinate participation in various steps of the Rate of Return Guideline Review process. The CRG represents a diverse range of consumer perspectives. Members were however, appointed in their individual capacity and not as representatives of organisations they are associated with. Our May 2018 submission lists the members of the CRG and the organisations with which they have an affiliation, merely to demonstrate the breadth of the perspectives covered.

The members of the CRG welcome the opportunity to actively participate in the ROR Guideline Review process, noting its incremental nature, and to present their views as a collective, represented in our May 2018 submission.

We believe that the AER's Draft Decision, particularly in relation to the key parameter values of beta, Market Risk Premium and gamma, represents a step

towards addressing the currently over generous returns afforded to networks. The CRG contends that the AER could, and should, have gone further to address that situation, however we acknowledge that in applying its judgement the AER has sought to balance consumer outcomes with other factors including investor confidence.

1.3   Consumer outcomes - observations

The CRG contends that the prices consumers are paying for energy are too high, with one of the contributors being a ROR for networks which exceeds the requirements of the NEO, NGO and RPP for economic efficiency in the long term interests of consumers.

Asset values and asset utilization

The CRG notes that whilst the process for determining the ROR is independent of the value of the assets to which the ROR is applied (the RAB), the calculation of ROR x RAB constitutes the single largest component of network revenues which are paid for by consumers.

The ACCC has suggested that the regulated asset bases used to set prices for the network services are in some jurisdictions overstated significantly[27] and recommends writing down the value of the relevant assets[28]. In the absence of action on that recommendation, consumers in the relevant jurisdictions are in effect paying for services they are not receiving.

The current banking inquiry[29] has alerted consumers generally to the practice of charging for services which are not delivered, usually where service providers were able to utilise the lack of consumers' understanding of pricing mechanisms and industry practice, to their significant financial detriment.

The CRG notes the parallels, in terms of outcomes, between such practices as have been revealed in the provision of financial services and in the energy industry, albeit for different underlying reasons but with the same price impacts for consumers.

Tax

The CRG also notes the recent instruction to the AER by the federal Minister for Environment and Energy[30] to review how it models tax costs and to make any changes required before the next round of revenue determinations, on the basis that it is *"totally unacceptable for consumers to be charged for corporate tax liabilities that are not actually incurred"*.

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[27] ACCC - Retail Electricity Pricing Inquiry-Final Report, June 2018, section 7.2.2

[28] Ibid, recommendation 11.

[29] Royal Commission into Misconduct in the Banking, Superannuation and Financial Services Industry

[30] See 15 May 2018 media release
   http://www.joshfrydenberg.com.au/guest/mediaReleasesDetails.aspx?id=570

The CRG notes the AER's current review of the regulatory tax approach and awaits with interest the outcomes of that review.

Financing costs

As discussed in section 2.3 of this submission, the ACCC has also suggested[31] that it is often observed that a high rate of return relative to actual financing costs faced by the *(network)* businesses may encourage greater investment.

Network profitability

The AER has released the first stage of its review of network profitability[32]. This review identifies that the networks do, in fact, enjoy a profitability greater than that assessed as the allowed rate of return on assets. The CRG contends that the causes of this outperformance lie with incentives consistently providing rewards, the cost of debt being lower than the AER allowance and in some cases, networks paying less tax than that assumed by the AER.

While the network profitability data does not of itself identify that the allowed rate of return is too high, it does provide evidence that greater care is needed in the application of market data when generating the parameter inputs.

Cumulative consumer impact

The AER's review of profitability of measures for electricity and gas network businesses, was initiated in November 2017 and, as noted above, it provides useful information on financing outcomes seen by network companies compared to those costs allowed under regulatory decisions. However, it does provide a guide as to the profitability of networks and it reinforces the CRG view that the combination of overstated RABs, tax allowances greater than actual tax paid and a ROR greater than actual financing costs contribute to profits which are excessive and impose costs on consumers which are similarly excessive. That outcome has an adverse impact on both productivity and the economy as whole.

In applying its judgement on ROR decisions the CRG suggests that the AER should be cognisant that there is clear evidence that networks are being over-rewarded and this imposes an unnecessary cost on consumers.

Reductions in network charges

Networks have stated[33] that in recent times there have been reductions in the charges applying to network services, and this supports their contention that they have made

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[31]ACCC - Retail Electricity Pricing Inquiry-Final Report, June 2018, Page 165

[32] See Return on Assets – summary data – September 2018 available at https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/profitability-measures-for-electricity-and-gas-network-businesses

[33] ENA presentation to the ROR public forum, 2 August 2018, slide 6

attempts to reduce the cost of network services. The CRG contends that these reductions are not wholly a result of actions by the networks but primarily the result of historically low costs of debt (which also impact the risk free rate). The CRG is concerned that with a return to historic levels for the cost of debt, there will be a surge in the cost of network services, exacerbating what are in its view already excessively high prices for the services provided by networks.

2. The CRG's May 2018 submission

2.1 Guideline objectives

In its May 2018 submission the CRG strongly contended that the key objective of economic regulation is to ensure the regulated network monopolies do not earn excessive (inefficient and unfair) profits on their investments. The allowed rate of return is the mechanism by which network investors obtain a return for their investment, and therefore this objective is meant to be achieved through the ROR Guideline. We contended that the current Guideline is not meeting this objective.

The CRG pointed out that Australian energy consumers share in a regulatory compact with network businesses that provides those businesses a guarantee of the right to recover their efficient costs on the condition that consumers are not over-charged for network services. To fulfil its obligations to both parties under the compact, the AER must set the allowed rate of return at an efficient level. For the last decade consumers have not been getting the outcomes they deserve in this process and are paying prices that are too high, driven in part by an allowed ROR that has erred on the side of promoting investment rather than promoting efficiency.

While there is no formal mechanism for testing whether the Guideline serves the long term interests of consumers, the CRG observed that available evidence demonstrates the objectives are not being met.

2.2 Reasons the Guideline objectives are not being met

The CRG suggested there are four reasons why the current Guideline is not meeting its objectives:

- The reduction in risk faced by the regulated network businesses afforded by the rules is not reflected in the 2013 Guideline. The consequence is significant; for example consumption volume risk is not borne by the electricity networks.

- The companies the AER draws its market data sample from do not represent benchmark efficient entity, as these listed companies operate both regulated and non-regulated businesses, and are not representative of the BEE.

- There is now some data on actual network returns against which to compare modelled returns so as to allow the AER to make informed judgements under the Guideline for future periods, although this limited data suggests that the allowed rates of return are too high. Current assessments of rates of return are reinforced by the use of market data that themselves reflect previous decisions, as identified in the Evidence Sessions.

- The Black version of the Capital Asset Pricing Model (CAPM) and the Dividend Growth Model (DGM) used in the Foundation model (2013 Guideline) result in an excessive allowance for the equity risk premium.

In combination, those issues have resulted in a substantial over-estimation of the efficient rate of return, which is inconsistent with the NEO/NGO and the Revenue and pricing principles.

Over the last decade the combined Regulatory Asset Base (RAB) of the electricity distribution networks has almost doubled while network utilisation has declined from just under 60 per cent to just over 40 per cent. Despite these changes, network businesses are continuing to enjoy strong earnings and are trading at multiples of 1.3 to 1.6 of the RAB.

The CRG contends that the over-estimation of the allowed ROR in the June 2013 Guideline is the starting point for the current review.

2.3   Information available since our May 2018 submission

The Retail Electricity Pricing Inquiry – Final Report, June 2018

The ACCC in its recent Retail Electricity Pricing Inquiry report suggested[34]:

> *"Three main drivers of over-investment in networks are often identified as: ……*
>
> *incentives in the regulatory framework, particularly those incentives where the rule structure and a high rate of return relative to actual financing costs faced by the businesses may encourage greater investment (also known as a 'capex bias')"*

The CRG suggests that actual financing costs compared to the allowed ROR as noted by the ACCC as well as lower rate of actual tax paid compared to the allowed tax rate contribute to excessive profits earned by network companies.

Network profitability analysis

On 10 September 2018, the AER released the first stage of its network profitability review[35]. This review reports on the return on regulatory assets achieved by the electricity networks in the four years from 2013/14 to 2016/17 and compares this to the allowance made by the AER in the regulatory reset.

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[34]ACCC - Retail Electricity Pricing Inquiry-Final Report, June 2018, Page 165

[35] See Return on Assets – summary data – September 2018 available at https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/profitability-measures-for-electricity-and-gas-network-businesses

While the CRG accepts that the report is limited in its ability to provide hard evidence as to a view as to the quantum of excessive rewards, it does provide a clear guide that:

- The incentives programs consistently deliver rewards to the networks of some 40-50 bp increase in the rate of return on assets, so the stated assumption by the AER that the incentives are balanced between rewards and penalties is not borne out by the evidence, and there is a clear bias to the earning of rewards

- The actual rates of return on assets consistently deliver a premium of some 130-140 bp above the allowed rate of return on assets[36].

The CRG considers that the incentive schemes have been a consistent contributor to network financial outperformance, and that the allowances the AER has made for the cost of debt and the cost of tax have also been overstated. The initial profitability data provides support for these views.

However, although the first stage analysis does not provide evidence that the AER allowance for the rate of return is higher than needed, it does provide evidence that the market data used to inform the market risk premium needs to be adjusted to reflect the sources of outperformance identified by the profitability analysis to ensure there is consistency in the usage of the data. This point is made more fully in section 4.4 of this submission.

Impact on investment

The CRG notes the ENA's reference[37] to an underspend in actual capex compared to allowed capex and suggests that, just as there are reasons other than ROR for over investment, so there are other reasons for underinvestment compared to allowed investment.

The CRG notes that there is currently no analysis available which examines in detail the reasons for underinvestment compared to allowed investment and suggests that over estimates of demand forecast and the application of capex incentive schemes can be expected to be major contributors.

Recent regulatory proposals submitted to the AER by NSW electricity networks, against a backdrop of the current ROR Guideline Review and the potential for a reduction in allowed ROR, show material projected RAB growth[38].

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[36] This average data is based on an annual basis from the geometric average over the 4 year period

[37] AER public forum 2 August 2018, Initial Network Sector Perspectives

[38] www.aer.gov.au/system/files/AER%20-%20Issues%20Paper%20-%20Ausgrid%2C%20Endeavour%20and%20Essential%20proposals%20for%202019-24%20-%20June%202018_6.pdf

Further, APA Group's acceptance in August 2018 of a $12.98 billion takeover offer from a consortium led by Hong Kong's CK Infrastructure, after the AER had delivered its Draft Decision on ROR, is not indicative of shareholder concerns over the allowed rate of return being too low as the chart at Figure 2 below from the Australian Financial Review[39] highlights:

Figure 2 – RAB multiples
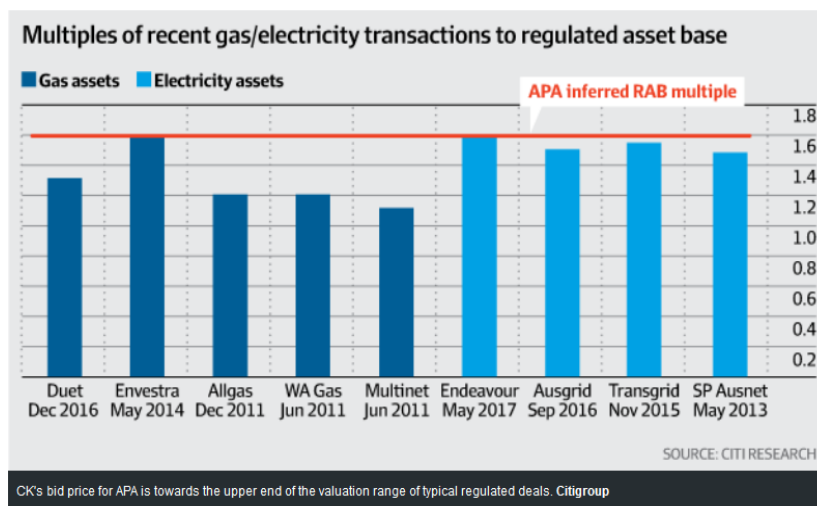
Impact on reliability

At the same time, there is no evidence of under-investment resulting in a decline in network reliability, safety, security or quality of supply, rather, the converse is the case[40], as noted in Figure 3 below:

Figure 3 - network reliability history

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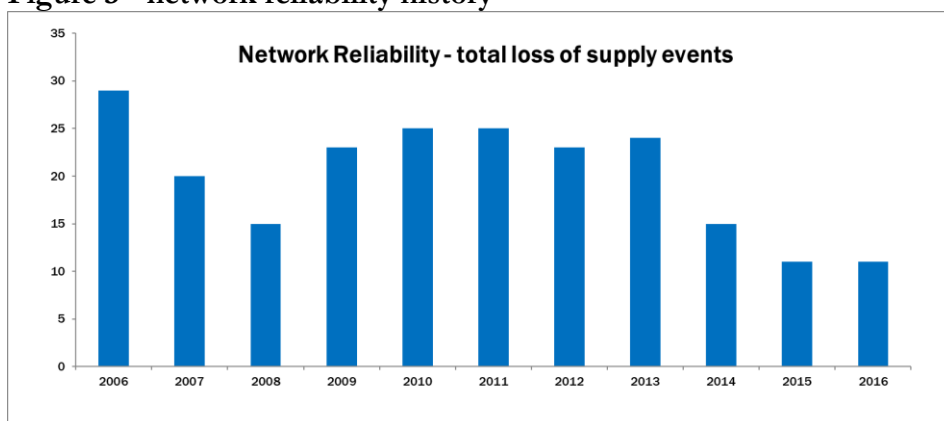
[39] 13th August 2018

[40] aer.gov.au/networks-pipelines/network-performance/transmission-performance-data-2006-2017

Using overall network performance as a guide, consumers do not appear to have received good value for the substantial over-investment in network assets which occurred between 2009 and 2013.

The CRG refers to the comments it makes in section 4.2 of this submission where it is pointed out that the capex incentive scheme provides a reward to networks for under spending capex allowances and therefore incentivises networks to over-claim those allowances in order to maximise the opportunity for increased rewards from the regulatory bargain.

3. The AER's Draft Decision and implications for consumers

3.1 Energy affordability and international competitiveness

The CRG notes that for some consumers, electricity is already unaffordable, and that if the Draft Decision is applied, residential and business consumers will continue to face very real pressures from electricity prices which include greater than efficient costs. Current hardship and disconnection rates will remain or increase as the effect of a lack of wages growth and fixed low incomes continues to bite.

Organisations providing financial counselling services report that it is common for them to see clients who have an energy debt equal to or greater than a quarter of their annual income.

While clearly not the only contributing factor to high wintertime mortality and ill-health, energy poverty plays a major role.

According to recent research[41] energy poverty is adding to the cost-of-living pressures on Australian households, and the cost of heating in parts of Australia is at least as problematic as is the cost of cooling in other parts.

For some, the cost of adequately heating draughty and poorly insulated homes is simply too high. ACOSS[42] suggests the number of Australians experiencing energy poverty is likely to be much higher than the 3 million living below the poverty line.

Other research[43] indicates that cold homes can cause high blood pressure and even heart attacks and pneumonia. They can also lead to social isolation, loss of sleep, stress and mental illness.

At the other end of the consumer scale, the issue of international comparisons of transmission charges was raised by Nyrstar at the ROR public forum in August of this year, with a response provided by the ENA[44].

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[41] https://theconversation.com/forget-heatwaves-our-cold-houses-are-much-more-likely-to-kill-us-83030

[42] ACOSS - Empowering disadvantaged households to access affordable, clean energy, August 2018

[43] https://www.cse.org.uk/advice/advice-and-support/heat-and-health

[44] https://www.aer.gov.au/system/files/Frontier%20Memorandum%20-%20AER%20Public%20Forum%20-%20Nyrstar%20transmission%20-%2010%20August%202018.pdf

Nystar's response[45] to the ENA indicates that their (Hobart) smelter transmission costs are 16 times that of its similar sized plant in Auby (France) and 6.2 times that of its Budel (Netherlands) smelter, and indicates:

"….. the fact that transmission costs in Nyrstar's smelter in (Hobart) Australia is so materially different from its European smelters warrants closer examination and questions regarding the regulatory process in Australia that is contributing and/ or has contributed to this and more importantly how this can be altered so that Nyrstar's Australian operations and other businesses more broadly are not at an international competitive disadvantage. For the above transmission costs to occur one could plausibly raise the proposition that the Australian regulatory process has over rewarded investment not commensurate with the risk or the investment was inefficient at the outset? Furthermore, how is the National Electricity Objective satisfied in Nyrstar's context given that domestic considerations are irrelevant? As you are aware the key drivers for return on capital are the RAB and the regulatory WACC. The RAB is not in the scope of this review by the AER and is the single largest contributor. It is well known that the domestic CAPM model has shortcomings….."

The CRG contends that every component of the electricity cost price stack must be the absolute minimum representation of efficient costs and must be tackled vigorously, in order to ensure that issues such as energy poverty for vulnerable consumers, the financial viability of small to medium enterprise, and international competitiveness for large energy consumers have the lowest possible impact.

3.2   Price impacts – energy alternatives

Energy self-sufficiency is an emerging viable alternative for many consumers[46], but not for vulnerable consumers. An increase in the level of energy self-sufficiency, driven by unnecessarily high electricity prices, will translate to even higher prices for vulnerable customers.

The Draft Decision does not provide a level of price relief which would change the current trends towards energy self-sufficiency.

3.3   Price impacts – high level Draft Decision outcomes

The consumer impact of the Draft Decision would be to deliver a bill reduction of $40 pa on the average residential retail electricity bill of $1,600 pa. That incremental reduction of around 2.4% could be significantly larger if the AER's exercise of judgement were to give greater consideration to consumer outcomes and less consideration to the need to provide excessive investment incentives.

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[45] Greg Zooeff, Regional Energy Portfolio Manager - Nyrstar Australia Pty Ltd, email 27th August

[46] See for example the recently announced Victorian Labor party proposal to support more rooftop PV solar in Victoria

The AER has determined values of 0.6 for equity beta, 6.0 for MRP and 0.5 for Gamma, but should give more consideration to consumer outcomes when exercising its judgement.

In doing so, the parameter ranges the CRG considers are demonstrably reasonable include equity beta of 0.4 to 0.5, Market Risk Premium of 4.0 to 5.0 and gamma close to 1.

Assigning the parameter values recommended by the CRG which deliver outcomes most favourable to consumers would result in retail residential electricity bill reductions totalling in the order of around 5.9% or nearly $100 pa.

Under the 2013 Guideline settings, the nominal ROR is around 6.68%[47], which delivers a notional return of $6.3 billion pa to the regulated gas and electricity networks overall which have an asset base (RAB) of around $95 billion.

Using the Draft Decision settings (MRP = 6.0, equity beta = 0.6, gamma = 0.5 and debt includes one third of broad A credit rating), the reduction from the 2013 settings is around 4.8%, giving a reduction in network revenues and corresponding saving to consumers of $510 million pa.

Using the CRG settings of MRP = 5.0 (high end of the range of 4.0-5.0), equity beta = 0.5 (high end of the range of 0.4 -0.5), gamma = 0.9 and broad A credit rating, the reduction from the 2013 settings is around 11.8%, giving a reduction in network revenues and corresponding saving to consumers of $1270 million pa

Under the Draft Decision consumers are being asked to pay around $740 million pa more than what the CRG estimates to be efficient financing costs. [48]

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[47] Derived from AER spreadsheet excel file "sensitivity matrix" available at https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/review-of-rate-of-return-guideline/consultation. This model is used for all calculations of input parameter changes throughout this submission

[48] If the bottom of the CRG ranges was used, the saving is over 16%

4. CAPM parameter values

4.1 Introduction

The following subsections concentrate on three key parameters – equity beta, MRP and gamma. The CRG considers that the Draft Decision has delivered point estimates for these parameters that are inconsistent with the data from which they are drawn and the basis of their derivation, resulting in outcomes that favour the networks to the detriment of consumers.

The CRG points out that the approach used in the Draft Decision to define the other parameters used in calculating the ROR creates a significant level of conservatism and inconsistency in approach. Specifically, the CRG highlights that the approach used by the AER of independently developing parameters for credit rating and gearing, and excluding any effect of high levels of unregulated revenue does not reflect the interdependence these parameters have with each other, and as a result has delivered an outcome that is conservative in favour of the networks.

4.2 Use of market data to inform parameter range and point values

In its May 2018 submission the CRG made the observation that it was concerned the AER was using a methodology that was primarily developed to assist investors with managing a share portfolio rather than addressing the fundamental need to provide investors in networks with a rate of return for the Benchmark Efficient Entity (BEE) for the transport of gas and electricity. As the CRG pointed out, the rules for regulating energy transport provide considerable protection for the investors through reducing the risks that they face compared to those faced by firms operating in a competitive environment. In its May 2018 response to the AER, the CRG provided details of where the rules reduce the risks faced by investors in energy transport. With this in mind, the CRG considers that the AER needs to provide a new approach to setting the rate of return on equity based on the fundamentals of identifying a risk premium above the risk free rate (ie developing a methodology to develop a recurring bond as proposed by Mr Ilan Sadeh at Concurrent Evidence Session #2) rather than using the current approach which the CRG considers is not only flawed but will, in the future, be beset by having a very small cohort of firms from which to draw market based data.

The AER approach to setting the rate of return on equity for networks is based on the assumption that it is preferable to use market data to develop the parameters for the rate of return on equity as the AER has decided that it will use the Sharpe Lintner CAPM as a foundation model to calculate the premium above the risk free rate for the return on equity that should apply. Whilst not explicitly supporting the use of the SL CAPM to set the rate of return on equity, the CRG accepts that this approach will

be used for this determination as it reflects a decision to address this review in an incremental manner. The CRG sees that an incremental approach would be based on the same fundamentals as the 2013 review but reassessing the input parameters to reflect market based data and a better understanding of how this market data can be used appropriately for the task.

However, the CRG is concerned at the way the AER has used the market data to develop the parameters for the SL CAPM as the CRG does not consider the market data is directly applicable for the uses that the AER makes of it, specifically for setting the values for the parameters of gearing, equity beta and market risk premium. In this regard, the AER comments (page 29)

> *"Where we exercise judgement, we do so placing our emphasis on market data and avoiding choices that are influenced by any material bias in either promoting or discouraging investment."*

While the CRG agrees with the sentiment expressed by the AER, it also recognises that the market data has to be applicable to the task it is being applied to. The CRG considers it is questionable as to whether the AER has applied the market data correctly. What is even more concerning to consumers, is that the market data is being applied in a way that delivers an outcome that is more conservative (ie in favour of the networks) than it needs to be, providing an excessive reward to networks and providing incentives to over-invest and therefore not in the long term interests of consumers.

The CRG is very concerned that there is now such a small cohort of listed firms owning Australian regulated networks and that this cohort might get even smaller should APA be acquired by another private firm. While the CRG agrees with the AER that only firms listed on the ASX and providing energy transport services in Australia should be used to provide data to inform the AER, such a small cohort of firms to provide market data not only delivers an outcome that might not be representative now, but will be less so in the future.

The development of the equity beta uses data observed from calculations for the relative volatility of returns for various listed shares. As dividends for ASX listed firms are only advised twice yearly, this means that the weekly or monthly relative volatility measured from market data is essentially based on share price movements. As noted in its May 2018 submission, the CRG is not convinced that relative share price volatility is a reasonable or appropriate surrogate to measure the risks faced by investors in regulated networks.

The AER uses the market risk premium measured by the ASX accumulation index as the basis for setting the premium that the owner of the regulated energy transport assets should receive. While this is logical, the application of the measure is not. The accumulation index measures **all** of the rewards that a firm gets, regardless of its source. In contrast, the rewards that the network owner gets comes from:

- the return on equity (via the use of the MRP and equity beta);

- deferring the timing of capex within a period and across periods to defer costs while retaining the same allowance;

- the incentive schemes for reducing opex and capex while maintaining reliability;

- the benefits from using the assets for providing unregulated services to others (the Shared Assets benefit scheme);

- the difference between the actual cost of debt and the AER allowance; and

- the difference between the actual tax paid and the AER allowance.

In the CRG's May 2018 submission, we noted that while the MRP measured for listed firms included historical excess returns (HER) from all sources, the networks have income from the ROR plus other income. In the Draft Decision, the AER seems to imply that the incentives are balanced (page 91):

"The service providers' actual returns could differ from the allowed return depending on how efficiently it operates its business. This is consistent with incentive regulation. That is, our rate of return approach drives efficient outcomes by creating the correct incentive by allowing (requiring) service providers to retain (fund) any additional income (costs) as a result of outperforming (underperforming) the efficient benchmark."

This statement provides a view that the AER sees the incentives provided are symmetrical (ie the potential benefit and the potential detriment are the same). This is not the case as the incentives schemes are the benefit/detriment between the AER allowance for opex/capex/reliability and the actual costs incurred. However, the AER allowances are based on other criteria than ensuring symmetry.

That this is the case, is demonstrated from the outworkings of the network profitability data recently released. The data is presented so that the benefits of the opex, capex and reliability settings show a consistent trend of rewards being paid to the networks by consumers. As noted in section 2.3, the data shows that the networks on average receive some 40-50 bp reward from the incentive schemes across the four years of the data. While there are a very few instances where the effect of the incentives was negative, overall bonuses were paid by consumers affirming that the incentive structure does not deliver symmetrical outcomes.

Incentive regulation is intended to drive networks to be more efficient and this improvement should accrue to consumers over the long term[49]. The very concept of an incentive is that there is a greater likelihood of gaining a reward than not, so intuitively and demonstrated, incentive regulation delivers a bias so that the reward is achievable rather than being symmetrical. The CRG notes that if there is little

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[49] The CRG notes that the incentive regulation as such does not apply in the case of the cost of debt or tax allowances, as there is no mechanism to provide any benefit to consumers over the longer term should networks achieve a better outcome than the AER allowance.

likelihood of gaining a reward, the networks would take other actions to maximise their revenue.

For example, the opex allowance provides for increases in the amount due to inflation, productivity and asset size whereas the accumulation index implicitly includes for these variables. Similarly the capex allowance is set independently of any incentive scheme and there is an incentive for the network to overstate its capex needs so that it will recover a bonus on the capex incentive. The fact there is no carry over of the capital incentive scheme between resets provides a ready tool for "gaming" the capex incentive. The reliability incentive is not only set on historical information up to 5 years old, but is also managed through opex and capex allowances, so again the incentive is dependent on the AER allowances.

While the reward for using the regulated assets fully paid for by energy consumers to generate additional revenue by using them to provide unregulated services to other users[50] clearly increases the sources of revenue, the CRG also points out that the AER expects that the debt and tax allowances can be (and most likely will be) under-run (as applies under incentive regulation) so that the network firm generates additional revenue above that measured by the MRP. In previous regulatory determinations, the AER has explicitly accepted that it sets the cost of debt higher than is likely to be needed (as an incentive to the firm) so the network firm can under-run the cost of debt and keep the reward, increasing its revenue.

In the Draft Decision, the AER concurs that the networks are able to increase their revenues above that allowed as it states on page 148

> *"Under incentive based regulation, if businesses are able to lower their actual costs whilst meeting their required service standards (ie, are able to achieve efficiencies) then they are able to keep part of the benefits, which would manifest in their actual return on equity, being higher than their allowed return on equity."*

The CRG considers that using the MRP measured from the ASX accumulation index as the basis for the return on equity and then not recognising that the network firms will get additional rewards from other sources from the regulatory bargain, delivers an outcome that is not in keeping with what the ASX accumulation index measures.

The network profitability data released by the AER clearly highlights that the networks have achieved a greater return on assets by some 130-140 bp than was set by the AER, yet the market data used to generate the market risk premium is based on all the rewards a firm gets from its activities. The CRG considers that the AER has erred by not adjusting the observed market data to reflect the reality that the networks demonstrably get increased profitability from other sources.

The CRG notes that the AER (and the experts during the Concurrent Evidence Sessions) are of the view that the MRP is relatively constant over time – so much so that the AER gives equal weight to data from the 19th century to that from the 21st

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[50] The Shared Assets incentive scheme

century. As the measure of the MRP includes the historical excess returns from all sources in the past, it is expected that it will do so in the future. This means that the MRP assessed now to be used until the next review of the guideline will implicitly include benefits from these additional sources of revenue that the networks have available to them under the regulatory bargain.

The CRG is not mounting an argument for a form of regulatory undertaking, that the firms should be punished for out-performance. We are only drawing the distinction between the evaluation by the market of the total returns of the business versus the allowed rate of return that forms a component of those total returns. In particular, we note that the returns on the regulated assets are less volatile than the returns from the incentive schemes.

So to apply the measured MRP which includes revenue from all sources to the networks, overstates the equivalent position of the networks. This overstatement means the AER should use this recognition to inform it to use a lower MRP than that measured from market data.

To be consistent, either the measured MRP needs to be discounted or there should be no revenue from other sources allowed to the networks from the incentives.

The CRG considers that the outturn return on equity calculated by the AER over the years has resulted in an over estimation of what is considered to be an appropriate return on equity. The very fact that many previously listed firms providing regulated energy transport have been acquired or are sought by privately owned firms implies that the returns achieved by these listed firms are very attractive to private firms where the internal returns on equity are lower than what are estimated in the AER determinations – whether this is because of the return on equity set, because of the additional sources of benefits that can be obtained or a combination of both. What this acquisition process highlights is that the regulatory approach does not set the rewards available to the owner of the regulated assets at the minimum necessary to just ensure that sufficient investment, but no more, will result from the regulatory determination.

4.3   Equity beta

The Draft Decision posits that equity beta lies between 0.3 and 0.7. Rather than take the midpoint, the AER has decided to set equity beta at 0.6. The CRG considers that 0.6 is not supported by the data and considers the correct set point is closer to 0.4.

As noted in its May 2018 submission and in the comments above in section 4.2, the CRG does not consider that equity beta is an appropriate measure of the risks faced by the networks. However, the CRG accepts that the AER intends to use the SL CAPM as the tool to set the return on equity and this requires the use of equity beta. With this in mind, the CRG makes the following observations.

There have only been a very few regulated network firms listed on the ASX and these only for less than 20 years, so the data available on listed Australian energy

network firms is quite modest. Currently there are only three listed energy network firms left (many have been acquired by private firms) and one of the three (APA) is under active review for potential acquisition by another private firm. This loss of listed firms on which to base assessments of equity beta has raised concerns widely, and was extensively discussed within the Concurrent Evidence Sessions, although there was no consensus as to how this problem could be solved.

In spite of the scarcity of data, the AER has determined that an equity beta of 0.6 should be applied to the SL CAPM to set the return on equity. The CRG agrees with the AER that the equity beta should be measured over the longest period available, noting that this is only 20 years and so to use any shorter period would introduce errors due to the short term volatility. In the attached report, SACES observe that there is some volatility in betas over time and comment that this does not mean that later data would provide a more accurate forward looking beta estimate. This implies that assessments made over longer periods are more likely to be closer to a forward looking estimate than more recent data.

However, the major aspect of the calculation of the equity beta for the Benchmark Efficient Entity (BEE) is that the market data available is contaminated by the fact that the listed firms available to use in the cohort have varying amounts of regulated and unregulated revenues. The risk inherent in owning regulated assets is considerably lower than the risk of unregulated assets and the volatility of share price movements of firms with unregulated assets would be expected to be higher than those with regulated assets. Equity beta measured for each of the listed firms must therefore be moderated by removing the impact of unregulated revenues in order to derive a value of equity beta for the BEE which, by definition, only provides services from regulated assets.

At page 36 of the Draft Decision explanatory statement, the AER provides an assessment of the different equity betas and degrees of regulated assets for the different firms in the cohort used to set the equity beta:

Figure 4 - Regulated revenue and beta estimates
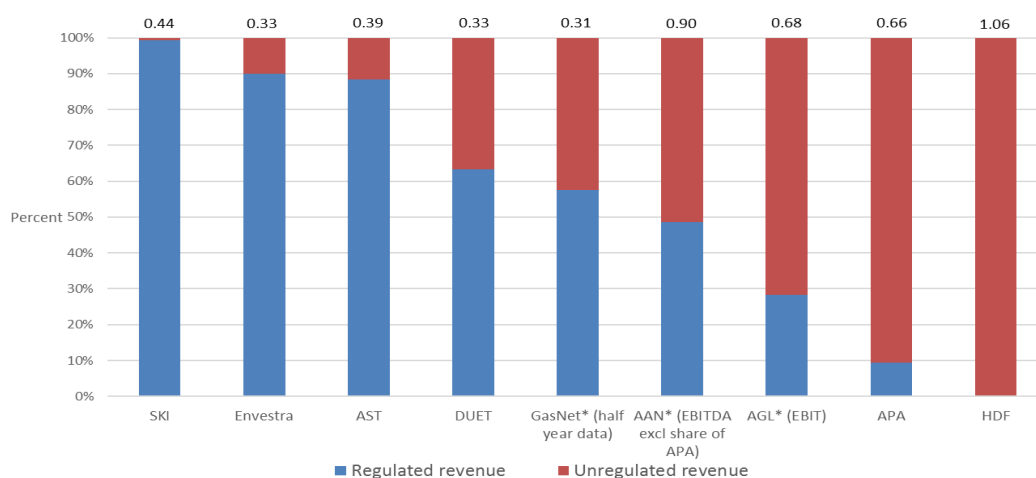
Source – AER - Draft Rate of return guidelines Explanatory Statement July 2018

That there is a significant differential between equity beta for firms with significant regulated revenues and those with large proportions of unregulated revenues reflects the different risk profiles introduced by this difference. For example, both the CCP and the CRG pointed out in their May 2018 submissions that regulated assets do not face asset impairment (unlike unregulated assets) and the AER agrees with this view (see Draft Decision Explanatory Statement page 90). There are other aspects where regulation results in lower risks so as a result, there is clear support for a view that the equity beta for the BEE (with its revenue being fully regulated) would have a significantly lower equity beta than an unregulated network asset.

In its May 2018 submission, the CRG observed that as the firm in the cohort had an increasing proportion of revenue from unregulated assets this would increase the risk faced by the firm. What the chart exemplifies is that as the proportion of revenue from unregulated assets increases, so too does the equity beta tend to increase.

Using this data, the CRG calculated that across the cohort for firms, the equity beta for a 100% regulated network (ie the BEE) would be around 0.4 and for a 100% unregulated network around 0.75 with an average standard deviation of 0.1 when comparing the observed equity beta and that calculated for each firm in the cohort. The average equity beta for the cohort using the data from figure 5 is 0.57 and the average for the cohort using the calculated values of 0.4 and 0.75 is 0.56, providing confidence in the derivation of the two values for regulated and unregulated revenues.

However, in the Draft Decision, the AER makes no quantitative assessment of this aspect and, other than making an observation that the issue will be used to "inform [the AER] assessment"[51], the AER takes little account of this issue and bases its assessment of the equity beta for the BEE purely on the outtake of the market data provided for the cohort, irrespective of proportion of regulated revenues. As mentioned in section 4.2, the Draft Decision regarding the assessment of equity beta is based on insufficient analysis of the market data that the AER has used

On this basis the CRG considers that the equity beta should be closer to 0.4 than the value set in the Draft Decision of 0.6.

There has been significant discussion about the issue of low beta bias and the Black CAPM and how they should be applied to setting the equity beta used in the SL CAPM. Implicit in the SL CAPM is that a risk free investment would exhibit a zero equity beta and in their attached report, SACES observes that while there is some concern that this might not be seen empirically there is a theoretical basis for this assumption and the empirical data implying a greater than zero value for equity beta for the risk free investment is not robust.

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[51] Draft Decision page 37

In contrast, the Black CAPM makes an assumption about options for financing that would deliver an outcome implying that the equity beta for a risk free investment is greater than zero as a result of using those financing options. SACES observes that even if this is correct, the restrictions on financing used in the Black CAPM are unlikely to justify the size of the zero risk premium identified. Implicitly supporting the Black CAPM is a view that the equity beta is not zero. The challenge is to identify, if there is a zero risk premium, what value, if any, it might have.

In this regard, the concept of a zero risk premium runs counter to the assumption for setting of the risk free rate that the AER uses in its development of the market risk premium. While the assumption made is that the 10 year bond rate is considered to be a risk free investment, but implicit in the Black CAPM, there is a higher value for the risk free rate than the bond rate which is derived from the market data. This then implies that the 10 year bond rate would have a negative value for equity beta equal to the premium identified by the Black CAPM and those propounding the zero beta bias[52].

If the higher value for the risk free rate imputed from the Black CAPM were used, the value for MRP reduces and the low beta bias argument disappears, ultimately delivering much the same outcome as the present arrangement. However, as the low beta bias cannot be measured, the CRG considers that such an exercise is effectively pointless.

The CRG agrees with the AER that the assessment of equity beta should not be adjusted for the implications of the Black CAPM or low beta bias.

We have discussed at length both in the Executive Summary and in section 5.2 that the Independent Panel appears to be less concerned about the basis of AER having diminished confidence in the Black CAPM than it is with the consistency between that decision and maintaining the equity beta at 0.6 to promote investor confidence.

In deciding to have diminished confidence in the Black CAPM the AER is in effect saying that it erred in giving as much weight to it as it did in the 2013 Guideline. That could be interpreted as the AER making an error five years ago that has resulted in consumers paying more than they should for network services since 2013.

The CRG could understand the AER's reticence about investor confidence if the proposal was to drop the equity beta to a level that reflected the concept of returning to consumers this historic over-compensation. But that is not what is being proposed. The AER is acknowledging that the consequence of the full suite of regulatory arrangements is that the real risk to networks is much lower than the uncertainty that accompanies general equities.

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[52] The CRG contends there cannot be two different values for a risk free rate – to assume so contradicts logic and the highest value has to be used as the risk free rate.

The CRG encourages the AER to reconcile the Panel's concerns about the conflict between the approach to the Black CAPM and investor confidence by having less regard for the need for investor confidence.

4.4 MRP

The Draft Decision posits that market risk premium lies between 5.0 and 6.5. Rather than take the midpoint, the AER has decided to set MRP at 6.0. The CRG considers that 6.0 is not supported by the data and considers the correct set point is lower than the lower bound used by the AER.

In its May 2018 submission, the CRG also observed that the annual calculation of the MRP demonstrates extreme volatility and, as a result, the average of the annual measures are better measured using a geometric mean as this is a more appropriate methodology to use when the input data has wide swings and significant outliers. In its Draft Decision, the AER acknowledges this use of the different averaging approaches and determines that the upper bound of the acceptable range would be the arithmetic mean and the lower bound should be the geometric mean. The AER then sets the parameter data point at closer to the upper bound than the lower bound. The AER acknowledges[53] that using the arithmetic mean is likely to overstate the MRP in that the MRP is measured annually and reset each year.

The attached report from SACES questions the use of 1-year return horizons implicit from the use of the arithmetic mean and observes that its use is mere convention rather than a reflection of reality. In fact, the networks view that their investments are made over much longer periods than 1 year, and the AER has stated a preference for use of 10 year bonds to reflect the long term nature of the investments. This highlights an inconsistency in the use of 1 year HER rather than allowing for the HER to be compounding for a set period more reflective of the longer term nature of the investments made.

To test the impact of this "upward bias" noted by SACES and the AER, the CRG has calculated a long term MRP[54] calculated as the geometric average of each two year period back to 1883 (ie assuming that any investment has a two year life span rather than a single year which applies using an arithmetic mean) with all of these values arithmetically averaged. The outcome shows that a two year investment would deliver an MRP of 5.2 compared to the annually assessed arithmetic average of 6.1 – effectively a 15% reduction in MRP. This implies that the assumption that the

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[53] Draft Decision page 212 "Blume and Jacquier et al also show that where the holding period is more than one year, then the arithmetic mean of one year returns is an upward biased measure."
[54] Excluding the impact of imputation

annually assessed MRP derived from the arithmetic mean delivers a significant overstatement of the true value for MRP appropriate for investments in networks.

The AER comments that its PTRM is calculated on an annual basis and uses this to support its continued use of arithmetic averaging; the CRG considers this does not reflect the reality of the term over which investments are made.

The AER takes a different approach in estimating expected inflation where the geometric average over ten years is calculated using RBA forecasts for the first two years and the RBA target mid-point for the other eight. The basis for this is the use of a ten-year tenor for other values, especially the risk free and debt rates.

The PTRM uses an annualised rate from ten-year data to do annual calculations. Inside the model the annual rate is used to convert full end-of-year data to an equivalent monthly investment profile. Further the regulated business doesn't have its revenue allowance determined by the annual calculation, instead the five years of revenue are combined into a five-year net present value which is then smoothed. The net present value in turn is derived from the WACC and at the very least therefore the underlying values should be derived from a five year investment horizon.

In practice, each regulatory period is usually for a period of 5 years, so the reward achieved through the return on equity by a regulated network is compounding for the 5 year period; it is then reset for the next period. This implies that the compounding geometric mean should be calculated for each 5 year period and then an arithmetic mean measured over all five year geometric mean values.

Equally, the risk free rate used for the calculation of MRP is based on 10 year bonds. This would imply that for consistency the geometric mean should be compounded over a 10 year period and the arithmetic mean of these used to develop the MRP[55].

A third option is that as investments are made (on average) over an approximate 40 year period, then the return on equity should reflect a geometric mean measured over 40 year periods and an arithmetic mean measured over these 40 year geometric mean measures.

On balance, the CRG considers that a compounding approach over a number of years reflects the reality of the reward from the investments made in each regulatory period and these should then be averaged using an arithmetic mean; reflecting the reality of what really occurs. With this in mind, the following table[56] reflects the arithmetic mean of 5 and 10 year geometric means, as well as the arithmetic and geometric means. All calculations exclude the effect of imputation.

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[55] A third option is that since investments are made (on average) over an approximate 40 year period, then the return on equity should reflect a geometric mean measured over 40 year periods and an arithmetic mean measured over these 40 year geometric mean measures. The CRG considers that this approach is impractical.

[56] Data derived from AER spreadsheet DORIS – D18-38661 aer – ROR – 2017 historical excess returns

Table 3 – MRP comparison

Period	AER MRP (Geo)	AER MRP (Arith)	CRG MRP (Arith of 2 year Geo)	CRG MRP (Arith of 5 year Geo)	CRG MRP (Arith of 10 year Geo)
1883-2017	0.050	0.063	0.055	0.050	0.048
1937-2017	0.042	0.060	0.049	0.045	0.044
1958-2017	0.042	0.065	0.051	0.044	0.041
1980-2017	0.043	0.064	0.052	0.047	0.041
1988-2017	0.045	0.060	0.054	0.048	0.044
2000-2017	0.044	0.061	0.050	0.046	0.045

Source: CRG based on AER data, including the effect of imputation (theta = 0.6)

This calculation shows that when the MRP is assessed as a geometric average for a set period (whether 5 years for the regulatory period or a 10 year period reflecting the risk free rate) the outturn still delivers an outcome consistent with the geometric average measured for the entire period assessed.

This view is supported by a recently released update by Credit Suisse (CS) of its Global Investment Returns Yearbook[57]. At page 15, CS posits that

> *"To make sensible inferences about the historical risk premium, it is thus necessary to look at much longer periods than a single year. Over longer horizons, we might expect good and bad luck to cancel each other out. However, long needs to be long indeed, as even over intervals of a decade or more, there can be major performance surprises. For example, there have been several lengthy periods, including the opening decade of the 21st century, as well as intervals in the 1970s and early 1980s when the realized US risk premium was negative. It follows that we need very long periods to infer investors' expectations about the reward for exposure to equity market risk. Even then, inference can be problematic, as we will see below. Over the full 118 years, the annualized (geometric mean) US equity risk premium relative to bills was 5.6%."*

Credit Suisse is of the view that the use of an arithmetic mean of annual returns is not an appropriate measure for historical excess returns and considers that such historical returns are best assessed over at least a 10 year holding period[58] implying the geometric averaging over this period.

Accordingly the CRG considers that, as the arithmetic mean approach used by the AER delivers an overstated reward to the network owner, it should not have used a set point value closer to the upward biased arithmetic mean and to have had greater recognition of the geometric mean. In doing so, the MRP set point should be significantly less than the 6.0 used by the AER.

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[57] Available at https://www.credit-suisse.com/media/assets/corporate/docs/about-us/media/media-release/2018/02/giry-summary-2018.pdf

[58] CS Global Investment Returns Yearbook page 31

The CRG is also concerned that the AER has a clear preference for using data from the very start of the accumulation series. While the CRG can see the benefit of using as long a series as is possible, this approach only has value when the data that underpins the series is clearly valid. The CRG is aware that the older data is not as reliable as later data as the older data has been "created" rather than directly measured[59] and reflects data from a number of different stock exchanges that existed before the ASX was formed. Equally, the CRG agrees that longer periods for data measurement are preferable to shorter periods, noting that the annual MRP data is extremely volatile, especially in the period of the 1950s to the turn of the century.

It is clear from the table above, that the MRP data is clearly showing a downward trend, yet the AER approach is to give equal weighting to data from 135 years ago as that which occurred in 2017. In contrast, the CRG considers that the AER should give more weight to more recent data as the AER is required to provide a forward looking estimate of the MRP to be used for the next five years of a regulatory reset. A forward looking estimate should not be heavily biased by data from 1883 but would more closely reflect more recent data.

With these views in mind the CRG considers the MRP should be more heavily weighted to later data and should be more reflective of a geometric average (to reflect the compounding of the return on equity set for a 5 or 10 year period) and for these shorter term geometric means to be arithmetically averaged over the longer term. This would result in an MRP averaged since 1883 in the range of 4.6 to 4.8 rather than the 5.0 to 6.5 posited by the AER. Further, as MRP has demonstrably fallen over time, greater weight should be given to later estimates than from the past.

The CRG points to the commentary in section 4.2 about the application of market data to the specific issues of network regulation where the CRG provides a view that the application of the measured MRP data needs to be considered in context with what other revenue the network owner receives from the regulatory approach. As noted above, the contribution from these other sources measured in the profitability data is some 130-140 bp, which when compared to the 600 bp for MRP set in the draft decision, is quite significant.

When considering all of the factors, the CRG considers the AER Draft Decision of setting MRP at 6.0 grossly overstates the reality and applicability of the data. When all three of these issues (ie using data which overstates the appropriateness of applying the measured MRP to regulated networks, use of the geometric mean and later data exhibiting a lower MRP than the longer term data) are considered, the CRG considers that the geometric averaging data therefore indicates MRP lies in the range of 4.0 to 5.0 percent, with data over the longer periods that draw upon reliable data pointing to a value at the lower end of that range.

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[59] The CRG points out that it was not until 1937 that in the various stock exchanges there was formality in introducing common listing requirements between them and prior to that most capital cities had their own stock exchanges. The ASX was not created until 1987. It was not until 1938 that the first of the share price indices were first published so any index prior to that had to be "created".

The CRG notes that in the 2013 guideline, the AER informed its set point through the implications of the dividend growth model (DGM) for assessing a forward looking MRP. In its Draft Decision, the AER has concluded that DGM should have little influence on the setting of the MRP. The CRG agrees that this is appropriate.

The advice in the attached SACES report provides a view that there is no theory or evidence that MRP varies inversely with bond rates and that the assumptions needed for the DGM that have to be made regarding the inputs are questionable. Overall, SACES observes that, while time-varying models for assessing MRP (such as DGM) are reasonable in principle, they have had little success in convincingly outperforming simple averages of historic data.

The CRG considers that the analysis by SACES supports the AER contention that the value for MRP should not be "informed" by the DGM or the Wright approach and that they should not influence the set point used for MRP.

4.5   Summary of equity risk premium

Equity risk premium (ERP) is the product of MRP and equity beta and debt risk premium (DRP) is the difference between the calculated cost of debt and the risk free rate.

The CRG considers that the ERP could be as low as 1.6 (based on an MRP of 4.0 and equity beta of 0.4) compared to the AER Draft Decision of 3.6.
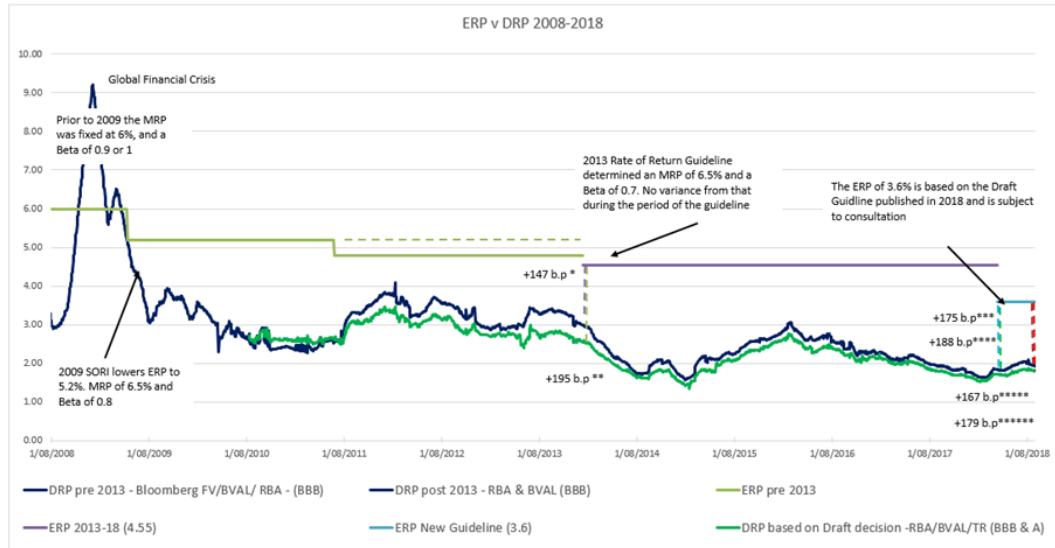
The AER assesses the performance of its approach to setting the return on equity by comparing the ERP and the DRP observed, noting that ERP should be greater than DRP. To show the premium between the DRP and ERP, the AER has developed a chart depicting the movements of the DRP and ERP over the past decade and this is shown in the following chart, Figure 5[60]. The chart is an extension of Figure 6 included in the Draft Decision (page 55) tracking equity risk premiums with debt risk premiums over the past 10 years.

[60] **Available at https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/review-of-rate-of-return-guideline/consultation**

Figure 5 – Equity Risk Premium vs Debt Risk Premium chart

The chart depicts a number of interesting features:

- Firstly, it tracks the DRP on two bases – the debt curve as used at the time (blue) and the debt curve based on the Draft Decision approach to debt (green). Typically the new approach to debt cost is below the pre 2018 approach but in recent years, the two curves trended closer. Effectively, the chart shows that the impact of changing the basis of calculating the cost of debt has the marginal effect of reducing to cost of debt by an average of 10 bp.

- The key values for the DRP over different periods and lines are:

	Blue (Broad BBB) Line		Green (Hybrid) Line	
	2008-2013	2013-2018	2010-2013	2013-2018
Avg.	3.54	2.21	2.85	2.01
Max	9.22	3.08	3.47	2.76
Min	2.28	1.57	2.40	1.35

- Most importantly, the AER has recognised that the ERP should now be lower, implying that earlier estimates of ERP were higher than needed. The higher values for ERP have been associated with times where there was excessive investment in the networks, supporting the view that the earlier values of ERP were too high.

- At the time of setting 2013 Guideline, the ERP was set at a premium of 152 bp over the then DRP, yet the Draft Decision sets ERP at a premium over the new cost of debt at 188 bp. Using a premium of 152 bp over the current cost of debt implies an ERP of 324 bp, less than the draft decision value of 360 bp

The CRG considers that some care is needed in analysing the data from the chart as the cost of debt is effectively reduced as it receives benefits for the firm through tax relief. For there to be a true comparison between the two, the different taxation impacts for equity and debt need to be incorporated.

The chart shows that the DRP calculated for the period up to 2018 is based on broad BBB credit rating and on the hybrid of $2/3^{rd}$ broad BBB and $1/3^{rd}$ broad A. The AER has, from its investigations, identified that the use of broad BBB credit rating overstated the actual cost of debt incurred by the networks but the further analysis carried out by the CRG, identifies that a credit rating of broad A (see section 4.6) would be more reflective of the credit rating for the BEE. This would mean that difference between the ERP would exhibit an even greater differential to the DRP than that shown in the chart.

On page 54 of the Draft Decision Explanatory Statement, the AER observes:

> "…we do not expect the return on equity for a benchmark efficient entity …to be significantly higher than the return on debt."

The CRG agrees with this sentiment but reflecting the observation of Mr Ilan Sadeh at the Concurrent Evidence Session 2, the return on equity can be considered to be a "recurring bond". On this basis, the ERP should be at a level which tracks the average DRP over time.

In the past, the DRP was set by regulators at the time of a reset, and this value would apply for the regulatory period. Using this same approach as a guide, the CRG considers that, at most, the ERP should generally exceed the peak level of the DRP, not exceed the 5 year average DRP by not more than 50 bp above the 5 year average DRP based on the broad A credit rating the CRG considers appropriate for the BEE[61] and not exceed the minimum DRP by more than 100 bp.

The AER considers that an ERP of 3.6 (MRP = 6.0 and equity beta = 0.6) is the appropriate setting now and that the ERP does not vary much with time. An ERP setting of 3.6 at the time of the 2013 review would have delivered similar comparative ERP to DRP differentials to those proposed by the CRG for this comparative analysis for ERP parameters.

On this basis, it becomes clear that the ERP should be not more than 2.5. This would be achieved by setting the MRP of 5.0 and an equity beta of 0.5. These values

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[61] See section 4.6

would deliver an ERP consistent with the observed DRP over the past 5 years and so provide guidance for the values of MRP and equity beta.

With this in mind, the CRG considers that its proposed settings for MRP and equity beta would be near the high end of the range the CRG considers are appropriate

4.6   Gearing, regulated revenue and credit rating

The Draft Decision uses market data (from a relatively small cohort) to set the gearing at 60% debt, with the AER noting that gearing calculated from book values delivers a much higher level of gearing than is derived from market values. With such a small cohort of firms to assess gearing using market data, the CRG considers that greater weight should be applied to gearing measured on a book value basis as this increases the cohort of regulated firms from which to assess the level of gearing that would be applied to the BEE.

The CRG points out that the market value of the regulated firm is driven by the previous decisions of the regulator. For example, if the regulator provides a greater revenue than would be expected from the value of the assets, this will drive up the price of the shares of the firm, thereby increasing the market value of the firm. This circularity was raised as a concern during the Concurrent Evidence Sessions. So the market data to inform the gearing assessment is a direct outcome from, among other things, the previous decisions about gearing applied to the BEE, as the level of gearing has a significant impact on the returns gained by the network firm.

The CRG points out that the book value of the assets reflects the costs incurred by the network in the acquisition of the assets they provide. The market value reflects more the value placed on the profits of the network (ie revenue less costs) and so it includes a value placed on the monopoly status of the network and the benefits that come from other aspects of the regulatory bargain. Despite the clear differences in valuation of the network, the AER applies the ROR to the Regulated Asset Base – an assessment based on the value of the physical assets – which is more related to the book value of the firm than a market value. Again, the AER is using market data which needs to be adjusted to reflect the use being made of it.

The CRG notes that credit rating is a measure of the likelihood of loan payment risk whereas the interest rate to be applied for a specific loan includes many more elements than just credit rating. This explains why there are different interest rates applied to firms with the same credit rating. Over time, it has been seen that the cost of debt incurred by firms providing regulated services is lower than for firms with the same credit rating but with less certainty of cash flow than seen by regulated firms.

What is also overlooked in the Draft Decision is that the proportion of regulated revenue a firm receives has a major bearing on credit rating as this determines the certainty of cash flow needed to demonstrate an ability to pay loan costs as and when

they fall due. So the higher the proportion of regulated revenue, it would be expected there would be a corresponding higher credit rating, but this aspect has not been assessed in the selection of the credit rating for the BEE.

While the level of gearing is a key aspect of influencing the credit rating of a firm, so too is the proportion of the firm's total revenues that are regulated

This means there are three basic variables that are quite intertwined – gearing, credit rating and proportion of regulated revenue – but the AER has assessed credit rating and gearing independently of each other as well as from the amount of cash flows from regulated assets. Yet, on page 112 of the Draft Decision Explanatory Statement, the AER makes the point:

> *"We maintain the view that one should not view any component or relevant parameter adopted for estimating the rate of return in isolation."*

The CRG agrees with this view but points out that this is not applied in the case of gearing, credit rating and proportion of regulated revenue.

By carrying out an assessment of each of these three variables independently, and averaging the outcomes regardless of the other two variables, the Draft Decision arrives at levels for gearing and credit ratings that ignore the impacts of the other two variables.

For example[62], APA has around 90% of its revenue unregulated, a long term credit rating of BBB and a long term gearing of 54% (market value) and 68% (book value). In contrast, Ausnet Services has around 13% of its revenue unregulated, a long term credit rating of A- and long term gearing of gearing of 60% (market value) and 63% (book value) and Spark has around 2% unregulated revenue, a long term credit rating of A- across the various networks it part owns and gearing of 60% (market value) and 72% (book value).

Analysis of the three elements in concert across the small cohort available for comparison would indicate that the BEE, with its 100% regulated revenue and a gearing of 60% would probably have a credit rating of broad A. As the Draft Decision has the outturn gearing for the BEE coupled to a notional credit rating of BBB+, the analysis undertaken by the AER delivers a conservative assessment for the key parameters of gearing and credit rating applying to the BEE.

The CRG considers that the AER needs to reassess the level of gearing and credit rating together with the degree of regulated revenue to arrive at a less conservative assessment of these two parameters (gearing and credit rating) for the BEE.

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[62] Data from Draft Decision table 14, table 15, table 42 and figure 1

4.7   Imputation Credits (Gamma)

The AER's Draft Decision

The CRG notes that in the Draft Decision and Explanatory Statement, the AER has recommended a γ of 0.5:

> *"The 0.53 estimate is based on the product of a utilisation rate of 0.6 (the proportion of imputation credits paid out by the benchmark efficient entity (BEE) we estimated that would be utilised) multiplied by a distribution rate of 0.88 (our estimate of the proportion of imputation credits created by the BEE that would be distributed). (page 63)*
>
> > *and*
>
> *Our estimate of 0.5 is rounded to one decimal place from an estimate of 0.53 based on the product of an estimated utilisation rate of 0.6 and an estimated payout ratio (or distribution rate) of 0.88. (page 388)"*

These figures are based on "all equity" (page 400) and on Professor Lally's payout ratio of 0.884 for the 2000-17 period for the twenty leading ASX firms.

CRG response

Because γ is the product of two variables – the distribution rate and the utilisation rate, the CRG deals with these two components in turn, as in its May 2018 submission.

Distribution rate (or "Payout ratio")

Having done its own calculations (on the ASX all ordinaries) the CRG does not dispute Professor Lally's finding of a payout ratio of 0.88 in the top 20 ASX listed firms. But it suggests that it is quite irrelevant for determining the γ component of the threshold ROR that would provide an adequate incentive for firms to invest in regulated assets.

The CRG does not understand why, while the AER professes to focus on the "provision of regulated services" for consideration of risk, it reverts to an economy-wide ("all equity") approach for estimating the payout ratio.

There seems to be an inconsistency in the AER's approach to different elements of the ROR.

In the AER's approach to risk (calculation of β) is the statement:

> *"It is important to emphasise that the relevant risk is the risk associated with provision of regulated services. It is not the risk of the service provider more generally". (page 20)*

This is a sound principle, focussing not only on the specific firms, but even more closely on the RAB within those firms. It is in line with the approach advocated by the CRG to consider the ROR required to fund the RAB – including both the β and

γ elements. Yet, when it comes to a calculation of the payout ratio, the AER departs from this principle.

The ASX top twenty payout is based on the behaviour of a heterogeneous sample of firms – the top twenty. There is no reason to expect the payout ratios of the top twenty firms to be representative of a firm providing regulated services and *only* regulated services. That sample, for example, includes four resource extraction/exploration firms (BHP, Rio, Woodside, Santos) which would be expected to have low payout ratios.

Firms with high growth prospects, or with the need to commit to exploration, will be expected to have high retained earnings, while firms with stable prospects, with no need for new investment, will be expected to have high payout ratios, perhaps even greater than 100 percent.

The AER's arguments in favour of accepting a payout ratio based on the top 20 ASX listed firms are detailed[63], but they do not come back to the key point of what would be the payout ratio of a firm whose only assets were regulated as applies to the BEE.

In fact in the CRG May 2018 submission it was noted that three ASX-listed firms with regulated revenues have payouts greater than 100 percent. One of those is SKI.AX, the only firm identified in Figure 1[64] with more than 90 percent of its revenue from regulated assets has a payout ratio of 283 per cent[65].

The CRG adds this as contextual supportive evidence, not as its prime argument, because as it has stressed, and as the AER acknowledges in relation to risk, the determination should be associated with provision of regulated services, not the risk of the service providers more generally, and certainly not an economy-wide index. Its point is that the argument that applies to β should surely apply also to calculation of γ.

Confirming its original submission, the CRG does not argue from the basis of firms' behaviour. If it were arguing along such lines the CRG would suggest that the payout of SKI.AX should be taken into account, SKI being the only firm with essentially all its assets in the RAB. For the purpose of estimating imputation credits, that would conservatively imply a payout of 1.0, because excess payouts do not always attract imputation credits.

The basis of the CRG argument, however, is that the payout ratio should be based on a business that has only the RAB. Such a business will have to withhold funds or draw on new capital to replace depreciating assets, but this should be provided by the formula[66]:

[63] AER Draft Decision Explanatory Statement, pages 425-428

[64] Ibid, page 36

[65] Yahoo Finance 1 August 2018

[66] The slight mathematical problem in that γ is a component of the ROR could be resolved by conservatively setting a notional γ of 1.0 in the ROR formula for calculating γ. This is conservative because in lowering the denominator it would lower the resulting payout, to the benefit of networks, but the effect would be minor.

$$Payout\,ratio = 1 - \frac{(New\,or\,replacement\,investment - Depreciation)}{RAB \times WACC}$$

If there is a need to expand the RAB, then that formula will determine a payout less than 1. That may be the case if, for example, new high-voltage transmission lines and interconnectors are needed as foreshadowed in AEMO's "Integrated System Plan".

Otherwise if there is no such need, that formula will probably return a value greater than 1, which by the same conservative reasoning above, would imply a payout of 1 in determining γ when that formula results in a payout ratio greater than 1.

Because there is clear evidence of excess network capacity, it is the CRG's expectation that the need for any new investment should be substantially offset by reduced investment in assets of a class which are under-utilized in the short term. That is, in relation to the above equation, the sum (new or replacement investment – depreciation) should be close to zero, resulting in a payout ratio in an efficiently-financed firm practically equal to 1.

In the medium to long term the CRG accepts that factors including the change in generation mix (for example from coal to renewables) will require investment in new interconnection assets, which will increase net investment and reduce the payout ratio.

The AER acknowledges statements about excess capacity by the CRG (page 26) and CCP (page 28), but the Draft Decision does not itself acknowledge the presence of excess capacity.

The CRG notes that in 2009 the AER used a payout rate of 1.0[67]. It can be argued, *a fortiori*, that if a payout rate of 1.0 was justified in 2009 when the RAB was growing strongly, it is even more relevant now that there is almost certainly over-investment in the RAB. (The basis on which Energex and Ergon appealed is not revealed.)

Misunderstanding of the GRG argument

In relation to the CRG argument, re-iterated in our formula above, the AER states[68]:

> *"This approach is based on the assumption that apart from the revenue compensation it gets from the regulator for asset depreciation, a BEE* **could only fund its investment through retained earnings**. *However, firms have access to different sources of finance to fund their investment." (CRG emphasis)*

The more complete statement is:

We have considered the CRG's proposed approach. We consider this approach is based on the assumption that apart from the revenue compensation it gets from the regulator for asset depreciation, a BEE could only fund its investment through retained earnings. However, as explained above, firms have access to different sources of finance to fund their investment, and may run dividend

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[67] AER Draft Decision Explanatory Statement, page 390

[68] Ibid, page 410

reinvestment programs to retain earnings while still maintaining a high franking credit distribution rate. Therefore, we do not consider the equation above based on the assumption would give a reliable estimate of the distribution rate. (page 429)

The CRG has made no such assumption. Its argument is that a firm which has no reason to make any net re-investment should distribute its earnings. Practically, within a corporation with a stable or declining value of regulated assets and assets outside the RAB that may mean such a distribution is internal: the corporation may still seek extra funds but not for its regulated assets.

In line with general finance theory the CRG assumes that, once transaction costs are considered, the opportunity cost of capital for retained earnings is the same as the marginal cost of capital for new capital raising. It is not at all clear how the AER has suggested the CRG has made any comment on the cost of capital.

The CRG point, to put it simply, is that if an asset is earning a return, and there is no need to make a net re-investment in that asset, the earnings should be distributed. That distribution may be either to shareholders or to other business units within the corporation, but if the regulated asset base is regarded as a business unit, it should distribute its earnings if there is no need for net new investment in the RAB.

If such a firm does have reason to make net investment in its regulated assets, there is nothing in the CRG statement suggesting that such funds should come from retained earnings. In fact that would be an illogical suggestion, for where would such funds come from? It is difficult to see how the AER has made this interpretation.

Also the AER's representation of the CRG's argument seems to be contradictory. In the initial summary pages is the statement (page 27):

> *"The CRG supported a reduction in the MRP (from 6.5 per cent to 5.75 per cent), a reduction in beta (from 0.7 to 0.3), and an* **increase in gamma from 0.4 to 0.83***."* *(CRG emphasis)*

And further on (page 30):

> *We note that there was a general level of agreement amongst stakeholders to:*
>
> > *Applying a 'utilisation' based post-company tax approach to estimating the value of imputation credits.*

Both statements are incorrect. The CRG did not ague for a fixed 0.83 as a value for γ. – that is the value that would result from Lally's earlier estimate and a utilisation rate of 1.0. But the CRG did not accept the idea that Lally's estimate was relevant for firms investing solely in the RAB, and there was no acceptance of an empirical 'utilisation" approach.

In the AER's detailed statement it does, however, accurately represent the CRG with respect to utilisation. It acknowledges that the CRG (among others) queried (page 396):

> *"whether a utilisation of 1 may be appropriate given that the model assumes the national equity markets are segmented and hence all the assets in the equity markets are owned by domestic investors and there is no foreign investment".*

The CRG remains of the view that the distribution rate should be close to 1.0.

Utilisation rate

We note the AER's statement, in line with textbook regulation theory (page 21):

> *"The service providers' actual returns could differ from the benchmark regulatory allowance depending on how efficiently it finances and operates its business. This is consistent with incentive regulation."*

The CRG argued that an efficiently-financed firm would source its equity finance from shareholders able to use their imputation credits.

The CRG May 2018 submission reads:

> *"As the AER is required to evaluate what a benchmark efficient entity would do and in this case, we assume that they would use the most efficient source of funding from Australian sources".*

What they are actually doing is an altogether different issue which is not at stake in estimating the value of imputation credits. Firms may argue that they are actually using foreign sources of funding. If that is the case, it is presumably because firms find equity from foreign sources to be lower-cost than equity from Australian sources and if this is the case our suggested method for calculating Gamma is almost certainly biased towards overstating their cost of equity finance.

The CRG notes that in the Concurrent Evidence Session on imputation credits, Lally cites major concerns with the use of the tax statistics data. Accordingly, he states the financial statement data from high-value listed companies (the 20 largest firms) gives a distribution rate figure of at least 83 per cent. Lally also posited a utilisation rate of 1. As summarised in the facilitator's notes:

> *"The distribution rate for listed firms without foreign operations is at least 0.83, from the Lally analysis. The utilisation rate should be 1, consistent with the Officer model assuming that national equity markets are closed to foreign investors. This implies an estimate for gamma of at least 0.83."*

The main point of difference is that the AER takes as given the presence of foreign investors (footnote 970, page 286):

> *"We implement the Sharpe-Lintner CAPM under the assumption of a domestic market, but with a presence of foreign investors. This allows us to recognise that foreign investors cannot utilise imputation credits. However,* **the benchmark efficient entity with a similar degree of risk as a relevant service provider in the provision of regulated energy services operates in the Australian market by definition,** *and we estimate the MRP in the context of the Australian market portfolio".* (CRG emphasis)

However, the AER specifically states (page 394):

> *"We also note that as the NER and NGR are drafted, the benchmark firm pays tax at the relevant Australian corporate tax rate.*
>
> *We consider one important element of the definition of a benchmark efficient entity is 'operating within Australia".*

Somehow the AER has interpreted 'operating within Australia' narrowly so as to preclude any idea that a benchmark efficient entity should be financed in Australia.

In the Appendix it acknowledges at page 406 arguments from the Concurrent Evidence Session:

> *"For the purpose of estimating the distribution rate, a benchmark efficient entity should be defined as a corporate entity who pays tax at the full Australian statutory rate and does not have any foreign operations.*
>
> *The Officer model assumes the national equity markets are segmented. In a segmented market,* **all the equities are held by Australian investors and there is no foreign investment***. Therefore, the appropriate estimate of the utilisation rate implied by the Officer model would be 1." (page 406, CRG emphasis).*

When it comes to estimation of the risk-free rate, the market risk premium and the cost of debt, the AER has held to the principle of basing its estimates on an efficiently financed entity, being one that draws on Australian sources for finance. Yet, when it comes to its estimate of γ, the AER departs from this principle.

On the notion that all the equities could be held by Australian investors and without foreign investment, at first sight the AER appears to agree, but in convoluted language it qualifies its agreement so as to negate it, by switching to the notion that firms' foreign sources of financing should be taken into account, rather than using the model of an efficiently financed entity financed from Australian sources. This switch to empiricism is captured in the statement (page 413):

> *"We agree. However, we consider the assumption of no foreign investment and no foreign investors does not reflect the empirical reality".*

This is one of the areas where the AER is holding tightly to its established approach for estimating γ, even though it generally acknowledges the risk of inaccuracy in using publicly-available empirical measures that may be only loosely associated with the regulated assets[69].

The AER states:

> *Another key issue raised by the stakeholders and the experts on the utilisation rate is that the Officer model assumes the equity markets are segmented. This implies a utilisation rate of 1 as it assumes all the assets in the equity markets are owned by domestic investors and there is no foreign investment. However, we consider the assumption of no foreign investment and no foreign investors would not reflect the empirical reality (of foreign investment in the Australian domestic market). In light of this we consider a more appropriate way for estimating the utilisation rate is to recognize the existence of foreign investors and therefore we interpret the utilisation rate as a weighted average over the utilisation rates of all investors in the Australian market.[70]*

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[69] See section 4.2 for further evidence of using market data inappropriately

[70] AER Draft Decision Explanatory Statement, page 400

Yet the CRG sees no reason to depart from the assumption that the firms are using the lowest-cost source of funds consistent with their risk profile. Maybe the firms are not efficiently financed, but public policy should have no place in rewarding firms for poor financial practice. Or maybe the firms have access to a lower cost of finance than from Australian investors utilising imputation credits. If so, assumption of a utilisation rate of 1.0 probably overstates their cost of finance: it should be considered as a lower bound.

The AER's general approach to γ

Even within its economy-wide approach to payout and utilisation, and within its incremental framework, the AER appears to have been biased towards a low value of γ. The AER states (page 389):

> *"While there is support for a slightly higher value of imputation credits of around 0.6 based on the most recent all equity Australian equity ownership rate of 65 per cent and a distribution rate of at least 0.88 based on Lally's updated work,* **we consider** *an incremental move upwards to 0.5* **appropriate** *at this time. The use of 0.60 for the utilisation rate is also consistent with Lally's most recent advice.*
>
> *We also note for the purposes of consistently estimating the post company tax return on equity, we have applied a value for the utilisation rate of 0.6".* (page 389, CRG emphasis)".

The wording *"we consider an incremental move upwards to 0.5 appropriate at this time"* implies that the AER has chosen to ignore the evidence provided by Lally. It has given no reason for departing from evidence. This raises the question as to whether this is a case of concern for "incrementalism" over-riding evidence and objectivity.

It is also noted at page 407 that the CCP argued for a γ of 0.5. The basis, summarised by the AER is:

> *"A gamma of 0.5 will result in an effective adjusted tax allowance of 15 per cent which is closer to the reality of the actual taxation paid by the networks but will* **still overcompensate the firms** *given the imputation benefits".* (CRG emphasis).

It is not clear why the CCP has argued for a γ that it asserts will "overcompensate" the networks. Also, because the CCP is basing its case on taxation data, the AER points out at page 426 *"the ATO in its note to us recommends the AER not use the tax statistics"* in this context.

The AER provides no reason for rejecting the CRG suggestion that the payout rate should be based on the regulated asset base (rather than any corporate or economy-wide measure), and in disregard for arguments about efficient funding from Australian shareholders it does not veer from its inclusion of foreign investors in its base for determining the utilisation rate, even though it states that in line with sound regulation policy it is to assume firms are financed efficiently.

It appears from the lengthy set of arguments at Appendix A of the Draft Decision Explanatory Statement that the AER is arguing to defend the whole concept of deducting the value of imputation credits in calculating the ROR. The CRG does not disagree with the basic argument for deducting the value of imputation credits, but it

considers the AER is understating the value of that deduction, because it is inclined to use broad ASX or industry-wide data, rather than a calculation of γ based on:

- the payout rate of an entity "associated with provision of regulated services", rather than the payout rate of "the service provider more generally", or, even remotely, the top 20 ASX firms.
- an efficiently-financed entity using the lowest-cost sources of equity finance – finance from Australian investors.

It is hard to see why the use of γ needs to be defended, unless somehow the "investor" is seen to be the disembodied corporate entity, rather than the incarnate owners of the corporation. If imputation credits had no value, the effective tax rate for Australian owners of large corporations would be a punitive 30 percent but subject to various deductions.

Why a fixed γ?

The CRG notes that the AER is suggesting a fixed γ of 0.5, based on broad economy-wide practice. The CRG argues for a γ that more properly applies to an efficiently-financed form (a BEE), investing in and only in the RAB, making payouts only in line with its need to retain earnings to finance net new investment in the RAB.

As pointed out above, new net investment is unlikely in the present environment of over-investment, to result in a γ of or close to 1.0, based on a distribution ratio as given by the above formula of or close to 1.0, and a BEE utilisation rate of 1.0. If there is to be a fixed γ for the duration of this determination, we suggest a value of 0.9, which would cover the possibility that over the period there may be some need for net new investment in the networks.

4.8 The Risk Free Rate

Averaging period

The CRG notes that the AER is proposing a flexible 20 or 60 day averaging period. In its original submission the CRG suggested that a 60 day averaging period would be less influenced by daily fluctuations, but the CRG accepted the arguments for flexibility. The CRG notes from Figure 16 (Explanatory notes page 194), and from its own analysis, that there is little difference between 20 and 60 day averaging.

CRG analysis, comparing 20 and 60 day averaging for 10 year Commonwealth bonds over the last five years, unsurprisingly found little difference between 20 and 60 day averaging, with on average over a 60 day averaging period, this gave a 0.02 per cent higher rate.

The CRG also notes that in late 2016, however, there was a run of about two months when choosing a 20 day averaging period would have resulted in a figure that was between 0.20 and 0.33 per cent higher than the 60 day averaging period. The CRG is

concerned that the flexibility now available to the networks will result in potential "gaming" although the CRG notes that fixing the averaging period well ahead of final decisions should reduce the ability to "game" the flexibility

Five or ten year bond rate

The AER states (page 42) that

> *"…using a term of five years for the risk free rate …would be inconsistent with the term used for the return on equity parameters."*

The AER later expresses a view (page 196) that there is no sufficient reason to move from its current practice of using the 10 year CGS as the risk free rate and states that the other parameters would vary as a result of this change.

The AER has misconstrued the CRG position. Using a 5 year bond rate could be used to develop a market risk premium reflecting the 5 year bond rate which would deliver a higher MRP than one derived from the 10 year bond rate. The other element of the return on equity (equity beta) is independent of the bond rate.

The benefit of using the 5 year bond rate is that it reflects the 5 year regulatory period over which the return on equity is compounded before it is reset at the start of the next regulatory period. As the ERA stated in its rate of return review in 2013, it considers there is more logic to setting the return on equity using a 5 year bond rate as this reflects the regulatory period. In contrast, the use of the 10 year bond rate to set the return on equity has no logic to support its use other than perhaps convention.

The CRG therefore stands by its initial submission that the risk free rate should be set with reference to five year Commonwealth bonds rather than ten year bonds.

The CRG considers that the AER's arguments about the PTRM used to support using arithmetic averages of excess returns to estimate the MRP would suggest the use of 5 year CGS, i.e. the same term as the regulatory period.

Drawing on Reserve Bank data, the CRG analysed the difference between five and ten year bond yields, and have found an average difference of 0.51 per cent. That is, in line with normal behaviour of financial markets, the yield on shorter-term bonds is lower than the yield on longer-term bonds. Allowing the risk-free rate to be based on ten year bonds as opposed to five year bonds in effect would result in a windfall for the networks of over 20 bp when using an equity beta of 0.6.

This highlights that the AER Draft Decision again results in a conservative outcome which favours the networks.

The CRG recognises that changing the risk free rate would result in a need to recalculate the market risk premium, but this can be readily done. There are no other parameters that would be affected. Alternatively the AER can accept our reasoning for the use of an arithmetic average of ten year geometric averages for the MRP.

4.9   Conclusion on ROR parameters

The CRG notes that recently published research on investment returns, such as that by the Credit Suisse Research Institute[71], indicate that returns enjoyed by Australian equity investors and the associated equity risk premium have been amongst the highest in the world.

In populating the CAPM as the AER has done in its Draft Decision, Australian consumers are paying energy network prices which deliver returns to shareholders in network companies which are amongst the highest comparable returns in the world economy.

While the CRG accepts the AER approach to use exogenous market data to inform its input parameters to the SL CAPM to generate the ROR, the CRG is concerned that in many instances the use of the market data has not been adjusted to reflect the uses that it has been put to, to derive point estimates into the ROR formula. By not applying the market data correctly the Draft Decision delivers an outcome that results in consumers paying an unnecessary premium to the networks for the provision of the services needed to transport electricity and gas to where it is needed. While broadly supportive of using the SL CAPM to set the return on equity for this review, the CRG considers that the Draft Decision delivers parameters that do not result in the most efficient cost structure as is required by the NEL and NGL. Specifically, the CRG considers, while maintaining the concept of an incremental review, based on the market data adjusted for:

- proportion of regulated revenue;
- additional rewards allowed from incentive schemes, cost of debt and tax, and use of shared assets;
- investment rewards compounding over 5 year regulatory periods
- inter-relationship between proportion of regulated revenue, gearing and credit rating;
- greater logic in setting the risk free rate;
- a distribution rate that reflects the practices of a firm only providing regulated services;
- consistency between setting the cost of debt, MRP, equity beta and utilisation rate;

the parameters to be used in setting the ROR should be as depicted in Table 4 below.

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[71] Credit Suisse Global Investment Returns Yearbook 2018, February 2018

Table 4 – CRG adjustment to ROR parameters/ranges

Market risk premium (based on 10 year CGS)	5.0
Equity beta	0.5
For a BEE with 60% gearing, a credit rating	Broad A
Gamma	0.9

Impact of the Draft Decision compared to CRG calculations:

- Under the 2013 settings, the nominal ROR is 6.68%, which delivers a notional return of $6.3 billion pa to regulated energy networks overall.
- Under the DD settings (MRP = 6.0, equity beta = 0.6, gamma = 0.5 and debt includes 1/3rd of broad A credit rating), the reduction from the 2013 settings is around 4.8% or $510 million pa.
- Under the CRG recommended settings of MRP = 5.0 (high end of the range of 4.0-5.0), equity beta = 0.50 (high end of the range of 0.4 -0.5), gamma = 0.9 and broad A credit rating, the reduction from the 2013 settings is around $1250 million pa.

5. Exercising regulatory judgment

5.1 Previous decisions and exercise of judgement

The CRG's May 2018 submission did not seek to arrive to arrive at definitive answers on each of the ROR parameter settings, rather it encouraged the AER to take into account the perspectives and matters it raised and to exercise its judgement accordingly[72], and suggested the AER should justify why it would choose parameter values other than those which delivered the lowest costs to consumers.

The CRG contends that in exercising its judgement in setting the 2013 Guideline the AER erred in favour of investment risk over price outcomes and risks to consumers, providing returns to network businesses in excess of efficient financing costs, resulting in excessive network costs being passed on to consumers.

The CRG notes at page 20 of the Draft Decision Explanatory Statement –

> *"There is a balance involved in having regard to these principles"* (the Regulatory and Pricing Principles) and "*We aim to determine a rate of return and a value for imputation credits that will provide the appropriate investment incentives that will lead to neither over nor under investment in assets, and achieve an appropriate balance of sustainable long term consumer outcomes in respect of price, quality, safety, reliability and security of supply".*

The CRG contends that the AER has historically adopted a cautious approach (erring in favour of investment risk over price outcomes and risks to consumers) in determining this balance. We note that the Draft Decision acknowledges the perspective that consumers are currently far more concerned about value for money outcomes than they are about reliability.

In moving the balance more towards price outcomes and risks to consumers we also note that the AER's ongoing concern for 'investor confidence' is constraining it from moving further.

The response to the Draft Decision suggests that the AER's concern for investor confidence and the associated constraint on reducing the allowed ROR further is not recognized by network owners and investors.

The CRG's observation is that equities analysts are not expressing these degrees of concern raised by network owners and investors, along the lines that "it is not logical that the largest ever single reduction in return on equity will not trigger aggressive re-

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[72] https://www.aer.gov.au/system/files/Consumer%20Reference%20Group%20submission.pdf, p36

evaluation by network owners"[73]. Similarly, there is no evidence that any ratings agency has put the regulated businesses under review.

It may be, therefore, that the AER concern with investor confidence is over-stated and that investor confidence would not have been damaged by going further, and that the expression of investor concern is simply part of the strategy to maintain the current level of excessive returns enjoyed by network owners.

The CRG further emphasizes that the AER's exercise of its judgement in the Draft Decision could suggest that the AER is acknowledging that the decisions made it the 2013 Guideline were not correct. Were that to be the case there has been an unjustified wealth transfer from consumers to the network businesses. Whether that transfer has found its way to investors or has been consumed in inefficient business operations would require more detailed investigation.

5.2 Independent panel review findings

As noted previously, the CRG has reviewed the report by the Independent Panel. The Independent Panel included a number of items relating to judgement that we have assessed as minor issues requiring clarification.

The Panel's biggest concerns were with the AER's treatment of Beta, with the rate of return as a whole, and with the treatment of imputation credits.

The Panel did not seem to have concerns about the AER's diminished confidence in the Black CAPM. Criticism of this decision by others is focussed on the presumption that the AER was correct in 2013 and the lack of any new evidence. The Panel by contrast thinks the AER is open to reassess the interpretation it placed on that earlier evidence and we believe that one of the reasons the AER has used is that the use of the Black CAPM has resulted in a Rate of Return which is too high; therefore the Black CAPM should have little impact on the decision.

The Panel appears to conclude that after reviewing the use of the Black CAPM the evidence is supporting a beta of 0.5. The Panel seems to be more concerned with the reasoning to justify settling instead for a beta of 0.6 on the grounds of maintaining investor confidence.

In this regard we note with some concern that investors seem to be paying little attention to the fact that beta has been set at a level higher than the data warrants on the basis of trying to maintain their confidence. It is notable, however, that despite the protestations of investors and network management, market analysts have been relatively comfortable with the AER's approach.

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[73] ENA presentation to public forum, 2 August 2018, slide 10

The CRG believes the AER should respond to the Panel's concerns about the consistency between the two elements by having less regard for the concern for investor confidence.

We repeat that in relation to the Panel's concern about the decision as a whole that the AER has been guided by its concern that it is the decision as a whole rather than the individual parameters that matter. We agree with the Panel that the AER can and should give more emphasis to the overall assessment of the allowed rate of return against the energy law objectives.

We note the Panel's comments on imputation credits, particularly Recommendations 24 to 29. These relate to the AER not considering a distribution rate higher than 0.88, or a utilisation rate higher than 0.6, leading to a low value of gamma at 0.5 (=0.83 x 0.6 rounded).

The Independent Panel has generally been concerned with the consistency of the AER's approach. We therefore note the Panel's statement in the consideration of gamma that it 'regards the inclusion of offshore ownership as a concession to reality …'. We find this a troubling concession because in all other respects the AER has consistently modelled an entity that is exclusively Australian and raises all its equity and debt in domestic markets.

The Independent Panel also provided observations where it considered there were examples of a lack of internal consistency in the approach undertaken by the AER. The CRG agrees and summarises the points made in the body of this submission of examples where it considers there has been a lack of internal consistency in approach.

- The AER uses a 10 year basis for setting the risk free rate and applies it to setting the revenue for a five year regulatory period.

- The MRP is set as an arithmetic annual average yet the rate of return rewards the networks get is compounded over a 5 year regulatory period, implying that the a geometric averaging should apply for each five year regulatory period

- The AER assumes that all debt and equity is sourced from within Australia but then assumes that a significant proportion of the providers are overseas investors (sourcing their finance from overseas markets) when assessing tax implications

- Gearing, credit rating and degree of regulated revenue are inter-dependent yet assessments of the gearing and credit rating parameters are made independent of each other with no reference to the degree of regulated revenue earned by the firms examined.

The CRG considers that this lack of inconsistency acts to the detriment of consumers.

6. CRG/ENA/IRG dialogue

Prior to the CRG and ENA's May 2018 submissions representatives of both bodies met on a roughly fortnightly basis.

The CRG's position was essentially that the rate of return is too high, not reflective of the low level of risk faced by investors in regulated network companies, and has been over an extended period. The ENA held a contrary view and the two parties set out to establish a productive working relationship and to endeavour to seek common ground on ROR issues wherever possible.

The details of the CRG and ENA's arguments are contained in their respective May 2018 submissions.

The CRG and ENA engagement was of only four months duration and therefore provided limited time to address differences in views. Accordingly there was no closure of the different perspectives on most elements of the ROR, but the parties gained insight into each other's rationale and perspectives. It is however the CRG's observation that the ENA has not embraced the CRG's underlying message.

This is reflected in continuing observations that high prices are either (a) due to some other element in the cost stack or (b) due to Government owned assets. Figure 6 below shows the contribution of each element of the cost stack to the increase in the value of the average retail electricity bill based from 2007-08 to 2017-18 (in 2016-2017 dollars).

Figure 6 – Retail electricity bill – price increase contribution
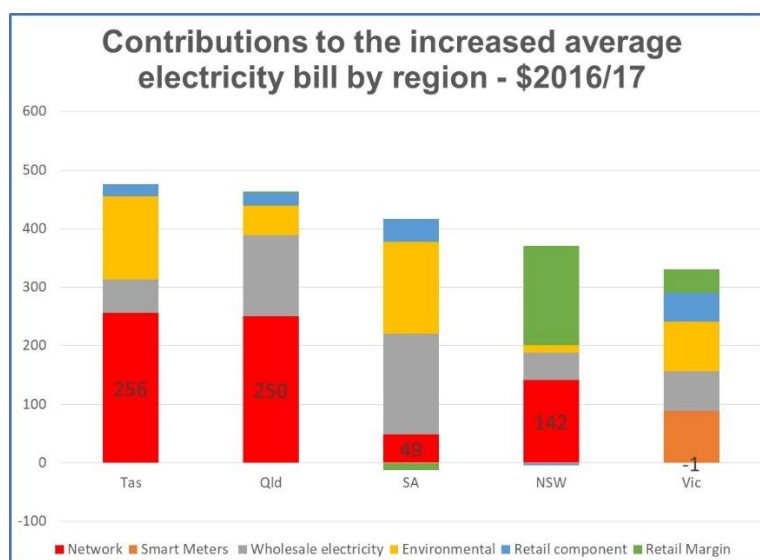
Source: ACCC - Retail Electricity Pricing Inquiry-Final Report, June 2018

The stand-out case of Victoria is distorted by the cost of the smart meter program because for the other networks metering remains a cost, and some of Victoria's improvements are only possible because of the smart meters.

The South Australian case is modest, but nonetheless an increase. The expectation of industry reform, private sector ownership and incentive regulation is that the network component of average electricity bills should be declining.

The CRG acknowledges that parts of industry are working together to develop an energy industry charter to jointly deliver energy for a better Australia through the first whole-of-sector initiative to address customer expectations.[74] The charter partners intend to demonstrate commitment through working together to improve energy affordability.

The CRG notes that when consumers interact with industry and state that prices are too high the expectation is that industry will respond by seeking ways to bring down prices.

CRG representatives met with IRG representatives on one occasion prior to May. There has been a subsequent telephone conference between the CRG and IRG and the discussion indicated that more consultation between these two groups could lead to some greater commonality of views.

The CRG's message to the IRG was the same as presented to the ENA, but with an emphasis on what the CRG sees an alignment between our interests – maintaining the value of the assets we have each invested in.

Discussions between the CRG and the ENA have continued since the May 2018 submissions and since the AER's Draft Decision. The CRG sees value in maintaining an ongoing dialogue, with the expectation that insights into each other's perspective might progress to understanding and then, and possibly with more time and information, different viewpoints being reconciled.

CRG/ENA Joint Project

The CRG and the ENA jointly commissioned a study into assessing the impact of the rate of return on network RABs since 2013. NERA Economic Consulting were engaged to carry out this work.

The joint Terms of Reference (TOR) for the review asked three questions:

(1)   What are the drivers of the increases in the regulatory asset bases for energy networks and what implications can be drawn from these increases as input to the AER's task of reviewing its rate of return guideline under the National Electricity and Gas Rules?

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[74] https://www.theenergycharter.com.au/

(2)   What is the set of empirical evidence and verifiable indicators that could reliably indicate that the AER's rate of return approach since 2013 may have led to higher or lower than efficient network Regulatory Asset Bases?

(3)   Do these indicators show a consistent pattern of evidence that is sufficiently robust to enable conclusions to be drawn that AER allowed rates of return are either too high or too low? Why or why not?

In its September 2018 report, NERA states that:[75]

> *In summary, the evidence doesn't present a particular clear picture one way or the other. There is evidence that could be interpreted to suggest returns are either too high, too low or at the correct level – and none of the evidence is particularly robust. This stems from the difficulty disentangling realised returns in excess of the allowed rate of return from whether the allowed rate of return is greater than the return required by investors to finance the activities of an NSP.*

While these findings are inconclusive, the report provides a solid basis of evidence for further discussion between the parties.

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[75] NERA Economic Consulting – RAB growth since the AER's Rate of return Guideline, September 2018, para 187

7. Broader review

As noted in its May 2018 submission, the CRG suggests that this review has raised further concerns about the use of market estimates and associated finance theory and strongly urges the AER to undertake a more fundamental review of the approach to determining the allowed ROR as soon as the first binding instrument is made.

The CRG notes that currently there are now only three energy transport networks listed on the Australian Stock Exchange (ASX) - Spark, Ausnet and APA. In recent years, a number of listed firms such as DUET, Envestra, GasNet, Hastings and Alinta have been acquired (mostly by privately owned firms) reducing the cohort of listed energy transport firms. A number of these firms have now been not listed for over a decade and by the time the next review of the ROR Guideline is carried out, some of the data used in this review will be close to two decades out of currency. Already the currency of data used for this review is seen as biasing the CAPM inputs and the CRG points out that this issue was raised in the Concurrent Evidence Sessions as a concern with more recent data being preferred by some experts rather than data that was many years old.

With the potential purchase of APA by the CKI consortium there will be only two listed firms with an association with energy transport to provide current market data. In this regard, the CRG also notes that while Ausnet is a direct holder of network assets, Spark is an investor in firms holding network assets, providing a view that the risks faced by Spark are not as aligned with the fundamental risks faced by an owner of regulated network assets.

Whilst the CRG accepts that historical data can be used for the development of some of the CAPM inputs (eg MRP) other data is seen by some as more impacted by current market conditions. Much of the market data used by the AER to inform it about the inputs to the CAPM approach to assessing the return on equity for networks (equity beta and gearing) has been predominately from a very small cohort of current firms, providing the opportunity for the data from these firms to be less than representative of the benchmark efficient entity, which has led to a decision to use data from firms no longer in existence. With the passing of time, it is more likely that the cohort will decrease in size rather than increase. This creates a major issue in the future for using market data to inform the inputs to the CAPM as the primary source of calculating a return on equity and gearing.

With this looming loss of current input data in mind, the CRG considers that the AER needs to start now to commence a review to consider, among other matters, new ways to calculate what the allowed rate of return for the benchmark efficient entity should be.

Further, the CRG considers that it is imperative that a decision concerning the allowed rate of return is capable of being assessed and, if necessary, corrected.

Noting the AEMC's 2012 final rule determination creating the ROR objective, where at page 43 it states:

> *"The draft rule determination stated that the primary objective of the allowed rate of return is to provide service providers with a return on capital that reflects efficient financing costs. A rate of return that reflects efficient financing costs will allow a service provider to attract the* **necessary investment** *capital to maintain a reliable energy supply while minimising the cost to consumers";* (CRG emphasis)

the review should include:

- A review of the use of the Sharpe-Lintner capital asset pricing model (SL CAPM);
- Establishment of information disclosure and public reporting obligations for regulated energy networks to provide empirical evidence as to actual returns; and
- Establishment of a performance monitoring and evaluation framework, using the above information, incorporating an error correction mechanism, to provide an *ex post* assessment of whether or not a prior decision was correct, to ensure that:
    - the allowed Rate of Return (ROR) meets the National Electricity Objective (NEO), the National gas Objective (NGO) and Revenue and Pricing Principles (RPP);
    - consumers pay no more than they should for the efficient delivery of services; and
    - networks do not earn excessive profits.

One other component of a broader review is the early involvement of consumers, including the Consumer Reference Group as described under the draft legislation for the binding rate of return instrument.

8. Conclusion

The CRG is of view that it has demonstrated that the allowed Rate of Return could and should be significantly lower than what the AER has determined in its Draft Decision.

The ROR allowed in June 2013 did not reflect the low risk status of network companies and over compensated both beta and MRP parameters, as well as being too generous in estimating gamma. That over compensation must be corrected in the 2018 guideline, as well as considering any reduction in the ROR arising from assessing the evidence now available.

The CRG nonetheless accepts that the AER must consider other, broader issues, including investor confidence and the need for its decision to be capable of acceptance.

On that basis, the CRG could accept the AER's Draft Decision, but only if this decision is seen as the first step in a downward progression over time.

The benefit of the Draft Decision by way of energy bill reductions is of real value only to those consumers who are most struggling with their energy costs. For most consumers the reduction of around 2.4% or $40 per year on the average domestic electricity bill, is only a small down payment on the further reductions that are required.

The CRG is accordingly surprised that the networks have not found the decision capable of acceptance.

The bill reduction delivered by the Draft Decision can be considered in the context of the bill reductions which the ACCC suggests[76] are possible as a result of implementing the recommendations of its Retail Electricity Pricing Inquiry-Final Report, which do not include any ROR reductions. In NSW for example, those savings attributable to the network component amount to $174 pa on a retail bill of $1,697 (page xv).

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[76] ACCC - Retail Electricity Pricing Inquiry-Final Report, June 2018.