

## **Submission to the Australian Energy Regulator (AER)**

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### **Consumer Challenge Panel**

#### **Submission to the AER on its Draft Rate of Return Guideline**

**Sub-Panel CCP16**

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**Final report**

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## Executive summary

### *Incremental review process*

In its submission in response to the Concurrent Evidence Sessions, CCP16 supported the incremental approach in the sense that this referred to working within the CAPM and foundation model.

The AER confirms in the Draft Guideline that it has done what it said it would do in the incremental approach and taken the CAPM model and the foundation framework approach from the 2013 guideline as a starting point and updated parameter values.

CCP16 believes that the Draft Guideline builds on the 2013 Guidelines and is therefore an incremental review of the 2013 Guideline.

In CCP16's view, the AER has followed the 'foundation model' approach set out in the Guideline, and we are not persuaded that a change in the relative reliance on different information sources constitutes a 'fundamental change'.

CCP16 does not consider that the AER has 'fundamentally changed' the 2013 Guideline framework for assessing the return on equity. The AER continues to consider the DGM (for the MRP) and the Black CAPM / low beta bias (for equity beta), but has drawn the conclusion that the problems with determining reliable and robust estimates are significant.

### *The AER's use of outcomes from the concurrent evidence sessions*

The NSG and the ENA have overstated the role of the concurrent evidence sessions and the AER's obligation to adopt the so-called 'agreed positions'. They have also underplayed the multiple submissions by many stakeholders who contested the conclusions of the networks and their appointed experts on the rate of return parameters, particularly the return on equity.

### *Returns under the existing Guideline*

The persistence of excess returns is clearly not in the long-term interests of consumers, and nor is it in the long-term interests of service providers. The importance of incentives to improve efficiency is well-accepted. However, excess returns should reflect exceptional performance, rather than being the norm.

CCP16 considers that this summary is equally applicable to energy networks and their regulation in Australia, and that a tightening of the ROR allowance, as the AER has proposed in its Draft Decision, is an essential element of providing a more balanced regulatory framework that better serves the long-term interest of all stakeholders. The assessment of past levels of profitability can provide information on the extent to which the historic allowed ROR has contributed to returns that have exceeded investor expectations, and a recalibration of the approach is now warranted.

In assessing this, we have considered the following factors:<sup>1</sup>

- *The role of the cost of capital and performance to date:* The allowed return represents one source of returns to shareholders. Understanding the risks and effective equity returns helps

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<sup>1</sup> This is based on the framework set out by CEPA in its advice to Ofgem. See CEPA, Review of Cost of Capital for Ofgem's RIIO-2 for Onshore Networks, Ofgem, Feb 2018, p5.

inform the assessment of the cost of capital, and whether the current approach provides an adequate but not excessive return.

- *RAB multiples*: Understanding market expectations of regulated companies as reflected in RAB multiples when transactions occur, in daily share prices and in valuations by brokers, gives an indication of whether allowed returns have been suitable.
- *Competitive benchmarks*: In some cases, bids for assets involve bidding required rates of return (for example Offshore Transmission Assets (OFTA) and the Thames Tideway Tunnel (TTT) in the UK), which provide ‘real-world benchmarks of required returns’, and a reference point for the assessment of network returns.

Our key conclusions on comparison of actual and allowed rates of return are as follows:

1. The regulatory framework provides for returns that persistently and significantly exceed the allowed rate of return.
2. Incentive payments are positive for all but two of the DNSPs, raising questions as to whether the incentive mechanisms are appropriately calibrated and cost estimates unbiased.
3. Other factors are a very significant positive contributor to the excess returns, and warrant further investigation. An important factor may be the difference between allowed and actual debt costs.

As we noted in our previous submission, RAB multiples have been rising, and are above benchmarks (up to around 1.3) that typically raise concerns for other regulators. Further analysis is required, but RAB multiples of 1.4-1.6 strongly suggest excess returns.

The Independent Panel Report comments that:

If RAB multiples are relevant to investors’ decisions (and the Draft Guidelines do not suggest they are not relevant), then they are necessarily relevant to the return on equity that prospective investors require to make investments. While the AER has explained that RAB multiples can arise from varied causes, the difficulty of sorting out and weighing those causes does not make any one of them irrelevant. (p16)

CCP16 agrees with this summary of the position by the Independent Panel, and considers that it supports a more explicit and systematic consideration of RAB values by the AER in setting the ROR.

While the interpretation of RAB multiples is challenging, we consider that further analysis of the RAB multiples in Australia would indicate that the gap between allowed and required ROR is a significant factor. As noted above, current RAB multiples are very high – 1.4 to 1.6 for the most recent transactions. We have used a simplified model to analyse the possible decomposition of the excess returns underpinning such multiples, and found that with a 50-year asset life and an allowed return of 5.5%:

- 1) For a RAB multiple of 1.5, the actual expected return would have to be 8.25% if the required return equalled an allowed return of 5.5%. This is a 275 basis point difference, which is almost more than double the actual difference since 2013.
- 2) For a RAB multiple of 1.5, the required return would have to be 3.0% if the actual expected return equalled an allowed return of 5.5%.

Neither of these extreme positions appears likely. In practice, both factors are likely to have contributed to the RAB multiples. For example, if the expected return exceeds the allowed ROR of

5.5% by 150 basis points (37 basis points above recent experience), the implied required return is 4.5% compared to the allowed ROR of 5.5%.

### *Is the AER's Draft Decision capable of acceptance?*

CCP16 considers that the AER's Draft Decision is a well-reasoned, cautious and prudent response to the changing market conditions and the evidence that the expected return on investment in the sector has exceeded the rate of return required by investors. The parameters proposed by the AER are largely consistent with those recommended by CCP16 in its presentation to the AER Board.

While we consider that the AER would have been justified in proposing a lower ROR, we support the AER's Draft Decision, which would see a reduction in the ROE of 95 basis points, and a reduction in the overall ROR of 45 basis points (when compared to the continuation of the current ROR Guideline).

We consider that the AER's decision is **capable of acceptance** given that an overall tightening of the regulatory regime is underway that we strongly expect will see a reduction in excess returns. In addition to the review of the ROR, reviews of the treatment of tax and the approach to the estimation of efficient opex have commenced. Strong evidence has been presented to these reviews that the current tax allowance overstates tax obligations and that the assumption of zero trend productivity improvement is inconsistent with more recent evidence on productivity gains in the sector and the reasonable expectations of consumers.

CCP16 confirms the overall capability of acceptance of the Draft Guideline, whether it is implemented as a guideline or as a binding instrument, provided that any changes that the AER makes between draft and final versions are to improve the long-term interests of consumers.

### *Parameter values*

CCP16 agrees with the AER's approach to the return on debt and imputation credits, subject to the AER further considering the recommendations of the Independent Panel regarding the implications of the Chairmont Report and the selection of the point estimate for gamma.

### *Return on equity*

All the evidence summarised in this submission points to the fact that the current ROE is likely to be high compared to current expectations of the ROE, a conclusion that was also made by the UK regulator in its recent assessment of the cost of capital for its next review period.

CCP16 concludes from this evidence that the equity market does not indicate a significant change in market perceptions of the value of investing in regulated network assets. What adjustments there are, are likely to reflect more modest expectations around limits on excess returns.

The AER has now achieved a more appropriate balance between the reasonable expectations and the risks facing both consumers and network investors over the next four years.

CCP16 supports the AER's draft guideline decisions on the MRP and the equity beta. In our submission in May 2018 to the AER's two discussion papers on the MRP and the equity beta (published March 2018), and to the report by CEPA summarising the concurrent evidence sessions, CCP16 recommended that the AER adopt a MRP of 6% and an equity beta no larger than 0.6.

CCP16's parameter value recommendations are generally in line with the AER's Draft Guideline for the MRP and equity beta. In our view, these recommended parameter values contribute to a rate of return that provides a more reasonable balance between the long-term interests of consumers and the interests of investors in network assets and between the respective risks that consumers and networks face.

CCP16 therefore concludes that the overall ROE proposed by the AER in its Draft Guideline will allow investors adequate (but not excessive) compensation for the risks that they face in investing in the regulated networks. Achieving a balanced outcome that takes account of the interests and risks facing investors and consumers is particularly important for the long-term sustainability of the energy markets.

In our view, the AER's 2018 Draft Guideline adopts an unbiased view of the conceptual and empirical evidence now before it, and comes to a decision on an efficient ROE that fairly balances the interests and risks faced by investors and by consumers. In previous sections of this submission, CCP16 has provided evidence that in the current conditions, the AER's 2013 guideline is contributing to higher returns than anticipated at the time. For instance, Figure 5 illustrates the increased spread year on year between the 2013 fixed ROE allowed by the AER, and return on debt (ROD) in both the 2009 – 2011 period (SORI), the adjusted SORI (2011-2013) and the 2013-2018 period (2013 Guideline).

Another important message is the risks to consumers of the AER over-reacting to shorter-term movements in the markets. To date, the AER's approach has largely been to respond to upward pressures while not responding to downward pressures. The 2018 Guideline provides the opportunity to address this bias while maintaining efficient returns to the investors in the businesses.

The AER has reduced the MRP from 6.5% to 6.0%, taking into account the evidence from the analysis of historical excess returns (HER), its developing views on the robustness of alternative methodologies in the regulatory context and observations of broader market conditions. CCP16 agrees with the AER's decision to reduce the MRP to 6.0%. We consider that the AER's decision is based on a careful examination of the empirical data and of alternative perspectives. It recognises the changes in the broader market conditions and the importance of balancing the interests and risks facing investors with those facing consumers.

While we support the overall decision CCP16 makes the following additional comments on the assessment of the MRP.

- Revisit CCP16's recommendations regarding the use of arithmetic and geometric averages. The AER notes CCP16's reservations regarding the biases of arithmetic averages of historical excess return data with relatively high volatility, particularly when used as an estimator of future long term MRP. However, the AER does not take this issue further, by assessing how much bias is introduced and whether as a result geometric averages should be considered as more than just a 'floor' to the estimate of MRP.
- As the AER acknowledges, the DGM model lacks robustness and is very sensitive to the inputs. CCP16 agrees with this and highlights that the weakness of the DGM (particularly as presented by the network consultants) is its reliance on subjective assessments, and its generation of results that are counter-intuitive. That is, the proposition that MRP's have increased in recent years does not correspond to the current market conditions or the assessments of the risks in the wider economy, by the RBA among others.



- It is reasonable to conclude that the MRP has declined (contrary to the DGM outcomes) since the 2013 Guideline. The regulatory estimates of the MRP has moved up and down, being 6% before 2009 SORI, 6.5% in the SORI that followed the GFC, 6% again when conditions improved and 6.5% when the 2013 Guideline was finalised, reflecting uncertainties at the time arising from the post-GFC repercussions on European government debt (among other things). A comparison of the statements made by the RBA in 2012-13 in its Economic Outlook compared to the current Economic Outlook illustrates this point.

CCP16 contends that the AER's 'default' position is for an MRP of 6%. Increases above this to 6.5% have been made in response to specific economic and financial circumstances. The adoption of an MRP of 6.0% in the 2018 Draft Guideline is a reversion to the default position, a reversion that is clearly warranted by the substantial improvements in the economic and financial outlook since 2012-13.

CCP16 considers that the recommendations of the Independent Panel are a useful addition to the ongoing assessment of the MRP. We expect that the Final 2018 Explanatory Statement will address these matters and that in doing so, the AER will clarify its reasoning and promote greater confidence among all stakeholders in the AER's decision making.

Such further explanations may also address the criticisms raised in August by the NSG and the ENA that the AER has not properly considered the views of the expert panels, particularly around the role/weighting of the DGM. However, while the recommendations will enhance the Guideline, in our view, the Panel's recommendations do not challenge the fundamental basis of the AER's decision on the MRP.

The AER states that based on the empirical evidence, it has selected a point estimate for the equity beta of 0.6 from a range of 0.4 to 0.8. The AER has in effect adopted the mid-point of the observed range, although not the average or the median. CCP16 supports this change to the equity beta in the Guideline while noting that it is still at the upper end of most of the empirical studies.

The AER's decision to include an equity beta of 0.6 in the 2018 Guideline, therefore, represents an important improvement to the AER's approach. This is because the AER is now selecting an equity beta that is around the mid-point of the observed range.

In the 2013 Guideline, the observed range from the empirical analysis was very similar to the updated assessments of the empirical data (i.e. 0.4 to 0.8). However, the AER selected an equity beta of 0.7 towards the top of the range, noting among other things that this was required to account for 'market imperfections' and also justified by reference to the Black CAPM 'zero beta premium' theory<sup>2</sup>. The AER's advisors, the CCP and other stakeholders were critical of this decision. As discussed in a later section of this submission, the Independent Panel was also concerned with the AER's views (both in 2013 and 2018) on what they call the 'Black model' which they considered had 'nothing to do with equity beta'.

For these reasons, CCP16 is pleased that the AER has modified its view on the use of the Black CAPM to select a point estimate. The AER's Draft Guideline decision of 0.6 is much closer to the empirical

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<sup>2</sup> The Black CAPM predicts a slope of estimated returns that can be flatter than the slope of the SLCAPM formula. Low beta stocks would therefore have a higher beta than they would under the SLCAPM. The 'low beta bias' in effect comes to a similar conclusion but is based on ex post observations of returns for low beta stocks rather than a theoretical construct about the relationship between returns and beta.

evidence. We also note that the multiple analyses conducted since 2009 by the AER and its consultant, Professor O. Henry, have all produced remarkably consistent results for the equity beta estimate. That is, each of the studies suggests an empirical re-levered equity beta in the range of 0.4 to 0.8 for the regulated gas and electricity networks, with an average equity beta of between 0.5 and 0.6. This consistency is observed despite the changing structure of the industry and in the face of changing economic conditions.

CCP16 believes that these consistent findings should give confidence to the AER that despite various data issues and the declining parameter set (discussed below), the Draft Guideline equity beta estimate of 0.6 is realistic and robust.

CCP16 does note, however, that some networks and their consultants claim that the equity beta is increasing. However, these studies rely on analysing a shorter estimation period, i.e. five years of observations.<sup>3</sup> CCP16 agrees with the AER that these studies do not (yet) demonstrate a fundamental change in investors' long-term perceptions of systematic risk. Nor is there a coherent explanation provided about why these perceptions would change since 2013 when, if anything, the regulatory arrangements provide greater certainty in cash flows, not less.

However, while CCP16 agrees with the AER's proposed benchmark equity beta of 0.6 as representing a reasonable reflection of the empirical data, we also highlight the growing challenge of estimating the equity beta as the existing comparator set decreases.

In our May 2018 submission to the AER we identified this issue and suggested to the AER that it consider using indices such as the Bloomberg *Utility* Index. We are more cautious, however, about the value of international estimates as a guide to the systematic risks facing a regulated network in Australia.

The Independent Panel has generally supported the AER's decision and noted the AER's extensive review of the relevant material that has been submitted to it. However, the Panel has raised issues for clarification. CCP16 supports the AER further explaining its decisions on these matters, which include a request for the AER to clarify its views on:

- The difference between business and financial risk including clarification of the relationship between financial risk, gearing and the systematic risk captured by the equity beta.
- The treatment of the Black CAPM and the low beta bias; the Panel considers the AER should not use the Black CAPM or the low beta bias to adjust the equity beta.
- The AER's focus on stability and predictability to limit the adjustment of beta.

While we support the AER including further explanation of these issues, CCP16 is not convinced that this will make much difference to the final equity beta decision of 0.6, or to the estimate of the overall return on equity. If it does affect beta, we estimate it will be to reduce the estimate of equity beta for the BEE from 0.6 to around 0.55. The AER will also need to be careful that any changes do not lead the AER to change its foundation model approach in this 2018 Guideline.

While CCP16 agrees with the AER's proposed benchmark equity beta of 0.6 as representing a reasonable reflection of the empirical data, we also highlight the growing challenge of estimating the equity beta as the existing comparator set decreases. It is likely that by the end of 2018, the AER will

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<sup>3</sup> In some instances, these 5-year analyses are presented in the form of rolling 5-year averages and therefore do cover a longer estimation period. However, each estimate is based on the average for that 5-year period, so again limits the statistical reliability of the findings of any trend in the data.

only have two relevant ASX listed network companies, due to consolidation of the market and shifts to greater overseas ownership. In our May 2018 submission to the AER we identified this issue and suggested to the AER that it consider using indices such as the Bloomberg *Utility* Index. We are more cautious, however, about the value of international estimates as a guide to the systematic risks facing a regulated network in Australia.

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- The AER's focus on stability and predictability to limit the adjustment of beta.

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CCP16 does not object to the widening of the averaging period for the risk free rate from 20 business days to a period of 20 to 60 consecutive business days (at the option of the network). We note that the proposal has widespread support from the networks, the concurrent evidence session experts and other stakeholders on the basis of the evidence that it reduces the volatility of the risk free rate estimate, while overall, the results do not significantly depart from the 20 day assessments of the risk free rates.<sup>4</sup> CCP16 supports the AER's draft decision to have a 'default' averaging period of 20 days, ending three months prior to the commencement of the regulatory control period (or revision commencement date), if a NSP fails to provide the AER with a compliant averaging period.

CCP16 has more concerns with the draft decision to expand the averaging period nomination window such that it must start and end between 7 months and 3 months (respectively) prior to the commencement of the regulatory control period (RCP) or revision commencement date. This appears to move the estimation of the risk free rate too far from the SLCAPM concept of the 'on the day' risk free rate'.

While the AER suggested that this extension of the averaging period to 7 months prior to commencement of the RCP will be necessary 'to provide confidentiality of the nominated averaging period', it would also appear to overlap the timing of the NSPs submitting their revised revenue proposal, allowing a network to adjust their proposal in line with information already available. On balance, CCP16 considers that the risks of 'gaming' outweigh the somewhat overstated concerns on confidentiality, particularly with respect to the RFR, which is public data and only used in the assessment of the fixed return on equity, not for estimating the cost of debt.

CCP16 seeks further clarification of this issue prior to the publication of the Final Guideline.

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<sup>4</sup> See for instance, AER, *Draft rate of return guidelines – explanatory statement*, July 2018, Figure 16, p 194.

# 1. Introduction

## 1.1. Background

### 1.1.1. The role of the Consumer Challenge Panel (CCP)

The AER established the Consumer Challenge Panel (CCP) in July 2013 as part of its Better Regulation reforms. These reforms aimed to deliver an improved regulatory framework focused on the long-term interests of consumers.

The CCP assists the AER to make better regulatory determinations by providing input on issues of importance to consumers. The expert members of the CCP bring consumer perspectives to the AER to better balance the range of views considered as part of the AER's decisions.<sup>5</sup>

The author of this submission is CCP16, a sub-panel of the AER's Consumer Challenge Panel that the AER has established to focus specifically on this review. The views expressed in this paper are the views of the members of CCP16: David Prins (chair), Louise Benjamin, Eric Groom, and Bev Hughson.

### 1.1.2. The AER's process for review of the Rate of Return Guideline

On 31 July 2017, the AER announced<sup>6</sup> that it was initiating a review of the Rate of Return (ROR) Guideline to apply to electricity and gas distribution and transmission businesses.<sup>7</sup>

CCP16 responded to a Consultation Paper on a process for the review. CCP16 attended and participated in a public forum in Sydney on 18 September 2017.

On 31 October 2017, the AER published an Issues Paper, requesting submissions from interested parties, to which CCP16 also responded. The CCP16 submission focused on the fundamental issues of concern to CCP16 in the review, as well as addressing each individual question asked in the AER's Issues Paper.

The AER held concurrent evidence sessions on 15 March and 5 April 2018. These were closed sessions to allow detailed and natural discussion between the AER Board and participating experts. CCP16 representatives attended both sessions. The purpose of the concurrent expert evidence sessions was to assist the AER Board in making a decision which will best achieve the national gas and electricity objectives. The AER published agendas and discussion papers prior to each concurrent evidence session and transcripts after each session. On 21 April 2018, the AER published a joint expert report covering the outcomes of both concurrent evidence sessions.

The AER invited written submissions on the evidence sessions, discussion papers and transcripts. CCP16's submission (dated 4 May 2018) to the AER on the evidence sessions and the published materials focused on the fundamental issues of concern to CCP16 in the review. It built on CCP16's response to the Issues Paper, the materials regarding changes to legislation and Rules published by

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<sup>5</sup> Detailed information on the CCP is available on the AER website at <https://www.aer.gov.au/about-us/consumer-challenge-panel>

<sup>6</sup> The announcement of the initiation of the review is available on the AER website at <https://www.aer.gov.au/communication/aer-kicks-off-its-review-of-rate-of-return-guideline>

<sup>7</sup> Documentation on the current project to undertake the review is being made available to stakeholders on the AER website at <https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/review-of-rate-of-return-guideline>

the COAG Energy Council, and the materials from the evidence sessions. CCP16 presented to the AER Board regarding this submission on 24 May 2018.

On 30 May 2018, CCP16 provided a further submission to the AER in response to a consultation on matters related to return on debt.

### 1.1.3. Changes to National Energy Laws and Rules to enable a binding ROR instrument

Meanwhile, the COAG Energy Council agreed to make changes to the National Electricity Law (NEL) and the National Gas Law (NGL) relating to the calculation of the rate of return on capital and the value of imputation credits used in economic regulatory decisions. The Senior Committee of Officials (SCO) sought feedback on the draft legislation, particularly regarding implementation issues for a new binding Rate of Return Instrument. Stakeholders were invited to provide written submissions on the draft legislation and the drafting instructions for the consequential rule change.<sup>8</sup>

On 5 April 2018, CCP16 provided advice to the AER regarding the COAG Energy Council draft legislation and rule changes for a binding Rate of Return Instrument, which the AER attached to its submission to the COAG Energy Council.<sup>9</sup> Among other stakeholders, CCP16 attended a public forum in Sydney on 29 May 2018, to discuss the submissions on the draft legislation and rule changes.

On 3 July 2018, the SCO issued a Bulletin of the Binding Rate of Return Guideline dated 27 June 2018, providing the formal response to these submissions, and confirming that the COAG Energy Council had agreed to introduce the final legislative amendments on 15 June 2018.<sup>10</sup>

The bill to implement a binding rate of return instrument within the National Electricity Law (NEL) and National Gas Law (NGL) was subsequently tabled in South Australia's Parliament as the *Statutes Amendment (National Energy Laws) (Binding Rate of Return Instrument) Bill 2018*.<sup>11</sup>

### 1.1.4. Publication of the AER's Draft Guideline

The AER published its Draft Decision (Draft Guideline) on 10 July 2018, and later published a fact sheet and other supporting information. The AER held a public forum on 2 August 2018 on the Draft Guideline, at which CCP16 presented (among other stakeholders).

The AER has invited written submissions on the Draft Guideline. This is CCP16's submission. It builds on our previous submissions and presentations.

### 1.1.5. The Independent Panel

The AER also established an Independent Panel to review the draft guideline and report on whether it is supported by sound reasoning based on the available information such that it is capable of promoting achievement of the national gas and electricity objectives. The panel provided a

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<sup>8</sup> <http://www.coagenergycouncil.gov.au/publications/national-electricity-law-and-national-gas-law-amendment-package-%E2%80%93-creating-binding-rate>

<sup>9</sup> The AER's submission with the attached CCP advice is available on the COAG Energy Council website at <http://www.coagenergycouncil.gov.au/publications/national-electricity-law-and-national-gas-law-amendment-package-%E2%80%93-creating-binding-rate>

<sup>10</sup> <http://www.coagenergycouncil.gov.au/publications/binding-rate-return-guideline-1>

<sup>11</sup>

[https://www.legislation.sa.gov.au/LZ/B/CURRENT/STATUTES%20AMENDMENT%20\(NATIONAL%20ENERGY%20LAWS\)%20\(BINDING%20RATE%20OF%20RETURN%20INSTRUMENT\)%20BILL%202018.aspx](https://www.legislation.sa.gov.au/LZ/B/CURRENT/STATUTES%20AMENDMENT%20(NATIONAL%20ENERGY%20LAWS)%20(BINDING%20RATE%20OF%20RETURN%20INSTRUMENT)%20BILL%202018.aspx)

comprehensive report to the AER on 7 September 2018, which the AER published on 11 September 2018.

This submission by CCP16 responds to the Draft Guideline and to the Independent Panel report. It does not repeat large amounts of information provided in the earlier CCP16 submissions which have been summarised above. The AER may refer to our earlier submissions to support the views contained in this submission.

#### **1.1.6. CCP16 commentary on the process followed by the AER**

The process that the AER followed leading up to its Draft Guideline was fully consultative. The AER established Investor, Retailer and Consumer Reference Groups. As set out above, the AER consulted on its decision making process and on the key issues at stake through open formal consultation processes, the holding of Concurrent Evidence Sessions, and establishing the Independent Panel.

The process that the AER has followed fully meets Australian and international regulatory standards.

### **1.2. Structure of this submission**

The remainder of this submission is structured as follows:

- Section 2 considers whether the approach of the AER to review of the ROR Guideline has been an incremental approach.
- Section 3 considers the AER's use of outcomes from the concurrent evidence sessions.
- Section 4 considers whether expected returns under the current Rate of Return Guideline exceeded required returns.
- Section 5 considers whether the AER's Draft Decision is capable of acceptance.
- Section 6 comprises a brief overview of assessment of parameter values.
- Section 7 discusses return on equity.
- Section 8 discusses achievement of the national objectives.

## 2. Incremental review process

The AER stated in its Issues Paper in October 2017 that its review would seek to build on the current Guideline rather than start afresh. There were aspects of the current approach that were reliant on market data and empirical analysis, and that material would need to be updated. Other aspects of the current approach are driven by finance theory and available academic literature. The AER stated that it was not aware of any significant new developments in this area that might warrant the AER taking a new approach.

Consistent with this, the AER's Draft Guideline Explanatory Statement in July 2018 set out:

*No stakeholders submitted that we should review our foundation model approach. This is consistent with our position, accepted by all stakeholders that this review should be an incremental review. In this context, we will update the relevant data and review new evidence so that our judgement can be exercised within the established approach to estimating the allowed return on equity.*

Figure 3 in the AER's Draft Guideline Explanatory Statement demonstrates in detail that there was largely no change in the role of various items of material from the process in 2013 to the current process in 2018.

### 2.1. What did the AER mean by an incremental review?

The AER sought submissions on whether it should adopt a clean slate when undertaking this review or whether it should use the 2013 Guideline as a starting point with updated parameter estimates and data sources.

The AER described what it meant by an incremental review in its Issues Paper dated October 2017. On page 8 the AER stated:

*"Our approach under the current Guideline was developed through an extensive consultation process. It is based on thorough analysis of all aspects of the rate of return and a widespread review of the relevant material that could inform an estimate of the rate of return. Our approach under the current Guideline has also been fully examined during our determination processes over the past three years and through a number of appeals to the Australian Competition Tribunal (Tribunal) and Full Federal Court.*

*Given this history, **we consider this review should seek to build on the current Guideline rather than start afresh. There are a number of aspects of the current approach that are reliant on market data and empirical analysis, and this material would clearly need to be updated.** However, there are a number of aspects of the current approach that are driven by finance theory and available academic literature. We not aware of any significant new developments in this area that might warrant us taking a new approach. While we remain open to considering any new evidence submitted to us, we have assigned these areas a lower priority for review than those outlined below."* (Emphasis added).

### 2.2. Submissions to the AER's proposed incremental review process

Network submissions supported the AER's approach of starting with the 2013 Guideline and confirmed this understanding of what an incremental review involved. ENA stated:

*“The 2017 Rate of Return Guideline process is an opportunity to build on considerable work undertaken in the 2013 guideline review process, and network businesses support **an incremental approach building on this past guideline review and subsequent legal review.** This approach recognises the past work and resources which contributed to the 2013 guideline, and that there have been no major developments in relevant finance theory since that process. **The focus of the review should be on updating data where possible and focusing on selected high priority issues identified in earlier AER consultations with stakeholders.**”<sup>12</sup> (Emphasis added)*

The ENA elaborated on this as follows:

***“Building constructively and incrementally on the 2013 Guideline***

*Energy Networks Australia agrees with the position outlined in the AER Issues Paper that the Guideline process should not seek to ‘reinvent the wheel’ for setting the rate of return. As the AER has noted:*

*...we consider this review should seek to build on the current Guideline rather than start afresh. There are a number of aspects of the current approach that are reliant on market data and empirical analysis, and this material would clearly need to be updated. However, there are a number of aspects of the current approach that are driven by finance theory and available academic literature. We not aware of any significant new developments in this area that might warrant us taking a new approach.*

*Energy Networks Australia agrees that the focus should be on incremental improvements rather than a ‘blank slate’ approach, and that the relevant empirical evidence should be updated.*

*For example, in the 2013 review, Energy Networks Australia members proposed a specific ‘multi-model’ approach to setting return on equity estimates. Networks do not seek to have that model adopted in this current Guideline review. **Rather, networks consider it appropriate to work within the AER’s foundation model approach (which gives some weight to the dividend growth model and Black CAPM). This is consistent with a range of individual network regulatory proposals to the AER over the past three years. To change from the foundation model approach after such a short timeframe would cause significant disruption and unpredictability in pricing.***

*Network businesses remain of the view that more information should be used to directly inform cost of equity estimates. It is acknowledged, however, that a comprehensive review of this was undertaken in setting the 2013 guideline. As outlined above, there have been no changes in finance theory and no new evidence put to further support the position already put to the AER by network businesses.”<sup>13</sup>*

The submission from AGPA also confirmed the same understanding of what an incremental approach involved. AGPA stated:

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<sup>12</sup> Energy Networks Australia, AER Rate of Return Guidelines, Response to Issues Paper, 12 December 2017 at pages 3-4

<sup>13</sup> Ibid at pages 5-6



*“APGA welcomes the opportunity to participate in the Rate of Return Guidelines review process. We support the AER’s incremental approach to review in delivering a Guideline that is commensurate with the level of risk undertaken by gas network service providers and is a capable of acceptance by all stakeholders. To achieve this objective we believe it is imperative that stakeholders’ views are properly considered through the process, and the evidence provided by various experts is treated in a transparent and objective manner. The new review process the AER has in place with expert conclaves and an independent panel assessing provides greater scope of achieving this objective.”.....and*

*“Although in a general sense we support only incremental change from 2013, there is one issue which we believe requires reconsideration, and that is the level of systematic risk borne by gas distribution and transmission businesses relative to electricity businesses. This has a legal and an empirical element and is based upon new evidence not available in 2013.”<sup>14</sup>*

Not all consumer submissions to the AER supported the approach of starting from the 2013 Guideline and argued for a more radical review. For example ECA argued that a more fundamental review was required, although noted that the legislative timing would preclude this approach. ECA stated:

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

*However, in our consideration of the current guideline we have identified opportunities for some more fundamental changes in determining the allowed rate of return, some of which may require rule changes. Where these require rule changes there is insufficient time for these to be made to underpin a new guideline. A further review immediately after the new guideline is finalised would allow for more fundamental review.”<sup>15</sup>*

In subsequent submissions to the Concurrent Evidence Sessions CRG, also argued for a more fundamental review after the incremental review:

*“In the CRG’s view an incremental review of the Guideline is not sufficient to address the deep seated problems with the Guideline outlined above. The present Guideline review process does not constitute an error correction process but instead represents an error reinforcement process.*

*Most importantly, there is no reference to data on the rate of return being achieved across the sector. To this end, the CRG is disappointed that rate of return data being developed by the AER and due to be released later in May 2018 was not available for this submission.*

***The remainder of body of this submission relates to the present incremental review. The CRG supports a full review of the Guideline to be conducted as soon as possible. Within the***

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<sup>14</sup> Australian Pipelines and Gas Association, Submission to the Issues Paper, AER Review of the Rate of return Guideline, 12 December 2017 at pages 2 and 3

<sup>15</sup> Energy Consumers Australia, Review of the Rate of return Guidelines, Response to the AER Issues Paper, December 2017 at page 4

*available timing and resource constraints, the CRG has considered a possible approach to full review of the Guideline. This is discussed in Appendix 1 and Appendix 2 to this submission.”<sup>16</sup>*

In its submission in response to the Concurrent Evidence Sessions, CCP16 supported the incremental approach in the sense that this referred to working within the CAPM and foundation model.

We expressed this support with the following caution:

***“The AER has described this as an incremental review. Therefore, incremental change means continuing to work within the CAPM and foundation model framework. CCP16 supports such an incremental approach. Within that context, CCP16 submits:***

- *The emphasis should be on long-term stability of parameters and approach in the interests of investors and consumers.*
- *Given the acknowledged shortcomings of CAPM and the difficulty of estimating the parameters, caution should be exercised in changing parameter values – especially those that are more difficult to estimate – based on short to medium term fluctuations.*
- *Given the problem of discerning the ‘signal from the noise’ (i.e. whether the estimates indicate changes in underlying values or statistical variability), the question needs to be posed: ‘Do the data changes make sense in relation to investment fundamentals?’*
- *This is especially important for the regulated businesses where investors are typically long-term investors with a long-term focus.<sup>10</sup>*

*However, we submit that it is not open to the AER to limit the exercise of its statutory obligations in creating the binding instrument by some pre-determined boundary on relevant information, in order to satisfy a self-imposed ‘incremental’ approach. **Such an interpretation of an incremental review would not be within the legislation, or within the purpose of the legislation, which requires the AER to make the decision which best satisfies the NEO and NGO.** For example, CCP16 cautions the AER against the minimalist approach being advocated by the ENA of using the review to ‘update’ data. Instead we strongly urge the AER to consider all data available to it, in order to satisfy its statutory obligations in this review, even if it is information such as financial information discussed below that the AER has not used before.”<sup>17</sup>*

CCP16 notes that the experts who participated in the Expert Concurrent Evidence Sessions also understood that an incremental review would start with the 2013 Guideline and the existing CAPM

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<sup>16</sup> Rate of Return Consumer Reference Group, Submission to the Australian Energy Regulator Rate of Return Guideline Review, May 2018 at pages 33 -34

<sup>17</sup> Consumer Challenge Panel, Submission to the AER on its Rate of Return Guideline Review Concurrent Evidence Sessions, May 2018 at pages 15-16

and foundation model framework. See for example the Expert Joint Report where all experts other than David Johnstone agreed:

***“Issue 2.12 Foundation model***

*Given the context and the AER’s stated objective of making incremental changes to the RORG, the foundation model framework should be retained. This gives primacy to the Sharpe-Lintner CAPM, with evidence from other relevant models to inform estimates of individual CAPM parameters as per the 2013 Guideline.*

***Reasons why most experts agreed:***

*In the context that this review is considered by the AER to be evolutionary, it **makes most sense to take the foundation model framework as given** and focus on how the application of that framework might need to be revised in light of evidence that’s evolved on other issues.”<sup>18</sup>*

We note that the exercise of judgement is a separate concept to the meaning of an incremental review.

### 2.3. Is the Draft Guideline consistent with an incremental review?

The Explanatory Statement for the Draft Guideline accurately described the submissions referred to above and others on support for and the meaning of incremental review in the Overview as follows:

*“While most participants agreed that the AER would be unwise to start from a blank slate, several groups noted that the knowledge gained to date on the AER’s approach should be open to question.*

*In our issues paper we indicated we were reconsidering the weight to give to different pieces of evidence, including whether some information referred to in our 2013 Guideline should be given any weight. For example, we asked stakeholders whether we should use the Black CAPM to inform the equity beta point estimate and the appropriate role of dividend growth models in setting the allowed return on equity.*

*While submissions on our issues paper were **generally supportive of an ‘incremental approach’** to this review, submissions from consumers suggested the 2013 Guidelines had not achieved the NEO and NGO on the submitted that it should not be simply assumed that the approaches or the parameter estimates adopted in the 2013 Guidelines would remain appropriate to achieve the rate of return objective, and the NEO and NGO.*

*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*
- ***Applying the foundation model approach for estimating the allowed return on equity, with the SLCAPM used as the foundation model***

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<sup>18</sup> Expert Joint report prepared by CEPA, Rate of Return Guideline Review – Facilitation of Concurrent Expert Evidence Australian Energy Regulator, 21 April 2018 at page 18

- *Using a benchmarking approach for estimating all key parameters when estimating the allowed return on equity and allowed return on debt*
- *Continuing the use of a trailing average cost of debt with a revenue neutral transition*
- *Using third party data services for estimating the allowed return on debt*

*In light of these stakeholder comments **we have used our 2013 Guidelines as a starting reference point for our analysis**, mindful of our obligation to reach a decision that we are satisfied will, or is likely to contribute to the achievement of the NEO and NGO and which meets the allowed rate of return objective.”<sup>19</sup> (emphasis added).*

The AER also stated:

*“No stakeholders submitted that we should review our foundation model approach. This is consistent with our position, accepted by all stakeholders that this review should be an incremental review.”<sup>20</sup>*

The AER confirms in the Draft Guideline that it has done what it said it would do in the incremental approach and taken the CAPM model and the foundation framework approach from the 2013 guideline as a starting point and updated parameter values.

The AER summarises its Draft Decision as follows:

*“Overall, our approach to gearing, and to estimating the returns on equity and debt, broadly continues our approach to determining the rate of return adopted in our 2013 guidelines, with updated parameter estimates and data sources.”<sup>21</sup>*

Since the publication of the draft guideline, the ENA has referred to a different meaning of the phrase incremental review as one which is capable of acceptance. We reject this, and discuss the question of whether the AER’s Draft Decision is capable of acceptance in more detail in Section 5 below.

The main recommendation of the Independent Panel relevant to the appropriateness of the AER’s approach to this review is recommendation 30 which is:

*“The AER should explain more clearly how the Final Guidelines **promote the achievement of the national objectives**, including why the AER is confident that the value that it has adopted results in an outcome that is neither too high or too low.”<sup>22</sup>*

CCP16 supports this recommendation.

The Independent Panel does refer to the fact that the AER chose to conduct an incremental review. It does not express concerns with the AER’s approach. By contrast the Panel observes:

<sup>19</sup> AER, Draft rate of return guidelines, Explanatory Statement July 2018 at pages 30-31

<sup>20</sup> Ibid at page 39

<sup>21</sup> Ibid at page 17

<sup>22</sup> Independent Panel, Review of the Australian Energy Regulator’s Rate of Return Guidelines, 7 September 2018 at page 68

*“Overall, we consider that the AER has undertaken an extensive consultation and engagement process. It has considered a significant amount of information, data and views to assist in developing its approach as set out in the Draft Guidelines and has demonstrated consideration of the range of submissions from practitioners, academics, and stakeholders. It has also sought to link its conclusions to the information provided using logical reasoning plainly expressed.”<sup>23</sup>*

However, recommendation 24 asks the AER to explain more fully why an incremental review is capable of meeting the NEO and NGO in respect of its updated estimates on the utilisation rate and the distribution rate. CCP16 supports this recommendation especially given our comments referred to above in our submission of May 2018 that *“it is not open to the AER to limit the exercise of its statutory obligations in creating the binding instrument by some pre-determined boundary on relevant information, in order to satisfy a self-imposed ‘incremental’ approach.”*

CCP16 believes that the Draft Guideline builds on the 2013 Guidelines and is therefore an incremental review of the 2013 Guideline.

We note that other stakeholders including the CRG also agree that the draft Guideline is consistent with the incremental approach of the AER to start with the 2013 Guideline with updated parameter estimates and sources.

#### 2.4. Did the AER depart from the foundation model?

There were limited challenges to the overall framework for estimating the ROE (and other components of the rate of return) prior to the publication of the Draft Guideline, because of the strong stakeholder support for the foundation model.

Since the publication of the Draft Guideline, however, the ENA and the NSG have written to the AER raising strong objections to the AER’s Draft Guideline. The ENA argues in its letter to the AER that changes downwards to the parameter values are not within an incremental approach. The ENA also argues the Draft Guideline involves fundamental changes to the foundation model and a reversion to a purely mechanistic application of the Sharpe-Lintner CAPM approach (SLCAPM).

CCP16 believes there is little substance to these objections.

Many of the areas of contention appear to arise from the AER’s proposal to change some of the ROE parameters (MRP and equity beta), and the imputation credits. In other sections of this submission, CCP16 has highlighted that the AER has exercised considerable care where it has changed these parameters from the 2013 Guideline and in most part, set out its reasoning in a clear and logical manner. The Independent Panel’s report (September 2017) supports CCP16’s views on this.

Both the NSG and the ENA’s argument that the AER’s Draft Guideline was not ‘incremental’ appears to rest on the claim that the AER has changed the 2013 guideline so fundamentally that it can no longer be considered an ‘incremental’ review. Moreover, these stakeholders claim that they would have submitted significantly more material had they known that it was not (after all) what they

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<sup>23</sup> Ibid at page 60

considered to be an incremental review. For example, in an email to the AER Chairman dated 15 August, the NSG made the following statement:<sup>24</sup>

*In our view, the approach taken by the AER in undertaking the 2018 Review has not been incremental as intended and represents a departure from the previous regulatory practice. It is our position that the AER:*

- *Changed the scope of the review from reviewing the prevailing evidence on the movement of Rate of Return ('ROR') parameters since the 2013 Guideline to assessing the appropriate level of the ROR with the prima facie assumption that the current ROR was excessive;*
- *Sought to reduce the ROR estimate by discounting the explanatory power of models and estimation approaches which support evidence of higher investment risk with insufficient justification for doing so;*

...

Similarly, the ENA suggested that the 2018 Draft Guideline included “fundamental changes to the foundation model”, and that the guideline is “an effective reversion back to a purely mechanistic application to the SLCAPM.”<sup>25</sup>

CCP16 does not accept this claim by the ENA that the AER’s Draft Guideline represents a ‘fundamental change to the foundation model’.<sup>26</sup>

In CCP16’s view, the AER has followed the ‘foundation model’ approach set out in the Guideline and we are not persuaded that a change in the relative reliance on different information sources constitutes a ‘fundamental change’.

The AER has clearly maintained its ‘foundation model’ approach to determining the return on equity. The foundation model approach to estimating the return on equity is based on a series of six logical steps:

- Step 1: identify the relevant material
- Step 2: determine the role/how best to employ relevant material (including the foundation model (SLCAPM))
- Step 3: implement the foundation model – use the SLCAPM to determine input parameters and point estimates
- Step 4: estimate other information used to inform overall return on equity
- Step 5: evaluate information from steps 3 and 4
- Step 6: distil return on equity point estimate, using the SLCAPM point estimate as a starting point.

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<sup>24</sup> Network Shareholder Group, email to Ms. Paula Conboy, Chair, Australian Energy Regulator, dated 15 August 2018. This email is now published on the AER’s website.

<sup>25</sup> ENA, email to Ms. Paula Conboy, Chair, Australian Energy Regulator, dated 17 August 2018. This email is now published on the AER’s website.

<sup>26</sup> See ENA, email to Ms. Paula Conboy, Chair, Australian Energy Regulator, dated 17 August 2018. A copy of this email is now published on the AER’s website.

The AER's foundation model approach has been affirmed by the Australian Competition Tribunal (Tribunal) in its 2016 decision, *PIAC-AusGrid [2016] ACompT1*<sup>27</sup> and should not be controversial.

The AER's reasoning as set out in the Explanatory Statement to the Draft Guideline follows each of these foundation model steps in coming to its decision. However, this does not mean that the AER was obliged to adopt the 2013 Guideline's conclusions on each of these steps. An 'incremental' review is just that. It builds on the core elements of the initial guideline but is not bound by each and every conclusion in the initial guideline.

Second, (and as suggested above) it was never intended that the 2013 guideline would require a fixed, static assessment (unlike the 2018 Guideline). There was always scope to change as new evidence emerged or conditions changed. The requirement under the NER and NGR was not that the AER must implement everything in the Guideline (unlike the 2018 guideline), but that changes to parameter values and methods could only be made if there was a transparent reason provided for doing so. For example, in the general provisions for Guidelines, the current NER states (for distribution NSPs) at Clause 6.2.8 (c) that:<sup>28</sup>

*Except as otherwise provided in this Chapter, a guideline is not mandatory (and so does not bind the AER or anyone else), but if the AER:*

*(1) makes a distribution determination that is not in accordance with the guideline, the AER must state in its reasons for the distribution determination, the reasons for departing from the guideline.*

...

A similar requirement is placed on the NSP in submitting a revenue proposal. For example, for distribution NSPs, the NER states at S6.1.1(9) that:<sup>29</sup>

*The Distribution Network Service Provider's calculation of the proposed return on equity, return on debt and allowed rate of return, for each regulatory year of the regulatory control period, in accordance with clause 6.5.2, including any departure from the methodologies set out in the Rate of Return Guidelines and the reasons for that departure.*

Since the 2013 Guideline was published, the AER's views have evolved as would be expected given the opportunity to collect additional data and undertake further investigations. For instance, in 2014, the AER revised the value of imputation credits from 0.5 in the 2013 Guideline, to 0.4 based on the new evidence regarding different data sources that became available to the AER in 2014. There was no outcry from the networks that this represented a 'fundamental' change.

The AER's views on the reliance that should be placed on various models and data have also evolved since 2013. For example, more recent revenue decisions have indicated that the AER has less confidence in the outputs of the prevailing dividend growth models (DGMs) even while it retained the parameter values in the 2013 Guideline. In its more recent decisions, the AER has explained that DGMs may be upwardly biased and have limited robustness given they are highly sensitive to input

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<sup>27</sup> Australian Competition Tribunal, *Applications by Public Interest Advocacy Centre Ltd and Ausgrid [2016] ACompTb1*, 26 February 2016.

<sup>28</sup> See NER, 6.2.8 (c)(1), and equivalent provisions in Chapter 6A (electricity transmission) and the NGR.

<sup>29</sup> See NER, Schedule 6, 6.1.1(9) and equivalent provisions in Chapter 6A (electricity transmission) and the NGR.

assumptions regarding short and long-term dividend growth rates. For example, the AER stated in its Draft decision for TransGrid, that:<sup>30</sup>

*Dividend growth model estimates indicate a market risk premium estimate above this baseline with a range of 6.92 to 8.17 per cent, which when conductive sensitivity analysis expands to 6.14 to 8.77 per cent. We consider our dividend growth model is theoretically sound but that there are many limitations in practically implementing the model. ... We consider our, and other dividend growth models are likely to produce upward biased estimates in the current market...The substantial widening in the range of results from the sensitivity analysis is indicative of the unreliability stressed by the limitations we discuss in appendix B.4.*

Similarly, the AER has expressed increased concerns over the Black CAPM/ low beta bias theories and their application to assessing the relative systematic risk for regulated networks in Australia. CCP16 agrees with the AER's concerns on these models.

For these reasons:

CCP16 does not consider that the AER has 'fundamentally changed' the 2013 Guideline framework for assessing the return on equity. The AER continues to consider the DGM (for the MRP) and the Black CAPM/low beta bias (for equity beta), but has drawn the conclusion that the problems with determining reliable and robust estimates are significant.

For example, the AER states in the explanatory statement to the Draft Guideline with respect to the DGMs, that:<sup>31</sup>

*[there is] **no change in role**. However at this time we have diminished confidence in the robustness of the DGMs and are therefore not persuaded to select an MRP towards the top of the observed empirical estimates of historical excess returns. [emphasis added]*

In its Draft Explanatory Statement:<sup>32</sup>

The AER makes a similar comment with respect to the Black CAPM, i.e. no change in the role of the Black CAPM as defined in the 2013 Guideline, but diminished confidence in the robustness of the Black CAPM and therefore its influence in selecting an equity beta towards the top end of the empirical estimates.

<sup>30</sup> AER, Draft decision, TransGrid transmission determination, Attachment 3, 28 September 2017, p 3-76. The AER's sensitivity study is set out in Table 3-23 of Attachment 3. The sensitivity analysis varies key input parameters such as the long term dividend growth rate, the period estimates are averaged over and the use of analysts' forecasts, which the AER states are "likely to be biased".

<sup>31</sup> AER, Draft rate of return guidelines – explanatory statement, 10 July 2018, Table 17, p 178

<sup>32</sup> Table 17 in the AER's Draft Explanatory Statement provides a useful summary of the relevant material and roles, and if/where these may differ from the 2013 guideline. The AER has not changed the roles of any of the 22 models/data identified in Step 1 of the foundation model approach, and only three areas where the AER has stated it has diminished influence relative to the 2013 Guideline. These are the DGMs (inform the MRP estimate), the Black CAPM (inform the equity beta estimate), and the Wright approach (inform the overall return on equity).



If CCP16 were to criticise the AER, it would be that the AER failed to modify the 2013 guideline parameters over the 'life' of the 2013 Guideline and in response to its increasing concerns with the DGM and Black CAPM - when perhaps it should have done – just as it did for imputation credits in 2014. The AER's recent chart on the spread between the equity risk premium (ERP) and the debt risk premium (DRP) (illustrated in Section 5 below) for instance, demonstrates that by 2017, the AER's decisions on ROE under the unchanged 2013 Guideline equity parameters were allowing an excessive premium for equity.

### 3. Use of outcomes from the concurrent evidence sessions

The ENA and the Network Shareholder Group (NSG) representing investors have sent emails to the AER's chairperson. Read together, the two emails include a claim that the AER did not adopt the agreed positions presented by the representative experts at the concurrent evidence sessions.

In the ENA's email to the AER (17 August 2018) the ENA states:<sup>33</sup>

*Network businesses' confidence in the process has been further undermined by a number of other aspects of the draft guideline. Most concerning is the rejection of the agreed Joint Expert positions. The disregarding of a number of agreed positions set out in the Joint Expert Report prepared by the independent convener (on the basis that AER's own expert may have expressed some disagreement with the statement if the AER had allowed more time for them to consider it) does not appear reasonable nor reflect a balanced assessment of the evidence.*

*All network stakeholders accept that the rate of return estimation involves areas of judgement and discretion on which reasonable minds can differ. This very fact makes instances in which the AER draft guideline decision is, without compelling evidence, at variance with the findings of an approved Joint Expert report is incompatible with stakeholder expectations of a sound evidence-based process.*

We consider that the AER has carefully assessed all the submissions and the views of the experts in the concurrent evidence sessions and that this is clearly evident in the Draft Explanatory Statement, which includes extensive summaries of the position of all stakeholders including the experts at the concurrent evidence session on each topic. In our view, the AER must consider each submission, but must exercise its own judgement and is not obliged to accept the views of a particular stakeholder(s).

Again, it appears that the concerns by the ENA and the NSG relate most particularly to the AER's Draft Guideline conclusions on the MRP, equity beta and the value of imputation credits (gamma), and thus warrant some comments in this section of CCP16's submission.

In the first instance, the AER stated at the outset that the main purpose of the expert sessions was to 'highlight material issues of agreement and disagreement to **aid us in consideration of submission material**'.<sup>34</sup> (emphasis added)

As such, while the AER would consider the areas of agreement and disagreement of the experts, it was never intended that the AER should have to accept the experts' advice. This remains true, even when the experts appear to agree on an issue, any more than the AER is obliged to accept advice from many of the same experts who have stated the same positions (and been rebutted by the AER and the Tribunal) in support of networks' revenue proposals. The AER's obligation is to consider the advice it has received from a variety of sources, including the experts appointed by the networks, consumer representatives and the AER's own advisors, and to assess the relevance of all this advice to achieving the rate of return objectives. This is similar to the obligation now on the AER to consider the relevance of the recommendations of the Independent Panel and advice in other submissions, including this one, on finalising a Guideline that meets the NEO, NGO and the rate of return objectives.

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<sup>33</sup> ENA, email to Ms. Paula Conboy, Chair, Australian Energy Regulator, dated 17 August 2018. This email is now published on the AER's website.

<sup>34</sup> See AER, Consultation paper, process for reviewing the rate of return guidelines, July 2017, Table 7, p 13.

The AER's Explanatory Statement goes into considerable detail in setting out the views from the range of sources, including the advice from the experts at the concurrent evidence sessions. The Draft Explanatory Statement, for instance, provides tables that set out the agreed positions of the experts and the areas where the experts disagreed at the concurrent evidence sessions. The AER then discusses each of these issues in turn.<sup>35</sup>

Second, much of the advice presented at the expert concurrent evidence session was not new, but had been extensively addressed by the AER in previous submissions. It is not clear why the ENA expected the AER to adopt a different position on these issues, simply because the views were expressed again at the concurrent evidence sessions. From CCP16's perspective, for instance, there was a distinct lack of demonstration by some of the experts about how their views on rate of return parameters were in the long-term interests of consumers, as opposed to discussion of the 'niceties' of different modelling approaches.

In addition, the claims regarding the AER's failure to pay adequate regard to the expert evidence in the concurrent evidence session do not appear to be supported by the subsequent Independent Panel Report. While the Panel's report highlights areas where the AER did not explain its position with sufficient clarity, the Panel clearly concluded that the AER had conducted a thorough process that took account of the multiple inputs including the experts' views summarised in the concurrent evidence report. The Panel states for instance:<sup>36</sup>

*The AER has undertaken an extensive consultation and engagement process. For the most part, 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.*

...

*Overall, we consider that the AER has undertaken an extensive consultation and engagement process. It has considered a significant amount of information, data and views to assist in developing its approach as set out in the Draft Guidelines and has demonstrated consideration of the range of submissions from practitioners, academics, and stakeholders. It has also sought to link its conclusions to the information providing using logical reasoning plainly expressed.*

CCP16 concludes that:

The NSG and the ENA have overstated the role of the concurrent evidence sessions and the AER's obligation to adopt the so-called 'agreed positions'. They have also underplayed the multiple submissions by many stakeholders who contested the conclusions of the networks and their appointed experts on the rate of return parameters, particularly the return on equity.

Other sections in this submission consider in more detail the AER's Draft Guideline on the two key components of the ROE, namely the MRP and the equity beta.

<sup>35</sup> For example, see AER, *Draft Explanatory Statement to the Rate of Return Guideline*, July 2018, Tables 24 (MRP) and Table 30 (equity beta).

<sup>36</sup> Independent Panel Report, 7 September, 2018, p II, and p 60

#### 4. Have expected returns under the current Rate of Return Guideline exceeded required returns?

A key question that has been raised is whether current returns under the existing Guideline are higher than they need be. We expect that this question will be answered more fully when the AER's report on profitability is published. In the meantime, the CRG, CCP and ACCC have judged the overall framework to be generous. RAB multiples provide market evidence support that the current returns are too high. The rate of return is also aimed high, as pointed out in submissions.

At the same time, asset protection and revenue caps mitigate risks for network service providers. Information asymmetry also offers more upside than downside to network service providers.

Overall, the current regulatory regime looks to be low-risk yet high-return.

In contrast, the ENA's presentation to the public forum on 2 August proposed that there was no evidence that rates of return were driving over investment. The presentation showed that under the 2013 Guideline, capex allowed by the AER exceeded actual capex spent. We suggest that this reflects the incentives under the current regime for networks to propose capex that exceed efficient capex requirements and then spend less than the allowed capex. It does not indicate that the allowed return is not greater than the required return. As we demonstrate below, networks have an incentive to spend less than the allowed capex unless the required capex is less than two-thirds of the allowed capex.

CCP16 strongly rejects the claims by the NSG and the ENA in their emails to the AER Chair that the AER's draft guideline review appears to be driven by an assumption that the current rate of return was 'excessive' and/or by an objective to improve 'affordability' in the short-term interests of consumers (but not the long-term interests)? For example, we see no basis for the claim by the NSG that the AER's Draft Guideline was motivated by a 'prima facie assumption that the current ROR was excessive' – although there was evidence that the current ROR was excessive. CCP16 explains below, we consider that there are parallels with the observation that Ofgem's allowed ROE in its RIIO-1<sup>37</sup> was excessive in the current condition and that Ofgem sees good reason to reduce the return on equity for RIIO-2 (commencing 2021).<sup>38</sup>

Similarly, the AER draws attention to the changes in the environment compared to the 2013 Guideline, and the impact of these changes on its assessment of parameter values. For example, after noting the arguments put by a variety of consumer representatives and by the networks and the NSG, the AER states:<sup>39</sup>

*In a number of areas we have determined parameter values or estimation approaches that differ from those in our 2013 Guidelines. We have done so on the basis that the updated parameter values will contribute to the legislative objective to the greatest degree given the current environment. We consider that the current environment is different in a number of ways to the environment at the time of the 2013 Guidelines. Most notably we consider that market volatility has subsided and risk premiums have reduced since 2012-13 ...*

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<sup>37</sup> See for instance the report to Ofgem by Cambridge Economic Policy Associates (CEPA), *Review of Cost of Capital Ranges for Ofgem's RIIO-2 for onshore networks, Final Report*, February 2018. CEPA states that: "Returns for the majority of companies have consistently been above the cost of equity ... for all sectors" (p. 8).

<sup>38</sup> CEPA, *Review of the RIIO framework and RIIO-1 Performance*, Ofgem, March 2018, p15

<sup>39</sup> AER, *Draft rate of return guidelines – explanatory statement*, 10 July 2018

As explained in more detail in this submission, CCP16 agrees with the AER's assessment. It is clear from our reading of the 2013 Guidelines that post the GFC and in the face of the subsequent European debt crisis (among other things), that the world and local investment environment in 2012-13 was very different than the current environment for investment.

Our view is that it would indeed be very strange if nothing changed from the 2013 guideline, given the changes in the energy market and in the investment climate and given the evolution of the AER's own understanding of the issues. More specifically, CCP16's response to the current review based on some simplistic assessment of short term pricing impacts (although these are important).

Our principle concern is that the AER's 2018 guideline adopt an unbiased view of the conceptual and empirical evidence now before it, and comes to a decision on an efficient rate of return that fairly balances the interests and risks faced by investors and by consumers. In other sections of this submission, CCP16 has provided evidence that in the current conditions, the AER's 2013 guideline is not delivering efficient network prices and thus transfers risk to consumers.

#### 4.1. Overview of the issue

Previous CCP16 submissions to the AER have stated that:

- 1) While the ROR needs to be set in a manner that reflects finance principles and practice, the adequacy of the allowed ROR needs to be assessed in the context of the overall regulatory outcomes; and
- 2) The allowed ROR has consistently exceeded the required expected returns of the investors in the NSPs.

These two key points also underpin this submission, and they have been reinforced by recent reports and decisions of UK regulators, the market response to the AER's Draft Decision, and the report of the Independent Panel.

The persistence of excess returns is clearly not in the long-term interests of consumers, and nor is it in the long-term interests of service providers. The importance of incentives to improve efficiency is well-accepted. However, excess returns should reflect exceptional performance, rather than being the norm.

As a report to Ofgem argued:

Persistent high returns across all energy network companies threaten the credibility of the regulatory framework. In order to ensure that the regulatory framework continues to work in customers' long-term interests, Ofgem needs to respond to the lessons from RIIO-1. It needs to set a framework that provides customers with confidence that the network charges they pay reflect efficient costs, and that returns are justified and legitimate. This is also in network companies and their investors' interest.<sup>40</sup>

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<sup>40</sup> CEPA, Review of the RIIO framework and RIIO-1 Performance, Ofgem, March 2018, p15

CCP16 considers that this summary is equally applicable to energy networks and their regulation in Australia, and that a tightening of the ROR allowance, as the AER has proposed in its Draft Decision, is an essential element of providing a more balanced regulatory framework that better serves the long-term interest of all stakeholders. The assessment of past levels of profitability can provide information on the extent to which the historic allowed ROR has contributed to returns that have exceeded investor expectations, and a recalibration of the approach is now warranted.

In assessing this, we have considered the following factors:<sup>41</sup>

- *The role of the cost of capital and performance to date:* The allowed return represents one source of returns to shareholders. Understanding the risks and effective equity returns helps inform the assessment of the cost of capital, and whether the current approach provides an adequate but not excessive return.
- *RAB multiples:* Understanding market expectations of regulated companies as reflected in RAB multiples when transactions occur, in daily share prices and in valuations by brokers, gives an indication of whether allowed returns have been suitable.
- *Competitive benchmarks:* In some cases, bids for assets involve bidding required rates of return (for example Offshore Transmission Assets (OFTA) and the Thames Tideway Tunnel (TTT) in the UK), which provide ‘real-world benchmarks of required returns’, and a reference point for the assessment of network returns.

## 4.2. Decomposing the profitability gap

As we argue below, there is strong evidence that the actual and expected returns under the current Guideline have exceeded the investors’ required returns. However, different pieces of evidence provide information on different components of this gap. Hence, it is important that the AER should consider all relevant information.

In decomposing the gap between expected return and the investors’ required return, it is useful to distinguish between three returns:<sup>42</sup>

1. *The investors’ required return.* This is the post-tax rate of return on investment that the investor would require to justify investment in the sector, given the relevant risk. Within the CAPM framework, the relevant risks are the systematic risks that cannot be offset by the investor through diversification.
2. *The allowed return.* This is the allowed return (after the regulator’s allowance for tax) that is incorporated in the revenue building blocks by the regulator.
3. *The expected return on investment.* This is the post-tax return that the investor expects to earn on investment in the sector, given the allowed rate of return and the overall regulatory framework, including the approach to assessing efficient costs, performance incentives, tax allowances, and form of control.

If the expected return is higher than the investors’ required return, the investor will be prepared to pay a premium for the asset. For regulated businesses, this is reflected in assets trading for a

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<sup>41</sup> This is based on the framework set out by CEPA in its advice to Ofgem. See CEPA, Review of Cost of Capital for Ofgem’s RIIO-2 for Onshore Networks, Ofgem, Feb 2018, p5.

<sup>42</sup> This is a simplified version of the decomposition proposed in S Wright, P Burns, R Mason and D Pickford, Estimating the Cost of Capital for Implementation of Price Controls by UK Regulators, UKRN, 2018, pp6-7.

premium above the Regulatory Asset Base ('RAB multiples'). This fundamental finance proposition is not in dispute. The difficulty for the regulator is that regulator's allowed return can be observed directly, but the investors' required return and the expected return cannot be observed directly. However, information is available that can help the regulator decompose and quantify this gap.

The RAB multiples<sup>43</sup> provide a guide to the overall gap between the expected return and the investors' required return. If one can be estimated, the other can be inferred from the RAB multiples. As the allowed return is known, the overall gap can then be decomposed into two gaps:

- The gap between the allowed return (which is known) and the expected return; and
- The gap between the investors' required return and the allowed return.

The latter gap provides important information for the regulator in setting the ROR.

The best information on the expected return on investment relative to the allowed return is the past excess return on investment in the sector. Hence, information on the difference between the actual and allowed returns is directly relevant to estimating the gap between the expected and allowed returns. Application of this approach to a single asset or NSP should allow for the relevant asset specific factors. But if actual returns are averaged across the whole sector, the impact of these asset specific factors would be greatly reduced. This is an important point: if RAB multiples and returns are averaged across observed values for several utilities, the impact of the utility-specific factors is reduced.

Investors' required returns on comparable regulated assets have been revealed through bidding processes for new assets / rights that require the bidder to specify its required return. CCP16 is not aware of comparable information in Australia. But given the internationalisation of capital markets, the relativity of the ROR bid-to-market returns, and returns estimated using the standard CAPM model would be relevant.

The sections below set out the evidence on these benchmark returns, focusing on information that has become available, or that we have become aware of, since our previous submission.

### 4.3. NSP profitability

Consumer groups have previously raised concerns around excessive profitability of regulated electricity and gas businesses. For example, CCP2 raised concerns about the level of profitability of the energy networks in its 2015 submission on the AER's Preliminary Revenue Determinations for the Queensland Distributors. More recently, in its submission to the Victorian electricity DNSPs' revenue reset 2016-20, CCP3 stated that there was a persistent pattern of excessive profits, not explained by efficiency improvements relative to AER's cost benchmarks.

However, until recently it has been difficult to compare the profitability of the regulated energy networks over time and with other regulated and unregulated businesses. In part, this is because of the indexation of the RAB and how this increase in asset value is treated, which makes it difficult to compare profitability.

This position is now changing with the work underway in the AER's profitability review – which is why the consumer stakeholders have welcomed this review. Comparisons of the profitability of the DNSPs with other regulated and unregulated businesses are not yet available, but comparisons of

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<sup>43</sup> Assuming investors are rational and informed

actual with allowed ROR is now available. Table 1 below summarises the actual and allowed rates of return for the electricity DNSPs for 2013-17. It also disaggregates the difference according to whether it was due to incentive payments or other factors.

**Table 1: Comparison of actual and allowed rates of return**

Comparison of Actual and Allowed ROR - Average 2013-17					
	Actual (%)	Allowed (%)	Difference (Basis Points)		
			Total	Due to incentives	Other factors
<b>Ausgrid *</b>	5.09%	5.55%	<b>-0.46</b>	0.40	<b>-0.86</b>
<b>Ausnet (D)</b>	6.97%	6.14%	0.83	0.80	0.03
<b>Citipower</b>	6.57%	6.14%	0.43	<b>-0.28</b>	0.71
<b>Endeavour *</b>	6.88%	5.57%	1.31	0.60	0.71
<b>Energex</b>	7.00%	6.00%	1.00	0.24	0.75
<b>Ergon</b>	7.31%	5.92%	1.39	0.39	1.00
<b>Essential *</b>	6.61%	5.52%	1.09	0.01	1.08
<b>Evo Energy (ActewAGL) *</b>	6.82%	5.15%	1.67	0.00	1.67
<b>Jemena</b>	8.61%	6.70%	1.91	1.30	0.61
<b>Powercor</b>	7.85%	6.04%	1.81	0.29	1.52
<b>SAPN</b>	8.53%	6.67%	1.86	0.31	1.56
<b>Tasnet (D)</b>	8.43%	6.55%	1.88	0.09	1.79
<b>United Energy</b>	6.27%	6.35%	<b>-0.08</b>	<b>-0.60</b>	0.52

Source: AER, Return on Assets - Summary data - September 2018.

Key points to note in this table are that for all but two DNSPs (Ausgrid and United Energy), the actual ROR exceeded the allowed ROR, and for nine of the DNSPs that gap was quite large (100-200 basis points). We accept that specific factors would have affected each business – for example the results in 2015-17 for Ausgrid were affected by the impact of the 2014 revenue determination and lagged reduction in opex costs. However, the overall pattern of substantial excess returns is quite strong, and the average excess return was 113 basis points. The average impact of the incentive payments was more variable and generally smaller than the impact of other factors. However, the incentive payments were still significantly positive on average (27 basis points), and only two DNSPs had negative incentive payments. The impact of the other factors is generally larger and more consistent across the DNSPs, with an average impact of 85 basis points.

Our key conclusions on comparison of actual and allowed rates of return are as follows:

1. The regulatory framework provides for returns that persistently and significantly exceed the allowed rate of return.
2. Incentive payments are positive for all but two of the DNSPs, raising questions as to whether the incentive mechanisms are appropriately calibrated and cost estimates unbiased.
3. Other factors are a very significant positive contributor to the excess returns, and warrant further investigation. An important factor may be the difference between allowed and actual debt costs.

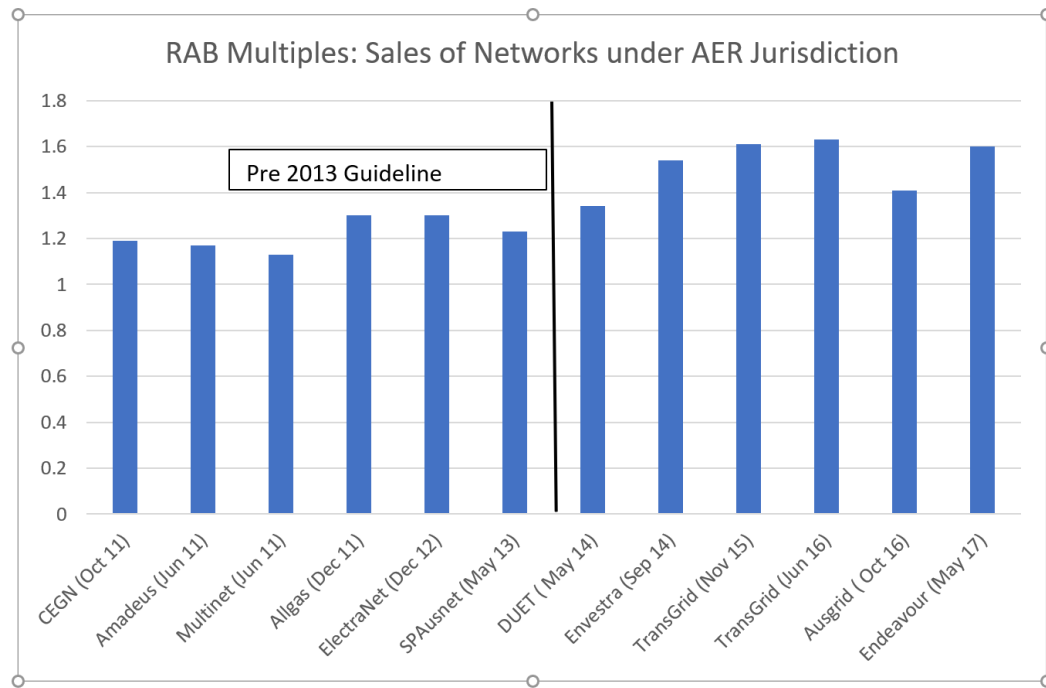


#### 4.4. RAB multiples

As we noted in our previous submission, RAB multiples have been rising, and are above benchmarks (up to around 1.3) that typically raise concerns for other regulators. Further analysis is required, but RAB multiples of 1.4-1.6 strongly suggest excess returns.

For example, we noted that in analysing UK gas transactions at a RAB multiple of 1.53, CEPA concluded that the transactions suggested that investors may be willing and able to finance gas distribution assets at an actual cost of equity below the RIIO-ED1 allowance of 6.0%.

**Figure 1: RAB multiples for transactions since 2011**



Source: AER, Financial Performance Measures Discussion Paper, Feb 2018, Table 2, p 14.

The use of RAB multiples was contested by the network submissions on the basis that various factors affected RAB multiples, and that attempts to disentangle the impact of the various factors was too difficult and uncertain.

In our previous submissions, we provided references to cases where analysts and other regulators have analysed and used RAB multiples in making judgements on the implied required returns and implications for the setting of the allowed ROR, respectively. Below we set out more recent evidence on the use of RAB multiples by other regulators and their advisors.

The Independent Panel Report comments that:

If RAB multiples are relevant to investors' decisions (and the Draft Guidelines do not suggest they are not relevant), then they are necessarily relevant to the return on equity that prospective investors require to make investments. While the AER has explained that RAB multiples can arise from varied causes, the difficulty of sorting out and weighing those causes does not make any one of them irrelevant. (p16)

CCP16 agrees with this summary of the position by the Independent Panel, and considers that it supports a more explicit and systematic consideration of RAB values by the AER in setting the ROR.

The Independent Panel also noted that the consideration of stability in the ROR should be considered at the level of the overall return, rather than individual parameters such as beta.<sup>44</sup> This is consistent with the concept of the use of information that is relevant at the overall return level as a cross-check. CCP16 considers that information such as RAB multiples should be used as a cross-check or constraint on the overall ROR in the same manner that the Independent Panel considers that the desirability of stability should be considered at the overall ROR level.

The logic of this process and framework for decision-making was set out in our presentation to the AER Board on 24 May 2018, where we:

- 1) Set out our preferred individual parameters based on the data available for each parameter;
- 2) Calculated the overall ROE and ROR resulting from the preferred parameter values; and
- 3) Used the information on RAB multiples as a cross-check on the magnitude and direction of change in the ROE/ROR.

In this case, the outcomes at step (2) were consistent with the implications of the existing RAB multiples at step (3), so there was no need to review and revise the initially preferred parameter values following the cross-check against the RAB multiples. Our preferred parameters resulted in a modest reduction in the ROR as the high RAB multiples indicated should occur.

The recent expert report on cost of capital for the UKRN analysed the evidence from RAB multiples and the role of this information in the determination of the ROR.<sup>45</sup> First, the report concludes that the RAB multiples provided evidence that investors' forward-looking anticipated returns are likely to have exceeded required returns. Second, regulated companies have systematically outperformed on cost targets and broader incentives, and the expected return has systematically exceeded the allowed return.

The authors disagree on the source of the premia, with Mason, Pickford and Wright suggesting that both an excess of allowed returns over required returns and outperformance against allowed returns have made significant contribution to investor expectations. Burns considers that potential for outperformance on the cost of equity (i.e. excess of allowed returns over required returns) is less dramatic.

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<sup>44</sup>Independent Panel Review of the AER's Rate of Return Draft Guidelines, p40.

<sup>45</sup> S Wright, P Burns, R Mason and D Pickford, Estimating the Cost of Capital for Implementation of Price Controls by UK Regulators, UKRN, 2018.

While the interpretation of RAB multiples is challenging, we consider that further analysis of the RAB multiples in Australia would indicate that the gap between allowed and required ROR is a significant factor. As noted above, current RAB multiples are very high – 1.4 to 1.6 for the most recent transactions. We have used a simplified model to analyse the possible decomposition of the excess returns underpinning such multiples, and found that with a 50-year asset life and an allowed return of 5.5%:

- 1) For a RAB multiple of 1.5, the actual expected return would have to be 8.25% if the required return equalled an allowed return of 5.5%. This is a 275 basis point difference, which is almost more than double the actual difference since 2013.
- 2) For a RAB multiple of 1.5, the required return would have to be 3.0% if the actual expected return equalled an allowed return of 5.5%.

Neither of these extreme positions appears likely. In practice, both factors are likely to have contributed to the RAB multiples. For example, if the expected return exceeds the allowed ROR of 5.5% by 150 basis points (37 basis points above recent experience), the implied required return is 4.5% compared to the allowed ROR of 5.5%.

#### 4.5. Market benchmarks

Competitive bidding for the provision of regulated services or operation of regulated concessions can provide direct evidence on the investors' required return. In these cases, the bidders may be required to bid the return that will be included in the determination of prices / revenues, providing direct evidence on the investors' required return.<sup>46</sup>

CCP16 is not aware of evidence from such transactions in Australia, but evidence from transactions in the UK has shown that the required returns are still below regulated returns, despite the reductions in those returns in recent decisions (see discussion of trends in UK regulated returns in section 5.5 below). While recognising the difficulty of cross-country comparisons, we note that the Independent Panel's report supports consideration of international evidence on returns given the internationalisation of capital markets.

Ofwat awarded the project licence for the Thames Tideway Tunnel (TTT), a planned £4.2bn 'super sewer' in London with a low bid weighted average cost of capital (BWACC) figure of 2.497%. This is less than the indicative TTT point estimate of 3.29% from Ofwat's draft guidance on the economic regulation of the TTT, and more than 110 basis points (bp) below the current 3.60% wholesale WACC from Ofwat's final determination for the PR14 price control for water and sewerage companies. While there are factors in the regulatory framework that contributed to the low BWACC, Ofwat's guidance would have considered these factors and despite this there is a significant gap (79 basis points) between Ofwat's guidance and the bid BWACC. This gap supports the reduction in allowed WACCs that has occurred. It supports the view that regulatory models of the ROR have overstated rather than understated required returns.

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<sup>46</sup> To the extent that the bidder submits multiple bid parameter (e.g. ROR and opex /capex), there may be strategic bidding across the parameters that will affect the strength of the conclusions drawn. Expectations of future incentive payments (if relevant) would also need to be considered.

In its recent advice to Ofgem, CEPA concluded:

Evidence from competitively bid infrastructure projects, such as OFTOs, indicates that specific projects can lock in a much lower cost of capital than has typically been applied in price controls over the same time period. These could be useful benchmarks for ensuring that the cost of capital estimates we recommend are consistent with current market conditions. However, we need to carefully consider how relevant these single projects are for larger mature networks with a portfolio of projects and undertaking a different range of activities.

While we acknowledge the caveats included by CEPA, it should be noted that the gap between the regulator's allowed ROR and the required ROR implied by investors' decisions is consistent with the implications from the RAB multiples. Each may be subject to different caveats, but they imply the same result: the required ROR is lower than conventionally allowed by regulators.

This discrepancy should not be surprising. CAPM is a guide but not a precise tool, and financial markets are not perfectly efficient. Furthermore, the regulated networks have specific characteristics – low risk and assured income growth – that may be in particularly high demand. The apparently low required return may reflect the supply and demand for low risk for these assets, but it is no reason for a regulator to provide a higher return than investors require.

In the context of arguing that the regulator should use the observed risk-free rate even though it is negative in the UK, Wright, Burns, Mason and Pickford argued:

This argument may or may not be correct; we would argue that it is simply irrelevant: the market price of indexed debt (and hence its implied yield) is simply what it is. The following extract from Cochrane (2011) makes the point very succinctly and vividly:

When you shop for a salad, all you care about is the price of tomatoes. Whether tomatoes are expensive because the trucks got stuck in bad weather or because of an irrational bubble in the tomato futures market makes no difference to your decision.

We see no reason to treat the market for indexed debt differently to the market for tomatoes.

That is, one should be careful in disregarding observable market values in favour of the outcomes of models of behaviour.

#### 4.6. Is the ROR higher than investor expectations – response to the networks' arguments

The primary evidence referenced by networks to argue that the allowed ROR is not above investor expectations and has not led to overinvestment is that actual capex spending has been below the capex allowed by the AER. However, these conclusions do not follow. First, the networks have an incentive to 'bid high and spend less', so that the apparent underspend may reflect the network's ability to use information asymmetry advantages to win acceptance of a capex program that is higher than necessary. **Second, the allowed ROR can be greater than investor expectations by a significant margin and the NSPs will still have an incentive to spend less than the allowed capex.** The proposition that capex spending below the allowed capex contradicts the view that the allowed ROR exceeds the required ROR is incorrect.

The spreadsheets in the attached annexures demonstrate this. The simplified example looks at the case where an NSP has an allowed capex of \$100m p.a. for 5 years and calculates the Net Present Value of the outcomes for the NSP where:

- The NSP spends the allowed capex or a lower capex of \$90m p.a.
- The NSP’s allowed rate of return is 6%, but its required rate of return is either 6% or 5%.

The annexure shows the results for both 20-year and 50-year asset lives, but the results in Table 2 below are those for 50-year asset lives. The results include the CESS payment where the NSP spends less than the allowed capex.

**Table 2: Net Present Value of cash flows (discounted at NSP’s required ROR)**

	Actual Capex= Allowed Capex (\$100m p.a.)	Actual Capex < Allowed Capex (\$90m p.a. actual)
Allowed ROR = Required ROR (6%)	\$0.0m	\$12m
Allowed ROR > Required ROR (Required ROR 5%)	\$55m	\$62m

The key point from this example is that, even where the required ROR is significantly below the allowed ROR, the NSP still has an incentive to spend less than the allowed capex. In the example, this holds true as long as the required ROR is at least 2/3rds of the allowed ROR.

Careful consideration of the nature of the incentives reveals why this is so. The key feature of the incentive regulation is that the incentive to pursue efficiencies and reduce costs comes from the de-linking of revenues from costs incurred for a fixed period. The incentive to find efficiencies that enable the NSP to provide the capacity needed at lower cost is highly desirable and in the longer-term interests of consumers. However, it also creates an incentive for the NSPs to provide capex forecasts that are higher than the ‘true’ capex needs. It is difficult for the regulator to distinguish ex-post cost savings due to overstated forecasts from cost savings that reflect genuine efficiencies. Furthermore, the current rules create greater limits on the scope for the AER to undertake ex-post capex efficiency reviews. Hence, the primary protection against ‘gaming’ of the capex forecasts comes from the AER’s ex-ante reviews. But efficiency testing of capex is not easy. Capex is more variable over time than opex, and may be driven by complex time / location specific factors. This makes the review of the efficiency of capex more difficult than that of opex (i.e. the information asymmetry is greater and scope for benchmarking more limited).

Given the capex forecast accepted by the AER, there is a strong incentive to spend less than the allowed capex, and this incentive persists until there are quite large differences between the allowed WACC and the NSP’s required WACC. With the CESS the benefit retained by the NSP is equivalent to 30% of the financial gains over the life of the asset (i.e. the return that would have been earned over the life of the avoided capex). Where the required ROR is lower than the allowed ROR, the NSP loses this wedge on the capex not spent. While this will reduce the incentive for the NSP to spend less than the allowed capex, there is a positive incentive to spend less than the allowed capex unless the required return is less than around 2/3rds of the allowed ROR.

The example also helps provide perspective on the drivers of the RAB multiples. The NSPs have argued that one of the factors behind the RAB multiples could be the expected positive performance

incentives. This example highlights that the performance incentive payments have a smaller impact on asset values than differences between the allowed and required ROR.

If the example were a stand-alone business with an allowed capex of \$500m and an allowed ROR, a potential purchaser would be prepared to pay a premium of \$12m above the RAB if it expected it could deliver the outcomes with a capex spending of \$450m. But the same purchaser would pay a premium of \$55m if the purchaser's required ROR were 5% rather than 6%.

#### 4.7. Implications for the AER's Draft Decision

There are two key implications from this assessment for the AER's Draft Decision:

1. The available evidence on various profitability measures strongly suggests that the current framework results in expected profits that exceed the investors required profits and that the gap between the allowed ROR and required ROR is a significant factor. This supports the AER's Draft Decision, which will result in a 45 basis point reduction in the overall ROR, and a 95 basis point reduction in the ROE.
2. The AER should commit to considering RAB multiples and other measures of profitability as a cross-check in determining the overall ROR in the Final Decision and in future reviews of the ROR guideline.

The RAB multiples point to a substantial gap existing between the expected return and the required return that investors factor into their investment decisions. The important issue in the context of the AER's decision on the ROR is the extent to which this is due to expected returns being higher than allowed ROR, or the allowed ROR being higher than the investors' required ROR. In our previous submissions, we provided examples of how others have sought to decompose the gap, and have used that information in regulatory decision-making. In this submission we have used recent information on profitability released by the AER and the report to the UKRN by Wright et al to demonstrate that it is not credible to assume that the observed market values for assets can be explained solely by outperformance against the allowed ROR. We have reached the same conclusion as Wright, Burns and Mason did in the UK: **the gap between the allowed ROR and the investors' required return must be a significant component of the observed RAB multiples of 1.4-1.6.**

## 5. Is the AER's Draft Decision capable of acceptance?

### 5.1. Relevance of capable of acceptance

The notion that the Guideline should be “capable of being accepted by all stakeholders” was originally conceived by the ENA and was discussed at the initial public forum held in September 2017 at the start of the review process. In its presentation at the public forum on 2 August 2018 ENA referred to “*Networks have supported the AER position of undertaking an incremental review **that is capable of acceptance.***”<sup>47</sup> Similarly in a letter to the AER dated 17 August 2018 ENA referred to the additional concept of an incremental review that is capable of acceptance:

*“Networks have supported the AER position of undertaking an incremental review that is capable of acceptance, and have participated fully and constructively in the process to date. We welcomed and supported the proposed review process, which included many innovative and positive opportunities to approach this important review in a different manner than previously.*

*On the basis of the AER's process goal of a guideline that was capable of acceptance by all parties, and AER's statements that there had been no change in relevant finance theory, networks have taken a deliberate collective action of not re-agitating areas already decided (such as the foundation model approach). .....”<sup>48</sup>*

While ENA and AGPA referred in their December 2017 submissions to a guideline that was ‘*capable of acceptance*’ this was not a concept included by the AER in the Issues Paper, nor by consumers in their submissions, nor by the AER in the Draft Guideline. In our view, these words are irrelevant to the meaning of an incremental review as intended by the AER. In CCP16's view the AER's task is to reach a decision that it believes will or is likely to contribute to the achievement of the NEO and NGO and which meets the allowed rate of return objective. Past experience would suggest that it is highly likely that not all stakeholders would agree with the Draft and final Guideline and that a guideline that is capable of acceptance by all stakeholders is not a meaningful test.

The AER was properly aware that developing a guideline that is ‘*capable of acceptance*’ is not part of its statutory obligations. Consistent with this the question the AER asks the Independent Panel is whether the Draft Guideline resulting from the AER's (incremental) review is capable of meeting the NEO and NGO. In its covering letter to the AER enclosing the Independent Panel report the Chair of the Panel states:

*“If the AER follows these recommendations, then our view is that the resulting Guidelines will be supported by sound reasoning, based on the available information, such that it is capable of promoting achievement of the national gas and electricity objectives.”<sup>49</sup>*

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<sup>47</sup> ENA, AER Draft Rate of Return Guideline, Initial Network Sector Perspectives, AER Public Forum 2 August 2018 at slide 16

<sup>48</sup> ENA letter to AER dated 17 August 2018 at page 2

<sup>49</sup> Letter from Natalia Southern, Chair Independent Panel to Ms. Paula Conboy, Chair AER dated 12 September 2018, at page 1

Similarly, in the Report from the Independent Panel, the Panel refers to whether the draft Guideline is capable of promoting the NEO and NGO in the following terms:

*“The Panel has not identified anything in the Draft Guidelines that appears to be inconsistent with the revenue and pricing principles in the NEL/NGL, the NER and NGR, and COAG Energy Council’s ongoing reforms as reflected in the legislative amendments introduced into the South Australian Parliament on 2 August 2018.*

*About promoting achievement of the national objectives, the Draft Guidelines aim to produce a rate of return reflecting a ‘benchmark efficient entity.’ A benchmark efficient utility, by definition, is an efficient utility carries out its service responsibilities, as defined by the regulator, efficiently. It raises capital efficiently, it operates and spends money efficiently, it plans capital expenditures program efficiently, and it carries out that capital expenditures program efficiently. An industry whose members perform that way is an industry that achieves the national objectives.*

*At a theoretical level, then, a rate of return that satisfies the criterion of ‘benchmark efficient utility’, and properly considers the risk-cost tradeoff discussed above, is necessarily capable of meeting the national objectives – to the extent the rate of return itself contributes to those objectives.”*

It has been and remains the view of CCP16 that the Guideline would be capable of being accepted if the process followed in creating the Guideline was appropriate, and the contents of the Guideline met the requirements of the National Electricity and Gas Objectives and the Revenue and Pricing Principles (the NEO, the NGO and the RPP).

CCP16 considers that the AER’s Draft Decision is a well-reasoned, cautious and prudent response to the changing market conditions and the evidence that the expected return on investment in the sector has exceeded the rate of return required by investors. The parameters proposed by the AER are largely consistent with those recommended by CCP16 in its presentation to the AER Board.

While we consider that the AER would have been justified in proposing a lower ROR, we support the AER’s Draft Decision, which would see a reduction in the ROE of 95 basis points, and a reduction in the overall ROR of 45 basis points (when compared to the continuation of the current ROR Guideline).

We consider that the AER’s decision is **capable of acceptance** given that an overall tightening of the regulatory regime is underway that we strongly expect will see a reduction in excess returns. In addition to the review of the ROR, reviews of the treatment of tax and the approach to the estimation of efficient opex have commenced. Strong evidence has been presented to these reviews that the current tax allowance overstates tax obligations and that the assumption of zero trend productivity improvement is inconsistent with more recent evidence on productivity gains in the sector and the reasonable expectations of consumers.

CCP16 confirms the overall capability of acceptance of the Draft Guideline, whether it is implemented as a guideline or as a binding instrument, provided that any changes that the AER makes between draft and final versions are to improve the long-term interests of consumers.



## 5.2. Draft Decision: Incremental adjustment

The Draft Decision will reduce the overall ROR by around 45 bp<sup>50</sup> and ROE by 95 bp for a given level for the risk-free rate and assumed inflation expectations. This is significantly below the implied gap between the currently allowed ROR and investors required returns implied from the RAB multiples under conservative assumptions (see above).<sup>51</sup>

**Table 3: Comparison of ROE under 2013 Guideline and 2018 Draft Decision**

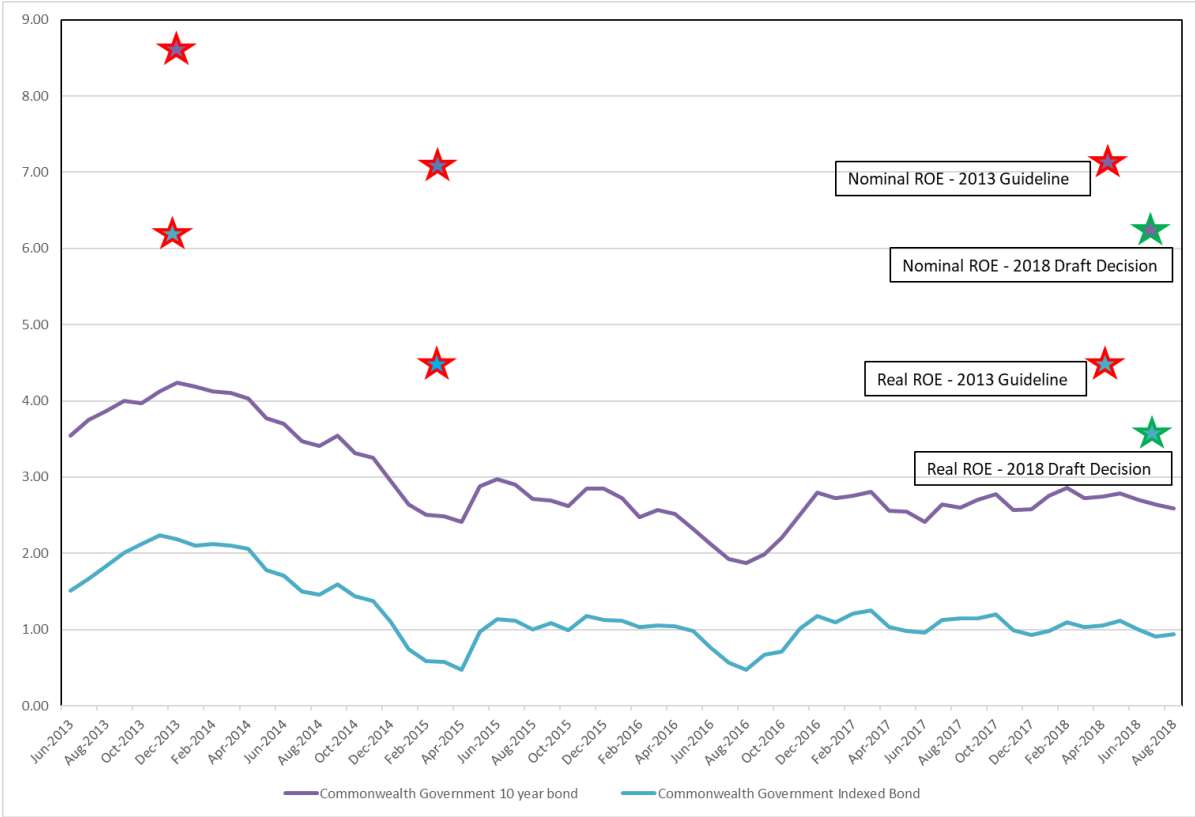
Year	2013 guideline- Dec 2013	2015 NSW Networks	2013 Guideline - Jun 2018	Draft 2018 Guideline
Inflation Rate	2.50%	2.38%	2.50%	2.50%
Value of Imputation Credits (gamma)	40%	40%	40%	50%
Risk Free Rate	4.24%	2.55%	2.64%	2.64%
Market risk Premium	6.50%	6.50%	6.50%	6.00%
Market ROE	10.74%	9.05%	9.14%	8.64%
Beta	0.70	0.70	0.70	0.60
Post-tax Nominal Return on Equity	8.79%	7.10%	7.19%	6.24%
Post-tax Real Return on Equity	6.14%	4.61%	4.59%	3.65%

The reduction in the ‘headline rate’ – that is the post-tax nominal ROE determined at different decision points – since 2013 is largely due to the fall in nominal and real interest rates. This is illustrated in Figure 2 below, which plots the ROE in Table 3 above against the decline in interest rates over the period.

<sup>50</sup> The slight imprecision in the estimate of the impact on the ROR is because the impact of the change in approach on debt will depend market values at the time.

<sup>51</sup> That is an assumption of outperformance of actual returns over allowed returns of 1.25 times the historical average.

**Figure 2: Comparison of risk-free rate and ROE**

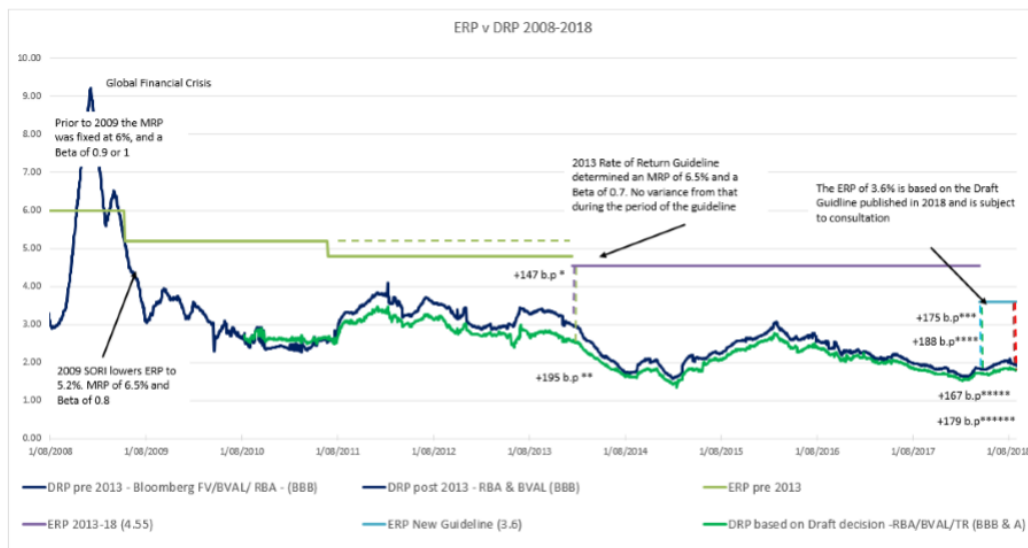


Source: RBA, CCP16

Under the 2013 Guideline and the 2018 Draft Decision, changes in the return on risk free assets – government bond rates – and the return on low risk assets (i.e. the NSP’s allowed ROR) move together so that the relative returns remains constant. The idea that the returns on investments that are close substitutes are closely correlated would not normally be controversial.

This also holds for the relationship between the equity returns and returns to debt holders under the 2013 guideline and the 2018 draft decision. This is illustrated in Figure 3 below which compares the Equity Risk Premium and Debt Risk Premium over time. From 2013 the decline in the DRP while the ERP was held constant resulted in a significant increase in the premium for the ERP over the DRP. The 2018 draft decision will return the premium to approximately the same level as in 2013 (195 basis points compared to 179 basis points).

**Figure 3: Comparison of Equity Risk Premium and Debt Risk Premium 2008-2018**



**Notes**

	ERP (%)	DRP (%)	Difference basis points <sup>1</sup>
*	4.55	3.08	147
**	4.55	2.60	195
***	3.60	1.85	175
****	3.60	1.72	188
*****	3.60	1.93	167
*****	3.60	1.81	179

*The basis points (bps) difference between the equity risk premium (ERP) and the debt risk premium (DRP) based on the 2013 guideline approach to estimating the return on debt (a simple average of extrapolated RBA and Bloomberg yields to 10 years) using updated closing price yield data for 17/12/13*

*The bps difference between the ERP and the DRP based on the 2018 draft guideline approach to estimating the return on debt using updated closing price yield data for 17/12/13*

*The bps difference between the draft ERP and DRP based on the 2013 guideline approach to estimating the return on debt using updated closing price yield data for 4/4/18*

*The bps difference between the draft ERP and DRP based on the 2018 draft guideline approach to estimating the return on debt using updated closing price yield data for 4/4/18*

*The bps difference between the draft ERP and DRP based on the 2013 guideline using updated closing price yield data for 31/8/18*

*The bps difference between the draft ERP and DRP based on the 2018 draft guideline using updated closing price yield data for 31/8/18*

Source: AER

### 5.3. Independent Panel Report supports Draft Decision

While critically evaluating the components of the Draft Decision, the Independent Panel's report broadly endorses the AER's Draft Decision. On some points, the Panel's report suggests alternative approaches and issues to be considered, but in CCP16's view the Panel's suggestions would not significantly alter the reduction in the ROR proposed in the AER's Draft Decision.

The Panel undertook a careful review of the AER's Draft Decision based on the material before the AER at the time of the decision. At various points, the Panel comments that the AER's analysis is sound and comprehensive. For example, the Panel found in regard to:

*Market Risk Premium:*

The Explanatory Statement casts a wide net, collecting data from several sources and noting arguments and information from stakeholders with different interests and points of view. The Explanatory Statement has adequately considered available information relevant to estimating the MRP.

Most of the Explanatory Statement chapter on the MRP is devoted to discussing stakeholder arguments and suggestions. But the road to the 6 per cent MRP estimate is clear and simple.

...

The Explanatory Statement makes clear what data and logic it finds helpful. Data and logic that receive lesser or no weight are also clearly identified. However, the Panel has identified several issues that deserve clearer explanation. (p33)

*Imputation credits:*

The Panel considers that the AER has demonstrated that it has identified, accessed and considered the available, relevant information. It has critically assessed the merits and shortcomings of the data and made rational and well-reasoned decisions about the relevance and weight of data sources.

Subject to the exceptions discussed below, the Panel concludes that the proposed approach to determining the value of imputation credits is supported by sound reasoning and there are logical links to the relevant information sources. (p50)

The Panel did not find significant errors in the AER Draft Decision, although it did question at which point the Black CAPM and low-beta bias should be considered, and suggested that international evidence on equity returns should be considered. Importantly, the Panel agreed with the AER's analysis of the role of DGM and the Wright model of a constant real market return on equity.

For the most part, the Independent Panel's 30 recommendations focused on improving the clarity of the report, and the adequacy and completeness of the explanations. To the extent that the Panel's recommendations will lead to a change in the methodology set out in the Draft Decision, we believe it is more likely to lead to a reduction rather than increase in the ROR. An appendix to this submission contains a selection of some (but not all) of the Independent Panel recommendations and CCP16 assessment of implications that might result if the recommendation is accepted.

## 5.4. Regulatory consistency over time

Regulatory consistency over time is an important consideration for the credibility and predictability of the regulatory regime. As we argued earlier, the review is incremental and, as the Independent Panel concluded, the decisions are well-supported.

Several elements (beta, MRP, debt benchmarks, and gamma) have changed, but this has been in response to new data and a review of the weight attached to some models. The underlying foundation model approach has been retained.

The reduction in MRP to 6.0% is a return to the MRP prior to the 2013 decision to lift the MRP in the aftermath of the GFC. As such it emphasises the consistency of approach over time and that the increase in 2013 was a response to the market circumstances. The reduction in MRP is supported by:

1. Indicators of investment climate such as volatility indices and premiums relative to debt costs indicate a more benign investment climate
2. RAB multiples which strongly indicate that the allowed returns have exceeded required returns and that this gap has increased since 2013 as the market climate has improved
3. The increased premium between the allowed ERP and the DRP since 2013 under the existing RORG
4. Increased questions about the robustness and reliability of the Australian DGM estimates, given:
  - a. The wide range in estimates of expected returns;
  - b. The contradiction between the increase in the estimated MRP derived from the DGM models and other indicators of investment climate; and
  - c. The contradiction between the increase in the estimated MRP derived from the Australian models and trends in DGM estimates in comparable international markets.

The reduction in beta to 0.6 is supported by

1. Analysis of link with ratio of regulated and unregulated income;
2. Reduced confidence in Black CAPM and low beta bias; and
3. The AER's preference for long-term 10-year data analysis which is consistent with approach across all other ROR parameters

## 5.5. Comparisons with other regulated returns

Regulatory consistency across jurisdictions is a valid consideration for a regulator. There are valid differences in the judgements and approaches used by regulators. However, given the internationalisation of capital markets, differences in trends in regulated returns:

1. Would raise questions as to whether there are country-specific factors that can explain this.
2. Could have a real impact on investment decisions.

The reduction in the ROR and ROE under the Draft Decision is consistent with trends in regulatory determinations in other comparable markets.

Ofwat proposes a reduction in the allowed cost of equity (based on a much lower estimate of total market returns than used in PR14). In its guidance for the current review (RP19) Ofwat foreshadowed returns of 2.40% (real, RPI-based) and 3.40% (real, CPI-based) are 133 and 33 basis points lower than the PR14 estimate of 3.74%. Underpinning the reduction in return proposed is a reduction in the assumed (real) total market return of 5.1 – 5.5% (compared to 6.15% in the AER's Draft Decision).

In determining that expected market conditions would merit a reduction in the cost of equity, Ofwat had regard to:

- Current evidence on the risk-free rate, with negative yields on the ten-year average of UK government index-linked bonds;
- Transaction and trading data, including on recent transactions that imply a market-to-asset valuation ratio [RAB multiple] of around 1.5 times (such as the Severn Trent acquisition of Dee Valley Water in 2017); and
- Regulatory precedent, including Ofcom's recent consultation for wholesale local access that proposes a total market return of 6.0%.<sup>52</sup>

Ofgem has also foreshadowed a substantial reduction in the ROR. In foreshadowing this Ofgem has emphasised factors that are particularly relevant to the AER's draft decision: the timing of the previous decision and the improving market conditions and the market evidence that investors' required returns are lower than previously allowed.

Despite these challenges, investors see networks as low risk, because Ofgem's stable, predictable regulatory regime protects companies from risks they cannot control. We set the current price controls in 2013, and since then the continued shift in financial markets following the 2008 financial crisis has seen investors willing to accept lower equity returns from longer-term investments in regulated infrastructure. ....

Setting the right level for the cost of capital is a key part of this. In the current price controls we allowed a cost of equity (the rate of return for shareholders) of between 6% and 7%. But since the evidence shows that investors are willing to accept lower equity returns we have indicated a range for the next price controls of between 3% and 5% (if we were to set the rates today).<sup>53</sup>

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<sup>53</sup> <https://www.ofgem.gov.uk/news-blog/our-blog/why-cost-capital-networks-likely-fall>, March 2018

## 5.6. Market responses to the Draft Decision

CCP16 has reviewed various brokers' reports on the listed regulated networks (SKI, AST, and APA) and trends in share prices to assess the market reaction to the decision.

The brokers' reports can be best characterised as mild surprise at the decision. Some reduction in the ROR seems to have been expected by most observers. Some had expected some reduction in MRP while others had expected a reduction in beta. One report commented that the decision was partly foreseeable however extent of ERP reduction in particular is likely to have exceeded expectations. Another report commented that MRP dropping back to 6% was not a surprise, but beta dropping to 0.6 was a surprise.

As shown in Figure 4 below, initially the share prices dropped, but since then much of the ground lost relative prices up to the end of June has been regained. It should be noted that the announcement of the draft decision was a significant event for the stocks and some of the trading just before its release of the decision may have been in anticipation of the decision. For that reasons, share prices prior to the immediate lead-up to the decision provide a more robust basis for comparison. APA prices have also been affected by the CKI takeover offer announced on 13 June.

**Figure 4: Movement in share values June to September 2018 – SKI, APA and AST**





Source: ASX

It was to be expected that a tightening of the ROR parameters would have an effect on asset values and RAB multiples. However, as discussed above, the previous values were inflated through a ROR that was above investor expectations and preservation of value is not an argument to maintain excess returns. The modest expected impact of the decision is reflected in both the subsequent recovery from the initial reduction and subsequent brokers' reports that have indicated that the draft decision was just one piece of 'news' affecting share values over this period. An important other element was the release of the ACCC report which once again placed the focus on rising energy prices and the contribution network prices had made to this until recently.

At the time of the decision valuations in broker reports suggested that RAB multiples may edge back towards levels that could be considered more 'normal'. Even so valuations in the latest broker reports remain consistent with RAB multiples of 1.35-1.4 which are still at the upper bound of the levels used as a benchmark by other regulators.

In summary, notwithstanding the concerns expressed by the networks in their presentations in response to the AER's draft decision, the decision has not destabilised the equity markets for these assets. It has had little impact on market valuations of the companies and there is no suggestion of



unwillingness to invest. Indeed, recent broker reports have given equal or greater weight to the ACCC report on energy prices. Given this, the concerns expressed in the ENA and investor presentations to the AER Forum on 2 August 2018 on the potential impact on investment in the sector and the long-term interests of consumers appear much exaggerated.

## 6. Overview of assessment of parameter values

As we have set out above, CCP16 contends that overall, the AER's 2018 Draft Guideline is a considered albeit cautious recalibration of the ROR within the current ROR framework, including the AER's approach using the 'foundation model' to the estimation of the ROE. Overall, we consider that the AER's Draft Guideline with its focus on a balanced assessment of all the relevant data will also go some way towards addressing the excess returns (i.e. the extent to which allowed returns exceed required returns) that have been observed under the current 2013 Guideline.

In previous submissions to the AER, CCP16 has written extensively on each of the ROR parameters including the ROE parameters, the approach to the return on debt and the assessment of the value of imputation credits. We summarise our recommendations on each of these parameters as set out in Table 4 below.<sup>54</sup>

**Table 4: CCP16 views on indicative range and initial parameter values**

Parameter	Indicative Range	Initial value	Summary of Reasoning
<b>Inflation</b>		2.4%	Existing methodology
<b>RFR</b>		2.4%	Existing methodology
<b>MRP</b>	5-6.0%	5.5%	Range based on HER estimate (5-5.5) and analyst practice (6.0) Less weight on DGM
<b>Beta</b>	0.5-0.6	0.6	Majority of long term estimates 0.5-0.6. Beta at upper end has regard to Black/low beta bias.
<b>DRP</b>	1.5-1.75%	1.68%	Average of Chairmont estimate and existing methodology.
<b>Gearing</b>		60:40	Existing methodology
<b>Gamma</b>	0.5-0.55	0.5	Increased weight on firm/industry distribution ratio and market utilisation ratio

Our consideration of the additional material provided by the AER in its Draft Explanatory Statement, submissions by other stakeholders and the advice by the Expert Panel, has in large part confirmed our views on the parameter values that were set out in these presentations.

The presentations by the network businesses at the Public Forum on 2 August 2018 focused on the AER's decision to adopt limited reductions in the two ROE parameters, the MRP and the equity beta (by 1% and 0.1 respectively).

CCP16 strongly supports the AER's decision on the two ROE parameters as we consider that the AER's decision represents an important step in adopting a more balanced approach to assessing the point estimate within the ranges identified in the empirical assessments of these parameters within the foundation model approach. The more balanced approach recognises that there are risks to consumers' long-term interests in over-investment as well as under-investment. It also recognises

<sup>54</sup> This table was presented as a slide in our presentation to the AER Board on 24 May 2018.

that the broader economic and financial environment is quite different than the one prevailing in 2012-13, when the reverberations of the GFC were still being felt around the world.

The two ROE parameters of the market risk premium (MRP) and the equity beta are therefore, discussed in more detail in section 7 below.

In addition to the ROE, the AER's Draft Decision has made important changes to the assessment of the ROD and to its point estimate of the value of imputation credits.

### **Return on Debt (ROD) Summary**

CCP16 has written extensively on the ROD issues, including a specific response dated 30 May 2018 to the AER's proposed changes to the assessment of the ROD including:

- Using an expanded data set that includes a third yield curve;
- Adopting a weighted average yields on A credit rated 10-year bonds (1/3 weighting) and BBB rated bonds (2/3 weighting) to better represent the benchmark credit rating of BBB+; and
- The report by Chairmont<sup>55</sup> to the AER on the actual debt raising practices and costs of the network businesses.

Subject to our agreement with the recommendations of the Independent Panel (below) on the AER's proposed ROD, CCP16 has no issue with the AER's proposed approach to the assessment of the ROD, In particular CCP16 comments as follows:

- There should be no change to the continued implementation of the transition to a trailing average approach as this is essential to maintain the "NPV=0" requirement. The Full Federal Court has also agreed with this approach.<sup>56</sup>
- The proposed averaging of A rated and BBB rated 10-year bond yields better represents the benchmark credit ratings of the network businesses.
- The Chairmont report provides some interesting insights into the actual debt funding practices of the network businesses, and gives confidence that the AER's proposed benchmark ROD allowance will allow efficient businesses to recover the cost of debt. However, we agree with the AER's conclusions that implementation of the Chairmont's recommendations will require more careful assessment over time, rather than inclusion in the 2018 Guideline.

### **Value of imputation credits**

CCP16 has also written extensively on the controversial question of the value of imputation credits and the reliability of various sources of data and the weighting give to these different data sources in determining the value of imputation credits within the context of an Australian CAPM. With respect to the two components of the AER's assessment, CCP16 concluded as follows:

- Utilisation rate: AER's approach of principally relying on ownership data for 'all equity' based on ABS equity ownership data is reasonable on both theoretical and practical grounds, as the ABS data appears to be of superior robustness than other sources of data. While the ABS data

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<sup>55</sup> See, Chairmont Consulting, *Aggregation of return on debt data report*, 28 April 2018.

<sup>56</sup> See, Federal Court of Australia, *SA Power Networks v Australian Competition Tribunal* (No 2)[2018] FCAFC 3, 3 January 2018.

supports a utilisation of 0.65 (range of 0.6 to 0.7), the AER selected a conservative estimate of 0.6 reflecting its approach to ‘rounding’ of the empirical results.

- **Distribution rate:** The AER has placed primary weight on the estimation of the distribution rate calculated by Lally for the top 20 ASX listed firms from 2001 to 2017. The AER argues that: “We consider the distribution rate from large listed firms in Australia as an appropriate benchmark distribution rate”.<sup>57</sup> Lally estimated a distribution rate from this sample of 0.88. However, the AER has determined a distribution rate of 0.83. The AER states:<sup>58</sup>

*We have used 0.83 to be internally consistent with our rounded gamma value of 0.5 and our utilisation rate of 0.6.*

In our previous submissions, CCP16 generally supported the AER’s view regarding the relevance and robustness of the various data sources and supported the AER’s initial suggestions of utilisation rate of 0.6, a distribution rate of 0.83 and an overall gamma of 0.5.

However, having further reviewed the material on imputation credit parameters, the AER’s assessment approach and the advice of the Independent Panel, we now consider that the AER’s position is conservative.

### **Recommendations of the Independent Panel**

The Independent Panel recommended that the AER:

1. *Return on Debt:* Explain better its use of the 10-year maturity assumption and consider making greater use of the Chairmont data; and
2. *Value of Imputation Credits:* Explain better its approach to the estimation of gamma, review aspects of the studies underpinning gamma, and explain why it has not adopted higher values for the distribution rate and utilisation rate.

We largely agree with the recommendations of the Independent Panel, as discussed below:

- The Panel’s recommendations on the ROD: CCP16 considers that there is a considerable body of analysis and extensive precedence for the use of a 10-year maturity assumption. Moreover, changing that assumption would require substantial rework of other parameters in the WACC such as the risk-free rate, the MRP and the equity beta. Without entering the debate on whether a 5-year horizon would be preferable for all the WACC parameter assessments (noting for instance, that the shorter period has been recommended by Lally and adopted by other regulators such as the West Australian Economic Regulation Authority (ERA)), it is essential that there is consistency across the WACC. More generally, CCP16 would be concerned that changing the debt period during the transition process may make the transition process more complex and undermine the revenue neutral purpose of the transition process.

As noted above, we also agree that the Chairmont analysis and recommendations are very useful and that the AER might have made greater use of the data analysis in determining the BEE debt practices. However, we are also mindful of the practical issues associated with adopting all of the findings and recommendations in the current Guideline. We strongly support the AER’s proposal to continue to collect the type of information required to implement these recommendations.

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<sup>57</sup> AER, *Draft Explanatory Statement*, July 2018, op cit., p 67.

<sup>58</sup> Ibid.

- The Panel’s recommendations on the Value of Imputation Credits: CCP agrees with the Panel’s recommendations. In particular, we agree that there are strong arguments for adopting a higher value of both parameter values, based on the empirical data. For instance, there is a case that the data supports the AER adopting a utilisation rate of 0.65 and a distribution rate of 0.88 with a gamma of 0.57. Moreover, we disagree with the AER’s ‘goal seek’ approach of first rounding down the utilisation rate, then combining that with a rounded target gamma value of 0.5 to arrive at a distribution rate of 0.83.

While we understand that the estimation process is not a precise one, the AER does not achieve a better estimate by rounding down one parameter, and a target gamma to estimate a distribution rate. For this reason, we have supported the Panel’s insights on this matter.

Overall, therefore, CCP16 finds the Panel’s recommendations a very useful addition to the discussion on both the ROD and the imputation credits and we would welcome further opportunity to develop these recommendations.

However, for the purposes of the 2018 Guideline, CCP16 suggests that the AER will need to carefully select those recommendations that are both achievable in the short time-frame available and consistent with the expectation of stakeholders of an incremental update of the 2013 Guideline. We consider at least two of the Panel’s recommendations with respect to the ROD and the imputation credits fit these requirements, namely:

1. To consider ways of better utilising the data in the Chairmont Report; and
2. To explain why the AER has not adopted higher values for the gamma parameters.

CCP16 agrees with the AER’s approach to the return on debt and imputation credits, subject to the AER further considering the recommendations of the Independent Panel regarding the implications of the Chairmont Report and the selection of the point estimate for gamma.

## 7. Return on equity

### 7.1. Overall Return on Equity (ROE)

Previous sections of this submission have considered the AER's Draft Guideline in the context of the assessing whether the AER's proposed overall return on equity is reasonable given current market conditions and all the evidence now available to the AER on network profitability, RAB multiples and the like.

All the evidence summarised in this submission points to the fact that the current ROE is likely to be high compared to current expectations of the ROE, a conclusion that was also made by the UK regulator in its recent assessment of the cost of capital for its next review period.

CCP16 also provided evidence in the previous sections of this submission that overall, the equity market has taken the AER's Draft Guideline 'in their stride'. The initial impact of the decision was followed by a subsequent recovery in share prices for listed network businesses and relatively muted response from various broker reports. The recent activity by CKI to purchase APA's eastern Australian gas network assets at a RAB multiple of around 1.5 to 1.6, is further evidence that the investors continue to value the returns on investment available from the regulated network assets in Australia. CKI is an international infrastructure company that has considerable experience in the Australian energy infrastructure and the regulation of both electricity and gas network assets – indeed, CKI has suggested it would seek re-regulation of uncovered pipelines to address competition issues.

CCP16 concludes from this evidence that the equity market does not indicate a significant change in market perceptions of the value of investing in regulated network assets. What adjustments there are, are likely to reflect more modest expectations around limits on excess returns.

The discussion below further expands on the previous sections of this submission on the overall ROE. The following sections also consider in further detail the two more controversial components of the ROE, the MRP and the equity beta.

CCP16 contends that the modest and incremental changes that have been made in the Draft Guideline to both the MRP and the equity beta estimates are consistent with its established approach to the rate of return and the components of the return on debt and the ROE, (i.e. the foundation model of the ROE).

The AER has now achieved a more appropriate balance between the reasonable expectations and the risks facing both consumers and network investors over the next four years.

In previous sections of this submission, we have also strongly challenged the recent claims by the ENA and the NSG that the AER's Draft Guideline does **not represent** an incremental review of the 2013 Guideline, and that the 2018 Draft Guideline is driven by a concern for short term savings in prices at the expense of efficient investment and the long-term interests of consumers. As discussed previously, CCP16 sees no evidence to support these claims.

To the contrary, the AER has followed its 2013 approach to the assessment very closely. Out of some 22 individual information components of the overall return on equity, the AER has made variations to only three of them: the dividend growth models (DGMs), the Black CAPM, the Wright model. Moreover, these variations relate to the AER’s developing views on the relative merit of these models based on their increased concerns with the robustness and reliability of the data in the model and the relevance of the models to an ex-ante regulated revenue determination. These limited changes in the AER’s assessments of the relative merits of various models do not comprise a fundamental change to the AER’s established foundation model.

CCP16 also rejects the claim that the AER did not take sufficient account of the view of the experts in the concurrent evidence session. Our view (as stated previously) is that the AER has considered a very wide range of information and advice, including the experts’ views and has done so in the context of its commitment to an incremental review. Our conclusions on this are supported by the supported by the Independent Panel’s report as highlighted in the discussions below.

**7.2. Overview of the AER’s Draft Guideline ROE parameters and CCP16’s response**

In its draft guideline, the AER has set out on the Sharp-Lintner Capital Asset Pricing Model (SLCAPM) parameter values as set out in Table 5 below.

Table 5 also includes the return on equity parameter values that were included in the AER’s 2013 Rate of Return Guideline, and the relevant values in the AER’s 2009 Statement of Regulatory Intent (SORI). These two additional sources are included to provide some historical context to our subsequent discussion on the individual parameters.

**Table 5: Return on Equity Parameter Values, 2009 SORI, 2013 Guideline and 2018 Draft Guideline**

Parameter	2009 SORI	2013 Guideline	Draft 2018 Guideline	Comments
Market Risk Premium (MRP)	6.5% (theta =0.74) <sup>(1)(2)</sup>	6.5% (theta = 0.6)	6.0% (theta =0.6 )	Prior to 2009, MRP was 6% and reverted to 6% by 2012
Equity Beta	0.8	0.7	0.6	Prior to 2009, equity beta was 0.9
Risk Free Rate (RFR)	Updated each determination using 10 year CGS bonds on agreed averaging period	Updated each determination using 10-year CGS bonds on agreed 20 business days (BDs) averaging period	Updated each determination using 10-year CGS bonds on agreed averaging period. The AER proposes extending this averaging period to 60 BD	In the 2018 draft guideline, the AER confirms that the guideline should set out a methodology rather than the expected rate for the RFR.

Notes: (1) The historical equity returns and the dividend growth model inputs used for the MRP calculation are adjusted for the value of theta (the utilisation rate) to reflect the introduction of the dividend imputation system in Australia in 1987. The AER adjusts historical equity returns for the value of gamma as determined in each period. (2) The 2009 SORI theta appears to be 0.74 based on tax statistics (see for instance, p. 467 of the 2009 SORI), although it is not clear from the current reading of the SORI document if/how this figure is used in the MRP calculation.

CCP16 supports the AER's draft guideline decisions on the MRP and the equity beta. In our submission in May 2018 to the AER's two discussion papers on the MRP and the equity beta (published March 2018), and to the report by CEPA summarising the concurrent evidence sessions, CCP16 recommended that the AER adopt a MRP of 6% and an equity beta no larger than 0.6.

More specifically we made the following recommendations:

With respect to the 2018 MRP, CCP16 recommended:<sup>59</sup>

- The AER adopt a value for the MRP of 6% consistent with the appropriate assessment of the HER (historical excess returns) and in recognition of the AER's recent work on the DGM and the findings of Damodaran and of Fenebris.
- The AER undertake further investigation into how it uses geometric and arithmetic averages given the volatility of the annual returns identified by Dimson et al.
- The AER further investigate the option of using a moving growth rate to estimating the DGM taking into account how this might be incorporated into a fixed Guideline.

With respect to the 2018 equity beta, CCP16 recommended:

- The AER should select an equity beta below the existing beta, taking account of the substantial empirical evidence accumulated over some 8 to 10 years that the equity beta for the networks is around 0.6.
- The AER should investigate further the potential for the Bloomberg Utility Index to support its analysis of the equity beta for the BEE.
- The AER should undertake further investigation of the best approach to leverage (including using raw data rather than unlevered data) given the issues raised by Partington, and the issues that may arise if/when a larger comparator set is adopted.

CCP16's parameter value recommendations are generally in line with the AER's Draft Guideline for the MRP and equity beta. In our view, these recommended parameter values contribute to a rate of return that provides a more reasonable balance between the long-term interests of consumers and the interests of investors in network assets and between the respective risks that consumers and networks face.

Overall, CCP16 considers that the AER's Draft Guideline decisions on the MRP and equity beta take account of relevant information to provide a reasonable balance between the interests of consumers and investors. We also consider that the changes to averaging period for the estimation of the risk free rate (RFR) reduces the exposure of the networks to short term volatility in the market for 10-year Commonwealth Government bonds.

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<sup>59</sup> See CCP16, *Submission to the AER on its rate of return guideline review*, May 2018.



CCP16 therefore concludes that the overall ROE proposed by the AER in its Draft Guideline will allow investors adequate (but not excessive) compensation for the risks that they face in investing in the regulated networks. Achieving a balanced outcome that takes account of the interests and risks facing investors and consumers is particularly important for the long-term sustainability of the energy markets.

A ROE that errs on the high side of efficient equity costs, incentivises over-investment in the assets as such investment promotes a focus on growing the RAB – particularly where the regulatory rules include revenue caps and indexation of the RAB that protect investors and leave consumers funding imprudent investment over many years. It also leads to a cycle of reducing demand and inefficient allocation of resources in the economy as a whole.

However, while CCP16 generally agrees with the AER's assessment of the ROE parameter values for the 2018 Guideline, we would also encouraged the AER to further consider CCP16's recommendations with respect to investigating the potential for the Bloomberg *Utility* index (or any similar index), and to further investigate the risks and benefits of the current approach to levering the observed equity beta. Both these recommendations are increasingly important because of the decline in the number of network businesses that are relevant to establishing a benchmark equity beta.

Sections 7.3 and 7.4 will further consider the estimation of an efficient MRP and equity beta including the issues raised above. Section 7.5 will briefly consider the third component of the ROE, namely the risk free rate, and the AER's proposed changes to the length of the averaging period of the risk free rate and the nomination window for the averaging period.

Before considering these individual components of the ROE, it is useful to reiterate the discussion in earlier sections of this submission regarding the current 2018 review, which the AER has stated will be an 'incremental review'. In the context of the ROE parameters, CCP16 understands this to mean that there will be no change in the fundamental framework, namely the use of the SLCAPM model as the foundation model, and an assessment of each of the ROE parameter values using the 'step' approach set out in the 2013 Guideline and the current 2018 Draft Guideline.

CCP16 does not accept it means that each parameter value must be effectively locked in to the 2013 decision, irrespective of the evidence that the AER has collected over the last five years. Such a position would be disingenuous, particularly given that the many NSPs have sought changes to the 2013 Guideline decision on the MRP, the equity beta and the imputation credits over multiple revenue proposals and notwithstanding the Tribunal's decisions to accept the AER's discretion on these matters.

CCP16 is therefore very pleased that the AER has approached the Guideline review of the ROE using the fundamental structure of its 2013 approach to the ROE, but has also brought together its ongoing clarification of the economic and financial principles, new market information, Tribunal decisions, new evidence from various experts (including the concurrent evidence sessions) and the views of the consumer organisations that it has garnered over the subsequent years.

If, as result, the AER has less confidence in the robustness of the dividend growth models (DGM) or the Black CAPM (equity) within the regulatory context, then its obligation is to reflect that in the new

Guideline and irrespective of whether the change in its reliance on these models results in a higher or lower parameter.

In addition, it is entirely appropriate for the AER to change the parameters if its analysis suggests that circumstances have changed since 2013. For example, after noting the arguments put by a variety of consumer representatives and by the networks and the NSG, the AER states:<sup>60</sup>

*In a number of areas we have determined parameter values or estimation approaches that differ from those in our 2013 Guidelines. We have done so on the basis that the updated parameter values will contribute to the legislative objective to the greatest degree given the current environment. We consider that the current environment is different in a number of ways to the environment at the time of the 2013 Guidelines. Most notably we consider that market volatility has subsided and risk premiums have reduced since 2012-13...*

As explained in more detail in the sections below, CCP16 agrees with the AER's assessment. It is clear from our reading of the 2013 Guidelines that in the years immediately following the GFC and in the face of the subsequent European debt crisis (among other things), the investment environment in was very different than the current environment.

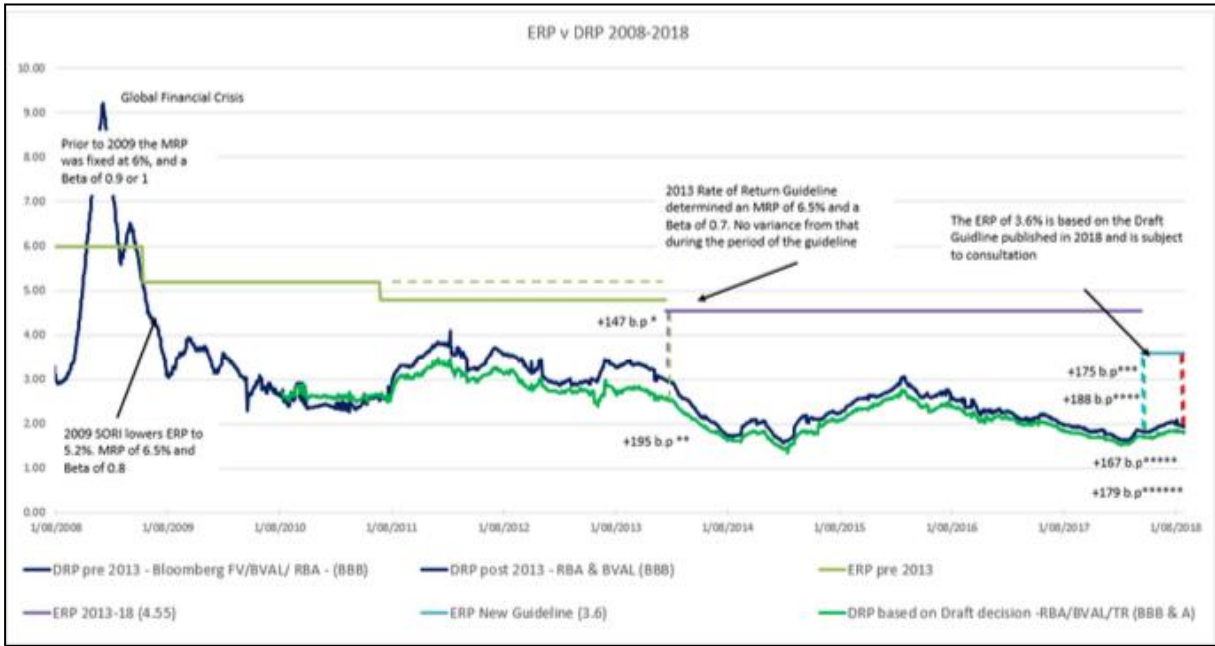
In our view, the AER's 2018 Draft Guideline adopts an unbiased view of the conceptual and empirical evidence now before it, and comes to a decision on an efficient ROE that fairly balances the interests and risks faced by investors and by consumers. In previous sections of this submission, CCP16 has provided evidence that in the current conditions, the AER's 2013 guideline is contributing to higher returns than an anticipated at the time. For instance, Figure 5 below illustrates the increased spread year on year between the 2013 fixed ROE allowed by the AER, and return on debt (ROD) in both the 2009-2011 period (SORI), the adjusted SORI (2011-2013) and the 2013-2018 period (2013 Guideline).

Another important message is the risks to consumers of the AER over-reacting to shorter-term movements in the markets. To date, the AER's approach has largely been to respond to upward pressures while not responding to downward pressures. The 2018 Guideline provides the opportunity to address this bias while maintaining efficient returns to the investors in the businesses.

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<sup>60</sup> AER, *Draft rate of return guidelines – explanatory statement*, 10 July 2018

**Figure 5: Comparison of Equity Risk Premium and Debt Risk Premium 2008-2018**



Source: AER, August 2018. Note: the full explanation of this chart is provided in section 5.2 of this submission.

**7.3. Assessment of the Market Risk Premium (MRP)**

**7.3.1. Overview**

The AER has reduced the MRP from 6.5% to 6.0%, taking into account the evidence from the analysis of historical excess returns (HER), its developing views on the robustness of alternative methodologies in the regulatory context and observations of broader market conditions. CCP16 agrees with the AER’s decision to reduce the MRP to 6.0%. We consider that the AER’s decision is based on a careful examination of the empirical data and of alternative perspectives. It recognises the changes in the broader market conditions and the importance of balancing the interests and risks facing investors with those facing consumers.

CCP16 wrote very extensively in our previous submissions on the measurement of the MRP, drawing on the previous analyses by the AER and others as well as the work of a range of international experts, such as Fenebris, Damodaran and Dimson et al. To reiterate, CCP16 concluded that:

- The MRP should be no greater than 6.0%.
- The AER should place significant reliance on the objective assessment of the MRP, using historical equity returns data (HER).
- In calculating the range and point estimate from the HER data, the AER should take more account of the geometric average of the historical data reflecting the volatility of the equity market returns and the resulting upward bias in arithmetical average returns.
- The DGM has limited relevance to the ex-ante assessment of the long-run MRP (10-years), given the many conflicting models of the DGM, and the extensive reliance on assumptions about (inter alia) the near term and the long-term equilibrium values for dividend growth, GDP and inflation.
- Notwithstanding concerns with the DGM, there was an opportunity to investigate approaches that appeared to provide more reasonable outcomes.

We refer the AER to these previous submissions for the detail on which we based these conclusions, noting that the subsequent material provided in various submissions to the AER have not changed our conclusions listed above.

CCP16 is, therefore, pleased to see that the AER has adopted a value of 6.0% for the MRP in its Draft Guideline and overall agree with its extensive analysis of the issues. In the previous discussion, CCP16 has also rejected the proposal that the AER's revised value for the MRP of 6% represents a fundamental change, rather than an incremental development.

While we support the overall decision CCP16 makes the following additional comments on the assessment of the MRP.

- Revisit CCP16's recommendations regarding the use of arithmetic and geometric averages. The AER notes CCP16's reservations regarding the biases of arithmetic averages of historical excess return data with relatively high volatility, particularly when used as an estimator of future long term MRP. However, the AER does not take this issue further, by assessing how much bias is introduced and whether as a result geometric averages should be considered as more than just a 'floor' to the estimate of MRP.
- As the AER acknowledges, the DGM model lacks robustness and is very sensitive to the inputs. CCP16 agrees with this and highlights that the weakness of the DGM (particularly as presented by the network consultants) is its reliance on subjective assessments, and its generation of results that are counter-intuitive. That is, the proposition that MRP's have increased in recent years does not correspond to the current market conditions or the assessments of the risks in the wider economy, by the RBA among others.
- It is reasonable to conclude that the MRP has declined (contrary to the DGM outcomes) since the 2013 Guideline. The regulatory estimates of the MRP has moved up and down, being 6% before 2009 SORI, 6.5% in the SORI that followed the GFC, 6% again when conditions improved and 6.5% when the 2013 Guideline was finalised, reflecting uncertainties at the time arising from the post-GFC repercussions on European government debt (among other things). A comparison of the statements made by the RBA in 2012-13 in its Economic Outlook compared to the current Economic Outlook illustrates this point.

These issues are discussed in more detail in the following sections.

**7.3.2. Geometric and arithmetic averages of the HER data**

CCP16 noted in the concurrent evidence sessions and subsequent submissions by the ENA and others, the summary dismissal of the use of geometric averages. We also note that while the AER recognised the geometric averages may have some 'information value', the AER only uses the geometric averages to set a notional floor' on the estimated range of MRP values.<sup>61</sup>

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<sup>61</sup> More specifically, the AER uses the top of the range of the observed geometric average of historical returns (4.2% to 5.0%) to provide a floor of 5% to the updated HER range of 5.0% to 6.5% adopted by the AER in its Draft Guideline. The observed HER arithmetic average was reported as 6.0% to 6.5%. See for instance, AER, *2018 Draft Explanatory Statement*, op cit, p 44.

For instance, the ENA states: <sup>62</sup>

*...geometric averages is inappropriate for the purpose of estimating the expected excess return ... the geometric average should not be used and only the arithmetic average should be used for the purpose of setting an allowed rate of return.*

These claims by the ENA were strongly asserted by their representative at the concurrent evidence session. The basis for this strongly stated position appears to be the view that the AER's revenue model (the PTRM, or the post-tax revenue model) is based on estimating single year returns, and that therefore, it is inconsistent to utilise estimates of the MRP based on geometric averages as geometric averages represent the average of compounded returns. We make several comments in response to the arguments put by the networks.

- Both arithmetic and geometric averages have strengths and weaknesses, as noted by the AER and its advisors, Partington and Satchell.<sup>63</sup> The arithmetic average is recognised as having an upward bias, while the geometric average has a downward bias. The extent of the respective upward and downward biases depend on factors including:
  - The horizon over which the averaging estimation is forecast relative to the estimation period. The longer the forecast horizon, the more the geometric average represents an unbiased estimate of returns relative to the arithmetic average. Jacquier, Kane and Marcus demonstrated this relationship in a series of papers published over the course of 2002-2004.<sup>64</sup>
  - The volatility of the equity returns over time. The more volatile the returns, the more upwardly biased is the arithmetic average as demonstrated by Dimson et al.<sup>65</sup>

Importantly, the Tribunal also recognised this issue as far back as 2012, in response to an application by Envestra to reject the AER's approach of considering both geometric and arithmetic averages. The Tribunal accepted the AER's approach and concluded as follows:<sup>66</sup>

*157 It may be accepted that an arithmetic mean of historic annual returns is an unbiased estimate of expected future one-year returns. It is not, however, an unbiased estimate of expected future returns over longer time horizons. A geometric mean of historical annual returns does not provide an unbiased estimate of expected returns over longer time horizons, either. **Envestra's submission that, because the CAPM model uses expected returns, only the arithmetic mean may be used cannot be accepted once it is understood that the arithmetic mean of annual historic returns is not an unbiased estimate of expected ten year returns.***

*158 Once it is accepted that the relevant benchmark is ten year excess returns, considerable thought and effort should be given to deriving the best estimate of expected ten year returns... [emphasis added]*

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<sup>62</sup> ENA, *Response to the Discussion papers and concurrent evidence sessions*, May 2018, pp 161-162

<sup>63</sup> See for instance, Partington G and Satchell S, *Report to the AER: Allowed Rate of Return 2018 Guideline Review*, 25 May 2018, p 34.

<sup>64</sup> Jacquier E, Kane A and Marcus A, "Optimal Estimation of the Risk Premium for the Long Run and Asset Allocation: A Case of Compounded Estimation Risk", October 2004 (updated). Also Jacquier E, Kane A and Marcus A, "Geometric or Arithmetic Mean: A reconsideration", May 2003 (updated revision).

<sup>65</sup> See Dimson, Marsh and Staunton, "The Worldwide Equity Premium: A Smaller Puzzle, revised", 7 April 2006

<sup>66</sup> Australian Competition Tribunal, *Application by Envestra Limited (No 2) [2012] ACompT 4*

- CCP16 considers that the networks have not addressed this issue of bias in annual returns, but have instead focused on the claim that the PTRM is an annual return model and therefore claim that the only unbiased estimate of the future MRP is the arithmetic averages of the HERs (leaving aside the DGM issues). CCP16, however, considers this is a narrow technical argument that focuses on the model, not the expectations of investors in the ‘real world’ equity market. In practice, we agree with Partington and Satchell that investors take a longer-term view and that both geometric and arithmetic averages are relevant to providing an unbiased estimate of the HER based MRP over the 10 year forecast period. Partington and Satchell state:<sup>67</sup>

*...Investors compound returns and whether or not the AER compounds returns is not relevant to the return that investors require/expect. It is well established that the arithmetic average of annual returns will overestimate expected returns if the holding period is more than one year. For example, in the expert evidence session it was suggested that some investors in the regulated businesses had investment horizons of 20 years. Given investor holding periods of more than one year it is appropriate for the AER to have regard to the arithmetic average for returns. It is also appropriate for the AER to consider return periods of more than one year.*

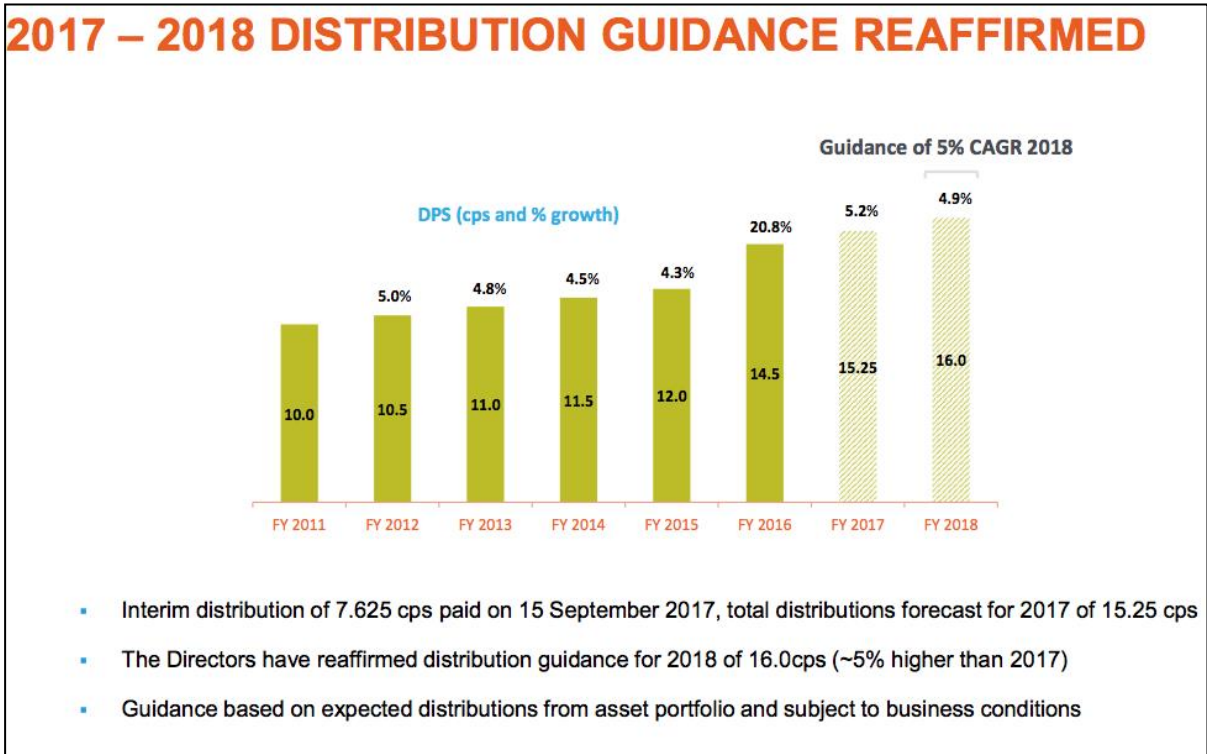
- In addition, CCP16 disputes the claim that the AER’s revenue models, taken together, focus on annual returns to the exclusion of compounding returns. Again this is a narrow view. We would argue that the output of the suite of models that the AER uses in its revenue determinations includes not only the PTRM, but also the roll-forward model (RFM) and the AER’s pricing model (RPM). The RFM model includes the compounding of the value of the RAB (i.e. an automatic CPI annual adjustment). The AER’s pricing model is based on compounding forecast revenue over the regulatory period via the CPI-X framework. Over a regulatory control period of five years (or 10 years in terms of projected returns), the price to customers and the revenue to networks will compound each year of the regulatory control period under this revenue formula.<sup>68</sup>
- In this context, CCP16 also notes that the networks’ presentations to investors and shareholders provide extensive reference to compound returns (e.g. compound annual growth rates (CAGR)). In this context, networks recognise that actual and potential investors are interested in what returns they are likely to receive over time by considering the historical trends in CAGR. For example, Spark Infrastructure includes the following chart in their presentation to Asian Investors in late 2017. Similar charts can be found in the reports by all the ASX listed networks.

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<sup>67</sup> Partington G and Satchell S, *Report to the AER: Allowed Rate of Return 2018 Guideline Review*, 25 May 2018, p 34.

<sup>68</sup> Arguably, the fact that the AER usually smooths the allowed annual revenues over the 5 year period and applies a NPV neutral formula (using the WACC as the discount value) to this process, also confirms that the revenue models taken collectively are looking at cumulative returns over the regulatory period.

Figure 6: Spark Infrastructure: Compound annual growth in returns to investors 2011-2018



Source: Spark Infrastructure, Investor Presentation, Asia, 8 November 2017

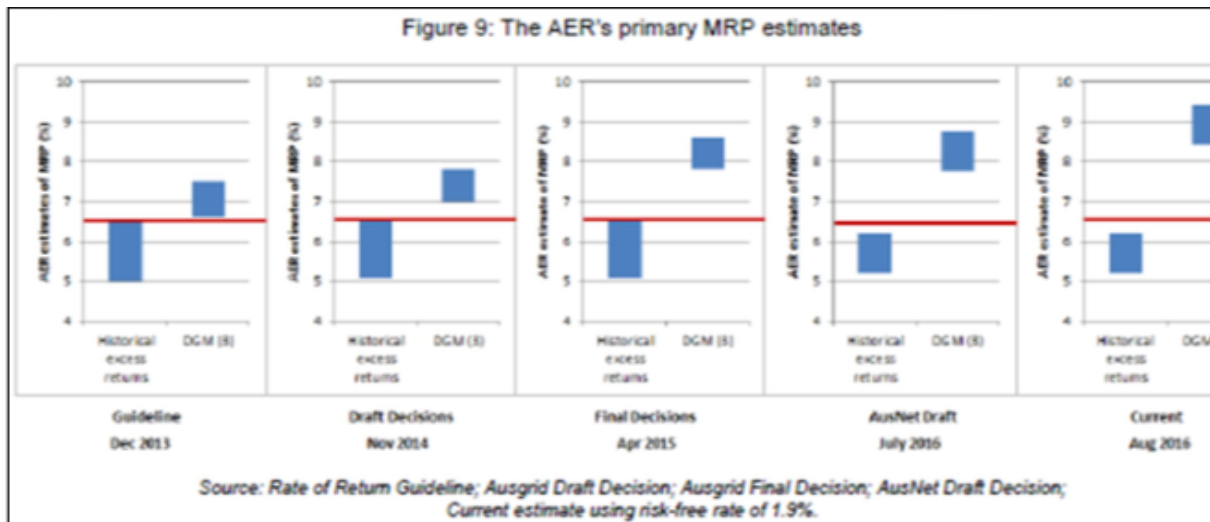
7.3.3. Limitations of the Dividend Growth Model

In general, the estimates of the MRP since 2012 (using the various versions of the DGM models, including the AER’s DGM versions) are systematically higher than the estimates of the MRP using the various analyses of historical excess returns. Moreover, the networks’ claim that the DGM models have indicated that the MRP has been increasing since measured in 2013.

In our May 2018 submission, CCP16 highlighted the increasing divergence between the outputs of the HER models and the outputs of the DGM models, suggesting that the models may be measuring two different things. Figure 7 below illustrates this divergence, based on the study by Frontier in 2016. No adequate reasons are given to explain why the two MRP should diverge to this extent over some 3 years and, more particularly, why the MRP as measured by the DGM should increase so significantly.

It has been observed that the output of the DGM can be affected by the ‘optimism’ bias of analysts in forecasting the input parameters such as future growth in dividends and GDP. In addition to this systematic bias, the DGM estimates are very sensitive to assumptions such as the long-term growth in dividends, short-term variations in share prices and corporate dividend policies (including ‘sticky dividends’). This means that DGM estimates must be treated with great caution and cannot be given a fixed weight. Where the estimates are inconsistent with other investment climate indicators, they should be given little weight, as the AER has done in this Draft Guideline.

**Figure 7: Frontier 2016 estimate of the MRP from both HER and DGM approaches**



Source: Frontier Economics, *The Market Risk Premium, Report prepared for AGN, Multinet Gas, AusNet transmission and AusNet gas*, September 2016, Figure 1, p 5.

Much else has been said over the last five years regarding the limitations of the DGM particularly, but not only, within the context of estimating the expected long-term (10 year) average MRP to apply over the forthcoming regulatory period.

CCP16 has referred to these limitations in all the submissions that it has provided to the AER, and we will not repeat this detail in this submission. Suffice to repeat that our major concern is with the subjectivity of the inputs into the model as well as the lack of a theoretical basis for choosing one DGM model over another given the multiple variations. This subjectivity becomes increasingly problematic as the forecast horizon expands, e.g. for estimating the long-term equilibrium dividend growth part that is required within the 10-year estimation horizon adopted by the AER.<sup>69</sup>

Our view is that in the contested regulatory environment, the subjectively derived inputs to the DGM and the selection of the appropriate model specifications would then become the source of debate – i.e. we have merely ‘kicked the can’ down the road. In addition, there is no objective method to assess the merits of one party’s assumptions about dividend growth in the short term and in long-term equilibrium, or of the related parameters of GDP growth. The HER methodology largely (although not completely<sup>70</sup>) avoids this subjectivity – ‘my expert versus your expert’ – dilemma. That is, the estimated 10-year return on equity using the HER is based on actual long-term history of equity returns.

The AER’s own research highlighted this issue when it examined the sensitivities of the DGM model to a range of reasonable inputs on long-term growth rates, time periods and analysts’ forecasts for 2 versions of the DGM (i.e. the two stage and three stage models used by the AER). The differences in the range of each of the DGMs set out in the chart, arise from (a) combining the low end of each of

<sup>69</sup> That is to say, that while the regulatory control period is 5 years, the rate of return inputs are considered over 10 years including the term of corporate debt (for the cost of debt) and the term of the Commonwealth Government securities (CGS) used in the estimation of the forward looking risk free rate. The ERA and other regulators have adopted a term of 5 years for bonds, and arguably, the DGM may have more relevance in that context (assuming the inputs and model specifications are agreed upon; a strong assumption).

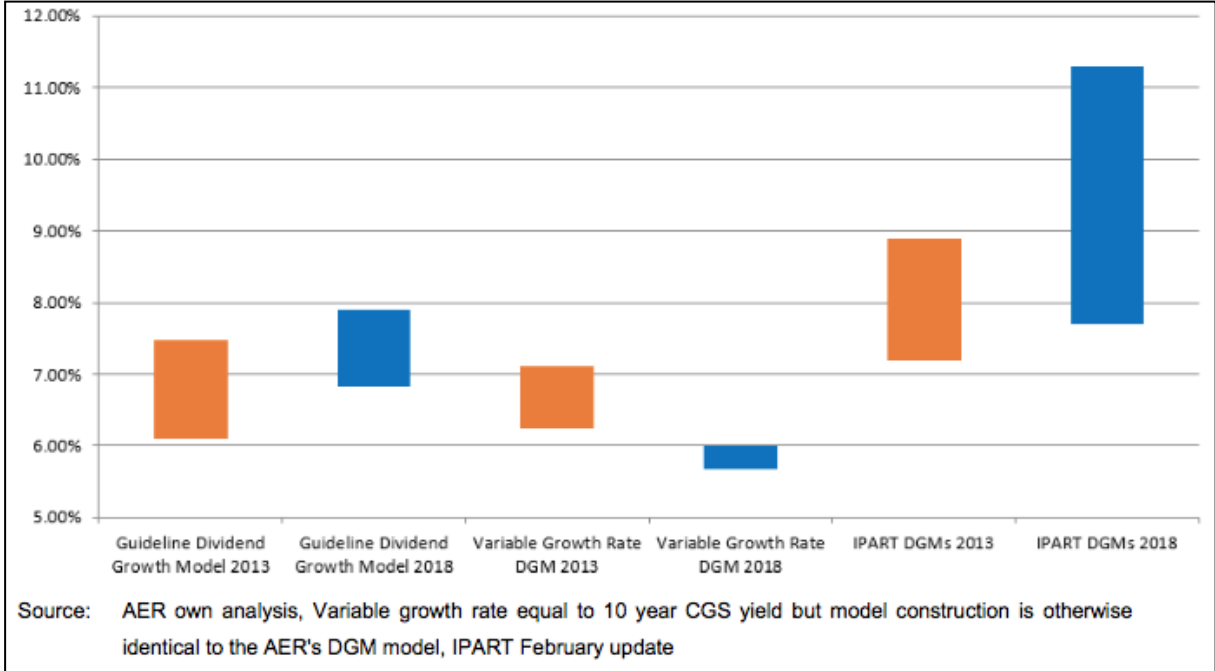
<sup>70</sup> That is, there are various adjustments that have to be made to the historical data, and no single universally accepted approach. However, the impacts of these are minor compared to the strong impacts of different assumptions and model specifications in the DGM.



the input assumptions; and (b) combining the high end of each of the input assumptions. The spread was significant and around 250 basis points <sup>71</sup>

The AER also examined wider range of DGM model constructions and assessed the output of these different constructions for 2013 and again for 2018 as illustrated in Figure 8 below from the AER’s 2018 Draft Explanatory Statement. The chart demonstrates the extent to which the DGM output will vary depending on the model construction. The 2018 estimate of the MRP ranges from less than 6% to up to 11%. This sensitivity to the model construction raises significant questions about the use of the DGM in regulatory decision-making. There is no way of knowing at this stage, ex-ante, which of these models best represents the actual expected returns.

**Figure 8: Results from DGM constructions 2013-2018**



Source: AER, *Explanatory Statement, Draft Guideline*, July 2018, Figure 20, p 223.

The SLCAPM requires an estimate of the expected MRP. The AER has used historic returns to estimate the expected returns and there is a sound basis for doing this. Expectations are formed on the basis of past experience so historic returns are likely to be a good estimator of expected returns, particularly over the medium to long-term when a reversion to long-term trends may be expected.

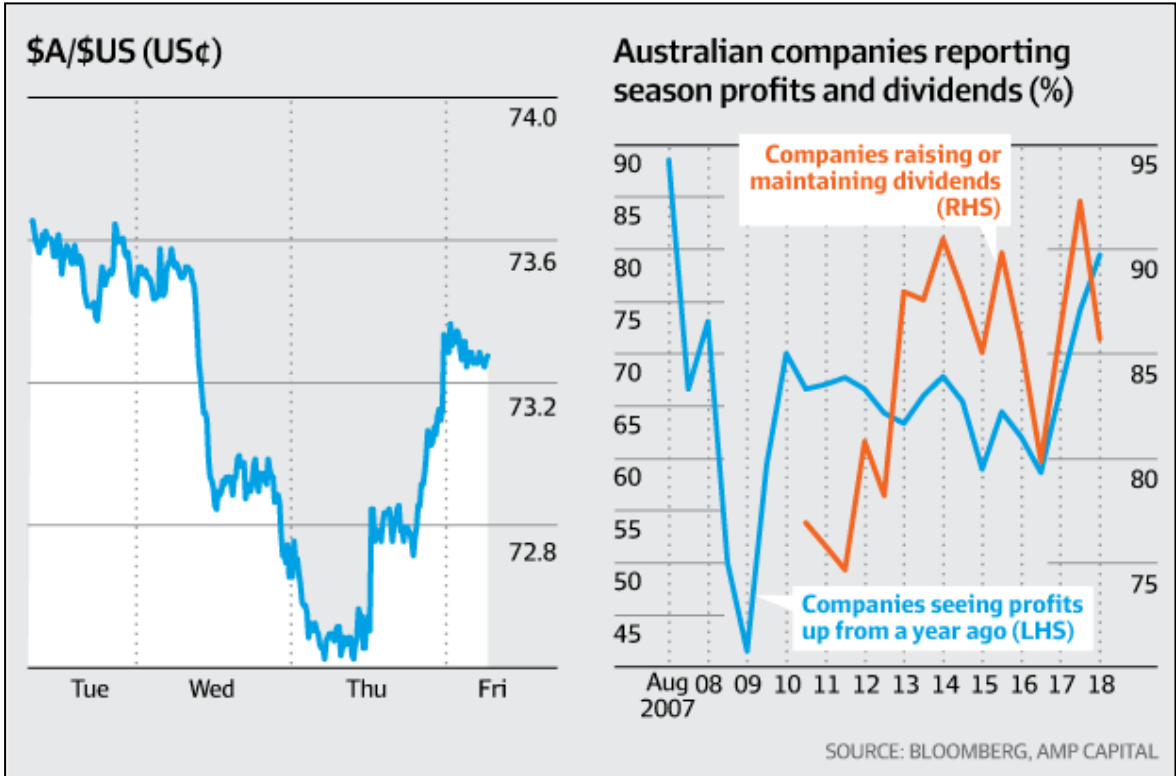
The DGM is an alternative means of estimating expected returns but it also draws upon past trends but in a more subjective, complex and less transparent manner. That is, the DGM requires forecasts of future trends in economic variables such as growth in GDP and dividend yields and in doing so, it draws on historical trends. Importantly, in estimating future returns based on these forecasts, it assumes (unlike the AER’s HER approach) that current share prices reflect only long-term expected returns. As we noted in our first submission, it is widely accepted that markets are not continuously efficient and share prices are too variable to be explained by variations in long-term expected returns.

<sup>71</sup> See, AER, *Explanatory Statement, Draft Guideline*, 10 July 2018.

A recent article in the Financial Review illustrated the particular difficulties of projecting long-term growth in dividends and profits (see Figure 9 below), and the extent to which experts can disagree. The article highlights the recent significant increase in payouts to shareholders by energy, utility and financial-sectors (covering a significant proportion of the Australian equities market) and concluded that:<sup>72</sup>

*Nine in ten companies to have reported earnings this season have maintained or increased their dividends, as profit growth continues apace and boards favour capital management over investment.*

**Figure 9: Australian companies reporting season profits and dividends (%)**



Source: Australian Financial Review, 26 August 2018

Based on this information, the article reports that some of the market analysts predict a continued focus by business on capital management including increased dividend payouts to shareholders. However, other analysts have a different view on whether this growth in dividends could be sustained into the future. For example, JPMorgan’s analyst stated:<sup>73</sup>

*Companies were already pushing toward the higher end of dividend payout ratios and likely won’t be able to stretch those ratios that much further. Companies will likely have to make the shift to greater investment in time...otherwise they will simply shrink to zero.*

As noted above, the DGM models are very sensitive to inputs on short and long term dividend growth rates. The examples above highlight the difficulty in forecasting DGM input variables such as

<sup>72</sup> Sarah Turner, Australian Financial Review, “Companies favouring dividends over investment: JPMorgan, 26 August 2018. <https://www.afr.com/markets/equity-markets/companies-favouring-dividends-over-investment-20180826-h14ilw>

<sup>73</sup> *ibid.* Note, the AER’s advisors also raise the issue on the limits of dividend growth over time.

the expected dividend growth rate which depends on multiple factors such as earnings growth, inflation and interest rate expectations, alternative investment opportunities, shareholder preferences and the firms overall capital management plans.

On what basis would the AER select a forecast of long-term 10-year dividend growth from this dividend yield data? Of course, the AER could look at historical averages of dividend payouts. The same article suggests that the Australian market has an average dividend yield of 4.3% (nominal) compared to average developed market dividend yield of 2.5% to 2.6%. Does the average developed world dividend yield better represent a long-term average for the Australian market? And how do we account for changes in dividend re-investment plans given Partington's view that this will decrease the 'true dividend yield'?<sup>74</sup>

As further evidence of the potential challenges faced in interpreting the results of the DGM analyses, CCP16 has considered other results such as the 2016 Frontier report (referred to in Figure 7 above). The report compares the required return on the market (the ROE) between December 2013 and August 2016, using the AER's DGM 3-stage model and the AER's allowed ROE over a series of decisions using a fixed MRP of 6.5%.

While the report seeks to criticise the AER's approach to MRP, it also indicates the problems of the current approach to the DGM in Australia. For example, the analysis implies that the MRP in 2013 was around 6.9% (using the AER's DGM model). By 2016, the implied MRP had risen to around 9.0%. We regard this result as highly improbable, particularly given the improving market conditions referred to in section 7.3.4 below.<sup>75</sup>

Overall therefore, CCP16 agrees with the AER's cautious assessment of the potential role of the DGM, in the 2013 Guideline and the AER's subsequent increased concern about the reliability and robustness of the DGM in the ex-ante 5-year regulatory revenue determination process. We further note the recent conclusion by Partington and Satchell (May 2018), that:<sup>76</sup>

*Although the dividend growth model is a forward looking model it is not sufficiently precise to reliably track changes in the MRP. Indeed it is likely to give biased results. We have discussed the problems with the DGM at length in previous reports and most recently in the expert evidence session. Our view is unchanged and it is that the DGM is not sufficiently precise to directly inform the AER's estimate of the MRP for a forward looking return.*

Further, there was sufficient evidence available to the AER by 2015-16, for the AER to reconsider how much reliance it could put on the DGM when selecting a MRP point estimate within the MRP range that was defined by the HER analyses. CCP16 considers that the AER might well have changed the MRP in these decisions to reflect its developing views. Nevertheless, we welcome the more explicit recognition that in the current circumstances, the DGM (as applied by the AER) is leading to forecasts of the MRP that are inconsistent with the other market measures, as discussed below.

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<sup>74</sup> Partington G, AER concurrent evidence session, April 2018, p 81; cited in the AER's 2018 Draft Explanatory Statement, July 2018, p 222.

<sup>75</sup> See, Frontier Economics, *The Market Risk Premium, Report*, September 2018, op cit., and in particular, Figure 4, p 8. The implied MRP is calculated on the difference between the estimated ROE and the risk free rate which had declined from 4.1% in 2013 to 1.9% in 2016.

<sup>76</sup> Partington G and Satchell S., op cit, 25 May 2018, p 33

#### 7.3.4. Changes in the economic environment since 2013

Leaving aside the AER's decision to place less reliance on the DGM in the selection of a point estimate for the MRP, there are substantive reasons for why the MRP should be lower than the MRP of 6.5% that was set out in the 2013 Guideline. The 'history' of changes in the regulated MRP clearly demonstrates the importance of current and projected economic conditions in the various changes that the AER has made to date on the estimate of the MRP. This is summarised below:

- Pre 2009, the preferred estimate of the MRP was 6.0%.
- In 2008 the AER commenced the development of a Statement of Regulatory Intent ('SORI') that set out the AER's reasoning and 'intent' in terms of the key parameter values. The final SORI was published in May 2009.
- The AER initially proposed to continue with a MRP of 6% (pre GFC) in the SORI.
- In its Final Decision on the SORI, the AER increased the MRP from 6% to 6.5% because of its concerns with the impact of the GFC. The AER explained this change in the MRP (and its decision on the equity beta) as follows:<sup>77</sup>

*...the AER has now adopted a market risk premium of 6.5 per cent (whereas, the AER proposed a value of 6 per cent in its explanatory statement) in this final decision, which recognises the **additional uncertainty on a forward looking basis associated with the global financial crisis**. Similarly, the AER has taken a cautious approach to the interpretation of empirical evidence on the equity beta of a benchmark electricity network business by **adopting a [equity beta] value that is above the range indicated by the empirical estimates**. [emphasis added]*

- By 2011-12, the AER, and other regulators such as the ERA in Western Australia, decided to revert to its initial MRP of 6.0%, in recognition that conditions had improved. The AER used an MRP of 6.0% for all the revenue decisions made between 2012 and 2013 (inclusive). The Tribunal confirmed the AER's decision to revert to an MRP of 6% in a number of decisions in 2012.<sup>78</sup> For example, In the Tribunal's decision on the ERA's decision re the MRP for the WA gas transmission pipeline (DBNGP), the Tribunal stated at para 158:

*The fact that the AER in a May 2009 decision on WACC parameters for electricity determined that an MRP of 6.5% was commensurate with conditions in the market at that time...illustrates the great state of uncertainty at that time about the continuing impact of the GFC... That crisis scenario was no longer thought by the ERA to be valid at the time of the Final Decision [of the ERA]. Instead it adopted the reasonable assumption that market risk was in the process of resuming its long-run average value.*

- During the development of the 2013 Guideline, however, the economic and financial conditions became more volatile and there were concerns with, for instance, the impact of the European

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<sup>77</sup> AER, *Final Decision, Electricity transmission and distribution network service providers, Review of the weighted average cost of capital (WACC) parameters*, May 2009, p iii.

<sup>78</sup> See for instance, Australian Competition Tribunal, *Application by DBNGP (WA) Transmission Pty Ltd (no 3)* [2012] ACompT14, paras 139-163. In particular, para 158

debt crisis on economic stability. In its Financial Stability Review (March 2013), the RBA set out a relatively pessimistic description of the state of the business sector in Australia:<sup>79</sup>

*Overall conditions in the business sector have softened over the past six months. Survey measures imply that conditions are now a bit below average in most industries; reported conditions deteriorated sharply in the mining sector following falls in bulk commodity prices through much of 2012... the softening of conditions in the mining sector is likely to have weighed on conditions in related industries. At the same time, the ongoing challenges of a high exchange rate and a return to more traditional borrowing and saving behaviour by householder have weighed on the manufacturing, retail and wholesale trade industries.*

*The softening of conditions is consistent with business profitability moderating over the past year...Market analysts continue to downgrade their earnings expectations for the coming financial year, with these downgrades having been particularly sharp for the mining sector.*

- Since 2013, and particularly since 2016, all the key economic and financial indicators support the view of a stable growing economy, low volatility in the equity markets, expanding profits, reasonable GDP growth and improving employment conditions. In its most recent half yearly Financial Stability Review, the RBA highlighted both the improvement in current conditions and the prospect of sustained improvement in the future.<sup>80</sup>

*Businesses' finances generally remain in good shape, supported by the ongoing improvement in overall economic conditions and low interest rates. Aggregate earnings of listed corporations continued to rise across most industries over the second half of 2017. The gearing ratio of listed corporations remains below its historical average and a market-based measure of default risk indicates that listed companies remain in generally good financial health...The business sector is well placed to service its debt; businesses' debt-servicing ratios declined over the second half of 2017 supported by a pick-up in profits.*

The RBA's reviews in 2013 and 2018 described above, paint very different pictures of the state of the Australian economy and the outcomes for Australian businesses and investors. The AER's 2013 and 2018 guidelines for MRP appropriately respond to these changes in the economy and financial conditions.

- The VIX index for the S&P/ASX200 has also remained at levels below the long-term average, as illustrated in Figure 10 below.
- Table 6 below taken from the RBA's web-site ('F7 Share market') also supports this steady improvement in the share market prices with stable dividend yields and price/earnings ratios over the last three years.

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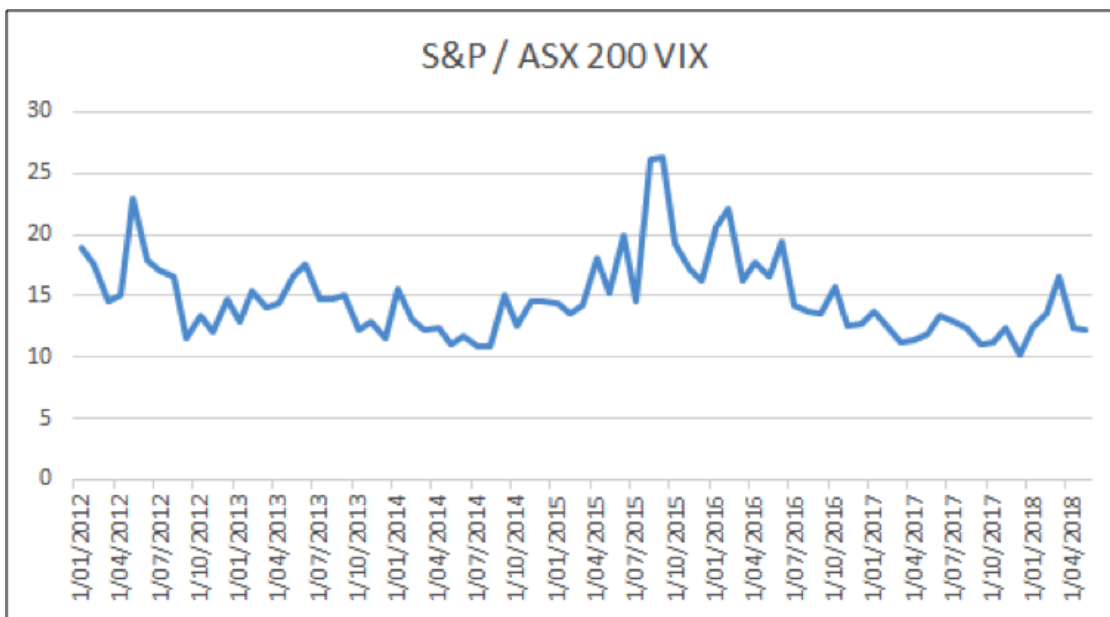
<sup>79</sup> RBA, *Financial Stability Review*, Business and Household Balance Sheets, March 2013.  
<https://www.rba.gov.au/publications/fsr/2013/mar/bus-house-bal-sheet.html>

<sup>80</sup> RBA, *Financial Stability Review*, Household and Business Finances, April 2018.  
<https://www.rba.gov.au/publications/fsr/2018/apr/household-business-finances.html>

CCP16 contends that the AER’s ‘default’ position is for an MRP of 6%. Increases above this to 6.5% have been made in response to specific economic and financial circumstances. The adoption of an MRP of 6.0% in the 2018 Draft Guideline is a reversion to the default position, a reversion that is clearly warranted by the substantial improvements in the economic and financial outlook since 2012-13.

This improved outlook is illustrated in Figure 10 and Table 6 below. The AER has therefore clearly made this decision in line with its well-established approach to assessing the MRP.

**Figure 10: ASX 200 Volatility Index (VIX) January 2012 – May 2018**



Source: <https://www.asx.com.au/products/sp-asx200-vix-index.htm>. Accessed 20 September 2018. The chart measures the VIX up to May 2018. The ASX will update the chart in early October 2018.

**Table 6: Trends in S&P/ASX 200: Share index, dividend yield and price earnings ratio from June 2012 to August 2018**

<b>F.7 Share Market</b>										
	Share price indices			S&P/ASX 200 31 December 1979 = 500	S&P/ASX 200 31 December 1979 = 1 000	Dividend yield per cent per annum	Price/ Earnings ratio	Market capitalisation of listed domestic equities \$m	Average daily turnover of equities \$m	
	S&P/ASX 200 05/07/02 = 3215	S&P/ASX 200 05/07/02 = 3215	S&P/ASX 200 05/07/02 = 3215							
	Banks	Industrials	Resources							
<b>2012 Jun</b>	3 849	3 487	7 877	4 095	31 905	4.80	11.8	1 185 936	4 293	
<b>2013 Jun</b>	5 046	4 405	7 143	4 803	39 163	4.30	14.0	1 347 186	4 948	
<b>2014 Jun</b>	5 855	4 929	8 156	5 396	45 991	4.13	14.5	1 551 594	4 351	
<b>2014/15</b>										
Jun	5 863	5 243	6 539	5 459	48 602	4.43	15.9	1 611 911	4 863	
<b>2015/16</b>										
Jul	6 117	5 535	6 426	5 699	50 742	4.25	15.5	1 685 726	4 099	
Aug	5 349	5 052	5 903	5 207	46 788	4.86	14.5	1 559 654	5 498	
Sep	5 148	4 927	5 333	5 022	45 405	5.00	14.6	1 517 916	5 048	
Oct	5 345	5 131	5 628	5 239	47 387	4.81	15.4	1 596 640	4 333	
Nov	5 416	5 149	4 960	5 167	47 063	4.89	15.1	1 583 106	4 724	
Dec	5 681	5 314	4 851	5 296	48 346	4.79	15.5	1 628 560	4 357	
Jan	5 163	5 050	4 404	5 006	45 698	5.06	14.9	1 546 207	4 293	
Feb	4 693	4 866	4 682	4 881	44 893	4.94	15.0	1 506 449	5 102	
Mar	4 997	5 056	4 951	5 083	47 019	4.87	15.2	1 570 961	5 011	
Apr	5 070	5 133	5 714	5 252	48 602	4.51	15.8	1 622 881	4 466	
May	5 201	5 324	5 409	5 379	50 101	4.46	16.0	1 661 015	5 038	
Jun	4 940	5 141	5 520	5 233	48 872	4.59	15.3	1 619 670	4 825	
<b>2016/17</b>										
Jul	5 192	5 462	5 879	5 562	51 946	4.31	16.5	1 727 551	4 393	
Aug	5 072	5 312	5 892	5 433	51 139	4.25	16.6	1 691 354	4 738	
Sep	5 133	5 267	6 200	5 436	51 386	4.27	16.0	1 695 838	4 942	
Oct	5 209	5 120	6 274	5 318	50 282	4.41	15.9	1 663 974	4 412	
Nov	5 429	5 227	6 490	5 440	51 784	4.29	15.6	1 693 589	5 267	
Dec	5 720	5 447	6 739	5 666	54 050	4.13	15.8	1 760 162	4 811	
Jan	5 608	5 341	7 086	5 621	53 623	4.17	15.7	1 750 141	4 194	
Feb	5 821	5 486	6 828	5 712	54 830	4.23	15.9	1 776 883	5 274	
Mar	6 049	5 669	6 781	5 865	56 653	4.11	15.7	1 820 555	5 028	
Apr	6 145	5 753	6 673	5 924	57 239	4.07	15.7	1 835 648	4 801	
May	5 439	5 512	6 753	5 725	55 662	4.20	15.5	1 774 206	5 403	
Jun	5 521	5 530	6 611	5 721	55 759	4.20	15.5	1 776 745	5 681	
<b>2017/18</b>										
Jul	5 647	5 478	6 943	5 721	55 753	4.20	15.7	1 785 987	4 558	
Aug	5 455	5 417	7 288	5 715	56 147	4.35	15.6	1 789 972	4 897	
Sep	5 527	5 408	7 105	5 682	56 138	4.37	15.4	1 788 393	4 467	
Oct	5 684	5 618	7 432	5 909	58 392	4.20	15.9	1 862 268	4 184	
Nov	5 500	5 652	7 658	5 970	59 351	4.14	16.0	1 893 560	5 090	
Dec	5 524	5 673	8 208	6 065	60 426	4.08	16.2	1 932 190	4 826	
Jan	5 449	5 631	8 274	6 038	60 155	4.11	15.9	1 932 212	4 113	
Feb	5 434	5 620	8 189	6 016	60 369	4.20	15.5	1 919 275	5 750	
Mar	5 087	5 400	7 720	5 759	58 093	4.35	15.0	1 847 785	5 197	
Apr	5 093	5 536	8 474	5 983	60 362	4.19	15.1	1 910 308	4 536	
May	4 938	5 533	8 695	6 012	61 021	4.19	15.3	1 926 759	5 313	
Jun	5 149	5 698	8 982	6 195	63 015	4.02	15.7	1 956 638	5 597	
<b>2018/19</b>										
Jul	5 286	5 795	8 994	6 280	63 890	3.98	15.7	1 989 148	4 642	
Aug	5 173	5 915	8 534	6 319	64 796	4.06	15.8	..	..	

Sources: ASX; Bloomberg; RBA; Thomson Reuters

Source: See RBA, Statistical Tables, no F7 at

<https://www.rba.gov.au/statistics/tables/pdf/f07.pdf?v=2018-09-25-01-40-32>. Accessed 20 September 2018

### 7.3.5. The Independent Panel's comments on the 2018 MRP

The Independent Panel states that the AER's 2018 Explanatory Statement has "adequately considered available information relevant to estimating the MRP"; "the road to the 6 per cent MRP estimate is clear and simple". Importantly, the Panel's report concludes that:

*The Explanatory Statement makes clear what data and logic it finds helpful. Data and logic that receive lesser or no weight are also clearly identified. However, the Panel has identified several issues that deserve clearer explanation.*

The issues identified by the Panel which it suggests the AER should address in its final 2018 Explanatory Statement, include:

- A lack of clarity in the AER’s explanation of why arithmetic averages are appropriate for setting allowed regulatory returns, nor does the AER explain what specific information provided by the geometric average was used in making the 6% MRP estimate.<sup>81</sup>
- The need for further explanation (or referencing), the method used by the AER to adjust historical returns for imputation credits (specifically, the value of theta).<sup>82</sup>
- The AER should check the reasonableness of its proposed market risk by examining historical averages of market risk premia in other developed countries.<sup>83</sup>
- While the AER’s current caution with the weight to be placed on the DGM outputs is clearly explained, the AER should delete its discussion on dividend reinvestment plans as ‘DGMs assume only dividends are received’.<sup>84</sup>
- While the AER explains clearly why the Wright approach should not be used to estimate the MRP, the AER should clarify its discussion on any possible correlation between the market risk premium and the level of risk-free interest rates.<sup>85</sup>
- The AER should identify the evidence that it relies on in terms of links between reduced debt risk premiums and a lower market risk premium.<sup>86</sup>

CCP16 considers that the recommendations of the Independent Panel are a useful addition to the ongoing assessment of the MRP. We expect that the Final 2018 Explanatory Statement will address these matters and that in doing so, the AER will clarify its reasoning and promote greater confidence among all stakeholders in the AER’s decision making.

Such further explanations may also address the criticisms raised in August by the NSG and the ENA that the AER has not properly considered the views of the expert panels, particularly around the role/weighting of the DGM. However, while the recommendations will enhance the Guideline, in our view, the Panel’s recommendations do not challenge the fundamental basis of the AER’s decision on the MRP.

### 7.3.6. Conclusions on the Draft Guideline MRP

CCP16 supports the AER’s decision to adopt an MRP of 6%. We consider that the AER has systematically and transparently examined the views submitted by all stakeholders, including the experts at the concurrent evidence sessions but also the many other stakeholders. In doing so, the AER has arrived at a balanced view on the expectations for long-term returns on equity investments in the Australian equity market.

CCP16 agrees with the AER that there are significant concerns with the DGM model as currently applied. Therefore, while the AER has considered in some detail the robustness and relevance of the DGM, we agree with the AER that the DGM (as currently specified), is not suitable for influencing the

<sup>81</sup> Independent Panel Report, op cit, 7 September 2018, pp 33-34.

<sup>82</sup> Ibid, p 34.

<sup>83</sup> Ibid, p. 35.

<sup>84</sup> Ibid, p. 35.

<sup>85</sup> Ibid, p. 36.

<sup>86</sup> Ibid.



AER's choice of a point estimate within the range of MRP values defined by the historical data analysis.

CCP16 would, however, like to see the AER conduct further analysis of the use of geometric and arithmetic averages. In our view, Dimson et al have demonstrated that where there is volatility in the annual excess returns year on year, the arithmetic average of historical excess returns will always result in an upward bias in the estimation of the MRP.

We also note that the Independent Panel has suggested the AER expand on its assessment of these two approaches to interpreting historical excess returns. However, we do not accept the argument put by the networks and their consultants that the geometric average should not be considered because the PTRM is a model of annual revenues and returns. This is a narrow technical argument that belies the actual behaviour of investors, and contradicts the emphasis placed in the annual reports and investor presentations on cumulative equity return growth measures such as the CAGR.

Finally, CCP16 has highlighted the extensive range of market information that individually and collectively illustrates the significant improvements in the economic outlook and business conditions since 2012/13 when the current 2013 Guideline was being prepared. The higher MRP of 6.5% set in 2013 Guideline has contributed to a period of excess margins in terms of equity over debt that are inconsistent with the relative risks of equity and debt in the current climate. The decrease in the MRP to 6.0% is a sensible reflection of these changes, and arguably, should have been pursued more vigorously in the AER's recent revenue decisions.

## 7.4. Assessment of the equity beta

### 7.4.1. Overview

The AER states that based on the empirical evidence, it has selected a point estimate for the equity beta of 0.6 from a range of 0.4 to 0.8. The AER has in effect adopted the mid-point of the observed range, although not the average or the median. CCP16 supports this change to the equity beta in the Guideline while noting that it is still at the upper end of most of the empirical studies.

The AER's decision to include an equity beta of 0.6 in the 2018 Guideline, therefore, represents an important improvement to the AER's approach. This is because the AER is now selecting an equity beta that is around the mid-point of the observed range.

In the 2013 Guideline, the observed range from the empirical analysis was very similar to the updated assessments of the empirical data (i.e. 0.4 to 0.8). However, the AER selected an equity beta of 0.7 towards the top of the range, noting among other things that this was required to account for 'market imperfections' and also justified by reference to the Black CAPM 'zero beta premium' theory<sup>87</sup>. The AER's advisors, the CCP and other stakeholders were critical of this decision. As discussed in a later section of this submission, the Independent Panel was also concerned with the

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<sup>87</sup> The Black CAPM predicts a slope of estimated returns that can be flatter than the slope of the SLCAPM formula. Low beta stocks would therefore have a higher beta than they would under the SLCAPM. The 'low beta bias' in effect comes to a similar conclusion but is based on ex post observations of returns for low beta stocks rather than a theoretical construct about the relationship between returns and beta.

AER's views (both in 2013 and 2018) on what they call the 'Black model' which they considered had 'nothing to do with equity beta'.

For these reasons, CCP16 is pleased that the AER has modified its view on the use of the Black CAPM to select a point estimate. The AER's Draft Guideline decision of 0.6 is much closer to the empirical evidence. We also note that the multiple analyses conducted since 2009 by the AER and its consultant, Professor O. Henry, have all produced remarkably consistent results for the equity beta estimate. That is, each of the studies suggests an empirical re-levered equity beta in the range of 0.4 to 0.8 for the regulated gas and electricity networks, with an average equity beta of between 0.5 and 0.6. This consistency is observed despite the changing structure of the industry and in the face of changing economic conditions.

CCP16 believes that these consistent findings should give confidence to the AER that despite various data issues and the declining parameter set (discussed below), the Draft Guideline equity beta estimate of 0.6 is realistic and robust.

Some networks and their consultants claim that the equity beta is increasing. However, these studies rely on analysing a shorter estimation period, i.e. five years of observations.<sup>88</sup> CCP16 agrees with the AER that these studies do not (yet) demonstrate a fundamental change in investors' long-term perceptions of systematic risk. Nor is there a coherent explanation provided about why these perceptions would change since 2013 when, if anything, the regulatory arrangements provide greater certainty in cash flows, not less.

The introduction of the revenue cap and the annually updated trailing average for debt since 2013 have been two areas where the networks agree have reduced financing risk.

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<sup>88</sup> In some instances, these 5-year analyses are presented in the form of rolling 5-year averages and therefore do cover a longer estimation period. However, each estimate is based on the average for that 5-year period, so again limits the statistical reliability of the findings of any trend in the data.

While CCP16 agrees with the AER's proposed benchmark equity beta of 0.6 as representing a reasonable reflection of the empirical data, we also highlight the growing challenge of estimating the equity beta as the existing comparator set decreases. It is likely that by the end of 2018, the AER will only have two relevant ASX listed network companies, due to consolidation of the market and shifts to greater overseas ownership. In our May 2018 submission to the AER we identified this issue and suggested to the AER that it consider using indices such as the *Bloomberg Utility Index*. We are more cautious, however, about the value of international estimates as a guide to the systematic risks facing a regulated network in Australia.

The Independent Panel has generally supported the AER's decision and noted the AER's extensive review of the relevant material that has been submitted to it. However, the Panel has raised issues for clarification. CCP16 supports the AER further explaining its decisions on these matters, which include a request for the AER to clarify its views on:

- The difference between business and financial risk including clarification of the relationship between financial risk, gearing and the systematic risk captured by the equity beta.
- The treatment of the Black CAPM and the low beta bias; the Panel considers the AER should not use the Black CAPM or the low beta bias to adjust the equity beta.
- The AER's focus on stability and predictability to limit the adjustment of beta.

While we support the AER including further explanation of these issues, CCP16 is not convinced that this will make much difference to the final equity beta decision of 0.6, or to the estimate of the overall return on equity. If it does affect beta, we estimate it will be to reduce the estimate of equity beta for the BEE from 0.6 to around 0.55. The AER will also need to be careful that any changes do not lead the AER to change its foundation model approach in this 2018 Guideline.

#### 7.4.2. CCP's May 2018 submission to the AER on equity beta

CCP16 has written very extensively on the measurement of the equity beta in all its submissions on the 2018 Guideline review. We refer the AER to these submissions in the first instance, as having reviewed the Draft Guideline and associated papers, we have not changed our views on the important issues relating to the assessment of the equity beta. A summary of the key points in our most recent submission in May 2018 is provided below:<sup>89</sup>

- The majority of the empirical estimates of the equity beta for both individual and portfolio networks sits around a median value of 0.5 to 0.6 using the AER's analysis, and the *Bloomberg Utility Index*.
- The networks' consultants claim that there has been an upward movement in beta, but their analyses was based on a very small sample of firms and were conducted over too short a period to represent long-term trends. The AER's 2017 analysis showed no such consistent trend.
- Individual firms in the current comparator set have a large proportion of unregulated energy assets, particularly APA, and the unregulated asset share has grown significantly over the five year period.
- Expanding the comparator set to include international data and/or Australian 'infrastructure stocks' does not provide a better estimate of the equity beta for the benchmark firm.

<sup>89</sup> CCP16, *Submission to the AER*, op cit., May 2018

- Technology risks are in large part a market wide issue, affecting almost all industries, and therefore should not be regarded as an industry specific systematic risk. Moreover, technology offers many benefits to improved performance and efficiency.
- The benefits of the de-levering and re-levering of the individual firms gearing ratios to the benchmark 60% may not offset the risks of such adjustments to the 'real' data, particularly given there is little evidence that it effects the networks credit rating (within a reasonable range).
- The Black CAPM/low beta bias is not an unbiased estimate of ex-ante market expectations and there is significant variability in the zero beta estimates for the Black CAPM. The models are therefore not suitable for estimating ex-ante, the equity beta or for making an 'adjustment' to the empirical beta.

CCP16 concluded that the AER should select an equity beta below the existing beta of 0.7. It should take account of the substantial empirical evidence accumulated over some 8 to 10 years, that the equity beta for the regulated networks sits between 0.5 and 0.6.

In coming to this conclusion, we noted that there has been a significant shift in the balance between the risks to investors of an inadequate return on investment (compared to current returns) and the risks to consumers of higher prices resulting from a ROE that is higher than necessary to attract investment. Network prices have risen, while energy market growth has stalled and asset redundancy increased. It is more appropriate in these circumstances for the AER to adopt a more balanced view each on the ROE parameters.

Finally, CCP16 expressed its concerns about the decline in the number of relevant ASX listed networks to assess the benchmark equity beta for an efficient network. We recommended that the the AER should investigate the potential for other indices to contribute to its selection of an efficient equity beta, such as the Bloomberg Utility index.

The remaining discussion in this section will concentrate on the following issues:

- The selection of a comparator set;
- The length of the estimation period;
- The Black CAPM and low-beta bias; and
- The review of the AER's decision by the Independent Panel.

### **7.4.3. The selection of a comparator set**

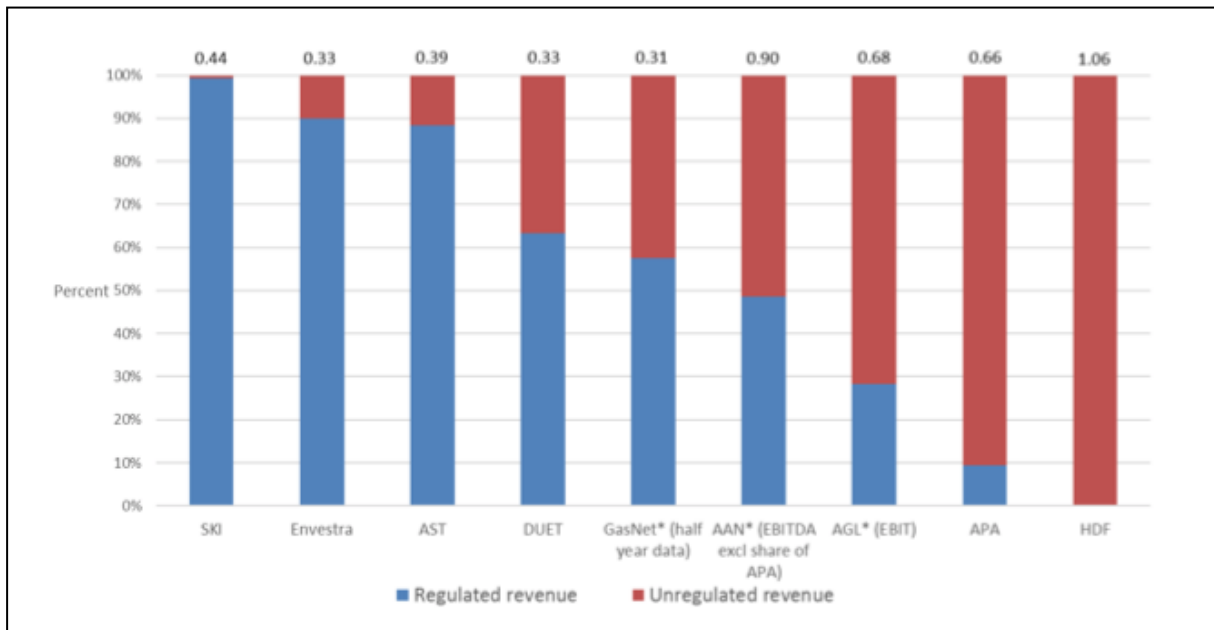
The AER's initial studies of equity beta included nine listed businesses that provided regulated energy network services (to varying degrees). Since then there has been a process of consolidation of ownership, and restructuring of businesses.

As at 2018, there are only three listed energy companies with regulated network assets, and of these three firms, one network (APA) has experienced significant growth in its unregulated business such that less than 10% of its current revenue now comes from the regulated market. The remaining two firms (SKI and AST), however, receive most of their revenue from regulated assets.

Figure 11 below from the AER's Draft Explanatory Statement clearly illustrates this dilemma that will face the AER. The chart demonstrates that APA has much the highest proportion of unregulated revenue and has the highest beta of the three remaining listed networks. APA is also significantly

larger by market capital than AST and SKI combined. APA's equity beta is, therefore, likely to dominate the calculation of the industry benchmark (assuming a value based portfolio calculation).<sup>90</sup>

**Figure 11: Regulated revenue and beta estimates**



Source: AER, *Explanatory Statement, Draft Rate of Return Guidelines*, July 2018, Figure 1, p 36. The AER states that the division between regulated and unregulated is based on the most recent publicly available information. For example, the most recent publicly available information for AGL and AAN, is 2006.

A further concern is that CKI, a company not listed on the Australian stock exchange, is looking to purchase most of the assets of APA<sup>91</sup> – and then there were two!

The smaller number of firms also impacts on the statistical reliability of the regression analyses and events in the individual firms will have significant effects on the estimated average beta for the BEE. The sections below will consider some of the options that the AER has for expanding the reliability and validity of its equity beta measures.

Overall, CCP16 agrees with the AER's approach of considering a variety of sampling periods and estimation techniques to estimate equity betas. However, the final assessment of the results of these different techniques should not blind the AER to the characteristics and limitations of each of these techniques.

Our overall conclusion agrees with the AER's position. That is, the most relevant analyses are those based on weekly data from the longest possible estimation period term and including only energy network firms listed on the Australian ASX. However, we have some preference for focusing on only those firms that have been listed up to around 2015-16. These issues are considered further below.

<sup>90</sup> As at mid-September 2018, the market cap values reported by the ASX for APA, AST and SKI were \$11.6, \$5.8 and \$3.8 billion respectively.

<sup>91</sup> CKI, a company based in Hong Kong and not listed on the ASX, has made an offer to APA that has been accepted by the APA Board and approved by the ACCC (subject to conditions) and is now awaiting FIRB approval.

#### 7.4.4. Empirical studies and comparison firms for the Benchmark Efficient Entity (BEE)

Ideally, the empirical equity beta of the BEE should be determined using a reasonably sized sample of firms whose structure and function closely resemble the characteristics of the BEE. However, by 2018 only two firms come close to the characteristics of the BEE, namely SKI and AST. A third firm, APA, now has a significant proportion of its revenue (around 90%) from unregulated pipeline and other services, fundamentally altering its risk profile compared to the BEE.

The declining numbers of comparator firms, and the changing characteristics of some of these remaining listed firms such as APA, pose a challenge for the AER in updating the equity beta studies. The following options have been considered as part of the current update of the equity beta analysis.

- maintain the existing comparator set that includes companies that no longer exist or are substantially changed, or use a subset of the existing set;
- expand the comparison set to include other regulated utilities such as water utilities, airports etc.;
- expand the comparison set to include international data; and
- investigate the option to use a third party index, such as the Bloomberg *Utilities* Index.

CCP16 has commented on most of these options in our previous submissions to the AER. As we consider our previous comments are still valid, we will not repeat all the detail in this submission but do provide a briefer commentary below on each of these matters. In addition, we will discuss two interrelated methodological issues:

- What is the preferred length of the estimation period for estimating a long-term (10-year beta)?
- What is the preferred sampling frequency (daily, weekly or monthly data), particularly given the small size of the comparator set?

Above all, the issues identified about the comparator set reinforce the importance of a sound conceptual framework and understanding of the detail of the companies involved. For example, as illustrated above, it is important to understand the structure and changes to APA that have occurred over the last five years, particularly given APA's size and influence over the outputs of the regression analyses (particularly analyses that use value based weightings of the data).

To illustrate this point further, CCP16 points to the weaknesses in the recent empirical studies presented by the networks; weaknesses that undermine the studies' conclusions that the equity beta has increased in the last five years and that the AER should, therefore, increase the empirical beta that is derived from the longer period analysis.

Aside from the issue of a limited estimation period (discussed below), the studies fail to provide an explanation for the relatively rapid change commencing around 2014-2015<sup>92</sup> of the equity beta, when it has previously been a very stable parameter across all the multiple empirical studies.

This 'increase' in the equity beta cannot readily be explained by reference to the theory of the equity beta, changes in systematic risk, changes in gearing, a more hostile regulatory environment or worsening economic conditions. Absent such explanations, it is impossible to determine if these results represent a long-term shift in equity beta for a BEE, structural changes in the comparator set, cyclical conditions that will revert over time, or merely a statistical 'blip'. The AER is correct

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<sup>92</sup> See for instance, Frontier Economics, *Report for APA VTS: Rate of Return parameters update*, 16 August 2017

therefore in placing limited emphasis on these findings in determining a long-term average equity beta value for the regulatory SLCAPM.

**The AER’s analysis of equity beta based on Australian listed firms**

The original 2009 and 2014 studies referred to in the 2013 Guideline included a set of 9 listed companies with energy infrastructure, using data from 1992 to 2013 (for the 2014 study). The studies supported an equity beta range of 0.4 to 0.7, although there were significant outlier firms.

The AER repeated the study using the same methodologies and the same sample of firms in 2017, and using the ‘longest possible data set’ as the majority of these firms have been de-listed or no longer operated network assets (e.g. AGL no longer holds network assets). The AER concluded that the results continued to support a range of 0.4 to 0.7 despite the changes in the market.

In March 2018, the AER updated the 2017 study. The AER reports that, based on what it considers the ‘most useful’ empirical estimates, the results showed that re-levered individual firm estimates (averaged across firms) range from 0.57 to 0.70, and the re-levered fixed weight portfolio estimates range from 0.43 to 0.85.<sup>93</sup> See also Figure 11 above.

Table 7 below summarises the AER’s 2018 empirical analysis using the AER’s preferred methodology of weekly sampling and ordinary least squares regression (OLS). The results are presented in terms of the estimation period used and the comparator set.

**Table 7: Comparisons of estimates for entire comparator set to listed comparators (OLS weekly)**

	Whole comparator set	Still listed firms (APA, SKI, AST)	Still listed majority regulated firms (SKI, AST)
<i>Average of firm level estimates</i>			
Longest	0.57	0.50	0.41
Post tech boom & excl. GFC	0.61	0.59	0.52
Recent 5 years	0.70	0.80	0.68
<i>Fixed weight portfolio estimates</i>			
Longest	0.43–0.66	0.52–0.54	0.42–0.43
Post tech boom & excl. GFC	0.50–0.67	0.63–0.66	0.52–0.53
Recent 5 years	0.53–0.85	0.79–0.85	0.68–0.7
Source: AER analysis, Bloomberg			

Source: AER, *Explanatory Statement, Draft Rate of Return Guideline*, Table 32, p 257.

Table 7 does not provide the standard errors of the estimates. However, it does confirm that:

- The “still listed majority regulated” firms (SKI and AST) for the two longer estimation periods have an average equity beta below the “whole comparator” set and the “still listed” firms

<sup>93</sup> The details of the AER’s preferred methodologies are set out in AER, 2018 *Draft Explanatory Statement*, op.cit, pp 250-251.

indicating that equity betas based on analysis of the whole comparator set, or the still listed set, are likely to overestimate the equity beta of the BEE.

- The “still listed majority regulated” firms (SKI and AST) have an equity beta for all estimation periods below the set that includes APA, indicating the importance of understanding the structure and business of the comparator firms.
- Taken as a whole, the AER’s updated analysis confirms that the use of an equity beta of 0.7 (as per the current Guideline) will overestimate the equity beta of a BEE.

Having considered the information in Table 7 above, the expanded results from using both OLS and LAD (least absolute deviation) regression forms, and the weekly and monthly sampling data, the AER concluded as follows:<sup>9495</sup>

*Given concerns with the number of comparators firms in section 8.3.3, we have maintained the use of our comparator set. **However, we have regard to the above information [on the still listed majority regulated firms]** when selecting a range and point estimate...[emphasis added]*

CCP16 agrees with the AER’s conclusions. In particular, we consider that, as the AER suggests in the quote above, it must have regard to the results for the two “still listed, majority regulated” firms, as they are the only firms that approach the conceptual definition of the BEE on which the regulated rate of return is based. However, CCP16 suggests that the AER should have more regard than it has in practice to these latter results, particularly as the findings have been relatively consistent over time.

The potential difficulties with including de-listed firms are touched on briefly below.

#### *The use of de-listed firms in the comparison set*

CCP16 agrees with the AER that it is reasonable to include de-listed firms in the comparator set, particularly given the small size of the remaining set. However we would also recommend removing firms that were de-listed before 2014-15 in any future analyses, and we would encourage the AER to place more weight on its analysis of the remaining two majority regulated listed firms in their evaluation of a point estimate within the empirical range, as noted above.

Having said that, CCP16 recognises that in the current analyses of equity beta, it is important to analyse the largest set of reasonable comparators and include the longest possible estimation period, while understanding the limitations of using de-listed firms.

CCP16 agrees with Partington and Satchell that at this time the benefits of using de-listed data outweigh the risks because the equity beta has been stable through time,<sup>96</sup> and therefore the information from de-listed firms will add more ‘data points’, while still being more relevant to estimating the equity beta for the BEE than international energy firms and other Australian infrastructure firms, as discussed below.

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<sup>94</sup> Ibid, p 258

<sup>95</sup> The AER summarises the results of the broader analysis in Ibid, p 258. In particular, the AER states that the average equity beta estimates for SKI and AST is 0.54 across all periods; the average firm estimates for the longest estimation period (which the AER gives most weight to) is 0.41 and average portfolio estimate is 0.42; and the average of portfolio estimates and averaged firm estimates is 0.54.

<sup>96</sup> Ibid, p 271, and Partington G and Satchell S, “Report to the AER: Allowed rate of return 2018 guideline review”, 25 May 2018, p 25.



*Maximising the number of data points.*

CCP16 supports the AER's view that the preferred model is to use the longest possible estimation period, sampled on a weekly basis. This approach will maximise the data points available for the regression analysis. It will also mean that the period of the analysis more closely corresponds to the long-term horizon on which the AER's SLCAPM is based.

However, we recognise that it is useful to look at shorter periods, and to examine daily and monthly sampling periods to the extent that this latter analysis are a check only on the preferred model. In particular, daily sampling may increase the volatility of the data and the standard errors while monthly sampling will reduce the number of data points.

Further assessment of the preferred estimation period is addressed in section 7.4.5 below.

**Options to expand the comparator data set**

The analyses of the empirical equity betas summarised above, indicate that while on average the equity beta is relatively stable, the observed equity beta at an industry level can be quite sensitive to changes in individual firms relative to the BEE, particularly when the sample is very small.

This outcome suggests that the AER should be very cautious about expanding the data set to include international data and/or other regulated industries in Australia. On the other hand, expanding the data set would minimise the impact of single firms and overall, reduce the standard error of the estimate.

CCP16 concludes, however, that the extension of the comparator data set to infrastructure firms and/or international energy network firms is not appropriate in the current review. The task of collecting and validating each firm included in the data set is very significant and will raise many issues about the validity of the data and the firms that are finally included.

However, there may be some value in considering the observed betas for international firms and the assessments of this data by other regulators. For instance, the New Zealand Commerce Commission has considered international data in its assessment of the equity beta but only after extensive analysis of what selection criteria should apply and which firms should be included.<sup>97</sup> It may be useful in the future for the AER to consider whether this approach is applicable to the Australian regulatory context. If the AER were to move to an international CAPM, for instance (and there is some case for doing that in the future), then international data would be more relevant.

For the current 2018 Guideline, CCP16 considers that there might be some value for the AER using the international betas as a cross-check, although this would have to be carefully qualified by the AER. However, CCP16 does not support the inclusion of equity betas for Australian listed infrastructure firms in the comparator set, or as a cross-check. Our reasons are set out below.

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<sup>97</sup> See, New Zealand Commerce Commission, *Input methodologies review decisions, Topic paper 4: Cost of capital issues, Public version*, 20 December 2016, pp 219-233. The final sample included 74 companies. The NZCC also examined alternative selection methods.

### *Expanding the comparator set using international energy firms*

The AER concluded after further review that international energy firms should not be included in the comparator set. CCP16 supports the AER's reasoning, namely that:<sup>98</sup>

- International energy firms deviate from the BEE, including (inter alia) differences in regulation, the economy, business cycles and geography.
- The AER's foundation model is a domestic CAPM, and it is questionable to use international data for estimating a key parameter in the CAPM.
- Equity beta estimates from international comparators are measured with respect to the market portfolio (MRP) of their home market and therefore, are not appropriate measures of the systematic risk of the BEE relative to the Australian domestic market portfolio.
- The structures of the firms may be different, e.g. the firms may be vertically integrated, or may engage in other activities such as telecommunications.

CCP16 supports the AER's analysis of the limitations of the international data. However, we are not yet convinced by the AER's conclusion that while international estimates of equity beta could not be used to establish a point estimate: "...we consider international comparators can still provide some information on the systematic risk of a firm".<sup>99</sup> Such a statement needs to be more carefully qualified by a clearer explanation of the selection criteria used to select international firms that are reasonably representative of the Australian BEE, including the regulatory framework in which they operate.

It is not sufficient, for instance, to make a claim such as the average US equity beta is 'x' without a clear explanation of what firms constitute that average and what regulatory environment(s) they operate within.

For instance, in a study by Burns for the UK regulators, one of his conclusions was that:<sup>100</sup>

*...the extent to which utilities are low risk with low asset Beta will depend on the form of regulatory control, with low-powered cost-pass through regimes observing asset Betas in the region of 0.2.*

The AER's analysis of betas for international energy firms (using a filtered sample of 56 US energy firms)<sup>101</sup> indicated a very wide range of betas even using the AER's preferred estimation approach of weekly sampling of the longest estimation period using an OLS regression form. Figure 27 in the AER's Draft Explanatory Statement suggested a range of equity betas from over 1.0 to less than 0.5.

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<sup>98</sup> See Ibid, p 268.

<sup>99</sup> Ibid, p 273

<sup>100</sup> Burns, P, "Beta estimates", Appendix F, F-138, in Wright S et al, *Estimating the cost of capital implementation of price controls by UK regulators*. Op cit.

<sup>101</sup> The AER states that it has updated the 2016 analysis by Frontier report, which estimated an equity beta for 56 US-listed energy network companies over a 20-year period from December 1995 to December 2015, and included only firms where at least 50 per cent of the revenue was regulated. See AER, *Draft Explanatory Statement*, July 2018, op cit., p 273, and Frontier, "Estimating the equity beta for the benchmark efficient entity", January 2016. The CCP has written extensively on the limits of Frontier's earlier 2013 study of the beta of US firms and their use in estimating the equity beta for the Australian BEE.

The weekly sampled 5-year estimation period OLS has an even wider range from around 1.3 to -0.25.<sup>102</sup>

The AER observes that: “estimates, across all estimation periods, cluster below 1.0”; and “estimates from the longest period (which we give most weight to when considering the empirical range) cluster below 1.0.”<sup>103</sup> However, CCP16 concludes that this type of observation simply demonstrates what is reasonably obvious in the Australian context at least, that the systematic risk of regulated (or partly regulated) energy network assets is below the market average.

We do not see how the examination of this type of international data, interesting as it may be, adds any significant additional information to the existing information obtained from the limited local data. Partington and Satchell make a similar point in their recent report to the AER. They state:<sup>104</sup>

*...we see considerable difficulties in extending the sample of firms by using overseas comparators and were this to be done it is not clear what is to be concluded.*

Partington and Satchell’s report goes on to note that in recent UK regulatory deliberations, the estimate of the betas of electricity transmission networks in the UK was 0.5, compared to the studies by Gray et al of USA firms (see above) where the empirical betas were much higher than the AER’s estimate. The report then raises the important (albeit rhetorical) question:<sup>105</sup>

*Does this suggest that the AER’s estimate should be moved up or down? It seems very likely that the answer will depend upon whether it comes from a regulated business or a consumer group.*

However, it is important that the AER continue to examine international information and how, with appropriate qualifications, this data might inform future decisions on the equity beta.

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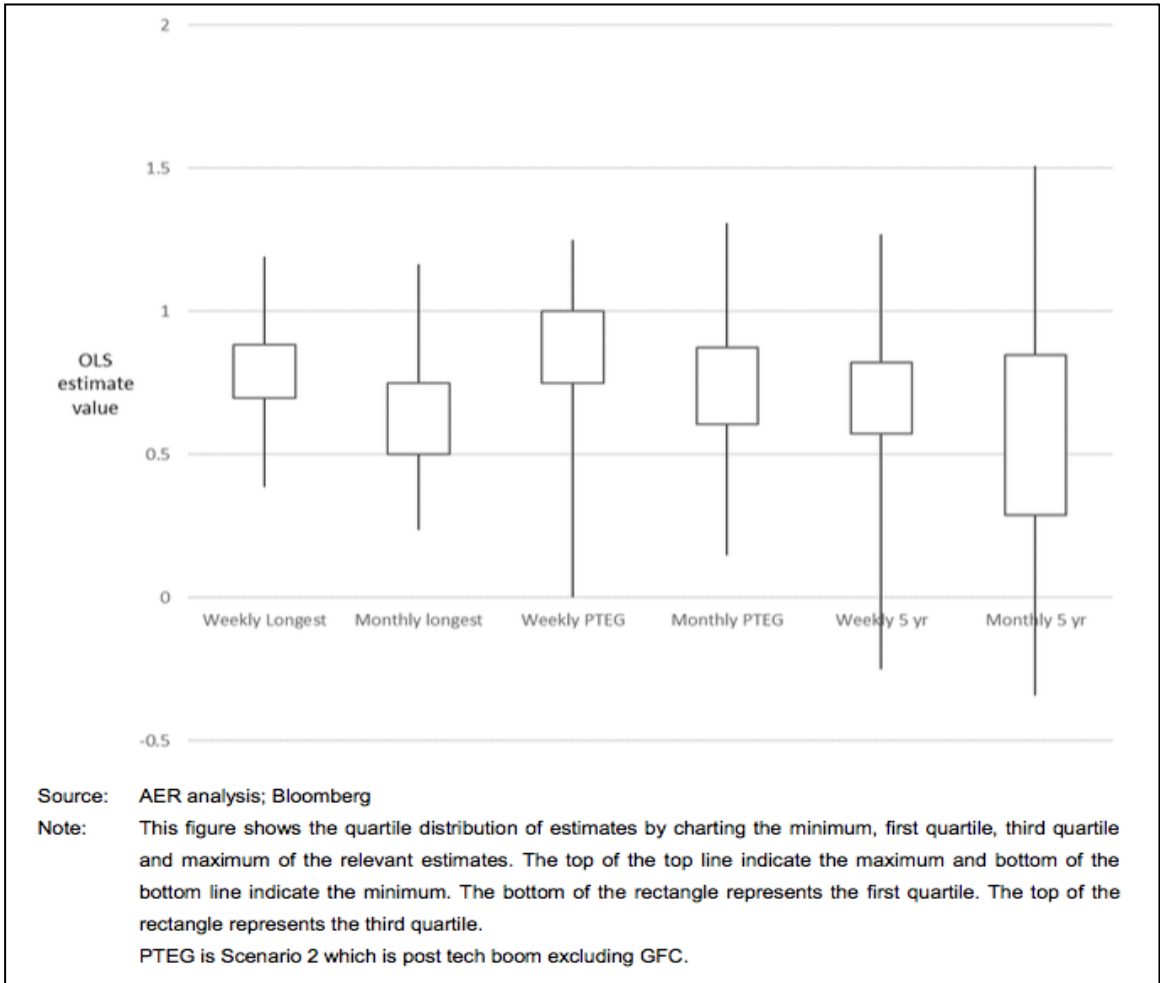
<sup>102</sup> Ibid,

<sup>103</sup> AER, *Draft Explanatory Statement*, July 2018, op cit., p 273.

<sup>104</sup> Partington and Satchell, “Report to the AER: Allowed rate of return 2018 guideline review, 25 May 2018, p.24.

<sup>105</sup> Ibid. Note, CCP16 has not confirmed if the UK figure was re-levered and if so, on the basis of what assumptions about gearing.

**Figure 12: AER’s summary of international estimates**



Source: AER, *Explanatory Statement, Draft Rate of Return Guideline*, Figure 27, p 274.

*Expanding the comparator set using other Australian infrastructure firms*

The AER concludes that Australian infrastructure firms are not representative of the risks associated with the BEE and should not be used to expand the comparator set used to estimate the equity beta of the BEE.

CCP16 has indicated in our previous submissions that we agree with the AER’s position and we continue to see little value in expanding the comparator set with these firms. Nor can we see a clear way of ‘filtering’ these firms as suggested for the international comparators.

Our view was supported by the representative of the investors attending the concurrent evidence sessions who was of the view that it would be quite dangerous to look at other Australian infrastructure firms because (for instance) of differences in funding arrangements and private ownership. Even water utilities may be of limited value because they are largely held by local and state governments and it is not clear how to interpret systematic risk in this context.

**7.4.5. Selecting the estimation period for the equity beta analysis**

The AER’s analyses examined three estimation periods, the ‘longest period’ (for which data is available), ‘post 2000, excluding the GFC’, and the ‘last 5 years’. CCP16 does not consider the second

estimation period (post 2000, excluding the GFC) as particularly relevant as the analysis of the long-term 10 year beta is best estimated without excluding particular periods of time that are more volatile than others.

The choice is therefore between placing most weight on the longest period, or on the more recent period five-year period. This is an important decision given the view that the more recent years have suggested an increase in the empirical equity beta that should be relevant to the AER's assessment of the beta for the BEE.

In part, this is an issue between obtaining more observations and using data more relevant to the current period. However, CCP16 considers the issue goes further than this simple trade-off. That is, we have strong conceptual reservations, about the relevance of equity betas derived from the analysis of 5 years of data, particularly in the context of the AER's rate of return framework.

We have previously discussed the lack of any explanation for a change in the systematic risk of the businesses that would be relevant to the assessment of the equity beta for the BEE and to identifying any changes in the equity beta over time.

Our concerns also relate to determining a range, a point estimate, and any 'trend' or long-term shift in the value of equity beta as suggested, for instance, by Frontier.<sup>106</sup> Frontier prepared the following chart on equity betas using a rolling 5-year beta. Frontier then suggested that the estimates for beta have "increased significantly" since the time of the Guideline.<sup>107</sup>

However, as the AER states:<sup>108</sup>

*...longer-term data is less vulnerable to interest rate movements, market volatility and one-off events which may unduly affect the 'true' beta of supplying regulated energy services.*

This was recognised also by Frontier in their analyses referred to above. Frontier indicated that the use of the 10-year estimation period was generally preferable to shorter periods. However, the 5-year analysis has been used as evidence that the equity beta is increasing and, therefore, the AER should continue to select the highest values in the empirical range – or above that in some instance.

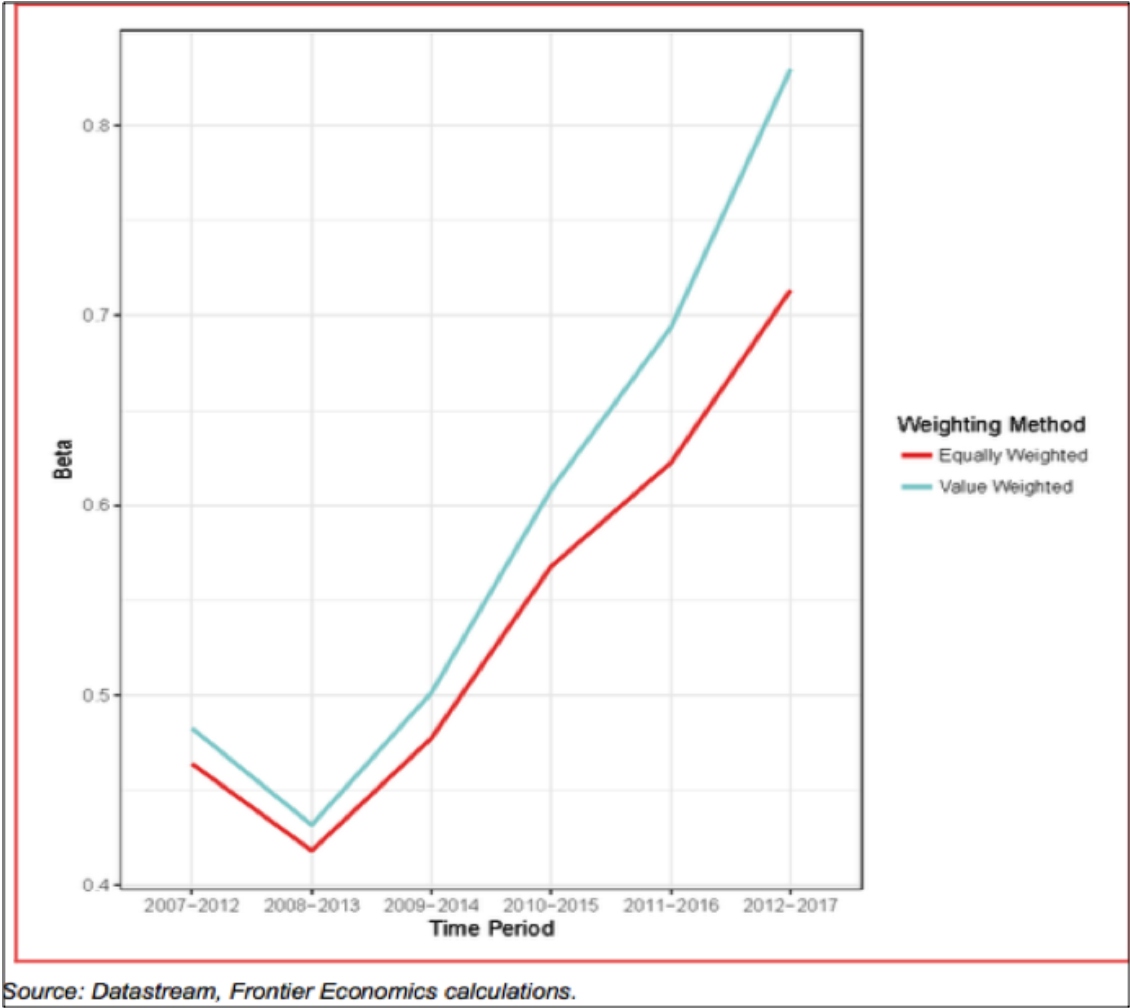
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<sup>106</sup> See Frontier, "Estimation of certain aspects of the allowed rate of return", April, 2018. Frontier conducted a similar study for APA VTS as part of APA VTS's revenue proposal (November 2017). Frontier also calculated 10-year weekly firm and portfolio equity beta estimates, with an equity beta point estimate of 0.51.

<sup>107</sup> *ibid*, p 21

<sup>108</sup> AER, *Draft Explanatory Statement*, op cit., July 2018, p 306.

**Figure 13: Rolling 5-year portfolio estimates of beta**



Source: Frontier Economics, *Report for APA VTS: Rate of Return parameters update*, 16 August 2017, p 20.

As CCP16 stated previously, the AER assesses its rate of return using longer term parameters such as the long term historical excess returns and the 10-year risk free bonds for the ROE, and the 10-year commercial bonds for the ROD. To modify the ROE parameters by an equity beta based on short-term movements is conceptually unsound. Each of these parameters is calculated to reflect the long-term expected returns to investors or debt providers of long-lived assets, an expectation that is not anchored to short-term economic or financial cycles.

A report by Wright et al as part of a large report on the cost of capital for regulators that was commissioned by CAA, Ofcom, Ofgem and the Utility Regulator in the UK, also supports the needs for consistency in the horizon used for assessing the ROE parameters including the equity beta. The authors of the report state:<sup>109</sup>

*Our Recommendation (Horizon) emphasised that, while the authors of the report do not have strong views on the choice of horizon regulators make in estimating the CAPM-WACC, it is crucial for all components to be estimated in a way that is as far as possible consistent with that horizon. Recommendation 6 stressed that this is particularly crucial in the context of the*

<sup>109</sup> Wright S and Robertson D, “Beta Estimation for CAPM-WACC at Long Horizons”, *Estimating the cost of capital for implementation of price controls by UK regulators*. 2018, p F-139

*beta estimation, because we are concerned to assess the nature of systematic risk at long horizons, we should ensure that our estimation techniques are consistent with that horizon.*

The AER does note that its own 5-year beta estimations suggest that the five-year average firm level estimates of the equity beta appear may have increased since the 2013 Guideline analysis relative to the longer term assessments. However, the AER also notes that there was considerable variation in the extent of this increase, and with most portfolio-level estimates rising by less than 0.05 (compare to Frontier Economics study of 5-year betas – see above). The AER concludes:<sup>110</sup>

*However, Table 33 still support an equity beta less than 0.7 as all updated estimates remain below 0.7. Further, estimates from the longest estimation period have shown marginal increases. We give most weight to the longest estimation period because short term estimates are unduly influenced by one-off events, market volatilities and interest rate movements.*

CCP16 also agrees with this conclusion and we note that Wright et al reach a similar conclusion in reviewing the evidence of an apparent rise in estimated equity betas in the UK.<sup>111</sup>

*This difference between 5-year vs 10-year estimates can also be related straightforwardly to a second key feature of the chart above, which shows that the rolling 5-year beta estimates have been tending to drift upwards in recent samples. So a clear issue worthy of investigation is whether these recent shifts towards a value of around 0.7 are likely to be sustained, or whether there is evidence that beta may revert to the lower average values seen in earlier samples. But there is a further, more basic issue relating to beta estimation. If regulators wish to estimate the CAPM-WACC appropriate to a relatively long horizon (say, 10 years), is it appropriate to estimate beta over such a short sample (often distinctly shorter than the horizon itself) and using high frequency (daily or weekly) data?*

..

*Crucially, there is strong historical evidence that short-term shifts in volatility and correlations do not persist indefinitely. As a result, Robertson and Wright conclude that the most recent rolling beta estimates are very likely to prove temporary. Furthermore, they conclude that there is evidence that both short- and long-run beta estimates appear to have been quite stable, and that there is therefore a quite strong prima facie case to use all available data to estimate, beta, not just a relatively short recent sample. This suggests that the most recent beta estimates shown in the chart above are very likely to be over-estimates.*

In addition to the important conceptual issues raised above and confirmed by Wilson et al, CCP16 would add that we have limited confidence in the 5-year forecast results given these are based on a shorter estimation periods because of the limited regression observation points relative to the volatility of the data. A far more extensive analysis is required for the regulator to have confidence that the ‘trend’ illustrated in Figure 13 above, is sufficiently statistically robust to be relevant in making an ex-ante regulatory decision that has a long-term horizon for the expected returns of 10 years.

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<sup>110</sup> AER, *Draft Explanatory Statement*, July 2018, p 261.

<sup>111</sup> Wright et al, op cit, pp 51-52.

In addition, as noted above, there is no corroborating evidence that the systematic risk of the regulated networks shifted in or around 2014-15 as suggested in the network's analyses.

For these reasons, CCP16 agrees with the comments by Wright et al, and with the AER's decision to place most reliance on the equity beta obtained from the longer-term data analysis.

#### 7.4.6. The role of the Black CAPM and low beta bias

The role of the Black CAPM and the observed low beta bias has been an area for debate since the 2013 Guideline. In the 2013 Guideline, noting the uncertainties in the data, the AER chose to use the 'theory' of the Black CAPM as one of the reasons for adjusting the empirical beta estimates from the mid-point of the empirical analysis to the upper end of the empirical range; that is to select a beta of 0.7 from a range of 0.4 to 0.8. The AER commented that: "...using the Black CAPM theory to inform our equity beta estimate may mitigate possible low beta bias".<sup>112</sup>

The AER did this adjustment notwithstanding its significant reservations about the robustness of the Black CAPM and the recommendations from its advisors such as Partington et al that no weight should be given to the Black CAPM. Consumer organisations also opposed the adjustment of the empirical equity beta on the basis of the theory of the Black CAPM and the low beta bias.

Since 2013, the AER's advisors have continued to express their view that the 'theory' of the Black CAPM was not used by practitioners in estimating the cost of capital and should not be used by the AER in setting an ex ante estimate of the ROE or of the equity beta. Partington and Satchell summarise their long-held views in their recent response to the AER.<sup>113</sup>

*There are a number of reasons why the Black CAPM should be totally disregarded, many of which we have discussed in our previous reports. It assumes that a riskless asset does not exist or that you cannot borrow, but you can lend at the risk free rate. It also assumes that unlimited short selling of stocks is possible, which we recall, Black himself agreed was not plausible...*

*Even if we ignore the problematic nature of these assumptions, the properties of the estimates used tend to guarantee very volatile and unreliable estimates of the zero beta return...*

AER has expressed, not surprisingly, further concerns about the robustness of the Black CAPM, although they have not amended the equity beta of 0.7 in regulatory decisions to date. However, in the new 2018 Guideline, the AER proposes that it will no longer use the Black CAPM theory as a reason for selecting a value of beta at the upper end of the empirical range. The AER states:<sup>114</sup>

*No change in the role of the Black CAPM [to inform foundation model equity beta]. However, at this time we have diminished confidence in the robustness of the Black CAPM and are therefore not persuaded to select an equity beta towards the top of the observed empirical estimates.*

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<sup>112</sup> AER, *Explanatory Statement, 2013 Rate of Return Guideline*, December 2013, p 12.

<sup>113</sup> Partington and Satchell, *Report to the AER*, May 2018, op cit., pp 16-17.

<sup>114</sup> *Ibid*, Figure 3, p 39.



CCP16's position is that neither the Black CAPM nor the low beta bias are appropriate for application to the regulatory decision making process for the equity beta. We consider that the Black CAPM is not suitable for use in the regulatory context because:

- It requires a construction of an artificial 'risk free asset' on assumptions that are agreed not to be realistic. In contrast, the SLCAPM relies on returns on an essentially risk-free asset (Australian Government bonds) that can be observed directly.
- The estimation of the value of the 'risk-free asset' is excessively complex, and there is a wide range of values calculated by various experts.
- For these reasons, it is rarely used in practice by regulators or the investment community.

Nor did CCP16 support consideration of the low beta bias, although there is evidence ex-post that the return on equity for low beta stocks exceeds the expected return on the basis of the SLCAPM.

There are many reasons why in a particular period, returns on low beta stocks may be higher than expected by the SLCAPM risk slope, but these do not invalidate the underlying SLCAPM approach. For example, Partington and Satchell (2017) state that at a particular period, when interest rates fall, then low beta assets will do well relative to high beta assets creating the effect of a higher beta (beta being a measure of systematic risk relative to the market). They summarise this apparently anomalous outcome in their May 2018 report to the AER as follows:<sup>115</sup>

*In the period in question interest rates generally fell, rather than rose and so we would expect low beta assets to have done well relative to high beta assets...The above is not an anomaly, nor a behavioural quirk that requires compensation, but is a consequence of a sequence of exogenous events which may well reverse in the future.*

The authors imply that this outcome is relevant to the 'period in question', which we take to be the more recent period of declining interest rates. CCP16 recognises that longer-term studies are required to understand if this is a constant relationship or is unique to the current period, or whether there are other factors that may be relevant at different times.

What it does indicate, however, is that the understanding of low beta bias, what it is, what causes the bias and how such a bias could be quantified in a way that is suitable for the ex-ante regulatory determination of the 'average beta' to apply over the longer term, is still lacking. As such, it suffers from the same limitations and subjectivity that limits the use of the Black CAPM. Therefore, CCP16 is most reluctant for the AER to arbitrarily adjust either beta or the overall ROE on the basis of an assumed low beta bias.

The explanations above provide yet another reason why it is important to place most reliance on the longer-term equity beta analyses (see previous discussion on estimation periods).

More significantly, as highlighted previously, the Black CAPM zero beta intercept and low beta bias are both assessed by considering ex-post data on returns. However, this does not mean that they are suitable for applying in a regulatory setting to an ex-ante long-term (10-year) forecast of beta for a low beta firm(s).

As a result, CCP16 maintains its view that the neither the Black CAPM nor the low beta bias should be used by the AER to adjust the empirical equity beta. If they are to have relevance at all (and we are

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<sup>115</sup> Ibid, p 29

not convinced of that) then the appropriate role is as part of the review of the overall ROE. The Independent Panel also highlighted that the Black CAPM (“Black model) had no role in the estimation of the equity beta as discussed below.

#### 7.4.7. The Independent Panel’s assessment of the AER’s equity beta draft decision

Overall, the Independent Panel supports the process by which the AER collated and evaluated a range of evidence on betas. The Panel stated that:<sup>116</sup>

*The Explanatory Statement presents a wide range of evidence on betas. It assembles and evaluates the available relevant information. The discussion is thorough and the reasoning clear.*

CCP16 agrees that the AER has followed a very thorough process of assessing the relevant empirical data, submissions to the review and previous papers by stakeholders on the equity beta, including the views expressed at the concurrent evidence sessions.

While the Panel recognised the process that the AER has followed, the Panel then identified three issues where the clarity of the Explanatory Statement could be improved. They were:<sup>117</sup>

- The conceptual analysis of business and financial risk – the Panel recommends that the AER clarify its discussion of financial risk in the Explanatory Statement.
- The discussion of the Black model and the low-beta bias – the Panel recommends that the AER clarify whether in estimating beta there is any relevance of the Black model and the low beta bias. The Panel also queries whether discussion of the role of the Black model/low beta bias is more appropriately included in the discussion of the return on equity or some other part of the Explanatory Statement.
- The decision to limit the reduction in beta to promote stability and predictability – the Panel recommends that the AER clarify why it has chosen to limit the reduction in equity beta, given the empirical data and the AER’s diminished confidence in the Black model/bias (which the Panel considers is irrelevant to the estimation of the equity beta, as per the point above)

CCP16 found these recommendations to be a very useful addition to the debate on the ROE parameters and the clarification of the AER’s position on each of these issues. For this reason, we discuss each of these recommendations in more detail below. However, it is important to also pose these two questions:

- Will adopting the Panel’s recommendation change the outcome of the Guideline, or is it more about clarification of the AER’s reasoning? The recommendations on financial risk may fit into this category; and
- Would implementing the recommendations be inconsistent with an ‘incremental’ review – the recommendations on the Black CAPM may fit into this category?

*Conceptual analysis and business and financial risk:*

The Panel raises two matters for the AER to clarify. One relates to the AER’s statement that higher leverage reduces the cost of capital if debt is cheaper than equity. The Panel suggests that this

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<sup>116</sup> Independent Panel, *Review of the Draft Guidelines*, op cit, 7 September 2018, p 37

<sup>117</sup> See Ibid, pp 37-38.

statement should be clarified to recognise that higher debt leverage also increase the equity beta and the cost of equity.<sup>118</sup> CCP16 considers this would be a useful clarification.

The Panel has also made perhaps a more significant challenge to the AER. That is, the Panel has challenged the AER's statement in the Draft Explanatory Statement (at p 112) that: "high financial leverage does not necessarily result in equivalently high financial risk". The Panel states:<sup>119</sup>

*The Panel agrees that low default risk is a good thing. But financial risk does not depend on the likelihood of default. It depends on the fixed costs of servicing debt. The higher the fixed costs, the higher the (percentage) volatility and beta of the residual claim, which is equity. Financial risk can be large even when the risk of default is zero.*

While CCP16 agrees that it would be useful for the AER to engage in further discussion on the links (or otherwise) between high financial leverage and high financial risk, we are less clear whether this would change the results of the AER's equity beta analysis, which are largely based around the empirical analysis of equity beta and the observed gearing levels for the relevant firms and the BEE.

CCP16 makes the following additional points:

- The risk of default is a key factor in the credit ratings published by the various credit rating agencies, thus it is relevant to the AER's assessment of return on debt. A credit rating of BBB+ suggests a relatively low, but non-zero risk of default.
- In the special instance of the regulated network, the firm's costs of debt (assuming an efficient debt portfolio) are effectively a direct pass through to consumers as highlighted in a 2013 report by McKenzie and Partington.<sup>120</sup> This reduces the cash flow risks and the risk of default (for the BEE). Taken together with a protected revenue flow (due to CPI indexation and revenue cap), the volatility and beta of the residual claim on equity is much reduced.
- The Panel agrees that the formula that the AER uses to re-lever observed betas to the 60% benchmark incorporates the correct definition of financial risk.<sup>121</sup> The Panel also states that: "the re-levering formula implies that equity beta increases with the debt-equity ratio, and takes no account of the odds of default",<sup>122</sup> thus contradicting the AER's claim regarding financial leverage and financial risk.

CCP16 concludes from these discussions that there is indeed need for clarification of the links (or otherwise) between default risk and financial risk as suggested by the Panel.

However, we also conclude that the re-levering formula adopts a simple linear relationship between leverage and financial risk. As such, the re-levering process does not appear to take account of the special characteristics of the regulated network firms which provide a range of 'protections' that are not available to other businesses. Rather, the process of de-levering (to obtain the asset beta) and re-levering to the benchmark gearing ratio assumes that the formula applies equally to the assessment

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<sup>118</sup> Ibid, p 39.

<sup>119</sup> See Ibid, p 38.

<sup>120</sup> McKenzie and Partington, Report to the AER: Risk, asset pricing models and WACC, June 2013, pp11-12, cited in the Explanatory Statement, op cit, July 2018, p 111. The trailing average and annual updating of the cost of debt further reduces this risk.

<sup>121</sup> Independent Panel, *Review of the Draft Guidelines*, op cit, 7 September 2018, p 38. The AER uses the Brealey-Myers formula to re-lever the equity beta, assuming a debt beta of zero.

<sup>122</sup> Ibid.

of the systematic risk (i.e. equity beta) of all businesses irrespective of whether the investors are very substantially protected by a regulatory regime from default and cash flow volatility.<sup>123</sup>

CCP16 therefore agrees with Partington and Satchell's comments in their May 2018 report to the AER. The authors note that the regulatory framework reduces demand risk, inflation risk and interest rate risk, which in turn reduce both systematic and unsystematic risk. The authors conclude that:<sup>124</sup>

***The low risk and stability of the cash flows is what allows a BEE [benchmark efficient entity] to carry very high levels of debt relative to most companies and still retain and investment grade rating. The current arrangements in relation to the rate of return can effectively guarantee the payment of historic debt. This mitigates the risk of leverage and thus the cash flows to equity are likely to be relatively stable and of relatively low risk. Consistent with this, shares in regulated utilities are sometimes described as a bond proxy.***

The AER's assessment also states that the use of non-levered data will have little impact on the equity beta results as the actual gearing of the firms is close to the assumed benchmark gearing. The AER states: <sup>125</sup>

*...we note the choice of whether or not to de-lever and re-lever is unlikely to be material on the average of individual firm estimates and portfolio estimates. This is because the average gearing and the benchmark gearing are very similar. However, the difference between raw and re-levered equity beta estimates for individual firms may be greater because some firms have higher or lower gearing than a benchmark efficient entity with a similar degree of risk...*

However, while CCP16 understands the AER's conclusions, given its current set of comparators, we do note that there appears to have been a reduction in gearing levels by the relevant firms over time (see for example, Table 14 in the 2018 Draft Explanatory Statement). Based on the same five firms used to assess equity beta, the AER reports a 10-year average gearing of 61%, and a 5-year average gearing of 54%.<sup>126</sup>

Given this change, and previous comments regarding a possible change in beta in the last five years, we encourage the AER to investigate if and to what degree, the 'normalisation' (re-levering) of the observed average equity betas in the 5-year and 10-year analyses impacts on the final benchmark beta.

#### *The Black Model and Low-beta bias*

The Panel notes the AER's extensive discussion on the Black Model and low-beta bias, including the reasons why the AER states it does not rely on the Black model and low-beta bias.

However, the Panel suggests that inclusion of this discussion in the sections on equity beta is not appropriate. The Panel further states:<sup>127</sup>

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<sup>123</sup> Indeed, the listed firms regularly highlight the cash flow stability to investors and lenders as is highlighted in CCP16's previous submissions and continues to be promoted in Annual Reports and in Presentations to Investors.

<sup>124</sup> Partington G and Satchell S, *Report to the AER: Allowed Rate of Return 2018 Guideline Review*, May 2018, p.4.

<sup>125</sup> *Ibid*, p 293

<sup>126</sup> AER, *Draft Explanatory Statement*, 2018, op cit, Table 14, p 164

<sup>127</sup> *Ibid*, p 39

*The model or bias have nothing to do with estimating beta. If the model or bias were relied on in estimating the cost of equity, the remedy would be to use a flatter relationship between beta and the cost of equity, not an arbitrary add-on to the beta of the benchmark efficient entity.*

CCP16 understands from this, that the Panel neither supports nor opposes the theory of the Black model, or the low beta bias per se. However, if either of the approaches have any relevance to the ROE, they should not be used to 'adjust' the observed equity beta, but instead, be considered in the broader context of the ROE calculation.

While noting this comment from the Panel, CCP16 considers that this would involve a significant change in the current SLCAPM approach.

In any case, from a practical perspective the issue may not be particularly relevant for the 2018 Guideline. CCP16 agrees with the AER's conclusion in the Draft Explanatory Statement<sup>128</sup> that given its 'diminished confidence' in the robustness of the Black CAPM, it will not use the theory of the Black CAPM to select an equity beta towards the top of the observed empirical estimates. Nor should the model/low beta bias be a reason at this stage for adjusting the overall ROE towards the top of the calculated range for the ROE.

*"Stability and predictability of beta"*

As noted above, the Panel considers that the Black model and low beta bias have nothing to do with estimating beta. The Panel concludes that as these two approaches should not have been used to select an equity beta at the higher end in the 2013 Guideline, the AER's current explanation for reducing equity beta from 0.7 to 0.6, namely the AER's reduced confidence in the robustness of the Black CAPM/bias, is not relevant.

The Panel notes that the empirical estimates for beta presented by the AER "suggest a beta estimate below 0.6".<sup>129</sup> The Panel also notes the AER's explanation of its limiting the reduction of beta by 0.1 points, i.e., from 0.7 to (only) 0.6, was taken in part to promote stability by not departing substantially from its previous value.<sup>130</sup> However, in the Panel's view the AER's concern with stability regarding beta seems "inconsistent". The Panel states that: "The Explanatory Statement does not invoke stability when it sets the MRP, the ERP or return on equity", and recommends that:<sup>131</sup>

*The Explanatory Statement should explain why limiting the change in beta from that selected in the 2013 Guidelines is justified, given that the 2013 beta estimate was materially influenced by the Black model, in which the AER has diminished confidence.*

CCP16 agrees with the Panel's comments. We note that the AER's equity betas in the AER's rate of return decisions and in the guidelines have gradually declined from 1 to 0.9 (SORI) to 0.8 then 0.7, and finally 0.6 in the 2018 Review.

Importantly, however, the declines in the value of the equity beta have not fully reflected the empirical data analysis. At each point, from the 2009 SORI studies onwards, the empirical data

<sup>128</sup> AER, *Draft Explanatory Statement*, July 2019, op cit., Figure 3, p 39.

<sup>129</sup> Ibid, p 40. The Panel notes that the empirical estimates are 0.51 for all subsets of the sample of Australian energy companies, and 0.57 for the whole set.

<sup>130</sup> Ibid, p 40. The Panel cites the Draft Explanatory Statement at p 244.

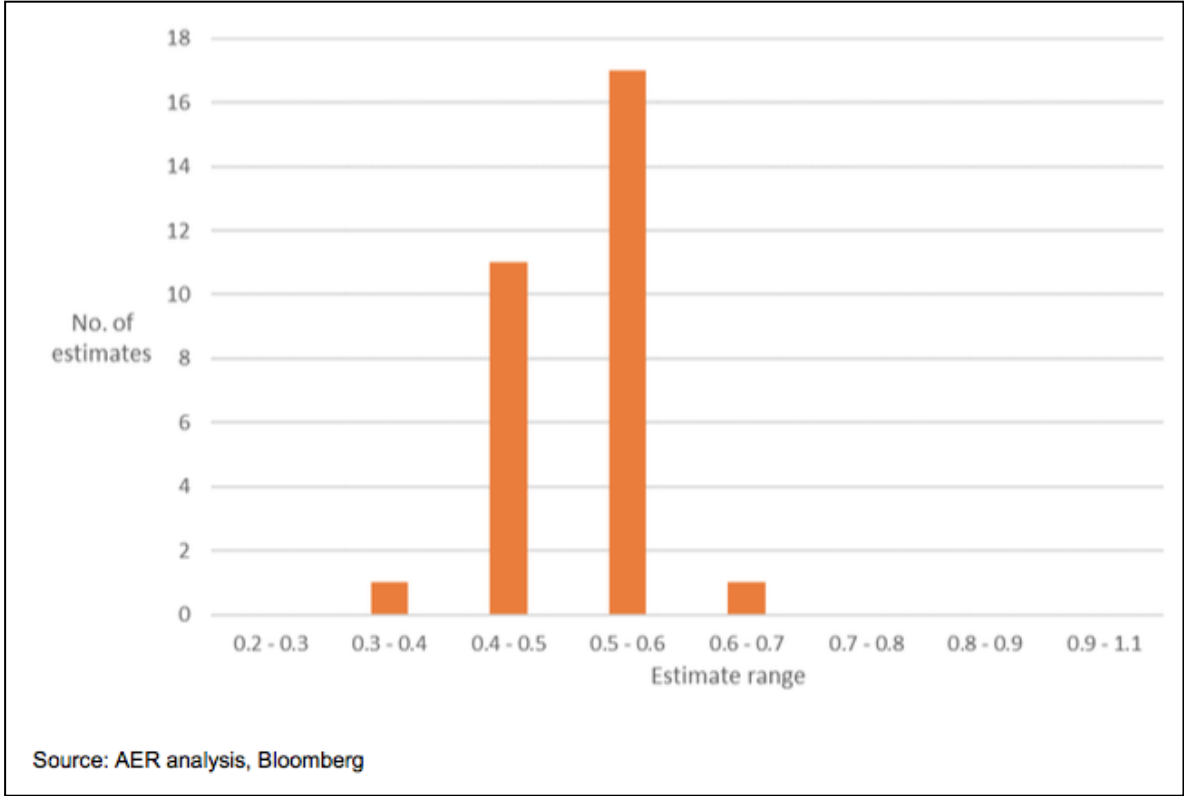
<sup>131</sup> Ibid, p 41.

strongly supports a lower beta value for the regulated network businesses – in the range of 0.3 to 0.7, with median values around 5 to 5.5.<sup>132</sup>

Each time, the AER has selected a slightly lower value than the previous decision, but one that is still at the high end of the observed range. Each time, the AER cites (inter alia) reasons such as maintaining stability in the regulatory decisions, uncertainty with the accuracy of the data, alternative theories such as the Black CAPM etc. Each time, consumers have challenged the AER’s decision to select the equity beta above, or at the higher end of the range of the observed data.

While the AER says it has now moved to a ‘mid-point’ of 0.6, this statement is somewhat misleading – a better estimate of the mid-point would be either the average or the median, both of which would point to an equity beta below 0.6. Figure 14 below demonstrates the ‘spread’ of beta results for the AER’s preferred analysis, using the longest estimation period.

**Figure 14: Distribution of 2018 re-levered weekly beta by range (OLS & LAD)**



Source: AER, *Explanatory Statement, Draft Guideline*, July 2018, Figure 25, p 251.

For these reasons, CCP16 strongly supports the Panel’s recommendations that the AER should explain why it limits the reduction in the equity beta to 0.6, when the data suggests a lower figure.

Moreover, while in 2009 and even in 2013, the AER may have had legitimate concerns with the data quality, the fact that the same results have been observed in multiple studies should give the AER confidence that the industry equity beta is relatively stable around a median value between 0.5 and 0.6. Partington and Satchell (May 2018), make the same point:<sup>133</sup>

<sup>132</sup> See the series of studies by Professor Olan Henry in 2008, 2009 and 2014. Also see the more recent studies by the AER using the same methodology.

<sup>133</sup> Partington G and Satchell S, op cit., 24 May 2018, p 7

*We agree that the true systematic risk of a BEE is likely to be stable over time. Hence it would be expected that both the asset beta and the equity beta would be stable through time. The stability is evident in AER (March 2018, Table 6) where quite similar estimates of beta arise in a comparison across 16 different studies covering varying sample periods, return measurement intervals and estimation methods...*

Overall, the Panel has raised some important issues of principle and practice regarding the equity beta assessment, and CCP16 looks forward to further consideration of these matters in the Final 2018 Explanatory Statement.

## 7.5. Averaging periods and the nomination window for the risk free rate

CCP16 does not object to the widening of the averaging period for the risk free rate from 20 business days to a period of 20 to 60 consecutive business days (at the option of the network). We note that the proposal has widespread support from the networks, the concurrent evidence session experts and other stakeholders on the basis of the evidence that it reduces the volatility of the risk free rate estimate, while overall, the results do not significantly depart from the 20 day assessments of the risk free rates. CCP16 supports the AER's draft decision to have a 'default' averaging period of 20 days, ending three months prior to the commencement of the regulatory control period (or revision commencement date), if a NSP fails to provide the AER with a compliant averaging period.

CCP16 has more concerns with the draft decision to expand the averaging period nomination window such that it must start and end between 7 months and 3 months (respectively) prior to the commencement of the regulatory control period (RCP) or revision commencement date. This appears to move the estimation of the risk free rate too far from the SLCAPM concept of the 'on the day' risk free rate'.

While the AER suggested that this extension of the averaging period to 7 months prior to commencement of the RCP will be necessary 'to provide confidentiality of the nominated averaging period', it would also appear to overlap the timing of the NSPs submitting their revised revenue proposal, allowing a network to adjust their proposal in line with information already available. On balance, CCP16 considers that the risks of 'gaming' outweigh the somewhat overstated concerns on confidentiality, particularly with respect to the RFR, which is public data and only used in the assessment of the fixed return on equity, not for estimating the cost of debt.

CCP16 seeks further clarification of this issue prior to the publication of the Final Guideline.

## 8. Promoting achievement of the National Electricity and Gas Objectives

In its presentation to the Public Forum held by the AER on 2 August, the ENA claimed that the lower ROR in the Draft 2018 Guideline (as compared to the current 2013 Guideline) would lead to:

1. A gradual 'stripping back' of services to standard vanilla network services;
2. Emergence of localised lack of capacity, resulting in constraints to consumers benefiting from DER;
3. Degradation of measured service and reliability outcomes over time; and
4. Lack of capacity to meet consumer expectations for increased service levels.

The Independent Panel stated that:

- It had "not identified anything in the Draft Guidelines that appears to be inconsistent with the revenue and pricing principles in the NEL/NGL, the NER and NGR, and COAG Energy Council's ongoing reforms as reflected in the legislative amendments introduced into the South Australian Parliament on 2 August 2018."
- "The Draft Guidelines aim to produce a rate of return reflecting a 'benchmark efficient entity.' A benchmark efficient utility, by definition, is an efficient utility carries out its service responsibilities, as defined by the regulator, efficiently. It raises capital efficiently, it operates and spends money efficiently, it plans capital expenditures program efficiently, and it carries out that capital expenditures program efficiently. An industry whose members perform that way is an industry that achieves the national objectives."
- "The rate of return contributes only one part of the revenue stream that flows to a regulated company. Thus, the rate of return is only one contributor to the national objective. The other contributors are the other building blocks. So, the regulator must place in those building blocks amounts sufficient to allow an efficient company to recover its actual operating expenses and capital expenditures. If the regulator does so, then the rate of return in conjunction with these other revenue flows will, by definition, be able to attract the voluntary debt capital and equity capital sufficient to satisfy the aspects of the national objectives that depend on capital. However, the national objectives also include consumption efficiency, which needs to be addressed as well. In achieving the national objectives, attracting capital is necessary but not sufficient."
- "A particular rate of return does not achieve the national objectives just because finance theory says it should. The national objectives are achieved not by finance theory but by the rational, informed actions of the firms and individuals who comprise the regulated industries: debt investors, equity investors, the managers and employees of regulated firms, consumers large and small, and the practitioners who represent their interests before regulatory tribunals. The Draft Guidelines will be capable of promoting the national objectives only if it wins the trust of, and induces the efficient conduct of, all those parties."

We support these views of the Panel, and do not accept the ENA's position that the Draft Guideline is not in the long-term interests of consumers. In particular, we support the view that the Draft Guideline would result in an efficient industry, which would meet national objectives. We also point to our own analysis in this report, including our analysis that the returns provided by the current guideline were excessive, that the reduction in the ROR in the new Draft Guideline is cautious,



measured and appropriate, that market reactions to the Draft Guideline have been reasonable, and that the Draft Guideline is capable of being accepted.

On this basis, we believe that the Draft Guideline when finalised will be capable of winning the trust of all the relevant parties, and look forward to the induced efficient conduct being forthcoming, in support of the national objectives.

## Appendix – Selected Panel recommendations and CCP16 assessment of implications

This Appendix contains a selection of some (but not all) of the Independent Panel recommendations and CCP16 assessment of implications. The recommendations to be included here were based on our view as to whether the recommendation was likely to affect the outcome determined ROR, whether it questioned or raised issues with the AER analysis or approach, and whether it would significantly affect the drafting of the AER’s Final Decision or Explanatory Statement.

**Table 8: Selected Panel recommendations and CCP16 assessment of implications**

	<b>Panel recommendation</b>	<b>CCP16 assessment of implications</b>
2	Explain more clearly why the relationship of risk free rate to market risk premium is neither one of lockstep movement nor one susceptible to a robust, predictive methodology.	Panel’s discussion leading up this recommendation makes it clear that the Panel does not support the Wright model. Improved explanation will not necessarily lead to change in assumption. <i>Neutral</i>
3	Explain more clearly: <ul style="list-style-type: none"> <li>• Why the AER intends to disregard RAB multiples</li> <li>• 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.</li> </ul>	As noted above, we support the Panel’s comments on RAB multiples and believe the comments would support greater consideration of RAB multiples and other profitability measures. This would provide strengthened support for the reduction in the ROE in the draft decision and possibly a larger reduction. <i>Lower ROR</i>
4	Explain more clearly why the AER has singled out debt from the other building blocks in suggesting that profitability may inform on the cost of debt.	As noted above. CCP16 supports consideration of profitability measure as a cross-check on the ROE and ROR. It can provide insights into the overall performance of the regulatory regime and the reasonableness of profits. <i>Neutral to lower ROR.</i>

	<b>Panel recommendation</b>	<b>CCP16 assessment of implications</b>
6	Explain more clearly why it should place any reliance on the Wright approach to determining equity risk premium estimates.	Panel does not support or argue for consideration of the Wright approach but notes the inconsistency between the AER's assessment of the approach and its inclusion in the factors considered. CCP16 agrees with the panel's recommendation which may result in the AER committing to give less or no weight to the Wright approach. <i>Neutral to lower ROR.</i>
7	Chapter 5 of the Explanatory Statement should include discussion of the Black model and the low beta bias and should consider whether any adjustments to the return on equity are justified based on that model and bias.	Agree that in principle the low beta bias and Black CAPM should be considered at the overall return level. However, we do not consider significant weight should be given to Black CAPM given the difficulty of estimation and lack of precedent for its use in regulation. <i>Neutral to higher (if AER gives greater weight to Black CAPM or low beta bias.)</i>
9	Justify more adequately the use of a 10-year term for the risk free rate including explaining the justification for adopting a 10-year term for the cost of equity.	Panel noted that average maturity if debt is less than 10 years. CCP16 supports the need to continue to monitor average maturities but a change now would greatly complicate the transition to the trailing average. <i>Neutral to lower ROR.</i>
10	Explain: <ul style="list-style-type: none"> <li>the reasons why confidentiality, and thus a provider nominated averaging period are important</li> <li>what, if any, scope there would be, given the provider's ability to nominate the averaging period, for the service provider to manipulate the market in the two bonds in that period</li> <li>why it is reasonable that the averaging period by the service provider will not be made public after the period has passed, since a continuation of confidentiality results in the rate of return estimate not being replicable by stakeholders other than the regulated entity.</li> </ul>	Increased transparency is supporting in principle as long as disclosure of the time averaging period does not adversely affect interest rates in the period. <i>Neutral.</i>

	<b>Panel recommendation</b>	<b>CCP16 assessment of implications</b>
11	<p>Explain:</p> <ul style="list-style-type: none"> <li>• why long-run averages of historical market risk premia, arithmetic averages of the historical market risk premia are appropriate for setting allowed regulatory returns.</li> <li>• what specific information, relevant to a five-year regulatory period is provided by the geometric average.</li> </ul>	<p>CCP16 agrees with the Panel’s assessment that geometric averages are commonly used in financial markets and that the AER should more clearly explain the reasons for using geometric averages, CCP16 believes two strong reasons are that geometric averages provide a better measure of long term average returns and commonly used in commercial applications of CAPM.</p>
13	<p>Check the reasonableness of the proposed market risk premium by examining historical averages of market risk premia in other developed countries.</p>	<p>CCP16 agrees that in the context of international capital markets and overseas investors MRP in other countries are also relevant, but we would extend this to include the overall ROE. <i>Lower ROR.</i></p>
14	<p>Clarify the discussion of the possible correlation between the market risk premium and the level of risk-free interest rates.</p>	<p>The Panel endorsed AER’s arguments in regard to DGM and Wright approach but recommended AER discuss further the relationship between the MRP and RFR. <i>Neutral</i></p>
15	<p>Identify the evidence the AER is relying on for the link between reduced debt risk premiums and a lower market risk premium.</p>	<p>CCP16 agrees that this should be clarified. A point not made by AER is that as these are alternative investments one would expect the corporate bonds and equity to be related unless there are long term changes in supply and demand conditions.</p>
17	<p>Clarify whether, in estimating beta, there is any relevance of the Black model and the low-beta bias.</p>	<p>See Recommendation 7</p>
18	<p>Consider whether the discussion of the Black model and the low beta bias should be moved to the section on the Sharpe Lintner CAPM or to another part of the Explanatory Statement.</p>	<p>See Recommendation 7</p>

	<b>Panel recommendation</b>	<b>CCP16 assessment of implications</b>
19	Explain why limiting the change in beta from that selected in the 2013 Guidelines is justified, given that the 2013 beta estimate was materially influenced by the Black model, in which the AER has diminished confidence.	Agree that stability can be considered at the aggregate ROE level as a cross-check alongside other factors/information such as RAB multiples. But this need not be in lieu of considering stability at the parameter level. Due to modest reduction in ROR in context of supporting information that current allowed returns were higher than required return this will not impact the ROR.
20	Test what assumptions would be required to reconcile the Chairmont data with an average 10-year term at issuance.	Agree but better considered at next review given transition to 10-year rolling average is underway. Lower ROR if consideration leads to shorter maturity.
21	Explain the reasons for adopting a 10 year benchmark for the average term of debt at issuance, rather than relying on judicial reviews, which did not consider the choice between a 10 year term and a shorter term.	Agree. Clear explanation will not necessarily affect outcome. Neutral
22	Investigate the possibility of: <ul style="list-style-type: none"> <li>- expanding the scope of future debt information collection to include characteristics on the stock of debt, as well as recent issuances</li> <li>- 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.</li> </ul>	See recommendation 20.
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.	Agree. Lower tax allowance.
24	Explain more clearly why adopting an incremental review to update the estimates for the utilisation rate and the distribution rate is consistent with the Rules and the achievement of the national electricity and gas objectives.	Agree. No impact if no change to assumptions but other comments of the Independent Panel suggest a higher gamma. Same or lower tax allowance.
25	Explain more clearly why the AER has not considered a distribution rate estimate higher than 0.88.	Agree. No impact if no change to assumptions but other comments of the Independent Panel suggest a higher gamma. <i>Same or lower tax allowance</i>

	<b>Panel recommendation</b>	<b>CCP16 assessment of implications</b>
26	Explain more clearly how SFG's 2016 dividend drop-off study and the adjustment suggested by Lally and Handley have informed the adopted utilisation rate estimate of 0.6.	Agree. No impact if no change to assumptions but other comments of the Independent Panel suggest a higher gamma. <i>Same or lower tax allowance</i>
27	Explain more clearly why it has not considered a utilisation rate estimate higher than 0.6.	Agree. No impact if no change to assumptions but other comments of the Independent Panel suggest a higher gamma. <i>Same or lower tax allowance</i>
28	Explain more clearly the rationale and methodology used to establish the set of values for gamma of 0.5, distribution rate of 0.83 and utilisation rate of 0.6.	Agree. <i>Same or lower tax allowance</i>
29	Review the AER's rounding policy in relation to gamma, including considering whether to round to the nearest five per cent or to two decimal places.	Agree. <i>Neutral.</i>
30	Explain more clearly how the Final Guidelines promote achievement of the national objectives, including why it is confident that the rate of return methodology it has determined results in an outcome that is neither too high nor too low having regard to the risk-cost trade-off involved.	Agree. The current decision meets the requirement of the NEO and NGO and provides a return that will remain attractive to investors and will not increase the risk of underinvestment. Indeed a case can be made for a lower ROR. Neutral to lower ROR