HERBERT SMITH FREEHILLS

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13 March 2015

By mail

Dear Michael

Confidential

AER Draft Decision – return on equity

We attach a submission in relation the draft decision by the Australian Energy Regulator (**AER**) on the 2014-2019 regulatory proposals submitted by Endeavour Energy, Ausgrid and Essential Energy (**Networks NSW**) in so far as it deals with the application of clause 6.5.2 of the National Electricity Rules (**NER**) to those proposals and matters which may affect the validity of any Final Decision by the AER.

The attached submission has been prepared with the assistance of the Counsel team.

Yours sincerely

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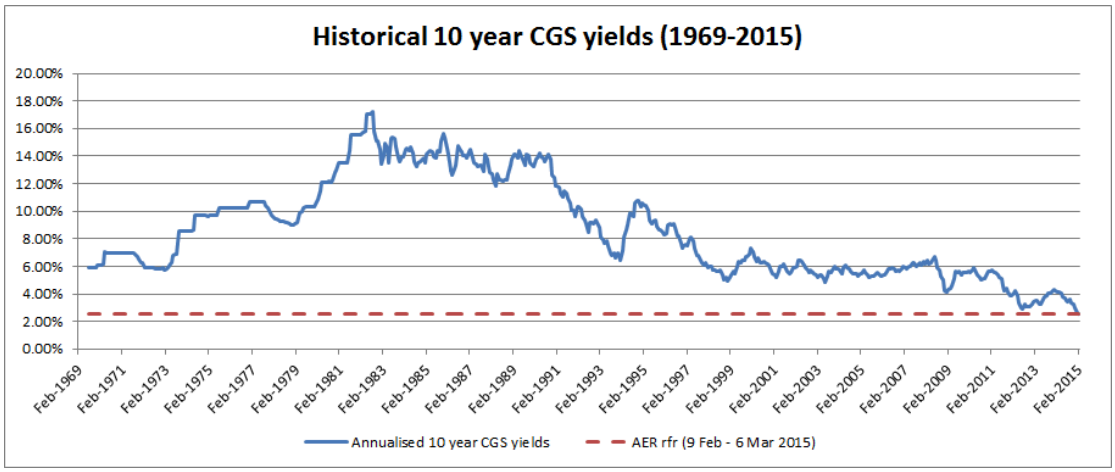
AER Draft Decision – Return on Equity

1 Last Friday, 6 March 2015 was the end of the specified averaging period for the calculation of the return on equity (**ROE**) for the Networks NSW distribution businesses, Ausgrid, Endeavour and Essential Energy (Networks NSW). That period saw the yield on Commonwealth Government Securities (**CGS**) drop to fresh historic lows. If the AER was to adopt the approach to calculating the ROE set out in the draft decisions, then the resulting cost of equity would be **7.11%**.

2 This figure is extremely low. The ROE calculated using the AER's approach has declined over recent times as a result of the impact of a significant reduction of the yield of CGS, when combined with a relatively inflexible market risk premium (now specified by the AER at 6.5%) and a specified equity beta of 0.7. As is shown in the chart below, the figure for CGS yields over the averaging period is just **2.56%**.



3 Information before the AER suggests that CGS yields have been driven down by, inter alia, a flight to quality and the recognition of Australian CGS as a safe haven investment. In recent months, we have witnessed the unprecedented phenomenon of negative yields on various European government bonds, which is a powerful demonstration of the strength of demand for low-risk assets. The evidence suggests that CGS yields have been impacted by:

(a) a shrinking supply of AAA rated sovereign debt globally;

(b) heightened risk aversion and increased levels of perceived risk, especially in the context of heightened concern over Greece leaving the Eurozone; and

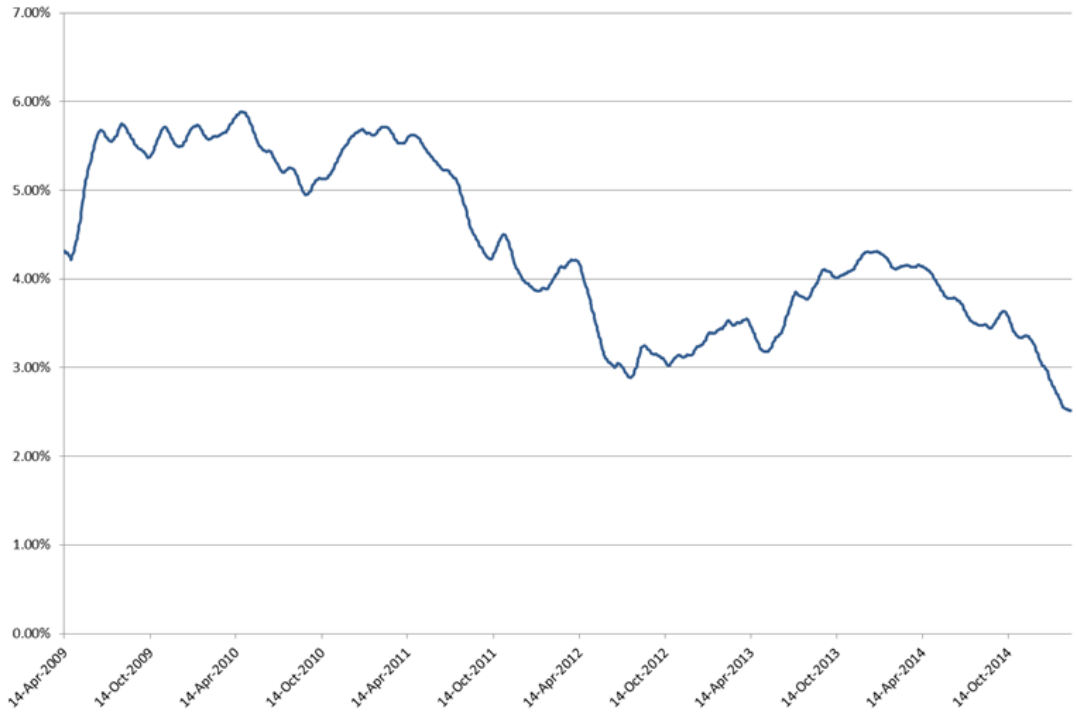
(c) heightened demand for liquid assets, including demand produced by changes in banking regulations.[1]

4 These matters are highly unlikely to be decreasing the required ROE for a benchmark entity (indeed the second matter is likely to be increasing the ROE) but the effect of the AER's approach of using the SL CAPM populated with a largely historical MRP is to drive down the ROE to a low level.

[1] CEG, *Estimating the Cost of Equity*, January 2015, para [102]

5 By way of illustration, the yield on 10 year CGS, and thus the ROE calculated using the AER's approach, has declined by approximately 1.75% over the past 14 months. The yield on 10 year CGS was 4.31% on 19 December 2013 and is 2.56% measured over the averaging period. The ROE calculated using the AER's approach has likewise declined by 1% over the past four months alone. Thus the ROE calculated using the AER's approach has declined from 8.10% in the draft decision to 7.11% now. There is no reason to think that the true ROE for the benchmark entity has declined by these amounts over these periods. There is nothing in the wider economic or commercial environment to suggest that equity returns have fallen precipitously. Nor do the changes merely reflect changes in underlying interest rates: the RBA's cash rate was 2.5% in December 2013 and is 2.25% now. Rather, the result is a particular and idiosyncratic consequence of demand for CGS, when combined with an essentially fixed MRP.

Likewise, only 7 months prior to 19 December 2013, the yield was 3.18%. There is no reason to think that equity returns increased by 1.13% between May and December 2013. Set out below is a chart showing the changes in the yield on 10 year CGS over the past 6 years.



6 Given that there is no reason to think that required equity returns have tracked the extreme volatility in CGS yields, the MRP must have varied over the last few years. However, the AER's approach fails to take that into account.

7 What this means is that an approach of using a largely fixed MRP (of 6.5%) coupled with a prevailing risk free rate under the SL CAPM cannot be said to be a reliable means of calculating the ROE. It is imperative for the AER to re-consider its SL CAPM approach to the ROE in light of the dislocation which has impacted on the application of that approach. An approach that produces a reduction in ROE of 1.75% in the last 14 months, or 1% in the last 4 months, is not a properly functioning approach. Put simply, it is not producing a sensible result. Nothing in the AER's draft decision accommodates the market phenomena that have impacted on CGS yields.

8 The AER is in possession of a considerable body of evidence that provides alternative means for calculating the ROE, and which produces figures for the ROE which are not driven down to record lows by idiosyncratic factors significantly impacting on CGS yields.

This is in addition to the significant evidence that the SL CAPM is downwardly biased for low beta stocks. It is important, in these circumstances, for the AER to consider and take into account other measures of the ROE in calculating the allowed ROE.

9 The AER's specification of the ROE in the draft decisions results from the AER largely adopting its traditional approach to ROE and, in practical terms, disregarding other sources of evidence on the basis that those sources do not meet certain evidence and reliability thresholds and therefore do not compel a different conclusion. The AER does not apply those same thresholds to its traditional approach.

10 The problem with the AER's approach is aggravated by:

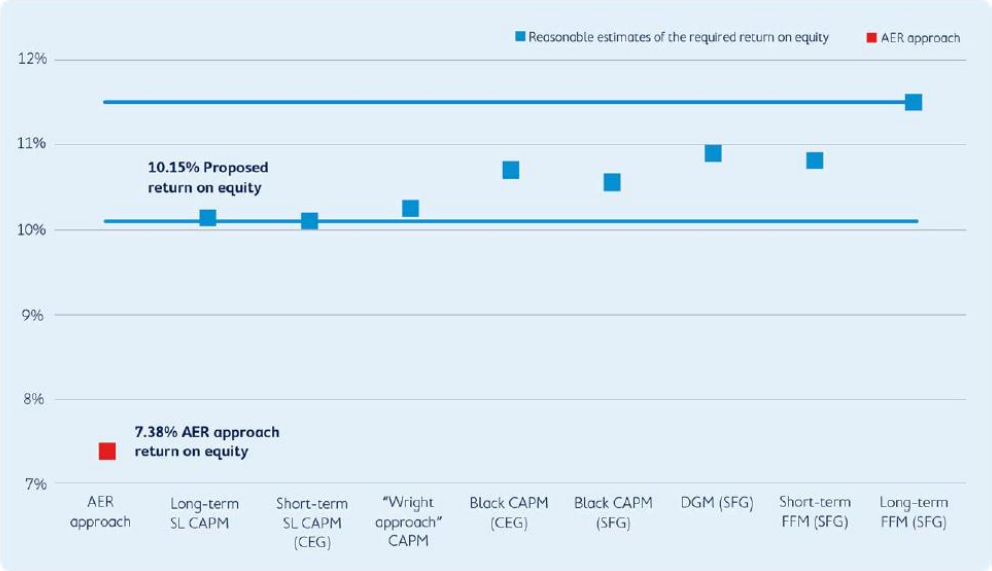
(a) the inconsistent use of a prevailing risk free rate and what is essentially a long-term measure of the MRP; and

(d) the use of an averaging period from 2015, rather than an averaging period prior to the 2014 – 2019 regulatory period.

11 The application of a 2015 cost of equity figure to the period prior to 2015 is particularly unjustifiable. Combining the extreme and unprecedented low CGS yields that have arisen since the beginning of the regulatory period with a relatively fixed MRP materially raises the prospect of error. The prospect still exists using the less extreme CGS yields prevailing at the beginning of the regulatory period (as proposed by Networks NSW should the AER apply a short term estimate of the risk free rate), but its potential magnitude is reduced.

12 As required by clause 6.5.2(e)(1) of the NER, Networks NSW had regard to a range of relevant estimation methods, models, financial market data and other evidence to develop the proposed return on equity. Based on this analysis, Networks NSW determined a reasonable range for the benchmark efficient cost of equity for benchmark efficient network businesses, and adopted a point within the reasonable range using the SL CAPM framework applied in an internally consistent manner (using a long term risk free rate and a long term MRP). The following figure from the Revised Proposals indicates the appropriateness of this approach, when compared to the figure then produced by the AER approach.

Figure 37 – Reasonable range for the allowed return on equity (%)



Ausgrid, Revised regulatory proposal, p. 188

13 The recent downwards compression of CGS suggests that the AER's specified ROE is likely to be too low. Other evidence before the AER also suggests that it is too low. This includes:

(a) strong evidence that the SL CAPM is downwardly biased for low beta stocks; and

(e) evidence from three other models that the return on equity is significantly higher than the output of the AER's approach.

14 As discussed below, it also includes the AER's 'cross check' evidence, when properly understood.

15 The AER's only concession to the considerable body of evidence suggesting that its approach will understate the ROE is to take a figure for equity beta from the top of the AER's equity beta range. However:

(a) as carefully analysed by CEG in its report of January 2015[2], and by SFG in its report of 13 February 2015 (submitted by United Energy)[3], the AER's equity beta range is itself erroneous and the product of artificial and contrived filters of relevant information; and

(f) the AER has undertaken no analysis of whether its selection of equity beta makes up the deficit.

16 The rules relating to the ROE have recently been amended, most importantly with the explicit intention of ensuring that the AER takes relevant estimation methods, models, market data and other evidence into account when estimating the ROE. In making the changes to the rules, the AEMC considered that a high quality rate of return estimate would be one that uses all relevant evidence and methods, and that such an approach would be best placed to achieve the National Electricity Objective and the revenue and pricing principles. The amendments to the NER remove any requirement or predisposition to use the SL CAPM to estimate the ROE, and the reasons given for the amendments indicate that there should not be continued exclusive reliance on the SL CAPM. Rather, the approach to estimating the return on equity must take into account all relevant evidence, and give it a direct role in the estimation of the ROE.

17 The evidence before the AER does not support the AER's approach of disregarding the output of other methods for calculating the ROE. There is little doubt that the SL CAPM has a well recognised downwards bias for low beta stocks, as was recognised by Black, Jensen and Scholes (1972)[4], Friend and Blume (1970)[5], Fama and French (1992)[6], and Brealey, Myers and Allen (2011)[7]. The AER's draft decision adopts a somewhat schizophrenic approach to this issue, denying that there is any bias but then selecting an equity beta at the top of the AER's range based on:

(a) the theoretical principles underpinning the Black CAPM – for firms with an equity beta below 1.0, the Black CAPM may predict a higher return on equity than the SLCAPM. We consider this information points to the selection of an

[2] CEG, *Estimating the Cost of Equity*, January 2015, Section 5

[3] SFG, *Beta and the Black Capital Asset Pricing Model*, 13 February 2015

[4] Black, F., M.C. Jensen, and M. Scholes, 1972, "the Capital Asset Pricing Model: Some empirical tests," in *Studies in the Theory of Capital Markets*, Michael C. Jensen, ed., New York: Praeger, 79-121

[5] Fried, I., M. Blume, 1970, "Measurement of Portfolio Performance under Uncertainty," *American Economic Review*, 60, 561-575

[6] Fama, E.F. and K. R. French (1992), "The cross-section of expected stock returns," *Journal of Finance* 47, 427-466

[7] Brealey, R.A, S.C. Myers, and F. Allen, 2011, *Principles of Corporate Finance*, 10th ed., McGraw-Hill Irwin, New York.

equity beta point estimate above the best empirical estimate implied from Henry's 2014 report.[8]

18 Further, there is little doubt that the AER's approach is affected by idiosyncratic impacts on CGS yields.

19 In light of the significant evidence of issues with the AER's version of the SL CAPM, it would be inappropriate for the AER to disregard other approaches and evidence in informing the calculation of the ROE (rather than just selecting from a range of equity beta estimates).

20 The AER's rejection of other methods of calculating the ROE is apparently based on observations by the AER that the other methods are unreliable and sensitive to variations in parameter estimates. However, as observed by SFG, (a) the SL CAPM is likewise sensitive to different parameter estimates, and (b) the AER's approach does not seek to assess the reliability of different applications of the alternative methodologies, but simply uses the existence of a range of outcomes as evidence of unreliability.[9] Thus the AER has adopted an inconsistent approach to the various models, and has also failed to give proper consideration to whether particular estimates using the model in question are reliable. As observed by SFG:[10]

21 According to the AER rationale, the Black CAPM will never be relied upon to estimate the cost of equity because there was once some analysis conducted that led to high estimates for a parameter input.

22 A rational approach to assessing the reliability of alternative models, and deriving the best estimates from those models, would be to give greater emphasis to studies that:

(a) reflected the most recent advances in econometric methodology;

(b) used more recent data;

(c) used larger, more comprehensive data sets; and

(d) had been subjected to more scrutiny.[11]

23 This is not what the AER has done. Instead, the AER has used the mere existence of a range of results (however meritorious or unmeritorious the individual study) to reject the application of the models in their entirety. This is not a logical or rational approach, and is unscientific. Further, the AER has purported to use the existence of developments to the models (for example, further factors in addition to or in place of the Fama-French factors) as evidence that the alternative models are not reliable or stable and as a reason to return to the SL CAPM. As SFG have observed,[12] it was once thought that the earth was flat, and later that the earth was a perfect sphere. Developments or refinements to the "perfect sphere" theory are no reason to revert to a flat earth approach.

24 This highlights a difficulty with the overall approach: the AER does not apply the same standard of criticism to its own SL CAPM approach as it does to alternative approaches. This has the effect of imposing an artificial hurdle before any alternative approach can be considered. For example, in relation to the Fama-French model, the AER's approach fails to have regard to the following matters, as summarised by SFG:[13]

25 On this point, it is generally accepted by stakeholders that:

[8] AER draft decision, p 3-268 [Ausgrid decision]

[9] SFG, *The Required Return on Equity: Initial review of the AER draft decisions*, January 2015, Section 3

[10] SFG, *The Required Return on Equity: Initial review of the AER draft decisions*, January 2015 at [56]

[11] SFG, *Using the Fama-French model to estimate the required return on equity*, February 2015, at [62]

[12] SFG, *Using the Fama-French model to estimate the required return on equity*, February 2015, at [98]

[13] SFG, *The Required Return on Equity: Initial review of the AER draft decisions*, January 2015 at [90]

(a) The vast majority of empirical evidence concludes that the Sharpe-Lintner CAPM provides a poor fit to the data – that there is either a weak or non-existent relationship between beta estimates and stock returns.

(b) The Fama-French model was first developed as a means of improving the empirical fit to the available data.

(c) The empirical performance of the Fama-French model is superior to the Sharpe-Lintner CAPM – the Fama-French model provides a superior fit to the observable data, including in Australia.

26 As well as the difficulties with its overall approach, the AER's draft decision contains errors in relation to its treatments of particular sources of evidence for the ROE. Those matters have been dealt with in the expert reports that respond to the draft decision. The errors include the following:

27 In relation to the Black-CAPM, the AER has not taken into account SFG's explanation of why its estimate of the zero-beta premium for the Black CAPM (unlike previous analyses) is done in such a way that high book-to-market stocks did not affect the estimate of the zero-beta premium.

28 In relation to the FFM, the AER has expressed a concern that the model lacks a theoretical foundation. The observation is incorrect: as explained by SFG, the general theoretical foundation for the FFM is the same as for the SL CAPM. The theoretical and empirical foundation for the FFM is discussed at some length by the Nobel Prize Committee in the explanatory material accompanying the award of the Nobel Prize to Eugene Fama in 2013.[14] Likewise, although the AER criticises the model as not designed to estimate ex ante returns, there is again no distinction between the FFM and the SL CAPM in this regard – the basis for using any asset pricing model is that the historically observed relationships between returns, risk and other factors may be expected to continue in future.

29 In relation to all three alternative models, the AER has made an erroneous assumption that the models are "not widely used". This has been corrected by SFG as well as Professor Bruce Grundy.[15]

30 The AER has rejected certain sources of evidence on the basis that the resulting estimates are "very high" when compared to the SL CAPM model, "equating to an equity beta of 0.94 in the SLCAPM". This is illogical: it can only rest on an assumption that the SL CAPM, as implemented by the AER, produces the correct result, an assumption that is clearly illogical in the context of an inquiry the aim of which is to actually derive the correct result. Moreover, as a factual matter the AER's implicit conclusion is unwarranted in light of the matters addressed earlier in this submission. If the SL CAPM is producing downwardly biased estimates of the ROE, then the correct figure would indeed produce a high equity beta in the SL CAPM. The AER's point establishes nothing.

31 In relation to the equity beta, CEG has analysed why the AER's pool of Australian comparators is too small and is out of date, and why AER's exclusion of international comparators is flawed. The latter includes the failure by the AER to adjust for different gearing levels in the comparator set, thus producing ranges that are artificially broad and subsequently excluding them from consideration. Further, if the adjustments are made they produce equity beta ranges that are generally above the upper end of the AER's range.[16]

[14] Economic Sciences Prize Committee of the Royal Swedish Academy of Sciences, *Understanding Asset Prices: Scientific Background on the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 2013*, 14 October 2013, p. 40

[15] SFG, *The required return on equity: Initial Review of the AER draft decisions*, January 2015, [57] – [60]; SFG, *The Fama-French Model*, 13 May 2014, pp 17-22; SFG, *The required return on equity for regulated gas and electricity businesses,* 6 June 2014, p. 40; Grundy B., *Letter to Justin De Lorenzo*, 9 January 2015

[16] CEG, *Estimating the Cost of Equity*, January 2015, Section 5

32 SFG's 13 February 2015 report on equity beta explains in detail how the AER impermissibly excludes relevant evidence for the proper determination of the equity beta. SFG also explains the errors made by the AER in relation to the international comparators. Specifically, the AER has lumped in together estimates from companies that are not geared at 60% (and not adjusted to reflect this gearing), and estimates from a very small number of comparators over only short periods. As analysed by SFG, proper and credible analysis indicates an equity beta of more than 0.7 (and this is prior to any adjustment of the sort undertaken by the AER to select a figure at the upper end of the range).

33 It is therefore apparent that the AER's "range" of 0.4 – 0.7 is not a proper articulation of the appropriate range for the equity beta. Likewise, the AER's selection of an equity beta of 0.7 does not reflect the upper end of any appropriate range and does not represent an adjustment to take into account the downward bias in the SL CAPM for low beta stocks.

34 Finally, the AER's cross-check information does not support the current ROE calculated using the SL CAPM. In this regard:

35 In relation to the "Wright approach", the AER produced a range, the bottom of which was the same as the AER's proposed return on equity as calculated in the draft decision. That is not a reasonable application of the Wright approach – the appropriate course would be to compare the midpoint of the range with the figure proposed to be used. Given that the midpoint would be significantly greater than the outcome of the AER's SL CAPM methodology, that approach would not support any ROE now calculated using the AER's methodology and the Wright approach is not a supporting "cross-check".

36 In relation to the Grant Samuel analysis, as explained by Incenta in its February 2015 report[17] and by Grant Samuel in its letter to the Directors of TransGrid,[18] the AER has misunderstood the Grant Samuel analysis, which contains an implied equity risk premium of 5.27 – 5.37%, well above the AER's equity risk premium of 4.55% (6.5% x 0.7), and prior to adjustment for imputation credits, which would increase the differential between the Grant Samuel approach and the AER's calculation of an equity risk premium. Indeed, Grant Samuel explained that they rejected the results from the straight application of the SL CAPM. Thus the Grant Samuel report does not support the AER's estimate in the draft decision and will not support any current estimate using AER's methodology.

37 Likewise, the independent valuation expert reports relied upon by the AER do not support the AER's estimate of the equity risk premium from the draft decision of 4.55%. As mentioned in (b), the "Grant Samuel figure" adopted by the AER is not a figure that accurately reflects the Grant Samuel report. Of the rest, all are 5% or above, except a single valuation from 2003. The only fair conclusion from considering these reports is that the AER's equity risk premium, and thus the AER's ROE, are too low.

38 The broker reports relied upon by the AER do not support its conclusion on the required ROE. All adopt a ROE that is significantly above the AER calculation. The AER's derived equity risk premium from these reports overlooks what appears to be an uplift to the prevailing risk free rate (consistent with the observations of SFG that a version of the Black CAPM is applied in practice), and thus a ROE that is considerably higher than the AER's estimate.

39 In light of the matters recorded above, it is apparent that the AER's methodology for calculating the ROE will produce a figure that is significantly too low, particularly in light of the current extraordinary impact on CGS yields. Networks NSW has proposed a method for calculating the ROE that will produce a figure that is consistent with the other evidence before the AER, including evidence from other models. If the AER was to

[17] Incenta, *Further update on the required return on equity from Independent expert reports*, February 2015

[18] Grant Samuel, *Australian Energy Regulator – Draft Decision,* 12 January 2015

continue with its methodology, notwithstanding all of the evidence that it is inappropriate, then this would be productive of significant error.