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Your Ref: email K Yap, 21 December 2011

20 February 2012

Mr Warwick Anderson
General Manager
Network Regulation
Australian Energy Regulator
GPO Box 3131
CANBERRA ACT 2601

Attention: Mark McLeish

Dear Mr Anderson

AER'S DRAFT DISTRIBUTION DETERMINATION – RETURN ON CAPITAL

Aurora Energy Pty Ltd (Aurora) had advised the Australian Energy Regulator (AER) that it would make a further submission with regard to the cost of capital and specifically a response to the paper provided by the AER via email from McKenzie and Partington.¹ Aurora also provides further commentary on the cost of capital following recent Australian Competition Tribunal (ACT) findings.

1 MRP and Risk Free Rate

1.1 Introduction

The AER engaged two academics, Professor Michael McKenzie and Associate Professor Graham Partington, to undertake an analysis of the market risk premium (MRP) in the context of Envestra's merits review of the AER's SA gas distribution decision.² The McKenzie and Partington report, dated 21 December 2011, was provided to Aurora on the same day as it was received by the AER. The report release was subsequent to the AER's Draft Distribution Determination for Aurora but did however occur at the time Aurora was preparing its Revised Regulatory Proposal for the AER's consideration.

The AER has indicated in its email that as the report "... discusses several matters relevant to the consideration of the MRP to apply to Aurora...the AER will consider the matters raised in the expert report as part of finalising Aurora's distribution determination." Aurora considers the inclusion of new material after the presentation of the AER's Draft Distribution Determination as somewhat contentious however Aurora has reviewed the McKenzie and Partington report, and sets out its comments below.

¹ Email from Kenny Yap of the AER to Leigh Mayne of Aurora, on 21 December 2011

² Michael McKenzie and Graham Partington (21 December 2011), *Equity MRP*, Report to Corrs Chambers Westgarth).

It should not however be construed that Aurora has undertaken an exhaustive review of these issues, and Aurora reserves the right to comment in greater depth in the future.

1.2 The McKenzie and Partington Report

1.2.1 The Terms of Reference provided by the AER

The first point Aurora notes in relation to the McKenzie and Partington report is that the Terms of Reference provided by the AER (through Corrs Chambers Westgarth) are very specific on some questions, whilst not appearing to address the most pertinent question in the current market circumstances.

The most pertinent question in today's market is whether, if a long term MRP is applied in the CAPM formula to derive a return on equity, it is appropriate to pair a long term MRP with a 'spot' risk free rate. As discussed in Aurora's Revised Regulatory Proposal, the current risk free rate is depressed relative to its long term average. This depression is due to the unusually strong demand for Australian Government bonds in the presence of the European sovereign risk crisis.

If a long term MRP is applied, then a long term risk free rate must also be applied, otherwise the resulting estimated cost of equity will under-estimate the required rate of return. Alternatively, it would be necessary to apply a short term MRP in conjunction with the observed short term risk free rate, rather than the long term rate, which was the topic of McKenzie and Partington's report.

The fact that McKenzie and Partington were not instructed by the AER to examine this issue is, in Aurora's view, an important scope limitation that reduces the relevance of the report findings in the current circumstances. In their discussion of the weaknesses of survey evidence on risk premiums McKenzie and Partington note that the results are sensitive to the question that is asked, and describe this phenomenon as 'framing bias'.³ Aurora contends that the same kind of 'framing bias' applies to the McKenzie and Partington report.

Aurora considers that if McKenzie and Partington had been asked to address the appropriate response of a regulator to a sharp drop in the risk free rate relative to its long term average, their advice may have been very different.

1.2.2 Arithmetic or geometric mean

Conversely, the AER's Terms of Reference for McKenzie and Partington were very specific on the question of whether the MRP, when applied in the AER's cost of capital framework, would be over-estimated using an arithmetic mean estimate, or whether "*the appropriate MRP lies between the arithmetic mean and the geometric mean.*"⁴

In addressing this topic McKenzie and Partington note that this is a complex issue, and that the vast majority of textbooks use arithmetic averages to estimate the MRP. A number of advantages and disadvantages of arithmetic and geometric averages are listed by McKenzie and Partington, with the arithmetic average being considered more reflective of actual market expectations, and therefore being appropriate for inclusion in a CAPM model.

³ Michael McKenzie and Graham Partington (21 December 2011), p.22.

⁴ Michael McKenzie and Graham Partington (21 December 2011), p.2.

While McKenzie and Partington note that Indro and Lee (1997) have suggested a weighting of the arithmetic and geometric MRPs, and that Dimson, Hathaway (2005) and Campbell (2007) take the view that a historical geometric average should be converted to a forward looking arithmetic MRP by taking account of the forward looking level of volatility expected in the market, they do not endorse either of these approaches.⁵ Instead, McKenzie and Partington conclude that the usual arithmetic approach should be applied in estimating the MRP and state:⁶

“Until such time as the bias inherent in the volatility adjustment process is more fully understood, we recommend using the arithmetic average.”

1.3 Evidence from independent expert reports

It is noteworthy that since mid 2011, when deteriorating international financial market conditions resulted in a precipitous decline in the 10 year Commonwealth Government securities (CGS), there has been a response among Australian market participants, who are deciding the disposition and valuation of billions of dollars of investments in a wide range of industries. In valuing the assets that are being exchanged in mergers and takeovers, the response of independent experts has been to make an upward adjustment in the risk free rate applied to determine the cost of equity when the discounted cash flow (DCF) methodology has been applied.

A prime example is provided by the firm of Lonergan Edwards & Associates Limited, a leading advisory firm, which in October 2011 completed an independent expert report on Rio Tinto Limited’s bid for a significant parcel of shares in Coal & Allied Industries Limited. In assessing the discount rate to apply in valuing the shares of Coal & Allied Industries, Lonergan Edwards & Co provided an appendix, in which it explained its decision to raise the risk free rate in its CAPM formula by 80 basis points:⁷

“While the yield for 10 year government bonds in mid September 2011 was around 4.2%, for the purpose of this report we have adopted a rate of 5.0% per annum given that:

- (a) the 10 year government bond rate has been particularly sensitive to developments in the US and the US Government’s fiscal position and has decreased as a result; and*
- (b) the average 10 year government bond rate was 5.2% and 4.7% for the year and three months to 20 September 2011 respectively.*

... If we were to adopt a risk free rate of 4.2%, in our opinion it would be appropriate to adopt a correspondingly higher MRP.” [Footnote 84]

⁵ Indro, D.C. and Lee, W.Y (1997), ‘Biases in arithmetic and geometric averages as estimates of long-run expected returns and risk premia,’ *Financial Management*, 26, pp.81-90; Dimson, E., Marsh, P. and Staunton, M (2003), ‘Global Evidence on the Equity Risk Premium, *Journal of Applied Corporate Finance*, 15, pp.27-38; Hathaway, N. (2005), ‘Australian MRP,’ Capital Research Pty Ltd.; Campbell, J. (2007) ‘Estimating the Equity Risk Premium,’ Working Paper 13423, NBER Working Paper Series, September.

⁶ Michael McKenzie and Graham Partington (21 December 2011), p.12.

⁷ Lonergan Edwards & Associates Limited, (21 October 2011), *Proposed acquisition by way of Scheme*, Letter to the directors of Coal & Allied Industries Limited on Rio Tinto Limited’s proposal to purchase shares in Coal & Allied Industries Limited, Appendix F, p98.

In other words, these expert market practitioners have articulated and applied the same logic that was applied in Aurora's Revised Regulatory Proposal to the AER. This logic holds that a long term MRP must be coupled with a long term risk free rate.

If the short term risk free rate declines markedly in response to current world financial market difficulties, it is necessary to either apply the long term MRP of 6 per cent as well as a long term risk free rate (i.e. the current spot rate plus an uplift to equal the long term risk free rate), or the current spot risk free rate applied to a current MRP that is higher than the long term risk free rate (i.e. higher than 6 per cent).

1.4 Australian Competition Tribunal findings on the MRP

The ACT considered the MRP recently, but has not decided on it, instead suggesting that it should be considered by the AER "*in consultation with service providers and other interested parties*".⁸ The situation is different for gas relative to electricity. For gas the AER can make a fresh decision on the MRP at each reset, however for electricity the AER must have persuasive evidence to justify departing from the 6.5 per cent MRP adopted in the Statement of Regulatory Intent (SORI).

In its Revised Regulatory Proposal to the AER, Aurora noted that it was not appropriate for the AER to propose that various reports have concluded that general economic conditions have changed for the better since the global financial crisis. The AER further concluded that there were therefore grounds for reducing the MRP from 6.5 per cent to 6 per cent. Aurora referred to a number of highly respected market opinions, which stated that international financial market conditions had deteriorated with the European sovereign risk crisis, and that Australian financial markets are affected by these developments through the interconnectedness of the Australian and international financial markets.

Aurora's approach has recently been supported in the conclusions reached by the ACT in its findings in the Envestra appeal that:⁹

"It is not appropriate for the AER to infer from generally positive economic forecasts conclusions as to the likely MRP. These reports are not intended to provide forecasts of equity returns. Further, the reports do not endeavour to address the extent of correlation between economic performance and equity risk. This correlation would need to be explicitly dealt with, either by the forecasting bodies, the AER or expert evidence, before these reports could be usefully or validly employed to assist in forecasting the MRP."

While not deciding on the matter in Envestra's appeal, the ACT noted that the AER had not sufficiently justified its decision to adopt a MRP of 6 per cent rather than the 6.5 per cent that had been adopted for electricity distribution and transmission businesses in 2009. The ACT noted that:¹⁰

⁸ Application by Envestra Limited (No 2) [2012] ACompT 3 (11 January 2012)

⁹ Application by Envestra Limited (No 2) [2012] ACompT 4 (11 January 2012), para. 161.

¹⁰ Application by Envestra Limited (No 2) [2012] ACompT 4 (11 January 2012), para. 149.

“Regulatory consistency may have led the AER to provide a more detailed explanation of the trigger that caused the AER to choose an MRP of 6% rather than the previously adopted 6.5%.”

Aurora’s case is different, in that the 6.5 per cent MRP was specified in the SORI, and the AER has provided this parameter value to comparable electricity distribution businesses on a national level. Regulatory consistency and equity considerations would dictate that the same 6.5 per cent MRP be applied in Aurora’s case. In doing otherwise the cost of electricity distribution services will differ between Tasmania and the mainland jurisdictions merely because of the timing of the decisions. As stated in Aurora’s Revised Regulatory Proposal, such an approach is inefficient, as it distorts the pricing of electricity between Tasmania and the other NEM jurisdictions, and will create incentives for inefficient investment.

2 Australian Competition Tribunal (ACT) findings on the debt risk premium

In some recent decisions the ACT has also investigated the methodologies that have previously been applied by the AER to estimate the debt risk premium (DRP). In the Envestra case the ACT acknowledged that while it is for the AER to determine whether to rely on the Bloomberg curve, sound reasons would need to be provided for the AER to depart from its previous practice of accepting the Bloomberg fair value curve. The ACT noted:¹¹

“The Tribunal, of course, accepts that in the first instance it is for the AER to determine whether to rely upon the Bloomberg curve, or to accept the extrapolation of that curve in the manner done in the past. It is not obliged to do so, although given the past regulatory decisions it may be expected to do so unless there were sound reasons to depart from that practice. For the future, that is a matter for the AER.”

Aurora considers that the AER has not provided any sound, rigorously investigated reasons to depart from a continuing application of the Bloomberg fair value curve appropriately extrapolated to 10 years. While the ACT also indicated that it is open for the AER to adopt a different methodology, for this process there are a number of considerations that should be undertaken. The ACT noted:¹²

“... the proper composition of the comparison sample of bonds, the methodology for deciding on the appropriate sample of bonds and the relevance of these bonds to its task should be undertaken by the AER on consultation with interested parties across the spectrum of entities in the industries it regulates, consumers of their services and other interested parties.”

Furthermore, since the AER has placed considerable reliance on the extrapolated Bloomberg curve (EBV) in the past, the AER’s current revised abandonment of Bloomberg cannot easily be explained. As noted by the ACT in its Envestra decision:¹³

¹¹ Application by Envestra Limited (No 2) [2012] ACompT 4 (11 January 2012), para. 120.

¹² Application by Envestra Limited (No 2) [2012] ACompT 4 (11 January 2012), para. 121.

¹³ Application by Envestra Limited (No 2) [2012] ACompT 4 (11 January 2012), para. 103.

“There had been identified to the AER a range of other bonds, some of which lay below the EBV and some above the EBV. Had the AER considered them, its caution about the limited use of the EBV may have been resolved. The hybrid position emerges from the fact that the AER nevertheless decided to rely on the EBV as one of the two significant inputs into its weighting process. It must have regarded the EBV as relevant and meaningful.”

The ACT has provided strong endorsement to the Bloomberg fair value curve in several of its decisions. In the United Energy Distribution appeal it was noted that:¹⁴

“The Tribunal has previously endorsed the Bloomberg fair value (FV) curve in Application by Jemena Gas Networks (NSW) Ltd (No 5) (2011) ATPR 42-360 as being the suitable benchmark for estimating the DRP in Australia. A major reason for this is that this curve appears to be accepted by the market as providing accurate estimates of the benchmark corporate bond rate.”

In the same decision, the ACT were unequivocal about the right of businesses to propose reliance on the Bloomberg fair value curve to estimate the DRP when it noted:¹⁵

“JEN submitted, and the Tribunal agrees, that it was unreasonable for the AER to reject its proposal to rely on the Bloomberg FV curve and instead to incorporate also the yield from a single bond which it had not demonstrated in any way to be a relevant benchmark or comparator bond. The AER appeared only to rely on the fact that the APT bond was appropriate because it was a 10-year bond issued by a company with infrastructure interests and that it had a lower yield than that predicted by the Bloomberg FV curve.”

Furthermore, the ACT found that:¹⁶

“In addition, there was evidence before the AER to show that the Bloomberg fair value curve provided an accurate representation of the yields on benchmark corporate bonds and that it was widely accepted by market practitioners.”

¹⁴ Application by United Energy Distribution Pty Limited (No 2) [2012] ACompT 4 (6 January 2012), para. 400.

¹⁵ Application by United Energy Distribution Pty Limited (No 2) [2012] ACompT 4 (6 January 2012), para. 434.

¹⁶ Application by United Energy Distribution Pty Limited (No 2) [2012] ACompT 4 (6 January 2012), para. 436.

In its conclusion in the United Energy appeal the Tribunal provided a DRP based on the extrapolated Bloomberg fair value curve, concluding that:¹⁷

“The Tribunal emphasises that it is important for the AER to estimate the DRP and other WACC components with rigour and transparency, using comprehensive market-accepted data and offering some degree of certainty about the way in which it will apply the various estimating formulae (including the DRP formula) to a regulated company. Its estimating practices, data sources and reference periods must be well articulated, consistent and communicated to the parties and must, generally speaking, follow the precedents well-established in previous decisions made by the Tribunal in Application by ActewAGL Distribution and Application by Jemena Gas Networks (NSW) Ltd (No5).”

The same application was applied in the APT Allgas Energy Pty Limited where the ACT found that:¹⁸

“In this matter, as the Tribunal has noted, there will be no real opportunity for the AER to develop a coherent alternative methodology to determine the DRP in the time available, so the AER would be forced to make the best decision it could on the material available if the matter were remitted to it. The more substantial task of developing an alternative methodology would be time consuming and complex, and necessary be one which to a degree at least not be specific to the parties but affect to other regulated entities.”

There was evidence provided to demonstrate an alternative estimate to the Bloomberg fair value curve:¹⁹

“Allgas provided to the AER strong evidence in support of the EBV, in particular by its response to the May 23 letter. The view of Dr Hird of CEG was that material did not demonstrate any basis for the substitution of an alternative estimate for the EBV. As noted, the AER itself accepted the relevance of the EBV. Whilst the Tribunal accepts that the AER properly considered the reliability of the EBV, it has reached the view on the available material that there is no reason shown from the available material why the use of the EBV should not be adopted in this particular matter. The observation of the Tribunal in ActewAGL at [74]-[78] suggest that, on the existing material, it is appropriate to vary the decision in the manner indicated.”

¹⁷ Application by United Energy Distribution Pty Limited (No 2) [2012] ACompT 4 (6 January 2012), para. 461.

¹⁸ Application by APT Allgas Energy Limited Limited (No 2) [2012] ACompT 5 (11 January 2012), para. 118.

¹⁹ Application by APT Allgas Energy Limited Limited (No 2) [2012] ACompT 5 (11 January 2012), para. 120.

In its proposal Aurora identified a number of methodological flaws in the AER's proposed methodology for estimating the DRP. Adjusting for these flaws brought the result closer to the DRP obtained by reference to the Bloomberg fair value curve. In its Draft Distribution Determination the AER did not provide any sound reason to depart from the application of the extrapolated Bloomberg curve, nor any analysis that explained the gap between its own findings on the DRP, and those obtained using the Bloomberg fair value curve. As repeatedly emphasised by the ACT in its decisions, the Bloomberg fair value curve is a well regarded professional service that is extensively relied upon in the market, and is therefore appropriate to apply in estimating the DRP. In placing full reliance on the Bloomberg fair value curve, Aurora's approach is consistent with the approach endorsed by the ACT.

3 Aurora's WACC parameters

In this section Aurora sets out its WACC parameters based on its chosen averaging period covering the nominated 20 business days window. Aurora has retained the assumption of a 6.5 per cent MRP, gearing of 60 per cent, gamma of 0.25 and inflation of 2.63 per cent. The changes relate to the updated risk free rate and DRP.

3.1 Risk free rate and DRP

For its averaging period Aurora re-estimated the 10 year risk free rate based on the annualised yields of interpolated CGS. This derived a risk free rate estimate of 3.89 per cent.

As shown in table 1, for its averaging period Aurora re-estimated the DRP based on the AER's methodology at 350 basis points. However, the SPAusNet (SPI) bonds are not appropriate to include due to the ultimate ownership of the Singapore Government, and their exclusion, the exclusion of the foreign issued Coca Cola bond, and the extension of the range of terms to maturity to 5 to 15 years, raises the DRP estimate to 368 basis points.

Table 1: DRP applying the AER's methodology (in Aurora's 20 day averaging period)

Bond	DRP
APT	325
Brisbane Airport	296
Sydney Airport	394
Sydney Airport	400
DBCT	445
SPI	255
STOCKLAND	338
Transurban	390
Sydney Airport	344
SPI	250
DB RREEF	329
DBCT	461
Caltex	331
AER average	350
Aurora average	368

Source: Bloomberg and UBS

Note: The unshaded area denotes bonds included by the AER with terms to maturity in the range of 7 to 13 years (excluding the foreign issued Coca Cola bond), while the shaded area denotes bonds added by Aurora to extend the period of investigation to 5 to 15 years.

Aurora considers that a better estimate of the DRP is provided by the extrapolated Bloomberg fair value curve. In Table 2 Aurora estimate a DRP of 411 basis points using the extrapolated Bloomberg fair value curve for Aurora's averaging period. The 7 year Bloomberg DRP was 381 basis points and extrapolated using the average annual increment in the DRP for paired Telstra and Stockland bonds.

Table 2: DRP – extrapolated Bloomberg curve (in Aurora's 20 day averaging period)

Bond	Maturity	Term to maturity	DRP	DRP per year
Telstra	2/08/2016	4.56	241	
Telstra	15/07/2020	8.52	274	8
Stockland	18/02/2015	3.11	268	
Stockland	25/11/2020	8.88	338	12
Average				10
Bloomberg 7 year FV				381
3 multiplied by DRP per year				31
Extrapolated 7 year FV using paired bond				411

Source: Bloomberg and UBS

Aurora’s estimate of the cost of debt is 8 per cent, based on a spot risk free rate of 3.89 per cent and a DRP of 4.11 per cent. However, in its Revised Regulatory Proposal Aurora made a strong case for applying the long term risk free rate of 5.5 per cent rather than the spot rate. Aurora contends that it is not appropriate to pair the spot risk free rate (that is downwardly biased due to current financial market instability) with a long term MRP. This means that the long term DRP implied by the 8 per cent cost of debt is 250 basis points.

3.3 Aurora’s parameters

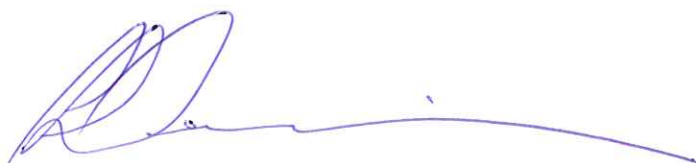
Aurora’s updated WACC parameters that it proposes for the cost of capital, based on the averaging period, long term parameters for the nominal risk free rate, beta and MRP, is shown in Table 3.

Table 3: Aurora’s WACC parameters (in Aurora’s 20 day averaging period)

Parameter	Long term	Short term
Nominal risk free rate	5.50%	3.89%
Equity Beta	0.80	
MRP	6.50%	
Gearing	60%	
Debt risk premium	2.50%	4.11%
Value of Imputation credits	0.25	
Inflation	2.63%	
Cost of equity (ke)	10.70%	
Cost of debt (kd)	8.00%	8.00%
Nominal Vanilla WACC	9.08%	

If you have any questions, please contact Nell Bingham on the above number or via email at nell.bingham@auroraenergy.com.au.

Yours sincerely



Dr Peter Davis
 Chief Executive Officer
 Aurora Energy