Estimating the regulatory debt premium for the Roma to Brisbane pipeline

A report for APT Petroleum Pipelines

Dr. Tom Hird

October 2011

Table of Contents

Table of Figures

Table of Tables

1. Introduction

1. My name is Tom Hird. I have a Ph.D. in economics and 20 years experience as a professional economist. My curriculum vitae is provided separately. APT Petroleum Pipelines Ltd (APTPPL) has asked me to provide an opinion on the debt risk premium to be applied in the regulation of the Roma to Brisbane gas pipeline. The scope of this engagement as set out in the terms of reference as per below:[1]

> *In recent decisions on the access arrangements to apply to a number of gas distribution and transmission pipelines the AER has determined the debt risk premium based equally on the reported yields of the APA Group bond and Bloomberg's (extrapolated) BBB fair value curve. The respective service providers had proposed that the debt risk premium be based solely on Bloomberg's (extrapolated) BBB fair value curve. Which of these approaches do you consider would provide a measurement of the debt risk premium that would:*
>
> *(a) when combined with the appropriate risk-free rate, result in a cost of debt that is in line with the Australian benchmark corporate bond rate for corporate bonds which have a BBB+ credit rating and a maturity of 10 years; and*
>
> *(b) when used in the WACC formula, result in a rate of return that is commensurate with the prevailing conditions in the market for funds and the risks involved in providing reference services?*
>
> *To the extent that the Bloomberg BBB fair value curve is used as part of the methodology to measure the debt risk premium, this curve may need to be extrapolated to 10 years, as Bloomberg only publishes BBB fair value estimates to seven years. What extrapolation methodologies are available and which of these methodologies would you recommend in light of the requirements in the Law and the Rules?*

2. The analysis in this report is based on market data over the 20 working days between 5 September 2011 and 30 September 2011.

3. The remainder of this report is set out as follows:

- Section 2 introduces and analyses data relevant to addressing whether the Bloomberg BBB fair value curve as extrapolated based on regulatory precedent is a good fit to the available data;
- Section 3 considers the factors that Bloomberg has regard to in assessing data and constructing its fair value curve and whether amending these estimates is likely to be reliable; and

[1] The full terms of reference are attached to this report at Appendix B.

- Section 4 assesses whether a change in the AER's extrapolation methodology for the Bloomberg BBB fair value is warranted.

4. I have read, understood and complied with the Federal Court Guidelines on Expert Witnesses. I have made all inquiries that I believe are desirable and appropriate to answer the questions put to me. No matters of significance that I regard as relevant have to my knowledge been withheld.

5. I have been assisted in the preparation of this report by Daniel Young from CEG's Sydney office and Johanna Hansson who works with me in Melbourne. However, the opinions set out in this report are my own.

Thomas Nicholas Hird

11 October 2011

2. Determining the debt risk premium

6. The AER's approach in relation to estimating the regulated debt risk premium for gas distribution and transmission businesses was most recently set out by the AER in the APT Allgas and Amadeus decisions.[2] In these decisions the AER considered that the benchmark DRP should be based on "an Australian corporate fixed rate bond issuance with a term to maturity of 10 years and a BBB+ credit rating".[3] This is the same definition of the benchmark DRP that it has previously been applied to electricity distribution and transmission decisions. The BBB+ credit rating is consistent with the AER's Statement of Regulatory Intent on WACC parameters.

7. In the context of the APT Allgas and Amadeus decisions, the AER determined that the simple average of the Bloomberg BBB fair value curve and an APA Group bond was the best estimate of a benchmark cost of debt consistent with the requirements of the National Gas Rules (NGR).

8. The Bloomberg BBB fair value curve only publishes up to maturities of seven years. In these decisions that AER used extrapolation of the Bloomberg BBB fair value curve from seven to ten years based on the most recent Bloomberg fair value curve information for corporate debt beyond seven years, i.e., the Bloomberg AAA fair value curve 20 days to 22 June 2010.[4] This extrapolation methodology is discussed in more detail at section 4 below.

9. The AER came to its decision for the benchmark DRP based on:

   - its quantitative assessment of the reasonableness of the extrapolated Bloomberg BBB fair value yield curve and the APA Group bond yield by reference to the observed yields on fixed and floating Australian dollar corporate bonds rated between BBB and A- by Standard & Poor's; and
   - its qualitative assessment of the relevance of the Bloomberg BBB fair value yield data, the APA Group bond yield and other bond yield data.

10. The methodology applied in this report to assess which approach is the best estimate of DRP is broadly the same as the process applied by the AER. This follows from the

---

2 See:

- AER, *Final decision: NT Gas Access arrangement proposal for the Amadeus Gas Pipeline*, July 2011, pp. 164-182; and
- AER, *Final decision: APT Allgas Access arrangement proposal for the Qld gas network*, June 2011, pp. 190-207.

3 APT Allgas final decision, p. 190.

4 APT Allgas final decision, p. 206.

development of the existing regulatory precedent, including several decisions by the Australian Competition Tribunal.[5]

11. I consider that there are persuasive reasons why it is desirable to rely upon, where possible, a fair value estimate made by an independent expert assessor of cost of debt information like Bloomberg.

12. Nonetheless, experts can arrive at different values as was evident when Bloomberg and CBASpectrum provided very different estimates for fair values. I consider that it is reasonable to apply a 'sanity check' to the extrapolated Bloomberg BBB fair value estimate by comparing it to the yields of bonds with similar characteristics.

13. For the purpose of this section I follow regulatory precedent in relation to extrapolation of the Bloomberg BBB fair value curve and compare it to yields of fixed and floating corporate bonds issued in Australia in Australian dollars bonds rated between BBB and A- by Standard & Poor. In doing so I examine the period 5 September to 30 September 2011.

2.1. Description of relevant bond data

14. I have identified the population of fixed and floating corporate bonds issued in Australia in Australian dollars rated between BBB to A- maturing in 2012 or beyond using Bloomberg as at 16 September 2011. This population consists of 128 bonds.

15. I have sourced the yields on these 128 bonds from Bloomberg and UBS. Bloomberg relies on several price series, including BCMP, BGN and BVAL series. In respect of the Bloomberg data, I consider it appropriate to rely on BGN yields where these are available, followed in order of preference by BVAL and BCMP. The basis for this order of preference is discussed in more detail at section 3.2 below.

16. The yields obtained from UBS and Bloomberg have been annualised on the basis that fixed rate bonds pay coupons semi-annually and that floating rate bonds pay coupons quarterly. Spreads have been calculated as the difference between annualised yields and annualised CGS yields interpolated to the same maturity as the bond.

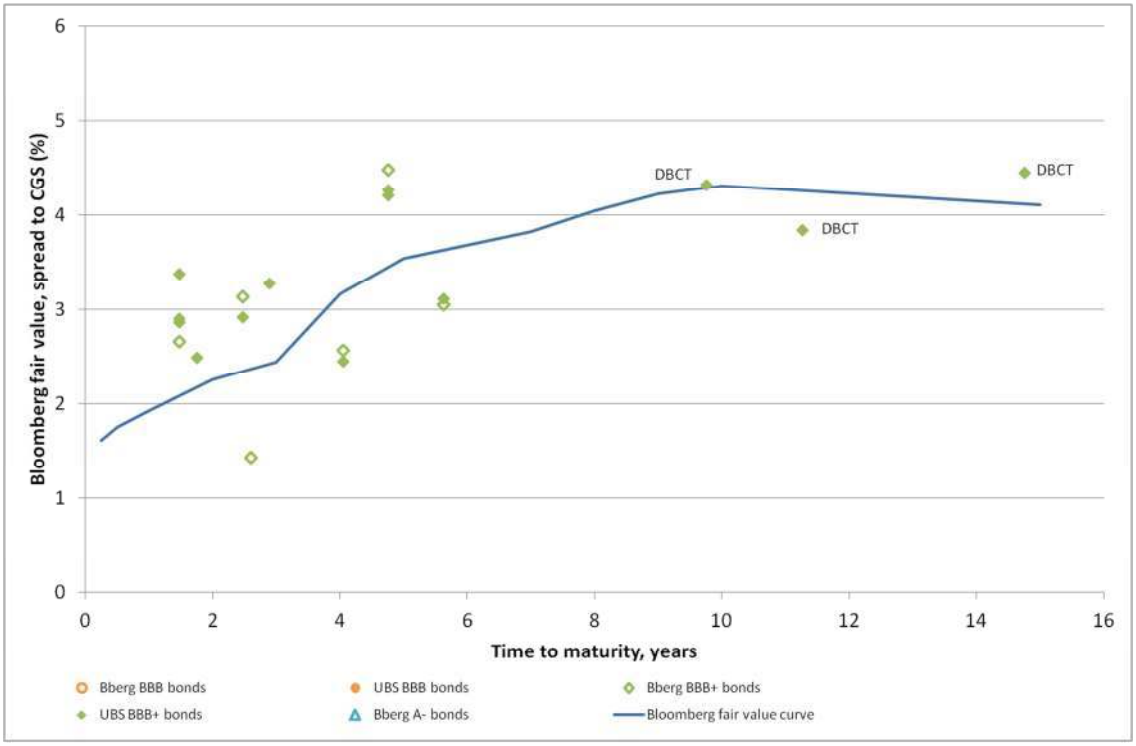
17. In the following sections I have relied on the maturity date reported by Bloomberg. This is of relevance in the context of callable bonds, since Bloomberg reports the final maturity date for callable bonds, whereas UBS rate sheets list the next call date under the maturity column rather than the final maturity of the bond.

[5] See for example Application by ActewAGL Distribution [2010] ACompT 4 (17 September 2010) paras. 49-63. Here the Tribunal sets out its opinion that, notwithstanding the AER's narrow definition of the benchmark bond, it is relevant to consider the yields on floating rate bonds and to consider the yields on bonds with similar credit ratings such as BBB and A-.

2.2. Analysis of relevant bond data

18. As a starting point, Figure 1 below sets out all fixed and floating Australian dollar corporate bonds rated BBB+, with maturity greater than one year. Bonds rated BBB+ are the logical starting point because the AER's benchmark bond is a BBB+ rated bond.

Figure 1: Bonds with maturity greater than one year rated BBB+



Source: Bloomberg, UBS, RBA and CEG analysis

19. Only three bonds in Figure 1 have a maturity date which is more than 8 years in the future, all of which are issued by DBCT. The spread of these bonds are either on, or close to, the Bloomberg BBB fair value curve. Table 1 summarises the spreads, which are only available from UBS.

Table 1: Bonds with maturity greater than 8 years rated BBB+

Issuer	S&P rating	Maturity (yrs)	UBS spread	BB spread
DBCT	BBB+	9.76	4.32	
DBCT	BBB+	11.27	3.84	
DBCT	BBB+	14.76	4.45	

Source: Bloomberg, UBS, RBA and CEG analysis

20. The quantitative evidence presented in Figure 1 and Table 1 above strongly suggest that the extrapolated Bloomberg BBB fair value provides a reasonable estimate for

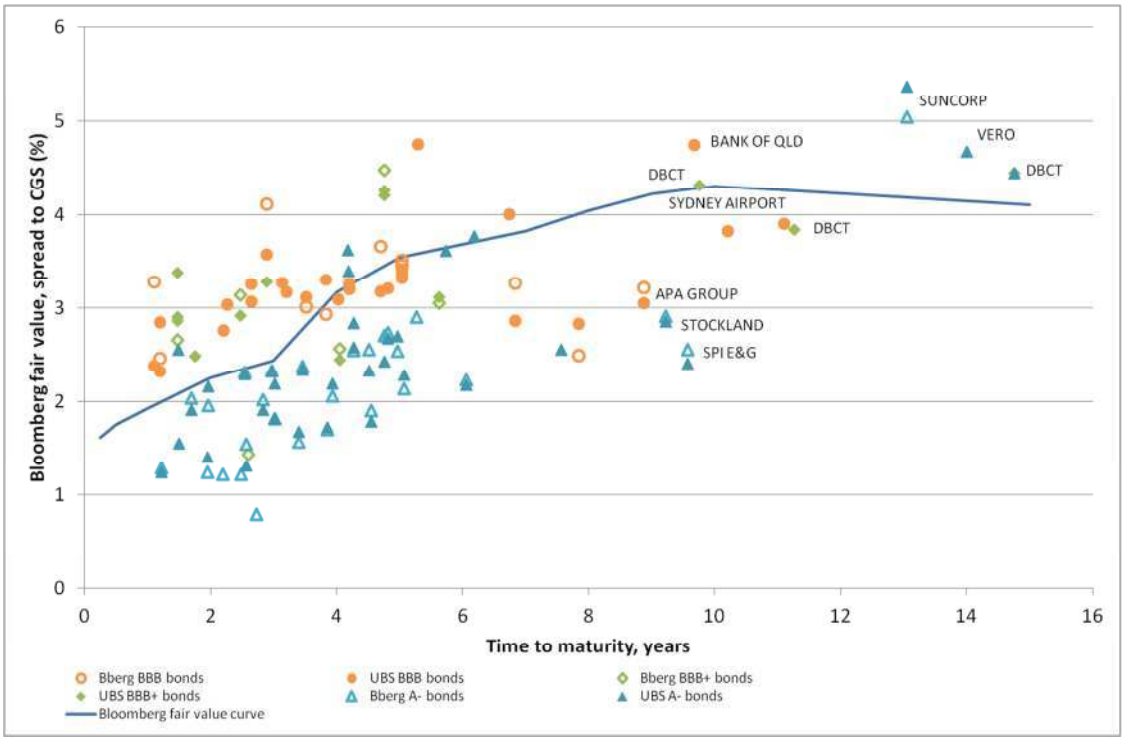
bonds rated BBB+. At the lower maturities the line passes through the middle of a 'cloud' of bonds, whereas at the higher maturities the three DBCT bonds all lie on or close to the curve.

21. It is relevant to note that DBCT is an Australian infrastructure issuer rated BBB+. To the extent that one takes the view that infrastructure issuer's bonds are more relevant to an assessment of the BBB+ benchmark (as the AER has previously done to justify giving weight to the APA bond) then these long dated bonds may be given more weight than other bonds (especially the floating rate bond maturing in almost exactly 10 years). I note that the AER has treated bonds issued by DBCT with scepticism in the past. In section 2.3.3 below I set out why I believe DBCT has been and remains an important and relevant comparator for assessment of the benchmark 10 year BBB+ cost of debt.

22. Figure 1 above indicates that the extrapolated Bloomberg BBB fair value curve is a very good fit to the available data for BBB+ bonds. However, of the three bonds with a maturity of above six years in Figure 1, all were issued by the same issuer. Whilst I have no reservations about the usefulness of the DBCT bonds as concerns their comparability to the benchmark bond, I do not consider the evidence based on a single issuer to be fully determinative.

23. Following the process originally proposed by CEG and accepted by the Australian Competition Tribunal and now the AER, Figure 2 expands the selection of bonds to include fixed and floating corporate bonds issued in Australia in Australian dollars rated BBB to A-, with maturity greater than one year. This larger dataset provides a further cross-check on the reasonableness of the extrapolated Bloomberg BBB fair value curve, as well as providing a cross-check upon the BBB+ data used in Figure 1 above for that purpose.

Figure 2: Bonds with maturity greater than one year rated BBB to A-



Source: Bloomberg, UBS, RBA and CEG analysis

24. Including bonds rated BBB and A- expands the number of bonds available with a maturity greater than 8 years from three to 12 bonds, as well as providing 6 distinct further issuers (not counting Suncorp and Vero separately as these are part of the same company group). The spreads of these bonds are both above and below the Bloomberg BBB fair value curve, and are detailed in Table 2 below.

Table 2: Bonds with maturity greater than 8 years rated BBB to A-

Issuer	S&P rating	Maturity (yrs)	UBS spread	BB spread
APA Group	BBB	8.88	3.05	3.22
Bank of Queensland	BBB	9.68	4.74	
Sydney Airport	BBB	10.21	3.83	
Sydney Airport	BBB	11.10	3.90	
DBCT	BBB+	9.76	4.32	
DBCT	BBB+	11.27	3.84	
DBCT	BBB+	14.76	4.45	
Stockland	A-	9.22	2.85	2.91
SPI Electricity & Gas	A-	9.57	2.41	2.56
Suncorp Metway	A-	13.05	5.37	
Suncorp Metway		13.05		5.04
Vero Insurance	A-	14.01	4.67	

Source: Bloomberg, UBS, RBA and CEG analysis

25. I do not consider that this wider population of bonds provides any basis upon which to conclude that the extrapolated Bloomberg BBB fair value curve is unreasonable. Whilst there are some additional long dated bonds located more than 1 percentage point below the curve, there are also long-dated bonds located above or close to it.

26. With a specific focus on BBB rated bonds it would appear that the bond issued by APA has a low spread to CGS for its maturity when compared to other BBB rated bonds. Specifically, it has a lower risk premium than the bulk of BBB rated bonds despite also having a longer maturity than the bulk of those bonds – which is inconsistent with the general trend risk premiums to be higher for longer dated maturities.

27. I consider that the evidence presented in Figure 2 and Table 2 above indicates that the extrapolated Bloomberg BBB fair value curve is a good fit to the observed bond yield data.

2.3. Analysis of specific bonds

2.3.1. Bonds with call options

28. Call options allow the issuer of a bond the right to repay the principal of the bond earlier than the final maturity date. There are different types of call options, including those that allow discrete dates at which these options may be exercised and others that permit a call to be made at any point beyond a certain date. These options may provide value to the issuer to the extent that it is likely that by exercising its option it can reduce its cost of financing. This value means that an issuer would accept a lower price (or higher yield) for its bond than if the bond were not callable. It is relevant to note that for many fixed/floating bonds issued before the global financial crisis with relatively low coupons/margins, the ability of the issuer to now or in the future lower financing costs by exercising a call option is likely limited. This is because risk

premiums post GFC have risen with the effect that 'hanging onto' pre GFC debt is likely to be more advantageous than calling that debt and reissuing at higher risk premiums.

29. I consider that the DRP should be assessed relative to the population of callable and non-callable bonds for the simple reason that businesses, including regulated businesses, prudently issue both callable and non-callable bonds. Moreover, the cost of equity has been estimated by the AER based on the observed equity betas for regulated businesses. To the extent issuing callable bonds lowers the cost of equity then removing the impact of the call option from the cost of debt involves an element of double counting (as it has already been captured in a lower cost of equity).

30. The AER has in the past not accepted this view and, in the context of the appeal of JGN's access arrangement decision, the AER commissioned a report from Oakvale Capital about how to value bonds with non-standard features.[6] Oakvale stated that call options on make whole callable bonds should not raise yields relative to the same bond with no call options (and may even depress yields as investors see some value from the potential that the bond may be called).[7]

31. Oakvale suggested a methodology for adjusting the yield on callable bonds to remove any impact of callability.[8] This methodology involves identifying option premiums embedded in the callable structure via a pricing model provided by Bloomberg. Out of the 7 bonds which Bloomberg describes as callable (and for which we have a yield estimate and which have a time to maturity of more than 8 years) Bloomberg identifies 3 as having an embedded option premium. The relevant bonds are summarised in the below table.

Table 3: Callable bonds in sample

Name	ISIN	Rating	Maturity	Callable	Make whole	Embedded premium
AU3FN0013124	BK OF QUEENSLAND	BBB	10/05/2021	Y	N	Y
AU300BBIF034	DBCT FINANCE PTY	BBB+	9/06/2021	Y	Y	N
AU3FN0001368	DBCT FINANCE PTY	BBB+	12/12/2022	Y	Y	N
AU300BBIF042	DBCT FINANCE PTY	BBB+	9/06/2026	Y	Y	N
AU300SUNQ027	SUNCORP METWAY	A-	23/09/2024	Y	N	Y
AU300SUNQ019	SUNCORP METWAY	A-	23/09/2024	Y	N	N
AU300VERO021	VERO INSURANCE	A-	7/09/2025	Y	N	Y

Source: Bloomberg

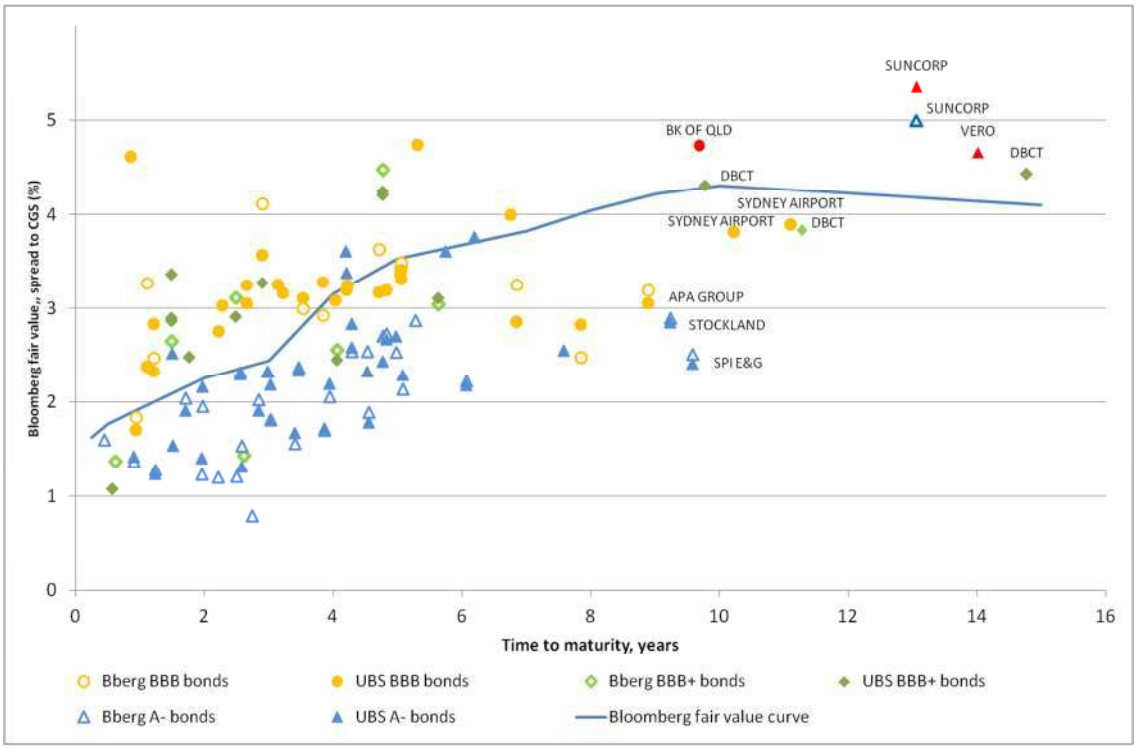
32. The 3 bonds that have an embedded premium are formatted in red in the below figure.

[6] Oakvale Capital, *Report on the cost of debt during the averaging period: The impact of callable bonds*, February 2011.

[7] Ibid, p. 7.

[8] Ibid, pp.13-16.

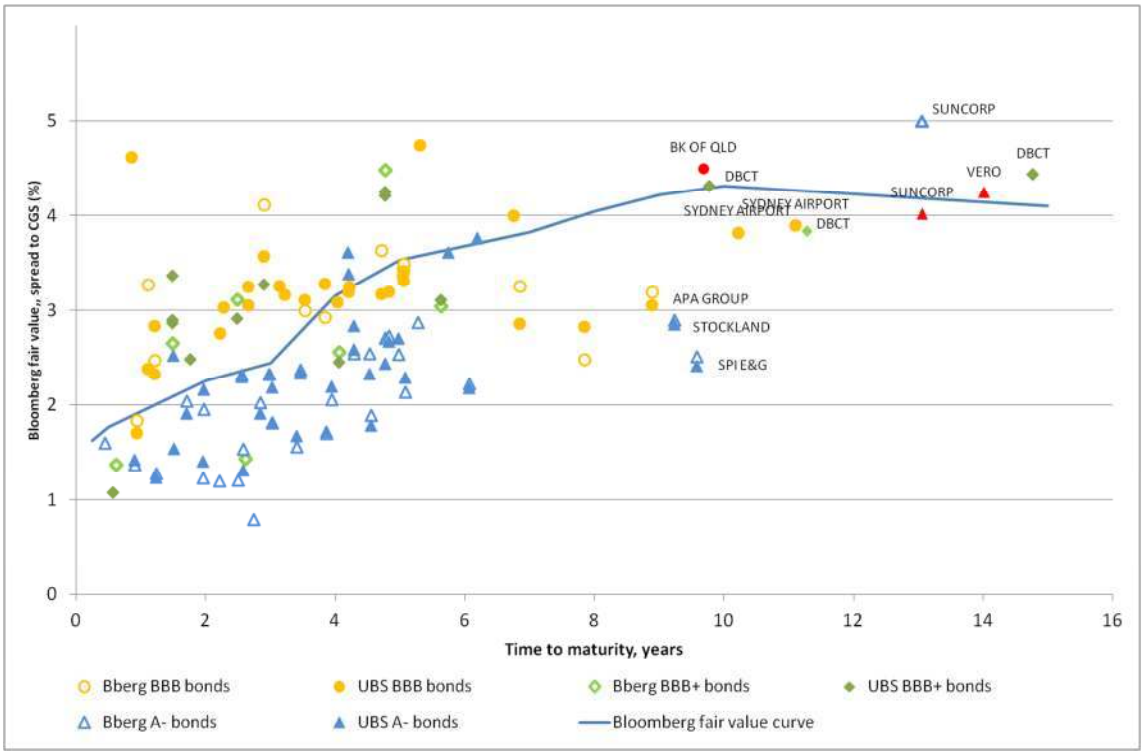
Figure 3: Bonds with maturity greater than one year rated BBB to A- identifying callable bonds



Source: Bloomberg, UBS, RBA and CEG analysis

33. Adjusting the UBS spreads in Figure 3 using the Oakvale adjustment results in the below figure.

Figure 4: Oakvale adjustment



Source: Bloomberg and UBS, CEG analysis

34. Making the Oakvale adjustments have the effect of making the relevant bonds closer to the Bloomberg fair value estimate rather than further away.

35. The Oakvale adjustment is considered in more detail in Appendix A.

2.3.2. Analysis of SPI Bond

36. It is relevant to note that SPI Electricity & Gas is part owned by the Singapore Government. The AER's experts, Oakvale Capital, stated in relation to a shorter dated SP AusNet bond in an earlier period that:

> *During the averaging period the bond was attracting one of the lowest yields, in contrast to other A- bonds observed (as per the CEG report). The key feature supporting the bond was the parental support of the issuer's owners and the link to the Government.* [9]

37. In my opinion, little or no weight should be given to the SPI Electricity & Gas observation to the extent that the relevant benchmark is the cost of debt for privately owned corporations. This is because, consistent with the views expressed by

[9] Oakvale Capital February 2011, Report on the cost of debt during the averaging period: The impact of callable bonds

Oakvale, the yield on SPI bonds appear to be depressed by a perception of the willingness of the Singapore Government to stand behind these bonds.

2.3.3. Analysis of the DBCT bonds

38. The AER has previously stated a position that the yield on DBCT bonds is in some sense aberrant. I consider that the AER's previously stated position with respect to the DBCT bonds was based on a number of factual and analytical errors, including:

- a failure to reference recent credit rating reports from S&P that do not support a conclusion that the DBCT bond is aberrant or an outlier and should be excluded from the determination of the DRP;[10] and
- a failure to compare the DBCT yields with the yields on other short and long dated bonds (such as the Bank of Queensland bond, the Sydney Airport bonds and the Suncorp Metway bonds) which indicate that the DBCT is neither aberrant nor irrelevant to the determination of the DRP.

39. Nonetheless, I note that recent statements by the AER suggest they may no longer see DBCT bond yields as aberrant. In the recent final decisions for APT Allgas and Envestra, the AER notes that "observed yields on the DBCT bond are now more consistent with other comparable bonds" and "that one possible reason for this change is that greater certainty may now exist surrounding the issuer and the future status of the issue (following previous restructuring and ownership changes)".[11]

[10] DBCT Finance Pty Ltd was last confirmed as BBB+ by Standard & Poor's on 27 May 2011. See http://www.alacrastore.com/research/s-and-p-credit-research-Summary_DBCT_Finance_Pty_Ltd-869103, accessed 30 September 2011.

[11] AER, APT Allgas, Access arrangement proposal for the Qld gas network, page 203.

3. Reliance upon an independent expert opinion

40. As noted in section 2 above, I consider that relying on an independent expert opinion, such as that of Bloomberg, is likely to give rise to a more accurate estimate of the DRP than reliance on specific bond yields to adjust Bloomberg's view. In my view, the results of the analysis at section 2 demonstrate that the extrapolated Bloomberg BBB fair value curve is also reliable from an empirical perspective as well as a principled one.

41. Given that the Bloomberg fair value curve provides a good fit to the data, I consider that it would be poor regulatory practice to try and second guess the Bloomberg estimate – especially if this second guessing were undertaken in a casual manner without an in depth understanding of the available data.

42. Second guessing the expertise of Bloomberg in gathering and interpreting information relevant to determine a fair value curve is a fraught exercise. To the extent the AER is less expert in this area than Bloomberg, it is reasonable that, in the absence of compelling evidence that the measurement of the DRP based on the Bloomberg curve would be unreasonable, a presumption should exist in favour of adopting Bloomberg's estimate.

43. In this regard it is relevant to note that interpretation of bond data is not straight forward. Bond yields might be affected by a number of factors, including:

- the expected loss given the default of the issuer;
- the size of the bond issue;
- the growth options of the particular issuer;
- the capital expansion plans of the issuer;
- the liquidity of trading in the issuer's bonds; and
- particular features of the bond (such as maturity, call features, credit rating, recognition of issuer's corporate brand, implied government backing etc).

44. It must also be kept in mind that the observations that the AER (and myself) work from are not actual bond yields but are estimates of bond yields if the bonds were to trade. Some estimates will be better than others depending on factors such as when the most recent trade took place in that bond (or other of the issuers' bonds) and the extent to which comparable bonds have recently traded. Moreover, some bond yield estimates may be more reliable than others. For example, a UBS yield estimate might be more reliable for a particular bond than an ABNAmro yield estimate because UBS trades in those bonds more frequently (or *vice versa*).

45. Properly synthesising debt market information is a difficult and complex task. Ideally, this is a task for industry experts/participants. The AER is not an industry expert/participant and, as such, should only involve itself to the extent that there is a

clear case that industry estimates, such as the Bloomberg fair value estimates, are inaccurate.

46. In summary, the Bloomberg fair value curve is built for and commercially provided to debt market participants who pay to use it for commercial purposes. In deriving its fair value curves Bloomberg has a great deal of information available to it – including, but not limited to, estimates of market prices of many hundreds of bonds across a range of credit ratings and maturities (including but, again, not limited to the BBB to A- bonds charted in this report). This compares to what is effectively one bond, the APA Group bond, which the AER has previously used as an alternative to the Bloomberg fair value curve (and which the AER justifies by reference to three or four other bonds).

3.1. Construction of the Bloomberg fair value curve

47. Only BGN yields are used in the construction of the Bloomberg fair value curve.[12] This suggests that bonds without BGN yields are not regarded as having sufficient reliability to be included in the fitting of the curve.

48. I find that this interpretation is supported by reference to Bloomberg's BVAL reliability scores, which are scores of reliability out of ten linked to BVAL. Examination of Bloomberg's BVAL screen indicates that Bloomberg has regard to the a number of factors in computing these scores, including:

- direct observations of the yield or margin of the bond. A bond with direct observations can receive a score as high as 10/10;
- the historical track of closely correlated peer bonds. A bond with historical track information only can receive a score of no more than 7/10; and
- observations of observed comparators, which places the bond on a line through a much broader set of comparable bonds.

49. When I examine the BVAL scores of bonds that are referenced in the construction of the Bloomberg BBB fair value curve, I find that all of these have a BVAL score of at least seven, with most having a score of eight or more, as indicated in below. It is relevant to note that a bond issued by DBCT, maturing in 2016, is one of those upon which Bloomberg relies in the construction of its fair value curve. More generally, it appears to be the case that bonds with BGNs also have, on average, higher BVAL scores than bonds which only have BVAL pricing sources.

50. Taken together, these factors suggest that Bloomberg take into account an array of data and analysis in assessing the quality of its data, its relevance to the calculation of fair values and in the construction of the fair value curve itself.

[12] The Bloomberg terminal states: "Fair market curves are constructed with an optimization model that solves simultaneously for all maturity points, or term structures, and volatilities to best fit the existing data. The goal of optimization is to minimize the option-adjusted spread (OAS) standard deviation between Bloomberg Generic Prices and the term structure-volatility combinations."

Table 4: BVAL scores of bonds used in the construction of the Bloomberg BBB fair value curve

Issuer	Bloomberg ticker	Maturity	BVAL score
Coles	EF023185 Corp	25/07/2012	9
Holcim	EH925974 Corp	7/08/2012	8
CLP	EF167960 Corp	16/11/2012	9
Downer Group	EI022346 Corp	29/10/2013	7
Transurban	EI188381 Corp	24/03/2014	8
Leighton	EH911249 Corp	28/07/2014	8
Wesfarmers	EH964875 Corp	11/09/2014	10
Mirvac	EI195249 Corp	15/03/2015	7
Sydney Airport	EI308853 Corp	6/07/2015	8
DBCT	EF461870 Corp	9/06/2016	7
Mirvac Group	EI414696 Corp	16/09/2016	8
Sydney Airport	EI684902 Corp	6/07/2018	8

Source: Bloomberg, extracted 27 September 2011.

3.2. Preference for BGN yields over BVAL and BCMP

51. Bloomberg makes available observed and estimated bond yields using different pricing sources. Three pricing sources that are used in the analysis in this report, and have been used by CEG and the AER in the past; are Bloomberg composite prices (BCMP), Bloomberg generic prices (BGN) and Bloomberg's evaluated price (BVAL).

52. As described by Bloomberg, a BCMP yield is any sourced by Bloomberg from a set of quality contributors. A BGN yield is Bloomberg's assessment, using bond-specific information only, of a market consensus price for the bond.[13] Bloomberg will not estimate a BGN price if it is not comfortable that there is a market consensus on price. A BVAL price is Bloomberg's assessment, using bond-specific and/or general market information, of the price a bond might trade at.[14]

53. From these definitions, it is clear that BGN prices (and yields) can generally be regarded as having the highest quality since Bloomberg considers these prices representative of a market consensus price. BVAL and BCMP prices are of lesser quality, since these are either Bloomberg's evaluated price or a price estimate provided by a contributor.

54. The table below shows the distribution of bond yield data available for BBB to A- rated bonds issued in Australia in Australian dollars across from Bloomberg and UBS.

[13] Bloomberg description of Bloomberg Generic Price (BGN) available in the Help Search function (search: Bloomberg Generic Price) under sub-heading Frequently Asked Questions

[14] Bloomberg description of BVAL Final Price available in the Help Page for BVAL.

Table 5: Availability of bond data from UBS and Bloomberg

Source	Fixed rate bonds	Floating rate bonds	Total
UBS	40	39	79
Bloomberg			
BGN	35	1	36
BCMP	48	1	49
BVAL	46	0	46
All sources	48	1	49
None	2	38	40
All bonds	**50**	**78**	**128**

55. Table 5 above indicates that there is very little floating rate bond data currently available from Bloomberg, but that Bloomberg on aggregate has slightly better coverage of fixed rate bonds than UBS. Of the 128 bonds that were identified, data is available from one of these sources for 88 of them, including 48 fixed rate bonds and 40 floating rate bonds.

56. I note that in recent decisions the AER has preferred the use of the BVAL source from Bloomberg over that of BGN or BCMP. Prior to its reliance on the APA Group bond, I understand that the AER relied upon BGN and BCMP yields. However, the APA Group bond only has Bloomberg yield data available from the BVAL source. Table 5 indicates that Bloomberg assigns fewer bonds a BGN yields than it does a BVAL yield and fewer bonds a BVAL yields than it assigns a BCMP yield.

57. I consider that it is most reasonable to rely on Bloomberg data from the BGN source where this is available. For the reasons set out above, it is clear that BGN yields have the greatest reliability. Furthermore, only BGN yields are used in the construction of the Bloomberg fair value.

> *Fair market curves are constructed with an optimization model that solves simultaneously for all maturity points, or term structures, and volatilities to best fit the existing data. The goal of optimization is to minimize the option-adjusted spread (OAS) standard deviation between* ***Bloomberg Generic Prices*** *and the term structure-volatility combinations.*[15]

58. As noted above, the bonds used by Bloomberg to fit its curve are those with the highest quality measures. However, I do not consider it reasonable to exclude potentially relevant data even where this may be of potentially lesser quality and so where BGN yields are not available (such as for APA Group) I use, in order of preference, BVAL yields and then BCMP yields.

[15] Bloomberg Help menu for Fair Market Curve Analysis (BFVC) page 5/9

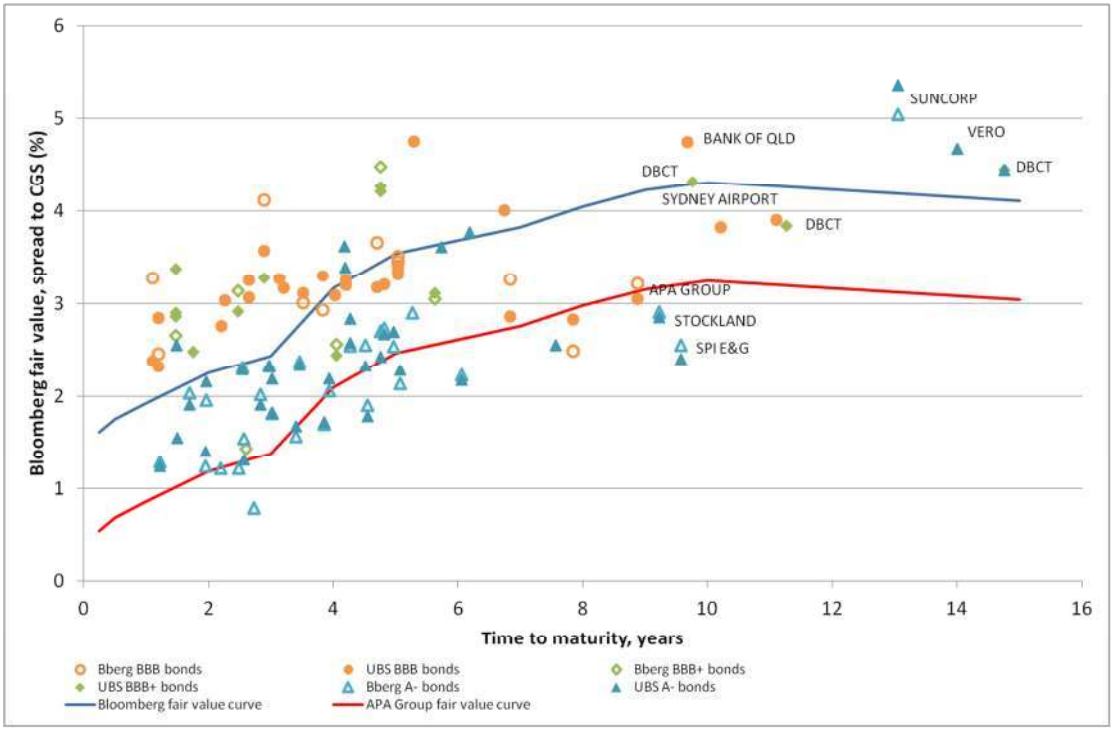
3.3. Reliance on the APA Group bond

59. APTPPL has asked me to assess which approach is likely to give rise to an estimate of the DRP in line with the benchmark Australia corporate bond as defined by the AER. The AER has previously given significant weight to the bond issued by the APA Group. I consider that giving material reliance to a single bond and in particular the APA Group bond, as the AER does, is problematic for several reasons.

60. First, the APA Group bond relied upon by the AER matures in less than 9 years. The benchmark bond for determining the debt risk premium is an Australian corporate bond with a BBB+ rating and a *maturity of 10 years.* There are other bonds which fit this description more closely than APA Group, including bonds issued by DBCT (BBB+ and matures in 9.8 years) and Sydney Airport (BBB and matures in 10.2 years).

61. Second, a fair value curve passing through the bond issued by the APA Group would provide a very poor fit to the population of fixed and floating Australian dollar corporate bonds rated between BBB and A-. This is illustrated in Figure 5 below; where the red line is the Bloomberg BBB fair value curve shifted down to pass through the APA Group bond.

Figure 5: Bonds with maturity greater than one year rated BBB to A- with fair value curve passing through APA Group



Source: Bloomberg, UBS, RBA and CEG analysis

62. Third, there is a danger in placing excessive reliance on a single bond, as well as second guessing the expert opinion of Bloomberg. In determining its BBB fair value

curve, Bloomberg has access to significantly more information than the AER. This information leads Bloomberg to ascribe different levels of 'quality' to different bond yield estimates it publishes. If Bloomberg's expert opinion was to place more weight on the APA Group bond, the APA Group fair value curve (red) would not be so far below the Bloomberg BBB fair value curve (blue) (see Figure 5 above).

63. I consider that this danger is exacerbated given that Bloomberg itself is not sufficiently sure of the market consensus yield on APA Group's bond to assign a BGN yield except for on three days during the averaging period.[16] That is, whilst the BVAL yield estimate for APA Group's bond may be Bloomberg's best estimate of how this bond would trade given current market information, Bloomberg does generally not have sufficient market information specific to the APA Group bond to be confident that there is a consensus around this view on a regular basis. Moreover, I note that the average BGN yield over the averaging period was 21bp higher than the average BVAL yield over the averaging period.

64. Fourth, the AER may create incentive problems for APA Group by putting too great a reliance on the yield of the APA Group bond in setting the debt risk premium, since APTPPL is a subsidiary of the APA Group. The rationale behind using a benchmark cost of capital, rather than that estimated specifically for a regulated business, is to avoid incentives for the regulated business to incur greater than efficient costs due to lack of incentives to operate efficiently.

65. By relying to such a great extent on APA Group's bond yields to set the cost of debt, the AER is setting a potentially damaging precedent. If APTPPL expects to have its cost of capital linked to the yields on bonds it or its parent issues then this will reduce the incentives of APA Group to manage its debt portfolio efficiently to achieve the lowest cost. For example, it may be unwilling to issue long-dated debt where this would otherwise be the most efficient policy if this means that the AER will rely upon those yields to estimate its cost of capital. It may also choose to issue small amounts of long-dated debt when it is not most efficient to do so, in order for these higher yields to be reflected in the regulatory cost of debt.

66. This is ultimately poor regulatory practice that can be mitigated by placing sole reliance on Bloomberg's fair value estimate, which is likely to be largely unaffected by the actions of any single bond issuer.

67. Moreover, as described above, it appears that the APT bond has an unusually low yield. Such a conclusion is supported by commentary from market participants such is embodied in the following quote from Australian Ratings.[17]

[16] The 2nd, 9th and 20th of September.

[17] Australian Ratings, Expert Opinion Prepared for N.T. Gas Pty Limited, Estimating the Debt Risk Premium, 26 May 2011.

Indeed, the APT 2020 bond is an example of a rare bond that broke new ground with investors, when issued in July 2010. The issue was reported at the time in the market newsletter, The DCM Review, as follows:

> ***APA Group opens eyes***
>
> *As for events that may be more significant for the longer term development of the market, the bond issue by APA Group via its financing subsidiary APT Pipelines Ltd., opened the eyes of many potential corporate issuers. Until now these potential issuers had little confidence in the market as viable source of medium to long term debt and would have gone straight to the US markets.*
>
> *Perhaps they will now reconsider.*
>
> *The deal sets a new record as being the first ten year bond issued by a „BBB" rated issuer. Snowy Hydro (then BBB+) issued ten year bonds in 2003 and Southcorp (then BBB+) was the first to do so in 2000.*
>
> *The deal is one of only six bond issues with a term to maturity of ten years or more, made this year, and Telstra is the only other non-financial institution issuer to do so. It is also one of only seven "BBB" category issuers this year.*
>
> *An examination of this group of issuers reveals an interesting pricing comparison. Dexus Property Group issued A$180 million of bonds for seven years in April (before the recent troubles in financial markets broke out), priced at 270bps over swap. Against this, the pricing of APA Group's issue at 240bps over, looks sensational, being rated one notch lower and with a term to maturity three years longer.*

The unusual and rare nature of the bond was recognised in subsequent industry awards from KangaNews and FinanceAsia at the end of 2010.

3.4. Pitfalls in making assumptions about underlying data – an example

68. Let us imagine for a moment that that the best estimate of the DRP was an average of the benchmark BBB spread estimated by Bloomberg and the true spread on the APA bond. The question then becomes whether the AER's estimate of the APA bond yield, being the BVAL yield from Bloomberg, is an accurate estimate of the yield on APA's bond.

69. The following chart from Bloomberg clearly suggests that this has not been the case in the past – including in the periods where the AER has used the APA BVAL yield estimate.

Figure 6: APA BVAL spread and Bloomberg assessment of quality

Source: Bloomberg

70. This figure shows the BVAL spread to CGS in the line chart at the top of the figure. The bar chart in the bottom of the figure shows Bloomberg's estimate of the quality of the information underlying its BVAL yield.

71. The quality of the information is very low (one out of ten) in June and July but then rises to be six or seven out of ten in early August. Coincident with the increase in the quality of the information Bloomberg has its BVAL yield also increased materially – by around 60bp.

72. This clearly illustrates the problem with relying on the BVAL yield for a single bond where the quality of the information going into that BVAL yield estimate is variable. Even if one accepts that one should set the DRP by reference to the APA bond yield, the AER's methodology would, prior to August 2011, appear to have resulted in a material underestimate of the DRP due to the fact that its BVAL estimate for APA would, during the periods of poor information quality, appear to have been an underestimate of the true yield on that bond.

4. Extrapolation of the Bloomberg fair value curve

73. On 23 June 2010 Bloomberg discontinued estimation of its 10-year AAA fair value estimates. Prior to that date, the AER was relying upon Bloomberg's AAA fair value curve to extrapolate forward Bloomberg's BBB fair value curve from seven to ten years.

74. At that time, I recommended (for the Victorian electricity distributors) that extrapolation be conducted using the increase in DRP between seven and ten years for the most recent Bloomberg AAA fair value curve and applying this to the contemporaneous DRP calculated from the 7-year Bloomberg BBB fair value estimate.[18] In its final decision in the matter, the AER accepted this approach:[19]

> *Overall the AER considers that using the spread on the AAA rated estimates to extrapolate Bloomberg's estimates to 10 years is preferable to using the spread on CGS estimates in light of CEG's arguments*

75. The AER has continued to rely upon this approach in subsequent decisions, including APT Allgas and Amadeus, using the Bloomberg AAA fair value curve over the 20 days to 22 June 2010. Current application of this approach gives an estimate for the extrapolated 10-year DRP of 4.31%, being:[20]

- the average annualised Bloomberg 7-year BBB fair value yield estimate over the 20 days to 30 September 2011 of 7.85%; plus
- the average increase in annualised Bloomberg fair value CGS yields between 7 and 10 years over the 20 days to September 2011 of 0.23%; plus
- the average increase in annualised Bloomberg AAA fair value yields between 7 and 10 years over the 20 days to 22 June 2010 of 0.60%; less
- the average increase in annualised Bloomberg fair value CGS yields between 7 and 10 years over the 20 days to 22 June 2010 of 0.13%; less
- the average annualised CGS 10-year yield over the 20 days to 30 September 2011 of 4.25%, as calculated by CEG using RBA reported yields.

76. APTPPL has asked CEG to recommend a method of extrapolation of the Bloomberg BBB fair value curve in light of the legislative requirements. As has been demonstrated in the analysis in section 2 above, most relevantly Figure 2, this approach still provides a very good fit to the observed yields for bonds of comparable ratings and maturity.

---

[18] CEG, *Use of the APT bond yield in establishing the NER cost of debt*, October 2010, p. 56.

[19] AER, *Final decision: Victorian electricity distribution network service providers: Distribution determination 2011-2015*, October 2010, pp. 510-11.

[20] The figures do not precisely sum to 4.31% due to rounding.

77. However, there are alternative methodologies available for extrapolating the Bloomberg BBB fair value curve. These alternative methodologies are explored below.

4.1. Alternative extrapolation methodologies

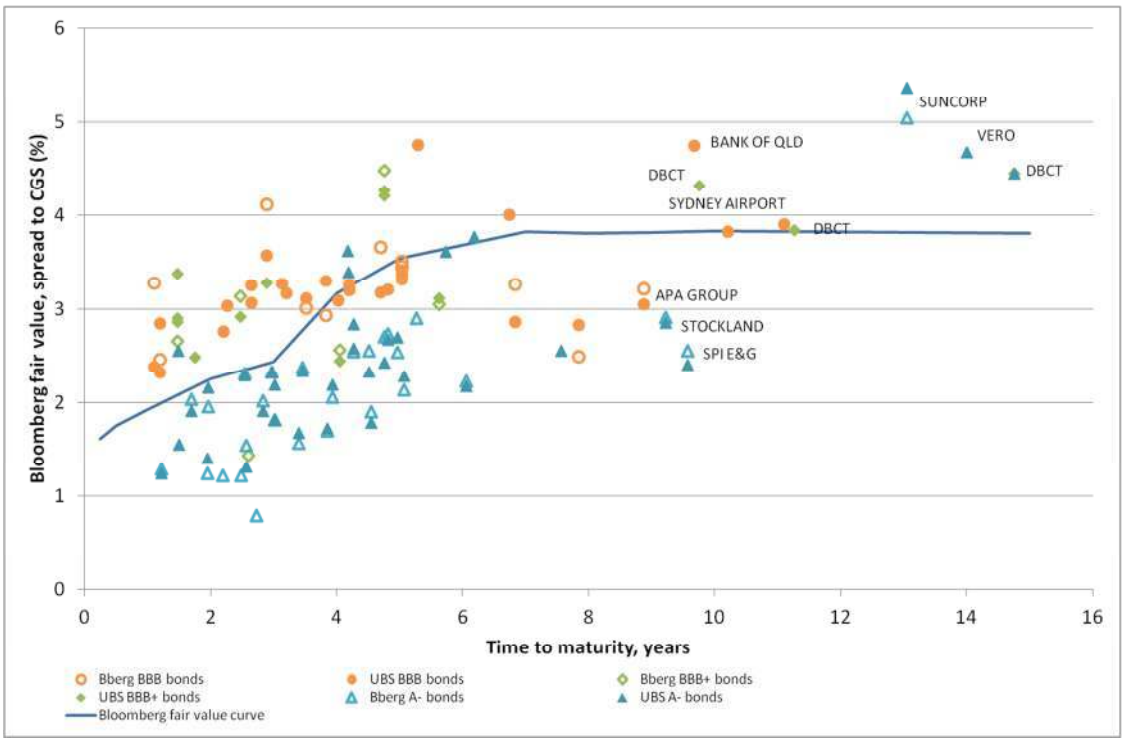
78. In this section I consider a number of alternative methodologies for extrapolation of the Bloomberg BBB fair value curve. These include:

- extrapolation using CGS only. That is, assuming that debt risk premiums remain constant between seven and ten years and the increase in yields is driven by the increase in yield of the seven year and ten year CGS yields;
- linear extrapolation using the Bloomberg BBB fair value estimates at five and seven years; and
- extrapolation based on the average difference in yield for bonds maturity in approximately 7 to 10 years issued by the same issuer.

4.1.1. Extrapolation using CGS only

79. Extrapolation using CGS only results in a flat Bloomberg BBB fair value curve beyond seven years, as is illustrated in Figure 7 below.

Figure 7: Bloomberg fair value curve extrapolated using CGS only



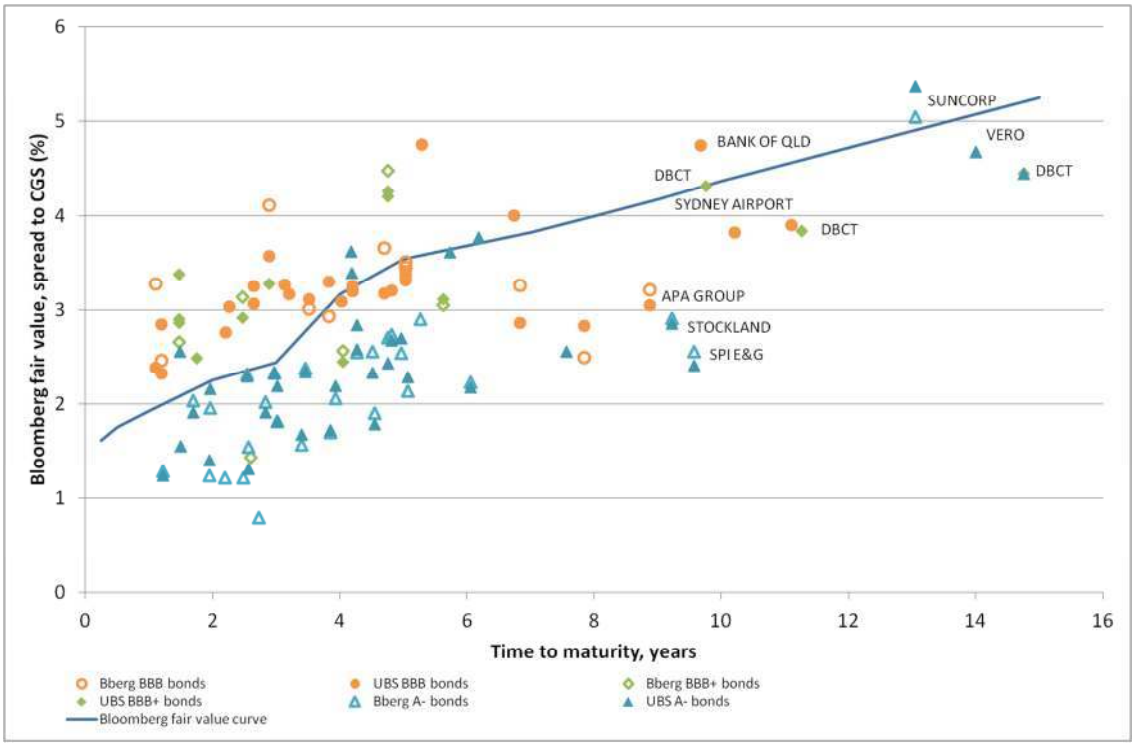
Source: Bloomberg, UBS, RBA and CEG analysis

80. Extrapolation based on the CGS yield curve results in a constant level of DRP beyond 7 years. I do not consider that it is generally reasonable, or consistent with other market information (as surveyed at 4.1.3 and generally indicated in the figure above), to assume that the DRP does not rise between 7 and 10 years.

4.1.2. Linear extrapolation

81. The result of extrapolating the Bloomberg BBB fair value curve using a linear extrapolation methodology is illustrated in Figure 8 below. Using the linear extrapolation methodology results in a relatively steeply upwards sloping curve beyond 7 years.

Figure 8: Bloomberg fair value curve extrapolated using linear extrapolation



Source: Bloomberg, UBS, RBA and CEG analysis

82. Linear extrapolation is not, in general, a reasonable way in which to extrapolate the DRP curve out to very long maturities. At some point adding an extra year to the time of principle re-payment will begin to add less to the uncertainty surrounding that principle repayment actually being achieved. Moreover, as maturity increases the importance of that principle repayment to investors as a source of value relative to coupons is lowered. Consequently, one can reasonably expect that at long maturities the DRP will increase less with maturity than at short maturities.

83. Consistent with the above discussion, the linear extrapolation approach results in materially higher DRP estimates beyond 10 years than does the application of

regulatory precedent (based on the shape of the AAA fair value curve when it was last published out to 15 years maturity). Nonetheless, its estimate of fair value at 10 years maturity is consistent with the estimate derived from regulatory precedent.

4.1.3. Extrapolation using actual differences in yield

84. There are a number of issuers that currently have multiple bonds on issue with maturity of both approximately 7 and 10 years. Therefore, it is possible to look to the difference in yield between bonds maturing in 7 and 10 years to inform the extrapolation decision.

85. There are currently 7 issuers of corporate bonds who have issued one bond maturing in 6 to 8 years and one bond maturing in 9 to 11 years. However, only three of these issuers have yield estimates for both of these bonds. The spread to CGS of the two relevant bonds and the difference between them are summarised in Table 6 below.

Table 6: Yield on bonds maturing in 7 and 10 years by the same issuer

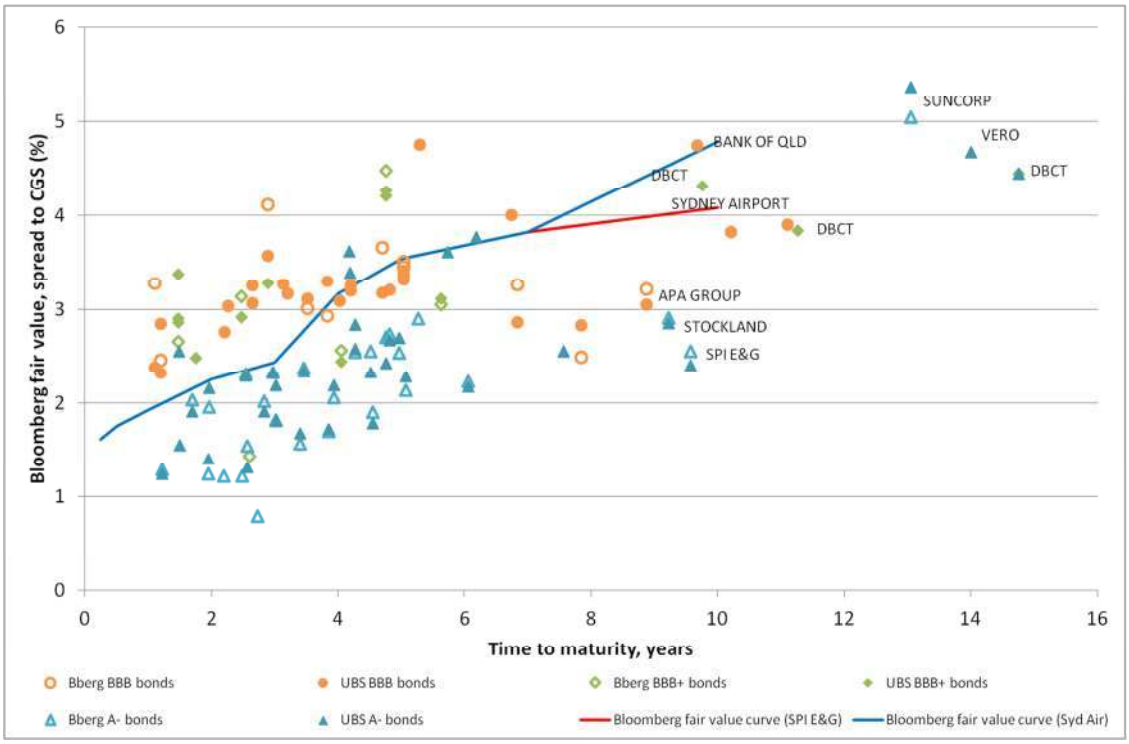
Issuer	Source	Rating	Yield ~10y	Yield ~7y	Δ in yields	Δ in spreads
Bank of Qld	UBS	BBB	8.97	8.02	0.95	0.74
SPI E&G	Av UBS, BB	A-	6.73	6.12	0.57	0.26
Sydney Airport	UBS	BBB	8.095	6.88	1.22	0.96
Average						**0.65**

Source: Bloomberg and UBS

86. UBS yields are available for three complete pairs of bonds, issued by the Bank of Queensland, SPI Electricity & Gas and Sydney Airport. Bloomberg yields are available only for the Sydney airport pair. The Bank of Queensland bonds mature in 6.7 and 9.7 years respectively, the SPI Electricity & Gas bonds mature in 6.1 and 9.6 years respectively and the Sydney Airport bonds mature in 6.8 and 10.2 years respectively. Although this analysis is ultimately only based on three bonds, it does indicate that there is a positive difference between bond maturing in 7 and 10 years.

87. Figure 9 below illustrates the Bloomberg BBB fair value curve extrapolated to ten years using the minimum and maximum increases reported in Table 6 above, i.e. 0.26 (in red) or 0.96 (in blue) per year.

Figure 9: Bloomberg fair value curve extrapolated using actual differences in yield



Source: Bloomberg, UBS, RBA and CEG analysis

88. This alternative extrapolation of the Bloomberg BBB fair value curve produces a range for the extrapolation that encompasses the extrapolation based on regulatory precedent – which falls close to the middle of this range.

89. I have two concerns about reliance upon this approach. Firstly, as noted at Table 6 above there are only three data points relevant to assessing the slope for this extrapolation. For the same reasons as set out at sections 2.2 and 3 above, I consider it unreasonable to place significant weight upon a range given by just three observations. In particular, I consider that such an approach would make the extrapolation results highly variable – depending on the movements in yields for just three issuers.

90. Secondly, and as noted in section 2.2 and section above, I hold some reservations about the reasonableness of relying upon yields of bonds issued by SPI (which gives rise to the bottom of the extrapolation range under this method). I consider that these are likely to be affected by the ownership stake of the Singapore government, and this consideration is also likely to affect the slope of (change in) the DRP associated with changes in the maturity of SPI's bonds.

4.2. Recommended extrapolation methodology

91. Having reviewed three possible alternative extrapolations to the Bloomberg BBB fair value curve between seven and ten years, none of these offer results that fit the observed bond data significantly better than the existing regulatory precedent. In my opinion, each of the alternative extrapolations gives rise to new and significant issues that are not created by continued reliance upon the existing methodology.

92. In particular, I consider that extrapolation based upon the most recent shape of Bloomberg AAA fair value curve:

- relies upon information from a range of corporate bond yields as assessed by Bloomberg;
- provides for a modest increase in DRP between 7 and 10 years; and
- provides a reasonable fit to the observed bond data.

93. Other things equal it would be desirable that the current extrapolation methodology uses more recent data. However, the fact remains that the standard regulatory precedent results in a curve that remains a very good fit to the available data. The alternative methodologies produce results that are either unreasonable, or are based on an extremely limited dataset which would be highly sensitive to change over time.

94. I consider that the existing regulatory precedent, to rely upon the most recent shape of the Bloomberg AAA fair value curve to extrapolate the BBB fair value curve, remains the most reasonable methodology in the circumstances.

5. Recommended DRP

95. I recommend the use of the Bloomberg BBB fair value curve, extrapolated from 7 to 10 years using the most recent information from the Bloomberg AAA fair value curve, to estimate APTPPL's DRP. Use of this extrapolation over the 20 days to 30 September 2011 gives rise to an estimate of the 10-year DRP of 4.31%.

96. In my view this is the best estimate of the required DRP consistent with prevailing conditions in the market for funds. I consider that when combined with the appropriate risk-free rate, use of this estimate results in a cost of debt that is in line with the Australian benchmark corporate bond rate for corporate bonds which have a BBB+ credit rating and a maturity of 10 years.

97. I have not been asked by APTPPL to review the other parameters used in the calculation of the WACC. I consider that estimate of DRP, when combined with the appropriate risk-free rate and a consistently calculated cost of equity in the WACC formula, will result in a rate of return that is commensurate with the prevailing conditions in the market for funds and the risks involved in providing reference services.

Appendix A. Oakvale adjustment calculations

98. The below table shows the change in yield that results from removing the embedded option for the 3 callable bonds that have an embedded option premium (and which have a maturity of greater than 8 years on 16 September 2011) as per the methodology suggested by Oakvale. The last row highlights the change in fixed equivalent yield to maturity which results from removing the option premium.

Table 7: Fixed equivalent yields with/without option premium

	AU3FN0013124	AU300SUNQ027	AU300VERO021
		Analysis with option	
Yield to call	7.8241	4.2429	4.4285
Yield to maturity	8.4447	6.4433	5.5642
Option premium	-1.5490	-12.9401	-4.1906
Clean price	100.68	102.83	100.98
OAS	321.2	0.0	0.0
		Analysis without option	
Yield to maturity	8.2050	5.0963	5.1430
Option premium	0	0	0
Clean price	102.72	115.43	105.29
Change in yield	**0.240**	**1.347**	**0.421**

Source: Bloomberg

99. I note that in the Bloomberg pricing model as it is used by Oakvale requires an option adjusted spread (OAS) spread to be entered. When a pricing source is available, the OAS defaults to an estimate based on this pricing source. However, when no pricing source is available the OAS defaults to zero – as it does for AU300SUNQ027 and AU300VERO021 in Table 4 above. This results in yield to call estimates that are very similar to the swap rate (consistent with a zero OAS) and yields to maturity that are only modestly higher than that.

100. These estimates are clearly not market based estimates of yield but are the default process in Bloomberg to set OAS equal to zero where no pricing information is available. Nonetheless, Oakvale still used the same process to generate a change in yield associated with callability (ie, even where Bloomberg had defaulted to a zero OAS). In effect, Oakvale is assuming that while the default levels of yields may be incorrect, the change in these yields when callability is removed is correct. I have followed Oakvale's process in this regard.

Appendix B. Terms of reference

HSBC Building
Level 19
580 George Street
Sydney NSW 2000
PO Box R41
Royal Exchange NSW 1225

Phone 61 2 9693 0000
Fax 61 2 9693 0093
www.apa.com.au

APA Group

Australian Pipeline Ltd
ACN 091 344 704

Australian Pipeline Trust
ARSN 091 678 778

APT Investment Trust
ARSN 115 585 441

15 September 2011

Dr Tom Hird
Competition Economists Group (CEG)
Suite 201
111 Harrington St
SYDNEY NSW 2000

By email: tom.hird@ceg-ap.com

Dear Dr Hird

Roma to Brisbane Pipeline access arrangements 2012 – 2017: Measurement of the cost of debt

Background

APT Petroleum Pipelines Ltd (**APTPPL**) owns the Roma to Brisbane Pipeline (**RBP**) which transports natural gas from the gas hub near Roma to the markets of Brisbane and the regional centres along the pipeline route. The mainline was constructed in 1969, is 438km long and runs from Roma (Wallumbilla) to Brisbane. The Peat lateral was constructed in 2001, is 121km long and runs from the Peat and Scotia gas fields to Arubial.

Pursuant to the National Gas Rules (**Rules**), APTPPL is required to submit an access arrangement revision proposal to the Australian Energy Regulator (**AER**) by 12 October 2011. The access arrangement revision proposal must, amongst other things, set out the amendments to the access arrangement that the service provider proposes for the following access arrangement period.

The reference service provided by the RBP is a non-interruptible service for the receipt, transportation and delivery of gas through any length of the pipeline in the direction from Wallumbilla or Peat to Brisbane.

Under the Rules, total revenue for a relevant service provider is determined for each regulatory year of the access arrangement using a "building blocks" methodology (rule 76). The building blocks include, amongst others, a return on the projected capital base for the year (subrule 76(a)).

Subrule 87(1) provides that the rate of return on capital is to be commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services. Subrule 87(2) provides:

> "In determining a rate of return on capital:
>
> (a) it will be assumed that the service provider:
>
> (i) meets benchmark levels of efficiency; and
>
> (ii) uses a financing structure that meets benchmark standards as to gearing and other financial parameters for a going concern and reflects in other respects best practice; and
>
> (b) a well accepted approach that incorporates the cost of equity and debt, such as the Weighted Average Cost of Capital, is to be used; and a well accepted financial model, such as the Capital Asset Pricing Model, is to be used."

Subrule 72(1)(g) provides that the access arrangement information for a full access arrangement proposal must include the proposed rate of return, the assumptions on which the rate of return is calculated and a demonstration of how it is calculated.

Rule 74, which applies generally to forecasts and estimates (including those used in determining the return on capital), provides:

> "(1) Information in the nature of a forecast or estimate must be supported by a statement of the basis of the forecast or estimate.
>
> (2) A forecast or estimate:
>
> (a) must be arrived at on a reasonable basis; and
>
> (b) must represent the best forecast or estimate possible in the circumstances."

Pursuant to section 28 of the National Gas Law (**Law**), in making a decision on whether to approve an access arrangement proposal, the AER must have regard to the National Gas Objective (in section 23 of the National Gas Law), which is:

> "...to promote efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas."

The AER must also take into account the revenue and pricing principles in section 24 of the Law when exercising a discretion in approving or making those parts of an access arrangement relating to a reference tariff. The AER may take into account the revenue and pricing principles when performing or exercising any other AER economic regulatory function or power (which is defined to include an applicable access arrangement decision), if the AER considers it appropriate to do so. The revenue and pricing principles in section 24 of the Law include the following:

> "(2) A service provider should be provided with a reasonable opportunity to recover at least the efficient costs the service provider incurs in—
>
> (a) providing reference services; and
>
> (b) complying with a regulatory obligation or requirement or making a regulatory payment.
>
> ...
>
> (5) A reference tariff should allow for a return commensurate with the regulatory and commercial risks involved in providing the reference service to which that tariff relates.
>
> (6) Regard should be had to the economic costs and risks of the potential for under and over investment by a service provider in a pipeline with which the service provider provides pipeline services."

In its revised access arrangement proposal, APTPPL will be using a Weighted Average Cost of Capital (**WACC**) to determine its return on capital under rule 87(1) of the National Gas Rules. In this context, APTPPL is seeking the opinion of a recognised independent expert on the appropriate methodology to be used to determine the debt risk premium and the value to be adopted for this parameter. The approach to determining the debt risk premium will be required to comply with the relevant provisions of the Rules and Law, including the Rules and Law set out above.

Scope of Work

You are briefed to provide an expert opinion report for use by APTPPL in its access arrangement revised proposal addressing the following questions:

1 In recent decisions on the access arrangements to apply to a number of gas distribution and transmission pipelines[1] the AER has determined the debt risk premium based equally on the reported yields of the APA Group bond and Bloomberg's (extrapolated) BBB fair value curve. The respective service providers had proposed that the debt risk premium be based solely on Bloomberg's (extrapolated) BBB fair value curve. Which of these approaches do you consider would provide a measurement for the debt risk premium that would:

(a) when combined with the appropriate risk-free rate, result in a cost of debt that is in line with the Australian benchmark corporate bond rate for corporate bonds which have a BBB+ credit rating and a maturity of 10 years; and

(b) when used in the WACC formula, result in a rate of return that is commensurate with the prevailing conditions in the market for funds and the risks involved in providing reference services?

Your answer should take into account data and information that has become available since the AER decisions on the APT Allgas, Envestra and Amadeus gas pipeline access arrangements.

2 To the extent the Bloomberg BBB fair value curve is used as part of the methodology to measure the debt risk premium, this curve may need to be extrapolated to 10 years, as Bloomberg only publishes BBB fair value estimates to seven years. What extrapolation methodologies are available and which of these methodologies would you recommend in light of the requirements in the Law and the Rules?

Information to be relied on

In providing your report, you are expected to draw upon the following information:

- the Law and the Rules in relation to the economic regulation of gas networks;
- the AER's Final "Electricity and Distribution Network Service Providers Statement of Revised WACC Parameters (transmission) Statement of regulatory intent on the revised WACC parameters (Distribution)" dated 1 May 2009, and the relevant materials generated by, and submitted to, the AER in the AER's WACC review;
- the AER's recent regulatory decisions, including its Final Decisions for the APT Allgas and Envestra gas distribution networks, and the Amadeus gas transmission network;
- published econometric, statistical, economic, financial and other relevant literature;
- relevant financial or economic data; and
- such information that, in your opinion, should be taken into account to address the questions outlined above.

Guidelines in preparing your report

The Guidelines for Expert Witness in the Federal Court of Australia are attached to this letter. Although this brief is not in the context of litigation, APTPPL is seeking a rigorously prepared

[1] See: AER, *APT Allgas Access Arrangement Proposal for the Qld Gas Network 1 July 2011 – 30 June 2016 – Final Decision*, 17 June 2011, pp 35 – 39 and Appendix A.5; AER, *Envestra Ltd Access Arrangement Proposal for the Qld Gas Network 1 July 2011 – 30 June 2016 – Final Decision*, 17 June 2011, pp 48 – 51 and Appendix A.5; AER, *Envestra Ltd Access Arrangement Proposal for the SA Gas Network 1 July 2011 – 30 June 2016 – Final Decision*, 17 June 2011, pp 53 – 56 and Appendix A.5; AER *N.T Gas Access Arrangement Proposal for the Amadeus Gas Pipeline 1 August 2011 – 30 June 2016: Final Decision – Public*, 20 July 2011, pp 73 – 78 and Appendix A.3. The AER's access arrangement decisions in respect of each of the pipelines adopted the approach of the AER to the measurement of the debt risk premium as set out in the respective final decisions.

independent view for use in the context of regulatory decision making and you are requested to follow the Guidelines to the extent reasonably possible in this context.

In particular, within your report you are requested to:

(a) identify your relevant area of expertise and provide a curriculum vitae setting out the details of that expertise (to be attached to your report);

(b) only address matters that are within your expertise;

(c) where you have used factual or data inputs please identify those inputs and the sources;

(d) if you make assumptions, please identify them as such and confirm that they are in your opinion reasonable assumptions to make;

(e) if you undertake empirical work, please identify and explain the methods used by you in a manner that is accessible to a person not expert in your field;

(f) confirm that you have made all the inquiries that you believe are desirable and appropriate and that no matters of significance that you regard as relevant have, to your knowledge, been withheld from your report; and

(g) please do not provide legal advocacy or argument and please do not use an argumentative tone.

All key source materials referenced by you in your report should be provided with your report.

Confidentiality

Please ensure that any confidential information provided to you by APTPPL for the purposes of drafting your report is kept confidential, and that any confidential information is not disclosed to any person without the consent of APTPPL.

Your report, and potentially all key source material, will be provided to the AER as part of APTPPL's revised proposal. All non-confidential material will be published by the AER on its website, including your report. As such, should your report contain any information which is confidential, this material must be clearly identified by you as confidential at the time your report is finalised.

Timing

APTPPL requires a final report no later than 3 October 2011, and a draft report no later than 26 September 2011. Please let us know if you anticipate that you may not be able to meet these deadlines.

Yours sincerely

Peter Bolding
General Manager Regulatory and Strategy

ATTACHMENT: FEDERAL COURT GUIDELINES

FEDERAL COURT OF AUSTRALIA
EXPERT WITNESSES IN PROCEEDINGS IN THE FEDERAL COURT OF AUSTRALIA

Guidelines

1. General Duty to the Court[2]

1.1 An expert witness has an overriding duty to assist the Court on matters relevant to the expert's area of expertise.

1.2 An expert witness is not an advocate for a party even when giving testimony that is necessarily evaluative rather than inferential.

1.3 An expert witness's paramount duty is to the Court and not to the person retaining the expert.

2. The Form of the Expert's Report[3]

2.1 An expert's written report must comply with Rule 23.13 and therefore must

(a) be signed by the expert who prepared the report; and

(b) contain an acknowledgement at the beginning of the report that the expert has read, understood and complied with the Practice Note; and

(c) contain particulars of the training, study or experience by which the expert has acquired specialised knowledge; and

(d) identify the questions that the expert was asked to address; and

(e) set out separately each of the factual findings or assumptions on which the expert's opinion is based; and

(f) set out separately from the factual findings or assumptions each of the expert's opinions; and

(g) set out the reasons for each of the expert's opinions; and

(h) comply with the Practice Note.

2.2 The expert must also state that each of the expert's opinions is wholly or substantially based upon the expert's specialised knowledge[4].

2.3 At the end of the report the expert should declare that "[the expert] has *made all the inquiries that* [the expert] *believes are desirable and appropriate and that no matters of significance that* [the expert] *regards as relevant have, to* [the expert's] *knowledge, been withheld from the Court*."

---

[2] The "*Ikarian Reefer*" (1993) 20 FSR 563 at 565-566.

[3] Rule 23.13.

[4] *Dasreef Pty Limited v Nawaf Hawchar* [2011] HCA 21.

2.4 There should be included in or attached to the report the documents and other materials that the expert has been instructed to consider.

2.5 If, after exchange of reports or at any other stage, an expert witness changes the expert's opinion, having read another expert's report or for any other reason, the change should be communicated as soon as practicable (through the party's lawyers) to each party to whom the expert witness's report has been provided and, when appropriate, to the Court[5].

2.6 If an expert's opinion is not fully researched because the expert considers that insufficient data are available, or for any other reason, this must be stated with an indication that the opinion is no more than a provisional one. Where an expert witness who has prepared a report believes that it may be incomplete or inaccurate without some qualification, that qualification must be stated in the report.

2.7 The expert should make it clear if a particular question or issue falls outside the relevant field of expertise.

2.8 Where an expert's report refers to photographs, plans, calculations, analyses, measurements, survey reports or other extrinsic matter, these must be provided to the opposite party at the same time as the exchange of reports[6].

3. Experts' Conference

3.1 If experts retained by the parties meet at the direction of the Court, it would be improper for an expert to be given, or to accept, instructions not to reach agreement. If, at a meeting directed by the Court, the experts cannot reach agreement about matters of expert opinion, they should specify their reasons for being unable to do so.

PA KEANE
Chief Justice
1 August 2011

[5] The *"Ikarian Reefer"* [1993] 20 FSR 563 at 565.

[6] The *"Ikarian Reefer"* [1993] 20 FSR 563 at 565-566. See also Ormrod *"Scientific Evidence in Court"* [1968] Crim LR 240.