

Submission to Queensland Competition Authority

Anglo American submission in relation to the WACC consultation papers and WACC forum

Anglo American Metallurgical Coal Pty Ltd
January 2014

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1 Introduction

Anglo American Metallurgical Coal Pty Ltd (**Anglo American**) welcomes the opportunity to make this submission to the Queensland Competition Authority (**QCA**) in response to the various consultation papers published in relation to the calculation of the Weighted Average Cost of Capital (**WACC**) of Aurizon Network Ltd (**Aurizon Network**).

In this submission, Anglo American have considered the following papers:

- (a) Dr Lally's papers on the risk-free rate (**RFR**) and market risk premium (**MRP**) dated 12 November 2012 and 22 October 2013;
- (b) Dr Lally's initial report on the estimated utilisation rate for imputation credits dated 12 December 2012 and second report on Estimating Gamma dated 25 November 2013 ;
- (c) PricewaterhouseCoopers paper on the cost of debt estimation methodology dated June 2013;
- (d) Incenta Economic Consulting's report on the benchmark credit rating and cost of debt for Aurizon Network dated November 2013; and
- (e) Incenta Economic Consulting's report on the regulatory capital structure and asset/equity beta for Aurizon Network dated 9 December 2013.

Anglo American has also made submissions in relation to various stakeholders presentation and the additional issues raised at the WACC forum held by QCA on 13 December 2013 (**WACC Forum**), in particular in relation to MRP and equity beta.

2 Executive Summary

2.1 Risk Free Rate

Anglo American supports the current approach of the QCA to:

- (a) use Commonwealth Government bonds as a proxy for the RFR in the Capital Asset Pricing Model (**CAPM**);
- (b) average the applicable rate over the 20 trading days immediately preceding the commencement of the regulatory cycle; and
- (c) set the term of bond equal to the term of the relevant regulatory cycle (ie 5 years).

Anglo American submits that Dr Lally has comprehensively addressed all of the issues raised by Aurizon Network and its consultants in relation to the RFR and that no new issues have been raised in sufficient detail at the WACC Forum to allow any further submissions.

2.2 Market Risk Premium

Anglo American support Dr Lally's proposal to use of a range of methodologies to calculate the MRP. However Anglo American are concerned that 3 of the calculation methods are 'biased upward'. In particular the Cornell methodology should be rejected as it is '*unequivocally biased upward*'.

Anglo American supports the view of the QRC that a MRP in excess of 6% does not accurately reflect market conditions and the MRP should instead be between 5-6%.

2.3 Gamma

Anglo American supports the methodology for calculating Gamma put forward by the QCA's expert, Dr Lally, namely that:

- (a) The utilisation rate must be 1 or close to 1 as any adjustment to reflect foreign ownership must still result in the test being satisfied and must not result parties 'cherry picking' parameters that actually fail and are deficient when applied to the approved model simply to seek an artificially low Gamma reading. Therefore a Utilisation rate of 1 should be favoured; and
- (b) The industry specific approach (financial statements of top ASX companies) provides a better result than a market wide approach (ATO data) which provides a poor representation of distribution by a regulated energy business. Therefore a distribution rate of .85 is more appropriate.

Accordingly Anglo American supports Dr Lally's findings of a gamma of .85.

2.4 Cost of Debt

Anglo American supports the view of the QRC that generally the Bloomberg provides a fair value estimates for the benchmark credit rating and term of debt for Aurizon Network. For example the Bloomberg FVC provides a very accurate estimate for the yield of the seven-year bond recently issued by Aurizon Network, whilst the simple portfolio approach is significantly higher than the yield on the Aurizon Network bond. Anglo American submits that the recent capital raising by Aurizon Network is a good representation of the likely future debt raising activity of the regulated entity and therefore the Bloomberg fair value estimates appears to be the more accurate methodology for estimating the cost of debt.

However in instances where Bloomberg FVC does not provide an accurate estimate, for example where there is a lack of data due to lack of market activity generally or in relation to a specific credit band (i.e AAA) then Anglo American acknowledges that the simple portfolio approach may be more reliable in these instances.

Anglo American support the use of the BBB+ credit rating as recommended by the Incenta Debt Paper. This credit rating is evidenced by the recent debt raising undertaken by Aurizon Network, which as identified above is good representation of the likely future debt raising activity of Aurizon Network.

Anglo American also supports the view of the QRC that a term of debt should be consistent with the actual conduct of regulated below-rail export coal infrastructure businesses. This is evidenced by the recent Aurizon Network debt raising which had a term of 7 years.

Anglo American therefore supports the QRC's calculation of the cost of debt of 5.65%.

2.5 Equity beta

In Anglo American's view, the beta applied under UT3 did not accurately reflect the fact that the 'revenue cap' form of regulation with an 'overs and unders account' protected Aurizon Network from volume risk.

In its submissions on UT3, supported by expert evidence at the time, Anglo American submitted that the Aurizon Network beta should be generated from weighting 25% at zero beta (reflecting the lack of risk and guaranteed revenue pursuant to the revenue cap form of regulation) and 75% at an average benchmark beta of similar firms. This methodology placed the UT3 beta at approximately 2.70.

Aurizon Network has taken all opportunities to mitigate its exposure to risk under the proposed drafting in UT4 and therefore the equity beta should be amended to reflect this. Accordingly Anglo American submits that a modified 50/50 weighting should be applied. That is, 50% weighted at zero beta (reflecting the decreased risk accepted by Aurizon Network under the proposed UT4) and 50% at an average benchmark beta of the firms set out by Aurizon Network's expert, SFG Consulting.

Anglo American therefore submits that an equity beta in the range of 0.2-0.3 is appropriate given the revenue cap form of regulation and the significantly reduced exposure to risk under the proposed UT4.

3 Risk-free Rate

3.1 Proxy

Anglo American supports the view of Dr Lally that Commonwealth Government bonds should be used as a proxy for the RFR in the CAPM for the following reasons:

- (a) compensation should be accurate over the life of the asset rather than over a regulatory period;
- (b) current unusually low RFR are forward looking and reflective of current market conditions;
- (c) yields are for long term bonds and therefore reflective of the length of the regulatory period; and
- (d) bond yields and the market risk premium are not strongly negatively correlated.

3.2 Averaging Period

Anglo American supports the proposal that the applicable rate should be averaged over the 20 trading days immediately preceding the commencement of the regulatory cycle and should:

- (a) be as close as practicable to the commencement of the regulatory cycle;
- (b) remain within the 10-40 trading day period generally adopted; and
- (c) be determined well in advance of the relevant period to avoid manipulation.

3.3 Term of Proxy

Anglo American supports the view of Dr Lally that the term of the proxy should be based on the term of the regulatory cycle (ie 5 years). This has been well documented in the draft decision on the 2009 QR Network Draft Access Undertaking and in the June 2010 draft decision on QR Network's 2010 Draft Access Undertaking – Tariffs and Schedule F. A number of other regulators in Australia have since adopted this approach and Anglo American submits that there seems to be no sound basis for changing the approach.

In its submission Aurizon Network submit that the term of the proxy should be increased to 10 years. Anglo American disputes the position put forward by Aurizon Network and their experts. Dr Lally clearly demonstrated in his RFR and MRP Paper that the proposal to increase the term to 10 years would breach the principle that $NPV = 0$. Further Dr Lally identifies that a term of the proxy of 10 years will provide Aurizon Network with unjustified compensation in its allowed cost of equity.¹

Further Aurizon Network argue that there is a strong negative correlation between the RFR and the MRP and therefore a lower RFR should lead to a higher MRP. Anglo American considers that Dr Lally clearly dismisses this argument on the basis that there is no strong evidence of a strong negative correlation between the RFR and MRP and therefore having a low RFR does not imply a high MRP.²

Anglo American therefore supports a term of the proxy of 5 years.

¹ Dr Lally, The Risk-free Rate and the Market Risk Premium, November 2012, p.5

² Dr Lally, The Risk-free Rate and the Market Risk Premium, November 2012, p.16

4 Market Risk Premium

4.1 Methodologies used to calculate MRP

Anglo American submit that the chosen MRP of 6% appears consistent with the assessment of Australian regulators. However Anglo American note that the estimate is derived from an average of 4 alternatives methods, 3 of which the QCA consider are '*biased upward*'.

Anglo American submits that these methodologies should apply a correction to offset the bias. In particular Anglo American considers that the Cornell estimate is of particular concern as the QCA describe it as "*unequivocally biased upward*" and therefore should not be used to inflate the other averages and should only be used as an upper bound estimate only to confirm that the culmination of the other estimates do not produce an estimate that is too high.

In its original submission the QRC submitted that if the Cornell estimate is removed from the calculation of mean and median values, the mean estimate becomes 5.44% and the median becomes 5.80% as identified below.

Table 1: Mean and median MRP estimates, excluding Cornell method

Method	QCA estimate (as at October 2012)
Ibbotson historical averaging	6.21%
Siegel historical averaging	4.32%
Cornell method	8.70%
Survey evidence	5.80%
Mean (excluding Cornell method)	5.44%
Median (excluding Cornell method)	5.80%

Source: QRC draft submission on WACC

Dr Lally directly responded to the QRC's submissions, stating that:

- (a) The QCA recognises this point and therefore describes the Cornell-estimate of the MRP as an 'upper bound' estimate; and
- (b) There will be an appropriate deduction for new share issues and the formation of new companies of between 0.5% - 1.5% which will be applied to the Cornell methodology and upon doing so will satisfy the requests from industry to lower the weighting on the Cornell method.³

Anglo American looks forward to seeing the deduction applied to correct the upward bias in the Cornell methodology. Anglo American notes that even where the discount is applied, the Cornell methodology should be used as an upper estimate only. That is, it should not be used to added to the calculation methodology, but rather used as a separate guide to determine if the estimate exceeds the upper estimate (which in this case it does not).

Anglo American notes that various alternate methodologies have been proposed including estimating the expected real market cost of equity from the historical average real market return, converting this to nominal terms using prevailing expected inflation and then deducting the prevailing nominal RFR, yielding 7.5% (**SFG Siegel methodology**). Anglo American supports, Dr

³ Dr Lally, Response to submissions on the risk-free rate and the MRP, October 2013 p.20

Lally's criticism of this methodology on the basis that it would be inconsistent with the Markowitz model that underlies the CAPM and therefore also inconsistent with the CAPM and is less stable over time than the Ibbotson model and therefore Anglo American submits that it artificially inflates the other averages when calculated together. Further the QCA recognise that the Siegel methodology is already biased upward and accordingly this should not be further inflated.

Anglo American submits the MRP should be calculated by averaging the following methodologies:

- (a) Ibbotson;
- (b) Siegel (not including SFG's proposed amendments); and
- (c) Survey method.

Following the calculation of the averages the final rate should be compared against the Cornell methodology to determine if the calculated MRP is too high.

4.2 Application of data from foreign markets

Anglo American agrees with Dr Lally's latest submission that evidence from foreign markets should also be considered.⁴ Evidence of rates from foreign jurisdictions show the averages as 5.9% (Ibbotson), 4.0% - 5% (Siegel) and 5.9% (survey) which would reduce the Australian MRP to 5.9%. Anglo American submits that where foreign market rates are included they should exclude the Cornell methodology and only use the original Siegel methodology (not the SFG Siegel methodology) to avoid significant upward bias.

4.3 Calculating the MRP

Accordingly, Anglo American submits that the effect of excluding the Cornell Methodology and including the averages from foreign markets support that the MRP should sit below 6% and Anglo American therefore submit that 6% MRP is overly favourable and should be reduced in accordance with its comments above.

The QRC takes a similar view stating that whilst adopting a value of 6% would be consistent with the most recent regulatory precedent,⁵ the expert advice of Professors McKenzie and Partington is that 6% is more likely to be too high rather than too low as:

- (a) estimates of the historical MRP may be upwardly biased, due to '*survivorship bias*' (ie it only reflects returns for companies that are successful enough to have survived, and ignores those that have not); and
- (b) estimates of the historical MRP are lower for more recent periods,

therefore QRC holds the view that 6% may be too high and therefore favours a range for the MRP of 5-6%.

Whilst Anglo American proposes a slightly different methodology, it submits that its findings are consistent with those of the QRC, namely that 6% MRP is favourable and the more accurate range should be 5-6% MRP.

4.4 Rounding margin for the MRP

Anglo American support the view of the QRC that the rounding margin of 1% proposed by Dr Lally is too wide as it may lead to very significant changes to the overall rate of return and regulated revenues. Anglo American support the QRC's proposal that the rounding margin for the

⁴ Dr Lally, Response to submissions on the risk-free rate and the MRP, October 2013 p.61-63

⁵ Application by APA GasNet (No 2) [2013] ACompT 8, [308]

MRP should be no higher than 0.5%, and preferably around 0.2% or 0.25% to provide a more appropriate balance between the competing considerations referred to above. This is consistent with the recent rate of return guidelines, where the AER said that it would adopt a rounding margin of 0.25% in estimating the return on equity.

4.5 New matters raised by Aurizon Network at the QCA forum

Aurizon Network's consultant, SFG raised a number of new MRP arguments at the QCA WACC forum on 13 December 2013. SFG's adjustment were proposed to increase the value of the MRP to 7%.

Anglo American supports the findings of the QRC in their current submission in response to these proposed adjustments. These findings (which have been provided to Anglo American by the QRC) are outlined below:

Table 2: SFG proposed adjustments to QCA MRP calculation

SFG argument	Response
Use the mean rather than median of various approaches	<p>Dr Lally states, correctly, that you cannot take an average, because the Cornell method does not produce a point estimate (it produces a range).</p> <p>In any event, the QRC agrees with the QCA in its view that the Cornell method provides an upper bound only, because of its inherent upward bias. This implies that it would be inappropriate to average it with other point estimates of the MRP.</p>
Adjust the Ibbotson estimate to correct Brailsford data errors	<p>Dr Lally's view (as explained at the QCA WACC forum) is that the error that previously existed in the historic data has already been corrected, and so no further adjustment would be required.</p> <p>The QRC is not aware of any other error in the historical estimates which have been relied on for some time by numerous regulators (or any suggested correction to perceived errors).</p>
Eliminate the Siegel approach	<p>Dr Lally stated at the WACC forum on 13 December 2013 that he does not favour eliminating the Siegel estimates from the calculation.</p> <p>The QRC agrees with this view. It is important to include the Siegel method in any consideration of the MRP because, unlike the Ibbotson method, it adjusts for the effects of unanticipated inflation</p>
Use the 2013 Fernandez survey results, instead of the 2012 results	<p>Using the 2013 survey results would not change the outcome of the MRP calculation. When properly applied, these more recent results continue to support an MRP below 6%.</p> <p>The 2013 results show a median MRP of 5.8% for Australia, which is lower than the median MRP reported for Australia for 2012 (6.0%). While the mean MRP reported for Australia for 2013 is higher (6.8%), it is apparent that this mean value is being skewed upward by a very high maximum value of 25%, which was not present in the 2012 results (the maximum in</p>

SFG argument	Response
	<p>2012 was 10%). The sample for 2013 is also much smaller (17 respondents in 2013, compared to 73 in 2012), which would suggest caution in relying solely on the mean result where there are clear outliers. If other countries are included (which Dr Lally favours), both the mean and median MRP values are still between 5.8% and 6% for 2013.</p>
<p>Use an updated MRP estimate from independent expert reports</p>	<p>The QRC would not support including a new data source or methodology, unless it is shown to be probative and robust.</p> <p>The QRC does not know what independent expert reports SFG are referring to, or how their inclusion would affect the outcome.</p>
<p>Use a “Wright estimate” based on corrected Brailsford data</p>	<p>The QRC understands “the Wright approach” to be the approach previously advocated by SFG which involves estimating the expected real market return from its historical average, converting this to a nominal market return using current expected inflation, and then deducting the current nominal risk-free rate. This approach has been considered by Dr Lally in his October 2013 report for the QCA.⁶</p> <p>The QRC would not favour the inclusion of the Wright methodology in the set used by Lally or the QCA. As noted by Dr Lally, this method would only be preferable to more conventional historical averaging approaches (such as the Ibbotson approach) if the overall cost of equity is more stable over time than the MRP.⁷ Dr Lally notes in his October 2013 paper that the evidence on this question does not favour using this alternative approach (rather it favours use of the more traditional Ibbotson approach). In other papers for the AER, Lally has presented evidence which contradicts the proposition that the overall cost of equity is more stable than the MRP.⁸</p> <p>In any event, we understand that Dr Lally already incorporates results of this methodology in his October 2013 paper for the QCA, and when he does this he still arrives at a median MRP estimate of 6%.⁹ Thus, it has no impact on the overall result.</p>

Source: QRC draft submission on WACC

Further the QRC note that it is not apparent that the MRP estimate would necessarily change if any of the adjustments are made. At least one of the proposed adjustments has already been factored into Dr Lally’s calculations, which produce an MRP estimate of 6%.

⁶ Lally MRP Report, p 60.

⁷ Lally MRP Report, p 60.

⁸ For example: Lally, Review of the AER’s Methodology for the Risk Free Rate and the Market Risk Premium, 4 March 2013.

⁹ Lally MRP Report, p 63. The QRC understands that the methodology referred to by Dr Lally as “Siegel estimate: version 2 (SFG, QTC)” is a version of what SFG refers to as the Wright methodology.

Finally it should also be noted that Aurizon Network has not yet submitted new evidence identified at the WACC Forum and accordingly industry proponents have not had a chance to consider these issues in detail.

Anglo American submit that any consideration of these additional issues by the QCA, be dismissed on the basis of insufficient evidence and a lack of consultation with industry.

5 Gamma

Anglo American wholly support the findings on gamma put forward by, the QCA's expert Dr Lally. In his papers on Gamma, Dr Lally identifies that the gamma should be set at .85.

As the QCA is aware, gamma is calculated by combining the distribution ratio (**F**) and the Utilisation rate (**U**), whereby:

- (a) The distribution ratio shows how many of the total imputation credits have been successfully distributed by a company over a certain period; and
- (b) The utilisation rate identifies the percentage of value that the imputation credit distributed to the investor represents against the total face value.

The different approaches of each of the parties are summarised below.

Table 3: Suggested value of Gamma by each key stakeholder

Proponent	F	U	Gamma
ACT	0.7	0.35	0.25
Aurizon Network	0.7	0.35	0.25
QRC	0.7	0.7	0.5
Lally (2013)	0.85	1	0.85

Source: SFG presentation 'A regulatory process for estimating gamma', 13 December 2013

5.2 Distribution rate (**F**)

Anglo American supports Dr Lally proposed distribution rate of .85. In his analysis Dr Lally favours the use of either an industry average or a market average to determine the distribution rate. Dr Lally notes that determining industry averages are subjective and likely to be an ongoing source of contention, involving which firms to choose and how much historical data to use. However adopting a market average, whilst objective and less contentious, creates a wide ambit across all industries and therefore the market-wide average could be a poor indicator of the situation for any industry.

Dr Lally identifies the strengths and weaknesses of each and favours the market based approach, as it is not worth using an approach that is likely to deliver an inaccurate result simply because it requires less inputs.

In relation to the proper data base, Dr Lally raises his concerns with the use of ATO data as it provides a market wide average (as opposed to an industry wide average) and therefore is a poor indicator of the regulated energy industry. Dr Lally therefore opts for more accurate estimates using data from the financial statements of the ten largest ASX companies over the period 2000-2013. Accordingly Dr Lally supports a distribution rate of .85.

Anglo American supports the findings of Dr Lally that an industry based approach is more favourable than a market based approach as it lessens the likelihood of poor indicator for the regulated energy industry and supports a distribution rate of .85.

5.3 Utilisation rate (U)

Dr Lally provided a thorough range of estimates in calculating the utilisation rate (outlined at Table 4 below).¹⁰ Importantly, Dr Lally highlighted the necessity for the preferred estimate to demonstrate the following requirements:

1. It is consistent with the definition of Utilisation rate (set out above);
2. It is likely to give rise to a plausible value for the cost of equity; and
3. It is reasonably precise.

Based on the above criteria, Dr Lally ranked the preferred methodologies. We have set these out in the table below.

Table 4: Dr Lally preferred calculation methodology for Utilisation Rate

Method	Description	Value ($U = [x]$)	Ranking
Method 1	The parameter is defined as weighted average of investors' utilisation rates (ignoring foreigners). This is consistent with the Officer CAPM.	$U = 1$	Rank 1: This methodology satisfies all requirements and is therefore recommended.
Method 2	As above, but with recognition of foreign investors. This implies U is the proportion of Australian equities held by Australians.	$U = 0.70$	Rank 2: This methodology only satisfies the first and third requirements above, but not the second because it generates implausibly high estimates of the cost of equity. It is therefore ranked second.
Method 3	The proportion of credits redeemed with the ATO.	$U = 0.40 - 0.80$	Rank 3: This methodology only satisfies the third requirement, and is therefore ranked third.
Method 4	Estimates based upon market prices such as drop off studies, simultaneous share and futures prices, simultaneous share index and futures prices, and regressions of returns on imputation credit yields.	Using post 2000 data, the results are 0.40, 0.13, 0.64, and 2.00. Ignoring the last one, the mean is 0.39.	Rank 4: This methodology satisfies none of the above and is ranked fourth.
Method 5	Surveys of market practitioners.	$U = 0.75$ ¹¹	Rank 5: This methodology does not produce a point estimate and is ranked last.

Source: Dr Lally, *Estimating Gamma*, 13 December 2013

¹⁰ Dr Lally, *Estimating Gamma*, 13 December 2013

¹¹ Based on the most recent survey amongst those who make explicit adjustments.

Dr Lally clearly identifies above that the only methodology that meets the criteria of the definition of utilisation rate is method 1, that is the weighted average of investors' utilisation rates (ignoring foreigners).

The key criticism of this test is that it does not allow for foreign investors (ie the Australian investor market is integrated with the world rather than a completely segregated market as presumed under the Officer CAPM Model). This issue is specifically identified by Dr Lally and addressed as follows:

- (a) Where the Officer CAPM Model does not recognise a reality on the real world investment market it must be adjusted;
- (b) Any adjustment should be made on a middle point between complete segregation of foreign investment (i.e. Method 1) and complete integration of foreign investment (Method 2);
- (c) Dr Lally ran several tests analysing the different outcomes of making this adjustment to the Method 1 which results in the following result:
 - (i) When adjusting the Method 1 to a utilisation rate that is significantly lower than 1, the approach generally applied by Australian regulatory fails virtually every time and is therefore deficient. This essentially creating a form of cherry picking of parameter values and models that maximises the price or revenue cap for regulated businesses; and
 - (ii) When adjusting the calculation methodology to a utilisation rate that is 1 (or close to 1) Dr Lally's test is satisfied in almost all instances.

Therefore as a practical result of the effect of adjusting the calculation methodology the only option is to select the methodology that most closely aligns with the definition of utilisation (Method 1) and adjust it to the extent that it does not fail. Anglo American support this analysis put forward by Dr Lally and submit that any counter analysis aims to seek the benefit of 'cherry picking' parameters that actually fail and are deficient when applied to the approved model simply to seek an artificially low Gamma reading.

Anglo American therefore submits that the Utilisation rate put forward by the QCA's expert is accepted by the QCA.

5.4 Calculating Gamma

Based on the above analysis Anglo American supports the methodology for calculating Gamma put forward by Dr Lally, namely that:

- (a) The industry specific approach (financial statements of top ASX companies) provides a better result than a market wide approach (ATO data) which provides a poor representation of distribution by a regulated energy business. Therefore a distribution rate of .85 is more appropriate; and
- (b) The utilisation rate must be 1 or close to 1 as any adjustment to reflect foreign ownership must still result in the test being satisfied and must not result parties 'cherry picking' parameters that actually fail and are deficient when applied to the approved model simply to seek an artificially low Gamma reading. Therefore a utilisation rate of 1 is favoured.

Accordingly Anglo American supports Dr Lally's findings of a gamma of .85.

6 Cost of debt

6.1 Methodology issues

Anglo American generally supports the methodologies outlined in the PwC Paper, namely the use of:

1. Simple portfolio approach; and
2. Bloomberg fair value curve (*FVC*).

The PwC paper outlines a range of advantages and disadvantages of each methodology. These are set out as follows:

- (a) Bloomberg provides a low cost independent analysis that is well respected worldwide;
- (b) Bloomberg FVC can be extrapolated to provide accurate estimates of up to 10 years;
- (c) Bloomberg is a well-respected, independent data provider, used by firms when valuing debt in the 'real world';
- (d) Bloomberg's estimates are not produced specifically for the regulatory process, however the use of Bloomberg is common practice for many regulators and is supported by the Australian Competition Tribunal;
- (e) As Bloomberg is independent it does not require subjective judgements of data;
- (f) Simple portfolio approach is more transparent than the Bloomberg approach; and
- (g) Simple portfolio approach is more adaptable,
- (h) Simple portfolio approach is more beneficial where Bloomberg does not provide fair values for the benchmark credit ratings and/or term (i.e. AAA band). Although we note this is unlikely given Aurizon Network BBB+ credit rating (discussed further at paragraph 6.2 below).

Anglo American supports the view of the QRC that generally the Bloomberg provides fair value estimates for the benchmark credit rating and term of debt for Aurizon Network.

Further Anglo American notes that Bloomberg FVC provides a very accurate estimate for the yield of the seven-year bond recently issued by Aurizon Network, whilst the simple portfolio approach is significantly higher than the yield on the Aurizon Network bond.

The capital raising by Aurizon Network is a good representation of the likely future debt raising activity of the regulated entity and therefore the Bloomberg fair value estimates appears to be the more accurate methodology for estimating the cost of debt.

However in instances where Bloomberg FVC does not provide an accurate estimate, for example where there is a lack of data due to lack of market activity generally or in relation to a specific credit band (i.e AAA) then the simple portfolio approach may be more reliable.

Anglo American generally support the debt raising costs set out by PwC of between 9 and 10 basis points. Anglo American submits that following the above methodology and adopting the debt raising cost allowance put forward by PwC is consistent with the approach taken by other regulators, such as the AER.

6.2 Benchmark assumptions for Aurizon Network

Anglo American support the use of the BBB+ credit rating as recommended by Incenta. The accuracy of this credit rating is further evidenced by the BBB+ credit rating assigned to the recent debt raising undertaken by Aurizon Network.

Anglo American also supports the view of the QRC that a term of debt should be consistent with the actual conduct of regulated below-rail export coal infrastructure businesses. This is evidenced by the recent Aurizon Network debt raising which had a term of 7 years. Anglo American submits that this activity provides an accurate representation of likely future debt raising activity and a longer term of debt is likely to overcompensate Aurizon Network.

Anglo American therefore supports the QRC's calculation of the cost of debt of 5.65%.

7 Equity Beta

7.1 Methodology to be applied

Anglo American submits that an equity beta in the range of 0.2-0.3 is appropriate given the revenue cap form of regulation and the significantly reduced exposure to risk under the proposed UT4.

In its submissions on UT3, supported by expert evidence at the time, Anglo American submitted that the Aurizon Network beta should be generated from weighting 25% at zero beta (reflecting the lack of risk and guaranteed revenue pursuant to the revenue cap form of regulation) and 75% at an average benchmark beta of similar firms. This methodology placed the UT3 beta at approximately 2.70.

Aurizon Network has taken all opportunities to mitigate its exposure to risk under the proposed drafting in UT4 and therefore the equity beta should be amended to reflect this. Accordingly Anglo American submits that a modified 50/50 weighting should be applied. That is, 50% weighted at zero beta (reflecting the decreased risk accepted by Aurizon Network under the proposed UT4) and 50% at an average benchmark beta of the firms set out by Aurizon Network's expert, SFG Consulting.¹²

In Anglo American's view, the beta applied under UT3 did not accurately reflect the fact that the 'revenue cap' form of regulation with an 'overs and unders account' protected Aurizon Network from volume risk. Expert advice obtained by Anglo American during its submission in relation to UT3 confirmed that:¹³

- (a) a significant adjustment to the beta was required by the QCA for the cost of capital to properly recognise the impact of the total revenue cap and the absence of volume risk;
- (b) the beta for the revenue covered by the guaranteed revenue cap should be approximately zero;
- (c) very few firms have similar guaranteed maximum revenue provisions to the regulated entity and even fewer are share market listed; and
- (d) few energy sector firms have anywhere near the degree of revenue certainty provided by the regulatory provisions applying to the regulated entity.

In addition to the principal form of regulation, there were a number of 'ancillary mechanisms' (both within UT3 and independently applied by Aurizon Network) which further reduced the total risk under UT3 (both diversifiable and non-diversifiable) to Aurizon Network. In summary, these ancillary mechanisms were as follows:

- (e) UT3 is 100% take or pay for a number of the elements of the tariff (AT2, 3 and 4);¹⁴

¹² Annex B to Aurizon Network's supplementary materials

¹³ Schedule 1 to Anglo American submission to the Queensland Competition Authority's assessment of QR Network's 2009 Draft Access Undertaking

¹⁴ Aurizon Network's 2010 Access Undertaking, Schedule F, Part B, clause 2.2.

- (f) UT3 includes a process for customer pre-approval for the scope of capex and procurement strategy, which reduces the risk of capex / costs not being included in the RAB;¹⁵
- (g) UT3 provides for the payment of relinquishment fees where access rights are to be relinquished or transferred;¹⁶
- (h) UT3 includes a cost 'pass-through' adjustment where electric and connection costs vary by more than 2.5%;¹⁷
- (i) UT3 includes annual adjustments for a Maintenance Cost Index (which provides better alignment to Aurizon Network's actual costs) and an annual process which provides for a reconciliation between forecast and actual Maintenance Cost Index, and forecast and actual CPI;¹⁸
- (j) UT3 includes an annual process for resetting volume forecasts, to reduce the size of revenue cap unders/overs and therefore reduce cashflow timing differences;¹⁹
- (k) UT3 allows accelerated depreciation of rolling 20 year asset lives for new capex;
- (l) UT3 allows a Review Event where Aurizon Network prudently and efficiently incurs maintenance costs which exceed allowances by more than 2.5% (further, over the years the definition of 'Review Event' has been expanded to include any material change in circumstances that could lead to a variation in Reference Tariffs);²⁰
- (m) UT3 allows a Review Event where Aurizon Network incurs costs in excess of \$1m as a result of certain Force Majeure events (for example Review Events were claimed in regard to the 2011 and 2013 Queensland floods);²¹
- (n) Aurizon Network reduces its risk profile by seeking and obtaining 'Access Conditions' to reduce risk and/or increase returns for significant investments. This means that the risk profile which the regulated cost of capital must compensate for is the risk profile of the existing RAB, minor capital expenditure and operating activities (ie, the relevant risk profile for this assessment need not consider the risk of significant investments);
- (o) Aurizon Network is able to lodge draft amending access undertakings (DAAUs) and seek adjustments when risks are realised, or when the likelihood of realisation is perceived to increase. Examples include the DAAU for maintenance cost adjustments during UT2 and the Electric Traction DAAU during UT3. Customers do not have a similar right to seek adjustments using DAAUs;²²
- (p) Aurizon Network is able to achieve additional risk transfer through the use of agreements with customers for which standard (regulator-approved) agreements do not exist. These include (as examples) agreements for:
 - (i) the funding of studies such as feasibility studies;

¹⁵ Aurizon Network's 2010 Access Undertaking, Schedule A.

¹⁶ Aurizon Network's 2010 Access Undertaking, clause 7.3.6.

¹⁷ Aurizon Network's 2010 Access Undertaking, Schedule F, Part A, clause 2.2.

¹⁸ Aurizon Network's 2010 Access Undertaking, Schedule F, Part A, clause 2.2; see also schedule 1.

¹⁹ Aurizon Network's 2010 Access Undertaking, Schedule F, Part B, clause 3.

²⁰ Aurizon Network's 2010 Access Undertaking, Schedule F, Part A, clause 2.2; see also schedule 1.

²¹ Aurizon Network's 2010 Access Undertaking, Schedule F, Part A, clause 2.2; see also Queensland Competition Authority *QR Network's Review Event Submission – Central Queensland Flooding* (October 2012); schedule 1.

²² See schedule 1.

- (ii) TFLs;
 - (iii) relocation deeds;
 - (iv) level crossings;
 - (v) RIM and train control services on customer specific spurs; and
 - (vi) funding of customer specific spurs;
- (q) Aurizon Network is able to reduce the risk of 'regulatory lag' by:
- (i) undertaking endogenous review events under UT3;
 - (ii) taking advantage of cost pass-throughs for costs varying by more than 2.5%;
 - (iii) lodging DAAUs in respect of cost adjustments in circumstances where UT3 would not allow cost pass throughs, for example, the AT5 DAAU (Anglo American notes that customers do not have similar rights to seek adjustments using DAAUs);
 - (iv) the timing of lodging Access Undertakings (for example, Aurizon Network has delayed the lodgement of UT4 and proposes to continue the current WACC parameters for the next year and then smooth any adjustment to the benefit of customers over the next regulatory period. This is the ultimate example of Aurizon Network benefiting from manipulating the timing of a review); and
 - (v) significantly deferring the outcomes of required actions under UT3, avoiding obligations that it was required to consider over the last three years of UT3 regulation, for example SUFA, System Rules and the System Operating Assumptions and the Alternate Access Agreements; and
- (r) even though the monthly TOP was waived during the force majeure event of the Australia Day 2013 flooding, TOP obligations are still compromised because after the re-commencement of services there were speed restrictions which affected the ability for services to be provided leading to producers paying TOP in any case.

In addition to the above, Aurizon Network has sought to take every opportunity to significantly reduce their expose to risk under the proposed drafting of UT4. This includes:

- (a) removing the end of period condition assessment;
- (b) reducing the circumstances in which the RAB can be optimised by the QCA;
- (c) removing the requirement that Access Conditions must reasonably reflect the financial risks involved in providing access;
- (d) providing for effectively unfettered pricing in relation to investment in Expansions;
- (e) effectively removing the (already weak) obligation to invest in Expansions to rectify Capacity shortfalls;
- (f) changing the customer-voting process (including being able to seek customer approval for prudence of standard) which makes it easier to require inclusion of investments in the RAB;
- (g) requiring the QCA to accept costs/variations as prudent where incurred in accordance with an approved procurement strategy in a wider range of circumstances;

- (h) reversing outcomes of Aurizon Network having certain risks under the existing regulatory framework in respect of ballast fouling, Gladstone destination TOP issues,²³ TOP disputes and audit costs;
- (i) reducing the depreciation period for UT1 and UT2 components of the RAB;
- (j) providing rights to increase the RAB by 'equity raising costs';
- (k) bringing 75% of the AT1 element of Reference Tariffs within the revenue cap;
- (l) changing the EC element of Reference Tariffs to a direct cost pass through;
- (m) socialisation of underrecovery of electric traction costs in the Blackwater system;
- (n) including in revenue cap adjustments:
 - (i) environmental compliance charges for non-compliance with the coal dust management plan;
 - (ii) differences in actual vs forecast audit costs; and
 - (iii) differences in maintenance costs based on changes in system forecasts;
- (o) introducing a greater number of Review Events; and
- (p) narrowing the definition of 'Network Cause' (such that Aurizon Network can recover TOP revenue in a wider range of circumstances when it fails to provide access).

Accordingly, Anglo American submit that the beta be revised in accordance with the cost and volume risk assumed by Aurizon Network (which Anglo American note is negligible) and should also include a reduction based on the mitigation of risk assumed by Aurizon Network under the Proposed UT4. Anglo American therefore submit that QCA adopt a beta generated from weighting 50% at zero beta (reflecting the lack of risk and guaranteed revenue pursuant to the revenue cap form of regulation and the decreased risk accepted by Aurizon Network under the proposed UT4) and 50% at an average benchmark beta of similar firms, deriving an equity beta in the range of 0.2-0.3.

Finally, Anglo American notes that even if Aurizon Network were to apply the 25/75 weightings the equity beta (ignoring the significant reduction in risk under UT4) the result is still a beta substantially lower than the 0.9 proposed by Aurizon Network and is closer to 0.30.

7.2 Aurizon Network' submitted beta

Notwithstanding Anglo American's separate views as to the appropriate calculation methodology to be applied for calculating Aurizon Network's equity beta (set out at paragraph 7.1 above), Anglo American considers it important to identify its support for the statements by the QRC in response to the proposed equity beta of .9 based on the expert report of SFG consulting.

Importantly Anglo American supports the QRC's findings that:

- (a) Aurizon Network's submission relies heavily on a comparison with US Class 1 Railroads and toll roads to justify its equity beta proposal, but contains very little by way analysis to support this comparison;
- (b) As pointed out in Incenta's report on equity Beta, Aurizon Network is fundamentally different to the US Class 1 Railroads, in terms of exposure to systematic risk (ie US Class

²³ In particular see Aurizon Network's submission on the 2013 Draft Access Undertaking, volume 3, section 5.5. It appears that there has been a differentiation in Access Agreements describing port services for a specific terminal or just for 'the Gladstone area'. Where the agreement was to the 'Gladstone area' this had the effect of not utilising the producer's Train Service Entitlements. As such, Aurizon Network has waived take or pay on those paths, but is attempting to recoup that retrospective loss by socialising the cost of the lost paths into UT4 tariffs.

1 Railroads are not subject to any form of ex ante price or revenue regulation whilst Aurizon Network is subject to a revenue cap form of regulation which protects against cost and volume risk);

- (c) Many of the US Class 1 Railroads are subject to a high degree of competition, from other forms of transport (e.g. trucking) and in some cases, from other railroads;
- (d) Toll roads are typically not subject to a form of regulation which protects them from either cost or revenue risk; and
- (e) Regulated energy and water businesses are much better comparators, although they are exposed to higher level of risk as the regulation does not limit exposure to risk to the same degree (refer to our comments as identified at paragraph 7.1 above).

7.3 Incenta's submitted beta

Further Anglo American shares the QRC's concerns in relation to Incenta's report into Aurizon Network's Equity beta, in particular:

- (a) It is unclear why the beta for toll roads is included in the range for determining Aurizon Network's beta, given the disparity in the cost risk and volume risk faced by toll roads compared with Aurizon Network;
- (b) The sample of energy networks should not include international businesses as these businesses are subject to a variety of different forms of regulation;
- (c) Incenta does not use a conventional estimation methodology, but instead uses a 'simulated month' estimated methodology. This leads to a significant increase in the asset beta estimate for energy networks. QRC's experts Castalia conclude that there is no logical explanation for this significant difference; and
- (d) Due to the culmination of the inclusion of international energy businesses in the sample, and use of the simulated month methodology, Incenta's beta estimate for energy businesses is exaggerated and therefore is significantly higher than other recent empirical estimates for these businesses, including estimates recently published by the AER.