5 April 2013

By email

Queensland Competition Authority
GPO Box 2257
Brisbane, QLD 4001

research@qca.org.au

Dear Sir / Madam,

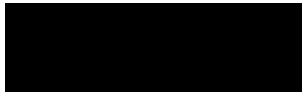**RTCA response to the QCA's Cost of Capital Methodology Review**

Rio Tinto Coal Australia (**RTCA**) welcomes this opportunity to participate in the QCA's Cost of Capital Methodology Review.

At a time when cost pressures on Queensland coal businesses like RTCA's are increasing, it is critical that regulated rate of return settings strike an appropriate balance between ensuring appropriate incentives for investment, while minimising cost pressures on users of regulated infrastructure.

RTCA is aware that there has been significant debate around rate of return settings in recent times, and empirical research undertaken. In this submission, we present our views on the issues raised in the QCA's two discussion papers – *Risk and the Form of Regulation* and *The Risk-free Rate and the Market Risk Premium* – having regard to the most recent research on these issues. We look forward to participating constructively in the QCA's ongoing consultation on these issues.

Please refer any questions in relation to this submission to Xiao Fan Zhuang on 3625 5197 or myself on 3625 5533.

Yours sincerely,

Tim Renwick
General Manager – Infrastructure

Rio Tinto Coal Australia

Submission to the QCA's Cost of Capital Methodology Review

29 March 2013

Executive summary

The QCA's review of its cost of capital methodology is particularly timely. It comes at a time of increasing cost pressures on users of regulated infrastructure, highlighting the need to appropriately balance incentives for efficient investment in infrastructure with a need to minimise unnecessary and inefficient cost pressures on users.

This submission provides RTCA's initial comments in relation to the issues raised in the QCA's two cost of capital discussion papers:

- the *Risk and the Form of Regulation* discussion paper, dated November 2012; and

- the *Risk-free Rate and Market Risk Premium* discussion paper, also dated November 2012

RTCA understands that as the QCA's thinking in relation to these issues evolves, it may wish to consult further with stakeholders. We look forward to engaging constructively with the QCA throughout this process.

Comments on the *Risk and the Form of Regulation* discussion paper

RTCA agrees that the form of regulation is likely to affect the regulated firm's equity beta, insofar as it affects the stability or variability of cash-flows and the firm's exposure to market-wide risk factors.

Specifically in relation to Aurizon Network, RTCA notes that the regulatory framework has evolved in a way that has provided increasing protection for QR / Aurizon against non-diversifiable risk factors. This implies that Aurizon Network's equity beta is likely to have reduced over time.

We also consider that the "split cost of capital" concept (as set out by the QCA in its discussion paper) is worthy of consideration in the context of the regulatory frameworks applying to Aurizon and DBCT. The nature of the regulatory frameworks applying to these businesses is such that there is likely to be little or no risk associated with management of existing assets. Therefore it may be appropriate to apply a split cost of capital for these businesses which provides a lower rate of return on the value of existing assets.

However we consider that the theoretical framework is relatively new and untested in Australia. Therefore it would be premature to implement at this stage without further investigation into the applicability and implementability of such a framework on regulated infrastructure like Aurizon Network and DBCT. RTCA would welcome further consultation in relation to how a split cost of capital may be applied to Aurizon Network and/or DBCT.

Comments on the *Risk-free Rate and Market Risk Premium* discussion paper

There has been considerable debate in relation to the cost of equity in recent times, and significant empirical research undertaken. In general, we consider that the most recent evidence supports the QCA's current approach to determining both the risk-free rate and market risk premium.

In relation to the market risk premium, while we consider it prudent for the QCA to take into account various methods and sources of evidence, careful consideration ought to be given to the appropriate weighting to be applied to each method. Specifically, given the QCA's reservations in relation to the Cornell method, we query whether this should be given equal weight to other methods.

Risk and the form of regulation

The QCA's conceptual framework

RTCA considers that the conceptual framework set out in the *Risk and the Form of Regulation* discussion paper is generally sound.

We agree with the basic proposition that the form of regulation will impact on the regulated firm's equity beta in the capital asset pricing model (**CAPM**), to the extent that it influences the stability or variability of cash-flows. More specifically, to the extent that the form of regulation influences the extent of co-variance between the regulated firm's cashflows and market returns, then this must have an impact on the equity beta.

As noted by the QCA in its discussion paper, there is a preliminary question as to how risk should be allocated in the design of the regulatory model. Ideally, the model should be designed so that risk is allocated to the party or parties that are best placed to manage that risk. While in some cases it may be more efficient for the regulated entity to bear certain risks (particularly cost risks), in other cases it may be more efficient for users to bear some degree of risk. However once the allocation of risk has been determined, it should not be altered unless there is a compelling reason to do so.

Once the design of the regulatory model (including risk allocation) has been settled, any determination in relation to the cost of capital must take into account the model design. In particular, where there are mechanisms in the model which protect the firm's cashflows from market volatility, the firm's equity beta should be lowered to reflect this.

Just as importantly, where the design of the regulatory model changes over time, the regulator should consider whether the equity beta may require adjustment. For example if the model is adjusted to include a cost true-up or pass-through mechanism, the transfer of cost risk from the regulated firm to users should be reflected in a lower equity beta.

Practical implications for estimating the equity beta

One important implication of the above discussion is that there is unlikely to ever be a perfect comparator business (or perfect comparative set), for the purposes of estimating the equity beta for the regulated business. No comparator business will perfectly replicate the characteristics of the regulated business, including the form of regulation which it is subject to.

This means that estimation of the equity beta will always involve a trade-off between ensuring a large enough set of comparator businesses (thus ensuring a large enough dataset for robust empirical analysis) and maintaining proximity to the characteristics of the regulated firm. Any benchmark set of comparator businesses will need to be sufficiently large to ensure robust empirical estimates, but not so large that the characteristics of included businesses stray too far from the regulated firm.

It also implies that where an empirical estimate is derived from a benchmark set, the regulator will need to consider relevant differences between the characteristics of the regulated firm and the characteristics of the comparator businesses. In particular, the regulator should consider the extent to which the form of regulation protects the regulated firm from some risks, relative to the comparator businesses.

To the extent that the regulated firm is likely to face a substantially lower degree of non-diversifiable risk relative to comparator businesses by virtue of the form of regulation, there may need to be a downward adjustment to the equity beta that has been estimated using the benchmark set.

Application to Aurizon and DBCT

As a preliminary observation, export-oriented port and rail operators such as Aurizon and DBCT are likely have relatively limited exposure to non-diversifiable market risk. This is partly due to the limited exposure of these businesses to fluctuations in the domestic economy, which implies that their cashflows will have a lower degree of covariance with domestic equity returns, compared to more domestically focused businesses. As the QCA has previously noted, this means that these businesses are likely to have a lower equity beta than a regulated electricity business which would be more exposed to fluctuations in domestic demand.[1]

Moreover to the extent that Aurizon and DBCT would otherwise remain exposed to some non-diversifiable risk, the regulatory framework provides significant protection from this. The protection from non-diversifiable risk is a result of both the basic design of the building block frameworks applying to these businesses, and the various modifications that have been made over time to those frameworks.

As set out in the submission of the Queensland Resources Council (**QRC**)[2], the degree of non-diversifiable risk faced by Aurizon Network has steadily decreased over the past decade or so, as a result of various modifications to the regulatory framework, including:

· shifting from a price cap to revenue cap;

· increasing the scope of take or pay arrangements;

· providing greater certainty around cost recovery through pre-approval of capex scope and procurement strategies; and

· allowing pass through of certain uncontrollable costs.

RTCA agrees with the QRC that given these modifications to the regulatory framework, Aurizon is now likely to face a lower degree of non-diversifiable risk relative to other businesses that are used as comparators for the purposes of estimating the equity beta. However the effect of these modifications to the regulatory framework is yet to be reflected in the equity beta for Aurizon Network.

RTCA submits that any future consideration of the equity beta to apply to Aurizon and DBCT should explicitly take into account the design of the regulatory framework applying to those businesses, including the modifications that have been made over time.

In relation to Aurizon Network, the QCA's consideration of any replacement access undertaking (UT4) would be an opportune time to reassess the equity beta value. In RTCA's view, there is a real question as to whether an equity beta value of 0.8 remains appropriate for Aurizon Network, given the level of protection from risk provided by the regulatory framework. We note that in the context of UT3 the QCA considered that the beta value should be below that for regulated electricity businesses,[3] and yet at the current time Aurizon's equity beta remains on par with that allowed for electricity and gas network service providers.

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[1] QCA, *Draft Decision: QR Network's 2010 DAU - Tariffs and Schedule F*, June 2010, p 47.
[2] RTCA is a member of the QRC, and has reviewed the QRC submission.
[3] QCA, *Draft Decision: QR Network's 2010 DAU - Tariffs and Schedule F*, June 2010, p 47.

Split cost of capital

The "split cost of capital" concept identified by the QCA (as advanced by economist Dieter Helm) is a relatively new and novel one, which has had limited consideration or analysis.

Whiile the concept may be worthy of further consideration, at this stage it remains a highly theoretical one and is untested in regulatory practice. RTCA submits that it would be premature to implement the concept in relation to Queensland regulated businesses and users, at this stage. Nonetheless, RTCA notes that the QCA intends to consult further on this issue, and we are keen to participate in those further consultation processes.

There are a number of important issues that would need to be considered and resolved before any 'split cost of capital' methodology could be implemented. These include:

1. There is a difference in terms of risk between entirely *'new'* capital expenditure and *replacement* capital expenditure (and maintenance) for which recovery is mostly guaranteed under Australian regulated pricing mechanisms. This distinction is not considered by Helm, but is critical in an Australian context.

2. For new investment, RTCA would not support a split cost of capital model that involved the application of a different method for calculating the rate of return from the current approach. The current Australian regulatory approach is designed and intended (as recognised in the objects of Part 5 of the QCA Act) to provide for a rate of return that is sufficient to provide incentives for new and efficient investment. There would therefore be no justification for changing the current approach to estimating the rate of return for new investment/assets.

3. RTCA would not support a new approach to determining operating expenditure which sought to create additional rewards or compensation for risks involved in operating and maintenance activities. We agree with the QRC submission that the operating expenditure functions of Aurizon and DBCT do not appear to involve material risk, given the various risk transfer and risk management mechanisms available to these businesses. Therefore the application of an incentive or reward scheme for operating expenditure is unlikely to be appropriate in the context of regulation of Aurizon or DBCT.

While RTCA considers that it is premature to implement any split cost of capital, we recognise that the nature of the regulatory frameworks applying to Aurizon and DBCT, in particular, are such that there is little or no risk associated with management of existing assets (what Helm and the QCA refer to as "RAB activities").

As discussed above and in the QRC submission, many of the modifications that have been made to Aurizon's regulatory framework over the past decade have had the effect of substantially reducing its exposure to non-diversifiable risk, particularly in relation to "RAB activities" – in particular, the combined effect a revenue cap form of regulation and increased scope of take or pay arrangements means that there is little (if any) risk in relation to RAB activities.[4]

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[4] We note that UT3 provides some limited scope for ex post optimisation of the capital base (Schedule A, clause 1.4). However the circumstances in which the QCA may require the RAB value to be reduced are very limited – essentially these require that either: (a) the QCA's approval of expenditure was based on false or misleading information; (b) demand has deteriorated to such an extent that regulated prices on an unoptimised asset would result in a further decline in demand;

The Risk-free Rate and the Market Risk Premium

The Risk-free Rate

RTCA agrees with the comments made in the QRC submission in relation to the QCA's approach to determining the risk-free rate. We consider that the QCA's current approach to determining the risk-free rate (as set out in section 2.3 of the *Risk-free Rate and Market Risk Premium* discussion paper) remains appropriate.

RTCA further notes that there has been significant debate in recent times around the appropriate approach to determining the risk-free rate, as yields on Commonwealth Government Securities (**CGS**) have fallen. In particular, the Australian Energy Regulator (**AER**) has undertaken detailed analysis of this issue and sought advice from various experts, including:[5]

· expert advice from Associate Professor Lally in relation to measurement of the risk-free rate;[6] and

· advice from the Reserve Bank of Australia, the Federal Treasury and the Australian Office of Financial Management in relation to the CGS market and the appropriateness of using CGS yields as a proxy for returns on a risk-free asset.[7]

This analysis and expert advice has confirmed that the traditional approach to determining the risk-free rate remains appropriate, notwithstanding the recent reductions in CGS yields.

The Market Risk Premium

RTCA considers that the QCA's current approach to determining the market risk premium (**MRP**) is generally appropriate.

As the current MRP is not directly observable and the empirical evidence is imprecise, we consider that it is prudent for the QCA to take into account various different sources of evidence, including both historical and forward-looking evidence. The QCA states that its current approach involves taking into account estimates from four different methodologies: Ibbotson historical averaging; Siegel historical averaging; the Cornell method; and survey evidence.

However we consider that care should be taken in deriving an estimate of the MRP based on the combination of available evidence. Depending on the limitations or advantages associated with different types of empirical evidence, more or less weight may need to be given to each in deriving an estimate of the MRP. Clearly if some forms of evidence have particular limitations, it may not be appropriate to weight them equally with other forms of evidence.

(c) it becomes clear that there is a possibility of actual (not hypothetical) bypass; or (d) asset management practices have been found to be imprudent or ineffective.

[5] The AER's most recent analysis of this issue (and a summary of the expert advice it relies on) is set out in its final decisions on the access arrangement proposals submitted by the Victorian gas network businesses. Refer to: AER, *Access arrangement final decision – Envestra Ltd 2013–17*, March 2013, Attachment 5 and Appendix B.

[6] Lally, *The risk free rate and the present value principle*, 22 August 2012; Lally, *The present value principle: risk, inflation, and interpretation*, 4 March 2013 (both reports are available at: <http://www.aer.gov.au/node/13556>).

[7] Reserve Bank of Australia, letter to Mr Joe Dimasi (ACCC) re: *The Commonwealth Government Securities Market*, 16 July 2012; Treasury / AOFM, letter to Mr Joe Dimasi (ACCC) re: *The Commonwealth Government Securities Market*, 18 July 2012 (both letters are available at <http://www.aer.gov.au/node/5197>).

We note that the QCA appears to have significant reservations in relation to the Cornell method, which it describes as being "biased upwards". We also note that the AER has expressed concerns in relation to dividend growth model methods (upon which the Cornell method is based), as they are seen to be highly sensitive to input assumptions.[8] The QCA describes the Cornell method estimates as providing an "upper bound" for the MRP.

RTCA agrees with the reservations expressed by the QCA (and similar reservations expressed by other regulators), and also query whether the Cornell method should be given equal weight to other methods in determination of the MRP. While estimates from the Cornell method may remain relevant to determination of the MRP, they could potentially be given less weight in recognition of the limitations inherent in this methodology. RTCA submits that the Cornell method, if used at all, is only used as a true upper limit, or check on the estimates produced by other methods – that is, a check to ensure that the estimates produced by other methods are not too high. It should not otherwise directly influence the outcome (e.g. by forming part of any averaging process).

If the Cornell method estimates are used only as an upper bound and removed from the calculation of mean and median MRP values (as set out in the QCA's table 3.1), this would substantially reduce the mean and median MRP. This is shown in the table below.

Table 1: Estimates of the MRP (adapted from QCA table 3.1)

Method	MRP estimate (weighting all methods equally)	MRP estimate (using Cornell method as an upper bound only)
Ibbotson historical averaging	6.21%	6.21%
Siegel historical averaging	4.32%	4.32%
Cornell method	8.70%	8.70%
Survey evidence	5.80%	5.80%
Mean	**6.26%**	**5.44%**
Median	**6.01%**	**5.80%**

Interaction between the Risk-free Rate and Market Risk Premium

RTCA notes that there has been debate in relation to the potential interaction between the risk-free rate and the MRP. This debate is ongoing, and indeed there has been a substantial amount of new analysis on this issue since the QCA published its *Risk-free Rate and Market Risk Premium* discussion paper.

However, based on the most recent empirical evidence on this issue, RTCA does not consider that any upward adjustment to the MRP would be justified.

In particular we note that:

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[8] AER, *Access arrangement final decision – Envestra Ltd 2013–17*, March 2013, Part 2, p 139.

- the empirical evidence in relation to the relationship between the MRP and the risk-free rate is generally inconclusive – while there is some evidence of an inverse relationship between these two parameters, there is also some evidence of a positive relationship;[9]

- although overseas data suggests that there may be an inverse relationship between the MRP and the risk-free rate, the same relationship is not borne out in Australian data. Recent analysis by Associate Professor Lally for the AER suggests that the relationship is not strong in Australian data. Associate Professor Lally also finds that the Australian MRP is generally more stable over time than the real cost of equity.[10]

The AER has recently conducted a comprehensive review of the empirical evidence on this issue in its access arrangement reviews for the Victorian gas network businesses. The AER has concluded that there is insufficient evidence to support any upward adjustment to the MRP, and has therefore maintained an MRP value of 6%.[11]

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[9] McKenzie and Partington, *Review of the AER's Overall Approach to the Risk Free Rate and Market Risk Premium: Report to the AER,* February 2013.
[10] Lally, *Review of the AER's Methodology for the Risk Free Rate and the Market Risk Premium,* March 2013, pp 15-16.
[11] AER, *Access arrangement final decision – Envestra Ltd 2013–17,* March 2013, Attachment 5 and Appendix B.