

QRC

submission

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To the QCA
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QRC response to Aurizon WACC submission

INTRODUCTION

The Queensland Resources Council (QRC) is the peak representative organisation of the Queensland minerals and energy sector.

The QRC's membership encompasses exploration, production, and processing companies, energy production and associated service companies. The QRC works on behalf of members to ensure Queensland's resources are developed profitably and competitively, in a socially and environmentally sustainable way.

Summary

This submission responds to WACC-related matters raised by Aurizon Network in its response to the QCA's draft decision on maximum allowable revenue.

In particular, we respond to new arguments raised by Aurizon in relation to the debt risk premium (**DRP**) and equity beta.

We do not provide a response in this submission to the points raised by Aurizon in relation to the market parameters (i.e. risk-free rate, market risk premium and gamma), as the points made substantially repeat earlier arguments and each has already been addressed by the QCA in its review of market parameters. We do not consider that there is any new material proposed by Aurizon that would require or justify the QCA from departing from its previously stated position on these parameters.

In relation to **DRP** and equity beta, QRC submits that:

- The new line of argument raised by Aurizon in relation to the **DRP** illustrates the concern previously raised by the QRC about the risks of the QCA adopting its own "bespoke" econometric methodology. The QRC has previously expressed the fear that adopting a novel or bespoke methodology for estimating the **DRP** will invite ongoing debates around methodological choices and datasets, which is precisely what is occurring now. The QRC's strong preference is that the QCA's position will be less prone to debate and challenge if it relies on the well-established and independent data published by Bloomberg to estimate the **DRP**, rather than using a potentially contentious econometric methodology;
- The additional material raised by Aurizon in relation to the equity beta does not take their argument any further – and certainly does not change what should be a clear conclusion from the empirical evidence. The empirical evidence clearly demonstrates that Aurizon's equity beta is significantly below 0.8, and likely in the range of 0.4 – 0.6 (consistent with Australian regulated energy utilities with similar cash flow variance risks).

Each of these points is addressed below.



1 Debt risk premium

Aurizon raises a new issue in relation to the bond sample used by Incenta (the QCA's consultant) for its econometric analysis. Aurizon claims that due to the composition of Incenta's sample – and in particular the inclusion of A- rated bonds in this sample – their estimate of the DRP is likely to be downwardly biased.

It is surprising that this is the first time Aurizon has raised this issue. The Incenta methodology was explained to stakeholders over a year ago in a series of PwC/Incenta reports¹ and at the QCA's WACC forum in December 2013.

The QRC previously expressed concern that use of a bespoke methodology for estimating the DRP would invite Aurizon to commence debates around methodological choices and datasets.² On the other hand, while subject to less methodological transparency, the use of an independent third party data provider can avoid such debates. This is one reason why other Australian regulators (including the AER) continue to use third party data sources to estimate the DRP for energy network businesses.³

The QRC repeats its submission that the QCA consider reverting to use of the Bloomberg yield data to estimate the DRP, in order to avoid this unnecessary debate.

However, if the QCA is minded to nonetheless continue to adopt the Incenta modelling, it should not accept any of the criticisms made by Aurizon without undertaking its own independent assessment of any of the modified data, regression analysis and sample selection used by Aurizon and its experts. The QRC considers that it would be appropriate also to share this work with stakeholders prior to any final decision. As the QCA will appreciate, given the time and resources available to the QRC, we have not been able to test the new technical arguments in this way.

Further, the QRC notes that if the conclusion to be drawn from the Aurizon submission is correct (that there is no material statistical difference between BBB and BBB+ yields over the relevant term to maturity) then this would make the Bloomberg BBB bond yield curve available to be used as the basis of a valid estimate of the BBB+ DRP. This further strengthens the QRC submission that the use of an independent data set, such as Bloomberg, is preferable.

2 Equity beta

Aurizon raises a number of points in relation to the QCA's approach to the equity beta. However no empirical evidence is provided by Aurizon to support its equity beta estimate of 1. In the QRC's view, the evidence continues to support an equity beta below 0.8.

¹ PwC, *A cost of debt estimation methodology for businesses regulated by the Queensland Competition Authority*, June 2013; Incenta, *Aurizon Network: Review of benchmark credit rating and cost of debt*, November 2013.

² QRC Further WACC Submission January 2014, pp 3-4.

³ AER, *Better Regulation – Explanatory Statement: Rate of Return Guideline*, December 2013, pp 126-130.



→ Relevance of Class 1 railroads and listed transport businesses

As previously noted, Aurizon's position on the equity beta relies heavily on the inclusion of US Class 1 railroads and certain listed transport businesses in the sample for estimating this parameter. Without the inclusion of these businesses in the sample, the empirical evidence clearly points to an equity beta below 0.8.

Despite the additional material, Aurizon presents no evidence that US Class 1 railroads or listed transport businesses face the same or similar degree of systematic risk.

On the contrary, Aurizon's new material accepts that it does not believe that it faces the same level of systematic risk as US Class 1 railroads.⁴ Their submission also refers to a number of important differences between its operating environment and that of the Class 1s, including:

- US Class 1 railroads have greater pricing flexibility than Aurizon Network;⁵
- US Class 1 railroads are not subject to revenue cap regulation (although Aurizon argues that this will only affect the cash flow component of beta);⁶ and
- evidence from Incenta indicates that US Class 1 railroads operate under much shorter term contracts.⁷ Aurizon seeks to dismiss this point on the basis that Incenta's evidence appears to be largely anecdotal. However given that it is Aurizon that is seeking to rely on parallels with US Class I railroads, the QRC would expect that it be able to produce more evidence of similarity on these and other points, rather than simply seeking to dismiss Incenta's views on relevant differences.

The QRC maintains its view that there is nothing about US Class 1 railroads or the listed transport businesses used in SFG's sample which would suggest that they face the same or similar degree of exposure to systematic risk. We note that this view is shared by the QCA and Incenta.⁸

Data for US Class 1 railroads or listed transport businesses should not have any role in estimation of the equity beta for Aurizon.

⁴ Aurizon, *2014 Draft Access Undertaking: Aurizon Network Response to Queensland Competition Authority's Draft Decision on Maximum Allowable Revenue*, December 2014, p 201.

⁵ Aurizon, *2014 Draft Access Undertaking: Aurizon Network Response to Queensland Competition Authority's Draft Decision on Maximum Allowable Revenue*, December 2014, p 201.

⁶ Aurizon, *2014 Draft Access Undertaking: Aurizon Network Response to Queensland Competition Authority's Draft Decision on Maximum Allowable Revenue*, December 2014, p 202.

⁷ Aurizon, *2014 Draft Access Undertaking: Aurizon Network Response to Queensland Competition Authority's Draft Decision on Maximum Allowable Revenue*, December 2014, p 202.

⁸ QCA, *Draft Decision: Aurizon Network 2014 Draft Access Undertaking – Maximum Allowable Revenue*, September 2014, p 252.



→ Relevance of toll roads

The consultant reports submitted by Aurizon query the relevance of toll roads to estimation of Aurizon Network's equity beta. For example the Brattle Group report states that the group of toll road businesses used by Incenta includes companies that are not comparable to Aurizon.⁹

The QRC agrees with Aurizon's consultants on this point. The QRC has previously observed that toll roads have very little in common with Aurizon Network in terms of their exposure to systematic risk.¹⁰ In particular:

- toll roads are typically not subject to a form of regulation which protects them from either cost or revenue risk. As noted by Incenta, while toll road prices are often fixed, they are generally not subject to a periodic review whereby revenues are realigned with cost.¹¹ This means that toll roads are exposed to both fluctuations in demand, and variations in costs over time. In short, the form of price regulation applied to toll roads provides them with very little (if any) protection from cost and revenue risk; and
- toll roads invariably face competition from alternative (usually free) roads. Users of toll roads will almost always face a choice between paying for use of the toll road and taking a free (but perhaps slower) alternative route.

Indeed Incenta notes that toll roads "are subject to significantly more volume (revenue) risk."¹²

As the QRC (and its expert, Castalia) have previously observed, the combination of rigid price regulation with full exposure to demand and cost risk has caused of a number of significant corporate failures by toll road owners and investors. The recent history of toll roads in Australia includes numerous toll road operators that have faced insolvency as a result of volumes being significantly less than forecast and/or construction costs exceeding estimates (risks which Aurizon Network is insulated from under its regulatory framework).¹³

The QCA in its draft decision does not express the view that toll roads are close comparators to Aurizon Network. Rather, the QCA appears to agree with Incenta that the closest comparators are regulated energy and water businesses.¹⁴ Nonetheless, the QCA then **uses** equity betas from toll roads as part of its assessment of Aurizon Network's equity beta – by adopting it as an upper bound point estimate.

⁹ Brattle Group, *Aurizon Network 2014 Draft Access Undertaking: Comments on Aspects of the WACC*, 17 December 2014, p 5.

¹⁰ QRC Further WACC Submission January 2014, p 11.

¹¹ Incenta, *Review of Regulatory Capital Structure and Asset / Equity Beta for Aurizon Network: Report to the Queensland Competition Authority*, 9 December 2013, p 13 (note B to Table 1.2).

¹² Incenta, *Review of Regulatory Capital Structure and Asset / Equity Beta for Aurizon Network: Report to the Queensland Competition Authority*, 9 December 2013, p 4.

¹³ Some recent Australian examples include the Clem Jones Tunnel in Brisbane, the Cross City Tunnel in Sydney and Eastlink in Melbourne.

¹⁴ QCA, *Draft Decision: Aurizon Network 2014 Draft Access Undertaking – Maximum Allowable Revenue*, September 2014, p 252.



Given the general agreement between the QRC, Incenta and Aurizon's consultants that toll roads have little in common with Aurizon Network, it is inconsistent to have toll roads play any part in determining a range for Aurizon's asset and equity beta, including as an upper bound. The effect of including toll roads is to artificially increase the upper bound for the asset beta range and significantly bias upwards the estimated asset beta for Aurizon (which Incenta calculates as the midpoint of the range, including toll roads).

The QRC submits that the QCA should use the betas only of those utilities entities which it (and Incenta) have identified as exposed to substantially similar systematic risks as Aurizon Network – being Australian energy and water utilities.

→ **Methodological issues with the Incenta analysis**

Aurizon seek to identify methodological issues with Incenta's beta analysis, and yet they do not present alternative estimates with these issues accounted for. Therefore it is unclear what the implications of the identified issues might be.

For example, Aurizon considers that:¹⁵

- there are errors in Incenta's implementation of the simulated month methodology; and
- Incenta has misclassified certain businesses in its data sample.

The QRC presumes that Aurizon would prefer that its own consultant's methodology be adopted, rather than Incenta's methodology which it considers to be flawed.

However as previously noted, even the results of Aurizon's expert (SFG) analysis do not support Aurizon's proposed equity beta, if the effect of US Class 1 railroads is stripped out. SFG reports that an asset beta estimate of 0.35 and a re-levered equity beta estimate of 0.59, based on its analysis excluding US Class 1 railroads and listed transport businesses.¹⁶

→ **Relevance of the Black CAPM**

Aurizon say that they support use of the SL CAPM to estimate the return on equity, and yet there is a suggestion in their submission that the Black CAPM should somehow be used to influence estimation of the SLCAPM equity beta. It is not clear from Aurizon's submission how they propose that the Black CAPM be used. Rather, it is simply stated that "*the QCA should give appropriate consideration to Black CAPM when determining the equity beta, and thus cost of equity for Aurizon Network*".¹⁷

The Black CAPM is a different model for estimating the return on equity, and one that is yet to gain any real acceptance among Australian regulators. It is not a tool for estimating the SL CAPM equity beta.

¹⁵ Aurizon, *2014 Draft Access Undertaking: Aurizon Network Response to Queensland Competition Authority's Draft Decision on Maximum Allowable Revenue*, December 2014, pp 196 – 199.

¹⁶ SFG, *Systematic risk of QR Network*, 31 August 2012.

¹⁷ Aurizon, *2014 Draft Access Undertaking: Aurizon Network Response to Queensland Competition Authority's Draft Decision on Maximum Allowable Revenue*, December 2014, p 200.



One reason why the Black CAPM is not used by Australian regulators is the lack of reliability around estimation of one of its key parameters – the zero-beta return. The AER notes that the model is not empirically reliable and is not widely used to estimate the return on equity by equity investors, academics or regulators.¹⁸

The SLCAPM on the other hand is a well-accepted and well recognised model for estimating the return on equity. It is generally considered to be the superior model for estimating the return on equity for regulatory purposes.

The QRC continues to support the QCA's use of the SLCAPM for estimating the return on equity, as reasonable and consistent with Australian regulatory practice. Other models (including the Black CAPM) should not be used unless they can be shown to be preferable to the SLCAPM in terms of producing reliable estimates of the required return on equity.

→ QRC's position on the equity beta

The QRC considers that the QCA's estimate of the equity beta for Aurizon Network should be based on the best available empirical evidence.

To date, Aurizon has not presented any empirical analysis which supports its beta estimate, besides the 2012 SFG report, which relies heavily on the inclusion of US Class 1 railroads in the dataset to obtain an estimate above 0.8. In its response to the draft decision, Aurizon does not present any new evidence to support its position. Rather, Aurizon simply seeks to raise issues which might be seen to cast doubt over the QCA's position.

None of the issues raised by Aurizon in its response to the draft decision alter what should be a clear conclusion from the empirical evidence.

The relevant empirical evidence is:

- SFG's analysis for Aurizon, with US Class 1 railroads excluded from the dataset. The QRC agrees with the QCA and Incenta that US Class 1 railroads and the listed transport businesses used in SFG's sample are not comparable, and Aurizon appears to acknowledge at least some of the key differences. With US Class 1 railroads and listed transport firms excluded, SFG's analysis produces an asset beta estimate of 0.35 and a re-levered equity beta estimate of **0.59**;¹⁹
- Incenta's analysis for the QCA, with toll roads removed from the range of estimates. As noted above, there seems to be general agreement that toll roads are not relevant comparators. With toll roads excluded, this analysis produces an asset beta range of 0.35 – 0.42, corresponding to an equity beta range of **0.59 – 0.73** (with a midpoint asset beta of 0.39 / equity beta 0.67);²⁰

¹⁸ AER, *Draft decision: Ausgrid distribution determination 2015–16 to 2018–19 – Attachment 3: Rate of return*, November 2014, 3-56.

¹⁹ SFG, *Systematic risk of QR Network*, 31 August 2012.

²⁰ Incenta, *Review of Regulatory Capital Structure and Asset / Equity Beta for Aurizon Network: Report to the Queensland Competition Authority*, 9 December 2013.



- Castalia's review of the Incenta analysis for the QRC, which shows that if the analysis is restricted to domestic energy and water businesses, the asset beta estimate would be 0.31 (corresponding to an equity beta of **0.51**);²¹
- Castalia's benchmarking analysis for the QRC, which shows that Aurizon is less exposed to systematic risk factors than other regulated businesses.²² Castalia's benchmarking set includes regulated energy and water businesses which are typically assigned an equity beta of 0.7.

The QRC considers that it cannot reasonably be concluded from this evidence that Aurizon's equity beta lies at or anywhere above 0.8. Rather, the only reasonable conclusion is that Aurizon's equity beta is significantly below 0.8, and most likely in the range of **0.4 – 0.6**.

3 Market parameters (MRP, risk-free rate and gamma)

The QRC notes that much of Aurizon's submission on market parameters repeats its previous submissions. The QCA has therefore already considered and addressed the points raised by Aurizon in its recent review of WACC parameters.²³

The QRC does not intend to repeat its previous submissions on these market parameters. Rather, for reasons previously explained we simply note that:

- we support the QCA's approach to estimating the risk-free rate;
- we consider that the QCA's estimate of the MRP is likely to be highly conservative (i.e. generous to Aurizon Network); and
- the QCA's estimate of gamma is reasonable (noting that the QCA's estimate of 0.47 is slightly below the QRC's proposed estimate of 0.5).

Of course, if the QCA was intending to reopen its decision on any of these market parameters, the QRC would expect that there be an opportunity to comment on this.

4 Assessment of the overall rate of return

Aurizon compares the rate of return allowed by the QCA with that allowed by the AER in its recent draft decisions for the NSW energy businesses. Based on its comparison, Aurizon concludes that, if it was an electricity distributor regulated by the AER, it is likely that the 2013DAU rate of return proposal of 8.18% would have been allowed.²⁴

Aurizon's comparison is misleading, as it relies on back-casting the AER's recent round of WACC decisions into an earlier period (the Aurizon averaging period). In doing so, it is assumed that the MRP and other parameters would have been the same in the earlier period and only the risk-free rate and DRP would have been different (that is, the risk-free rate and DRP would have been materially

²¹ Castalia, *QCA Cost of Capital Consultation: Equity Beta Issues – Further supplementary report to the Queensland Resources Council*, 20 January 2014.

²² Castalia, *Aurizon Access Undertaking: Risk Allocation Analysis – Report to Queensland Resources Council*, October 2013.

²³ QCA, *Final decision: Cost of capital: market parameters*, August 2014.

²⁴ Aurizon, *2014 Draft Access Undertaking: Aurizon Network Response to Queensland Competition Authority's Draft Decision on Maximum Allowable Revenue*, December 2014, p 167.



higher than in the AER's recent decisions). Aurizon also appears to assume that the AER would have taken an average of the Bloomberg and RBA data sources to estimate the DRP, even though only the Bloomberg data was available at the time of the Aurizon averaging period.²⁵ These assumptions may not hold, including because the AER's view on the MRP and its method for measuring the DRP changes over time depending on market conditions – the AER has only recently increased its estimate of the MRP to 6.5% and changed its method for estimating the DRP.²⁶

The QRC notes that in the recent round of AER draft decisions referred to by Aurizon, the AER actually determined rates of return ranging from 6.8% (for Jemena Gas Networks (NSW) Ltd) to 7.24% (for TransGrid).²⁷

The QRC considers that if any comparison is to be drawn with decisions of other regulators, the most relevant point of comparison is the allowed equity risk premium (**ERP**). An ERP comparison excludes the effect of movements in the risk-free rate and DRP and focuses on the allowance made for exposure to equity risk. The ERP is the primary metric used by the AER to compare its decisions on the return on equity with allowances made by other regulators and market practitioners.²⁸

A comparison of the ERP allowed by the QCA with that allowed by other regulators demonstrates the generosity of the QCA's allowance (see Figure 1). The QCA's ERP allowance for Aurizon is materially above that allowed by the AER, ACCC and ERA for regulated energy and telecommunications network businesses, even though Aurizon is *less* exposed to systematic risk factors.

²⁵ The RBA data series was not available until December 2013, and the AER did not start considering it as part of their estimation process until April 2014 (refer to: AER, *Return on debt: Choice of third party data service provider – Issues Paper*, April 2014). Prior to that, the AER was relying solely on Bloomberg data to estimate the return on debt for energy network businesses.

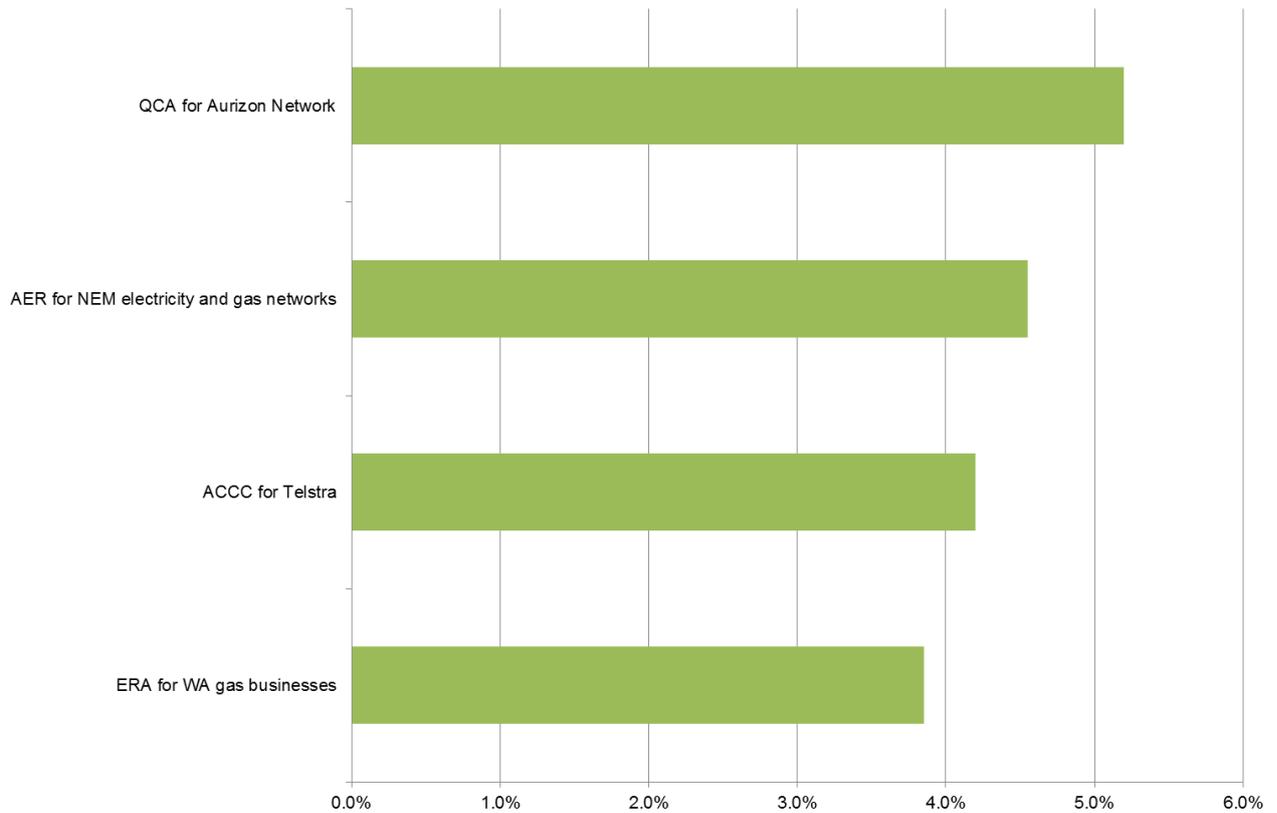
²⁶ For a period of approximately two years prior to publication of its rate of return guideline in December 2013, the AER had been adopting an MRP of 6%, and prior to that it had variously adopted an MRP of 6% or 6.5%. The AER's method for estimating the DRP has also changed over time, depending on market conditions and relative accuracy of available data sources and estimation techniques. For a period of approximately three years prior to publication of its draft decisions for the NSW businesses in November 2014, the AER had relied solely on Bloomberg data to estimate the DRP, and prior to that it had variously relied on either Bloomberg, CBASpectrum, or an average of the two.

²⁷ AER draft decision rate of return fact sheet and draft decisions.

²⁸ See, for example: AER, *Draft decision: Ausgrid distribution determination 2015–16 to 2018–19 – Attachment 3: Rate of return*, November 2014, 3-46.



Figure 1: Comparison of QCA allowed ERP with other regulators²⁹



Without prejudice
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²⁹ Figures reflect the most recent decision (or draft decision) of each regulator. For the AER, the ERP of 4.55% reflects an equity beta of 0.7 and MRP of 6.5%, as allowed in its draft decisions for the NSW electricity businesses (refer to: AER, *Draft decision: Ausgrid distribution determination 2015–16 to 2018–19 – Attachment 3: Rate of return*, November 2014). For the ACCC, the ERP of 4.2% reflects an equity beta of 0.7 and MRP of 6%, as allowed in its final access determination for the wholesale ADSL service (ACCC, *Public inquiry to make a final access determination for the Wholesale ADSL service: Final Report*, May 2013). For the ACCC, the ERP of 3.85% reflects an equity beta of 0.7 and MRP of 5.5%, as allowed in its recent draft decision for the Mid-West and South-West Gas Distribution System (ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Mid-West and South-West Gas Distribution System, submitted by ATCO Gas Australia Pty Ltd*, 14 October 2014).