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Brisbane, Qld, 4000

Aurizon Network Response to QCA Request for Comments on 2021 Rate of Return Review

29 January 2021

Dear Charles,

Aurizon Network welcomes the opportunity to respond to the Queensland Competition Authority's (**QCA**) Request for Comments on the 2021 Rate of Return Review (**RfC**).

Aurizon Network notes that undertaking a periodic review of the QCA's approach to estimating the rate of return for the business it regulates may provide some benefits including it:

- avoids reviewing the methodology for each regulatory determination,
- promotes consistency in regulatory decision making, and
- updates the methodology to reflect changes in regulatory best practice and improvements in information/methods.

In this regard, Aurizon Network considers that the benefits of conducting a review of the rate of return at this point in time are likely to be diminished given the terminating dates for current QCA approved access undertakings and review dates for the various water businesses. This is particularly the case if market conditions, information and regulatory developments at the time of the next determination differ from that prevailing at time of the QCA's rate of return review.

On 13 May 2019, Aurizon Network submitted a Draft Amending Access Undertaking to implement the UT5 negotiated agreement between Aurizon Network and the majority of its customers (**UT5 Customer Agreement**). This agreement reflected a revised package of amendments to the approved access undertaking that better aligned the interests of Aurizon Network with users of the declared service and the promotion of the statutory objectives of the access regime. This was subsequently approved by the QCA on 19 December 2019.

The UT5 Customer Agreement also followed an extensive period of regulatory review of the original UT5 Draft Access Undertaking for the period between 30 November 2016 to the final approval date of 21 February 2019. This review substantially addressed a large range of matters canvassed in the RfC. As shown in the following table the UT5 review process comprises some 1,324 pages of submissions, decisions and reports on the estimation of the

Weighted Average Cost of Capital (**WACC**) applicable to the provision of the declared service for the transportation of coal in the Central Queensland Coal Network.

Table 1. Pages in UT5 Documentation on the Weighted Average Cost of Capital

	Aurizon Network	QCA	Total
Submissions/Decisions	119	280	399
Expert Reports	669	256	925
Total	788	536	1324

The UT5 Customer Agreement also comprised an uplift in the UT5 WACC which reflected a package of agreed changes that better aligned the interests of Aurizon Network and its customers and the improvements in the value of the service to those customers.

A key outcome of the UT5 Customer Agreement was improved long-term regulatory certainty regarding the agreed terms and conditions of access through:

- an extension of the term of the UT5 Access Undertaking to 30 June 2027; and
- the application of a defined WACC reset methodology at the WACC reset date of 1 July 2023.

Therefore, any outcomes from the QCA's 2021 Rate of Return Review are not expected to be applicable to Aurizon Network's coal reference tariffs during the term of its current UT5 Access Undertaking. In addition, Aurizon Network anticipates that subsequent national and international reviews of matters relevant to the estimation of WACC's for coal export infrastructure may supersede the evidence, precedents, information and literature that the QCA will have regard to in its current review.

Given the substantive materials recently considered in relation to estimation of the UT5 WACC and the term of the approved UT5 Access Undertaking, Aurizon Network intends to limit its participation in the 2021 Rate of Return Review in respect of methodologies and inputs. Similarly, an objective for Aurizon Network and its customers in the UT5 Customer Agreement was to settle several contentious matters such as the WACC and avoid further regulatory reviews.

Aurizon Network also notes that the review process is consultative only and that any conclusions or findings from the review are not binding on the QCA in the consideration of future access determinations or approvals of undertaking. Therefore, Aurizon Network also preserves all rights in respect of future regulatory proceedings in respect of its participation in the 2021 Rate of Return Review.

This submission therefore comments on the following aspects:

1. Negotiated settlements between access providers and users of the service represent an efficient WACC;
2. The economic impacts from undercompensating export infrastructure are far more significant than overcompensating providers of essential services;
3. The Rate of Return Review process will be improved by ensuring a wider consideration of evidence and materials than that submitted by stakeholders; and

4. The QCA needs to obtain empirical evidence to support its current approach to estimating asset betas.

Negotiated Settlements are a Preferred Outcome to Regulatory Terms

There is substantial evidence that where access to significant infrastructure is subject to:

- a direct contractual relationship between the service provider and the end-users of the service (often referred to as shippers);
- the provision of standardised and common service conditions; and
- the users being well informed corporate entities with relatively homogeneous interests;

then the terms and conditions of access under a negotiated settlement with a commercially agreed rate of return are preferable to regulatory determined terms and conditions. This evidence can be found in:

- the negotiated outcome for the 2010 Hunter Valley Access Undertaking included substantial variations and commitments relative to the voluntary access undertaking originally submitted by the Australian Rail Track Corporation (**ARTC**) and included a commercially agreed rate of return;
- the 2010 DBCT Access Undertaking was commercially agreed between DBCT and its customers providing a commercially reasonable WACC outcome of 9.86%;
- the application made by ARTC on 23 December 2020, to extend the term of the current approved access undertaking for a further 5 years, incorporates a package of updates to the 2010 negotiated outcome that have been agreed with ARTC's customers (including an updated commercially negotiated rate of return); and
- negotiated settlements are the preferred practice for North American gas pipelines where the commercially agreed rate of return exceeds the regulators benchmark returns. Doucet and Littlechild (2009) note these settlements have improved the relationship between the pipeline and its shippers and expanded the range of negotiation outcomes to determine:

  'prices, operating and capital cost projections, return on equity, service quality improvements, risk-sharing investments and information requirements.'[1]

The UT5 Customer Agreement is another form of negotiated settlement which acknowledges that all parties could obtain an overall preferable outcome through a negotiated variation to the regulatory outcome.

The ability and incentives to achieve a negotiated settlement are influenced by the expected rate of return that might be obtained under the alternative regulatory terms and conditions. In

[1] Doucet, J. and Littlechild, S. (2009) Negotiated settlements and the National Energy Board in Canada, *Energy Policy*, Vol. 37, Iss. 11, November, pp. 4633-4644.

this regard, Bordignon and Littlechild (2012)[2] note that in respect of the Hunter Valley Coal Network negotiated settlement in 2010:

- Experience here is thus consistent with experience elsewhere, that customers are often willing to pay a little more than the regulator deems appropriate, in order to secure a service better tailored to their needs than the regulator would otherwise specify;

- A willingness by customers and users to accept a slightly higher rate of return for desired services seems to work wonders in facilitating negotiations; and

- It seems helpful to allow the parties to focus on the particular circumstances of that industry at that time rather than to tie down the outcome too closely to previous decisions in that or other industries; to allow the parties to agree a mutually acceptable rate of return to reflect the services provided and the risks incurred.

Therefore, where there is an expectation of obtaining a regulatory rate of return that undercompensates the access provider the gap between that expected outcome and the commercial return commensurate with the commercial and regulatory risks of the alternate negotiable outcomes then customer incentives to negotiate a settlement may be diminished and the more efficient outcome may be foregone.

Similarly, it is also important for regulators to recognise the value exchange in prior negotiated settlements if it is necessary to establish regulated terms and conditions of access. For example, ARTC was not able to obtain agreement with its customers on the terms of the 2016 Access Undertaking and in consideration of the subsequent voluntary 2016 Hunter Valley Access Undertaking the ACCC accepted the negotiated outcomes from the 2010 Access Undertaking included in the proposal but proposed a reduction on the WACC to reflect its approach to estimation of the WACC inputs. This outcome largely precluded the parties reaching a negotiated settlement in response to the draft decision as one group to the original 2010 agreement would be able to retain the value of the original terms without the compensation provided to the access providers in exchange for those terms.

Economic Impacts from Undercompensating Export Infrastructure

Aurizon Network recognises the QCA's acknowledgement that it should assess the overall reasonableness of the WACC outcome and make adjustments were necessary. A challenge for a regulator such as the QCA, which regulates both significant export infrastructure under part 5 of the *Queensland Competition Authority Act 1997* and essential services such as bulk water, is that the matters relevant to the reasonableness of the WACC will differ considerably across industries.

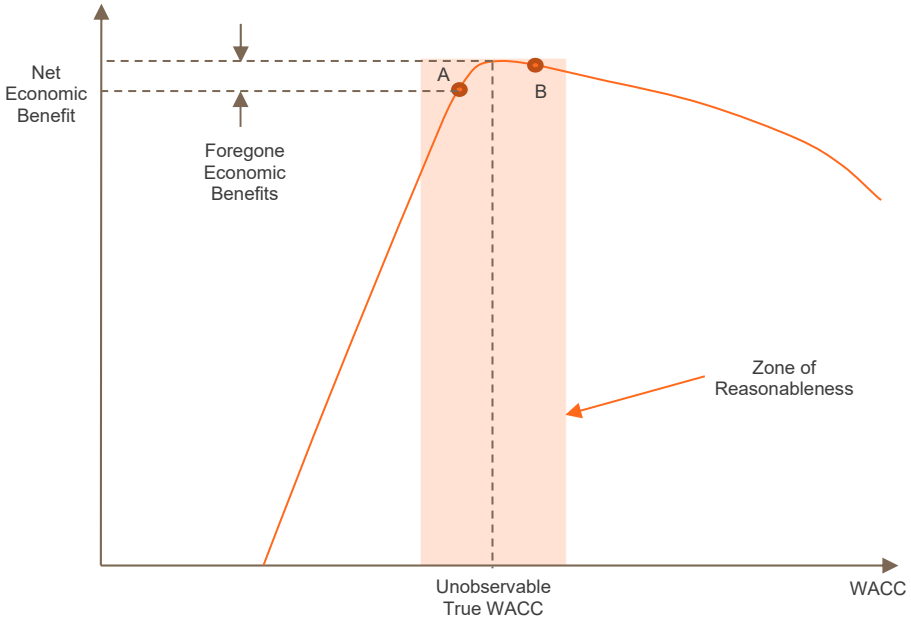
In respect of essential services, the downstream economic impact from either over or undercompensating a service provider is likely to be reasonably symmetrical. That is, a higher WACC will raise prices and therefore alter the price of that good in the basket of goods and services used by business and households, relative to other goods and services in that basket, thus distorting allocative efficiency. Alternatively, a lower WACC will lower prices and increase consumption if demand is elastic and lead to overinvestment in the facility. The economy wide

[2] Bordignon, S. and Littlechild, S. (2012) The Hunter Valley Access Undertaking: elements of a negotiated Settlement, *Transport Policy*, Vol. 24, November, pp. 179-187.

nature of essential services as an input into the majority of household and businesses also differs from the industry specific impacts of pricing by export infrastructure providers.

For significant export infrastructure, the economic impact of under or overcompensating the access provider is likely to be far more asymmetric and significant. This concept can be demonstrated in Figure 1 which conceptually shows the economic value of output associated with the use of the declared export infrastructure service and the range of WACC outcomes. Where the access provider is undercompensated (point A) the business has lower incentives to expand, innovate and absorb costs or risks associated with maximising output and improving value to the supply chain. The value of lost economic benefit to the entire value chain is therefore significant. However, providing a higher WACC to the access provider within the zone of reasonableness (point B) is expected to have little or no impact on demand at the margin and the economic impact is simply slightly higher access prices to the users.

Figure 1. Asymmetric Consequences of Under Compensating Export Infrastructure Providers



As the true WACC is not observable and regulators largely make qualitative judgements there are increased prospects of regulator error. However, the economic consequences of that error are likely to be far greater by undercompensating. Given these risks, the exercise of regulatory discretion should be skewed towards commercial reasonableness rather than false precision.

Regulators of coal export infrastructure should therefore approach the task of evaluating the overall reasonableness of the WACC not from the perspective of seeking to identify a precise estimate based on theoretical and statistical imprecise models and methods but in terms of the outcomes in upstream downstream markets. That is, the focus is not on whether the WACC itself is an *efficient output* of a financial model but whether that WACC will promote more *efficient outcomes* having regard to:

- Incentives for the access provider to invest, improve efficiency (through innovation and assuming risk) and maximise the value of the entire supply chain; and

- The consequences for demand for the service and promoting workable competition in the relevant market.

Improving the 2021 Rate of Return Review Process

The number of stakeholders impacted by the decisions and determinations made by the QCA is not large relative to both national and international regulators. It is also possible that given the timeframes between recent decisions and the review that no new information will be submitted to the QCA. Therefore, the depth of evidence and information submitted to the QCA may not be adequate to complete a comprehensive review of the matters relevant to the questions posed in the RfC.

Aurizon Network recommends that the QCA undertake a wider-ranging review of WACC input methodologies, including comparable reviews by other national and international regulators that have been recently completed or currently being undertaken, and evaluate the relevant strength and weaknesses of approaches in any subsequent draft report. The conclusions or findings in the draft report should demonstrate that the QCA has considered all relevant materials and information and be supported by clear analysis of how that information has been evaluated to draw that conclusion.

Aurizon Network notes that the target date by 30 June 2021. is ambitious and may not provide the QCA a reasonable period of time to undertake a substantive and complete review of the evidence and information relevant to the questions asked in the RfC.

Aurizon Network also notes that the QCA has historically utilised a narrow field of experts in respect of estimating reasonable rates of return. Table 2 shows the experts used by the QCA in various regulatory processes since 2005. While retention of consultants can assist in promoting regulatory consistency of decisions there is also an inherent risk that the regulator becomes captured by the views and opinions of the consultant (i.e. the expert ceases to provide independent opinion). Similarly, given that regulated businesses and stakeholders will challenge the views of that expert there is also the prospect that the expert will be subject to confirmation bias to defend positions and views expressed in prior reviews.

Table 2 WACC Experts Engaged by the QCA in Regulatory Proceedings.

Regulatory Review	Consultant 1	Consultant 2	Consultant 3
2005 Aurizon Network UT2	Dr Lally	Dr Michael Lawriwsky (ACG)	
2009 Aurizon Network UT3	Dr Lally	Dr Michael Lawriwsky (ACG)	
2013 Aurizon Network UT4	Dr Lally	Dr Michael Lawriwsky (Incenta)	PWC (Debt Risk Premium)
2017 Aurizon Network UT5	Dr Lally	Dr Michael Lawriwsky (Incenta)	Nine-squared (WACC Benchmarks)
DBCT 2006	Dr Lally	Dr Michael Lawriwsky (ACG)	
DBCT 2015	Dr Lally	Dr Michael Lawriwsky (Incenta)	
QR AU2 (2020)		Dr Michael Lawriwsky (Incenta)	

GAWB 2005	Dr Lally	Dr Michael Lawriwsky (ACG)	
GAWB 2015		Dr Michael Lawriwsky (Incenta)	
GAWB 2020			CEPA
2014 Cost of Debt Review	Dr Lally		
2014 Cost of Equity Review	Dr Lally		

Aurizon Network therefore recommends that the QCA seek to diversify the advice it receives from expert advisors by expanding the pool of experts it uses to advise on matters relating to the estimation of reasonable rates of returns for the businesses it regulates.

Empirically Validating Asset Beta Comparator Selection

Estimating the unleveraged beta for coal export infrastructure providers is complicated by the lack of listed comparators either domestically or internationally. As such, the accepted approach in the finance literature of identifying *pure-play* comparators, determining a benchmark and making adjustments to account for differences in business risks is not available to regulators if they cannot identify pure-play comparators.

The QCA and other regulators of coal export infrastructure have sought to overcome this problem by using out-of industry domestic comparators and effectively ranking the firm against the industry averages.

This process is highly subjective and involves a material level of statistical imprecision. Aurizon Network has sought to identify instances where regulators of the following significant infrastructure:

- rail freight networks (excluding predominantly coal networks);
- gas pipelines;
- electricity networks;
- water supply and distribution;
- ports; and
- airports

have relied on out-of industry comparators to estimate the asset beta for a regulated business within the relevant industry classification. Aurizon Network was unable to identify instances where the QCA's approach has been applied in these sectors. In practice, regulators have a stronger preference to utilising international comparisons from the same industry than to making domestic out-of industry comparisons.

The problem of utilising out-of industry comparators is readily apparent in considering the lack of precision associated with estimating the asset beta for a non-listed firm from pure-play listed firms within the same industry with similar characteristics. For example, Leissig and Payne

(2017)[3] evaluate the precision of asset beta estimates obtained from this pure-play approach match, by simulating matching firms in an industry that are closest, with a maximum of six firms in that industry with the same characteristics. They conclude that '*the pure-play technique using common matching metrics does not provide a precise estimate for asset beta when compared to observed asset betas of publicly traded firms*'.

The reported results are that average differences are small across the entire sample and each industry but the absolute difference is impractically large for the approach to be of any value to a practitioner, such as an economic regulator seeking to estimate the beta of an unlisted firm. In no industry was the absolute difference between the comparator estimated beta and the observed unlevered beta less than 47%.

Given this level of statistical imprecision for within industry comparisons including firms with similar characteristics, it is reasonable to conclude that comparisons of unlisted firms with out-of industry comparators would be statistically unreliable.

If the QCA is to continue to apply its current method of establishing comparators for coal export infrastructure businesses and making qualitative assessments of systematic risk then it should seek to estimate the level of confidence associated with that approach and evaluate the reasonableness of the estimate having regard to other factors.

For example, Aurizon Network applied a bootstrapping approach with replacement to the weekly asset betas in the sample gas pipelines considered in the UT5 process. This allows for use of the variability within a sample to estimate that sampling distribution empirically. This is done by randomly resampling with replacement from the sample many times in a way that mimics the original sampling scheme. From these simulated samples we may, among other assessments, perform hypothesis testing, calculate standard errors and construct confidence intervals.

Figure 2. North American gas pipeline asset betas

Pipelines	
Mean	0.60
Confidence interval 5%	0.54
Confidence interval 95%	0.65
Sample size	15

The interpretation of this distribution is that to reject North American gas pipelines as being a comparator of unlisted coal export infrastructure requires a conclusion that the asset beta for those firms falls outside this distribution with 100% probability.

[3] Leissig, V, and Payne, J (2017) The Precision of Asset Beta Estimates, International Journal of Managerial Finance, Vol. 13, No. 2, pp 213-224

Aurizon Network acknowledges the complexity and difficulty of establishing a point estimate for an unobservable input into the CAPM model. However, if reliance is placed on establishing a point estimate with any level of precision based on cross industry comparators then that method should be supported by some empirical evidence of businesses with comparable business risks across different industry sectors having comparable asset betas. To the best of Aurizon Network's knowledge this empirical evidence is not been demonstrated.

While there is reasonable evidence to support the determinants of systematic risk, there is very limited evidence supporting the deconstruction of the firm beta into those components and therefore no basis to apply more weight to one factor, such as form of regulation, to another factor such as operating leverage.

The lack of empirical evidence to support cross industry comparators increases tension between access providers and customers in the regulatory process and reduces the acceptability of regulatory outcomes.

Aurizon Network recommends that the QCA evaluate and consider alternatives to the current out-of industry beta estimation approach and critically evaluate the empirical support for, and the reliability of, its current approach to estimating asset betas for unlisted firms.

Should you have any questions in relation to this submission please contact Dean Gannaway, Principal Regulatory Strategy.

Kind regards,

Jon Windle
Manager – Regulation