Queensland Rail's Access Undertaking (AU1)

West Moreton Reference Tariff Submission

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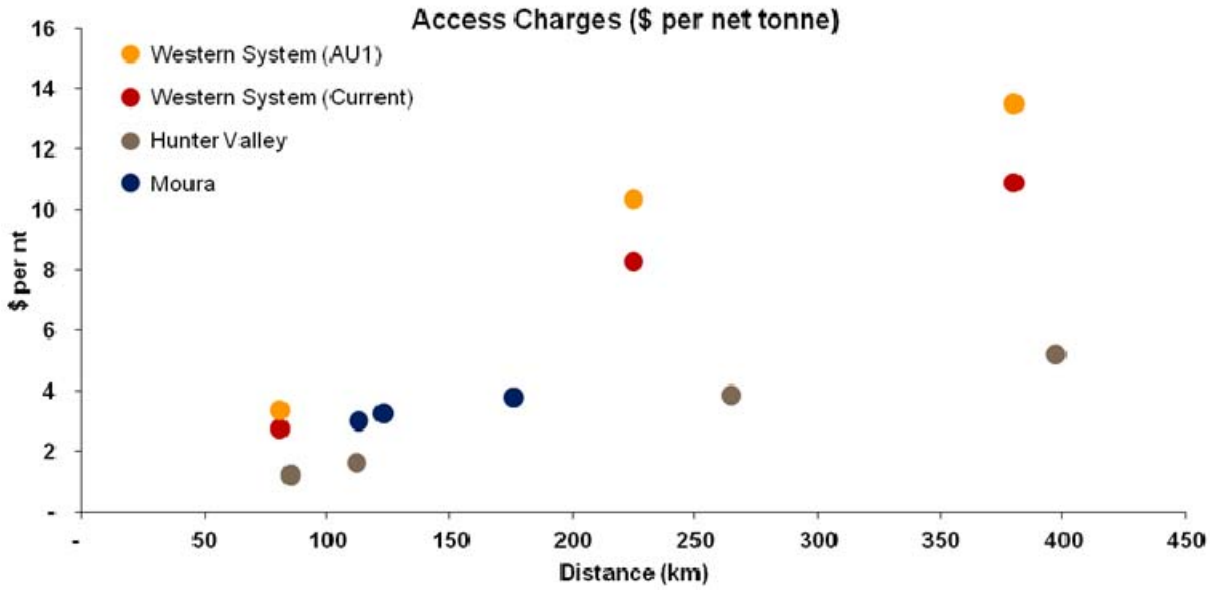
1 Key Points

- Aurizon supports the objective of a transparent and repeatable methodology for the calculation of a coal reference tariff on the Western System.
- The proposed Western System must promote the long term sustainability of the Western System as a critical transport corridor for both coal and non-coal freight in South East Queensland. Moreover, the proposed tariff must ensure the ongoing competitiveness of the Western System coal supply chain as against both domestic and international competition.
- It is acknowledged that a reference tariff for the Western System should support the legitimate business interests of QRail over the long term, by providing a sustainable revenue basis, and giving QRail adequate incentives to invest in and maintain the rail infrastructure.
- However, Aurizon considers that QRail's proposed Western System reference tariff is unreasonable. QRail's proposed Western System reference tariffs appear to be far in excess of those charged by any comparable access provider in Australia, including Aurizon Network. This is not justifiable, particular given the condition and design of the relevant network is below what access seekers expect of a modern, heavy-haul railroad.

Figure 1: Relativity of Proposed Tariff with Comparator Railways



- QRail have applied an arbitrary reduction to a portion of the asset base to account for the capacity constraints imposed on the Western System by the Metropolitan system. This is not a sound way to deal with the constraint imposed on throughput. Further consideration is required to account for the volume impacts of the Metropolitan system in the reference tariff.
- Actual volumes on the Western System, historically, are greater than those used to determine the reference tariff. This gives rise to the risk that QRail will inefficiently over-recover revenue from access holders. Aurizon suggests amendments are made to the undertaking to mitigate the risk that QRail will over-recover revenue from access holders.
- A Regulatory Asset Base for the Western System has yet to be approved by the QCA. Given the significant impact that the initial asset valuation will have on access charges over time, the QCA needs to have regard to the impact of the valuation on competition in upstream and downstream markets. In this respect, Aurizon considers that there are questions as to whether QRail has overvalued the asset, noting:
  - based on the information available, there are some significant discrepancies in relation to the actual asset condition as compared with that assumed in QRail's DORC valuation;
  - a comparison of the Western System to a modern, engineered railroad would suggest a need to amend the valuation to

- be reflective of actual asset quality by substantially discounting ballast and formation costs;
- exclude the value of timber bridges as having no inherent economic value;
- exclude the costs of tunnels (which were built in the 1800s) as having no realisable economic value;
- optimise the maintenance expense to the extent maintenance scope can be attributable to a difference between the installed and the modern engineering equivalent standard (as opposed to condition); and
- establish the tariff on the presumption that train services are able to operate at a 20 tonne axle load if this is consistent with the modern engineering equivalent applied in the valuation.

- Aurizon considers it appropriate for the QCA to assess QRail's weighted average cost of capital proposal on its merits, independent of the assessment of Aurizon Network's 2013 Draft Access Undertaking. This is analogous to the separate consideration of the DBCT and the CQCN WACC during prior resets. Aurizon would note that the historically low risk-free rates used by QRail in its proposed WACC have obscured the potential impact of its proposed asset valuation. Aurizon would therefore request that the QCA consider the reasonableness of QRail's valuation in light of a WACC which is closer to the historic average.
- Given QRail's own consultants have found the asset is of fair to poor condition, Aurizon considers that either a range of asset performance measures, or a single asset performance index, should be developed to provide access holders and users with transparency on the targeted service levels of the proposed maintenance regime.
- The methodology used to include the Columboola to Macalister assets in a single Western System tariff ignores the opportunity cost associated with an alternative use of the Rosewood to Macalister capacity. Based on the information provided, further evidence is required to ensure that the approach taken by QRail is not inconsistent with the principle of incremental and stand alone costs included in the pricing principles.

2 Introduction

Aurizon welcomes the opportunity to provide a submission to the QCA on Queensland Rail's (**QRail)** Western System tariff, as proposed in the June 2013 Draft Access Undertaking (**June 2013 DAU**). Aurizon is the largest access seeker and access holder on the Western System, providing both coal and non-coal haulage. This submission is primarily focused on the way in which Queensland Rail's Western System tariff proposal will directly affect the competitive performance of above rail operations and the supply chain.

2.1 The structure of this submission

To facilitate consideration by the QCA, this submission has sought to identify the statutory assessment criteria and, importantly, alternative solutions where those criteria are not met.

This submission is in six parts:

- Section 2 provides context to Aurizon's submission and the objectives of the Western System reference tariff;
- Section 3 discusses, at a principle level, the development of a repeatable pricing methodology to achieve a sustainable railway;
- Section 4 addresses the form of regulation and the probability of over or under recovery of revenue;
- Section 5 includes more detailed discussion on the specific issues relating to Queensland Rail's proposed building blocks; and
- Section 6 analyses the inclusion of the Columboola to Macalister assets in the RAB and the consistency with the pricing principles.

Aurizon would welcome the opportunity to discuss, or clarify, any matter raised in this submission. Please contact Rachel Martin on (07) 3019 5476.

2.2 Objectives of the Western System reference tariff

2.2.1 Background

The regulatory approval of a West Moreton (Western System) tariff for coal carrying services has been problematic since the commencement of QRail's first undertaking in 2001. In that process, the QCA decided that access charges for the West Moreton coal traffic would be commercially negotiated with access to dispute resolution. This decision was, in some respects, based on the view that the public benefits of finalising the assessment were considered less then the costs associated with further delay in approving the undertaking[1].

In the 2006 Undertaking, the QCA approved a Western System tariff using a benchmarking framework to complete a cost based analysis[2] resulting in a reference tariff that it considered reasonable, given the information available.

In 2009, QR Network submitted a tariff that it considered to be below the ceiling tariff. The proposal was approved as it aligned with the QCA's assessment of what constituted a reasonable tariff[3]. However as a "repeatable and transparent methodology for deriving the western system tariff"[4] had not been agreed the QCA considered it to be an objective of future undertakings. It was also noted at this time that the undertaking would need to be amended in the future to introduce a Columboola reference tariff.

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1 QCA, Draft Decision on QR's Draft Undertaking, Volume 2 – The Draft Undertaking, December 2000, p.56

2 QCA, Decision, QR's 2005 Draft Access Undertaking, December 2005, p.73

3 QCA,Draft Decision, QR Network's 2010 DAU – Tariffs and Schedule F, June 2010, p.89

4 QCA,Draft Decision, QR Network's 2010 DAU – Tariffs and Schedule F, June 2010, p.89

2.2.2 Objectives for QRail's AU1 Western System reference tariff

Given this background, Aurizon supports QRail's objective of:

- implementing a transparent and repeatable pricing methodology that can be rolled forward into future regulatory periods; and
- the inclusion of Columboola as a nominated loading facility.

In the December 2009 draft decision[5], the QCA stated some further objectives for the pricing methodology, namely that the requirement for a *"transparent and robust methodology"* would provide access holders and their customers with the ability to plan future rail haulage operations with some degree of certainty. Further, the QCA indicated that such a methodology would address the risk that a new operator would receive an access charge that was significantly higher than the incumbent, *"with the only justification for the change being that the tariff remains lower than an estimated ceiling price"*.

Aurizon agrees with the QCA that a reference tariff is one instrument that "*provide[s] information to third party operators as to the likely level of access charge for train services of a similar type as the specified reference train service"*[6]. In addition, given a latent risk to operators and end users is the extent to which an approved reference tariff will change over time, Aurizon agrees with the view that the reference tariff *"facilitates an efficient access negotiation process"*[7] to the extent it includes information regarding the changes to the cost of access across regulatory periods.

However, with respect to the QCA's comment on new entrants, Aurizon notes that, whilst in the Queensland rail access regime reference tariffs have traditionally reflected the ceiling price, there is no requirement for them to do so. Of relevance is whether the reference tariff meets the requirements of section 168A of the QCA Act, and in this respect, the pricing principles require access charges for like services in the same market to be differentiated on the basis of cost and risk regardless of whether a reference tariff is in place or not[8]. Aurizon is therefore circumspect about the implication that reference tariffs should be 'equivalent' between operators, whether incumbent or otherwise. Adequate protections in relation to anticompetitive price discrimination are found in the Act, or in approved undertakings, and in any case are not obviously applicable to the Western System.

In addition to the QCA's comments, Aurizon notes a number of further considerations. In particular, as required by the QCA Act, the development (and subsequent approval) of the reference tariff requires the consideration of a number of factors, including ensuring the price is *"at least enough to meet the efficient costs of providing access to the service and include a return on investment commensurate with the regulatory and commercial risks"* and *"provide incentives to reduce costs or otherwise improve productivity"*[9] One way of conceptualising these requirements (particularly in the context of the Western System) is to consider whether the access charge is sufficient to maintain a sustainable railway.

Of relevance then, in assessing whether the proposal meets the legislative requirements, is a number of factors related to the public interest, including:

- the risk of bypass;
- the return expectations of QRail shareholders;
- the appropriate level of costs associated with the standard of infrastructure and service levels;
- the incentives to increase utilisation and throughput; and
- the long term competitiveness of the supply chain, particularly, whether efficient use of, and investment in, the supply-chain will be promoted.

2.3 Transparency of the proposed reference tariff

Aurizon has sought, as much as possible, to adopt an evidence based approach to the identification of issues with QRail's proposal. Aurizon has targeted its review at the reference tariff building blocks information as presented by QRail, and has sought to identify areas requiring further analysis or

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5 QCA, Draft Decision, QR Network's 2009 Draft Access Undertaking, December 2009, p.73

6 QCA, Draft decision on QR's Draft Undertaking, Volume 3 – Reference Tariffs, December 2000, p.23

7 QCA, Final Approval, QR's 2006 Draft Access Undertaking, June 2006, p.26

8 Refer cl.3.3 AU1

9 S.168A(a) and (d), Queensland Competition Authority Act 1997

information. As this submission is not an exhaustive review of the Western System tariff proposal, Aurizon looks forward to the opportunity to constructively engage with both the QCA and QRail on the continued development of the western system tariff and the AU1. This submission should be read in conjunction with Aurizon's four previous submissions on QRail's draft access undertaking.

In assessing the reasonableness of QRail's reference tariff submission Aurizon first had regard to the material provided by QRail to support the 28 June 2013 proposal. Aurizon formed the view that QRail had not disclosed sufficient information to enable stakeholders to fairly review the reasonableness of the proposal. Aurizon's requests to QRail for further information were rejected, and thus Aurizon was required to approach the QCA in relation to obtaining further information. QRail provided additional information to stakeholders, at the request of the QCA, on 18 September 2013.

As both the QCA and QRail's objective is a *transparent* pricing methodology, it is essential that sufficient information is provided to interested parties for independent review. In this regard, there is significant precedence in Queensland in relation to the type of information required to be provided by network providers in support of reference tariff proposals. It is not unreasonable for QRail to replicate this level of disclosure. However, the initial information provided by QRail did not do so. While the additional information provided by QRail is of assistance, in that QRail has provided a revenue summary and an historic roll-forward to the opening asset value, QRail has yet to provide a forecast roll forward. For the purposes of this submission, Aurizon has sought to estimate those values.

This lack of transparency in relation to asset values is of the greatest concern. Given the intention of the 28 June 2013 western system proposal is to provide a line in the sand approach to asset valuation, it is imperative that there is a high degree of confidence in the initial asset valuation. Unfortunately, it is extremely difficult for stakeholders to review and comment on the robustness of the original asset valuation as very limited information has been provided to allow scrutiny of an important and critical input to current and future tariff outcomes.

As the information supplied by QRail raises concerns as to whether the depreciation is commensurate with asset condition the QCA is encouraged to include in its decision a detailed summary of the original depreciated optimised replacement cost (DORC) asset valuation which sets out the relevant details for the following significant components:

Table 1: Minimum Information Disclosure for DORC Valuation

Asset Class	Modern Engineering Equivalent[10]	Optimised Replacement Cost (ORC)	Valuation Life	Average Life Expired	Depreciated ORC
Rail	50 kg				
Turnouts	Unknown				
Sleepers	Concrete 685 mm spacing				
Ballast	400mm depth, 4m width, 1600 m^3/ km				
Formation	Single 6 m and Dual 10 m width				
Earthworks	30% rock cutting. Cut and fill on plan and sections				
Culverts	Unknown				
Bridges	Concrete bridges				
Tunnels	Unknown				

This information is partially available within QR National's 2010 Draft Access Undertaking submitted to the QCA in April 2010[11] which includes the following table:

[10] Connell Hatch (2008) Final Estimate Report, Western System – Depreciated Optimised Replacement Cost (DORC) Assessment Queensland Rail, Attachment H to QR Network Draft Access Undertaking 2009, Section 3 – Key Assumptions. http://www.qca.org.au/files/R-2009DAU-AR-Vol1Atts-0908.PDF

Table 2: DORC Information Disclosed in Previous Regulatory Submissions

Asset	DORC ($ August 2007)	Avg. Weighted Remaining Life
Track	$186,960,000	21.0
Signals	$9,540,000	9.5
Bridges	$39,020,000	25.3
Culverts	$9,340,000	25.0
Earthworks	$2,370,000	5.0
Tunnels	$85,740,000	50.0
Land Acquisition	$552	2.5
Telecom	$15,350,000	10.0
Land	$330,00	-
Power Systems	$1,370,000	9.7
Total	$350,020,552	

These average weighted remaining life figures can be contrasted with the proposed asset lives on p. 13 of Q Rail's proposal:

Table 3: Proposed Western System Asset Lives

Asset Class	QCA December 2009 Draft Decision Assumed Lives (Years)	Proposed AU1 Assumed Lives (Years)
Sleepers	50	35 (One Class for Track, including Turnouts)
Rail	20	
Turnouts	20	
Ballast	20	
Top 600	50	
Roads	38	38
Fences	20	20
Signals	20	20
Bridges	50	50
Culverts	50	50
Earthworks	100	100
Tunnels	100	100
Land Acquisition	50	50
Telecommunications	20	20
Power Systems	20	20

These tables represent the extent of the asset related information provided in support of the most significant driver of the return on and return of capital components of the building blocks.

[11] QR National (2010) Draft Access Undertaking – Volume 1, April, p. 107. http://www.qca.org.au/files/R-2010-DAU-QRNational-Vol1Final-0410.PDF

3 Promotion of a Sustainable Railway

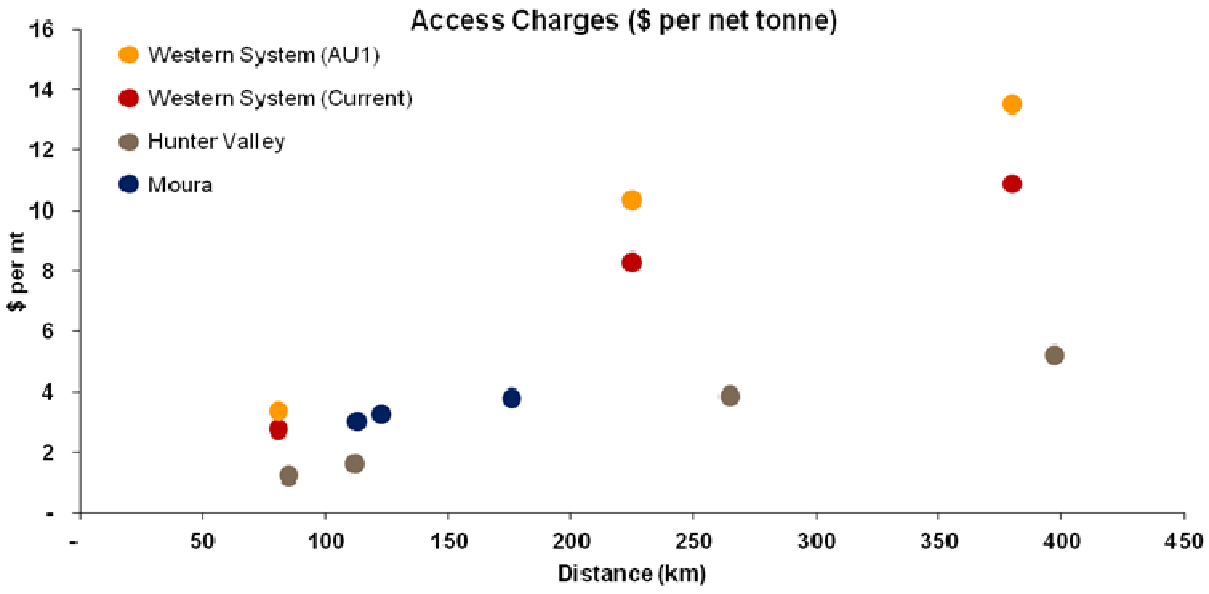
Aurizon considers that there is significant alignment between the producers and suppliers (QRail and Aurizon) in relation to the need for a sustainable railway in South East Queensland to service both the coal and non-coal freight task. It is acknowledged that a sustainable West Moreton system requires that QRail has an adequate revenue base to maintain and, where there is sufficient demand and commercial incentives, increase the capacity of the rail network to support the forecast volumes. Likewise, the notion of sustainability reflects a long term perspective regarding the competitiveness of the Western System coal chain relative to domestic and international competition.

3.1 The proposed tariffs are inconsistent with any reasonable or relevant benchmark

Aurizon considers that the development of a transparent and repeatable methodology does not require a building blocks framework and that a reference tariff could be developed with reference to a range of relevant comparators[12]. However, regardless of the methodology used to develop the reference tariff for the Western System, benchmarking the tariff provides information to the network provider and users of the reasonableness of the resultant tariff.

The graph below shows that the proposed Western System tariff for coal services is significantly higher than the tariff in comparator systems. This is particularly relevant for the services with a haul distance of greater than 200 km. Whilst there may be a number of factors contributing to this, in Aurizon's view, it warrants a review of the proposed methodology for reasonableness, relevant to the condition and utilisation of the asset. This is so, given the potential impact on the competitiveness of the Western System coal chain with other coal chains in Australia and globally.

Figure 2: Relativity of Proposed Tariff with Comparator Railways

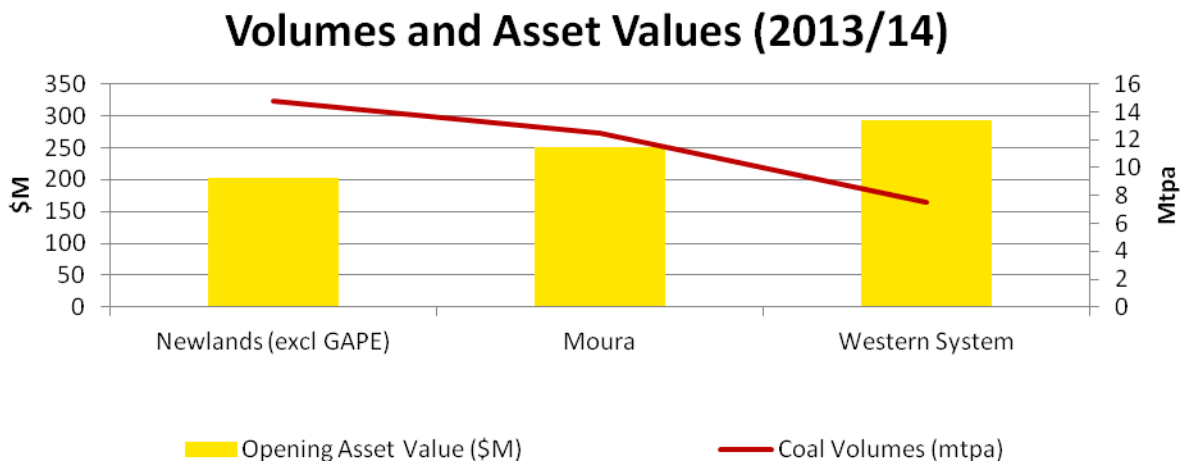


3.2 An alternate, repeatable, transparent and sustainable methodology

The Western System is overvalued for the levels of utilisation. Analysis of the Western System tariff against relevant comparators show the variance is primarily attributable to the value of the assets relative to the levels of utilisation. As represented in Figure 3, coal volumes are the lowest on the Western System and are attributed returns for the highest asset value.

[12] Aurizon, Submission to the QCA on Queensland Rails' 2013 Draft Access Undertaking (February 2013), 3 May 2013, p.12

Figure 3: Opening asset values for coal systems with similar volumes



Note: In the GAP to Turrawan variation application, the roll forward asset values of Musselbrook to GAP line segments were confidentially provided to the ACCC by ARTC, therefore Hunter Valley Zone 3 asset value information has not been included for comparison[13].

The asset valuations used by QRail assume modern engineering equivalent (MEE). Meanwhile the volumes used to derive the tariff are based on contract volumes which are significantly lower then the capacity of a modern railway. As referred to in the Draft Decision on the 2009 Draft Access Undertaking[14], a modern railway has capacity for trains as much as two kilometres long, carries more than 10,000 tonnes of coal and has relatively few competing traffics to disrupt services. In comparison, trains on the Western System carry less than 2,000 tonnes and face a number of restrictions. In 2009, it was recommended that some adjustments to asset values be included to account for the condition of the asset as compared to the modern engineering equivalent.

In the AU1, QRail have adopted the 2009 recommended approach to asset valuations. Aurizon is of the view that this approach does not adequately account for the restrictions that result in significantly lower levels of utilisation as compared to a modern railway. The issues regarding asset condition as compared to MEE are discussed in detail in section 5.2. However, to the extent MEE is used to value the assets, the volumes used to derive the tariff should also reflect that of a MEE railway.

In developing a transparent and repeatable approach to the Western System tariffs, further consideration is required to account for the impact of the Metropolitan passenger network on the coal services. Capacity remains constrained on the Western System as a result of the limited *"number of available paths provided to coal within the Metropolitan system due to clashes with passenger services and peak passenger periods"*[15] Restrictions are also placed on coal services traversing the passenger network due to:

- scheduled Corridor Access System (SCAS) maintenance closures implemented in the Metropolitan system, resulting in capacity block outs on average of 64 hours per month;
- delays or cancellations associated with passenger priority obligations, which have increased as a result of the greater number of passenger services in the system;
- limitations on wagon gauge to pass passenger station platforms; and
- maximum train lengths of 655 metres through the metropolitan system.

The Western System tariff proposal gives no consideration to these matters and argues that the impact of passenger network on the capacity available to coal services has in fact reduced. QRail have stated[16] that instead of two, three-hour blackout periods for peak services there are now two, two and a half-hour black out periods and a strict peak curfew for non-passenger trains is not in place. In addition, QRail have

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13 ARTC, Application To Vary The Hunter Valley Coal Network Access Undertaking (Varied On 17 October 2012) To Provide For The Incorporation Of Gap To Turrawan Segments In The Network, Supporting Documentation, June 2013, p.10

14 QCA, Draft Decision, QR Network 2009 DAU, December 2009, p.74

15 QR Network, QR Networks Access Undertaking (2009) Western System Coal Tariff Development, September 2008, p.10

16 QRail, AU1 West Moreton Reference Tariff Reset Overall Submission, June 2013, p.9

stated that the ability to run services in the opposite direction to the peak reduces the inavailability of the network from six to five hours (on average) each weekday. As a result QRail have argued that the 20% reduction applied to pre-1995 assets used to account for the restrictions associated with passenger services should be reduced to 15%.

QRail's assessment focuses only on the peak period blockouts and does not take into consideration any of the other impacts on the Western System. Since the 2009 pricing decision, the morning and afternoon peak periods have increased marginally, it seems obvious that the QCA decision was attempting to take account of these issues. In addition, contrary to the justification included in the submission, QRail have, in this draft access undertaking, sought to put in place a strict curfew for non-passenger services during peak periods[17].

Aurizon considers a simpler way to address the restraints on coal services imposed by the Metropolitan system is to assess the capacity that would be available for coal services on the Western System, if the constraint did not exist. That is, the capacity available if the supply chain did not include the metropolitan system.

[17] Refer cl. 5.2(e) of the AU1 Standard Access Agreement

4 Revenue at Risk

For the Western System, QRail have in place, and propose maintaining, a price cap form of regulation. Price cap regulation allows the network provider to set a unit price for services based on assumed level of inputs. The unit price is then generally only adjusted according to cost increases that align to an index, such as CPI and includes productivity offsets. Whilst the efficiency offsets may take the form of CPI-X, it may also take the form of a glide path or menu of options[18] as a means of sharing efficiency gains between the network provider and users.

As an example, prior to the implementation of the revenue cap in the CQCN, the price cap regulation in place included a volume range such that QR Network absorbed any increases in revenue associated with increased volumes within an identified range (and likewise bore reductions in revenue due to reduced volumes). However, to the extent volumes increased above the identified range, the efficiency dividends were returned to users in the form of a reduced tariff. In comparison, a menu of options approach, for example, allows the network provider to present a number of different capital expenditure and maintenance trade off scenarios for different service standards, allowing users to select the approach.

4.1.1 QRail proposal

The price cap form of regulation in the Western system, takes the form of unit prices increasing at CPI, with the benefit of any efficiency improvements, either through reduced costs or increased volumes, being to the benefit of QRail. QRail have proposed to use contracted volumes as its forecast for each year of the reference tariff reset period and to maintain the two part tariff which includes a path charge and a variable charge for services from Columboola to Rosewood, but to have a single tariff variable on GTK for services from Ebenezer.

Under the model currently in place in the Western System, QRail are protected from downside risk to revenue through the 80% take or pay arrangements which are proposed to be maintained.

QRail have maintained access holder performance accountability at the contractual level, rather than at a system level. This means that revenue lost due to non performance of contractual services will be largely recoverable through take or pay.

4.1.2 Issues with QRail Proposal

(A) Volume risk is asymmetric under the current form of price cap

The current price cap model imposes two significant risks to users of the Western System:

- First, given there is no obligation for QRail to maintain the network to a transparent and objective standard, users are exposed to the risk that QRail will reduce costs leading to a reduction in service levels and increase in the operational costs of above rail operators. This is a significant risk associated with the vertical separation of railways, given divergent incentives between above and below rail entities, and requires careful management. Logically, the incentives to reduce costs will partly depend on whether the maintenance deficit can be 'clawed back', either through an increase in the maintenance allowance or through capacity enhancement projects, such as those funded by users. The link between maintenance and service outputs is discussed in section 5.3.
- Secondly, under the proposed approach, the reference tariff is not reduced in the event volumes increase compared to forecast. For example through supply chain improvements that do not require below rail investments.

In justifying the maintenance of the current form of regulation QRail have stated that, *"QRail does not gain an advantage by the non-implementation of a revenue cap form of regulation. In contrast, QRail would likely benefit from a revenue cap…"*[19] This argument is put forward on the basis that the system is capacity constrained and revenue forgone on non-coal freight services will be recouped from coal services. Particularly given non-coal freight services have a lower capacity to pay. This argument is flawed because:

[18] Citipower, Response to the ACCC's Statement of Regulatory Intent for the Regulation of Transmission Revenues, 1999, p.13

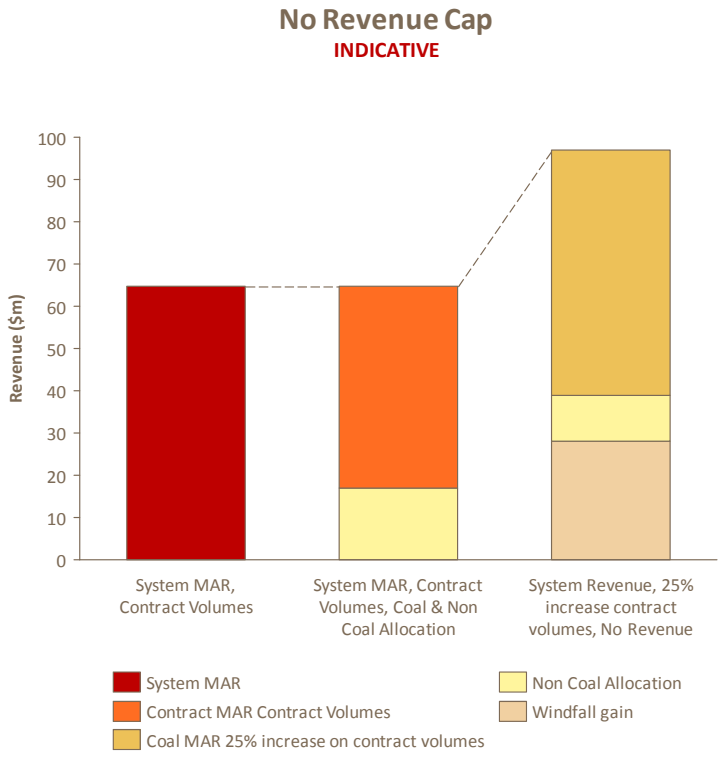
[19] QRail statement QRail, AU1 West Moreton Tariff Reset Overall Submission, p.15

- it ignores the contribution to revenue from the Transport Services Contract;
- it assumes that a revenue cap requires an under-recovery of revenue to be recovered from all users, regardless of whether contractual obligations have been met or not;
- it ignores the requirement for QRail to bare the opportunity cost of lost revenue where the access charge in a capacity constrained network is below the maximum access charge (cl.3.1.2 AU1); and
- it ignores the requirement for prices to not exceed the stand alone costs of providing individual train services or combination of services20.

Regardless of whether the services are coal or non-coal, the determination of the ceiling revenue limit (or maximum allowable revenue) for a combination of services, assesses the efficient, stand alone costs of providing the services. The graph[21] below indicatively shows the estimate of the maximum allowable revenue for the system, based on the contracted volumes and the allocation of costs between coal and non-coal services. As the allocation between coal and non-coal is volume based, when coal volumes increase proportionally to total volumes, the fixed costs allocated to coal services also increase.

The unit price (reference tariff) is then a proportion of fixed and variable costs. In a high fixed cost environment, where volumes increase and the variable component of the tariff does not reflect incremental costs only, the total revenue earned will exceed the maximum allowable revenue. That is, every additional tonne is recovering a proportion of fixed costs that are already fully recovered. When the reference tariff is not adjusted for increases in volumes the network provider earns a windfall gain, not consistent with the stand alone test.

Figure 4: Volume Impacts on Revenue Outcomes



Actual coal volumes on the Western System are historically greater than contracted volumes. This is achieved by taking advantage of capacity that becomes available in the day of operations when capacity set aside for management of the network by QRail becomes available or when non coal or passenger services are unable to operate. Traditionally, as with the AU1, the forecast volumes used to determine the reference tariff are equivalent to contract volumes. The following graph shows that “forecast” volumes used to determine the tariff are lower then actual volumes with the exception in 2010/11. This exception

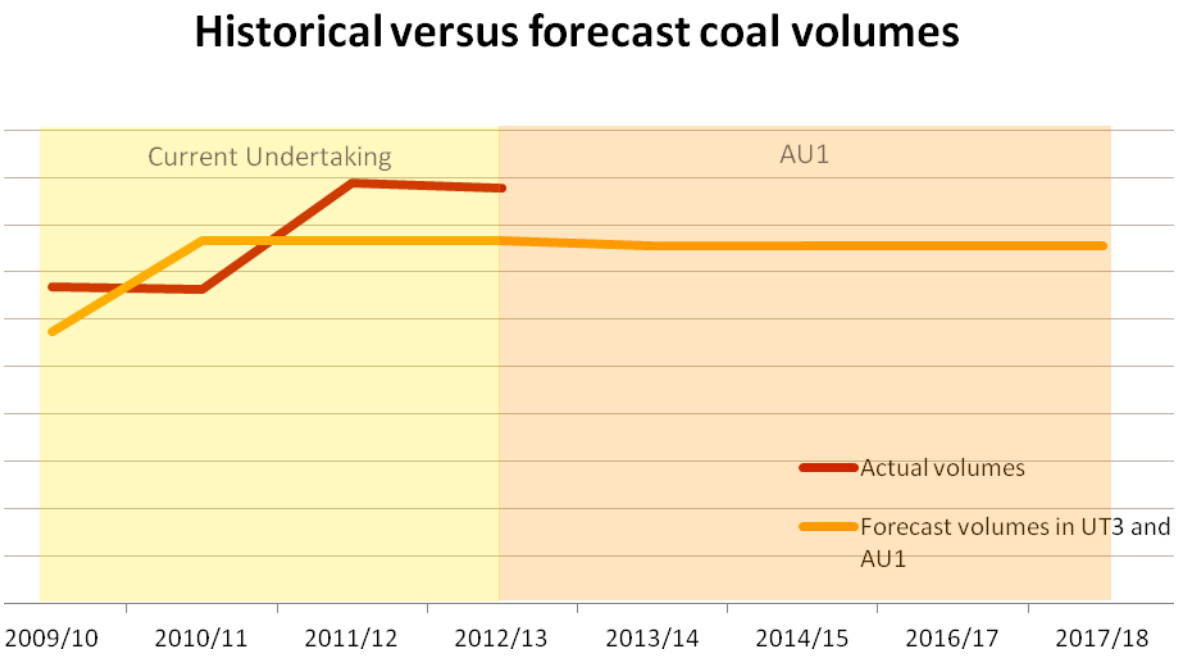
[20] Refer pricing limits, cl.3.2 in AU1

[21] Indicative assessment based on Macalister to Rosewood and 2013/14 building blocks. Maintenance is assumed to be 70% fixed costs.

was largely attributable to the impact of flooding in 2011. Developing the reference tariff using the contract volumes is a conservative estimate. This combined with the limited ability to review the volumes over the term of the undertaking could result in QRail earning revenue above the efficient cost of providing the services, contrary to the provisions of the QCA Act.

QRail have stated they would *"submit a Draft Amending Access Undertaking to take into account the additional volumes and capital expenditure"*[22] associated with the Capital Optimisation Study. In the draft access undertaking there is no obligation of QRail to do so and arguably the incentives are limited to the circumstances where QRail funds capacity – which is not the current practice.

Figure 5: Volume Outcome Relative to Pricing Forecasts



Given the above discussion, QRail is more likely to earn additional revenue from volume increases compared to the risk to revenue of lower then forecast (contract) volumes. The under-recovery of revenue is further ameliorated by the maintenance of take or pay arrangements at 80% of the access charge. In the assessment of revenue cap versus price cap form of regulation, QRail have ignored the impact of take or pay and the exposure to revenue risk.

Aurizon would argue that the 80% of access charge take or pay arrangements are fundamentally inconsistent with a price cap model as it yields asymmetric (upside) return outcomes. The take or pay arrangements provide the service provider with the scope to obtain a large windfall gain if the unused capacity is utilised through ad hoc services. This could also create perverse financial incentives to withhold or frustrate the transfer of access rights. Accordingly, to the extent QRail seeks to contractually maintain take or pay at 80% this should be coupled with a suitable capping mechanism which ensures the expected revenue outcomes are symmetric against the system volume forecast. That is, QRail would be entitled to retain some additional revenue but only where the railed services exceed the system volume forecast.

Aurizon continues to support the accountability for performance at the contractual level rather than through the socialisation of non performance across the system.

4.1.3 Recommendation

- QCA to assess whether contract volumes are the appropriate denominator for the determination of the reference tariff.
- The variable component of the reference tariff is reviewed to reflect the incremental costs.

[22] QRail, AU1 West Moreton Reference Tariff Overall Submission, June 2013, p.22

- Provisions are included in the undertaking to allow Access Holders to request a variation to reference tariffs based on material increase in volumes.
- Provisions are included in the undertaking to require the reporting of actual revenue against the ceiling revenue limit, disaggregating between coal and non-coal freight services.

5 Deriving Building Block Revenue

The building blocks approach to setting regulated revenues and prices is widely used in the rail, electricity, gas and telecommunications industries. The 'building blocks' are the factors that contribute to the determination of the required revenue, and include operating expenditure, capital expenditure, the cost of capital and depreciation of assets. As stated by the AEMC in 2009[23] the objective of the building block approach,

"..is to estimate the total revenue that the service provider will require each year over the forthcoming regulatory period to provide its investors with a reasonable rate of return and to allow the service provider to meet efficiently incurred costs relevant to providing the regulated services."

In assessing the building block components proposed by QRail, this section discusses:

- weighted average cost of capital (WACC) and incentives to promote efficient investment in the network;
- initial asset valuation methodology for inclusion in the regulated asset base;
- maintenance of the infrastructure and transparency of information; and
- benchmarks used to determine the other operating cost allowance.

5.1 Setting the Weighted Average Cost of Capital

QRail has voluntarily adopted the parameters applied by the QCA in QR Network's 2010 Access Undertaking in order to derive the weighted average cost of capital (WACC). In making the proposal, QRail have not provided any information as to whether they have assessed the commercial and regulatory risks associated with the development of the WACC for the AU1 regulatory period.

Aurizon Network's 2013 Draft Access Undertaking is currently before the QCA for approval. That proposal includes a proposed WACC for the central Queensland coal network reference tariffs, together with substantial expert evidence on the proposed WACC. Aurizon, naturally, supports Aurizon Network's proposal and likewise considers it reasonable the two rail network providers in Queensland will have different approaches to the development of WACC.

Indeed, there are a number of examples in regulatory regimes in Australia where different WACC determinations have been made for the same industry or supply chain, and indeed, by the same regulator. For example, the Dalrymple Bay Coal Terminal and the central Queensland coal network, the Hunter Valley coal network and the central Queensland coal network, ARTC's interstate mainline and the Hunter Valley coal network, and Brookfield Rail and The Pilbara Infrastructure railways in Western Australia.

Aurizon considers the decision by QRail to voluntarily submit a lower WACC then the central Queensland coal network is analogous to the Dalrymple Bay Coal Terminal and Hunter Valley coal network users agreeing to a higher WACC than that approved for the central Queensland coal network. In the same way, that the QCA did not decrease the Dalrymple Bay Coal Terminal WACC to align to its central Queensland coal network determination or increase central Queensland coal network to align to the Hunter Valley, then the relative merits of both QRail's proposal and that of Aurizon Network should be assessed independently and in accordance with the statutory criteria, based on the individual circumstances that apply to each.

Aurizon also notes that in assessing the appropriateness of the WACC, the QCA will give consideration to whether or not the WACC will appropriately balance the interests of not only QRail, but future user funders of common infrastructure and the need for a return commensurate with the regulatory and commercial risk as well as the interests of all parties of the supply chain to a sustainable railway. Importantly, Aurizon also acknowledges that elements of the financial model, such as gearing levels and/or working capital requirements may need to be reviewed where the DORC valuation is not accepted.

[23] AEMC 2009, Review into the use of total factor productivity for the determination of prices and revenues, Perspectives on the building block approach, 30 July 2009, Sydney , p.2

5.1.1 QRail proposal

QRail's proposed nominal post-tax weighted average cost of capital of 6.93% is to apply as at the approval date. After the approval date, the applicable WACC will be the average of the five year Commonwealth Government bonds plus a margin of 4.77%[24]. As a result of the change in the way WACC is defined in AU1, it is expected that the WACC will increase over the course of the regulatory period.

5.1.2 Issues with QRail proposal

(A) Overvaluation of sunk assets will not promote efficient investment and utilisation of rail infrastructure

The main issue with the WACC is not its absolute level, but that the low WACC voluntarily submitted by QRail obscures the overvaluation of the initial asset base. Aurizon has concerns that the overvaluation of sunk assets, when eventually overlayed with a commercial rate of return on invested capital, may 'crowd out' capital expenditure in other parts of the supply-chain.

Aurizon notes that significant increases in coal volumes are dependent on complementary investment in the upstream and downstream markets. Indeed, it was identified in the draft decision on the 2009 Draft Access Undertaking[25] that investment in rollingstock "*was likely to be cheaper than the investment in below rail infrastructure to achieve a similar increase in coal capacity."* The AU1 submission includes some information regarding options being considered to increase capacity to 15 mtpa[26]. The options include below rail investment (additional passing loops on the Toowoomba range, extending the length of passing loops and infrastructure upgrades to 20 TAL) and above rail investment (longer trains and linear density wagons).

The assessment, then, of the below rail tariff needs to be considered in the context of whether providing a return to QRail on capital expenditure incurred prior to corporatisation, incentivises the elements of the supply chain that are most efficiently able to impact on increased utilisation and ultimately the efficiency of the supply chain.

Arguably the investment in assets that occurred prior to corporatisation in 1995 were, at least in part, in furtherance of the social objectives of the government owners at the time, rather than assessed entirely on the commercial and economic viability. This is in part supported by the fact that it was not until corporatisation that the objective of government owned entities to achieve a commercial rate of return on investments was enforced legislatively and the cost of government policy objectives were required to be transparently reported.

Of particular relevance to the competitiveness of the supply chain is the impact of increases in the risk free rate over time. The return on and of the pre-1995 assets represents approximately 30%-50%[27] of the proposed reference tariff. The following graph shows, indicatively, the impact on the tariff of a change in the WACC as compared with a change in the value of the pre-1995 assets. Given the risk free rate is at record lows, it is highly likely that in the next regulatory period the WACC will be significantly higher then what has been proposed by QRail. Should the proposed asset value be approved by the QCA, a 1.5% increase in the WACC may result in a 8% increase in the tariff, based on current asset values. Conversely if the pre-1995 assets are reduced by 25%, an increase of 1.5% in the WACC may have a minimal impact on the tariff.

As the current and future WACC determinations will be applied to a notional and locked-in RAB value it is essential that the sustainability of the reference tariff methodology be adequately stress tested against a range of economic conditions.

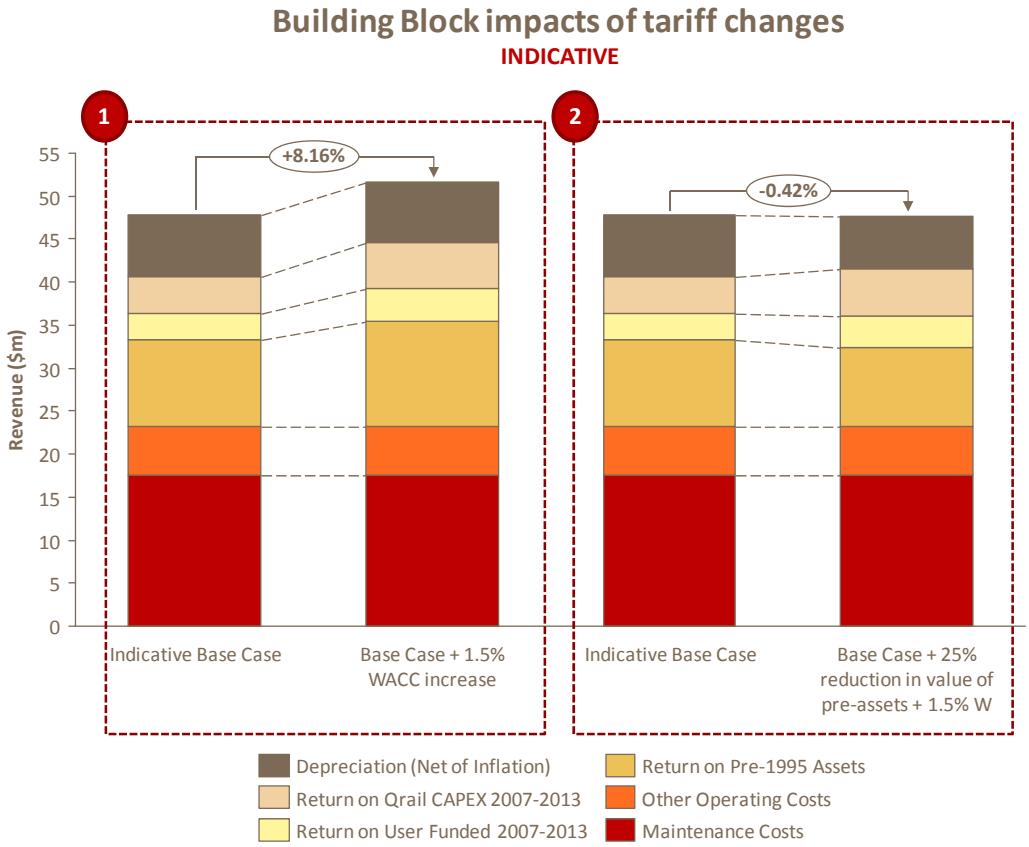
24 QRail, AU1, June 2013, Part 7- "WACC", "Undertaking Risk Free Rate" and "Margin"

25 QCA, Drafting Decision QR Network's 2009 Draft Access Undertaking, December 2009, p.75

26 QRail, AU1 West Moreton Tariff Reset Overall Submission, June 2013, p.22

27 Assessment based on opening asset value in overall submission (p.13), escalated at inflation rates (p.14) and assuming 2.5% for 2013/14 onwards. Depreciation rate is based on assumed remaining life calculated using depreciation for 2007 Datum Date in ATTACHMENT 1: Proposed West Moreton Reference Tariff Asset Roll-Forward Information (September 2013)

Figure 6: Impact of Changes of RAB and WACC values on Revenue Outcomes



(B) Application of the WACC during the regulatory period

Aurizon seeks amendments to cl.3.4.2 of Schedule A to clarify the circumstances that may give rise to a review event. Given the change in the definition of the WACC from the current undertaking, the ability to vary reference tariffs under Schedule A, may result in reference tariffs being amended where there is a material change in the risk free rate during the course of the regulatory period. Aurizon sees some difficulties in this approach. In particular, the point at which and the frequency of, determinations that assess market fluctuations as having a material sustained impact on QRail's investments. In contrast to the current definition, it is Aurizon's view that for the determination of the Ceiling Revenue Limit (cl.3.2.3) in relation to Western System tariffs, the WACC used to assess the Ceiling Revenue Limit should be as approved by the QCA in relation to the reference tariffs.

Whilst Schedule A specifies that the reference tariff for the West Moreton system is effective from the 1 July 2013, it would appear that some minor amendments are required to the definition of WACC (e.g. the reference to the WACC applying from the Approval Date) and clause 3.4.2 (which still includes the requirement for QRail to submit the West Moreton reference tariff by 1 July 2013 and the consequences if this does not occur) to give effect to the intention of Schedule A.

5.1.3 Recommendation

- The relative merits of both QRail's WACC proposal and that of Aurizon Network should be assessed independently and pursuant to the statute, based on the individual circumstances that apply to each process.
- QCA give consideration to whether or not the WACC will appropriately balance the interests of:
  - QRail and shareholder expectations of return;
  - future user funders of common infrastructure and the need for a return commensurate with the regulatory and commercial risk; and
  - operators and end users, and the incentives on investment in the upstream and downstream assets to improve efficiency.

- The assessment of the appropriateness of the WACC is considered by the QCA relative to the need for QRail to earn a return on sunk costs and the long term viability of the rail network. In other words, the QCA consider the reasonableness of the initial asset valuation in light of the historically low WACC submitted by QRail.
- Clarification is provided on the ability of QRail to use the review event in Schedule A to amend the reference tariff during the course of the regulatory period as a result of a material change in the risk free rate.
- The provisions in the Undertaking are reviewed in relation to WACC, to update for the submission of the tariff proposal prior to 30 June 2013.

5.2 Valuing the Assets

The asset valuation methodology will have a significant influence on the overall pricing outcome. It is therefore important to consider the longer term implications of the valuation methodology on achieving the following objectives:

- establishing a transparent, repeatable and sustainable methodology to ensure that users of the service are able to make informed long term investment decisions associated with utilisation of the declared service; and
- establishing an efficient price which promotes efficient investment and utilisation of rail infrastructure.

5.2.1 QRail proposal

The proposal submits that:

> *'The primary rationale for using depreciated optimised replacement cost to value assets, in preference to other valuation methods, is that it provides a better indication of the opportunity cost to the owner (and the economy) of the assets devoted to a particular activity'.*

While this objective is certainly relevant to forward looking costs and to ensuring the service provider is able to earn a return on its investments which is commensurate with the commercial and regulatory risks involved, it is not clear that the rationale is universally applicable to all assets within QRail's DORC valuation. This is particular pertinent to sunk investments which are immovable, have no alternate use and materially constrain the realisation of higher productivity levels.

5.2.2 Issues with QRail proposal

In order to insulate consumers from price volatility, promote incentives for investment and to avoid windfall gains or losses to the service provider, it is the usual practice of Australian regulators to ensure that once an asset has been included into a Regulatory Asset Base (RAB) it is not subject to further revisions to reflect technological obsolescence or replacement costs.

In its fourth submission on the QRail draft access undertaking[28], Aurizon highlighted some concerns with using DORC to value QRail assets. One recommendation was for QRail to *"publish and maintain a rate base for major corridors which represented the Depreciated Actual Cost (DAC) of investment in rail transport infrastructure made following corporatisation in 1995"*. In response, QRail have identified *"significant problems associated with the DAC approach"* and concluded that DORC valuations address these problems as evidenced by its use *"in other regulatory jurisdictions"*[29].

Aurizon notes that DORC is not universally applied in other regulatory jurisdictions. For example in the Western Australian rail access regime, gross replacement value is used. In some regimes, such as ARTC's interstate mainline and the Tarcoola to Darwin railway, the asset valuation may nominally be DORC, however the access charge does not reflect that asset valuation.

Regardless, the fact that DORC has been applied by other regulators does not itself provide a basis for its application to determining the efficient price of access for coal carrying train services in the Western

[28] Aurizon, Queensland Rail's 2013 Draft Access Undertaking (February 2013), 3 May 2013, p.7

[29] QRail, AU1 West Moreton Reference Tariff Reset Overall Submission, June 2013, p.13

System. It has also not been demonstrated that the application of DORC will yield improvements in efficiency. In this regard the Productivity Commission[30] has previously noted that:

> *'This suggests that a range of valuation methods could reasonably be used and that no method is likely to be intrinsically superior. Indeed, at least conceptually, both DORC and DAC would appear to be equally able to deliver outcomes which are allocatively and productively efficient…*
>
> *The Commission therefore considers that where DORC methodologies are applied, there would be value in regulators setting out the reasons for using the approach rather than a potentially simpler DAC valuation.'*

Where the application of DORC has been applied by Australian regulators, it is generally used in establishing a line in the sand asset valuation for the purpose of establishing an initial asset value.

This approach typically requires the regulator to establish an initial asset value and then apply a depreciating actual cost (DAC) approach to the initial RAB and future capex. It is noted that much of the academic and theoretical debate around DORC occurred over a decade ago, with the general consensus being that the asset valuation would need to be periodically reviewed. However, due to the complexity, information intensity and subjectivity of DORC valuations, this would represent a material regulatory risk and substantially reduce the incentive to invest. This is particular relevant where investors have acquired a regulated facility on the basis of the RAB value and its roll-forward principles.

Accordingly, if it is not the intention to apply DORC valuation principles on an ongoing basis then it is unclear why DORC is the most appropriate approach to establishing the initial asset value. It could be entirely consistent to establish the initial asset value with DAC and maintain the value of that asset also using DAC.

Based on the arguments presented by QRail, there is some confusion with respect to how an optimised DAC would be applied and concerns as to whether this approach would lead to an outcome which reflected the book values at the valuation date. Clearly such values will not be appropriate where assets have not been subject to appreciation and therefore are not reflective of real costs.

In order to overcome this problem the initial asset value would need to be derived from the values in the fixed asset register at a point in time which is auditable and has a high degree of confidence. These values, including used and useful capital expenditure less disposals, would then be escalated and depreciated to derive an opening asset value for the RAB up to the valuation date of August 2007.

This approach has the following advantages:

- the RAB is a more accurate representation of the age and condition of the assets as opposed to some arbitrary installation dates;
- as it is based on the fixed asset register it is auditable;
- as it reflects actual costs there is no need to optimise actual maintenance for the modern engineering equivalent so that operating and maintenance costs are more closely aligned to the capital costs;
- the appreciation of the assets from the nominal valuation date ensures the service provider obtains a real economic return on its sunk assets; and
- avoids any material windfall gains or losses to the service provider in establishing the initial asset valuation.

In addition, a rate of return commensurate with the commercial and regulatory risks will provide strong investment incentives for the service provider to improve service quality in an affordable and economic way. In effect it would allow convergence of the written down book asset value with a DORC valuation over time as assets are progressively replaced and renewed as would appear to be the requirement to achieve the operating standards commensurate with the modern engineering equivalent.

This approach would also not appear to have material financial implications for QRail. As shown in the financial analysis based on the 2011/12 Below Rail Financial Statements for the West Moreton (Table 4). Provided the rolled forward depreciated optimised RAB value is not less than what was reported in the statement of assets then the reduction in the RAB from DORC to DAC should provide sufficient cash flow and an interest cover ratio to finance sustaining capital expenditure.

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[30] Productivity Commission (2001) Review of the National Access Regime – Inquiry Report no. 17, AusInfo, Canberra, p. 367

Table 4: 2011/12 Below Rail Financial Statements adjusted for depreciated actual costs

Line Item	2011/12 $000s	Notes
Current Assets	10,841	
Non – Current Assets	160,533	
Less AUC	2,869	
Less Plant and Machinery	0	
Total Assets	**168,505**	
Gearing	55%	
Debt (D)	92,678	
Equity (S)	75,827	
Revenue	70,395	
Less National Disaster Revenue	8,600	Excluded as extraordinary income
Corridor Revenue	**61,795**	
Expenses		
Maintenance	22,434	
Derailment	129	Excludes $4.3 million of extraordinary flood expenses
Depreciation	6,238	
Train Operations	3,740	
Other	3,298	
Corporate Overheads	2,921	
Total Operating Expenses	**38,760**	
Operating Income (X_o)	23,035	Corridor Revenue – Opex
Cash Flow to Assets[31]	29,273	(Rev – X_o + Depreciation)
Return on Assets	17.4%	
Debt Share of X_o (X_D)	9,212	Debt (D) x 9.96%[32]
Pre-tax Equity Share of X_o (X_E+X_G)	11,749	$X_{E+G} = (X_L - X_D) \times (1 - T(1-\delta))$
Pre-tax Return on Equity (R_E)	**15.5%**	**S/(X_{E+G})**
Target Pre-tax R_E (assumed in 9.96% WACC)	11.72%	$= K_e / (1 - T(1-\delta))$

In 2011/12, QRail earned a return on DAC of 17.4%, equivalent to a pre-tax return on equity of 15.5%. The improvement in the pre-tax return on equity as compared to the target of 11.72% can primarily be attributed to the difference in the value of the permanent way assets of $128 million in the below rail financial statements relative to the proposed DORC assessed, RAB roll-forward value of $239 million. The reasonableness of this valuation is discussed further in this section.

[31] Cash flow and WACC as per the before tax cost of capital in Officer (1994) The Cost of Capital under Dividend Imputation, Accounting and Finance, Vol 34. pp 1-17.

[32] Based on UT3 WACC of 9.96%

Aurizon considers that a robust defence of the application of DORC to determining an efficient price for coal carrying train services has not been established and that recent and forecast replacement, asset renewals and maintenance expenditure are materially inconsistent with the valuation assumptions implicit in the previous DORC valuation (which has not been formally accepted by the QCA). This is reinforced by the disparity between the value of the assets recorded in QRail's accounts ($160M[33]) and the roll forward, for the same period, included in the submission ($290M[34]).

The following table summarises the arguments presented in the tariff proposal for the use of DORC and the difficulties in how the purported advantages can be realised in the application to the specific circumstances of the Western System.

Table 5: QRail Reasons for Applying DORC to the Western System

	QRail Statement	Application to Western System
1.	DORC represents the unconsumed portion of an asset based on an optimal network	The Western System does not represent an optimal network and is substantially inferior to modern engineering standards as noted by Worley Parsons[35] *'Even at 15.75 tal, this does not represent an efficient mode of transport in a modern railway'*
2.	The optimisation process ensures that obsolete, poorly sized and poorly located assets are not included in the capital base and consequently are not paid for by users	This advantage is not limited only to DORC as the 'used and useful' optimisation principle and can be applied to any valuation methodology, including historical actual costs.
3.	It allows for technological change (assets can be valued in a way that reflects current technology)	This also necessitates a pricing framework which provides an equivalent unit rate per commodity transported commensurate with train operations utilising the relevant technology in order to establish an 'efficient' price. This has not been proposed.
4.	It addresses a major problem with DAC, namely, the incompatibility in relating historical values for capital assets and capital costs with current values for other revenue and expenses.	This is unlikely to be the case when there is a material difference in the standard and condition of the asset relative to the modern engineering equivalent. In such cases DORC will lead to material misalignment with costs. For example, the maintenance cost as a percentage of allowable revenue for the CQCR of 25% is substantially different from that of Rosewood to Macalister at 37%. Accordingly, the assumption will only hold where the maintenance costs are commensurate with what would be incurred for an asset built to the modern engineering equivalent and not the actual maintenance costs.
5.	It establishes asset values that will minimise incentives for inefficient bypass of the Network.	The assumption may not hold where it would not be economically viable to build a railway based on the foreseeable demand. The price outcomes using DORC principles for low levels of asset utilisation may promote inefficient bypass.

The reference tariff proposal does not include a detailed and complete assessment of both the advantages and disadvantages of using DORC. The remainder of this section addresses the limitations of DORC in relation to its application to the Western System.

[33] QRail, 2011/12 Below Rail Financial Statements, Statement of Assets

[34] Qrail, West Moreton Reference Tariff Attachment 1: Proposed West Moreton Reference Tariff Asset Roll-Forward Information, September 2013

[35] Worley Parsons (2013) West Moreton Reference Tariff Submission Review, p. 21

(A) The Optimised Replacement Cost must be economically viable to the applied circumstances

QRail has argued that the use of DORC is necessary to ensure users of the service pay charges which reflect the economic costs. This approach necessitates current and future utilisation rates which demonstrate it is privately profitable to replicate the service.

There are a range of circumstances where DORC valuations have been applied to derive access prices where the infrastructure standard has been lower than the efficient axle loads for the relevant gauge, including:

- Dartbrook to GAP 25 tal (MEE-30 tal), Hunter Valley Coal Network
- GAP to Turrawan 25 tal (MEE-30 tal), Hunter Valley Coal Network
- Minerva to Burngrove 20 tal (MEE-26 tal), Blackwater System

A key objective in each of these circumstances is the overall reasonableness of the tariff. As noted in the tariff proposal DORC is also applied to the ARTC interstate network. However, the application of DORC in these circumstances simply yielded a conceptual price ceiling which substantially exceeded the applied tariff with the service provider not fully recovering the economic costs.

Aurizon also understands that ARTC has applied DORC valuations from Dartbrook to Turrawan with the expectation of a large increase in utilisation and currently applies a loss capitalisation model in relation to those corridors.

In relation to the Minerva mine, the reasonableness and economic viability of the asset valuation and tariff outcomes was assessed against other mines in the system which involved customer specific infrastructure and comparable volume levels. Concessions were also made on assets such as timber bridges, ballast and formation due to service quality. Finally, as a reasonableness check, the applied tariff was not materially in excess of other services within the CQCR of similar haulage distances (i.e. Rolleston and Lake Vermont).

As the objective of DORC is to establish a price which reflects the remaining service potential of the efficient configuration of the facility, it is therefore also necessary when applying DORC to an existing facility, that there is a reasonable prospect that it would be economically viable for a greenfield asset to be developed to meet the similar level of demand at that replacement cost. Clearly, as there is no market for second hand railways, comparative analysis of either price or configuration is necessary to assess whether the price outcomes are consistent with those that would be expected to prevail if there was competition for the market.

As noted in section 3.1 of this submission there is a considerable disparity between the proposed tariff and any known or relevant benchmark. In this respect, given the volumes which have prevailed since the valuation date and those anticipated to continue, evidence that the tariff was reasonable and efficient would include evidence of:

- A network service provider providing coal access charges at a comparable rate per net tonne (Aurizon does not consider that such a network exists in Australia); or
- A new railway or extension being developed of comparable length with sustained railings of 5 to 10 mpta (in order to validate the economic viability of the optimised replacement cost to its applied circumstances).

The second of these reasonableness tests is useful in assessing whether the proposed reference tariff based on a DORC valuation is at risk of current or future bypass risk by road. In this context, Atlas Iron[36] has publicly indicated that they currently pay on average in the order of $13 per tonne for iron ore haulage by road. If similar levels of technical feasibility were available for road transport to the Port of Brisbane, the proposed reference tariff would not provide sufficient revenue to even cover an operator's marginal costs and significant coal haulage volumes would shift to road transport.

(B) The asset valuation does not appear to be consistent with asset condition

In making a determination on the initial asset value that is to apply to the Western System, Aurizon has given consideration to the reasonableness of the asset value relative to the alignment with the modern engineering equivalent standard. This is necessary to ensure that any errors in the proposed valuation do not promote inefficient investment or utilisation.

[36] Brinsden, K (2013), Inside Business, 28 July, http://www.abc.net.au/insidebusiness/content/2013/s3812592.htm

A close review of the materials provided to the QCA by QRail shows an inconsistency between the assumed and actual asset condition. This raises question as to whether the applied depreciation in the asset valuation is a fair representation of the installed assets. The analysis in this section applies only to line sections between Rosewood and Macalister. However, the principles and analysis can be easily extended to the Macalister to Columboola line section.

For example, based on the information provided by QRail, if the track assets are assumed to represent an average remaining life of 21.4 years at the valuation date, and noting that an additional $60-$70 million in track upgrades have occurred to maintain the asset at that standard, then the applied weighted average life of 35 years implies the asset is only 40% life expired. This assumption would appear to be obviously contradictory to observed asset condition in the Western System.

Indeed, it would also appear contradictory to QRail's own expert assessments of the asset, which show a generally poor asset condition. Based on the report *West Moreton Reference Tariff Submission Review* prepared by Worley Parsons, the following table represents one approach to how the asset condition could be summarised to reflect the findings and conclusions within the report (excluding capex since 2007).

Table 6: Observed Asset Condition - Rosewood to Macalister

Condition based assessment	Excellent	Good	Fair	Adequate /Poor
Percent Life Expired	10%-30%	30%-60%	60%-80%	80%-100%
Ballast			X	
Sleepers			X	X
Rail		X		
Turnouts			X	
Formation				X
Culverts			X	
Bridges (Timber)				X
Bridges (Concrete)		X		

In making an assessment, emphasis must be given to the future maintenance and renewal costs that will need to be incurred in order to provide efficient service levels and the consequence of those costs on the tariff when added to the initial asset valuation. Based on the 40% life expired for track assets a DORC value of $187 million implies an optimised replacement cost of $311 million and an average annual physical depreciation rate of $8.9 million in 2007 dollars.

This rate can be contrasted with the rate of capital renewal for track assets (in 2007 dollars) since the valuation date as shown in the following table:

Table 7: Rate of track assets capital renewal

Asset Replacement Expenditure – Track Structure	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	Total
Jondaryan Project	9	1,769	7,887	208							9,873
Columboola Project	47	1	8,255	8,557	2,332	521					19,713
WSARP	3,772	54	0	3,755	7,059	10,116					24,756
Formation Repairs							2,798	2,909	3,026	3,147	11,880
Drain Renewals						533					533

Asset Replacement Expenditure – Track Structure	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	Total
Check Curve Rails							2,978	3,097	3,220	3,349	12,644
Re-railing										1,937	1,937
Western System Asset Replacement							8,089	3,581	4,432		16,102
Mechanised Resleepering	10,740								14,497	9,384	34,621
Rail Joint Elimination							476	449	808	671	2,404
Total (Nominal)	**14,568**	**1,824**	**16,142**	**12,250**	**9,931**	**11,170**	**14,341**	**10,036**	**25,983**	**18,488**	**134,463**
Deflation Rate	3.5%										
Total (2007 Dollars)	**14,075**	**1,703**	**14,559**	**10,910**	**7,907**	**9,087**	**11,272**	**7,622**	**19,064**	**13,106**	**109,306**
Annual Average Expenditure	10,931										

Note: Table 7 has been compiled using information made available by QRail in support of the Western system tariff proposal and derivations using the following assumptions:

- Maintenance and capital works are conservatively estimated to exceed CPI as reflected in the deflation rate of 3.5%;
- Rail joint elimination expenditure is derived from the allocation of 2.3% of the total maintenance cost provided in the Worley Parsons report[37];
- Mechanised resleepering in FY08 is as per the UT3 proposal; and
- The capital costs for the Jondaryan Project have been reduced to reflect the timber bridge elimination works based on the published $1.255 million for the Doctors creek bridge and a conservative assumption of $350k for each of the five replacement box culverts.

It is evident from the table that the asset restoration rate of approximately $10.9 million per annum exceeds the annual physical depreciation rate of $8.9 million per annum. Importantly, the weighted average asset life from track components of 35 years is applicable to a heavy haul railway with substantial volumes. It would be expected that where the asset which is constructed of the modern engineering equivalent and is subject to annual volume of 5-10 million net tonnes per annum this would coincide with significantly longer life spans and therefore the physical depreciation rate would be lower than $8.9 million.

A general assumption on the use of DORC is that the asset will continue to reflect the remaining service potential on an ongoing basis. That is, overtime, the asset would not expect to exceed the DORC value applicable at that point in time. The following graph shows what the indicative RAB value of a $311 million track asset with a weighted average life of 35 years under the DORC principles would expect to be compared to the estimated RAB roll forward value associated with the 2007 DORC valuation with actual and forecast capex up to FY2017. The primary focus of this graph is not the difference between the two curves but the relativity of the trend lines.

[37] Worley Parsons (2013) West Moreton Reference Tariff Submission Review, p. 71

Figure 7: Indicative RAB Appreciation relative to DORC

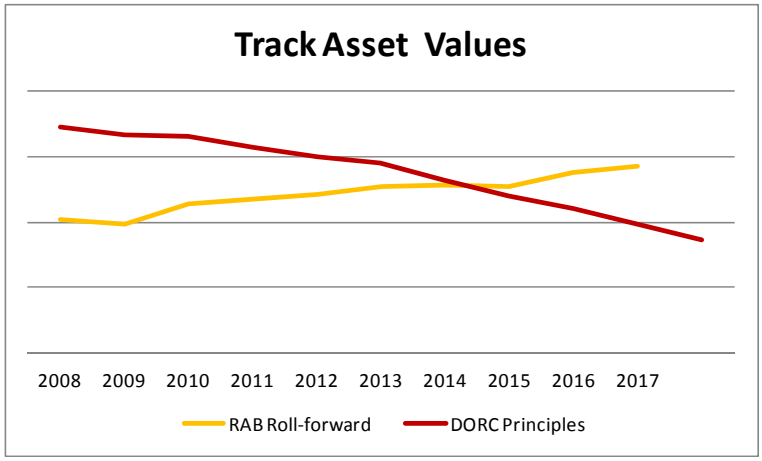

Table 8: Indicative RAB Roll-forward values for Track Assets

Track Assets ($000s)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Opening	201,528	198,942	213,489	217,973	221,528	227,082	228,088	227,328	238,588	243,322
Inflation	5,057	10,053	4,074	6,863	8,394	2,011	4,427	5,588	5,726	5,919
Depreciation	9,345	10,066	10,501	11,215	11,927	12,277	12,808	13,393	14,098	14,901
Closing	197,240	198,929	207,062	213,621	217,995	216,816	219,706	219,523	230,216	234,341

The indicative RAB roll-forward of the track assets, inclusive of the capex values in the above table, suggests that there is misalignment between changes in the RAB values and the asset value which would be expected to prevail under a modern engineering equivalent with 21 year of remaining useful. As the capex in Table 8 does not include expanding the quantity of assets the roll-forward asset value would not be expected to be increasing.

This is reinforced when consideration is given to the weighted useful remaining life provided in Table 9. In the information provided by QRail, the weighted useful remaining useful life appears to be decreasing even though capital expenditure exceeds depreciation. This reduction in the weighted average useful life where capital expenditure exceeds depreciation may occur if the asset lives associated with the capital expenditure is significantly shorter than the original DORC valuation. A more likely explanation is that the 2007 DORC valuation is not representative of the asset condition and that the asset renewals, upgrade and replacement expenditure is being incurred in order to bring the asset up to the condition assumed in the DORC valuation.

Table 9: RAB Roll forward Rosewood - Macalister

	FY9	*FY10*	*FY11*	*FY12*	*FY13*	*FY14*	*FY15*	*FY16*	*FY17*
Opening	**213.7**	**209.8**	**218.1**	**237.9**	**237.7**	**241.8**	**255.0**	**265.0**	**275.2**
Capex	3.8	1.8	12.0	22.5	9.5	21.2	18.6	18.6	17.9
Depreciation	9.0	10.1	10.6	11.5	12.0	13.4	14.3	15.2	16.0
Inflation	9.9	4.3	6.9	8.8	2.2	6.3	6.6	6.8	7.1
Closing	**209.8**	**218.1**	**237.9**	**237.7**	**241.8**	**255.0**	**265.9**	**275.2**	**284.2**
Weighted Useful Remaining Life	23.96	20.86	21.14	21.67	20.20	18.83	18.48	18.05	17.76

The Connell Hatch valuation report[38] makes no reference to asset condition when determining the remaining service potential of the relevant assets. Section 3.1.7 of the report notes that where an asset has been upgraded and installation dates are known these dates have been applied assuming a straight line depreciation profile. Section 3.1.8 also notes that where the installation date is not known a straight line depreciation approach has been applied assuming assets are 50% life expired at the valuation date.

In the absence of an increase in the capacity of the system (noting increased volumes are only improving utilisation of the installed capacity available since the valuation date) the pricing arrangements are potentially unsustainable as this approach to valuation will not reflect asset condition. On the contrary, it is more likely that asset installation dates would not be known for assets that deteriorate under load and are closer to end of their useful life. The valuation approach will therefore over state condition and the remaining service potential for those assets.

The report prepared by Worley Parsons suggests that additional capital expenditure will be required beyond AU1 in order to continue to sustain the current capacity levels in a fit for purpose state. Given the proposed pricing levels, and the potential lock-in of the asset valuation, the 2007 valuation may represent a strong disincentive to undertake the investments necessary to bring productivity levels up to the minimum standard of 20 tonne axle load due to the consequential impact on prices. Accordingly, while the investments needed to facilitate the more efficient operations might be economically viable on a forward looking costs basis, they may be uncommercial when reflected in an average cost price constructed from an asset valuation which may contain material errors in relation to the depreciation component. This may substantially impair the ability to realise more efficient utilisation of existing train paths.

As a consequence, Aurizon encourages the QCA to review the depreciation component of the 2007 DORC valuation and obtain all information necessary to determine whether the opening asset value as reflected by the roll-forward is a reasonably accurate depiction of the current asset condition. This should then inform what adjustments should be applied to remaining asset lives in the valuation to reflect the current condition.

(C) Allocation of RAB between non-coal and coal services is not clear

Whilst QRail have provided information regarding the allocation of maintenance and operating costs between coal and non-coal freight, it is not clear whether the same allocations have been used in relation to the roll forward of the RAB. For example, a structural change in the opening RAB value for FY14 associated with increase in the total RAB allocation to coal services with the increased train paths would not have been unexpected. Of concern is that the RAB has not yet been adjusted and that the reference tariffs may be increased to account for the proportional change in volumes. Greater transparency is required in relation to the RAB roll forward to determine whether the proposed methodology will be sustainable over time.

(D) The asset valuation does not appear to be commensurate with service quality of modern engineering equivalent

As the general presumption of the use of DORC is that prices will reflect the unconsumed portion of the asset value then to the extent that the valuation is based on modern engineering equivalent there is a reasonable expectation that the asset condition and hence service quality will be commensurate with the applied standards.

As the DORC approach for MEE does not lend itself to pricing for services which are substantially below the service quality generally expected with that MEE. The assessment, then, of the appropriateness of the DORC valuation to the Western System requires an assessment of the targeted and actual service levels.

Details of speed restrictions, overall track condition index or other asset performance metrics are not publicly available or included in the documentation submitted with the tariff proposal. Accordingly, stakeholders are not in a position to assess whether the asset condition is consistent with service quality implicit with the modern engineering equivalent applied in the valuation. Nevertheless some general observations can be inferred from the maintenance costs.

The following table shows the resurfacing requirements for the Western System in AU1 relative to those proposed in the central Queensland coal network in UT4 against the forecast utilisation rates.

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[38] Connell Hatch (2008) Final Estimate Report, Western System – Depreciated Optimised Replacement Cost (DORC) Assessment Queensland Rail, Attachment H to QR Network Draft Access Undertaking 2009, Section 3 – Key Assumptions. http://www.qca.org.au/files/R-2009DAU-QR-Vol1Atts-0908.PDF

Table 10: Comparison Network Resurfacing Requirements

	Rosewood to Macalister	Macalister to Columboola	Moura	Goonyella	Blackwater
Gross tonne kilometres	2,735	246	3,965	39,077	41,168
Resurfacing Kilometres	250	70	119	878	1077
Weighted Useful Remaining Life (@FY12)[39]	18	16	26	18	18
Intervention Rate	0.09	3.51	0.03	0.02	0.03

It is clear from the table that the resurfacing intervention levels are substantially higher than those in the CQCR for the forecast traffic level and comparable asset age as implied by the respective RAB roll-forwards.

This observation suggests that the formation and ballast condition is either not consistent with the valuation assumptions or alternatively the quantities assumed in the modern engineering equivalent are not representative of the actual asset. The most effective means of addressing these deficiencies in the DORC valuation is to adjust the asset quantities. For example, ballast quantities should be consistent with the ballast depth measurements obtained from ground penetrating radar and formation should only be valued where it can be demonstrated an engineered formation is actually present. The 400 mm ballast depth assumption in the asset valuation also appears high when compared to ballast depths of 250 mm not uncommon for light freight rail as shown in the following table:

Table 11: Ballast Depth Standards for Comparison Railways

ARTC[40]	Ballast Depth (mm)	ARUP[41]	Ballast Depth (mm)
Heavy Haul	300	UK-1	254
Interstate Lines	250	UK-2	300
Light Weight Lines	150	NA-1	305

As a key objective of the DORC valuation is to obtain the value of a key variable into the efficient price determination then the price should be commensurate with the service levels appropriate to the modern engineering standards applied. It would generally be expected that modern materials and construction methods would support a minimum narrow gauge standard of 20 tonne axle loads.

A limiting factor to achieving this operational standard is the standard and condition of some rail bridges and the load bearing capacity of the ballast/formation. Therefore an alternative to making deductions to the original DORC valuation is to adjust the capital expenditure relating to obtaining that operational standard and deriving a reference tariff assuming train paths were utilised with 20 tal services. However, this is unlikely to provide the incentives necessary to promote investment to achieve the desired productivity levels.

(E) Complexity in assessing Maintenance and Renewal Costs

Where the asset being valued is not consistent with the standards being applied, particularly in terms of formation and ballast depth, then physical asset deterioration rates of rail and fixings are also accelerated due to increased stresses arising from top and line alignment. These deterioration rates then need to be addressed through increased maintenance intervention and ultimately through more costly formation and ballast restitution. The increased intervention levels and tamping may facilitate further liquefaction of the formation with the ballast. This cost cycle is not implicit in the DORC valuation assumptions and therefore it represents an imprecise approach to derive an asset value.

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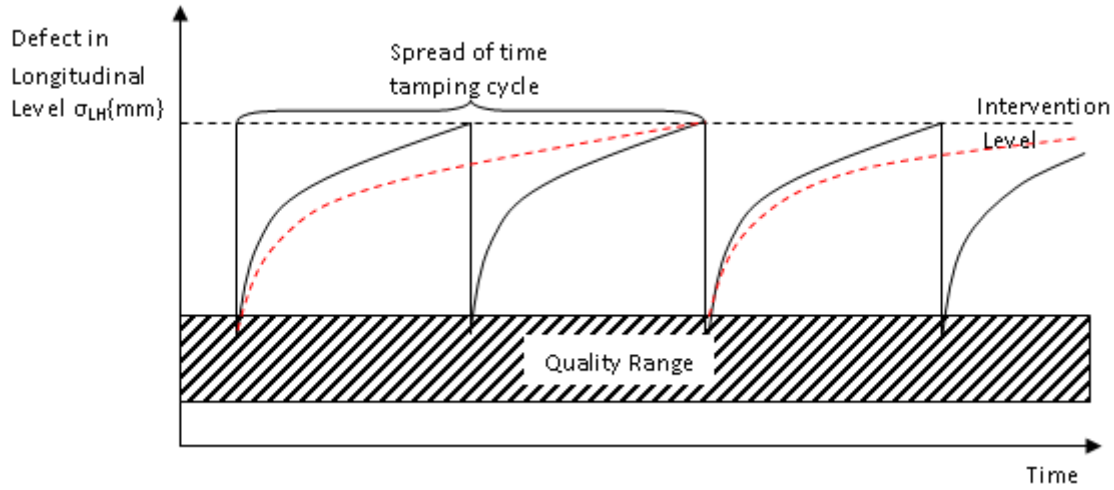
[39] As calculated by dividing opening asset value by depreciation.

[40] Australian Rail Track Corporation (2012) Code of Practice, Section 4 – Ballast, Version 2.7 - http://extranet.artc.com.au/docs/eng/track-civil/procedures/ballast/Section4.pdf

[41] ARUP (2008) Comparison of North American Rail Asset Life – Report Prepared for Office of Rail Regulation, April, p.18. http://www.lerail.com/IMG/pdf_rapport-arup.pdf

It is also therefore a requirement for the application of DORC that the efficient maintenance costs are not materially different from the modern engineering equivalent. As an example, the efficient resurfacing costs included in the tariff should be consistent with the mean time between failures implicit in the infrastructure standard and construction methods employed in DORC assumptions. As shown in the following graph, it might be expected that under the forecast asset utilisation rates the period of time between intervention might be represented by the red broken line. However, if intervention rates for tamping are more closely aligned to the solid black line then there is an inconsistency between the asset valuation and other aspects of the cost forecasts.

Figure 6: Resurfacing Intervention Frequency



The issue of consistency between efficient maintenance and asset standard extends to a range of matters. For example, and without limitation:

- Timber structures and sleepers. If the DORC valuation has applied a modern engineering equivalent of pre-stressed concrete structures then the efficient maintenance costs would need to be reflective of an inspection frequency and repair program consistent with a concrete structure.
- Rail Joining Method. The Worley Parson's report notes that the system is comprised of both continuous welded rail (CWR) and fastened joints. The standard applied in the valuation process then has implications for the maintenance allowance as CWR would be expected to have higher installation costs with lower ongoing maintenance costs whereas fastened joints would be less expensive to install but have higher inspection and maintenances costs.
- Ballast depth and sleepers. The resurfacing rate should be consistent with concrete sleepers installed on 400 mm ballast.

In relation to the sleeper configuration concrete sleepers have greater resistance to lateral displacement as shown in the following table[42]:

Table 12: Comparison of lateral displacement of sleeper configurations

Name	Wood (N)	Concrete D58 (N)	SBB Steel (N)
Fully Stabilised	4800	7200	5600
After Tamping	2850	4400	3600

This table indicates that an adjustment factor should be applied to resurfacing activities to align to the modern engineering equivalent. Clearly, as the difference between the actual rail infrastructure standard and condition relative to the modern engineering equivalent becomes larger, then the efficient maintenance costs do not approximate the actual expenditure levels and the regulatory process which is intended to be transparent and repeatable devolves into a complex and subjective exercise of what a hypothetical maintenance regime might comprise along with the unobservable costs of that theoretical scope.

[42] Reproduced from Table 18 in B, Lichtberger (2011) Track Compendium, DW Media Group, Hamburg, p.48

(F) Impact of asset value on incentives to invest in upstream and downstream markets

Perhaps the most commonly advanced criticism of using DORC is that it represents a windfall gain to the service provider where long lived assets are suddenly revalued and the profitability is increased at the expense of consumers.

It might also significantly distort investment incentives and competition in the downstream market if the consequential price increase constrains pricing in the downstream market to below replacement cost. This is likely to be particularly acute where rail operator's assets lives are substantially less than the long lived assets being valued at DORC. In order to maintain commercially viable operations, the rail provider might be required to sweat assets beyond their intended physical lives. Alternatively, due to the capacity constraints of the Toowoomba range in regards to both train paths and train length, the rail operator may have no incentive to pursue innovation in higher capacity consists if this requires replacement of sunk rollingstock with new wagons and current and expected access charges would not provide the operator an appropriate commercial return on those investments. In the absence of a deep market in second hand rollingstock suitable for the lower standard of operations, then competition in the downstream market could also be adversely affected.

Tunnels represent a significant proportion of the regulatory asset base. However, these assets were constructed in the late 1800's and due to heritage listings are unable to be replaced with more modern higher capacity tunnels or removed entirely. This presents two complexities with respect to the DORC valuation. First, there is no opportunity cost to the service provider in relation to these assets they have no alternate use. Secondly, they restrict the rail corridor from operating at higher productive levels expected of a modern engineered railway. Therefore, in the event there existed a second hand market for railways these assets would most likely reduce the economic value (the alignment would be bypassed). There are a substantial number of precedents where a regulator has exercised its discretion to exclude some sunk assets from the regulatory asset base or reflect the historic actual costs where those assets effectively form part of the natural terrain, such as port channels and easements.

As an example, consider a newly discovered resource deposit being developed with an annual production rate of 5 mpta over 30 years. The deposit has no available rail transport options. However, it is adjacent to a rail trail which was decommissioned 10 years ago which also includes a number of tunnels. The owner of the deposit can either contract with a service provider to build a new railway on a more direct alignment or it can construct along the historic alignment. If it constructs on the old alignment, it obtains the advantage of the natural environmental endowments and needs only undertake limited earthworks. As the old alignment and tunnels have no alternate use, the cost of acquiring the alignment is negligible. The cost of building the modern engineering equivalent is therefore comprised mainly of installation of track and structures. If the service provider later sought to increase its prices by valuing the old alignment on the basis of what it would have cost to build the new railway on the direct alignment then it is effectively converting the natural endowments to locational rents.

While this example is hypothetical and arguably not foreseeable, it is no less hypothetical than applying DORC valuation principles to assets which are over 100 years old and are not reflective of modern materials and construction standards. It is unclear to Aurizon how revaluing tunnels and earthworks promotes efficient investment and utilisation of rail infrastructure in order to promote competition in a downstream market compared to other feasible and equally valid valuation approaches.

5.2.3 Recommendation

The previous sections have raised concerns as to whether:

- it would be economically viable for a hypothetical new entrant to replicate the facility for given utilisation rates and therefore whether valuation at replacement cost is consistent with achieving an efficient price;
- the forecast asset renewals and replacement expenditure would cause the price path to overshoot the replacement costs within or beyond AU1 and whether this would lead to inefficient pricing and distortions to investment incentives;
- the approach used to determine the asset condition and therefore the historical depreciation used to determine the remaining service potential of a modern engineering equivalent accurately represents the actual asset condition;
- any adjustments have been made to the maintenance cost scope to reflect the modern engineering equivalent in order to ensure internal consistency with the capital and operating costs; and

- the valuation of tunnels and earthworks is reasonable given the time elapsed since the actual costs were incurred and the permanent and immutable nature of those assets.

It is evident that in order to determine whether the proposed tariff is consistent with the objects clause (s.69) and the pricing principles (s.168A) within the QCA Act these matters would need to be adequately addressed.

On balance and subject to information to the contrary, it would appear necessary for an efficient price to:

- be reflective of the asset quality by substantially discounting ballast and formation costs;
- exclude the value of timber bridges as having no inherent economic value;
- exclude the costs of tunnels as having no realisable economic value in a commercial transaction;
- optimise the maintenance expense to the extent maintenance scope can be attributable to a difference between the installed and the modern engineering equivalent standard (as opposed to condition); and
- establish the tariff on the presumption that train services are able to operate at a 20 tonne axle load if this is consistent with the modern engineering equivalent applied in the valuation.

However, the information necessary to address these issues may not be readily available or may take considerable time to establish. Accordingly, Aurizon considers that an alternate approach to establishing a repeatable, transparent and sustainable methodology could be considered which overcomes many of these deficiencies.

5.3 Maintaining the Infrastructure

In December 2009, the QCA approved a total maintenance cost of $40.1M during the 2009 DAU regulatory period to derive tariffs for the western system[43]. This programme of work was to include

- Track maintenance, including mechanical resurfacing, rail grinding, fire and vegetation control and other activities;
- Track-side systems maintenance, including rectifying faults on equipment such as publice level crossings;
- Structures maintenance, including drainage work, inspections, and painting and repairs to bridges; and
- Mechanical re-sleepering.

In 2010/11 and 2011/12, QRail incurred $15.7M and $22.4M on infrastructure maintenance[44]. The 2008 undertaking did not require QRail to provide annual maintenance cost reports for the Western System therefore there is limited publicly available information in relation to the actual maintenance of the Western System as compared to the forecast programme of works. There is also a concern in relation to asset condition, noting QRail's own consultant has assessed the asset is in a generally poor condition.

QRail have noted in the Maintenance submission[45] that the key performance indicators (KPIs) in relation to maintenance activities and the relationship with system performance are the Overall Track Condition Index (OTCI) and Transit Time Delay (TTD). Whilst there is limited publicly available information in relation to these KPIs for the Western System, according to QRail's QCA Annual Report for the years 2010/2011 and 2011/12, the OTCI for the entire QRail network (excluding the metropolitan and standard gauge systems) is 47.07 and 46.69 respectively.

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[43] QCA, QR Network 2009 Draft Access Undertaking, December 2009, p.89

[44] QRail Below Rail Financial Statements for years ended 30 June 2011 and 30 June 2012. Noting that QRail advised in the 2011 statements that no comparative information is provided for prior years as QRail began providing below rail services from 1 July 2010.

[45] QRail, AU1 West Moreong Reference Tariff Reset Maintenance submission, June 2013, p.11

5.3.1 QRail proposal

QRail have proposed a maintenance programme of approximately $20m per annum for the 4 year regulatory period from 2013/14 to 2016/17[46] which includes:

- Track (excluding Mechanised Resleepering);
- Trackside Systems
- Facilities ; and
- Structures.

In addition QRail have proposed for the years 2015/16 and 2016/17 to conduct mechanised resleepering of $14.5M and $9.3M.

QRail have allocated the total planned maintenance costs to the Rosewood to Macalister and Macalister to Miles line sections on the basis of total GTK's and then allocated between non-coal and coal freight within each line section also on the basis of GTK's.

5.3.2 Issues with QRail proposal

(A) Specification and monitoring of asset performance

Economic regulators are often required to assess the efficiency and reasonableness of both the required maintenance levels and the costs associated with the achieving those levels. The last of these tasks is reasonably achievable through either direct observation or measurement of comparators.

In contrast, how does the regulator and users evaluate whether the proposed maintenance activity levels are reasonable and commensurate with achieving the desired service levels where:

- the inherent and inherited characteristics of the asset substantially differ from comparators and may also differ substantially within the asset itself; and
- the desired service levels are not specified in a meaningful way which allows for measurement and therefore also monitoring.

Similarly, without specification of a measurable service level or quality, how are operators able to assess the costs and benefits associated with improving the reliability and availability of the asset. Likewise, for service providers, without the specification of the desired service levels by the customer, it falls on the service provider to determine the maintenance intervention levels with respect to achieving outputs and budgets (minimising below rail costs) as opposed to minimising total transport costs associated with the value maximising outcomes.

Aurizon recognises that as the accredited railway manager, QRail is best placed to manage the railway to deliver safe and reliable infrastructure to meet the contracted service levels. Currently, QRail has not proposed to report on KPIs in relation to maintenance activities or system performance and contractually there is limited performance accountability other than to the extent QRail meets their accreditation obligations and is not negligent. In addition QRail have not provided any information in relation to the targeted KPIs that the scope of maintenance activities is intended to achieve.

QRail have recognised the importance of key performance indicators in relation to the development of the West Moreton reference tariff by outlining in the submission a number of KPIs relevant to the maintenance activities and system performance. In relation to the proposed scope of works QRail have also indicated that the maintenance of certain activities are required *"to continue to maintain the network within the required asset performance indicator bandwidths"*[47].

QRail has committed to report on OTCI, percentage of track under speed restrictions and average below rail delays. However, Aurizon considers that the current performance reporting proposal is inadequate as, based on the information provided in the QRail's maintenance submission, these metrics either do not directly relate to the KPIs identified as relevant to the maintenance activities or they will not be reported at a system level or line segment. For example the transit time delay and number of derailments is not proposed to be reported and whilst OTCI is proposed to be reported in the quarterly reports[48] it is at an

[46] QRail, AU1 West Moreton Reference Tariff Reset Maintenance Submission, June 2013, p.44

[47] QRail, AU1 West Moreton Reference Tariff Reset Maintenance Submission, June 2013, p.20

[48] AU1, Schedule E

enterprise level rather than at a system level. In addition, of some concern in relation to OTCI, is that it is only proposed to report the “most recent measure” of OTCI, which may not relate to the performance in the relevant quarter being reported.

Metrics that are generally reported by network providers in Australian rail access regimes, are related to transit time and the track condition index. In relation to transit time this is generally represented by:

- Below rail transit time (BRTT);
- Temporary speed restrictions (TSR); and
- Below rail delays (BRD).

The BRTT will largely reflect the TSR and BRD and is therefore a composite of various factors. In addition, the overall track condition index will also be highly correlated with temporary speed restrictions meaning that transit time represents the primary representation of asset performance.

However, there are substantial problems in relying on transit time as the primary measure of assessing asset performance as it is generally presented as a system average and only reflects below rail delays. In contrast, asset performance in parts of the transit may have more adverse outcomes on system performance. For example:

- Significant faults may lead to cancellations which will not be reflected in the transit time data as no transit occurs (in other words cancellations can be high and BRTT largely unaffected depending on the nature of the root cause);
- Above rail delays may be partially attributable to a prior network incident which gave rise to a below rail delay which later affects the operator’s ability to maintain to schedule;
- Transit times are predominantly influenced by congestion and extended periods of underutilisation may mask longer term asset performance issues which may not emerge until the asset returns to full utilisation and there is limited capacity to address asset performance through additional maintenance; and
- Unallocated delays represent a significant proportion of transit time delays which may at least be partially attributable to asset performance.

Given the inherent subjectivity and uncertainty associated with delay attribution, Below Rail Transit Time, on its own, lacks the necessary precision to provide the basis for assessing asset performance.

Similarly, OTCI is a lag indicator and may not provide a reasonable basis or guidance as to whether the asset is performing as expected, or funded, and that future maintenance cost allowances need to be increased in order to maintain the asset performance at the desired and efficient levels.

Through proper specification of the asset performance requirements the asset manager should be able to organise and plan its resources to manage to outcomes. This philosophy is highly preferable to the more intrusive and resource intensive periodic asset condition assessments which provide little insight as to whether the asset is being maintained to achieve the cost effective and optimal performance on the context of optimising supply chain throughput.

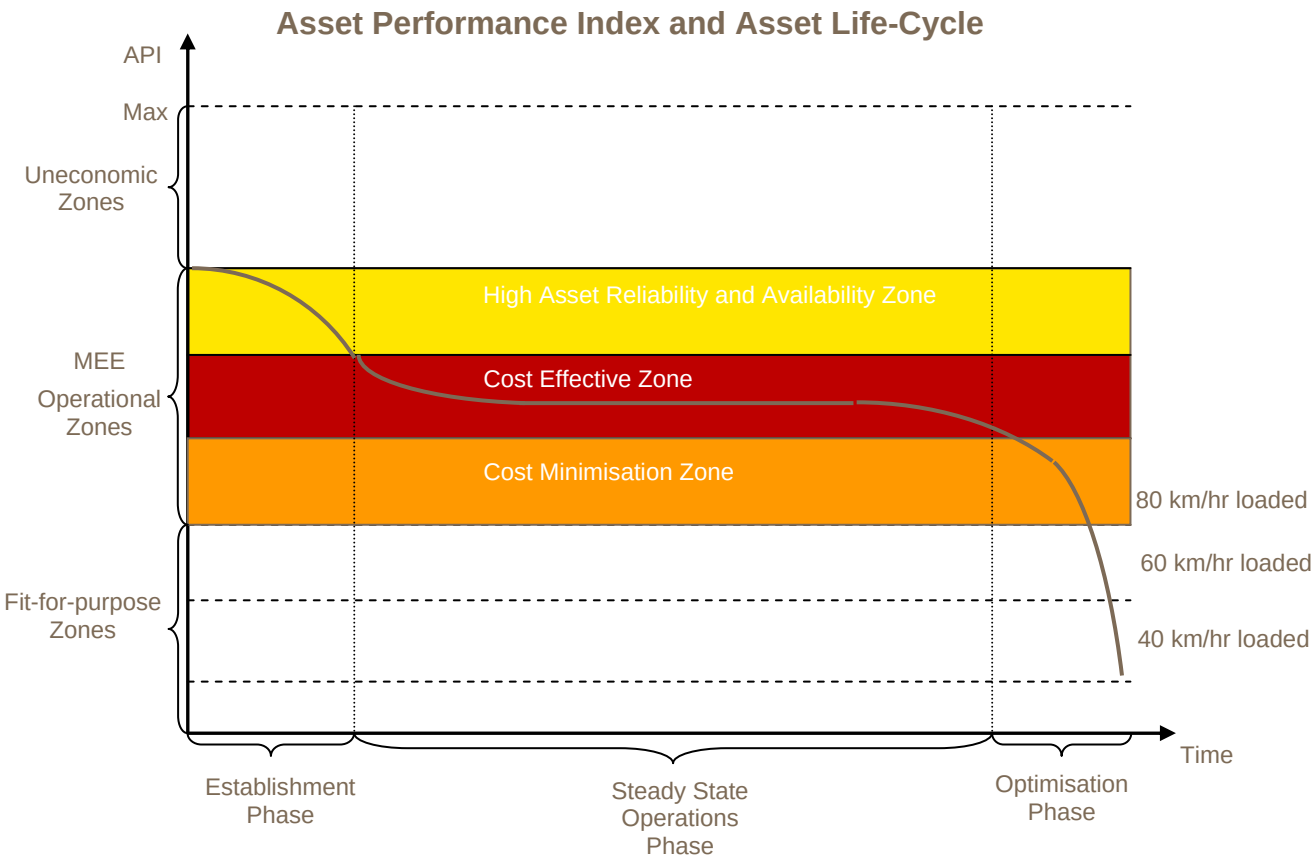
Asset Performance Index

Aurizon considers there is an opportunity to develop an improved understanding of the asset performance and it would be appropriate for the indicator(s) to be comprised of both lead and lag indicators. Whilst, traditionally asset performance metrics are primarily associated with multiple measures, there is also an opportunity for a number of measures to be weighted and consolidated into a single reportable index, such as an asset performance index (API).

The particular advantage of conceptualising asset condition as an index, is that both service providers and users are able to specify preferences commonly understood and agreed units of measure to support a budgeting process. In this way the index can be customised to the priorities of different railway managers, users and systems.

When assessing the maintenance and renewals expenditure requirements, it is of significant importance to understand where the asset currently resides with respect to a measure of asset performance and whether the objective of those expenditure levels is to improve, maintain or manage a reduction in the asset performance. This is shown conceptually in the following asset performance index graph.

Figure 8: Economics of Asset Performance



The responsiveness of the index to expenditure reduction and therefore the transparency of the cost implications of shifting to higher levels of asset performance will provide a more robust basis with which to assess the prudency of different maintenance intervention levels.

Observations on Asset Performance

The following observations are provided to clarify the inter-relationship between the asset performance index and the asset life cycle as depicted in the graph:

- The curve represents the indicative performance profile which minimises whole of life costs for an infrastructure asset with a finite economic life[49].
- Asset performance on newly constructed rail assets is extremely high with low probability of asset failure and faults. Asset availability is maximised with limited maintenance intervention and possession requirements.
- During the uneconomic zone in the steady state operations phase, the asset is either being over-maintained or the original investment was of a standard which exceeded the required service levels (gold-plated).
- Operating in the cost effective zone during the steady state operations phase represents the lowest joint cost of integrated rail operations.
- The cost minimisation zone represents the minimum safety standard of a modern engineering equivalent railway.
- As the asset nears the end of its useful life and demand is declining it is prudent to reduce costs and infrastructure standard to maintain the asset in a fit for purpose state. Fit for purpose in this context refers to the provision of a safe railway with service levels below expected modern engineering equivalent standards for availability, reliability and supply chain throughput.

[49] Assumes maintenance expense and renewals are amortised over the life of the asset.

- The asset must be maintained at or above the minimum asset performance index required to maintain safe operations at the relevant operational standard. As the asset performance index declines so to does the operational standard.

Changes in the asset performance can have significant and material cost implications to rail operations. As such it is essential in the pricing and resourcing of rail operations that the asset performance index is predictable over the term of the proposed commercial arrangements. In operational or structurally separated industry models, the profitability of rail operations can be affected by variations in the asset performance index that change rail operations cost structure. This has a number of implications, namely:

- the misalignment of the above rail pricing period relative to the regulatory period exposes rail operators to the regulatory risk of changes in the asset performance index through the determination of the maintenance allowance and scope; and
- whilst coordination mechanisms can overcome aspects of this problem they are unable to fundamentally address the relevant compensation and incentives required to promote the most efficient rail transport operations without substantially complex contractual mechanisms (neither of which have been able to be developed in the HVCN or CQCN).

It is worth noting that in line with the known tradeoffs between coordination and competition of vertically integrated rail operations, an operationally separated integrated railway is incentivised to identify and maintain the cost effective point for the asset performance index, and a fully integrated railway will have increased commercial and operation flexibility to optimise costs through changes in the asset performance index in response to changes in market conditions (for example, decisions can be made regarding the acceleration or deferment of maintenance activities to optimise asset utilisation from both rail and maintenance operations).

QRail has identified the following items as key performance indicators in their maintenance submission that could be considered:

- Number of broken rails[50]
- Number of Track buckles[51]
- Number of derailments[52]
- OTCI[53]
- Transit Time delay[54]
- Speed restrictions[55]
- 12 month average of the sum of high priority faults for the month[56]
- Actual delivery versus plan for material maintenance activities[57]:
  - Resleepering;
  - Resurfacing
  - Rail grinding
  - Track recording
  - Non destructive testing
  - Trackside signal routine maintenance
  - Trackside signal major maintenance

[50] QRail, AU1 West Moreton Reference Tariff Reset Maintenance Submission, June 2013, p.25
[51] Ibid
[52] Ibid
[53] QRail, AU1 West Moreton Reference Tariff Reset Maintenance Submission, June 2013, p.11
[54] Ibid
[55] QRail, AU1 West Moreton Reference Tariff Reset Maintenance Submission, June 2013, p.19
[56] QRail, AU1 West Moreton Reference Tariff Reset Maintenance Submission, June 2013, p.11
[57] Ibid

Regardless of whether a number of measures or a single asset performance index are provided, the object would be for the measures or index to adequately represent those factors relevant to asset availability and reliability that would adversely impact throughput and above rail cost outcomes.

Further information required on asset performance

Impact of key activities on system performance

QRail have provided a table in the maintenance submission which outlines the impact of key activities on system performance. For example in relation to Ballast cleaning 250 possessions are required each for a 3 hour period over a 4 week timescale. QRail have advised Aurizon that this information does not relate to the proposed maintenance budget, however the provision of similar information and the impact of the activities on contracted capacity would provide transparency to operators in relation to the potential exposure on operations during the regulatory period.

Efficiency of maintenance activities

QRail have described the efficiency objective in relation to maintenance activities as *"not necessarily limited to doing more with less, or finding ways to reduce costs"* but *to "... maximise the intensity of the maintenance effort while minimising the impact on throughput"*[58]. Aurizon considers further information is required as to how the trade-off between 'intensity' and 'throughput' is assessed in relation to Western System traffic. QRail introduced the Scheduled Corridor Access System (SCAS) closures for major maintenance and construction works in 2011. Communications about the SCAS closures[59] stated that Western System services would be impacted by eight full weekend shutdowns per annum.

Since January 2011, there have been 35 full weekend closures and another 79 twelve hour closures (equates to approximately 930 hours of closures per annum) impacting western system coal services, this is despite major construction works associated with the Richlands line being completed in January 2011. This is above the target weekend closures of 8 per 12 months and 32 twelve hour closures (or 770 hours per annum). In addition there have been 14 instances of the 48 hour closures extending to 53.5 hour closures and one instance of a 102 hr and 45 minute closure.

Of considerable concern is the irregularity of the SCAS maintenance calendar. The planned cycle of maintenance closures during the month is defined as A, B, C & D weeks. With A weeks being full weekend closures, B weeks no closures, C weeks a 12 hour closure on Sunday and D weeks a 12 hour closure on Mondays. In October, it was planned to have a A/B/C/C cycle which was changed shortly before implementation to a A/B/A/B roster. This has considerable impacts on traincrew rosters through increased costs to cover unplanned peaks and inefficient use of resources rostered for a peak that does not eventuate.

Aurizon considers, in assessing whether maintenance costs are efficient, consideration should be given to the effectiveness of the closure program. For example, the extent to which the coal supply chain has benefited or otherwise from the program, given the cost to operators of maintaining higher levels of resources to deliver contracted volumes and the change in scope of the SCAS closures from plan.

Continuous improvement initiatives

QRail have outlined a number of factors that are not within the control of QRail that may impact the scope of maintenance works[60]. Aurizon considers that QRail does have considerable influence on a number of these factors, for example the ability to align network maintenance activities with port shutdowns. Of interest to Aurizon, and the assessment of risk, is the "continuous improvement"[61] initiatives that QRail is undertaking to minimise the potential cost impacts of these factors.

Transparency on historical performance

As the network manager, QRail has significant control over the scope of proposed maintenance work. However, it has not provided consistent information across products on the proposed scope and the related cost. Track and Mechanised sleepering represent between 75% and 90% of total maintenance costs per annum. Information in relation to mechanised resurfacing includes a breakdown of cost line items, a total costs per annum and the scope of work defined in number of kilometres for each line section to be resurfaced per annum. Rail grinding is similarly disclosed. However there is limited

58 QRail, AU1 West Moreton Reference Tariff Reset Maintenance Submission, June 2013, p.10

59 QRail, Scheduled Corridor Access System Presentation, Current Feb 2010, p.2 and QRail customer meetings in late 2010

60 QRail, AU1 West Moreton Reference Tariff Reset Maintenance Submission, June 2013, p.8-9

61 QRail, AU1 West Moreton Reference Tariff Reset Maintenance Submission, June 2013, p.10

information on resleepering, albeit QRail have included two products in relation to resleepering, Product 6 sleeper management and Product 11 track reconditioning and removal. Whilst, potentially any resleepering will be conducted as part of the proposed track reconditioning and removal, this is not clear.

The assessment of the reasonableness of QRail's proposed maintenance scope of works would be enhanced by the availability of historical performance. For example to the extent that QRail achieved the scope of works approved in 2010 and the actual key performance indicators that were achieved would provide a significant level of assurance regarding QRail's expertise and the risk to operators. QRail have not provided any historical information for assessment.

(B) Track Maintenance costs may include a level of contingency

QRail have stated that weather is a key factor in relation to the ability to undertaking maintenance and the potential cost impacts[62]. In 2010/11 and 2012/11, QRail incurred $35.4M in flood damage and recovered $28.2M in disaster relief funding. QRail have stated that they have not included any costs associated with weather or derailment related infrastructure damage. However, in order to assess the potential impact during the course of the undertaking period, users require additional information, such as:

- the level of insurance obtained and therefore what residual claims QRail might seek from users;
- the level of residual claim QRail intend to obtain from natural disaster relief funding; and
- the level, if any, of contingency has been included in track maintenance estimates.

(C) Maintenance cost allocations are inconsistent with the Costing Manual

The December 2011 draft of QRail's costing manual provides for the treatment of Below Rail Expenses as line section specific, region specific or network wide[63]. In particular, it is noted that maintenance of track, bridge, signals and line section specific buildings and facilities are to be identified to the line section on which they are incurred.

The maintenance cost submission identifies activities levels and costs for various maintenance activities between Rosewood to Macalister and Macalister to Columboola. However, it than simply applies a GTK based cost allocation between these sections. This is inconsistent with the accounting treatment required in the costing manual. To demonstrate, table 7.1 of QRail's maintenance cost submission notes that resurfacing costs in 2013-14 are $4.9 million of which tables 6.3 and 6.4 suggest that over 20% is attributable to Macalister to Columboola. This is significantly greater than the applied 8.25% allocation in table 7.8.

This allocation on a GTK basis is inconsistent with the accounting treatment required in the costing manual. Additional information is required regarding the line specific costs in order to assess the incremental and stand alone costs for each of the line sections to ensure that services on one line section are not cross subsidising services on different line sections.

5.3.3 Recommendation

- QRail and the QCA to consider the merits of developing a single asset performance indicator.
- Information in relation to scope of works and costs of products to be provided.
- Information in relation to capacity impacts of proposed works to be provided.
- QRail to allocate maintenance activities to line sections in line with the costing manual.
- QRail to nominate the assumed targets in relation to performance indicators.
- QRail to provide historical performance on the efficiency of the closure programme and achievement of forecasted scope of maintenance work to be provided for assessment of reasonableness of current proposal.
- QRail to provide information on residual risk in relation to weather and derailments.

62 QRail, AU1 West Moreton Reference Tariff Reset Maintenance Submission, June 2013, p.9

63 QRail, Costing Manual, Draft at December 2011, p.34

5.4 Other Operating Cost Allowance

5.4.1 QRail proposal

QRail have proposed to include in the Western System tariff an allowance for other operating costs, using the 2011/12 actual costs disclosed in the below rail financial statements as the benchmark for future costs. QRail have removed $0.7M of actual costs from the allowance. It is assumed by Aurizon that these costs were abnormal expenditures although QRail have not provided any information in this regard. QRail have then escalated the 2011/12 costs and allocated using GTK and TKM to line sections and then attributed between coal and non-coal based on GTK.

To account for planned efficiency improvements, QRail have included a reduction to the benchmark costs based on a "glide path to efficiency" of 80% (2013/14), 76.5% (2014/15), 73.0% (2015/16) and 70% (2016/17).

5.4.2 Issues with QRail proposal

Other operating costs include train operations management, other regional and system wide costs, including engineering services, business and group management, corporate overheads, and a return on buildings, plant, software and inventory. QRail have also stated that *"an allocation of QRail's insurance premium has been added to the proposed allowance"*[64].

In response to the draft Costing Manual proposed by QRail in December 2011, Aurizon sought greater clarification of the derivation of the standard allocators[65]. Aurizon considers it appropriate for QRail to demonstrate that the allocators used to determine the actual costs are a reasonable allowance for the AU1 regulatory period.

In addition, the reasonableness of the 2011/12 actual costs as a benchmark should be assessed against both the 2010/11 and 2012/13 results. QRail has been on a program of reform for at least the last 18 months, and considers that some benefits may have been realised in the years since 2011/12. Aurizon acknowledges that at the date of the proposal, QRail had not finalised the 2012/13 accounts and indeed at the date of this submission QRail had not yet issued the 2013 Annual Report.

5.4.3 Recommendation

Aurizon considers that prior to the finalisation of the operating cost allowance, the proposed allowance is tested against the 2012/13 accounts and standard allocators are reviewed.

64 QRail, AU1 West Moreton Reference Tariff Reset Overall Submission, June 2013, p.19

65 QR National, Submission to the QCA on Queensland Rail's Costing Manual, 21 February 2012, p.3

6 Pricing Macalister to Columboola

The Western system tariff approved in QRail's current undertaking[66] did not include Columboola as a loading point in the relevant reference tariff schedule. Whilst, QR Network's stated intention was to apply the approved Western System tariff to the Surat Basin mines and Columboola[67], the QCA advised that a draft access amending undertaking would be required to include Columboola as a loading point and to introduce a Columboola reference tariff.

6.1.1 QRail proposal

QRail have proposed to maintain a single Western System tariff that applies to Jondaryn, Macalister, and Columboola loading facilities. However, as compared with the current undertaking, QRail have sought to include the assets, including the user funded assets, from the Columboola to Fisherman Island capacity enhancement project for the transportation of coal from Cameby Downs for Yancoal. QRail will then provide a rebate to Yancoal for the user funded assets in the Rosewood to Macalister line section.

The justification for this approach seems to be based on the assumption that the current pricing approach is inequitable. QRail have inferred that the Cameby Downs volumes included in the reference tariff, resulted in either an under-recovery of revenue or a cross subsidisation due to end user funded assets between Macalister and Rosewood being common to all users. In addition QRail have proposed this revised approach, to avoid complex calculations required to determine the contribution to common costs[68].

Based on the information provided by QRail, the impact on the Western System tariff of the inclusion of the Cameby Downs (Yancoal) assets is an increase of $1.10 per 000 GTK on the current escalated tariff of $18.18 per 000 GTK or 6%. Yancoal receive a rebate equivalent to $1.09 per 000 GTK for the line segment between Macalister and Rosewood. QRail have also stated that *"rebates to Yancoal for Macalister to Columboola assets would represent 18.4% of the allowable revenue for that section."*[69]

6.1.2 Issues with QRail proposal

QRail's March 2012 submission notes that the changes to the pricing principles from the current undertaking to what is included in the AU1, *"are largely consistent with the Temporary Undertaking and overarching principles from current and past access undertakings for QR Network, QR Limited and ARTC."*[70] Not withstanding the drafting changes, the intent then of cl.3.2 of AU1 is to ensure that each user pays at least the incremental cost of the service and pays at most the stand alone cost of the service. These clauses were introduced in the first undertaking to ensure that no party is worse off as a result of additional users being introduced to the system as per the following statement from the QCA:

> *"For a cross-subsidy to arise, it is necessary to demonstrate that a user or cluster of users contributes less than their incremental cost and that another user or cluster of users pays more than their stand-alone cost."*[71]

In completing the incremental and stand alone tests the relevant criteria to be considered is both the individual train services and the combination of train services. For the Western System an illustrative example is shown below. For example the review of incremental and stand alone costs for line segment from B (Macalister) to C (Jondaryn) would be:

1. volumes traversing B to C that originate at Columboola and finishes at Rosewood
2. volumes traversing B to C that originate at Macalister and finishes at Rosewood
3. combined volumes of 1 and 2 traversing the line segment B to C.

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66 QR Network's Access Undertaking (2008), approved June 2010

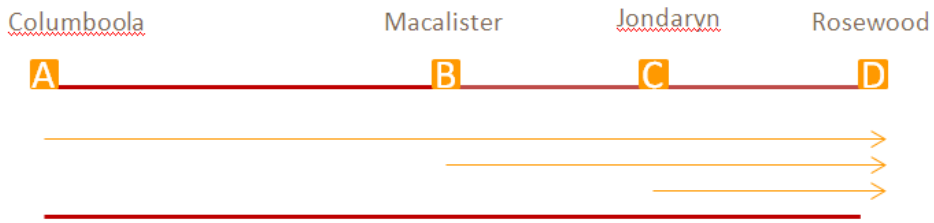
67 QCA, Draft Decision QR Network 2009 Draft Access Undertaking, December 2009, p.90

68 QRail, AU1 West Moreton Reference Tariff Reset Overall Submission (Public Release), June 2013, p.5

69 QRail, AU1 West Moreton Reference Tariff Reset Overall Submission (Public Release), June 2013, p.7

70 QRail, Draft Queensland Rail Access Undertaking 1 – Submission and Explanations – March 2012, p.40

71 QCA, Draft Decision on QR's Draft Undertaking Volume 2 – The Draft Undertaking, December 2000, p.211



Similar tests are required to be conducted for each line segment and combination of line segments. For example line segments A to B and C to D as well as the combination of A to C, B to D and A to D. This ensures that no service is in breach of either the incremental or stand alone tests and thereby demonstrating that there is no cross subsidisation of services.

In the 2006 final approval of the access undertaking, the QCA provided clarification on the way in which the pricing principles apply for capacity constrained lines. Of relevance to the assessment of QRail's approach to the single reference tariff for the Western System is the following:

> *"…it is reasonable that QR continue to be able to charge traffics incremental costs, where warranted, plus the same common cost contribution for a capacity constrained section of track…Combined with the overall revenue limit (cl.6.2.4) the undertaking will also constrain QR's ability to provide discounts to one party and recoup them from another"*[72].

The QCA also went on to explain the interrelationship with the equivalent of QRail's network utilisation principle (cl.3.1.2). That this principle allows QRail to *"offer access to any access seeker up to, or at the ceiling price."*[73] So whilst QRail is able to commercially negotiate discounts, in a capacity constrained network, the discount is at QRail's cost and is not to be recouped from other users. Noting that, discounts provided to non-coal traffic on the basis of public policy objectives are supported by the Transport Services Contract with the State Government.

(A) Incremental Revenue attributable to Macalister to Columboola appears less than the incremental costs included in the revenue base

Based on the building block summary provided in the September submission, it appears that the revenue contribution of the Macalister to Columboola segment does not cover the incremental costs, particularly as the train path charge relates to constraints on the Toowoomba range.

Table 13: Evaluation of Incremental Revenue and Costs for Macalister to Columboola Segment

	2013/14	2014/15	2015/16	2016/17
Segment Volume (000 gtk)[#]	223,833	223,833	223,833	223,833
AT1 Tariff	$11.11	$11.39	$11.67	$11.96
Revenue (AT1 x gtk) $000s	**$2,487**	**$2,549**	**$2,613**	**$2,678**
Incremental Costs				
Allocated Maintenance	$1,600	$1,500	$2,700	$2,200
Operating costs	$400	$400	$400	$400
Return on Assets	$3,500	$3,400	$3,400	$3,330
Economic Depreciation	$1,800	$2,000	$2,100	$2,200
Tax	$400	$500	$400	$500
Total Costs	**$7,700**	**$7,700**	**$8,900**	**$8,600**

[72] QCA, Final Approval, QR's 2006 Draft Access Undertaking, June 2006, p.25

[73] QCA, Final Approval, QR's 2006 Draft Access Undertaking, June 2006, p.25

	2013/14	2014/15	2015/16	2016/17
Net Gain / (loss)	**($5,213)**	**($5,151)**	**($6,287)**	**($5,922)**

[#] 90.99% of 245,997 in Table 7.8 of QRail Western System Maintenance Submission

The cash flows indicate that the proposed tariff structure does not result in train services from Macalister to Columboola contributing sufficient revenue to cover the additional costs being included in the development of that tariff. This also suggests that other Western System users would pay a lower tariff if the committed capacity to Columboola was reallocated to another Western System user.

(B) Inclusion of Macalister to Columboola may be consistent with the Stand Alone Cost Test

QRail have argued that the inclusion of the Yancoal funded assets and volumes in the Macalister to Rosewood line segment results in a reduced tariff than would otherwise be applicable. In particular, that it would result in a Rosewood to Macalister only tariff of $26.08 per 000 GTK rather then the proposed $22.22 per 000 GTK tariff. This appears to be based on the assumption that a separate Columboola tariff *"would involve excluding the Columboola volumes from the determination of the tariff applicable to the Macalister to Jondaryan loading points."*[74] This analysis fails to take into account the train paths would be usable by other Western System users.

Aurizon would suggest that given the Western System is capacity constrained[75], services originating from MacAlister (Wilkie Creek) loading point are being deprived of the ability to run additional train services in order to increase the contribution of coal access revenue to a hitherto underutilised line section.

As such the relevant comparison to be made is the proposed single tariff of $22.22 per 000 GTK with the stand alone cost of the Macalister to Rosewood segment. This assessment would assume that the capacity used on the Macalister to Rosewood segment by Cameby Downs volumes could be utilised by other services from the Wilkie Creek loading point. In addition it would exclude capital expenditure from the Columboola to Fishermans Island project that was applicable to the Macalister to Columboola line segment. The resultant tariff would then be commensurate with the stand alone cost to Wilkie Creek services. In the event this stand alone cost is lower then the proposed single tariff of $22.22 per 000 GTK it is appropriate for QRail to set the reference tariff for the Macalister to Rosewood line section at the Wilkie Creek stand alone cost which would align with the intent of 3.2.1 of the AU1.

A proposal that sets the maximum access charge for the Macalister to Rosewood line section at the standalone cost will also be inline with the network utilisation provision (3.1.2 of AU1). Whilst QRail have removed the order of precedence for the pricing principles, they have stated that *"to the extent that there is no hierarchy of pricing principles, QRail would be obliged to comply with all of the pricing principles."*[76] The network utilisation principle requires, in a capacity constrained network, for the access charge to be set at the maximum access charge. For the Western System, based on the indicative assessment of the incremental cost for the Columboola to Macalister line section, the maximum access charge would appear to be equivalent to the Wilkie Creek stand alone cost.

Based on this assessment it is appropriate for the coal specific costs associated with the Columboola loading point to be treated as a mine specific spur. An appropriate alternative pricing proposal would see the development of two reference tariffs for each line segment, rather than the single all inclusive tariff proposed by QRail:

- Columboola to Macalister reference tariff; and
- Macalister to Rosewood reference tariff.

QRail have not provided any information as to whether this option was considered however, it is similar to the line segment pricing applicable to the North Coast Line. When contemplating a separate Columboola tariff, QRail seem to have only considered an option that would see a Columboola to Rosewood tariff and a Macalister to Rosewood tariff that excludes the volumes that would be included in the Columboola to Rosewood tariff[77]. QRail's approach appears to ignore the opportunity cost associated with allocating the services to Yancoal.

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74 QRail, AU1 West Moreton Reference Tariff Reset Overall Submission, p.7

75 Refer QRail, AU1 West Moreton Reference Tariff Reset Overall Submission, p.8 *"Given the system is capacity constrained…"*

76 QRail, QRail's Draft Access Undertaking 1 – Responses to QCA Issues Paper, April 2012, p.7

77 QRail Wester Moreton Reference Tariff Reset Overall Submission, June 2013 p.7

(C) Treatment of end user funded assets Rosewood to Macalister

In the 2009 draft decision on Western System tariffs, the QCA sought to ensure that rebates associated with end user funded assets were not used by *"QR Network… as a way of collecting revenue beyond the level provided in the reference tariff."*[78] QRail have suggested that the rationale for including the end user funded assets in the reference tariff is to address the reverse risk that QRail will be obliged to rebate the return on and of the end user funded assets regardless of whether it is included in the reference tariff or not. That is:

> *"Permitting 100% of end-user funded assets to be included in reference tariff building blocks aids QRail's investment decisions as it would be unacceptable to proceed with an investment, even if it is end-user funded, in circumstances where only a partial return is included in reference tariff building blocks but a full return is rebateable to end users."*[79]

Albeit QRail also state that *"An all-inclusive tariff that establishes a RAB for Macalister to Columboola assets provides a basis for rebates applicable to Yancoal funded assets west of Macalister."*[80] This appears to infer that QRail have not paid a rebate to Yancoal in relation to these assets.

Notwithstanding the fact that the Access Facilitation Deed[81] is a commercial agreement between the end user and QRail, Aurizon agrees with QRail that investments must be economically viable for the network provider. Traditionally, user funded assets in the Western System have substantially been akin to mine specific infrastructure investments at low levels of utilisation and have not been for incremental capacity of common user infrastructure. For example the investment in the MacAlister to Columboola infrastructure did not create additional capacity for the remainder of the system, but rather provided a better alignment with the MEE standard used to determine the reference tariff. Under these circumstances, the decision to invest will have included an assessment on risk that the assets will not be fully utilised and therefore that the access charges will not fully cover the commercial and regulatory risk. Previously the QCA has accepted that "*QR Network is less able than the miners to manage the risk that the western system mines will stop operating for economic or technical reasons before the asset life of the coal-specific infrastructure has expired"*[82]*.*

Given QRail's Western System pricing proposal is an ex-post consideration of the prudency and costing allocation methodology, consideration should be given to the commercial contracts executed in relation to the end user funding. Aurizon notes that both ARTC and Aurizon Network provide for the ability for users and the regulator to determine whether the investment is prudent and the extent to which the cost is socialised amongst all users.

(D) Acceptance of the prudency of scope of capital expenditure

In the assessment of the prudency of scope of capital expenditure, QRail have introduced that the QCA must consider a user funded investment as prudent in scope to the extent that it is a customer specific expenditure for a branch line to a mine, which is to be included as a loading point for a reference tariff. Aurizon only considers this appropriate to the extent that the customer specific capital expenditure will not be incorporated in an existing reference tariff. In the circumstances where another party, whether now or in the future, is required to bear some of the costs it is imperative that both the QCA and affected parties are given the opportunity to assess the risks and benefits to determine whether the scope is appropriate. When combined with there being no obligation to consult with access seekers or holders either through the development of a master plan, a voting process or the provision of any other publicly available information, there is a risk that whilst the investment included in the RAB under this provision may be considered prudent in scope for the user funder, this may not be the case for other potential users.

6.1.3 Recommendation

Aurizon acknowledges that QRail have argued that the incorporation of the Yancoal assets is actually a reduction in the single system tariff. However given the concerns outlined in this section, Aurizon considers additional information is required to substantiate the proposal. Specifically, to ensure that the proposal is not inconsistent with the incremental and stand alone cost tests breached. Additional information would include the:

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78 QCA, Draft Decision, QR Network 209 Draft Access Undertaking, December 2009, p.75

79 QRail Wester Moreton Reference Tariff Reset Overall Submission, June 2013 p.9

80 QRail Wester Moreton Reference Tariff Reset Overall Submission, June 2013 p.7

81 The form of contract generally used in relation to end user funded assets on the western system.

82 QCA, Draft Decision, QR Network 2009 Draft Access Undertaking, December 2009, p.76

- Value of each asset class by line segment;
- Maintenance and operating costs directly attributable to line segments;
- Volumes by line segment; and
- Details of the related capital expenditure. For example, whether the investment includes the bringing forward of renewal capex, increasing reliability as opposed to capex that is solely for the creation of increased capacity.

Aurizon seeks amendments to the undertaking to provide Access Holders and/or users with sufficient information about investment decisions to determine the risks and benefits of investment options, whether they are user funded or not. In addition that Access Holders and/or users and the QCA have the ability to determine whether the scope of an investment is prudent.