

Queensland Competition Authority

Draft Decision

Aurizon Network 2013 Blackwater Electric Traction Pricing Draft Amending Access Undertaking

November 2013

The QCA wishes to acknowledge the contribution of the following staff to this report:

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SUBMISSIONS

Public involvement is an important element of the decision-making processes of the Queensland Competition Authority (the QCA). Therefore submissions are invited from interested parties concerning its assessment of Aurizon Network's April 2013 Blackwater electric traction pricing (AT₅) draft amending access undertaking. The QCA will take account of all submissions received.

Written submissions should be sent to the address below. While the QCA does not necessarily require submissions in any particular format, it would be appreciated if two printed copies are provided together with an electronic version on disk (Microsoft Word format) or by e-mail. Submissions, comments or inquiries regarding this paper should be directed to:

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The closing date for submissions is 31 January 2014.

Confidentiality

In the interests of transparency and to promote informed discussion, the QCA would prefer submissions to be made publicly available wherever this is reasonable. However, if a person making a submission does not want that submission to be public, that person should claim confidentiality in respect of the document (or any part of the document). Claims for confidentiality should be clearly noted on the front page of the submission and the relevant sections of the submission should be marked as confidential, so that the remainder of the document can be made publicly available. It would also be appreciated if two copies of each version of these submissions (i.e. the complete version and another excising confidential information) could be provided. Again, it would be appreciated if each version could be provided on disk. Where it is unclear why a submission has been marked "confidential", the status of the submission will be discussed with the person making the submission.

While the QCA will endeavour to protect material that is claimed as, and is genuinely, confidential as well as exempt information and information disclosure of which would be contrary to the public interest (within the meaning of the *Right to Information Act 2009* (RTI)), it cannot guarantee that submissions will not be made publicly available. As stated in s 187 of the Queensland Competition Authority Act 1997, the QCA must take all reasonable steps to ensure the information is not disclosed without the person's consent, provided the QCA believes that disclosure of the information would be likely to damage the person's commercial activities and that the disclosure of the information would not be in the public interest. Notwithstanding this, there is a possibility that the QCA may be required to reveal confidential information as a result of a RTI request.

Public access to submissions

Subject to any confidentiality constraints, submissions will be available for public inspection at the Brisbane office of the QCA, or on its website at www.qca.org.au. If you experience any difficulty gaining access to documents please contact the office (07) 3222 0555.

Information about the role and current activities of the QCA, including copies of reports, papers and submissions can also be found on the QCA's website.

GLOSSARY OF ACRONYMS, TERMS AND CONDITIONS

A

ACCC	Australian Competition and Consumer Commission
ARTC	Australian Rail Track Corporation
Asciano	parent company of Pacific National (the rail operator)

B

C

CQCN	central Queensland coal network
CQCR	central Queensland coal region
CRIMP	Coal rail infrastructure master plan

D

DAAU	Draft amending access undertaking
DAU	Draft access undertaking

E

EC	electric energy charge
egtk	Electric gross tonne kilometre

F

G

GAPE	Goonyella Abbot Point Expansion
gtk	gross tonne kilometre

H

I

J

K

L

M

mtpa	million tonne per annum
------	-------------------------

N

NPV	net present value
Nt	net tonne
ntks	net tonne kilometres

O**P****Q**

QCA Act	Queensland Competition Authority Act 1997
QRC	Queensland Resources Council

R

RAB	Regulatory asset base
-----	-----------------------

S**T**

TCO	Total cost of ownership
-----	-------------------------

U

UT3	Undertaking 3 (2010 Access Undertaking)
UT4	Undertaking 4 (2013-14 to 2016-17 Access undertaking period)
UT5	Undertaking 5 (2017-18 to 2010-21 Access undertaking period)
UUP	Under utilisation payment

V**W**

WACC	Weighted average cost of capital
WICET	Wiggins island coal export terminal

X**Y****Z**

PREAMBLE

This draft decision proposes to refuse to approve the draft amending access undertaking (DAAU) submitted by Aurizon Network in April 2013.

The DAAU proposed to amend the pricing arrangements for electric traction services (the AT₅ tariff) on the Blackwater system, in the approved 2010 access undertaking (UT3). The DAAU sets out the principles for calculating the Blackwater AT₅ tariff into the future, but it stops short of actually proposing to change the approved AT₅ tariff itself. Aurizon Network's intention is to use the pricing principles in the DAAU to develop a tariff that would be implemented over the course of the next two undertakings (UT4 and UT5).

Aurizon Network has proposed these amendments as it is concerned its recently built Blackwater electric assets may be stranded. In particular, it is concerned the underlying efficiency of electric traction is being masked by the UT3 pricing arrangements – which includes an average-cost-based AT₅ tariff with an annual revenue cap adjustment. To address its concerns, Aurizon Network has proposed to change the way the Blackwater AT₅ tariff is calculated by:

- (a) estimating the AT₅ tariff based on an eight, not four, year average
- (b) levying a fee, known as the under utilisation payment (UUP), at the end of an undertaking period to recoup revenues foregone due to below forecast volumes.

This would have the effect of reducing the level of the AT₅ tariff. It would do this by pushing revenues into the future to a time when utilisation had increased. The UUP replaces the existing annual revenue cap adjustment mechanism, and it differs from that mechanism in that it would also apply to diesel locomotives.

While stakeholders supported a lower AT₅ tariff, they questioned whether this was achieved by:

- (a) growing utilisation of the electric infrastructure; or
- (b) a possible cross-subsidy from diesel users that did not use the electric infrastructure.

The QCA considers that the revised AT₅ mechanism on its own is not dissimilar to the existing pricing mechanism and is largely consistent with the access regime's objects clause and pricing principles and not adverse to the interests of the access provider, access seekers or the broader public interest of the Queensland community.

However, the proposed UUP mechanism, is dissimilar to the existing revenue cap mechanism, which it replaces, as it seeks to recoup under-recovered AT₅ revenues from all Blackwater users, including diesel locomotives.

The QCA does not have an in-principle issue with mechanisms that seek to provide Aurizon Network with revenue certainty on efficient investments. Indeed, the existing access agreements already contain a range of such mechanisms including take-or-pay arrangements, security requirements, and fees for relinquished or transferred capacity. These mechanisms seek to provide a commercial imperative for honesty in contracting – such that other users should not have to wear the commercial costs if another user under rails, defaults, or seeks to alter their contract and reduce their use of the network.

UT3's revenue capping mechanism provides Aurizon Network with additional protections in the way of revenue certainty in the event that the contracting arrangements deliver less than the required revenue.

The proposed UUP mechanism is different, however. It provides for access holders to pay for infrastructure that they have no commercial contract to use. This arrangement may, on the one hand, provide Aurizon Network revenue certainty and an incentive for future investment in central Queensland.

On the other hand, it may not promote effective competition in the above-rail market in Blackwater and it may adversely affect the interests of some access holders and some customers.

The impact of the UUP and the balance between these conflicting outcomes depends on the likelihood that a UUP payment will be required and the materiality of that payment.

The volumes Aurizon Network used to calculate the tariff are 85% of the contracted tonnages for the parts of the Blackwater network that are electrified. The volume forecasts prepared for the Authority, and accepted by most stakeholders, were said to be conservative yet still 11% below those provided by Aurizon Network. It is, therefore, unlikely that 85% utilisation factor will be achieved, which means that the UUP would be both likely to be levied, and expected to be a material amount (i.e. in the order of around \$130 million or 15% of Blackwater electric revenues over the terms of UT4 and UT5). Therefore, it is almost certain that Blackwater diesel users will be asked to pay for electric infrastructure they do not use.

Faced with the conflicting objectives, of revenue adequacy and promoting effective competition and the interests of access holders, the QCA has concluded that it will not accept the DAAU with the UUP mechanism as proposed. However, this is not to say that the QCA rejects outright the notion of a UUP mechanism to protect Aurizon Network's legitimate business interests, among other things.

Rather, the QCA considers the AT₅ tariff should be constructed to maximise the recovery of the efficient electric infrastructure costs, so the UUP is unlikely to be levied, and expected to be immaterial. One option is to reduce the contract utilisation rate used to set the tariff (e.g. to around 65-70%). This would increase the size of the AT₅ tariff and would have the effect of making a UUP unlikely. While there may be other options to reduce the likelihood and materiality of a UUP payment, these have not been considered in any detail in this decision (e.g. the period over which the revenue is recovered could be extended).

The QCA is also concerned that a mechanism such as the UUP as proposed in this DAAU, could be seen to underwrite, and therefore encourage, the development of unwanted future projects. Looking forward, future projects should still be assessed against the merits of effective capital expenditure approval processes and take-or-pay arrangements to ensure there remains a strong link between efficient costs and customer demand.

This preamble seeks to set out the main themes and conclusions of the QCA's consideration of the 2013 AT₅ DAAU, but should not be read as a substitute for the detailed analysis in the main body of the draft decision.

The QCA welcomes stakeholders' comments on all aspects of the draft decision. The QCA will consider all submissions it receives by 5 p.m. on Friday, 31 January 2014.

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1 INTRODUCTION

Aurizon Network has applied to amend its approved 2010 access undertaking to alter the pricing arrangements for electric traction services in the Blackwater system (the AT₅ tariff). Aurizon Network considers that the amendments will address what it says are deficiencies in the existing pricing arrangements, and will ensure it recovers the full costs of its Blackwater electrification investment.

The QCA published Aurizon Network's proposal, received submissions from stakeholders, and assessed the proposal based on the relevant criteria in the QCA Act.

Stakeholders are requested to prepare submissions in response to this draft decision.

1.1 Structure of electric infrastructure tariff (AT₅)

Aurizon Network has installed infrastructure for electric traction on all of the Goonyella system and on large parts, but not all, of the Blackwater system (i.e. the Minerva and Rolleston spurs are not yet electrified).

The rail electric infrastructure includes two main types of equipment, namely: the wires running above the tracks on the electrified sections, and the feeder stations which provide power to those wires at the correct voltage and current. The service also requires dedicated assets provided by Powerlink to connect Aurizon Network's electric infrastructure with the electricity transmission network.

Above-rail operators in the Goonyella and Blackwater systems can use electric or diesel locomotives. Goonyella largely operates as an electric system, and Blackwater is a mixed system, with both electric and diesel train services. The Moura and Newlands (including GAPE) systems are diesel-only systems.

An electric infrastructure tariff (AT₅) is paid by the access holders that use electric locomotives. The tariff seeks to recover the capital, maintenance and operating costs for Aurizon Network's electric infrastructure as well as Powerlink's charges to Aurizon Network for the use of its transmission network. A separate electric energy charge (EC) is levied to recoup the costs of the electricity actually supplied.

The AT₅ tariff is calculated separately for the Goonyella and Blackwater systems by dividing each system's regulatory asset base (RAB) and other costs for the electric infrastructure by its expected demand for electric traction over a regulatory period. Demand for electric traction is measured on an electric gross tonne kilometre (egtk) basis, which is a weight and distance-based forecast of the use of the electric infrastructure by electric-powered trains in each system. Diesel-powered trains do not pay the AT₅ tariff but they do pay a tariff for access to the tracks, which is also paid by electric trains.

1.2 History

The tariff structure for Aurizon Network's central Queensland coal services was introduced in the 2001 undertaking to achieve a number of objectives, including to provide signals about the consumption of capacity, to ensure that Aurizon Network recovered its efficient costs, and to prevent Aurizon Network from unreasonably favouring its related-party above-rail operator.

The AT₅ electric infrastructure tariff was applied to the electric trains that used the overhead wires and associated electricity transmission and distribution services provided by Aurizon

Network. The use of the services of the electric infrastructure are declared and reference tariffs have been approved to ensure that access to the electric infrastructure could not be withheld or priced to create a barrier to entry.

The decision to electrify the Blackwater and Goonyella systems was made in the early 1980s, and the existing infrastructure largely dates from that time.

In February 2007 and April 2009, following user support under the then master planning approval process, the QCA pre-approved the scope of investments with a forecast cost of \$136 million, that Aurizon Network said would double the capacity of the electric infrastructure on the Blackwater system. The project comprised four new electricity feeder stations at Bluff, Duaringa, Raglan, and Wycarbah.¹

In its submission supporting the 2009 draft access undertaking (DAU), Aurizon Network said the new investment would double the RAB of the Blackwater electric infrastructure, while demand for electric services (in egtk) was forecast to increase 42%. Aurizon Network said the resulting increase in the AT₅ electric infrastructure tariff for Blackwater was inequitable, and the pricing structure for electric infrastructure was inefficient (Aurizon Network, September 2008(a): 143-4; September 2008(b): 8-9).

Aurizon Network argued that Goonyella users secured a 'free-rider' benefit as Goonyella was only able to operate as 100% electric because Blackwater was electrified. Aurizon Network therefore proposed combining the asset bases for both systems, to create a single tariff that was lower for Blackwater users, but higher for Goonyella users (Aurizon Network, September 2008(b): 8-9).

In its December 2009 draft decision, the QCA proposed to reject Aurizon Network's proposal to combine the tariffs, saying Aurizon Network had not made a convincing argument (QCA, December 2009: 167-170). Aurizon Network proposed in the 2010 DAU to retain separate AT₅ tariffs for Goonyella and Blackwater, but said it would revisit the issue during the term of the 2010 undertaking.

In its June 2010 pricing decision on the 2010 DAU, the QCA approved Aurizon Network's proposal to retain the two tariffs. However, the QCA reiterated a comment made in its December 2009 draft decision that it seemed incongruous that expanding the electric infrastructure could be viewed as the most efficient option yet the subsequent access prices be seen as threatening the viability of electric train operations (QCA, June 2010: 5).

December 2011 AT₅ DAAU

In December 2011, Aurizon Network submitted a DAAU proposing to alter the pricing arrangements for electric traction services in the approved 2010 undertaking, to encourage customers to favour electric traction over diesel traction, and increase utilisation of the electric infrastructure in the Blackwater system.

In its material supporting its December 2011 DAAU, Aurizon Network said electric traction was superior to diesel traction for hauling coal in central Queensland, yet the AT₅ tariff structure was causing above-rail operators and their customers to opt for diesel traction. It said this happened even though diesel was consuming more capacity and was a less efficient solution for

¹ Three feeder stations were commissioned in 2011-12, and the fourth (Duaringa) was commissioned in January 2013. On 10 October 2013, the QCA approved \$184.6 million claimed by Aurizon Network for the four feeder stations (QCA, October 2013: 3).

the supply chain. It supported its claim with a total cost of ownership (TCO) analysis which sought to show that electric traction had a lower overall above- and below-rail cost.

Aurizon Network also argued that an efficient above-rail fleet would consist of a mix of the more efficient electric locomotives as well as diesel locomotives – whereby the diesel locomotives (with their lower capital cost but higher operating costs) were best suited to providing a buffer capacity to meet uncertainties in demand and other factors. It argued that the diesel buffer fleet, for the otherwise all-electric Goonyella fleet, operated in the Blackwater system.

Aurizon Network therefore argued that Goonyella system users benefitted from this arrangement as they had the benefits of a fleet with similar performance characteristics, yet Blackwater users were disadvantaged as the Blackwater electric tariff was higher than it would otherwise be because of the lower utilisation of the electric system capacity. As a result, Aurizon Network said that users of the mixed-traction Blackwater system provided spillover benefits to Goonyella users, and that the AT₅ tariff failed to reflect these benefits.

Accordingly, Aurizon Network proposed to reduce the Blackwater AT₅ tariff in the approved 2010 undertaking from \$4.53 to \$2.74 per thousand egtks for 2012-13 by:

- (a) introducing a single network AT₅ tariff that combined the electric infrastructure bases for the Goonyella and Blackwater systems; and
- (b) proposing that operators pay AT₅ tariff for at least 90% of the gross tonne kilometres (gtks) for train services that could feasibly operate with electric trains, including services actually operated with diesel trains.

In addition, Aurizon Network proposed limiting future increases in the new combined AT₅ tariff to no greater than 5% in any one year by deferring recovery of electric revenue cap amounts. Aurizon Network said it was prepared to defer revenues only if the other two measures were approved.

QCA's draft decision

The QCA made a draft decision in July 2012 not to approve the December 2011 AT₅ DAAU. It found Aurizon Network's TCO analysis was not convincing or conclusive in establishing that electric traction was more efficient than diesel traction. It also considered that Aurizon Network had not made a compelling case to verify its claim that diesel trains in the Blackwater system provided buffer capacity spillover benefits to Goonyella users.

The QCA found the proposal, that train services that did not use the Blackwater electric network (i.e. Goonyella electric trains and Blackwater diesel trains) should share the costs of that network, would adversely affect competition in above-rail markets. It considered the DAAU would over-signal the benefits of investment in electric traction and would, on balance, have an adverse impact on the interests of current and future access holders/seekers. It did not consider the DAAU was consistent with the objects clause of the access regime set out in Part 5 of the QCA Act, or with the pricing principles in section 168A of the QCA Act, nor did the QCA consider that the DAAU was in the public interest.

The QCA acknowledged that there might be a problem with the AT₅ tariff being an average price, which tended to push up the price early in the life of an asset, when the efficient economic signal would be lower price. However, the DAAU had not sought to adjust the way AT₅ tariff was derived to provide more appropriate signals that reflected marginal costs or the likely pattern of usage over the life of the assets.

The QCA also said it did not intend to strand assets in the regulated asset base; however, it was keen to ensure that future investments did not suffer from continuing stranding concerns.

Stakeholders' comments on the draft decision

The 40 submissions the QCA received on its draft decision reflected polarised views on Aurizon Network's application and the QCA's draft decision, including contrasting views on the relative merits of electric and diesel traction.²

More relevantly, Aurizon Network highlighted that its main concern was the stranding risk of its new electric assets in the Blackwater system. It said the new investment had increased the Blackwater AT₅ due to the average price nature of the tariff, which was discouraging the use of electric traction. This was in some contrast to its initial DAAU submission, which focussed on the efficient pricing arguments associated with the spill-over benefits of having a 'buffer fleet' of diesel trains in the Blackwater system.

Several coal producers expressed concern over the high level of Blackwater AT₅ charges and wanted Aurizon Network to reduce the AT₅ to a level that would prevent a further decline in the demand for electric traction services. Some coal producers even suggested that the expansion of the Blackwater electric network was handled inefficiently, and that Aurizon Network should face an asset stranding risk in order to achieve a lower AT₅ tariff.

Aurizon Network and Aurizon Holdings were concerned that a lower AT₅ would result in Aurizon Network earning less revenue with no certainty about recovering the full costs of its electrification investments.

Workshop on Electric Infrastructure Tariff

At the request of a number of stakeholders, the QCA organised a workshop on 23 January 2013, to discuss the issues raised as a result of Aurizon Network's December 2011 DAAU. The QCA invited a representative from each organisation that made a submission on the DAAU and the QCA's draft decision.

The QCA published a short discussion paper before the workshop that was intended as a guide to assist the workshop discussions, and did not represent its considered views.

The paper outlined a potential way forward, whereby Aurizon Network would reduce the AT₅ tariff to a diesel-equivalent level and forgo cashflow in the short term. If electric utilisation increased and revenue from the diesel-equivalent tariff rose, the tariff would remain at that level until Aurizon Network recouped the forgone cashflow. In order to prevent the forgone amount from increasing to an unsustainable level, Aurizon Network could recover the shortfall as a levy on all Aurizon Network users, with a time lag (QCA, January 2013(a): 4-6).

The discussion at the workshop focussed on issues with the existing AT₅ electric infrastructure tariff. While many attendees said that AT₅ should be lower, there were substantial differences on who should bear the cost of any under-recovery arising from a reduced price – there was no consensus on a way forward (QCA, January 2013(b): 1).

² Arup, Aurecon, Bombardier, China Railway Materials, CSR Times Electric Australia, Emission Capital Management, Lend Lease, Siemens, Toshiba, and Union Fenosa Wind Australia explained the benefits of electric over diesel traction. Conversely, Downer EDI Rail, Freightliner Australia, General Electric, and UGL Rail outlined the technological advances in diesel traction, and other new technologies e.g. natural gas fuel.

Withdrawal of DAAU

In advance of the workshop, Aurizon Network withdrew the December 2011 AT₅ DAAU on 22 January 2013. Aurizon Network said it did so as a good faith effort to assist the workshop process by removing any distraction that might prevent stakeholders from focusing on resolving the inefficient pricing mechanism for AT₅. Aurizon Network indicated that it would submit an alternative DAAU in due course (Aurizon Network, January 2013: 1).

1.3 Summary of Aurizon Network's Application

On 24 April 2013, Aurizon Network submitted a DAAU (the 2013 AT₅ DAAU), proposing changes to the arrangements for pricing electric traction services in the Blackwater system, and recovering its Blackwater electric system costs.

Aurizon Network proposed inserting a new Schedule K in the 2010 undertaking (UT3), setting out the principles for:

- (a) calculating a fixed-price Blackwater AT₅ tariff; and
- (b) recovering any revenue shortfall, or returning any revenue over-recovery.

In its material supporting its 2013 AT₅ DAAU, Aurizon Network said the existing AT₅ access charging arrangements for the Blackwater electric infrastructure were intended to allow Aurizon Network to fully recoup its investment costs. It said users were effectively charged the average cost of using the infrastructure, and the pricing arrangements were proving ineffective. That was because users of the Blackwater system could bypass the electric infrastructure by running non-electric traction modes on the electrified track, which increased the average cost electric access charge, and could, in the extreme, strand its electric assets (Aurizon Network, sub. no. 2: 3).

To avoid this, Aurizon Network said the 2013 AT₅ DAAU proposed a revised charging system, that would lock in the AT₅ tariff for eight years. It said that the fixed access charge would expose it to volume risk that did not exist with the existing revenue cap mechanism i.e. with a fixed price it might fail to fully recover the costs of its electric infrastructure facility if forecast/contracted volume levels did not materialise. As a result, Aurizon Network said the revised charging system included a mechanism to apply additional charges, if required, to ensure revenue adequacy (Aurizon Network, sub. no. 2: 3).

Unlike the December 2011 DAAU, the 2013 AT₅ DAAU does not propose an AT₅ tariff. Rather, it proposes the principles for an alternative pricing approach. In its supporting material, Aurizon Network said that the AT₅ tariff itself would be settled as part of the UT4 process (Aurizon Network, sub. no. 2: 3).

In its submission of 19 August 2013, Aurizon Network clarified some aspects of the 2013 AT₅ DAAU. It acknowledged the 2013 AT₅ DAAU (or 'Framework DAAU' as it called it) was not in a form that would allow the QCA to make a straightforward decision to approve it. Aurizon Network said the primary objective of the 2013 AT₅ DAAU was to establish economic principles that could then be applied in determining an efficient AT₅ tariff in the 2013 DAU (UT4). Aurizon Network also said the 2013 AT₅ DAAU was intended to provide a high-level framework to support revenue adequacy over a reasonable period of time, having regard to the QCA's stated objective of ensuring neutrality between both diesel and electric traction (Aurizon Network, sub. no. 3: 4).

The key issues then for the draft decision are the proposed principles governing:

- (a) the Blackwater AT₅ tariff mechanism; and
- (b) the unders and overs mechanism to deal with variability in volumes.

The DAAU also proposed that the full unrecovered AT₅ revenue would be recouped at the end of the UT4 undertaking period, and that the recovery would be from all Blackwater users.

1.4 Outline of Assessment Criteria

In accordance with section 142 of the QCA Act, the QCA must consider the 2013 AT₅ DAAU and either approve, or refuse to approve, it. In doing so, the QCA must publish the DAAU and consider comments on it.

If the QCA refuses to approve the AT₅ DAAU, it must provide a written notice stating the reasons for the refusal and the way in which the QCA considers it is appropriate to amend the AT₅ DAAU. This draft decision reflects the QCA's proposed decision for the purposes of sections 142(2) and 142(3) of the QCA Act.

The factors affecting the QCA's consideration and approval of a DAAU are set out in the QCA Act.

The QCA Act

Section 143(2) of the QCA Act provides that the QCA may approve a DAAU only if it considers it appropriate to do so having regard to the matters mentioned in section 138(2). Section 138(2) of the QCA Act states that the QCA may approve a DAAU only if it considers it appropriate having regard to:

- (a) the object of Part 5 of the QCA Act, which is:
 - to promote the economically efficient operation of, use of and investment in, significant infrastructure by which services are provided, with the effect of promoting effective competition in upstream and downstream markets (s. 69E).*
- (b) the legitimate business interests of the owner or operator of the service;
- (c) if the owner and operator of the service are different entities – the legitimate business interests of the operator of the service are protected;
- (d) the public interest, including the public interest in having competition in markets (whether or not in Australia);
- (e) the interests of persons who may seek access to the service, including whether adequate provision has been made for compensation if the rights of users of the service are adversely affected;
- (f) the effect of excluding existing assets for pricing purposes;
- (g) the pricing principles in section 168A of the QCA Act, which in relation to the price of access to a service are that the price should:
 - (i) generate expected revenue for the service that 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 involved; and
 - (ii) allow for multi-part pricing and price discrimination where it aids efficiency; and

- (iii) not allow a related access provider to set terms and conditions that discriminate in favour of the downstream operations of the access provider or a related body corporate of the access provider, except to the extent the cost of providing access to other operators is higher; and
- (iv) provide incentives to reduce costs or otherwise improve productivity;
- (h) any other issues the Authority considers relevant.

Section 138(3) of the QCA Act provides, among other things, that the QCA may approve the DAAU only if it is satisfied the proposed undertaking:

- (a) is consistent with any access code for the service; and
- (b) is not inconsistent with a ruling relating to the service that is in effect under division 7A of Part 5 of the QCA Act.

There are no applicable access codes or rulings in effect under division 7A.

1.5 Outline of QCA's Assessment Process

The QCA commenced an investigation into Aurizon Network's 2013 AT₅ DAAU on 29 April 2013. It published the DAAU and sought submissions from interested parties by 10 June 2013.

The QCA received 11 submissions in response to its request for submissions (i.e. from Anglo, Asciano, Aurizon Holdings, BHP Billiton Mitsubishi Alliance (BMA) and BHP Mitsui Coal (BMC), Glencore, Rio Tinto, Springsure Creek Coal, Stanwell, UGL, Vale, and Wesfarmers Curragh).

On 10 July 2013, the QCA published a report by its consultant, Energy Economics, assessing the coal volume forecasts Aurizon Network used to derive:

- (a) the indicative AT₅ tariff contained in the 2013 AT₅ DAAU submission; and
- (b) the proposed AT₅ tariff in the 2013 DAU (UT4).

The QCA sought further submissions from interested parties by 21 August 2013.

It received three submissions, from Asciano, Aurizon Holdings, and Aurizon Network. Energy Economics provided a response to concerns Aurizon Network and Aurizon Holdings raised about Energy Economics' volume forecasts. The QCA has published Energy Economics' response with this draft decision.

In reaching this draft decision, the QCA has applied the criteria in the QCA Act and in doing so has considered Aurizon Network's proposal, all the stakeholders' submissions, and Energy Economics' report and response.

In evaluating Aurizon Network's 2013 AT₅ DAAU the draft decision has been structured as follows:

- (a) *Chapter 2* – assesses Aurizon Network's proposed Blackwater AT₅ tariff mechanism, including the inputs (e.g. volume forecast and electric system costs) it proposed in calculating an AT₅ tariff;
- (b) *Chapter 3* – assesses Aurizon Network's proposed unders and overs mechanism, including the infrastructure under utilisation payment (UUP) it proposed levying on all Blackwater users in case of revenue shortfall;
- (c) *Chapter 4* – sets out the QCA's analysis of Aurizon Network's proposals against the assessment criteria in the QCA Act.

For the reasons set out in this draft decision, the QCA proposes not to approve the DAAU.

The QCA seeks submissions in relation to this draft decision by no later than 31 January 2014.
The QCA will consider any submissions it receives by that date.

2 BLACKWATER AT₅ TARIFF MECHANISM

Aurizon Network has proposed a mechanism to develop a tariff for its Blackwater electric infrastructure that will, effectively, be implemented during UT4. It proposes that the AT₅ be based on 85% of contracted volumes³ over the term of UT4 and UT5. As contracted volumes increase over this period it has the impact of reducing the tariff today and deferring revenues into the future.

In doing so, Aurizon Network expects that its proposal will provide the appropriate signal for the choice of electric locomotives and reduce the risk of not recovering a portion of its Blackwater electric infrastructure costs.

Stakeholders almost universally questioned the key assumptions underlying Aurizon Network's proposed new AT₅ tariff methodology (e.g. that electric traction is superior to diesel traction) and the process Aurizon Network followed to gain industry support to expand the Blackwater electric infrastructure.

While some stakeholders suggested there may be alternatives to Aurizon Network's proposal, they nevertheless supported the concept of a lower tariff and revenue deferral.

The QCA considers that the proposed pricing methodology is not dissimilar to the current average pricing methodology – that is, an AT₅ tariff based on a smoothing of total costs divided by:

- (a) 85% of contract volumes over two undertaking periods, in comparison with*
- (b) forecast volumes (which are generally a proportion of contract volumes) over one undertaking period.*

However, critical to the QCA's assessment of the proposal is the proposed revenue recovery mechanism, its materiality and the likelihood that it will be activated – these matters are discussed in the following chapters.

2.1 Introduction

The tariff for using Aurizon Network's electric infrastructure has been set for more than a decade by recovering the efficient costs of providing the poles, wires and transformers from the users of the infrastructure, divided among them on a weight and distance (egtk) basis.

In the 2013 AT₅ DAAU, Aurizon Network argued this average-price tariff created a risk of asset stranding when customers opted to run diesel trains where electric trains could operate. It therefore proposed a new approach for a fixed-price tariff, based on investment returns, operating costs and volumes over eight years, in a way that defers revenues and reduces the price early in that period. Its aim was to encourage use of electric traction locomotives and reduce the risk of stranding some of its Blackwater electric infrastructure.

³ Note, this is 85% of contracted volumes on electrified paths regardless of traction choice.

This chapter examines the various issues associated with the potential stranding of the Blackwater electric assets and the elements of the proposed new Blackwater AT₅ tariff mechanism that seek to reduce this risk. Accordingly, this chapter is structured to consider a number of relevant matters in turn, namely:

- (a) Issues relating to choice between electric and diesel traction, including Aurizon Network's TCO analysis (discussed in section 2.2).
- (b) Issues with the risk of bypass and stranding (section 2.3).
- (c) The 'diesel-equivalent tariff' (section 2.4)
- (d) The proposed tariff mechanism (section 2.5).
- (e) Electric system costs and the treatment of planned electric investments in the Rolleston branch line (section 2.6.1).
- (f) The proposed volume approach (section 2.6.2).

2.2 Traction Choice

The majority of the trains operating on the Blackwater system use electric traction. However a substantial minority of services use diesel locomotives. These include trains from the Rolleston and Minerva mines, which are not served by electric infrastructure, as well as from some mines that have access to electric infrastructure, but have chosen not to use it.

Aurizon Network sought to demonstrate, in the material accompanying its 2011 AT₅ DAAU, that electric traction was more efficient, through a total cost of ownership (TCO) analysis. Aurizon Network said the analysis found that, over 30 years, it would cost \$6.3 billion to operate an all electric train operation on Blackwater, compared with \$7.3 billion for an all diesel operation.

Stakeholders raised a number of concerns about the TCO analysis, and the QCA found in its July 2012 draft decision that Aurizon Network had not made a compelling case that electric traction was more efficient.

Aurizon Network's 2013 Proposal

In its submission accompanying the 2013 AT₅ DAAU, Aurizon Network again said electric traction represented the least cost transport option, at high utilisation of electric infrastructure (Aurizon Network, sub. no. 2: App B: 7).

It argued that differences in fuel costs and in locomotive capital and maintenance costs established the cost superiority of electric traction over diesel traction. This was consistent with its earlier TCO analysis, that showed electric traction was substantially less expensive per gtk than diesel traction at high utilisation of the electric infrastructure (Aurizon Network, sub. no. 2: 10-11).

Aurizon Network said Goonyella electric utilisation was nearly 100%, due to profit-maximising decisions of private firms. It said the Goonyella network would have become diesel-dominated 'had electric traction not been the more efficient traction mode' (Aurizon Network, sub. no. 2: 11).

Stakeholders' Comments

A number of stakeholders (Anglo, Asciano, BMA, Rio Tinto, UGL and Vale) said Aurizon Network's 2013 AT₅ DAAU had not provided any further evidence to support its earlier claim that electric traction was superior. They said the 2011 TCO analysis was flawed as it:

- (a) failed to consider the prospect of technological change in diesel locomotives (UGL, sub. no. 14: 2; Anglo, sub. no. 4: 1-3; Asciano, sub. no. 5: 4).
- (b) did not account for sensitivities of key variables – e.g. forecast diesel and electricity prices (Anglo, sub. no. 4: 1-3).
- (c) relied on cycle time assumptions that understated the relative performance of diesel trains (UGL, sub. no. 14: 2; Anglo, sub. no. 4: 1-3).
- (d) did not consider the reliability benefits of having diesel trains when the electric network failed (Anglo, sub. no. 4: 1-3).

They also said Aurizon Network was wrong to say that high utilisation of electric traction on the Goonyella system was evidence that the same should happen on Blackwater (Glencore, sub. no. 10: 1-2; Vale, sub. no. 15: 2). Vale said:

The only further claim that Aurizon has made to support the efficiency of electric traction is the reference to the electric utilisation on the Goonyella System being nearly 100%. Vale believes, using Goonyella as a reference is very subjective as a counter argument can be made with reference to the Newlands, Moura, and the Western Systems all remaining diesel only operations. It also ignores the Hunter Valley coal network, which has significantly greater tonnages to each of the systems in Queensland, still remaining a diesel only operation (Vale, sub. no. 15: 2).

UGL said the competitive market should be the primary influence on traction choice (UGL, sub. no. 14: 2).

QCA's Analysis

In its July 2012 draft decision, the QCA concluded that there was no compelling evidence that electric or diesel traction was superior.

The QCA received many submissions on that draft decision. However, that information was either of a very general nature or related to circumstances that were different to those in central Queensland. Those submissions have, therefore, not helped the QCA form a definitive view on whether electric traction is more or less efficient than diesel traction in all, or even most, circumstances.

Nothing in the submissions on the 2013 DAAU causes the QCA to alter its view that Aurizon Network has not made a convincing case that electric traction is superior to diesel traction. Indeed, it remains likely that there will be circumstances where diesel traction represents a more efficient traction option to electric traction, and *vice versa*. The QCA considers this is an assessment best made by above-rail operators and their customers in a competitive market.

2.3 Risk of Bypass and Stranding

Aurizon Network said, in the material accompanying its 2011 AT₅ DAAU, that the Blackwater AT₅ tariff provided the wrong economic signals. In its July 2012 draft decision, the QCA accepted that this may be the case, as the structure of the AT₅ tariff was an average price. This meant that the price was high early in the life of an asset, and low later on, when utilisation was higher and capacity was scarce.

Aurizon Network did not focus on the potential for these pricing signals to cause asset stranding in its 2011 DAAU. However, its submissions on the QCA's July 2012 draft decision were largely concerned with the risk that its Blackwater electric investments would be stranded.

Aurizon Network's 2013 Proposal

Aurizon Network argued users of the Blackwater system could bypass the electric infrastructure by running diesel trains, that reduced electric infrastructure utilisation and increased the AT₅ tariff. That made electric traction artificially less competitive against diesel traction, which was not related to the relative marginal costs of the two traction types. It said that in the extreme, bypass could make electric traction entirely uncompetitive, and strand its electric assets (Aurizon Network, sub. no. 2: 3-4; App B: 1).

Stakeholders' Comments

Miners said Aurizon Network had not presented evidence there was an actual risk of bypass of the Blackwater electric assets (BMA, sub. no. 9: 2; Rio Tinto, sub. no. 11: 2; Wesfarmers, sub. no. 16: 1).

BMA said Aurizon Network had ignored the long asset life of electric locomotives, that operators bought to operate for up to 30 years. It said an above-rail operator would use its electric locomotives, as long as the revenue they generated was greater than the marginal cost of operation (BMA, sub. no. 9, Att 1: 2).

Rio Tinto said it did not accept Aurizon Network's proposition that the current AT₅ charge was too high and that it provided poor traction choice signals (Rio Tinto, sub. no. 11: 2). Wesfarmers said Aurizon Network had signed a 'significant volume of tonnages' for electric traction on the Blackwater system, including BMA, Xstrata and Ensham. The 'critical issue' now appeared to be not so much bypass of the electric assets, but overall system tonnages (Wesfarmers, sub. no. 16: 1).

Aurizon Holdings said the current tariff regime penalised users of Blackwater electric infrastructure. Traction choice contributed to 'coordination failure', and therefore prevented electric users from benefiting from the economies of scale that made electric traction services competitive. The application of market forces was not likely to result in the lowest cost outcome for the supply-chain. 'Instead, it will result in a perpetually hybrid system, where the system bears the ongoing cost of coordination failure, without any appreciable benefit in terms of increased above-rail competition' (Aurizon Holdings, sub. no. 8: 1-2).

Aurizon Holdings also said the current average cost pricing methodology provided inefficient signals for the efficient utilisation of the electric traction infrastructure – i.e. at low utilisation, prices are high which encourages use of diesel services. This, in turn, resulted in further increases in the price for electric traction services, rendering both above and below rail electric assets uneconomic (Aurizon Holdings, sub. no. 7: 6).

QCA's Analysis

In its 2012 draft decision, the QCA accepted that the average price nature of the AT₅ tariff meant it might give the wrong signals about utilisation of the electric infrastructure, as the price was high when there was ample spare capacity.

Aurizon Network has again in its supporting material for the 2013 AT₅ DAAU said this tariff structure creates a potential that its Blackwater electric assets will be stranded, because the tariffs discourage use of electric traction. Stakeholders have argued that there may not be a risk of bypass of the electric infrastructure, or that the risk has gone away because a number of haulage agreements have recently been signed.

The QCA considers that, whether or not the risk of bypass has passed, it is reasonable to consider a tariff approach that gives the right signals for the efficient investment in, and use of,

the rail infrastructure. However, the Authority considers that the tariff should be neutral and neither over or under signal the use of the electric infrastructure – traction choice should remain a decision of a competitive above-rail market.

2.4 Diesel-Equivalent Tariff

The QCA's July 2012 draft decision argued that the 2011 DAAU proposal could discriminate between diesel and electric traction as it made Blackwater diesel users pay for the electric network costs, which increased the access charge for diesel services and reduced that for electric services (QCA, July 2012: 53). In its January 2013 discussion paper, the QCA suggested that one way to avoid such discrimination might be to set the AT₅ tariff at the 'diesel-equivalent' level. This would be the AT₅ price at which the cost of operating a diesel train, including fuel and maintenance, was equivalent to the cost of operating an electric train, including power, maintenance and the AT₅ tariff (QCA, January 2013(a): 4-5).

Aurizon Network's 2013 Proposal

Aurizon Network said it considered setting AT₅ at a 'cost difference' level, that equalised the full costs (below- and above-rail) of electric and diesel haulage. It said that such a tariff would not bias traction choice. However, Aurizon Network said it did not have sufficient data about above-rail cost structures to confidently determine a cost-difference AT₅ tariff (Aurizon Network, sub. no. 2: 5).

Stakeholders' Comments

Aurizon Holdings accepted that 'the diesel equivalent price is material to the level at which AT₅ can be set' (Aurizon Holdings, sub. no. 7: 13-14).

However, Aurizon Holdings said it would be difficult to calculate a diesel-equivalent tariff and it would not be 'appropriate for the competitiveness of diesel traction with electric traction to be considered in the context of setting AT₅' as:

- (a) such a calculation was not relevant to setting an efficient AT₅, which could be calculated without any reference to the cost structure of a diesel service;
- (b) costs varied over time and between firms, so it was not possible to identify with sufficient certainty for price-setting the point at which the electric tariff rendered diesel 'out of the money'; and
- (c) Aurizon Holdings and its competitors would not agree to their confidential cost or margin information being used in a regular or public process for the setting of below-rail tariffs (Aurizon Holdings, sub. no. 8: 3).

QCA's Analysis

An AT₅ tariff that is higher than the diesel-equivalent level would tend to discourage customers from using electric traction – this would lead to inefficient outcomes if the TCO analysis is correct in concluding that electric locomotives are more efficient than diesel locomotives on the Blackwater system.

The QCA has not sought in this draft decision to progress the notion of setting the AT₅ tariff at a diesel equivalent price – this is not a proposition that gained much stakeholder support at the January 2013 workshop or in subsequent submissions. Notwithstanding that, it is accepted that knowledge of a diesel equivalent tariff could provide a benchmark to assess the likely effectiveness of any AT₅ tariff proposal.

However, both Aurizon Network and Aurizon Holdings have pointed to the information difficulties associated with reliably estimating a diesel equivalent tariff. The QCA acknowledges these difficulties, but notes that all the information required to estimate a diesel equivalent tariff is also required to undertake a TCO analysis. It seems incongruous to the QCA that one could make certain conclusions based on a TCO analysis, yet question the feasibility of calculating a diesel-equivalent price using the same information.

The QCA has not formed a view on the appropriate estimate of the diesel equivalent tariff. However, it might be reasonable to surmise that a diesel equivalent tariff sits somewhere between \$3.00/'000 egtk and \$5.00/'000 egtk, as these are the tariffs that Aurizon Network has said will solve, or alternatively created, the problem of a disincentive to efficiently utilise the Blackwater electric infrastructure.

2.5 Tariff Approach

The QCA's discussion paper in January 2013 suggested that Aurizon Network could address the problems with the average price nature of the AT₅ tariff by deferring revenue in the early years of the electric assets' lives. It could then recoup that revenue by holding prices steady as electric volumes increased. If this did not generate sufficient revenue to cover the cost of providing the electric infrastructure, the shortfall could be recovered through a levy on users, with a time lag (QCA, January 2013(a): 5).

Aurizon Network's 2013 Proposal

Aurizon Network said that the current average-cost AT₅ pricing arrangement biased choice against electric traction (Aurizon Network, sub. no. 2: 12).

Therefore, in its 2013 AT₅ DAAU, Aurizon Network proposed the principle of setting a fixed AT₅ tariff that reflected the present value of Blackwater electric system costs over eight-years (the next two undertakings i.e. UT4 and UT5). It proposed levying the AT₅ tariff on train services that used the electric infrastructure i.e. on the basis of egtk (2013 DAAU, Schedule K, cl.2(f)).

In the DAAU, Aurizon Network:

- (a) set out the principles for calculating a Blackwater AT₅ tariff in accordance with the proposal described above;
- (b) identified the inputs i.e. electric system costs (see section 2.6.1 of this draft decision) and volume forecasts (section 2.6.2) it proposed to consider in calculating the AT₅ tariff; but
- (c) did not include a proposal to amend the Blackwater AT₅ tariff.

Aurizon Network said it chose eight years as the period for recovering its electric system costs, because it was concerned about the stranding risk and the difficulty of guaranteeing regulatory decisions far into the future (Aurizon Network, sub. no. 2, App B: 8).

Worked Example

Aurizon Network said the DAAU sought to establish a framework for an efficient AT₅ tariff in the Blackwater system, but that it did not seek to determine the AT₅ tariff rate (Aurizon Network, sub. no. 3: 1). As a result, Aurizon Network's submission included a worked example to illustrate the use of its proposed pricing approach (Aurizon Network, sub. no. 2: 5-6).

In the example, Aurizon Network calculated an AT₅ tariff that equalised the present values of the annual Blackwater electric revenues and electric system costs, over the eight years of the next two undertakings (i.e. 2013-14 to 2020-21) assuming:

- (a) weighted average cost of capital (WACC) at the UT3 level (i.e. 9.96%);
- (b) 30-year straight line depreciation;
- (c) capital renewals expenditure of \$15 million per annum from 2017-18 onwards;
- (d) Rolleston branch line was electrified from 2015-16 onward, at a cost of \$200 million⁴;
- (e) electric volumes were:
 - (i) at forecast gtps on electrified paths for the UT4 period (i.e. 2013-14 to 2016-17)⁵; and
 - (ii) 85% of the gtps contracted to run over those electrified paths for 2017-18 to 2020-21;
- (f) the initial AT₅ charge escalated by the Consumer Price Index (CPI) estimate of 2.5% per annum (Aurizon Network, sub. no. 2: 5-6, 10, 11).

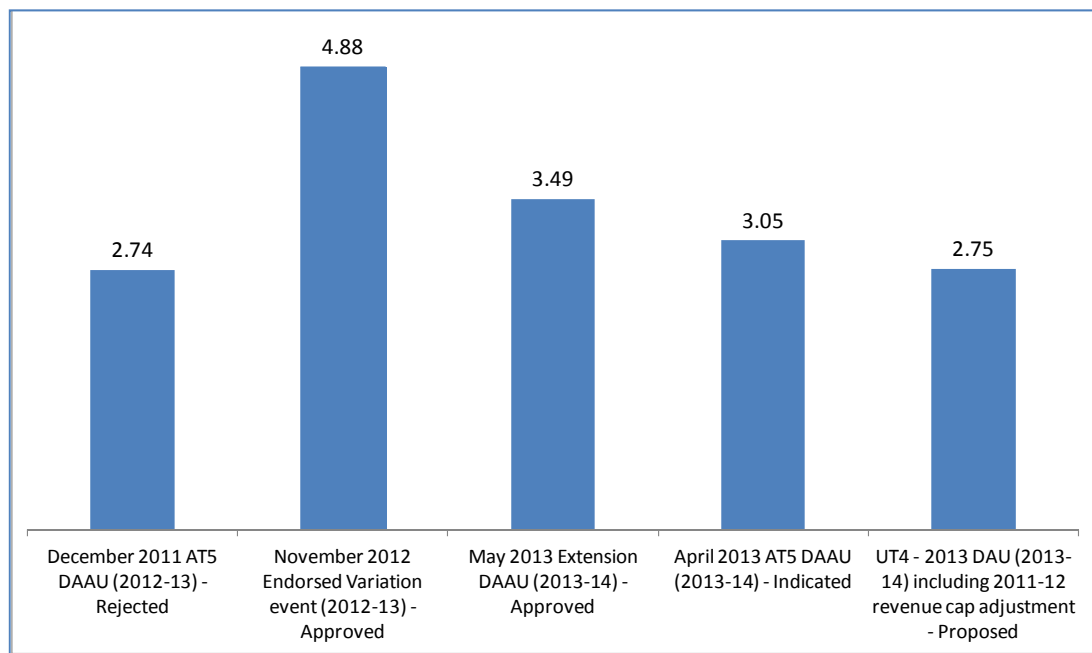
The example provided an initial AT₅ charge of \$3.05/'000 egtps for 2013-14, which was lower than the current AT₅ (see Figure 1). It said that it would update the initial AT₅ charge once WACC and tonnage forecasts were approved for UT4 (Aurizon Network, sub. no. 2: 3, 6, 11, 12).

The worked example showed that the lower AT₅ would result in under-recovery in the early years of the eight-year period, with accumulated revenue shortfall of \$77 million at the end of UT4 (i.e. 2016-17). Aurizon Network said that anticipated growth in volumes in later years would result in over-recovery, with the effect that the costs over the eight-year period as a whole would be fully recovered by the end of UT5 (i.e. 2020-21). It said that under its proposal, it would recover costs on average later than under the existing arrangement (Aurizon Network, sub. no. 2: 5, 6, 12).

Aurizon Network also used the DAAU's proposed mechanism to calculate the Blackwater AT₅ tariff in its UT4 application (Aurizon Network, April 2013, Volume 2: 17). This is discussed further in section 3.3 of this draft decision.

⁴ Aurizon Network, April 2013, Volume 3 - Maximum Allowable Revenue and Reference Tariffs: 158-9.

⁵ This is different from the 85% of contract volumes threshold proposed in the DAAU. Also, Aurizon Network's information indicates that its forecast gtps on electrified paths are, on average, 70% of the contracted gtps on those paths for the UT4 period (i.e. 2013-14 to 2016-17).

Figure 1 Blackwater AT₅ Tariff (\$/'000 egtks) in Aurizon Network's Submissions

Source: Aurizon Network, December 2011: 242; QCA, November 2012: 2; Aurizon Network (May 2013: 239; sub. no. 2: 6; April 2013, Volume 1: 237)

Aurizon Network said its proposed method of calculating AT₅ was the best available estimate of an efficient long-run marginal cost for the electric infrastructure as it was cost-reflective and was based on high electric utilisation i.e. 85% of contracted electric system capacity (Aurizon Network, sub. no. 2, App B: 8). It added that an AT₅ tariff of around \$3.00/'000 egtk in 2013-14:

- (a) would allow electric traction to be competitive with diesel traction (Aurizon Network, sub. no. 2: 11-12; App B: 3-4).
- (b) would ensure electric traction was not artificially disadvantaged relative to diesel traction and would not distort traction choice against electric trains (Aurizon Network, sub. no. 2: 3, 6; App B: 2).

Aurizon Network said its proposed tariff mechanism would ensure a price that was stable over time (Aurizon Network, sub. no. 2: 11-12; App B: 3).

Stakeholders' Comments

Tariff mechanism

Stakeholders largely supported reducing the tariff and providing a fixed price path. For example, Aurizon Holdings said the goal was to set the AT₅:

... at an 'efficient' level that reflects the cost of providing the service. Given the inherent efficiency of electric traction (at sufficient utilisation), setting AT₅ at a level which reflects efficient utilisation of the electric traction assets will achieve an AT₅ that is low enough to ensure a sustained increase in the use of electric traction (Aurizon, sub. no. 7: 13-14).

However, some stakeholders were concerned about the method set out in the DAAU and accompanying material, including that Aurizon Network's proposal:

- (a) was not necessary as electric utilisation could be encouraged by simply lowering the price, without the DAAU (Glencore, sub. no. 10: 3; Stanwell, sub. no. 13: 1-2, BMA, sub. no. 9: 2).

- (b) was acceptable, but only if there was no mechanism to recover any unrecouped revenue (BMA, sub. no. 9: 4 – see section 3.4).
- (c) did not appear to offer long-term structural changes that addressed the flaws in the underlying mechanism for setting the tariff by providing appropriate signals that reflected marginal costs or the pattern of usage over the life of the assets (Vale, sub. no. 15: 2-3).

Deferral and review mechanism

Vale and BMA both suggested an alternative mechanism whereby deferred AT₅ revenue would be capitalised into the asset base, in a manner similar to that applied by Australian Rail Track Corporation (ARTC) for parts of its Hunter Valley coal rail network (Vale, sub. no. 15: 3; BMA, sub. no. 9: 4). BMA said ARTC deferred the revenue where it:

... formed a view that recovering its full allowable revenue from current coal traffic would result in an excessive access charge. ... To the best of our knowledge, ARTC did not receive any guarantee of the recovery of the deferred revenue, nor approval to recover it from users in other Zones in the event that Zone 3 volumes do not grow as expected, nor any adjustment to the WACC for bearing this risk (BMA, sub. no. 9: 4).

BMA said there was also a precedent in the use of a 'Speculative Capital Expenditure Account' under the National Gas Code.

Wesfarmers said it was possible the revenue deferral should extend for more than eight years given the expected life of the assets (Wesfarmers, sub. no. 16: 2).

Wesfarmers also said the price should be fixed for the eight years proposed in the DAAU, and there should be no review mechanism (Wesfarmers, sub. no. 16: 2). However Aurizon Holdings said a review mechanism would offer some flexibility to cope with events that were unforeseen, or impossible to forecast (Aurizon Holdings, sub no. 7: 4, 15-16).

QCA's Analysis

The April 2013 DAAU is unusual to the extent that it does not include a proposed change to the price, but proposes a change to the way the AT₅ tariff will be derived. The QCA has considered the proposed changes to the tariff mechanism, and taken into account the illustrations of its effect provided by both the worked example submitted with the DAAU, and the AT₅ tariff included in UT4.

The Blackwater AT₅ tariff in the 2010 undertaking is based on the forecast annual capital, maintenance and operating costs for the system's electric infrastructure, and a volume forecast, smoothed over four years so the price increases annually by expected inflation.

The Blackwater AT₅ proposed in Aurizon Network's April 2013 DAAU takes the same cost inputs, and volume forecasts based on contracted tonnages, and smoothes them over eight years, based on expected inflation.

Stakeholders have largely supported this approach, but questioned whether the proposal provides the long-term structural changes required to reflect marginal costs.

The QCA notes that the proposal is not a long-run marginal cost pricing mechanism, as that would involve an assessment of incremental costs and increased tonnages. Instead, mechanism in the April 2013 DAAU is a modified average cost tariff, that addresses a concern about incorrect signals early in the life of an asset by deferring revenue.

Stakeholders have questioned whether the tariff change is necessary at all. As discussed in section 2.3 of this draft decision, the QCA considers it reasonable to change the pricing mechanism in a way that lessens the problems with the existing average price approach.

Stakeholders have also asked whether there should be a review mechanism, or whether the price should be fixed in all circumstances. The QCA considers that it may be preferable to have a mechanism at the end of UT4 that adjusted the tariff for UT5 to reflect the WACC or other approved cost changes for that regulatory period. This would reduce the chance of the tariff materially under- or over-recovering the allowable revenues during UT5. However, a mechanism such as this is not essential to the overall impact of the proposed pricing methodology, and the QCA has not formed a concluded view on these issues.

For the reasons set out in chapter 4, the QCA is comfortable with the other main aspects of the tariff approach, including deferral of revenue, which is consistent with the direction suggested in its January 2013 discussion paper.

2.6 Inputs to the AT₅ tariff

Aurizon Network's proposed AT₅ tariff is, like most of the rest of the central Queensland coal region (CQCR) tariff components, based on

- (a) Infrastructure and operating costs (see section 2.6.1), divided by
- (b) Volumes (section 2.6.2).

This section considers each of those factors in turn.

2.6.1 Electric System Costs

The costs recovered through the AT₅ tariff include a return on, and of, the capital invested in Aurizon Network's electric infrastructure, as well as allowances for maintenance and operating costs. The largest part of the operating costs is the amount paid to power transmission company Powerlink for the power lines and transformers it built to connect Aurizon Network's electric infrastructure to the Queensland electricity network.

Blackwater customers approved \$136 million of investment in Blackwater electric infrastructure through the Coal Rail Infrastructure Master Planning (CRIMP) process. Aurizon Network has indicated Powerlink spent around \$400 million on its connection assets.

Aurizon Network's 2013 Proposal

Aurizon Network said that the coal industry endorsed the scope of the Blackwater power system upgrade project, as part of the 2008 CRIMP process, and the QCA pre-approved it under the 2008 undertaking (Aurizon Network, sub. no. 2: 11-12).

In its 2013 AT₅ DAAU submission, Aurizon Network said that it was entitled to recover the Blackwater electric system costs, which included:

- (a) Powerlink's charges for its connection assets
- (b) Aurizon Network's other operating and maintenance costs for the Blackwater electric system
- (c) Aurizon Network's capital costs, i.e. depreciation and return on capital at the regulated WACC
- (d) forecast costs for committed future electrification projects – e.g. the expected electrification of Rolleston spur line during UT4 (Aurizon Network, sub. no. 2: 11).

Stakeholders' Comments

Voting process

In commenting on the 2011 AT₅ DAAU, stakeholders were concerned about Aurizon Network's conduct of the customer vote processes for the Blackwater electric infrastructure upgrades. In particular, stakeholders said they had not received sufficient information about the projects, and were not aware of the size of the Powerlink liabilities.

These concerns have been reiterated in their comments on the 2013 AT₅ DAAU.

BMA and Rio Tinto said the CRIMP process was flawed as customers were not given sufficient, or the requested, information about the investment. They were particularly concerned that the \$400 million of Powerlink costs had not been disclosed and, if it had, the customer vote might have been different (BMA, sub. no. 9, Att. 1: 6-7; Rio Tinto, sub. no. 11: 7-9).

Rio Tinto and Aurizon Holdings said the QCA should review the costs of the Powerlink contracts (Rio Tinto, sub. no. 11: 3; Aurizon Holdings, sub. no. 7: 16).

Rolleston electrification

Anglo, BMA and Rio Tinto raised concerns about Aurizon Network's treatment of the proposed electrification of the Rolleston branch line.

BMA said Aurizon Network's approach to electrifying Rolleston appeared to be repeating the mistakes made in the 2008 approval of the Blackwater electric upgrades, including that:

- (a) it was making decisions on the basis of information that was not available to users.
- (b) the analysis was biased as it began with the assumption that an electrified network was the preferred option.
- (c) the decision-making process was now combined with a proposal to change the way the investment was priced (BMA, sub. no. 9, Att.1: 8).

Anglo and Rio Tinto said other miners should not pay for electrification of a single user spur. Rio Tinto said the Rolleston electrification had not been approved by either users or the QCA. It was also concerned that the risk of a 'significant' single-mine investment would be socialised across other users of the system (Rio Tinto, sub. no. 11: 2, 3, 5).

Rio Tinto and BMA said Aurizon Network was open to a perceived conflict of interest relating to the Rolleston electrification, and the long-term utilisation of Aurizon Holdings' electric locomotives (BMA, sub. no. 9, Att.1: 8.). Rio Tinto said Aurizon Holdings had 'a considerable amount to gain (or lose)' from electrifying the Rolleston line, which gave Aurizon Network a strong incentive to depart from its usual investment approach to have the investment included in the Blackwater RAB (Rio Tinto, sub. no. 1: 5).

QCA's Analysis

Aurizon Network's April 2013 AT₅ DAAU proposes that it be able to recover the same costs through the new AT₅ tariff mechanism that it has been recovering through the existing electric infrastructure tariff mechanism. These include a return on and of capital, as well as efficient operating and maintenance costs.

While the DAAU does not include a proposed tariff, the worked example in the accompanying submission, and the AT₅ in the UT4 tariffs, both include a full cost buildup. Indeed, the annual allowable revenue in each case is the same, apart from the effects of the different WACCs that Aurizon Network has assumed and changes in depreciation rates.

The largest single element of the costs is the payments to Powerlink for connecting to its electricity distribution network. These costs, and other operating and maintenance costs, will be reviewed for efficiency as part of the QCA's assessment of UT4.

The other major portion of the AT₅ cost buildup is the return on and of capital, for the Blackwater electric infrastructure assets in Aurizon Network's regulatory asset base.

These costs too are subject to review. The WACC and depreciation period will be considered as part of the overall assessment of UT4, which will also determine the reasonable level of the capital indicator. And, when any new capital is put forward by Aurizon Network to be included in the Blackwater electric RAB, that will be subject to the prudence and efficiency checks that have been applied in the past.

So, in principle, the QCA has no issues with the cost components that would be included in the allowable revenue for the Blackwater AT₅, under Aurizon Network's proposed tariff approach.

Nevertheless, stakeholders have raised two concerns, namely: the legitimacy of the approval process for the Blackwater electric infrastructure assets that were completed during UT3; and the appropriate treatment of the infrastructure assets that will be required to electrify the Rolleston branch line.

The four new feeder stations for Blackwater were all subject to the customer vote process in Aurizon Network's undertaking, and were approved. Customers chose not to exercise their right in the undertaking to formally challenge the information they were provided, or to vote against the proposed investments. The QCA has subsequently assessed the prudence of the standard and cost of those four feeder stations, and approved them to be included in the RAB.

The Rolleston electrification assets will be assessed for inclusion in the RAB as part of the usual process for customer-specific infrastructure. They will therefore be subject to the undertaking's capital expenditure review process once they are submitted to the QCA for approval.

The QCA considers the Rolleston electrification assets should not be treated differently from any other assets on a single-user branch line, that is:

- (a) asset stranding risks are normally handled through some form of capital underwriting (e.g. access facilitation deeds) or capital contributions from the relevant single user.
- (b) the tariff for all loading points needs to cover incremental costs plus a common cost contribution.

It should be possible to meet the incremental cost test, as Rolleston has high volumes to cover user-specific costs. However, the Authority considers that any electric infrastructure that did not pass the 'system test' would need to have an adjustment similar to what happens with the AT1 to AT4 tariff components.

The QCA notes that UT4 proposes changes to the capital expenditure review arrangements. The QCA will need to consider the extent to which the UUP mechanism should cover future capital expenditure as part of its assessment of UT4. In that regard, the QCA considers Aurizon Network should not rely on the UUP mechanism as proposed in the 2013 AT₅ DAAU to underwrite future investments (see section 3.4 of this draft decision).

2.6.2 Volumes

Aurizon Network's 2013 Proposal

Aurizon Network proposed that the AT₅ tariff would be calculated on an electric volume assumption of 85% of the gross tonne kilometres (gtps) for contracted Blackwater train services

that could operate with electric trains, including train services with committed future electrification (2013 DAAU, Schedule K, cls.3(b)(i) and (ii)).

Aurizon Network supported this approach on the basis that the more usual approach, based on forecast railings, was not consistent with efficient pricing principles as:

- (a) today's forecast railings are different to the expected volumes when the investment decisions were made. Therefore, setting a long-term price path based on today's forecasts would alter key assumptions at the time the investments were made.
- (b) an AT₅ tariff based on forecast railings would maintain the existing average-cost methodology that gave rise to high AT₅ rates and created disincentives for using electric locomotives.
- (c) forecasting economic variables (e.g. railings) over long periods of time is subject to a high degree of error, and contracted rail and port capacity was a robust alternative for long-term volume forecasts (Aurizon Network, sub. no. 2: 11; sub. no. 3: 2-4).

Aurizon Network said 85% was a reasonable proportion of contracted volumes, and a reasonable assumption for utilisation rates when contracting for access rights and expanding 'the supply chain'. It said that utilisation of a reasonable proportion of contract volumes represented an efficiently utilised system (Aurizon Network, sub. no. 3: 2).

Aurizon Network also said that 85% of electric system capacity was the egtk percentage required to sustain the Blackwater electric network (Aurizon Network, sub. no. 2: 11).

It is noted that in its worked example for the AT₅ tariff, Aurizon Network used forecast railings for the UT4 period, and 85% of contracted volumes for the UT5 period (see section 2.5 of this draft decision).

Stakeholders' Comments

Aurizon Holdings said a measure based on contracted electric volumes, rather than forecast actual volumes, should be used to calculate the AT₅ tariff. Forecast volumes would lead to a higher tariff and was 'unlikely to be a sound approach', as the forecasts would be 'polluted' by today's underutilisation issues.

In contrast, contracted tonnes was 'market evidence' of the capacity the electric infrastructure and the level customers had been prepared to vote for in the CRIMP. Contracted tonnes also removed the potential for gaming of volumes and provided an approach that could be applied in the Goonyella system. Aurizon Holdings said:

... such a measure is an objective indication of how many tonnes the market expected to rail at the time the investments were made, and therefore provides a market-based indication of the economies of scale that would be available were the network efficiently utilised (Aurizon Holdings, sub. no. 8: 2-3).

Aurizon Holdings said full utilisation of the electric assets would be the 'maximum feasible volume of gtk's forecast to be shipped from all mines that are on electrified lines'. It noted that Aurizon Network estimated that 85% of system capacity was the utilisation required for Blackwater electric infrastructure to be sustainable.

However, Aurizon Holdings said the \$3.05/'000 egtk's indicative AT₅ tariff in Aurizon Network's worked example was derived by applying forecast volumes for the UT4 period, and 85% of feasible volumes for UT5. This resulted in 'an AT₅ that is significantly higher than if an approach that reflected the efficient utilisation of the electric assets was adopted' (Aurizon Holdings, sub. no. 7: 2-4, 7-8, 11-12).

BMA said Aurizon Network had not provided evidence that justified 85% as an appropriate electric utilisation rate (BMA, sub. no. 9: Att. 1: 5).

QCA's Analysis

Aurizon Network has proposed that the volumes used to calculate the Blackwater AT₅ tariff should be based on 85% of the contracted gross tonne kilometres, on all parts of the system that are capable of running electric trains.

Aurizon Holdings has supported this approach, saying that an efficient tariff should reflect efficient use of the electric infrastructure, and the threshold for efficiency is 85% utilisation.

As discussed in section 3.3 of this draft decision, the forecast electric volumes during the proposed eight-year AT₅ tariff period are only about 70% of contracted volumes on electric-capable portions of Blackwater.

This lower actual volume can be expected to result in under-recovery of the allowable AT₅ revenues on Blackwater. The QCA would not be concerned about this, if that simply meant Aurizon Network accepted the revenue deferral as a part of doing business, and took the risk that the volumes would not pick up enough later to allow it to recoup those amounts.

It might also be reasonable to use the 85% assumption for the volumes if the AT₅ tariff was subject to 100% take-or-pay, such that if utilisation did fall below the 85% assumption any shortfall would be recouped from the contracted electric locomotives.

However, that is not the case. Rather, Aurizon Network has proposed that the UUP mechanism will recoup the unrecovered revenue from all Blackwater users, including access holders operating diesel trains. The reasonableness of the 85% assumption and the implications of this are explored in chapter 3.

2.7 Conclusion

The regulatory regime prevents the operator of monopoly infrastructure from extracting rents. In return for limiting the potential returns, the regulations seek to ensure that the business will not lose money, if it operates efficiently. To that end, the pricing principles in the QCA Act provide that, among other things, the price of access to a regulated service should:

- (a) *generate expected revenue for the service that is at least enough to meet the efficient cost of providing access to the service and include a return on investment commensurate with the regulatory and commercial risks involved (s.168(A)(a)).*

Stakeholders, including the mining companies, above-rail operators and locomotive suppliers, have raised a variety of points about the relative efficiency of electric and diesel traction, the risk of asset stranding, and the diesel-equivalent tariff.

These are discussed in detail in sections 2.2 through 2.4. But the issue before the QCA is a change to the pricing approach for electric infrastructure in the Blackwater system.

Aurizon Network has proposed a pricing mechanism for electric traction services that is designed to recover the efficient annual capital, maintenance and operating costs for the Blackwater electric infrastructure, over eight years, rather than the four years that has been applied in previous undertakings. As discussed in section 2.6, these costs will be subject to the same processes of review and regulatory oversight that apply to the other CQCR reference tariffs, and to the costs for the existing AT₅.

Overall, this proposed net present value (NPV) approach appears largely the same as the existing mechanism used to smooth tariffs over a single regulatory period, but extended over two regulatory periods.

The QCA has assessed the tariff mechanism against the relevant criteria, and, in principle, Aurizon Network's proposal seems to meet those criteria (see chapter 4 of this draft decision). In particular, the mechanism appears capable of generating expected revenue for the service that is at least enough to meet the efficient cost of providing access, and include a return on investment.

The key outstanding issue is how Aurizon Network will recoup its unrecovered revenue if volumes fall short of the 85% of contracted capacity on electrified track in Blackwater that it proposes to use to calculate the tariff. That issue is assessed in the next chapter.

3 UNDERS AND OVERS MECHANISM

Aurizon Network proposed a mechanism to recoup any revenue shortfall resulting from actual electric volumes falling below the 85% volume threshold in its proposed Blackwater AT₅ tariff mechanism.

It proposed to apply a levy, or under utilisation payment (UUP), at the end of an undertaking period on all Blackwater users, regardless of their traction choice, to recoup that shortfall. It argued the UUP will ensure revenue adequacy and provide regulatory certainty for investment.

Most stakeholders objected to the UUP mechanism because it socialised electric network costs across diesel users and penalised existing diesel users. Many of them argued that there were already other regulatory or contractual mechanisms available to address Aurizon Network's concern. They also said that Aurizon Network should bear the under-recovery risk as it had mismanaged the Blackwater electric investment process.

The QCA does not have an in-principle issue with mechanisms that seek to provide Aurizon Network with revenue certainty, and considers the proposed recovery mechanism is similar to the existing annual revenue cap adjustment approach. However, the proposed UUP mechanism is also different, as it imposes a levy on users that have no commercial contract to use the Blackwater electric network.

The QCA considers revenue under-recovery at the end of UT4 and UT5 is likely to happen, and to be substantial. That means the UUP would be imposed in a material amount on all Blackwater users, including diesel users, which could have a number of adverse consequences similar to those identified by the QCA in its July 2012 draft decision on Aurizon Network's 2011 AT₅ DAAU. Those impacts are examined under the assessment criteria in the QCA Act in the next chapter.

3.1 Introduction

Aurizon Network argued that the existing pricing and revenue capping arrangements created a short-term price signal, that threatened the full recovery of its electrification costs. Chapter 2 of this draft decision discusses Aurizon Network's proposal to restructure how AT₅ is calculated. However, this is only part of Aurizon Network's 2013 AT₅ DAAU.

As Aurizon Network is still concerned that it is exposed to volume risk, and might fail to fully recover its costs, the 2013 AT₅ DAAU also includes a recovery mechanism to ensure that Aurizon Network can fully recover its Blackwater electric system costs. In that context, Aurizon Network said this was necessary as the regulatory WACC did not compensate it for asset stranding risk.

Accordingly, this chapter examines the issues associated with Aurizon Network's proposal to allow it to fully recover its Blackwater electric system costs, and considers the following matters:

- (a) Issues with full cost recovery in the existing pricing arrangements (discussed in section 3.2).
- (b) The likelihood of revenue shortfall under Aurizon Network's proposed fixed AT₅ tariff mechanism (section 3.3).
- (c) Aurizon Network's proposed recovery mechanism (section 3.4).
- (d) The issue of whether WACC compensates Aurizon Network for asset stranding risk (section 3.5).

3.2 Cost recovery in existing pricing arrangements

Aurizon Network operates under a revenue cap regime, where any under (over) recovery of its approved revenues in any given year is recouped (returned) two years later (NPV adjusted) through a separate reference tariff adjustment. The revenue cap and the reference tariff adjustments are subject to the QCA's approval.

The AT₅ tariff for the Blackwater system in the approved UT3 was pushed high, partly on the basis of forecast costs of expanding the electric infrastructure – \$4.65/'000 egtk in 2009-10 (UT3 p. 239). It subsequently increased over the life of UT3 as the various volume estimates were revised down and revenue cap adjustments were implemented. For instance, the QCA approved an AT₅ for the Blackwater system of \$5.39/'000 egtk, which compared to \$2.85/'000 egtk for the Goonyella system (QCA, June 2012: 7).

Aurizon Network's 2013 Proposal

Aurizon Network said the existing AT₅ pricing arrangements for the Blackwater electric infrastructure were intended to allow it to fully recover its investment costs. However, it argued that as those arrangements created short-term price signal that encouraged bypass of the electric infrastructure, this threatened the full recovery of its electrification costs (Aurizon Network, sub. no. 2: 3, 4, 12).

Aurizon Network said the existing recovery mechanism maintained revenue adequacy by temporarily increasing the tariff, to account for variations between forecast demand and actual demand. This was effective only in circumstances of captive and relatively inelastic demand – i.e. when users were unable to bypass the regulated asset (Aurizon Network, sub. no. 3: 3).

It argued that the existing mechanism was unsuitable where utilisation rates differed substantially from those assumed when the investment decision was made, and bypass was 'economically available'. It said that the requirement to recoup accumulated losses through changes in access tariffs might not ensure recovery of deferred revenue due to continued reductions in demand (Aurizon Network, sub. no. 3: 3).

Aurizon Network said an efficient access tariff for an individual train service should reflect the costs that the individual service imposed on the network, and should not be adversely impacted by economic choices made by other users of the network. However, it argued the existing pricing mechanism made users of electric traction assume financial responsibility for cost recovery in an environment of under-utilisation, that was largely a result of the preferences (e.g. traction choice, or coal production) of other users (Aurizon Network, sub. no. 3: 2).

It stated that the existing arrangements were inconsistent with s.168A(a) of the QCA Act, which provides that access charges should ensure revenue adequacy (Aurizon Network, sub. no. 2: 4).

Stakeholders' Comments

Stakeholders had differing views on whether existing arrangements affected full cost recovery by Aurizon Network.

Vale said Aurizon Network had not provided 'cogent evidence' that the current AT₅ tariff was not generating the expected revenue for the service. It commented that Aurizon Network had not identified a 'current risk', but rather it (Aurizon Network) was concerned that the existing mechanism was 'threatening not to provide' revenue adequacy (Vale, sub. no. 15: 3).

Vale added that Aurizon Network had not proposed fundamental changes to the AT₅ tariff structure, and said:

Aurizon is proposing a temporary adjustment to the pricing mechanism which reverts to the current pricing mechanism in the longer term. Vale does not believe Aurizon can make a claim for the pricing mechanism to be inconsistent to the Act if it does not propose to change the way the AT₅ tariff is derived (Vale, sub. no. 15: 3).

Rio Tinto said the value of electric assets was unlikely to be recovered over the originally anticipated investment timeframe because of a lack of sufficient demand, and suggested that Aurizon Network could recover that value at a later point in time if, or when, demand picked up (Rio Tinto, sub. no. 11: 10-11).

Aurizon Holdings reiterated Aurizon Network's views that short-run fluctuations in the average cost AT₅ tariff would affect revenue adequacy and result in inefficient outcomes, as long as the option to run diesel service on electric path existed (Aurizon Holdings, sub. no. 8: 2).

QCA's Analysis

Aurizon Network said the existing arrangements created a short-term price signal that threatened the full recovery of its Blackwater electric infrastructure costs. However, miners noted Aurizon Network had not provided evidence to show it was not recovering its allowable revenues.

While it is probably correct that Aurizon Network's supporting submission did not include evidence to support its under-recovery concerns going forward, it is the case that over the last four years there has been a persistent under-recovery of Blackwater electric revenues (i.e. in the order of around \$30 million between 2009-10 and 2012-13, which is around 12% of the allowable revenues over the same period).⁶

The causes of this pattern of under-recovery are various, some of which may not have been foreseen, and some of which were anticipated (to a greater or lesser extent) at the time UT3 was approved. Lower than forecast volumes across the central Queensland network could not have been anticipated.

Conversely, Aurizon Network was concerned that the Blackwater AT₅ tariff would be too high and proposed amalgamating it with the Goonyella tariff. The QCA was not convinced by that argument at that time and subsequently proposed rejecting it when the proposal was resurrected in the December 2011 DAAU. Also, the approved AT₅ tariff embodied the UT3 accelerated depreciation profile which tended to bring forward the cost recovery of new investments; yet at the same time the AT₅ tariff was based on ambitious electric utilisation targets which in turn exaggerated the extent of the subsequent revenue under-recoveries.

These factors have contributed to the under-recovery of revenues. And, because the way the revenue capping mechanism works, they have exacerbated the uneconomic signals the existing average-cost-based AT₅ price provided for utilising the electric infrastructure, and may have discouraged some customers from using electric locomotives.

Aurizon Network has now proposed to replace the four year average-price AT₅ with an eight year average-price AT₅ tariff structure.

⁶ This is the NPV of the sum of the under- and over-recoveries i.e. (\$8.1 million) in 2009-10, (\$20.3 million) in 2010-11, \$2.4 million in 2011-12 and the claimed (\$13.1 million) in 2012-13.

The QCA considers the proposed average price structure would provide medium-term price certainty and stability, and lower prices in the early years of the electric infrastructure's life. Together these factors will provide better economic signals for utilising the assets.

The existing revenue capping arrangement will be replaced by an end of undertaking period revenue recovery mechanism. That issue is discussed in the next section.

3.3 Under-recovery in proposed AT₅ tariff mechanism

Aurizon Network's 2013 Proposal

Aurizon Network said the DAAU established economic principles for determining an efficient AT₅ tariff that was achieved by using a reasonable proportion of contract volumes (i.e. 85% of contract volumes from mines on electrified lines). However, it said that its proposed fixed AT₅ pricing arrangement exposed it to volume risk.⁷ It argued electric volumes could fall too low to enable full cost recovery, because users might opt for diesel traction despite the reduced AT₅ tariff (see Figure 1), or system volumes might fall below expectations (Aurizon Network, sub. no. 2: 3, 7; sub. no. 3: 1-2).

Aurizon Network said that it was possible that a fixed AT₅ charge would not result in full cost recovery and that this was a common feature of natural monopoly infrastructure, where the marginal cost of providing access was below the average cost. It said that marginal cost pricing provided economically efficient traction choice signals, but did not ensure full cost recovery (Aurizon Network, sub. no. 2: 3, 5).

Accordingly, Aurizon Network proposed supplementing the fixed AT₅ pricing mechanism with a mechanism to levy additional charges, if required, to ensure full cost recovery (Aurizon Network, sub. no. 2: 3, 5). That recovery mechanism is discussed in section 3.4.

Worked Example

In its supporting submission, Aurizon Network provided a worked example to illustrate the extent of revenue shortfall. In particular, if electric volumes were at its base-case assumption of 85% of system capacity egtk, the accumulated under-recovered amount at the end of the UT4 period (i.e. 2016-17) would be \$77 million which would be recouped over the course of UT5.

However, if volumes were 10% lower than the base case assumption, the amount of this under-recovery would be \$116 million by the end of UT4 and \$124 million by the end of UT5 (i.e. 2020-21) (Aurizon Network, sub. no. 2: 7-8, 11).

Stakeholders' Comments

Stakeholders (Aurizon Holdings and Vale) said they doubted volumes assumed by Aurizon Network (85% of system capacity egtk) were achievable, which would increase the likelihood of revenue shortfall.

Vale said the previous electrical infrastructure constraints in the Blackwater System would limit the ability of the system to achieve the 85% volume threshold. It said the electric infrastructure assets that triggered this DAAU were constructed to increase the electrical capacity of the Blackwater system. However, in the interim period, many long-term contracts had been established to operate diesel traction (Vale, sub. no. 15: 3-4).

⁷ In the context of the existing pricing arrangements, Aurizon Network noted that the average-cost pricing mechanism was designed to insulate it from all volume risks, but was proving ineffective as it resulted in a high AT₅ which discouraged use of the electric infrastructure (Aurizon Network, sub. no. 2: 4, 12).

Aurizon Holdings said the indicative AT₅ tariff in Aurizon Network's worked example was based on forecast volumes (not contract volumes) for UT4, and therefore it was higher than a tariff based on maximum feasible electric volumes would be. Aurizon Holdings said this higher AT₅ would result in lower electric traction utilisation, and prevent the electric network from reaching the 85% utilisation assumed in the DAAU (Aurizon Holdings, sub. no. 7: 12).

Nevertheless, Aurizon Holdings reiterated Aurizon Network's view that capping AT₅ might cause revenue adequacy problems, given the likelihood of depressed system volumes over UT4, and said:

Aurizon has consistently expressed a preference for the QCA to manage revenue deficits by addressing the underlying cause of the shortfall, namely, actual or potential coordination failure as regards traction choice. Aurizon's position remains that, in dealing with any shortfall, the QCA should ensure it is treating the disease not the symptoms (Aurizon Holdings, sub. no. 8: 4).

Volumes and Energy Economics' Report

Aurizon Network said an AT₅ tariff based on 85% of system capacity egtkws would ensure full cost recovery; however, it also acknowledged that a revenue shortfall was possible if system volumes fell below its expectations (Aurizon Network, sub. no. 2: 3, 5-7, 12; sub. no. 3: 1-2).

The reasonableness of Aurizon Network's 85% utilisation assumption is important, as lower-than-forecast volumes would make a revenue shortfall more likely. The QCA therefore engaged coal market analyst Energy Economics to review the volume forecasts and, by extension, the likelihood that the 85% utilisation factor could be achieved over the life of the next two undertakings – i.e. from 2013-14 to 2020-21.

Energy Economics forecast total Blackwater system coal railings of 542 million tonnes over the eight years from 2013-14 to 2020-21. Energy Economics noted that 'the balance of risks to its forecast is weighted to the downside' (Energy Economics, July 2013: 4) – i.e. its forecast is at the higher end of a reasonable range.

Energy Economics' volume forecast is 39 million tonnes (6.6%) lower than the volume assumption, of 581 million tonnes, embedded in Aurizon Network's 85% utilisation assumption.

The QCA published Energy Economics' report, and received submissions from Asciano, Aurizon Holdings and Aurizon Network.

Asciano said Energy Economics' forecasts implied a levy would be required, and was concerned that 'if one DAAU assumption is incorrect by more than 6% then it may be that other DAAU assumptions are also incorrect' (Asciano, sub. no. 6: 1-2).

Aurizon Network and Aurizon Holdings were concerned about a number of aspects of Energy Economics' forecasts – see Table 1 for a summary of those concerns and Energy Economics' response.⁸

⁸ Energy Economics' response has been published with this draft decision.

Table 1 Stakeholder Arguments and Energy Economics' Response

<i>Stakeholder Arguments</i>	<i>Energy Economics' Response</i>
<i>Lack of supporting evidence:</i> Energy Economics provided little supporting evidence for its bearish outlook (Aurizon Holdings, sub. no. 8: 5).	While the published version of the report excluded confidential and proprietary data, it included details on the methodology and assumptions underlying the volume forecasts (Energy Economics, August 2013: 3).
<i>Lack of a range or confidence interval:</i> Providing point estimates for a long forecast period is subject to error. The usual practice is to provide a range, a confidence interval or an average of multiple independent forecasts (Aurizon Network, sub. no. 3: 3; Aurizon Holdings, sub. no. 8: 5).	Energy Economics was asked to review Aurizon Network's volume forecasts which were point estimates, so it too provided point annual forecasts for direct comparison. Additionally, it is uncommon for coal volume forecasts to include forecasts of upper and lower bounds, or for them to be simply compiled from a panel of multiple forecasters (Energy Economics, August 2013: 2).
<i>Evaluation of 2012-13 forecast versus actual:</i> Aurizon Network's volume forecasts for the Blackwater and Goonyella systems in the 2012-13 annual tariff reset had smaller variance than Energy Economics' forecasts, when compared with the actual railings. Even for a single year, volume forecasts for the CQCR are frequently inaccurate by a considerable margin (Aurizon Network, sub. no. 3: 3-4).	Aurizon Network compared the forecasts for only the Goonyella and Blackwater systems, even though forecasts were prepared at the time for the four rail systems, excluding GAPE. It was more useful to compare the CQCR forecast volumes with actual railings, and that showed Energy Economics' forecast had smaller variance (2.8%) than Aurizon Network's forecast (4.6%) (Energy Economics, August 2013: 2).
<i>Take or pay incentive effect and cost cutting:</i> Energy Economics did not incorporate the increased utilisation of rail infrastructure by producers due to take or pay costs. Additionally, miners' were incentivised to increase production to reduce unit cost, given the size of their fixed costs; as observed in increased railings through RG Tanna in the last quarter of 2012-13 (Aurizon Holdings, sub. no. 8: 5).	Take or pay agreements provided coal producers a strong incentive to fulfil the tonnages stipulated in their contracts; however, that was only one of many other factors. The existence of take or pay agreements had not guaranteed coal railing at contracted levels in the past. Additionally, projects such as WICET could not begin until the various permits, etc. were in place, regardless of the incentive effect of take or pay. The increased railings through RG Tanna were the result of a catch-up in railing volumes, following rail outages in the third quarter of 2012-13 (Energy Economics, August 2013: 4).

Aurizon Network accepted that, if the lower volumes forecast in Energy Economics' report were realised, an AT₅ tariff based on 85% of contract volumes would likely result in a revenue shortfall. However, it argued that a tariff based on Energy Economics' forecasts would be substantially above that based on a fully utilised asset, and would discourage efficient use of that asset – making the problem worse (Aurizon Network, sub. no. 3: 1-2).

Aurizon Holdings said Energy Economics' forecasts could be used in assessing the materiality of any shortfall (and a levy). However, it considered that assessing the extent of the shortfall was a secondary issue as long as the AT₅ tariff was set at a level which promoted efficient use of the infrastructure (Aurizon Holdings, sub. no. 8: 5).

QCA's Analysis

Under the existing arrangements, the volume risk that Aurizon Network faces is addressed by an annual revenue capping arrangement. Aurizon Network considers that this revenue capping mechanism, along with persistent revenue under-recoveries in recent years, has added to the poor signalling inherent in the current AT₅ tariff.

As the proposed revision to the AT₅ tariff is little different to the current AT₅ tariff (i.e. both are effectively average price tariffs), Aurizon Network would be exposed to volume risks in the absence of a revenue capping mechanism or, indeed, take-or-pay arrangements for electric traction. That said, the QCA accepts that the risks to Aurizon Network may be greater as, even at the utilisation level assumed by Aurizon Network, there is a forecast under-recovery of revenues during UT4 which would be balanced (in NPV terms) by an over-recovery during UT5.

A key issue in the 2013 DAAU is how likely this balancing between UT4 and UT5 revenues will be, as a lower than forecast utilisation will result in revenue under-recovery – in particular if that occurs early (i.e. during UT4) given the compounding effect this has through the NPV neutrality aspect of the UUP mechanism.

Aurizon Network did not provide a specific tariff proposal in the 2013 AT₅ DAAU. However, the QCA has made an initial assessment of the extent and the likelihood of a revenue shortfall over the proposed eight-year tariff period based on Aurizon Network's worked example in the 2013 AT₅ DAAU and as proposed in UT4.

That volume assessment was done by replacing Aurizon Network's volumes with forecasts prepared for the QCA, and accepted by most stakeholders⁹. This resulted in expected

- (a) net tonnes 6.6% lower than Aurizon Network's forecast in the AT₅ DAAU, and 7% lower than the UT4 figure for the eight years, and
- (b) gross tonne kilometres on electrified paths (the measure used by Aurizon Network in its volume assumption)
 - (i) 10.6% lower than Aurizon Network's estimate in the AT₅ DAAU, and
 - (ii) 11.8% lower than the UT4 forecast.

Those estimates are about 70% of contracted gtk's on electrified paths compared with Aurizon Network's 85% assumption.

On that basis, the QCA expects an accumulated revenue shortfall at the end of eight years of around \$130 million – i.e. about \$128 million (based on AT₅ DAAU data) and \$133 million (based on UT4 data). This represents around 15% of Aurizon Network's proposed Blackwater electric allowable revenues over that eight-year tariff period (see Table 2).

Table 2 Under-recovery profile in different scenarios (\$ million)

Under-recovery at the end of	2013 AT ₅ DAAU worked example			UT4 (2013 DAU) model	
	Aurizon Network's base-case volumes (85% of system capacity egtks)	Electric volumes 10% below the base-case (i.e. 75% of system capacity egtks)	Energy Economics' volume forecasts	Aurizon Network's base-case volumes (85% of system capacity egtks)	Energy Economics' volume forecasts
UT4 (2016-17)	-76.5	-116.1	-103.8	-78.9	-117.4
UT5 (2020-21)	-0.1	-124.2	-127.7	0.8	-132.6

Source: Aurizon Network models; QCA assessment

⁹ See comments by Queensland Resources Council (October 2013, maintenance submission: 3); BMA (October 2013: 9); and Rio Tinto (October 2013: 100) on Aurizon Network's UT4 application.

This revenue shortfall is expected to be greater still, as both Aurizon Network's proposed volumes and the volumes estimated by the QCA are based on Blackwater paths available to be used by electric trains, not just the paths contracted for electric services. Given that there are already some diesel services contracted to use electric paths, the forecast actual electric railings are expected to be much lower than Aurizon Network's 85% volume assumption.

The QCA is of the view that the proposed tariff mechanism should be constructed based on volumes that will make the under-recovery unlikely and immaterial. Considering Aurizon Network's proposal to recoup any revenue shortfall from all Blackwater users (including diesel users), the shortfall amount expected based on Aurizon Network's 85% assumption could have a similar effect for diesel users to that they faced with the 2011 DAAU. That issue is discussed in the next section.

For that reason, the QCA does not agree with Aurizon Network and Aurizon Holdings that the DAAU with an 85% volume assumption will promote efficient use of the infrastructure. As shown above, that volume assumption makes the shortfall likely and expected to be a material amount. As discussed in section 4.2, the mechanism proposed to recover that shortfall would not promote economic efficiency of the below-rail infrastructure.

3.4 Proposed recovery mechanism

Aurizon Network's 2013 Proposal

Aurizon Network said it undertook the Blackwater power system upgrade project after receiving QCA and customer approval through the CRIMP process. It stated that it was entitled to recover its investment in the Blackwater electric system (2013 DAAU, Schedule K, cls.2(a) and (b); Aurizon Network, sub. no. 2, App B: 5-6).

Aurizon Network proposed:

- (a) deferring recovery of any shortfall in its UT4 period Blackwater electric system costs to the following regulatory period (UT5)
- (b) recouping any shortfall from all access holders using the Blackwater system in the UT5 period; and
- (c) returning any over-recovery of its UT4 period Blackwater electric system costs to access holders using the Blackwater system during the UT5 period (2013 DAAU, Schedule K, cls. 2(c), (d) and (e)).

Worked Example

In its supporting submission, Aurizon Network provided a worked example to illustrate its proposed recovery mechanism in the event of a revenue shortfall – as noted in section 3.3, this included a base-case (i.e. 85% of system capacity egtks) where UT4 revenues would be under-recovered by \$77 million and an alternative where volumes were 10% lower and the UT4 under-recovery would grow to \$116 million (Aurizon Network, sub. no. 2: 7-8, 11).

Aurizon Network said it would levy the UUP at the end of UT4, to recoup any unanticipated shortfall relative to the base-case – i.e. around \$40 million in case volumes were 10% lower (Aurizon Network, sub. no. 2: 7-8). However, it should be noted that the recovery mechanism in Aurizon Network's worked example differs from the drafting in the DAAU meaning that the full \$116 million would be recouped at the end of UT4 (see Table 3).

In its submission, Aurizon Network added that if electric volumes remained 10% below the base-case assumption throughout the UT5 period, costs would not be fully recovered by the

end of UT5. The worked example showed accumulated unrecovered revenue of \$66 million at the end of UT5 (i.e. 2020-21) – with a UUP of \$40 million at the end of UT4, this would require a second UUP of \$66 million to ensure full cost recovery (Aurizon Network, sub. no. 2: 7-8).

Allocation of UUP

The 2013 DAAU detailed that all Blackwater users would be levied/reimbursed any under/over recovery via the UUP mechanism. This was Aurizon Network's preferred option as it:

- (a) avoided cross-system socialisation that was part of its December 2011 DAAU; and
- (b) removed the short-term bypass incentive as the electric users that chose diesel, despite a lower AT₅, would still be required to pay some of the costs they imposed on the rest of the Blackwater system.

Aurizon Network's submission also canvassed two other options (see Table 3) (Aurizon Network, sub. no. 2: 9, 13) whereby the UUP would be paid by:

- (a) all users of the network in central Queensland, on the basis that:
 - (i) its regulated WACC did not compensate it for asset stranding risk (see section 3.5);
 - (ii) if it faced an asset stranding risk, its WACC would need to be increased and that all users of its network in central Queensland would bear that cost
 - (iii) it reduced the UUP that would be levied on Blackwater users (including diesel users) thereby reducing any further distortions of traction choice in Blackwater
- (b) a mix of the other options such that Blackwater users would be solely liable for any uplift at the end of UT4 and all central Queensland users would pay [or be repaid] the UUP at the end of UT5. Aurizon Network said that this option allowed it to assess the market response to a lower, fixed AT₅ path and that if there was a material asset stranding risk (that became apparent during UT5) the UUP could be levied on all users of the network.

Table 3 Recovery Mechanism in DAAU and Supporting Material

<i>Issue</i>	<i>DAAU</i>	<i>Supporting Submission</i>
Shortfall	Aurizon Network proposed recovering <i>any</i> shortfall in UT4 electric system costs (cl.2(d)) e.g. the entire \$77 million shortfall forecast for the end of UT4 in the worked example (or any other shortfall amount above or below that figure).	Aurizon Network said it would seek to recover <i>any unanticipated</i> shortfall relative to the base-case scenario (sub. no. 2: 7-8) – e.g. any shortfall amount over and above the \$77 million forecast for the end of UT4 in the worked example.
UT4/UT5	Aurizon Network proposed recovering a UT4 shortfall in the UT5 period (cl.2(d))	Aurizon Network said it would seek to recover the unanticipated portion of any UT4 shortfall at the end of UT4 and any UT5 shortfall at the end of the UT5 period (sub. no. 2: 7-8, 13).
Allocation of levy	Aurizon Network proposed recovering the shortfall from all access holders using the Blackwater system (cls.2(c) and (d))	Aurizon Network identified three user group options for recovering the shortfall: Blackwater users; CQCN users; or Blackwater users at the end of UT4 and CQCN users at the end of UT5 (sub. no. 2: 9-10)

Assessment

Aurizon Network said the 2013 AT₅ DAAU was intended to provide a high-level framework to support revenue adequacy over a reasonable period of time, having regard to the QCA's stated objective of ensuring neutrality between both diesel and electric traction (Aurizon Network, sub. no. 3: 1).

Aurizon Network said the DAAU established economic principles for determining an efficient AT₅ tariff, whereby the tariff was set based on a reasonable proportion of feasible electric contract volumes (85%) and where these volumes were not achieved the under-recovered revenues would be borne by the system through the UUP (Aurizon Network, sub. no. 3: 2; App B: 8).

It argued that the recovery mechanism sought to avoid any distributional effects of users' choice, by transferring the ultimate responsibility for cost recovery from individual train services to the system, through a UUP. It stated that the recovery mechanism would ensure appropriate incentives for the efficient utilisation of the electric assets (Aurizon Network, sub. no. 3: 2).

Aurizon Network stated that the regulatory framework required a recovery mechanism that:

- (a) did not affect the efficient AT₅ price path;
- (b) provided appropriate price signals for the efficient investment and utilisation of rail infrastructure;
- (c) did not distort competition in upstream or downstream markets; and
- (d) addressed the distributional impacts on all current and future users of the declared service (Aurizon Network, sub. no. 3: 3).

It argued that requiring current and future users of electric train services to assume sole financial responsibility for any resultant revenue shortfalls would not meet these thresholds. Therefore, the proposed UUP was a traction-neutral levy imposed on the system to recover any accumulated shortfall (Aurizon Network, sub. no. 3: 3).

Aurizon Network said its proposed recovery mechanism ensured cost recovery in the types of circumstances that the existing arrangements were designed to address, but failed to do so. It said the DAAU would remove the need for the QCA to revisit the issue of cost recovery, if volumes fell below expectations (Aurizon Network, sub. no. 2: 8, 12-13).

Aurizon Network acknowledged that the DAAU was not in a form which would allow the QCA to make a 'straightforward decision' to approve it. However, it said that a draft decision or a position paper on the DAAU will provide the industry guidance on the general principles the QCA will accept, which will provide the regulatory certainty necessary for investment in regulated assets (Aurizon Network, sub. no. 3: 4).

Stakeholders' Comments

Most stakeholders either did not support, or questioned key aspects of, Aurizon Network's proposed recovery (UUP) mechanism. Only Aurizon Holdings and Wesfarmers supported the proposal, albeit in a conditional manner.

A number of stakeholders said the UUP mechanism was not needed, in part because there were already other regulatory or contractual (e.g. take-or-pay) mechanisms available to address Aurizon Network's concerns (including that Aurizon Network was already compensated for asset stranding risk through the WACC, see section 3.5).

BMA said Aurizon Network should be confident in achieving cost recovery without the need for a UUP, in particular as it was also confident that electric haulage was more cost effective than diesel and that 85% electric infrastructure utilisation was efficient (BMA, sub. no. 9, Att 1: 5).

Asciano said the electric infrastructure had natural monopoly cost characteristics but its usage was discretionary as operators and users could choose not to use the infrastructure. It said:

In these circumstances, rather than avoid volume risk by using a revenue cap (which results in a price increase if volumes fall) it may be preferable to use a price cap and take the volume risk (Asciano, sub. no. 5: 9-10).

In addition, many stakeholders either:

- (a) opposed the UUP mechanism because it:
 - (i) socialised Blackwater electric infrastructure costs across users (i.e. Blackwater diesel users and CQCN users) that did not use that infrastructure (Anglo, sub. no. 4: 3; Asciano, sub. no. 6: 2; BMA, sub. no. 9, Att 1: 4-5; Rio Tinto, sub. no. 11: 2; Springsure, sub. no. 12: 3; Vale, sub. no. 15: 1, 3-4)
 - (ii) distorted traction choice against diesel haulage and reduced traction choice in the above-rail market (Asciano, sub. no. 6: 2; Glencore, sub. no. 10: 2; UGL, sub. no. 14: 1-2)
 - (iii) removed the incentive for future prudent investment by Aurizon Network (Asciano, sub. no. 5: 4-5, 8-9; Springsure, sub. no. 12: 3)
 - (iv) penalised diesel operators and users for investments made on the basis of electric system constraints and prevailing pricing arrangements (Asciano, sub. no. 5: 9-10; BMA, sub. no. 9: 2; Rio Tinto, sub. no. 11: 2; Springsure, sub. no. 12: 2)
 - (v) penalised users for not achieving the electric utilisation target (85%) that was specified by Aurizon Network but without any evidence justifying the target (BMA, sub. no. 9, Att 1: 5).
- (b) argued Aurizon Network should bear the risk of the under-recovery because it:
 - (i) mismanaged the Blackwater electric investment process (BMA, sub. no. 9: 3-4, Att 1: 6-7; Glencore, sub. no. 10: 3; Rio Tinto, sub. no. 11: 7-9, 14)
 - (ii) delayed electric capacity enhancements in Blackwater (Asciano, sub. no. 5: 9-10; Glencore, sub. no. 10: 3)
 - (iii) invested in electric infrastructure, despite its knowledge of the declining electric traction use in Blackwater (Asciano, sub. no. 5: 8-9; Rio Tinto, sub. no. 11: 2-3, 7-9)

Other stakeholders questioned aspects of the proposed UUP proposal. In particular, Rio Tinto observed that any DAAU, that intended to socialise Blackwater electric traction cost recovery across diesel users, must not include the Powerlink costs (Rio Tinto, sub. no. 11: 9-10).

Glencore suggested that any UUP must be applied first to the underutilised contracted electric paths, before any remaining shortfall was allocated to diesel users. It said that such a mechanism should not set a precedent for resolution of future stranding risk issues (Glencore, sub. no. 10: 3).

Springsure added that the DAAU assumed additional capital expenditure to electrify the Bauhinia line, without any certainty that the investment would create a further incentive to use electric traction. It said:

... this would perpetuate an illogical outcome whereby all Blackwater users under AN's proposal would face higher supply chain costs due to investment of capital that may not have been required in the first instance (Springsure, sub. no. 12: 3).

Wesfarmers supported the proposed recovery mechanism, subject to Aurizon Network imposing the UUP at the end of the eight-year period, and bearing part of the shortfall (Wesfarmers, sub. no. 16: 2-3). It said:

Given the security that Aurizon Network would gain from achieving a QCA directive binding stakeholders for 8 years (or longer if the deferral period is extended) it would not be inappropriate for Aurizon Network to bear some of the burden ... if there is a deficit between the total approved costs of the electrification assets and the revenue raised from the new AT₅ tariff at the end of the UT5 regulatory period Aurizon Network should only be entitled to recover 85% of that amount from users. The remaining 15% it would bear itself.

Aurizon Holdings expressed cautious support for the proposed recovery mechanism. It said diesel users should pay a portion of the costs they imposed on the system. However, it said an annual UUP was more equitable, otherwise access holders with new agreements commencing immediately prior to the UUP payment date would incur costs for which they were not responsible. It added that users on non-electrified spurs should not pay the UUP (Aurizon Holdings, sub. no. 7: 3, 4, 10).

Aurizon Holdings opposed raising the AT₅ tariff to minimise the likelihood of a UUP, as that would 'penalise electric users by depriving them of the scale that made electric traction competitive'. It said:

It would not be appropriate to goal-seek a tariff for such a purpose, as to do so would not evidence appropriate regard to the requirements of efficient pricing (Aurizon Holdings, sub. no. 8: 4).

A number of stakeholders said the proposed drafting in Schedule K had 'insufficient detail', was 'deficient' and 'not clear', and wanted Aurizon Network to provide further information (Aurizon Holdings, sub. no. 7: 3-5, 17-18; BMA, sub. no. 9: 4; Rio Tinto, sub. no. 11: 1, 3, 16; Springsure, sub. no. 12: 2; Stanwell, sub. no. 13: 2; Vale, sub. no. 15: 4; Wesfarmers, sub. no. 16: 3).

QCA's Analysis

The QCA does not have an in-principle issue with mechanisms that seek to provide Aurizon Network with revenue certainty on efficient investments, which is what the UUP mechanism is designed for. These mechanisms would encourage Aurizon Network to invest in the below-rail network. However, the QCA would have issues with recovery mechanisms that created the type of adverse consequences identified by stakeholders, e.g. in terms of competition in above-rail market, interests of access seekers and holders and that of the public.

The proposed UUP mechanism is similar to the existing revenue cap adjustment mechanism, in that it is designed to protect Aurizon Network by providing revenue certainty if volumes fall short of Aurizon Network's expectations. However, it is also different, as it imposes a UUP on users that have no commercial contract to use the Blackwater electric network.

That mechanism could have a number of adverse consequences, which depend on the likelihood a UUP payment will be required and the materiality of that payment.

Section 3.3 shows under-recovery at the end of the eight-year period is likely and can be expected to be around \$130 million, or more. Therefore, under Aurizon Network's proposals, the UUP would be imposed in a material amount on all Blackwater users, including diesel users. While the UUP is an ex post payment, it is a payment that can be anticipated now with some certainty that it will have to be paid. That would increase the access charge for existing users of

diesel traction, and decrease that for existing users of electric haulage service, as some electric network costs would be recovered from diesel users.

In that case, the 2013 DAAU proposal would yield a result similar to the 2011 DAAU, which sought to socialise ex ante Blackwater electric costs to non-electric users, by effectively recovering any shortfall from users that did not use the Blackwater electric network (i.e. Blackwater diesel users). As discussed in QCA's July 2012 draft decision, that would have an adverse impact on competition in related markets, and interests of access holders, among others. These issues are considered against the assessment criteria in section 138(2) of the QCA Act in Chapter 4.

Additionally, the DAAU proposes that recovery of any shortfall in recouping future electric investments would depend on an ex post levy on all Blackwater users, irrespective of whether they used that infrastructure. As this effectively underwrites future investments, it might create incentives for over-investment in electric infrastructure, and would not promote economically efficient investment in below-rail infrastructure. This is discussed further in section 4.2.

Therefore, the proposed UUP mechanism based on the 85% volume assumption raises concerns, which are considered against the assessment criteria in section 138(2) of the QCA Act in Chapter 4.

A mechanism that made the UUP unlikely and immaterial may avoid those adverse consequences or reduce their impact.

Such a mechanism would not affect the access charge for existing users of diesel haulage services, as they would continue to pay the same charge they contracted for. Additionally, access seekers and access holders would be able to form the view that it would be unlikely that anyone but electric users on Blackwater would be required to pay for the Blackwater electric infrastructure.

An unlikely UUP would not distort traction choice in the above-rail market. Indeed, a fixed AT₅ tariff tied to an unlikely UUP would incentivise diesel operators to come up with a better price offer, and that would encourage rivalrousness in the above-rail market. The possibility of triggering an under-recovery payment if a user chose diesel traction would not discourage that choice, rather the end customer would be better off. This is because the user would not only pay a lower diesel access charge but also share only a part of the under-recovery, not the full under-recovery its choice of diesel traction would trigger.

Thus, the QCA considers an unlikely and immaterial UUP, if correctly structured, would not only ensure revenue adequacy but also not disrupt the rivalrousness in above-rail market.

The QCA is of the view that the inputs underlying the proposed tariff mechanism could be adjusted to make a revenue shortfall, and an under-recovery levy, unlikely and immaterial.

For example, the volume forecasts used to calculate the tariff could be chosen to ensure the UUP was unlikely and immaterial. In the existing pricing arrangements, tariffs are already based on anticipated volumes. However, since the proposed recovery mechanism seeks to recoup under-recovered amounts from diesel as well as electric users (unlike the existing revenue cap adjustment), it is important to consider a conservative volume estimate (i.e. at the lower end of a reasonable range) to make the under-recovery unlikely and immaterial. That issue is discussed further in Section 4.9.

The QCA also notes that Aurizon Network's DAAU specifies that it will recover any shortfall at the end of UT4 (see 'Shortfall' row in Table 3). However Aurizon Network's supporting material, including the worked example, proposed that only the unanticipated shortfall would be

recovered at the end of UT4. In other words, the recovery at the end of UT4 would be just the amount by which the actual shortfall exceeded the shortfall which had been forecast when the tariff was derived.

Aurizon Network has indicated that the approach in the supporting material was its intended treatment for unrecovered revenue at the end of UT4. The QCA also considers the 'unanticipated shortfall' approach is appropriate, and that the DAAU should be amended to reflect that principle.

In its submission, Aurizon Network also canvassed two other options whereby the UUP would be imposed on a wider group of CQCN users, and not just Blackwater users.

If the UUP was likely, and it was imposed on CQCN users, it would raise many of the same issues as it does if it is levied only on Blackwater users. Indeed, it could exacerbate those consequences by introducing cross-system socialisation, which could yield results similar to the 2011 DAAU. In that case, the QCA's July 2012 draft decision, noted that the revenue adequacy measures would create regulatory uncertainty by changing the principles underlying the tariff calculation, and could breach the undertaking's pricing limits.

The QCA considers a mechanism that would make the UUP unlikely and immaterial could avoid those adverse consequences that could be expected to occur in the alternative options canvassed by Aurizon Network.

3.5 WACC and asset stranding risk

In addition to the arguments outlined in section 3.4, a number of stakeholders argued that the UUP was not required as Aurizon Network was already compensated for asset stranding risk through the regulated WACC.

In considering these arguments, the QCA's AT₅ workshop discussion paper indicated that the WACC for Aurizon Network was set on the basis that assets would face only limited optimisation risk – which was largely at the time the assets entered the asset base. It stated that if that approach was changed to allow for subsequent optimisation of the asset base, the WACC might have to be reviewed (upwards) (QCA, January 2013(a): 3).

There was significant difference between stakeholders, at the workshop. Some representatives said that if the Blackwater electric assets were stranded, users would have to bear a higher WACC. However, several others said that Aurizon Network's approved WACC was greater than the risk-free rate and therefore included an allowance for commercial risks, such as asset stranding (QCA, January 2013(b): 3).

Aurizon Network's 2013 Proposal

Aurizon Network said the existing arrangements were inconsistent with the QCA's commitment to avoid stranding of the Blackwater electrification assets, noting that the regulatory WACC did not compensate it for asset stranding risk in relation to customer-approved assets. It said that was the most reasonable interpretation of the WACC approved for UT3 (Aurizon Network, sub. no. 2: 4).

Stakeholders' Comments

Miners said the regulatory WACC compensated Aurizon Network for asset stranding risk, and the undertaking (UT3) provided other means to fully mitigate that risk because:

- (a) the WACC was greater than the risk free rate and included some exposure to market risk (e.g. fluctuations in economic activity that might affect demand for rail capacity) (Rio Tinto, sub. no. 11: 3, 14-15; Glencore, sub. no. 10: 3)
- (b) the QCA, in the context of UT3, effectively accepted that 'the equity beta should (and would) take into account risks to long term cost recovery', and noted that asymmetric risks were best accounted for outside the WACC framework (e.g. through accelerated depreciation) (Rio Tinto, sub. no. 11: 15)
- (c) the undertaking provided 'clear guidance around the circumstances when assets will be optimised', and allowed Aurizon Network to seek investment pre-approval, which if managed properly would fully mitigate optimisation risk (BMA, sub. no. 9: 3; Att 1: 3).

Anglo said the DAAU insulated Aurizon Network from the optimisation risk included in the terms of UT3; however, Aurizon Network left its regulated WACC unchanged, which was 'a completely unbalanced position' (Anglo, sub. no. 4: 5).

Rio Tinto said the take or pay arrangements reduced Aurizon Network's exposure to demand risk, which meant the equity beta overcompensated Aurizon Network for exposure to market risk (Rio Tinto, sub. no. 11: 14-15).

Rio Tinto said there was no regulatory precedent to support introducing an 'investment premium' to reflect stranding or optimisation risks, and such adjustments would encourage imprudent investments (Rio Tinto, sub. no. 11: 10-11).

Vale said the discussions about optimisation and WACC adjustments were premature as the electric infrastructure had only recently been constructed (Vale, sub. no. 15: 4).

QCA's Analysis

Stakeholders' submissions spent some time on whether or not the existing WACC compensates for asset stranding risk – in part, this was prompted by the suggestion in the QCA's workshop discussion paper that in the absence of an asset stranding mechanism the WACC may have to be higher.

There are two aspects of UT3 that are relevant to this discussion.

First, UT3 seeks to deal with the efficiency of investments up front – i.e. at the time the new investment is added to the RAB. UT3 sets out limited circumstances for subsequent optimisations (e.g. the original capital expenditure approval decision was based on false or misleading information, or in the event of either actual bypass or a severe deterioration in demand (Aurizon Network, 2010 undertaking, schedule A, cl. 1.4).

Second, the QCA approved prices based on an accelerated depreciation of new investments in response to Aurizon Network's concerns that new investments might suffer from greater stranding risks than existing assets.

The WACC for UT3 was settled in that context – that is, it did not provide for Aurizon Network to bear a more general asset stranding risk that was reflected in its approved WACC or cashflows. The various parameters in the WACC formula were estimated and benchmarked based on relevant comparators. The asset/equity betas, in particular, were estimated/benchmarked with reference to the systematic risks of the business. An asset stranding risk is unlikely to be a systematic risk for Aurizon Network as it is unlikely to be related to movements in the Australian share market (for many of the same reasons why Aurizon Network's returns are unlikely to be related to movements in the Australian share market).

Stakeholders have persistently raised concerns that they believe that the regulated WACC for Aurizon Network is too high. They have done this in submissions to the QCA's assessments of previous undertakings, in its assessment of UT4 and again in the context of the 2013 AT₅ DAAU.

The QCA accepts that these approved WACCs may have been on the high side of a reasonable range, and that this has been done to encourage Aurizon Network to invest in capacity expansions. However, this has not been done to reflect a general asset stranding risk.

An asset stranding risk is a cash flow risk that is better reflected in the cash flows rather than in an uplift to the WACC as some have argued (e.g. accelerated depreciation as provided for in UT3). The QCA accepts that its workshop discussion paper suggested that there could be a WACC uplift to reflect an asset stranding risk. However, it did not do this to suggest that this was a reasonable course of action. Rather, it was seeking to illustrate that an asset stranding risk of one part of the network is a risk that may have to be borne by all users of the network – and that a socialisation of that risk is not incongruous in that context.

3.6 Conclusion

Aurizon Network said its proposed tariff mechanism would allow electric traction to be competitive with diesel traction. However, it was still concerned that if the volumes underlying the tariff mechanism fell short of its expectation, it would not be able to fully recover its allowable revenues. Therefore, Aurizon Network proposed levying an under-utilisation payment (UUP) at the end of an undertaking period to recoup any revenue shortfall.

The UUP would replace the annual revenue cap adjustment mechanism for the AT₅ tariff, and it differs from that mechanism in that it would apply to diesel as well as electric locomotives.

A number of stakeholders opposed the UUP because it socialised Blackwater electric infrastructure costs across Blackwater diesel users, and therefore penalised existing users of diesel traction.

The QCA does not have an in-principle issue with mechanisms that seek to provide Aurizon Network with revenue certainty on efficient investments. Indeed, the existing access agreements already contain take-or-pay arrangements, security requirements, and fees for relinquished or transferred capacity, each of which provides revenue certainty in some way or other. However, the QCA has approved these mechanisms in substantial part because they seek to provide a commercial imperative for honesty in contracting. They have the effect of shielding other users from the commercial costs if another user under-rails, defaults, or seeks to alter its contract and reduce its use of the network.

Similarly, UT3's revenue capping mechanism provides Aurizon Network with additional protections in the way of revenue certainty in the event that the contracting arrangements deliver less than the required revenue.

The proposed UUP mechanism is different, however. It provides Aurizon Network revenue certainty by providing for access holders to pay for infrastructure that they have no commercial contract to use. This arrangement could artificially increase the cost of diesel haulage services and distort traction choice in the above-rail market. That effect depends on the likelihood that a UUP payment will be required and the materiality of that payment, which in turn depends on how realistic Aurizon Network's volume assumption is.

The volumes underlying Aurizon Network's proposed tariff mechanism are 85% of the contracted tonnages on electrified paths. Aurizon Network said that was subject to the risks of

less than expected system volumes, and increased use of diesel traction, even though the tariff was reduced for electric users.

As shown in section 3.3, the Blackwater system volume forecasts prepared for the QCA, and accepted by most stakeholders, show the system volumes are likely to be significantly below Aurizon Network's forecast. It is, therefore, unlikely that 85% will be achieved, which means revenue under-recovery is expected to be material i.e. in the order of \$130 million or 15% of Blackwater electric revenues over eight years.

This revenue shortfall is expected to be greater still, as Aurizon Network's proposed volumes are based on 85% of paths available to be used by electric trains, not just the paths contracted for electric services. As there are already some diesel services contracted to use electric paths, Aurizon Network's volume assumptions can be expected to be too high under almost any plausible forecast.

Given the expected amount of the revenue shortfall, it is almost certain that Blackwater diesel users will pay for electric infrastructure they do not use, through the UUP. That would increase the cost of diesel haulage services and discourage diesel traction. That could yield a result similar to the 2011 DAAU, which sought to socialise ex ante Blackwater electric costs to diesel users. These issues are discussed in section 3.4.

Therefore, while the proposed recovery mechanism may be acceptable in principle, if it is applied as Aurizon Network has proposed, it is likely to distort traction choice and create perverse investment incentives. These effects are weighed under the assessment criteria in the QCA Act in the next chapter.

4 DRAFT DECISION

The 2013 AT₅ DAAU seeks to address Aurizon Network's concerns regarding the existing pricing arrangements for the Blackwater electric infrastructure. It proposes a mechanism to develop a fixed-price tariff based on 85% of contracted volumes on electrified paths, over the terms of UT4 and UT5; and a mechanism to recoup any revenue shortfall by levying a UUP on all Blackwater users, if volumes fall short.

Aurizon Network said its proposed restructured AT₅ tariff will promote economically efficient outcomes in below-rail infrastructure, will not distort competition in related markets, and will be in the interests of the miners. It argued its proposed UUP mechanism will ensure full cost recovery, and therefore promote its legitimate business interests.

While stakeholders generally supported many aspects of the proposed tariff mechanism, a number of them objected to the proposed UUP mechanism. In particular, that the UUP mechanism socialised Blackwater electric infrastructure costs across non-electric users, favoured Aurizon Network's related party operator, created regulatory uncertainty, and encouraged imprudent investment in electric infrastructure.

The QCA considers that the proposed pricing approach is not dissimilar to the existing pricing methodology. It lowers the AT₅ early in the life of an asset by deferring revenue that would send better economic signals for use of electric infrastructure, and will be levied only on Blackwater electric users.

However, critical to the QCA's assessment of the DAAU is the proposed UUP mechanism – how likely and how material the revenue shortfall will be. The QCA finds it is likely the UUP will be required and be material, which means it will have to be paid by, among others, Blackwater diesel users. For the reasons set out in more detail below, the QCA has formed the view the DAAU is not consistent with the objects clause in Part 5 of the QCA Act, with the interests of access seekers and holders or the public, and with the pricing principles in the QCA Act.

A mechanism that makes the UUP unlikely and immaterial could minimise or alleviate those concerns and may change the outcome of the QCA's assessment of the UUP. That mechanism might include amending the volume assumption (85%) to better reflect forecast actual railings, extending the deferral period beyond the end of UT5, or introducing take-or-pay arrangements for electric infrastructure. However, these alternatives have not been proposed in the DAAU, and the QCA does not propose to undertake a comprehensive analysis of them at this time.

4.1 Introduction

Aurizon Network argued the existing average-cost-based pricing and revenue capping arrangements created a short-term price signal that threatened the recovery of its electrification costs in Blackwater.

Accordingly, Aurizon Network's 2013 AT₅ DAAU proposed a mechanism to:

- (a) develop a fixed-price Blackwater AT₅ tariff to send better economic signals for use of the electric infrastructure (discussed in Chapter 2 of this draft decision), and

- (b) impose an under-utilisation payment on all Blackwater users to recover any revenue shortfall, if volumes underlying the fixed tariff did not materialise (discussed in Chapter 3).¹⁰

This chapter of the draft decision analyses both the DAAU mechanisms (limbs) against the assessment criteria in sections 138(2) and 138(3) of the QCA Act, which include the objects clause in section 69E of the QCA Act, and the pricing principles in section 168A of the QCA Act. These criteria are set out in section 1.4 of this draft decision.

4.2 Object of Part 5

s.138(2)(a) and s.69E: The object of this part is to promote the economically efficient operation of, use of and investment in, significant infrastructure by which services are provided, with the effect of promoting effective competition in upstream and downstream markets

December 2011 AT₅ DAAU

The QCA's July 2012 draft decision stated that the objects clause was a single test with two limbs linked in a cause and effect relationship i.e. the focus was on

- (a) promoting economic efficiencies in the below-rail infrastructure (the 'cause') and, as a result,
- (b) promoting effective competition in related markets (the 'effect') (QCA, July 2012: 23).

The draft decision dealt with economic efficiency and competition separately, for ease of presentation, but noted they were two separate parts of the same test linked in a cause and effect relationship.

In making this distinction, the QCA said that the focus of the objects clause was on promoting economic efficiency of the below-rail infrastructure. The QCA formed the view that economic efficiency of the whole of the rail haulage service was relevant in the context of the public interest criterion in section 138(2)(d) (QCA, July 2012: 26-27).

The QCA also highlighted that the second limb of the objects clause focused on competition – in particular, 'effective competition', which was characterised by rivalrous market behaviour in all dimensions of the price-product-service packages offered to end customers, and by low barriers to entry into the relevant market (QCA, July 2012: 31-32).

Aurizon Network and Aurizon Holdings said the QCA's interpretation of 'economic efficiency' was too narrow, and argued that economic efficiency should be interpreted from a supply chain perspective. They observed that the QCA's interpretation was inconsistent with the QCA's past approach which focused on the whole of coal supply chain efficiencies (Aurizon Holdings, September 2012: 33-35, November 2012: 14-15; Aurizon Network, September 2012: 25-29, November 2012: 21-22).

Asciano contradicted this view adding that the QCA's draft decision did not ignore supply chain costs, rather they were covered in the public interest test (Asciano, November 2012: 16).

The QCA's interpretation of the objects clause remains relevant to considering the April 2013 DAAU as Aurizon Network's and stakeholders' submissions raised similar issues to those addressed in the 2012 draft decision.

¹⁰ Aurizon Network also identified two other options for allocating the UUP which are considered in section 4.9 of this chapter (Aurizon Network, sub. no. 2: 9, 13).

April 2013 AT₅ DAAU

In commenting on the 2013 AT₅ DAAU, Aurizon Network focused on the likely efficiency and competition effects of the proposed restructured AT₅ tariff whereas stakeholders focused on the likely effects of the UUP mechanism.

Aurizon Network's Proposal

Aurizon Network stated that its proposed mechanism of calculating AT₅ represented the best available approximation of the efficient long-run marginal cost of the electric infrastructure (Aurizon Network, sub. no. 2, App B: 14).

Aurizon Network argued that, therefore, its proposed pricing mechanism was allocatively efficient, as scarce investment funds would be allocated to their highest-value end-uses under long-run marginal cost pricing. It said this outcome applied not only to investments in electric system infrastructure, but also to investments in locomotives and associated assets. Thus, the proposed tariff mechanism promoted efficient investment in significant infrastructure by which services were provided (Aurizon Network, sub. no. 2: App B: 9).

Aurizon Network stated that electric traction was the least-cost transport option. Therefore, by incentivising higher utilisation of the least-cost technology, the proposed tariff mechanism was productively efficient – a given coal transport task would be accomplished for least input cost. Thus, the proposed pricing promoted efficient operation and use of significant infrastructure by which services were provided (Aurizon Network, sub. no. 2: App B: 9).

Aurizon Network stated that its proposed tariff mechanism established a cost-reflective tariff; therefore was least distorting to competition in upstream and downstream markets (Aurizon Network, sub. no. 2: App B: 9, 14).

Aurizon Network said that under its proposals, electric train operators paid AT₅ and diesel train operators did not, and the tariff mechanism aligned the AT₅ with long-run marginal costs. Therefore, it argued its proposed pricing mechanism was competitively neutral and did not distort competition between diesel and electric train operators. It also stated that the proposals did not distort competition between locomotive suppliers since the AT₅ tariff was cost-reflective (Aurizon Network, sub. no. 2: App B: 7, 9).

Aurizon Network argued that the proposed tariff mechanism addressed the existing distortions to electric traction pricing, and would improve the prospects for effective competition between Blackwater miners, and between train operators in the Blackwater system (Aurizon Network, sub. no. 2: App B: 9-10).

Stakeholders' Comments

Stakeholders (Asciano, Rio Tinto, Springsure, Vale) said the DAAU did not promote economic efficiencies in the below-rail infrastructure because:

- (a) Aurizon Network's TCO analysis did not establish that electric traction was more efficient than diesel traction (Vale, sub. no. 15: 2).
- (b) The proposal to socialise the UUP across Blackwater diesel users and CQCN users
 - (i) reduced operating and allocative efficiencies (Asciano, sub. no. 6: 2; Springsure, sub. no. 12: 3)
 - (ii) encouraged imprudent investment in electric infrastructure (Rio Tinto, sub. no. 11: 7, 18; Springsure, sub. no. 12: 3).

- (c) It proposed temporary changes to the AT₅ tariff structure, and did not provide 'a clear and consistent mechanism which will assist access holders during future discussions on upgrading or developing electric infrastructure' (Vale, sub. no. 15: 2).

Rio Tinto argued the DAAU was fundamentally inconsistent with the object of promoting efficient investment. It said:

... providing for socialisation of costs associated with projects that have not been subject to proper approval processes and which have not been demonstrated to be prudent will not promote efficient investment in infrastructure (Rio Tinto, sub. no. 11: 18).

A number of stakeholders (Anglo, Asciano, Glencore, Rio Tinto, and UGL) said the proposed UUP mechanism would reduce competition in the above-rail haulage market and the locomotive supplies market.

Asciano, Glencore and UGL argued that the proposal to socialise the UUP across non-electric users would discourage the use of diesel traction (Asciano, sub. no. 5: 3, 6; Glencore, sub. no. 10: 2; UGL, sub. no. 14: 1-2).

Anglo, Glencore and Rio Tinto said the DAAU favoured Aurizon's related party train operator that had 'a pre-existing significant investment in electric consists', compared with Pacific National's 'considerable investments in diesel rolling stock'. They argued the DAAU undermined above-rail competition 'through the effective cross subsidisation by an operator with proportionately less electric assets than Aurizon operations' (Anglo, sub. no. 4: 1-4; Glencore, sub. no. 10: 2; Rio Tinto, sub. no. 11: 3, 12).

Anglo added the DAAU might make uneconomic Pacific National's investments in diesel locomotives, and deter new entry. It said:

Even if Pacific National can continue to compete, the fixed AT₅ price path and resulting socialisation will certainly deter any smaller above rail operators from entering the market (as diesel is typically going to be a safer mode of entry for new entrants as it can be used to service a wider range of customers) (Anglo, sub. no. 4: 4).

UGL argued the UUP mechanism distorted traction choice in favour of electric haulage, and that would reduce competition in locomotive supplies market. UGL noted global electric locomotive manufacturers faced high barriers to entering the electric locomotive supply market in Queensland (UGL, sub. no. 14: 3-4).

QCA's Analysis

The QCA's earlier (2012) draft decision was based on the premise that the objects clause focuses on economic efficiency of the below-rail infrastructure and its impact on effective competition in related markets, whereas whole of coal chain efficiencies are relevant under the public interest criterion. The QCA has not received any compelling argument from stakeholders to alter its view – whether that be in submissions to the 2012 draft decision or in support/response to the 2013 AT₅ DAAU.

Aurizon Network's April 2013 DAAU has two limbs

- (a) the AT₅ tariff mechanism, and
- (b) the recovery (UUP) mechanism.

The QCA considers that both the DAAU limbs should satisfy the objects clause.

The proposed fixed-price tariff structure lowers the AT₅ in the early years of the electric assets' lives by deferring revenue as this would send better economic signals for use of the electric infrastructure than the existing average price tariff mechanism (see section 2.5).

Aurizon Network has proposed levying the AT₅ tariff on train services that use the electric infrastructure (i.e. on egtks). This addresses a concern the QCA had with the December 2011 DAAU which proposed levying the AT₅ tariff on diesel traction users as well (see section 2.5).

The proposal to calculate the fixed AT₅ tariff is largely the same as the existing mechanism. It is therefore not reasonable to characterise it as a long-run marginal cost price as it is not based on incremental costs and incremental tonnes. That is, it remains an average price albeit over two regulatory periods and not a single period as is currently the case (see section 2.5).

Importantly, the 2013 DAAU proposal differs from the earlier proposal in that the December 2011 DAAU proposed changing the regulatory principles by introducing a single AT₅ tariff that combined the cost bases and forecast demands of the Blackwater and Goonyella electric networks.

Given this, the QCA is minded to accept that the proposed AT₅ tariff mechanism would send appropriate economic signals for use of the electric infrastructure. Additionally, Aurizon Network has proposed to impose the AT₅ tariff on electric users (not diesel users), which would not adversely affect competition in related markets.

That said, the overall effect of the DAAU also depends on the effect of its second limb, i.e. the UUP, on economic efficiency in the below-rail infrastructure and effective competition in related markets.

In the context of the economic efficiency limb, the DAAU would set a precedent by making recovery of any shortfall in recouping future electric investments reliant on an *ex post* levy on all Blackwater users, irrespective of whether they use that infrastructure. This effectively underwrites future investments and might create incentives for over-investment in electric infrastructure (see section 3.4).

Such a mechanism could be considered implicit in the undertaking's arrangements as there are provisions for recovering efficient costs and limited circumstances for optimising assets. However, these mechanisms are not spelt out or contemplated in the undertaking – probably because they are considered as an unlikely occurrence.

With this proposal from Aurizon Network, section 3.3 shows the UUP is likely and can be expected to be material. That this UUP mechanism is likely to be invoked, resulting in electric users not paying for the full costs of the services they use, may well over-encourage future investments in electric infrastructure which may not be efficient.

Therefore, the QCA considers the UUP limb of the April 2013 DAAU will not promote economic efficiency of the below-rail infrastructure in central Queensland. On this basis, the QCA has formed the view that the DAAU does not satisfy the 'cause' part of the objects clause of Part 5.

The QCA also has examined the effect of the UUP limb of the DAAU on effective competition in related markets.

Under Aurizon Network's proposal, part of the required UUP will be levied on Blackwater diesel users – i.e. the DAAU would make those diesel users pay for the under-recovery of the Blackwater electric network costs. While the UUP is an *ex post* payment, it is a payment that can be anticipated now with some certainty that it will have to be paid. The assessment in chapter 3 shows the amount of the UUP is likely and can be expected to be material. As a result, it would increase the access charge for diesel haulage services in Blackwater, and thereby discourage the use of diesel traction (see section 3.4).

Given Aurizon Holdings' (Aurizon Network's related party operator) reliance on electric trains and Pacific National's (the third party entrant) reliance on diesel trains in Blackwater, the DAAU

would discriminate against Pacific National, and create a perception that access rules could be changed to favour the related party operator and disadvantage rival third party operators.

Not only will that affect the terms on which Pacific National's diesel services compete with Aurizon Holdings' electric services, but it will also affect Pacific National's (or any third party operator's) ability to provide an effective and credible competitive constraint to Aurizon Holdings.

Therefore, the QCA has formed the view that the UUP, as proposed, would

- (a) reduce the degree of competition between Aurizon Holdings and Pacific National in the Blackwater haulage market, and
- (b) discourage new entry into the Blackwater haulage market, as a potential entrant may not want to risk capital in a market where rules could be changed to favour the related party operator.

In assessing competition in the locomotive supplies market, the QCA understands there are several potential suppliers of electric locomotives around the world. However, it remains less clear the extent of the competitive constraint they provide to Siemens – which is the only active narrow-gauge electric locomotive supplier in central Queensland.

That said, narrow-gauge diesel locomotives are a substitute for electric locomotives in the electrified segments of Blackwater. However, if Aurizon Network's TCO analysis is correct, diesel locomotives are already at a competitive disadvantage to electric locomotives. Any such disadvantage would be exacerbated by the DAAU as diesel locomotive operators can be expected to have to pay some portion of the UUP. The effect of this may be that diesel locomotives would no longer be an effective substitute for electric locomotives in Blackwater.

Therefore, the DAAU would reduce the competitive constraint faced by the narrow-gauge electric locomotive supplier from the narrow-gauge diesel locomotive suppliers, and lessen competitive conditions in the locomotive supplies market.

On this basis, the QCA has formed the view that the UUP will not promote effective competition in related markets.

The objects clause requires the DAAU to satisfy the 'economic efficiency' and the 'competition' limbs, and the UUP limb in the 2013 DAAU does not satisfy either of them. Therefore, the DAAU is not consistent with the objects clause.

Conclusion

For reasons set out above, the QCA considers the April 2013 DAAU is not consistent with the objects clause.

4.3 Legitimate Business Interests of Owner

s.138(2)(b) and (c): the legitimate business interests of the owner or operator of the service; if the owner and operator of the service are different entities – the legitimate business interests of the operator of the service are protected

In its December 2011 DAAU submission, Aurizon Network said access holders/seekers might choose diesel trains, which could make some of its existing electric infrastructure in Blackwater redundant. It argued that would create an uncertain environment for its future investment in the electric infrastructure. Aurizon Network said the 2011 DAAU proposals would address those

concerns, and were in its legitimate business interest as owner and operator of the electric network services (QCA, July 2012: 36-37).

In its July 2012 draft decision, the QCA accepted that the DAAU was likely to address Aurizon Network's concerns regarding asset stranding and certainty for future investments (QCA, July 2012: 39-40).

That said, the QCA observed it seemed incongruous that an asset stranding issue was being raised so soon into the life of major new investments. The QCA said it wanted to discourage investment in assets for which there was no demand and that were subject to continuing stranding concerns (QCA, July 2012: 39-40).

Although the QCA formed the view that the DAAU would be in the interests of Aurizon Network as owner and operator of the service, it considered the mechanism proposed in the DAAU was not an appropriate way to address Aurizon Network's asset stranding concerns (QCA, July 2012: 39-40).

In its submission on the draft decision, Aurizon Network more clearly articulated its concerns about the stranding risk for the Blackwater electric infrastructure, and said:

It is not QRNN's expectation that acceptance of the prudence of scope translates to an obligation to utilise the infrastructure enhancements which are the subject of that endorsement. It is however, our expectation that investment in reliance on that endorsement will be subject to an appropriate and efficient means of cost recovery over the investment horizon relevant to that decision (Aurizon Network, September 2012: 1-2).

Other submissions, including by North Queensland Bulk Ports, argued assets should not be stranded (NQBP, September 2012: 1).

The April 2013 DAAU Proposal

Aurizon Network's Proposal

Aurizon Network argued that the existing pricing and revenue capping arrangements created short-term price signal that encouraged use of diesel locomotives, and threatened the full recovery of its electrification costs – Aurizon Network's arguments are detailed in Chapters 2 and 3 of this draft decision, and are not repeated here (see sections 2.3 and 3.2).

Aurizon Network said the DAAU established economic principles for an efficient AT₅ tariff, but it was concerned that it was exposed to volume risk, and might fail to fully recover its costs (see section 3.3).

Accordingly, Aurizon Network proposed supplementing the AT₅ tariff mechanism with a recovery (UUP) mechanism to ensure it fully recovered its Blackwater electric system costs. Aurizon Network said the UUP mechanism was necessary as the regulatory WACC did not compensate it for asset stranding risk (see sections 3.4 and 3.5).

Aurizon Network said its proposed recovery mechanism ensured cost recovery in the types of circumstances that the existing arrangements were designed to address, but failed to do so. It said the DAAU would remove the need for the QCA to revisit the issue of cost recovery, if volumes fell below expectations (see section 3.4).

Aurizon Network stated that the proposed pricing and recovery mechanism would be consistent with its interests as the access provider as long as the QCA made a binding ruling that ensured recovery of its losses capitalised during UT4, within the UT5 period. In that case it said its proposals would prevent the stranding of its Blackwater electric assets (Aurizon Network, sub. no. 2, App B: 10, 15).

Stakeholders' Comments

Stakeholders had differing views on whether existing arrangements affected full cost recovery by Aurizon Network.

Miners (BMA, Rio Tinto, Vale, and Wesfarmers) said Aurizon Network did not present evidence that there was an actual risk of bypass of the Blackwater electric assets or that the existing mechanism did not generate the expected revenue for the service – their arguments are detailed in Chapter 2 of this draft decision and are not repeated here (see section 2.3).

On the other hand, Aurizon Holdings reiterated Aurizon Network's concern that the existing average cost pricing methodology would render both above- and below-rail electric assets uneconomic (see section 2.3).

A number of stakeholders said the UUP mechanism was not needed, in part because there were already other regulatory or contractual mechanisms (e.g. take-or-pay) available to address Aurizon Network's concerns. They also said Aurizon Network was already compensated for asset stranding risk through the WACC (see sections 3.4 and 3.5).

Many stakeholders argued Aurizon Network should bear the risk of the under-recovery because it mismanaged the Blackwater electric investment process, and invested in electric infrastructure, despite its knowledge of the declining electric traction use in Blackwater (see section 3.4).

QCA's Analysis

The QCA notes that sections 138(2)(b) and (c) focus on the 'legitimate business interests' of the owner/operator.

The meaning of this phrase was considered by the Australian Competition Tribunal ('the Tribunal') in *Re Telstra Corp Ltd* [2006] ACompT 4 and re-affirmed in *Re Telstra Corporation Ltd (No 3)* [2007] ACompT 3. The Tribunal stated that, in the context of the telecommunications access regime, 'legitimate business interests' meant the service provider should be allowed to recover its efficient costs of service supply and earn a 'normal' return on investment.

The QCA's view is that a business interest which is 'legitimate' would also include:

- (a) allowing the owner/operator to recover its efficient costs of providing access to the service
- (b) providing the owner/operator with an appropriate rate of return on its capital
- (c) not exposing the owner/operator to risks which are disproportionate to that return or which it cannot effectively manage.

The QCA accepts that the mechanism proposed in the DAAU would ensure Aurizon Network recovered its efficient investment costs. That would create investment certainty for Aurizon Network and would encourage it to invest in the rail network.

Additionally, the regulatory WACC was determined, at the time UT3 was approved, to be an appropriate rate of return for Aurizon Network. As discussed in section 3.5, the QCA considers that the regulatory WACC does not compensate Aurizon Network for asset stranding risk. Rather, the proposed UUP mechanism would protect Aurizon Network from that risk.

Therefore, key aspects of the DAAU appear to be in the legitimate business interests of Aurizon Network.

However, considering the UUP is likely and expected to be material, Aurizon Network's legitimate business interests need to be weighed against other criteria in section 138(2) of the QCA Act (see section 4.9 of this draft decision).

That does not mean the QCA has an in-principle issue with the notion of a UUP mechanism to protect Aurizon Network's legitimate business interests. Rather, the QCA considers the AT₅ tariff should be constructed to maximise the recovery of the efficient electric infrastructure costs, so the UUP is unlikely and immaterial. This matter is considered further in section 4.9.

Conclusion

The QCA has formed a view that the DAAU will be in the legitimate business interests of Aurizon Network, as owner and operator of the service, based on the information available from Aurizon Network and stakeholders.

4.4 Public Interest

s.138(2)(d): the public interest, including the public interest in having competition in markets (whether or not in Australia)

The QCA's July 2012 draft decision stated that public interest might include a wide variety of matters, and the relevant matters could vary from one DAAU to another. In its assessment of the December 2011 AT₅ DAAU, the QCA formed the view that the development of the coal industry in Queensland, and the environmental impact of traction choice were relevant public interest matters (QCA, July 2012: 56).

Aurizon Holdings said the public interest meant the 'welfare, particularly the economic welfare, of the general community'. It argued that the draft decision did not account for the 'difference between the private interests of the Queensland coal industry and the public interest' (Aurizon Holdings, September 2012: 50-51).

The April 2013 DAAU Proposal

Aurizon Network's Proposal

Aurizon Network argued the DAAU proposals would reduce the cost of coal transport in the short and long term, and promote the development of the Queensland coal industry (Aurizon Network, sub. no. 2, App B: 12).

It stated that the DAAU would improve competition in some markets (e.g. the Blackwater rail haulage market) and have no impact in others. It said that it had not identified any market in which the DAAU would lessen competition (Aurizon Network, sub. no. 2, App B: 10, 12).

Aurizon Network said that the DAAU would lead to more widespread use of electric traction in the Blackwater system, and the environmental impacts of that change were mixed (Aurizon Network, sub. no. 2, App B: 11-12).

It argued conventional air pollution along the routes of coal trains travelling between Blackwater mines and the port would be reduced by the shift to electricity. However, it said that electric trains might create more carbon dioxide emissions per gtk than diesel trains. That was because electric trains in central Queensland relied on coal-fired electricity generation, which had a relatively high carbon intensity (Aurizon Network, sub. no. 2, App B: 11-12).

Stakeholders' Comments

Rio Tinto said the DAAU did not promote certainty and predictability in the regulatory regime and efficient investment in infrastructure; therefore, it was not in public interest (Rio Tinto, sub. no. 11: 18).

A number of stakeholders (Anglo, Asciano, Glencore, Rio Tinto, and UGL) said the proposed UUP mechanism would reduce competition in the above-rail haulage market and the locomotive supplies market – their arguments on this point are detailed in the discussion on the objects clause and are not repeated here (see section 4.2).

QCA's Analysis

The QCA's earlier (2012) draft decision considered the development of the coal industry in Queensland, which is a major contributor to the state's economy, and the environmental impact of traction choice were relevant public interest matters. The QCA has not received any compelling argument from stakeholders to alter its view.

As set out in this draft decision, the QCA considers the DAAU, in particular the UUP as proposed, will

- (a) not promote effective competition in the above-rail market (see section 4.2)
- (b) over-encourage investments in electric infrastructure (see section 4.2)
- (c) introduce regulatory uncertainty (see section 4.5)

As a result, the QCA has formed the view that the DAAU could increase the cost of coal transport infrastructure and hamper coal mining activity in Queensland. This may have the adverse impact on Queensland by reducing employment and the payment of royalties to the government – which may, in turn, limit the government's ability to provide services to the Queensland community.

On the other hand, the QCA considers that the purported benefits of electric traction over diesel traction i.e. a lower cost of transport, is not convincing (see section 2.2).

The QCA accepts that the UUP mechanism creates investment certainty for Aurizon Network which would encourage it to expand its (electric and non-electric) network to meet growing demand from the coal industry – which would have benefits for the wider community. However, such benefits are unlikely to be realised given the detrimental impacts mentioned above (i.e. not promoting competition in the above-rail market and regulatory uncertainty for access seekers).

Therefore, the QCA has formed the view that the DAAU does not promote the development of the coal industry in Queensland and as a result employment opportunities or the ability for the government to fund (out of royalty payments) services for the Queensland community.

The QCA considers that an alternative mechanism, that made the UUP unlikely and immaterial, may counter balance or address the concerns about competition, investment and uncertainty for access seekers. To the extent that mechanism ensured Aurizon Network recovered its efficient investment costs, and prevented any adverse impacts on future investment in the coal network, it would further the development of the coal industry, and the Queensland economy. This issue is considered further at the end of this chapter.

The QCA considers there are differing views on the environmental impact of electric and diesel tractions. It has not received any compelling argument that shows electric traction is better

than diesel traction. Therefore, the QCA considers that environmental impact of traction choice is not a factor to reject or approve this DAAU.

Conclusion

The QCA has formed the view that the DAAU is not in the public interest, including the public interest in having competition in markets, based on the information available from Aurizon Network and stakeholders.

4.5 Interests of Access Seekers

s.138(2)(e): the interests of persons who may seek access to the service, including whether adequate provision has been made for compensation if the rights of users of the service are adversely affected

Access seekers are in general future access holders.¹¹ Like the access provider, access seekers have an interest in regulatory certainty – e.g. confidence that the terms on which they base their decision to contract for access will not be changed in a way that undermines the assumptions behind that decision.

In its July 2012 draft decision, the QCA said that there was an important distinction between two types of uncertainty about a tariff, relating to changes in:

- (a) the assumptions about time-variant inputs such as demand and costs, that are used with a known formula to derive the tariff; and
- (b) the formula itself, and the principles that are used to apply the formula.

The QCA said access seekers could make their own assessment of future costs and prices, and develop an informed view about the terms of access. However the QCA said that, in contrast:

... changes in regulatory principles or in the application of known regulatory principles are more difficult to predict and therefore manage, or mitigate. They are, therefore, likely to have a more material adverse impact on stakeholders than risks that can be assessed in advance and subsequently managed (QCA, July 2012: 48).

A number of stakeholders were critical of this approach, in particular:

- (a) Aurizon Network said this approach to certainty did not address a problem that had been identified with the principles, and it was not acceptable to defer a solution to a flawed pricing structure (Aurizon Network, September 2012: 14).
- (b) Aurizon Holdings said the draft decision applied a 'flawed definition' of regulatory certainty, that ignored the commercial disadvantage to electric users of the existing tariff arrangements (Aurizon Holdings, September 2012: 44).

The QCA's approach to considering regulatory certainty was particularly relevant in the 2011 DAAU as access seekers in the Goonyella system were, for the first time, being asked to pay for infrastructure they did not use – i.e. the Blackwater electric infrastructure. However, this

¹¹ The QCA's July 2012 draft decision discussed the interests of access holders and their customers as part of its analysis of the interests of access seekers. This was done on the basis that 'existing access holders, and their customers, are likely to represent the majority of those persons that will seek to gain access in the future' (QCA, July 2012: 46). The QCA acknowledges that s.138(2)(e) may only directly relate to the interests of existing users of a service to the extent relevant to seeking access in the future, rather than access holders' interests in their existing rights. Therefore, the interests of access holders and their customers are considered under s.138(2)(h), in section 4.7 of this draft decision.

distinction remains relevant for the 2013 DAAU as it is likely that the proposed UUP will also require diesel users of the Blackwater system to pay for infrastructure they do not use – i.e. the Blackwater electric infrastructure.

The April 2013 DAAU Proposal

Aurizon Network's Proposal

Aurizon Network argued that the proposed pricing mechanism would ensure that access seekers on the Blackwater system had certainty of cost-reflective access to the least-cost transport option for the next two undertakings (Aurizon Network, sub. no. 2, App B: 10).

It argued that a future, where the approved UT3 average-cost pricing rules continued, would be less advantageous to Blackwater access seekers because:

- (a) the option to move to electric traction would become increasingly unattractive over time and eventually, perhaps, unavailable;
- (b) a least-cost system configuration in which electric traction infrastructure was widely available and highly utilised would become unattainable; and
- (c) transport costs would be higher than necessary and increasingly vulnerable to shocks in the world oil price (Aurizon Network, sub. no. 2, App B: 10).

Aurizon Network said that its DAAU proposals maintained a significant price differential between electric trains (which paid AT₅) and diesel trains (which did not), compared with its December 2011 DAAU proposals, which sought to apply the full AT₅ charge to diesel trains operating from mines on electrified lines. It said that the impact of the UUP on access seekers, if required, was significantly less than its December 2011 DAAU proposals (Aurizon Network, sub. no. 2, App B: 10-11).

Stakeholders' Comments

Vale and Asciano said the pricing mechanism in the DAAU created uncertainty about future pricing. Vale said the approach could not be used for future expansions of the electric infrastructure (Vale, sub. no. 15: 3). Asciano said the UUP would result in substantial price fluctuations at the end of every regulatory period (Asciano, sub. no. 7: 4).

Anglo said Aurizon Network should not be able to make material changes to the structure of its reference tariffs during a single regulatory period, as this would result in a shorter industry focus and inefficient investments that reflected the industry's fear it could face changes at any time. Anglo said that:

... given the long term nature of the industry and the quantum of investments made by users and operators, good regulatory practice would demand that the tariff framework would remain substantially similar for consecutive regulatory periods unless there was a clearly identified reason to implement changes. Those changes should then be applied over an extended period of time so that users and operators do not lose substantial value on their investments (Anglo, sub. no. 4: 4-5)

Glencore said investment decisions were made in the expectation that stand alone cost reflective pricing principles would continue to be applied by the regulator (Glencore, sub. no. 10: 2).

Aurizon Holdings said the transition between regulatory periods, particularly between UT3 and UT4, created uncertainty for Blackwater users, so the DAAU should clarify the treatment of adjustment charges once the final UT4 tariffs had been approved (Aurizon Holdings, sub. no. 7: 5, 18-19).

QCA's Analysis

The QCA considers that access seekers have an interest in knowing that, once they have signed access agreements, they will be protected from discriminatory behaviour, and from the misuse of monopoly power. In general, once an access agreement is signed access will be provided in accordance with the terms of that agreement.

However, the standard access agreements for central Queensland refer to reference tariffs approved by the QCA in an undertaking, and Aurizon Network has an option to seek to amend an approved undertaking at any time.

Therefore, access seekers interests will be protected if they have confidence that the principles, including the formulas used to calculate tariffs, will only be changed if there is strong justification to do so.

The tariff mechanism that Aurizon Network has proposed in the 2013 DAAU:

- (a) resolves the problems of the average price AT₅ tariff being too high early in the life of an asset, by deferring revenue to a time where there can be more confidence that high levels of utilisation are achievable.
- (b) provides medium-term price certainty to potential users of the electric network by fixing the tariff over eight years.

At the same time, the proposed mechanism retains most of the familiar elements of the existing tariff mechanism, including the building blocks approach, and tariff smoothing, albeit spread over eight years rather than four (see sections 2.5 and 2.6 of this draft decision).

This means that the proposed principles for developing a Blackwater AT₅ tariff are not a significant departure from past pricing practices and, accordingly, are unlikely to adversely impact on the interests of access seekers.

However, the overall effect on access seekers hinges on the UUP, and the signals it sends about the level of certainty that they can expect should they become access holders.

As shown in section 3.3, the UUP is likely and expected to be material, if the tariff is applied as Aurizon Network intends. In that case, access seekers will see two adverse signals that were also concerns with the 2011 AT₅ DAAU, in that:

- (a) a tariff has been changed in a way that makes users of diesel trains pay for infrastructure they do not use, while the cost for electric users is reduced. This would represent a material change in the tariff principles under which a past access seeker decided to contract for train paths.
- (b) The tariff changes may be perceived as a deliberate attempt by Aurizon Network to protect its related party train operator in Blackwater from competition from a rival train operator that only operates diesel trains on the system (this issue is discussed in greater detail elsewhere in this draft decision, including sections 3.4 and 4.2).

In either case, the DAAU would not be in the interests of persons who may seek access.

The situation may be different if the UUP was unlikely and immaterial. Access seekers could then expect that they would face the modified AT₅ proposed in the 2013 DAAU, which is close enough to the existing regime to signal to access seekers that they can expect certainty, and is therefore in their interest. This issue is addressed at the end of this chapter.

Conclusion

For reasons set out above, the QCA has formed a view that the April 2013 DAAU will not be in the overall interests of persons who may seek access to the service, based on the information available from Aurizon Network and stakeholders.

4.6 Asset Exclusion

s.138(2)(f): the effect of excluding existing assets for pricing purposes

The QCA's July 2012 draft decision noted that the issues relevant under this criterion – asset stranding and optimisation – were considered in the context of the legitimate business interests of the owner i.e. sections 138(2)(b) and (c); therefore, the QCA formed the view that the consideration of this criterion was subsumed in s.138(2)(b) and (c).

Stakeholders, in their submissions on the draft decision, did not submit a different view.

The QCA notes that the Explanatory Notes to the bill which introduced section 138(2)(f) into the QCA Act suggest that the purpose of this section was to direct the QCA's attention to the impact excluding assets from the asset base would have on the access provider's incentives to make significant investments. That is whether there may be adverse impacts on future investment if there is insufficient regulatory certainty that return on such investments will be recouped.

The QCA notes that matters relevant under this criterion – cost recovery, asset stranding and certainty for future investment – are covered in the legitimate business interests of the owner; therefore, the QCA's consideration of this criterion is subsumed into that earlier discussion (see section 4.3).

A reduced incentive for the access provider to invest in the network might also limit the future growth prospects of the Queensland coal industry, and the Queensland economy and community more generally – these matters are discussed as part of the QCA's consideration of the public interest (see section 4.4).

4.7 Pricing Principles

s.138(2)(g) and s.168A: The pricing principles in relation to the price of access to a service are that the price should –

- (a) generate expected revenue for the service that 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 involved (*'Revenue adequacy'*); *and*
- (a) allow for multi-part pricing and price discrimination when it aids efficiency (*'Price discrimination'*); *and*
- (b) not allow a related access provider to set terms and conditions that discriminate in favour of the downstream operations of the access provider or a related body corporate of the access provider, except to the extent the cost of providing access to other operators is higher (*'Related party'*); *and*
- (c) provide incentives to reduce costs or otherwise improve productivity (*'Improve productivity'*).

The QCA's July 2012 Draft Decision stressed that multi-part pricing and price discrimination to favour electric trains would only be appropriate if it could be shown that this aided efficiency.

And the QCA found that Aurizon Network had not shown that the measures proposed in the 2011 AT₅ DAAU would promote efficiency.

The QCA also found that Aurizon Network had not demonstrated any difference in the cost of providing below-rail services to the two above-rail operators in Blackwater, that would justify pricing that raised costs for diesel trains, and lowered them for electric trains, thereby discriminating in favour of Aurizon Holdings' above-rail services.

Further, the QCA was concerned that the 2011 DAAU could hamper productivity, and make use of below-rail infrastructure less efficient, by eliminating traction choice as one of the ways competitors in above-rail markets could seek to differentiate themselves from their rivals.

On this basis, the QCA considered the 2011 DAAU was not consistent with the pricing principles in the QCA Act.

Aurizon Network said the DAAU sought to achieve efficiency by providing a signal to encourage the use of electric traction. It said the pricing proposal did not compel operators to use electric traction; rather, it promoted efficiency by ensuring they took into account the impact of their traction choice on the costs of the supply chain (Aurizon Network, September 2012: 43).

Aurizon Holdings said the existing pricing approach inefficiently over-signalled the use of one type of traction. This meant the existing tariffs could not be said to meet the requirements of s.168A(a) of the QCA Act, and the onus was on the QCA to propose an alternative approach. It also said the QCA was wrong to equate the competition between diesel and electric traction to competition between Aurizon Holdings and Pacific National, and wrong to assume the two above-rail operators were irrevocably committed to those traction choices (Aurizon Holdings, September 2012: 46-50).

The April 2013 DAAU Proposal

Aurizon Network's Proposal

Aurizon Network said the DAAU provided it with adequate revenue over the lifecycle of the electric system assets, subject to the QCA providing a binding ruling that ensured recovery in UT5 of its UT4 capitalised losses (Aurizon Network, sub. no. 2, App B: 11).

It said that the DAAU price differentiated between diesel and electric traction, in that electric trains paid AT₅ and diesel trains did not. It argued that the differentiation was cost-reflective and therefore efficient (Aurizon Network, sub. no. 2, App B: 11).

Aurizon Network said the proposal did not discriminate between above-rail operators based on their identity – only on the basis of the costs they imposed on the infrastructure provider. It acknowledged some differential pricing impacts on above-rail operators based on their mix of traction types, but said those differentials were cost-reflective (Aurizon Network, sub. no. 2, App B: 11-12).

It argued that the proposed AT₅ pricing was cost-reflective, which would promote productivity by improving allocative efficiency within the coal supply chain (Aurizon Network, sub. no. 2, App B: 12).

Stakeholders' Comments

Stakeholders' comments largely focussed on the potentially discriminatory nature of the UUP mechanism and the likely adverse impact this would have on competition in the above-rail market.

Stakeholders (Anglo, Asciano, Glencore, Rio Tinto) said there were various anti-competitive pricing measures in the DAAU. In particular, they argued that the effect of the proposal would be for diesel services operated by Pacific National to cross-subsidise electric services operated by Aurizon Network's related party, Aurizon Holdings.

Rio Tinto said the proposed UUP introduced anti-competitive cost-shifting, in that it shifted the cost and risk of underutilisation of electric assets, including rolling stock, from Aurizon's above-rail business to other users. Given Aurizon Network's related above-rail operation had already invested in electric rolling stock, while Pacific National had entered the market with diesel, the proposed price regime 'intentionally places Aurizon's above-rail business in a stronger competitive position to win future contracts' (Rio Tinto, sub. no. 11: 12-13, 19).

Anglo said Pacific National might still be able to compete, but the changes would affect its profit margins and the economic viability of its operations. Without Pacific National, Aurizon would be an effective natural monopolist in the above-rail haulage market. Anglo said:

The clear anti-competitive effect of the Proposed DAAU also raises serious questions about whether Aurizon Network's proposal is primarily to benefit its related operator (rather than on efficiency grounds), and whether the regulatory framework needs to be strengthened to prevent such behaviour (Anglo, sub. no. 4: 4).

Asciano said the UUP effectively required diesel users to fund electric infrastructure they did not use (Asciano, sub. no. 5: 6). Glencore said the 'practical effect of the DAAU' would be to undermine above-rail competition (Glencore, sub. no. 10: 2).

QCA's Analysis

While they are relevant considerations under the pricing principles criteria, issues associated with revenue adequacy, and the associated potential for the stranding of assets, are addressed under the legitimate interests of owner discussion (see section 4.3 of this draft decision).

Aurizon Network has proposed to solve the problem of an average AT₅ price sending the wrong signals for utilising spare capacity, by proposing an alternative tariff mechanism that defers revenue to a future period when demand for electric infrastructure capacity is expected to have increased. This AT₅ tariff mechanism does not discriminate between users or operators, as it will be levied only on Blackwater electric train users.

The tariff would appear to allow Aurizon Network to recover its costs.

However, it is not obvious that it would be expected to improve productivity, although this is possible to the extent that it is a more effective mechanism in sending cost-reflective price signals for use of electric infrastructure.

Therefore, the QCA considers that the AT₅ tariff mechanism, on its own, is largely consistent with the pricing principles in the QCA Act.

However, as stakeholders have pointed out, adding the UUP recovery mechanism changes this. When the UUP is likely, and expected to be material, and costs of the electric infrastructure will be borne by diesel users, the overall pricing can be expected to:

- (a) discriminate against diesel operators or their customers, without aiding efficiency (see section 4.2 of this draft decision).
- (b) discriminate in favour of Aurizon Network's related party, Aurizon Holdings, which predominantly operates electric locomotives, while the third party Pacific National competes only with diesel locomotives in Blackwater (see section 4.2).

- (c) erode above-rail competition, by creating a perception that rules could be changed to favour the related party operator, and therefore reduce productivity (see section 4.2).

The 2013 AT₅ DAAU, as submitted, is therefore not consistent with the pricing principles in the QCA Act.

However, if it could be shown, when the tariff was assessed, that the UUP was unlikely, and expected to be immaterial, these adverse impacts may not arise or may be less significant in the overall context, and the QCA's analysis may result in an assessment that the tariff structure is consistent with the pricing principles in the QCA Act. This is addressed further in section 4.9.

Conclusion

For reasons set out above, the QCA has formed a view that the April 2013 DAAU is not consistent with the pricing principles in s.168A of the QCA Act, based on the information available from Aurizon Network and stakeholders.

4.8 Other Relevant Issues (Interests of Access Holders and their Customers)

s.138(2)(h): any other issues the Authority considers relevant

The QCA considers that the interests of access holders and their customers is a relevant issue for assessing Aurizon Network's 2013 AT₅ DAAU, that is not already weighed under s.138(2)(a) to (g).

The assessment criteria in the QCA Act specify the QCA should have regard to the 'interests of persons who may seek access to the service' (s.138(2)(e); for a discussion of this criterion see section 4.5 of this draft decision). However, the QCA Act gives only limited direction for the QCA to consider the interests of access holders – i.e. those stakeholders who have progressed from seeking access to signing agreements and using the rail network.

The QCA considers it should take into account the interests of the existing users of the network, when assessing a proposed change to Aurizon Network's access undertaking. This is particularly true for access prices, which are not fixed by the terms in the standard access agreement, but instead are set through subsequent regulatory processes.

The April 2013 DAAU Proposal

Aurizon Network's Proposal

Aurizon Network said the DAAU would remove the unintended consequence of the existing average cost pricing rule that distorted traction choice in favour of diesel, and benefited Blackwater diesel train operators. It was necessary to remove that benefit to make pricing more efficient, and prevent stranding of the electric system investments. It argued that the UUP would only be charged at the end of an undertaking period, and that allowed operators to mitigate the impact in the long term by passing the UUP through to end customers (Aurizon Network, sub. no. 2, App B: 1, 11, 15).

It argued that the pricing proposal did not discriminate between operators based on their identity – only on the basis of the costs they imposed on the infrastructure provider (Aurizon Network, sub. no. 2, App B: 11).

Aurizon Network argued that the proposal to charge diesel train users for some part of the electric system costs was appropriate because mines on electrified lines derived a benefit from the availability of electric traction infrastructure. That benefit was an option to switch at short notice and at low cost from diesel to electric, when relative fuel prices changed. It recognised

that switching was difficult within the term of a haulage contract, and said that switching would occur at the point of renewal of haulage contracts and should be viewed with a long-term perspective (Aurizon Network, sub. no. 2, App B: 13).

Stakeholders' Comments

Asset Stranding

Stakeholders (Glencore, Rio Tinto and Springsure) said the DAAU would penalise diesel users for past investment decisions that were based on the regulatory framework that existed when they were entering into haulage agreements.

Springsure and Rio Tinto said the DAAU increased the asset stranding risk for access holders and customers with financial exposure to diesel locomotives. Springsure said the proposed changes, including any of the UUP options, would 'force upon it a greatly altered asset stranding risk to that upon which it based its investment decisions' (Springsure, sub. no. 12: 2). Rio Tinto said the QCA must take into account the legitimate commercial interest of producers in relation to their substantial sunk investment in diesel locomotives (Rio Tinto, sub. no. 11: 18).

Glencore and Rio Tinto said they had chosen diesel traction because there was insufficient electric capacity available when they had to enter haulage agreements. Glencore said the lack of capacity was due to poor project management by Aurizon Network (Glencore, sub. no. 10: 2). Rio Tinto said the DAAU would require customers that had chosen diesel traction to compensate Aurizon Network for its own inefficient investment (Rio Tinto, sub. no. 11: 4, 6).

Socialisation of costs

Stakeholders (Asciano, BMA, Glencore and Springsure) said there should not be 'socialisation' of costs by users that did not use the related infrastructure.

BMA said the QCA needed to take into consideration the interests of users. Under all three UUP options put forward by AN, there potentially would be some users charged for infrastructure from which they derived no benefit (BMA, sub. no. 9: 5). BMA said it was:

... inappropriate to attribute the shortfall in revenue from Blackwater electric assets to users that do not use the Blackwater electric infrastructure, and there are circumstances where it is not appropriate to attribute the shortfall to Blackwater electric users (BMA, sub. no. 9, Att. 1: 4-5).

Asciano said Aurizon Network's charges to diesel users would not reflect actual costs they incurred, 'which would result in cross-subsidies from these users to users of electric traction' (Asciano, sub. no. 5: 3).

Rio Tinto said the cross-subsidisation had the effect of favouring Aurizon's above-rail operations (Rio Tinto, sub. no. 11: 12). Glencore said socialising an electric revenue shortfall across all Blackwater users appeared to ignore cost-reflective pricing principles (Glencore, sub. no. 10: 2). Springsure said socialising costs through the UUP reduced both the operating and allocative efficiencies when costs specific to some users were socialised across all (Springsure, sub. no. 12: 3).

QCA's Analysis

An access holder or its end customer is no longer subject to the economic signals that might have discouraged an access seeker from signing a contract as it is already committed to the terms of access for the life of the agreement it has signed. However that in no way diminishes its interest in seeing that the certainty it expected when negotiating access will be delivered in practice.

This broad desire for certainty is discussed under the interest of access seekers criterion (see section 4.5 of this draft decision). However, stakeholders have also raised specific issues on how the DAAU will affect access holders' interests.

They have highlighted the asset stranding risk that will be faced by above-rail operators and end customers that have invested in diesel locomotives, or underwritten those investments.

The QCA considers the effect of the DAAU depends on the the likelihood and materiality of a UUP payment. If the UUP is likely and expected to be material, then the overall package proposed by Aurizon Network tends to discriminate against users of diesel traction, unreasonably making them less able to compete against electric users.

The QCA is concerned that a mechanism designed to reduce the risk that Aurizon Network's electric infrastructure assets are stranded, may unreasonably end up causing diesel investments made in good faith by above-rail operators to be stranded as well.

The QCA also shares stakeholders' concerns that diesel users may end up paying for infrastructure they do not use.

The QCA notes Aurizon Network's arguments that there is some option value for diesel users on electrified lines, in the ability to use electric traction if it becomes attractive in the future. Equally, electric users/operators benefit from the option to switch to diesel, either to compete for customers (for train operators) or to seek efficiencies and cost savings (for end customers). However these are second-order benefits which are hard to quantify, and not sufficient to justify a one type of user paying for infrastructure it does not use.

Therefore, in addition to the concerns raised in section 4.5 that the DAAU will erode the certainty sought by access seekers and holders, the proposal also affects access holders by threatening to make their assets uneconomic, and make them pay for infrastructure they do not use.

This is made more likely by Aurizon Network's intended treatment of the volumes used to calculate the AT₅ tariff. Aurizon Network has proposed that the volumes be calculated based on 85% of paths available to be used by electric trains, not just the paths contracted for electric services.

Given that there are already some diesel services contracted to use electric paths, this volume treatment would tend to make the UUP more likely, by inflating the volumes used in the tariff calculation, as it is already clear the 85% threshold will be harder to reach.

This would have the effect of penalising existing diesel users on electrified paths, as they would be likely to have to pay the UUP, which recoups the costs of infrastructure they did not use. It is therefore against the interests of those access holders.

However, any approach which reduced the volumes used in calculating the tariff to a level that was likely to be achieved or exceeded would make the UUP unlikely and immaterial. This would greatly reduce the chance that diesel users' assets would be stranded, and would therefore be less likely to adversely impact on the interests of access holders and their customers. This is dealt with further in section 4.9.

Conclusion

For reasons set out above, the QCA considers the April 2013 DAAU is not consistent with the interests of access holders.

4.9 Conclusion

Aurizon Network has, in its April 2013 Blackwater Electric Traction Pricing DAAU, proposed two measures, namely:

- (a) fixing the Blackwater AT₅ tariff for eight years, at a price calculated using 85% of contracted volumes on all electrified paths on the Blackwater system, and
- (b) imposing an under-utilisation payment on all Blackwater users to recover any revenue shortfall, if volumes underlying the fixed tariff did not materialise.

This package of measures would have the effect of promoting the use of electric traction, by making it more attractive relative to diesel traction.

The QCA is required to have regard to all of the assessment criteria in s.138(2) of the QCA Act in reaching a decision on the DAAU.

As required by s.143(2) of the QCA Act, the QCA has considered and weighed the matters mentioned in s.138(2) of the QCA Act.

For the reasons set out above, the QCA considers Aurizon Network's proposals in the DAAU are not consistent with the objective of Part 5 of the QCA Act (s.138(2)(a)), the public interest (s.138(2)(d)), the interests of access seekers (s.138(2)(e)), the pricing principles in the QCA Act (s.138(2)(g)) or the interests of access holders and their customers (s.138(2)(h)). The QCA's conclusions on these matters outweigh its finding that approving the DAAU would be in the legitimate business interests of Aurizon Network (s.138(2)(b)), and in terms of the effect of excluding assets for pricing purposes (s.138(2)(f)).¹²

For the reasons set out in chapters 2, 3 and 4, the QCA's draft decision is that it is not appropriate to approve the DAAU, having regard to the criteria in sections 138(2) and 138(3) of the QCA Act. The QCA therefore proposes to refuse to approve the DAAU under section 142(2) of the QCA Act.

As already noted, in its submission of 19 August 2013, Aurizon Network clarified some aspects of the 2013 AT₅ DAAU and noted that it was 'essential for ... that the industry obtains guidance from the QCA on the general principles which it will accept' (Aurizon Network, sub. no. 3: 4). Accordingly, for the purposes of section 142(3)(b), the QCA's guidance is that it is appropriate to amend the DAAU, and any resulting tariff proposal, to ensure that the UUP would be unlikely and immaterial. It is also appropriate to change the treatment of the UUP at the end of UT4 so it only applies to the unanticipated under-recovery. The QCA's reasoning for this approach, and its intended assessment process, is set out below in the 'way forward' section.

Way forward

As mentioned above, the QCA sees merit in a properly constructed UUP mechanism as a way to provide revenue adequacy to Aurizon Network.

A key attraction of the UUP approach is that it is similar in many respects to the revenue cap unders and overs mechanism that is already in the undertaking to protect Aurizon Network from volume risk. However any ex post payments required under the existing revenue cap mechanism are spread across the same group of users that were liable for the tariffs in the first place. This tends to make the volume forecasts less contentious, as they do not affect the relative position of any group of users.

¹² Section 138(2)(c) is not relevant as the owner and operator of the service are the same entity.

For the proposal in the April 2013 AT₅ DAAU, the situation is quite different, as the UUP would be levied on all Blackwater users, regardless of whether they contracted to use electric traction. As discussed throughout this chapter, a likely and material UUP has various adverse implications for competition, and the interests of access seekers and holders. The main driver of the likelihood and materiality of a UUP is the assumed utilisation rate. In turn, the reasonableness of the utilisation rate depends on the relationship between the volumes used to derive the tariff, and those that actually occur. It is therefore important to get the volume forecasts right.

As discussed in section 3.3, the information available to the QCA, including the Energy Economics report, indicates the actual volumes are almost certain to fall below the 85% threshold proposed by Aurizon Network. This makes it likely that the UUP will be levied, and that the shortfall will be material.

The QCA has indicated in this draft decision it may accept a UUP approach where the levy was unlikely and immaterial. The QCA will not be able to form a final view on the expected recovery profile until it considers an actual tariff proposal. However, based on the information available, including the QCA's independent expert advice, and Aurizon Network's worked example and UT4 AT₅ proposals, the QCA considers that the UUP would be unlikely and immaterial, if volumes were set at a utilisation rate of around 65 to 70% of contracted volumes.

If the tariff was derived on the basis of those lower volume assumptions, the UUP would be unlikely, and could be expected to be immaterial. Knowing in advance that the Blackwater electric infrastructure costs can be expected in most circumstances to be borne by electric users will not adversely affect the future decisions of access holders and access seekers (see section 3.4). Equally, knowing that this mechanism would not be routinely relied on for future investment decisions should ensure that Aurizon Network only makes investment decisions that it can justify to the QCA as being prudent.

If those approaches to volumes and future investment were applied, the outcome of the QCA's assessment of the criteria in section 138(2) or the weighing up of those criteria may result in the QCA finding it appropriate to approve such a DAAU.

The QCA also acknowledges that there may be other approaches that could achieve a similar outcome, including introducing take-or-pay arrangements for electric infrastructure and/or a lengthening of the revenue deferral period beyond eight years.

These alternatives have not been proposed in the DAAU, and the QCA does not propose to undertake a comprehensive analysis of them at this time. The QCA notes, however, that a large under-recovery during the early years of the proposed AT₅ tariff period will be hard to recoup in later years, given the effect of compounding the unrecovered balance at the approved WACC (see section 3.3).

The QCA also considers that the DAAU needs to be amended so that the UUP at the end of UT4 will recoup the 'unanticipated' shortfall, and not 'any' shortfall (see section 3.4).

The submission accompanying the DAAU proposes that Aurizon Network could levy the UUP on CQCN users, or have a staged approach where first Blackwater users and then CQCN users were asked to underwrite the Blackwater electric revenues. As these were presented as options, and were not formally submitted to the QCA for consideration, they have not been considered in detail in this draft decision. Nevertheless, if the UUP was unlikely and immaterial, it would ensure revenue adequacy for Aurizon Network, and thereby achieve two key outcomes, namely:

- (a) encouraging Aurizon Network to invest in infrastructure; and

- (b) preventing any requirement that the WACC be increased to compensate Aurizon Network for a greater risk of asset stranding.

It is expected that a new AT₅, based on an approach that is approved by the QCA, will be implemented as part of the overall process of finalising UT4.

The QCA will consider all submissions made in response to this draft decision submitted by Friday, 31 January 2014.

APPENDIX A: LIST OF SUBMISSIONS

<i>Organisation/individual</i>	<i>Submission number</i>
Anglo American	4
Asciano	5, 6
Aurizon Holdings	7, 8
Aurizon Network	1, 2, 3
BHP Billiton Mitsubishi Alliance (BMA) and BHP Mitsui Coal (BMC)	9
Glencore Xstrata	10
Rio Tinto	11
Springsure Creek Coal	12
Stanwell	13
UGL Rail	14
Vale Australia	15
Wesfarmers Curragh	16

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