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QR NATIONAL™

23 November 2012

Mr John Hall
Chief Executive Officer
Queensland Competition Authority
GPO Box 2257
BRISBANE QLD 4001

Dear Mr Hall,

Re: QR Network's Electric Traction DAAU

Please find attached QR National's (**QRN**) submission, prepared following the Queensland Competition Authority's (**QCA**) request for further comment on 8 October 2012, on QR Network's Electric Traction Draft Amending Access Undertaking (**DAAU**).

QRN is aware that the QCA is considering sponsoring a series of Electric Traction Workshops (**ETW**) to facilitate the timely resolution of the electric traction issue. QRN is supportive of that proposal. QRN has been an active participant in industry discussions on the benefit of promoting the efficient utilisation of the electric infrastructure, and will continue to proactively work with its customers, the QCA and QR Network to progress a viable electric traction pricing regime. Given the complexity of this issue, QRN considers that a workshop process could very well identify sustainable electric traction pricing options more effectively than the continued exchange of detailed submissions and expert reports. Such a process might also facilitate the QCA's review of the detailed empirical work that has been provided by stakeholders, including its review of QR Network's TCO model.

QRN considers that the success of a workshop process depends on the QCA setting clearly defined terms of reference, including the firm specification of what is in (and out of) scope. QRN considers that any workshop must be unambiguously focused on identifying alternative tariff methodologies for AT5, thereby ensuring continued confidence in the regulatory framework, particularly, the integrity of the capital expenditure pre-approval process and the reliance on that process by supply-chain participants. Importantly, some aspects of the Draft Decision, particularly, the QCA's finding that the current tariff structure is inefficient, should not be re-opened through the working group process.

In setting the terms of reference, QRN would encourage the QCA to reassess the importance it placed in the Draft Decision on 'traction choice'. The Blackwater and Goonyella systems each have a substantial sunk commitment made to a particular installed traction technology (electric), and minimal sunk commitment to the other (diesel). Given the presence of major sunk costs, QRN considers that the benefit of promoting the efficient utilisation of existing assets outweighs the

economic value of maintaining 'traction choice'. Further, it does not believe that the economies of scale that make electric the most efficient option for Blackwater can be realised through uncoordinated decision-making. As a result, QRN does not consider that continual *ex post* reappraisal of the electrification decision through pricing signals is either necessary or appropriate.

In this respect, QRN would particularly note the material that was recently submitted as regards the QCA's reform of the access agreement framework. The QCA has proposed, and QRN supports, amending the access arrangements to allow users to obtain much greater flexibility to swap operators within the 48-hour operating window. However, QRN is concerned that otherwise positive efforts to introduce greater flexibility into the above-rail market will, under the current AT5 arrangements, essentially result in the continual reappraisal of the economic viability of a regulated asset and the compounding of the existing coordination failure. Further, QRN queries how any market participant (including QRN) will be able to obtain a reasonable degree of certainty about forecast electric volumes and, therefore, the level of AT5, where the regulator has introduced the scope for uncertainty about daily egtk volumes.

QRN believes that the adoption of an AT5 that promotes the utilisation of existing assets will promote supply-chain efficiency, and lead to an overall reduction in system costs. As a result, QRN does not see a compelling objection to the QCA finding that above-rail competition should occur within the boundaries of sunk technology choices – and that, therefore, trains running on electric paths should pay for the cost of *all* the installed technology, including the electrical infrastructure, regardless of whether they are electric or diesel services.

Should you have any questions in relation to the attached materials, please contact Robin Laver, Senior Regulatory Advisor, on (07) 3019 9516 or via email at Robin.Laver@qrnational.com.au.

Yours sincerely

[redacted]

Andrew MacDonald
Senior Vice President
Commercial and Planning

QR NATIONAL

Electric Traction DAAU

Response to the QCA's Request for Further Comment

23 November 2012

I Introductory comments

QR National (**QRN**) welcomes the opportunity to provide further comment on the issue of sustainable electric traction pricing for the Central Queensland Coal Network (**CQCN**). As noted in QRN's September submission,[1] efficient pricing for electric traction is central to continued confidence in the regulatory framework, and is an important prerequisite to the supply-chain investment that will drive the next phase of industry development.

QRN welcomes the QCA's proposed sponsorship of Electric Traction Workshops (**ETW**) as a positive step towards the resolution of this issue. QRN has been an active participant in industry engagement to date, including the Traction Working Group (**TWG**) process that was underway prior to the Draft Decision. QRN will continue to proactively work with its customers, the QCA and QR Network to progress a viable electric traction pricing regime. Since the Draft Decision was released, QRN has been encouraged by the QCA's renewed engagement with the complex set of issues presented by QR Network's DAAU, and by its well-judged reconsideration of the requirement for it to advance an alternative tariff proposal.[2] In this respect, QRN reiterates that it sees no compelling reason for further deferral, and therefore welcomes the QCA facilitating a process to identify suitable alternatives to QR Network's DAAU.

QRN considers that the identification of alternative AT5 tariff methodologies will necessarily be the predominant focus of a QCA endorsed working group. QRN submits that it is therefore important for the QCA to set clear terms of reference which focus attention on the requirement for an alternative regulatory proposal, as well as the desirability of such a proposal being developed in a collaborative way with industry. In this regard, the QCA's position in the Draft Decision, namely, that QR Network's below-rail assets will not be stranded and that a cost-recovery mechanism will ultimately need to be devised, is a useful guiding principle for the ETW.

Further, QRN notes that, through its support of both the TWG and the ETW, QR Network has consistently demonstrated that it is prepared to reconsider aspects of its DAAU through the course of industry negotiations. In this respect, QR Network has indicated that, at the present time, it will not necessarily pursue cross-system socialisation of costs between Blackwater and Goonyella in any alternative DAAU. QRN understands the concerns expressed by its Goonyella customers in relation to this issue, and is therefore supportive of QR Network's revised position. As noted in its September submission, QRN also acknowledges the willingness of QR Network to consider transitional arrangements for Blackwater customers with diesel hauls (which includes QRN), and the continued engagement of QR Network with spur-line electrification projects in Blackwater.

QRN does not wish to provide further, extensive comment to the QCA in relation to matters that were fully dealt with in its September submission. The focus of this note is on providing some short, structured comments in relation to the range of tariff proposals that have been raised by QR Network and by stakeholders.

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1 QR National, *Submission on QR Network's Electric Traction Draft Amending Access Undertaking (DAAU)*, 25 September 2012 (September submission)

2 As evidenced by the QCA's request for further comment on the Draft Decision and in particular the focus on alternative solutions. Refer to the QCA Letter of 8 October 2012 to QR Network, http://www.qca.org.au/files/R-QCA-Issuesforfurthercomments-ETS-1211.pdf

II Sustainable electric pricing options

(a) Overview of the options

Despite significant complexity in the eventual detail of any tariff proposal, it appears that the QCA will select between one of two pricing frameworks in resolving this issue, if it is to deliver a sustainable outcome for electric traction users in Blackwater, while also avoiding stranding sunk electric infrastructure assets. Although highly simplified, QRN sees the choice for the QCA as essentially between:[3]

- a 'per unit' or 'usage charge' that would collect some proportion of QR Network's electric capital charges from diesel users in Blackwater (recognising the cost of their bypassing the installed traction technology), with the effect that the cost of operating diesels on electrified paths would increase and the economic preference of users for each traction type on those paths would be affected; or,

- a 'lump sum' charge, that would collect some proportion of QR Network's electric capital charges from all Blackwater hauls on an annuity-like basis (with presumably some limited adjustability to ensure revenue adequacy), with the result that the same such proportion of electric capital charges would act as a fixed overhead to end-users and the economic decision to select diesel or electric would not be materially affected.

The DAAU proposed that the access seeker, regardless of their choice of tractive technology, would pay AT5 on 90% of electric *feasible* paths in Blackwater, and 100% of electric *feasible* paths in Goonyella.[4] This proposal has the properties of a usage charge, as the cost of the electric network would be attributed between users, essentially, on mine output rather than their choice of tractive energy. As noted in the September submission, this would increase the attractiveness of electric traction – as the tariff for electric access would reflect efficient utilisation, rather than actual utilisation – while decreasing the attractiveness of bypassing a regulated asset. As explained in QR Network's original explanatory material, this change was premised on the need to influence the economic decision-making of individual users, in order to ensure that the entire supply-chain obtained the benefit of electric economies of scale and coordinated decision-making around traction choice.[5]

Plainly, the controlling factor in relation to the analysis of the alternatives above is the terms of the *Queensland Competition Authority Act* 1997 (**QCA Act**), but that being noted, there is considerable latitude for the QCA to have regard to all the factors of this problem in making its assessment, including the broader policy question about the future of electric traction in Queensland. In this respect, while the QCA has clearly rejected the pricing framework proposed in QR Network's DAAU, QRN would encourage the QCA to maintain openness with respect to alternative proposals, particularly given that questions have been raised about the correctness of some parts of the Draft Decision by a number of interested parties.

(b) The centrality of 'traction choice' to the QCA's rejection of a usage charge

The Draft Decision rejected the concept of a 'usage charge' because the QCA considered that such a tariff would result in the 'over-selection' of electric traction by access seekers. Instead, the

[3] A third option would be the proposed socialisation of electric costs more broadly across the regulated network, including Goonyella, and presumably in future, any additional electrified system. This option is not considered here as QR Network is not pursing this issue, nor is the QCA prepared to accept it at the present time. QRN understands the view of the Goonyella user base that now is not the optimal time for a uniform electric tariff.

[4] QR Network, Submission to QCA, September 2012, p.42 *"…the DAAU provisions only apply to feasible electric services – that is, the ones where the route is actually electrified. Future investments remain subject to customer approval."*

[5] QR Network, *Submission to QCA: Electric Access Draft Amending Access Undertaking*, December 2011, p.7

Draft Decision put forward the idea that each traction type should face a 'cost reflective' access environment, such that decisions about tractive effort are made 'efficiently', at least, insofar as efficiency can be gauged from the perspective of an individual user.[6] Underscoring this reasoning is a broader judgment by the QCA that operating diesel locomotives on electrified paths should be facilitated by the regulatory framework. Such a conclusion is, in large measure, premised on a view that the economic and social value of maintaining 'traction choice' on the CQCN outweighs the benefit (including the public benefit)[7] of traction coordination and the efficient utilisation of existing electric infrastructure. In other words, it would seem that the QCA considers that the value of continued hybrid operations on the CQCN outweighs the cost.[8]

QRN, as an above-rail business, takes an opposing view on this fundamental issue. In particular, for the reasons given in the September submission, QRN does not understand why the QCA considers traction choice to be an important consideration in developing a regulatory framework that promotes supply-chain efficiency and the interests of the Queensland resources industry. The Blackwater and Goonyella systems each have a substantial sunk commitment made to a particular installed traction technology (electric), and minimal sunk commitment to the other (diesel).[9] To continually re-litigate the electrification decision ex post through pricing signals, and thus increase the likelihood of asset stranding, inefficient hybrid operations and regulatory error is, in QRN's opinion, a far-reaching conclusion that does not appear to have convincing justification.

The 'access product' offered by QR Network is necessarily a bundle of network assets and services – with access seekers typically given only nominal choice in relation to what elements they consume and therefore pay for. This is because, on the CQCN, as on all networks, coordinated decision-making around technology, systems and operating requirements is an essential part of overall efficiency. This is an inherent consequence of the presence of network effects, in that where one agent's adoption of a good benefits other adopters, while increasing the incentives of others to adopt it, coordination around the consumption of that good is centrally important to achieving the lowest cost outcome. Regulatory frameworks have always recognised this, and implemented ways in which coordination might be facilitated, given the difficulties of realising network efficiencies through market-based processes where there are multiple agents with differing equilbria.

In this regard, the substantial use of mandated standards around many operational and technical aspects of the CQCN, and the consequent limitations on the freedom of above-rail operators to vary their business models, reflects a judgment that, while non-price competition in the dependent market is important, it is plainly not efficient if that differentiation comes at the cost of higher overall costs to the supply-chain. This has been expressed well, in a different network economics context, by Access Economics:

> (W)hile competition has a crucial role in fostering greater network efficiency, this needs to be balanced with industry cooperation in markets dominated by network effects…. In particular, cooperation is critical in the smoother operation of, and innovation in networks. Developments of standards and technical features of networks

[6] QRN notes that it does not agree with the QCA that this could be described as 'efficient'. As discussed at length in the September submission, efficiency requires an assessment of the entire supply-chain. Cost reflective traction pricing, at least as conveyed by the Draft Decision, appears to be directed solely at allocative and productive efficiency from the perspective of an individual user, rather than an efficient supply-chain outcome.

[7] QRN notes the information provided by multiple stakeholders on the environmental benefits of electric traction, including the lower localised pollution and lower noise levels.

[8] QRN reiterates its view that the QCA does not have sufficient data to make that assessment until it takes the opportunity to review QR Network's TCO model. QR Network has recently advised QRN, given that QRN has provided QR Network with confidential data to populate the model, that the QCA has not yet had access to the model.

[9] Diesels are, by definition, not sunk to a coal system, given they can be used across the CQCN (or any other narrow-gauge network, including those in Western Australia). Further, there are minimal diesels that are committed to Blackwater, given QRN's commitment to cascade its diesels into un-electrified growth corridors, and PN's small fleet (c 3-4 diesel consists serving Oaky Creek and Kestrel).

> may require the joint effects of industry participants for new instruments to emerge…. Potential tensions between the desirability of cooperation over the development of networks and competition will need to be considered.[10]

For example, using (and paying for) QR Network's electronically controlled points is not optional, even were an operator conceivably prepared to bear the cost of switching the points manually. Likewise, the suggestion that operators should have a choice between QR Network's signalling system, or installing their own in-train virtual signalling network to avoid using and paying for the below rail fixed block signals, would also likely be regarded as unacceptable.

The obvious absence of 'choice' in relation to these sorts of questions recognises that efficient and effective supply-chain coordination can require administrative coercion.[11] This is recognised as much by the contractual framework, which allows QR Network the ability to coercively alter system wide requirements in a number of circumstances, and by doing so, impose costs on other supply-chain entities.[12] Of course, the same could conceivably be achieved through price signals, but this would involve herculean regulatory effort to both avoid error and the imposition of transaction costs (including those arising by way of delay in the regulatory process). The need for compulsion on this issue is well noted in the economics literature, particularly where the failure to coordinate is a consequence of a policy decision to eliminate internalised coordination by an integrated firm:

> If failure to standardize is not a coordination problem, but stems from differences in preferences (horizontal differentiation), then an indicative standard will not help but a compulsory standard might, and government's compulsion may be needed. By driving on the wrong side of the road, a driver sacrifices his own network benefits from driving on the same side as others, but this may not discourage him enough. Administratively coordinated groups such as firms often impose compatibility internally, suggesting that they expect decentralisation to yield too much incompatible variety.[13]

In this regard, as discussed in the September submission, even assuming that the price for both diesel and electric were perfectly cost-reflective, this would still give little assurance that uncoordinated decision-making by individual users will result in an optimal supply-chain outcome. Indeed it is difficult to see how the economies of scale that make electric the more efficient option at sufficient utilisation will be realised in an environment where each user can pursue their own interests while inadvertently imposing costs on others. In other words, the self selection of diesel traction can be made by a user without incurring any 'exit cost', with the efficiency loss instead being born by others through the loss of scale economies for the broader supply-chain.

As noted in the Ergas Report that accompanied QRN's September submission:

> "In … supply chains, complementarities between investment decisions at the various layers give rise to external effects that need to be managed. Those effects … are rarely amenable to efficient management through decentralised choice (as would occur, for instance, in a market-based price systems). As a result, processes are needed that emulate the decisions that would be taken within a vertically integrated firm. Those processes must provide for the efficient provision to the supply chain as a whole of quasi-public goods (such as shared capacity with high fixed costs and low variable costs), and allow each participant in the supply chain to take its decisions on the basis of reasonable expectations as to the complementary investments that will be undertaken." [14]
>
> …
>
> "… it is a defining feature of vertical supply chains that there are vertical complementarities, in which supply decisions at one layer create (or remove) options at others. Properly managed, these vertical complementarities create a 'whole is greater than the sum of its parts' effect, however, if they are not properly managed, each vertical layer will have incentives to shift costs on to other vertical layers,

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10 Access Economics, *Card Payments Forum – Discussion Paper* (2008), pages 34-5, available at: http://www.apca.com.au/docs/policy-debate/paper_cfp01.pdf (accessed 8 November 2012).

11 QRN, *September Submission*, Appendix A: Ergas, H et al, *Economic Aspects of Electric Traction Charges*, September 2012, p.8-9.

12 QR Network, Standard Operator Access Agreement, cl 5.10

13 Farrell, K and Klemperer, 'Coordination and Lock-In: Competition with Switching Costs & Network Effects, (2004) *Handbook of Industrial Organization*, Vol 3. M. Armstrong and R. Porter (eds.), North-Holland 2007, p.50

14 QRN, *September Submission*, Appendix A: Ergas, H et al, *Economic Aspects of Electric Traction Charges*, September 2012, p.2-3

> including the costs (and risks) of financing capacity expansion. In other words, if vertical externalities remain 'un-internalised', it will be difficult for the system as a whole to undertake investment in a coordinated manner along the least cost capacity expansion path".[15]

Noting the above, it is hard to see what interest is served preserving a distinct 'diesel option' in Blackwater through the regulated tariff arrangements. In other words, there is not a clear rationale for promoting 'traction choice' by exempting diesel services from paying for the cost of all installed capacity in the system, including electric capacity, through access charges.

First, if there was a substantial, sunk commitment to diesel traction in Blackwater, the QCA might be reticent, at least in the short-term, to adopt a tariff proposal that increased below-rail costs for those users. However, in this regard, it is notable that: (i) diesel commitments are not sunk, and can be re-deployed (refer Figure 2 which shows recent cascading of diesel locomotives in Queensland by QRN); and, (ii) the operator with by far the largest commitment to diesel in Blackwater is QRN, which supports the DAAU. Pacific National currently operates no more than three to four diesel consists (12-16 locomotives) in Blackwater to service the Oaky Creek and Kestrel hauls. By way of contrast, QRN has typically operated at least nine diesel consists (greater than 36 locomotives) in Blackwater. QRN is now transitioning its fleet to take advantage of increased overhead electric capacity and cascading diesels into non-electrified growth corridors (i.e. Newlands and Moura). It follows that, to the extent that the DAAU made diesels in Blackwater more expensive, QRN will be adversely affected, more so than Pacific National – given its much larger commitment to diesel in the system. However, QRN also recognises that there is scope to redeploy its diesel fleet over the period in question, and recognises the benefit of the DAAU. Further, QRN has a reasonable expectation that any short-term impact on its operations, as indeed on Pacific National's operations, would be dealt with by QR Network's transitional arrangements.[16]

Second, if there was a clear case for the use of diesels in driving growth tonnes in Blackwater, some particular accommodation for that might be necessary. However, QR Network has confirmed that the current electric assets (encompassing the four new Blackwater feeder stations, a proposed new feeder station for Rolleston, and the addition of Wotonga in Goonyella), when combined with asset renewal, are sufficient to accommodate forecast tonnes until at least 2040.[17]

Third, were traction choice particularly fundamental to above-rail competition, it might again be regarded as a relevant reason for preserving the option to operate diesels on electrified paths (on the assumption the competition benefits would outweigh the cost of coordination failure). However, as noted in the September submission,[18] there does not appear to be any reason to think that competition across the electric-diesel axis is particularly vigorous or even extant. To suggest otherwise is to imply that the level of competition in non-hybrid systems like Newlands or Goonyella is somehow inferior; which is, of course, an unsustainable proposition, given the spread of market share across above rail operators in those systems. Even were traction choice a relevant feature of ensuring Blackwater remains contestable for above-rail entrants, it is hard to see that the additional efficiency gains that might be obtained by incremental traction-based competition, would outweigh the cost of stranded below-rail assets (noting an estimated value of $613.5 million equal to $346.2 million in Blackwater and $267.4 million in Goonyella), [19] Powerlink break-costs (noting an estimated value of $620m, comprised of $400 million in Blackwater and $220 million in Goonyella),[20] the introduction of substantial disincentives to investment, and the inefficiencies of a hybrid operation. In other words, any additional efficiency in the above-rail market that might be

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15 QRN, *September Submission*, Appendix A: Ergas, H et al, *Economic Aspects of Electric Traction Charges*, September 2012, p.7

16 QR Network, *Submission to QCA: Electric Access Draft Amending Access Undertaking*, December 2011, p.30

17 QR Network, *Submission to QCA: Electric Access Draft Amending Access Undertaking*, December 2011, p.44

18 September submission, p.36-38

19 QR Network, *Submission to QCA: Electric Access Draft Amending Access Undertaking*, December 2011, p.23

20 QR Network, *Submission to QCA: Electric Access Draft Amending Access Undertaking*, December 2011, p.49

realised by traction-based competition, would be substantially outweighed by the costs, and thus produce an overall negative outcome in terms of economic efficiency and community welfare.

Fourth, QRN does not believe that there is a legal requirement for the QCA to take such a position, for the extensive reasons outlined in the September submission. It is submitted that the QCA Act does not require the regulator to disaggregate pricing of the declared service into individual tariffs that, in turn, reflect the cost of individual network elements (such as AT5). The pricing principles provide only that (emphasis added):

> The pricing principles in relation to the price of access to a service are that the price should –
>
> … (b) allow for multi-part pricing and price discrimination *when it aids efficiency* … [21]

In this respect, to think that 'cost reflectivity' has a statutory basis in relation to electric traction is considered to be incorrect – the statute neither requires nor contemplates access seekers being given unlimited choice by the regulator in relation to what below-rail assets they pay for through multi-part tariffs. This issue is, instead, one of regulatory discretion and judgment, with the question ultimately coming down to the QCA's assessment of what multi-part tariff structure will best promote economically efficient outcomes for the supply chain, or, put differently, what tariff structure will lead to an overall "enhancement of local wealth".[22]

Given the above, QRN would encourage the QCA to re-examine the importance it has attached to promoting traction choice through a multi-part tariff. While QRN understands that having an optional charge for electric access was a function of providing transparency of the causative elements of the pricing structure,[23] it is notable that the tariff arrangements have only recently been vigorously tested against actual market conduct.[24] There should not therefore be, in QRN's view, any historical impediment to re-examining the suitability of a 'usage charge' for electric traction that attributes some proportion of electric costs to diesel locomotives operating on electric paths. As noted, QRN does not see a compelling economic or policy objection to the QCA simply finding that above-rail competition should occur within the confines of sunk technology choices – and that, therefore, trains running on electric paths should pay for the cost of *all* the installed technology, including the electrical infrastructure, regardless of whether they are electric or diesel services.

(c) QRN's view on a two-part tariff for electric access

In an attachment to its submission to the QCA on 25 September 2012, QR Network provided a report by Sapere outlining an economic framework for calculating a two-part access tariff for the electric overhead infrastructure. QR Network has continued to canvas that option with industry. The tariff would be structured basically as follows, noting though that a number of other variants were raised by both Sapere and by QR Network:

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21 *Queensland Competition Authority Act* 1997, s 168A(b)

22 *Re Fortescue Metals Group* ([2010] ACompT 2 at [798]-[803].

23 Discussions regarding the structure of pricing for the electric infrastructure began during the development of QR's first undertaking. Whilst in the Final Decision on the 1999 Undertaking, the QCA considered it appropriate that the reference tariff included *"a charge for the use of the electrical overhead network only if an above rail operator uses it."* (See QCA, Final Decision on QR's 1999 Undertaking, Volume 2, Chapter 10 - Reference Train Service p.332), in the Draft Decision on the same undertaking the QCA sought to balance the objectives of providing transparency on the causative elements in pricing structures as well as reducing the incentives to bypass the infrastructure. See QCA, Draft Decision on QR's Undertaking, Volume 3 – Reference Tariffs, December 2000:

(p.32) It is *"necessary to separately identify causative elements in the pricing structure so that the costs that are imposed on the system through different operational arrangements are reflected in the prices that are charged."*

(p.55) *"The Authority is also concerned to ensure that it avoids creating an incentive to bypass this (electric) infrastructure by requiring QR to levy a use of system charge that makes electricity an unattractive energy source relative to diesel."*

The transparency objective was reinforced when in the final decision on the 2001 Undertaking, the QCA sought to further *"enhance the transparency of the Reference Tariff structure"* by unbundling its electrical overhead charge into an electric traction access charge and an electric energy charge. (see QCA Final Decision on QR's 2001 Draft Access Undertaking, December 2001, p.13)

24 Until Pacific National made the decision to bypass the declared asset, the economic problems with the AT5 tariff had not arisen and thus had not been examined with reference to actual decision-making in the electrified CQCN.

- an efficient 'per unit' tariff (AT5) for electric users that is set with reference to either long-run marginal cost, or average cost assuming full utilisation of the electric assets; and

- a lump-sum annuity charge is levied across all users to allow QR Network to recover any revenue shortfall, noting that the magnitude of the charge would reflect the actual utilisation of the assets and the consequent under recovery of AT5 revenue.

This alternative proposal has been apparently developed by QR Network due to the current reluctance of the QCA to accept a tariff structure that would include electric costs in the 'per unit' tariff paid by diesel users for access. Instead, the proposal would ensure that the cost of using electric and diesels would each be, on the QCA's view, cost reflective, while at the same time, permitting QR Network to recover its revenue cap without stranding risk. The underlying economic theory is that, as the cost of the electric overhead would act as a fixed overhead, it would not bias the economic decision as regards either traction option.

QRN accepts that a two-part tariff would resolve the immediate problem of below-rail asset stranding in the Blackwater system, while not also strongly affecting the economic decision of a user to opt for either electric or diesel traction.[25] Long-run marginal cost pricing for the electric assets, or something close to that, would necessarily promote allocative efficiency in traction choice to a significantly greater degree than the average cost price methodology that is currently employed. For this reason, QRN is supportive of the initiative in principle, though notes that a detailed regulatory proposal from QR Network has not yet been released.

If users and the QCA do indeed wish to preserve the viability of running diesels on electrified paths (which for the reasons given above, is not an option supported by QRN), then spreading a revenue under-recovery as thinly as possible across the Blackwater user group as an annuity appears to be the least distorting, most equitable way of resolving the asset stranding issue. However, QRN considers that there are a number of shortcomings with such an approach that the Blackwater user group and the QCA ought necessarily to consider in determining whether this approach is superior to a 'use tariff', such as that contained in the original DAAU. In particular:

- QRN has concerns about whether the complexity of an annuity approach is really necessary, given its view that a usage charge would be the simplest way of resolving this issue. QRN considers that an annuity approach may prove to be a highly complex, costly and time-consuming exercise, particularly so if it involves designing a detailed adjustability re-opener in the event volumes differ from the assumptions in the annuity calculation. Further additional sources of complexity will be the interaction between the annuity and any new capital expenditure on the electrified network.

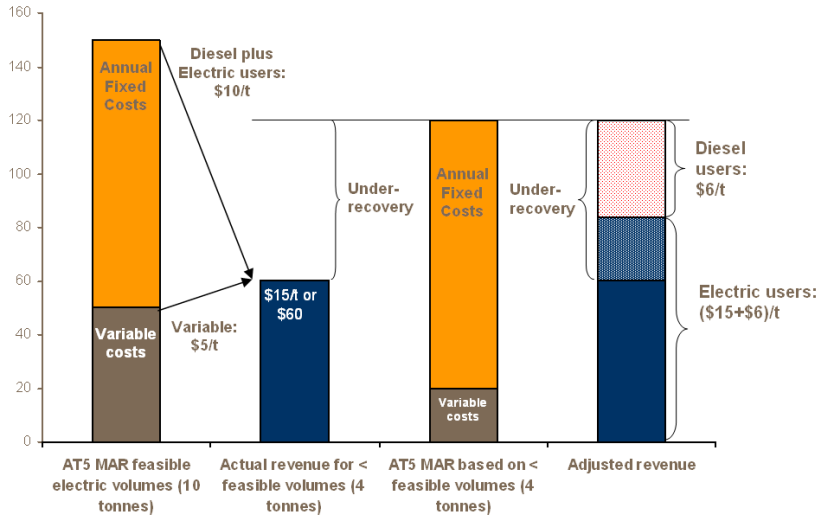
- Further, this proposal would mean that users which signed electric hauls in conformity with the endorsed master plan would be required to bear the ongoing availability cost of an electric network that is inefficiently under-utilised only due to a regulatory framework that permits free-riding by other users. As noted on several occasions in the September submission, QRN is a strong advocate for its customers with electric hauls, and in this respect, regards a 'usage charge' (which imposes cost on only those users which elect to bypass part of the declared facility) as superior to a lump sum charge that increases costs on users that are in fact promoting supply-chain efficiency by coordinating decision-making. In QRN's view, this would appear to be a potentially inequitable outcome, given

[25] QRN understands that the Sapere proposal is intended to function as a two-part tariff. That is, the cost of electric access would be recovered by a per-unit charge that would be set with reference to long-run marginal costs, together with a lump-sum charge that would ensure revenue adequacy and the recovery of fully allocated fixed costs. While this proposal reflects basic economy theory with respect to the recovery of fixed costs, it is difficult to understand the exact economic properties of the Sapere report until QR Network develops an alternate regulatory proposal through the ETW process.

the absence of uniform, sunk commitments to diesel in Blackwater. In other words, QRN does not consider it equitable for its customers to bear the ongoing cost of allowing Pacific National the option of running a small number of diesels on electric paths.

Assume, for example and depicted in Figure 1, that there were 10 users (railing the same volume), all of whom voted for the electric assets, which have a fixed, annual cost for sunk investment of $100 (i.e. $10 per tonne) and a variable cost of $5 per tonne. In this scenario, the efficient AT5 would be $10+$5 per tonne. However, if only four users rail electric, then under the Sapere proposal, the electric user is still charged $10+$5 *plus* an annuity of $6 (per tonne), being the revenue shortfall, which is also paid by the six diesel users. This means that the actual cost to electric users of railing electric will exceed the avoidable cost plus their efficient share of the fixed cost. The consequence would appear to be the over-taxing of electric users and under-taxing non-users, which could itself potentially induce non-users to vote for an asset through the pre-approval process. This is because a voter would face non-equalised charges between an ex ante expectation of a fixed cost of $10 (per tonne), and an ex post actual charge of $6 (per tonne).

Figure 1: Non equalised charging through two-part tariff



- Lastly, and most importantly, the investment pathway for future expansions and renewals of the electric network has not been made clear. This is of substantial concern, as the expansion of both the Blackwater and Goonyella systems will require a framework that incentivises investment in the electric overhead. Fundamental to such an incentive, is certainty for QR Network (or indeed, a user-funder of below-rail infrastructure) as to the timing and likelihood of returns. This is of most obvious concern to QRN's Goonyella customers, given the need for significant renewal work in that system over the medium term, with only the Wotonga feeder station, Grosvenor and Broadlea track sectioning cabins approved as part of the customer voting process.[26] Of further note, is the requirement for continued, incremental investment in and renewal of the electric system in Blackwater as the system expands. In this respect, it is QRN understands that the TCO evaluation includes in situ renewals and upgrades of the electric infrastructure required to reach 156 mtpa and 290 mtpa in Blackwater and Goonyella respectively.

[26] QCA letter to QR Network, 26 May 2011, "Regulatory Pre-approval of Scope for 2010 Coal Rail Infrastructure Master Plan Projects", http://www.qca.org.au/files/R-QCA-FinalDecision2010CustomerVote-0511.pdf

It is important to stress that, in QRN's view, investment in the electric overhead is not an optional adjunct to investment in other below-rail infrastructure. That is, it is not operationally possible to expand an electrified mainline without also investing in expanding the overhead, given the major inefficiencies that would result from developing un-electrified mainline duplications or sidings. Such an arrangement could easily result in the unreliable operation of the network. This has been confirmed by QR Network in its September submission, in that it did not consider that further upgrades of Blackwater capacity could have occurred at all without feeder station investment:

> In the absence of a customer vote to invest in additional feeder stations to increase electric capacity, power strengthening would also likely have been necessary to address the operational risks and complexities with full duplication of the Blackwater system. This arises because, from an operational perspective, a given electric section might become saturated with electric traction services. Single line sections with passing loops provide a physical constraint on load saturation within a given electrical section. However, as the capacity of the facility is expanded to accommodate the demand of additional train services these physical constraints are removed. While this constraint could have been artificially imposed by not electrifying duplicated sections this would have imposed significant capacity constraints on the system, and would have removed the principal operational and capacity benefit of duplication – the removal of crossing delays, and would have resulted in QRNN (QR Network) not being able to meet its contractual service quality obligations to electric access holders.[27]

QRN does not therefore consider that continued uncertainty about the status of electrical investment in Queensland is in the interests of the supply-chain, given the need for continued investment in electrical overhead assets in the electrified networks. It follows that, until this issue is resolved, then the environment for investing in all infrastructure assets in the electrified systems is uncertain. In this respect, QRN notes, in particular, the potential direct exposure of the user group to this issue in the event a user-funded expansion of the mainline is considered as part of anticipated port expansions at Wiggins Island.

While it may be possible for the QCA to design an annuity mechanism that meets these three points, while still providing for traction choice across electrified paths, QRN is increasingly concerned that the complexity of the proposed tariff solutions is escalating without the underlying premise – namely, that diesels should be free to operate on electrified paths without paying the full costs of that path (which would include the costs associated with electrification) – receiving appropriate analytical attention. In particular, as is made clear above, QRN regards the emphasis in the Draft Decision on traction choice as unhelpful. That said, the annuity mechanism proposed by QR Network and further developed through the TWG is progress on the prevailing average cost pricing, and QRN is therefore able to give it cautious support, pending a more detailed regulatory proposal.

III QRN response to the QCA request for information

Question 1: Traction Choice

The QCA has asked for further views on traction choice. As discussed in the body of this submission, QRN does not consider that the QCA's underlying rationale – namely, that traction choice should be left to market forces – is sound. There are numerous reasons to think 'cost reflective' pricing would fail to result in an efficient outcome, irrespective of how efficiently the price

[27] QR Network, *Submission to QCA: Electric Access Draft Amending Access Undertaking*, September 2012, p.49

for electric access is set, including economies of scale, strategic behaviour, bypass risk and coordination failure. The limitations of decentralised choice in a supply chain context were discussed at length in Appendix A to QRN's September submission. QRN also notes the discussion on this issue in the expert report from NERA that accompanied QR Network's September submission.

Question 2: Benefits of Electrification

QRN is supportive of the material presented to the QCA on the benefits of electrification and remains of the view that electric traction is the most efficient option for the Blackwater system. QRN's view on a specific issues raised by the QCA are set out below.

(a) Economic feasibility of electrifying single-mine spur lines

Whilst QRN considers that QR Network is best placed to respond to stakeholder comments, it would draw the QCA's attention to Attachment B of the 25 September submission, where QR Network provided information on the feasibility of electrifying spurs of various lengths and volume profiles was included. This information was prepared for industry in the course of the TWG process, and uses TCO model assumptions and inputs.

More generally, QRN notes that the proposal in the DAAU was for AT5 to be paid only on electric paths, or on paths where there is a clear case that electrification of the spur is economically feasible. Plainly, the test for investment in a proposed electrified spur is going to be equivalent for that which applies for the inclusion of assets in the RAB, namely, a test of prudency in scope, standard and cost. In this respect, it is difficult to see how the DAAU would act to promote the electrification of spurs where there is no economic benefit in doing so. Where a spur-line is too long, and volumes too low, for electric to be viable there is no proposal that such a service be required to pay the AT5 charge.

Moreover, QRN does not consider the economic feasibility of electrification of a spur line as a reason to dismiss the fundamental arguments of the benefit of a fully-utilised brownfield electrified network. In developing mine-specific infrastructure, rational parties will assess all options available taking into consideration the technological developments at the time. For example, options are now available to electrify spur lines with lower volumes by delaying or removing the need for more capital intensive investment in feeder stations. In addition, there are options available that may include the use of diesel spur lines, yet result in electric traction for the main line, for example the use of shunt locomotives or last mile diesel/electric locomotives.[28]

(b) The option value of having diesel and electric trains on a mixed network

QRN has not quantified the option value of having diesel and electric trains on a mixed network, though does acknowledge that there is a benefit to an operator of being able to flexibly deploy diesel locomotives across networks and therefore provide buffer capacity across the fleet. In this respect, reducing 'traction choice' will diminish the value of this option, but QRN does not believe that on any reasonable view the option value in having this option exceeds the cost of stranded assets, impaired future investment incentives, and the inefficient operation of more than 'buffer level' diesels in an electrified system. In other words, QRN's view is that the benefit of greater coordination of traction choice will exceed the option value of the alternative.

[28] QRN notes Attachment G to its 25 September 2012 submission includes reference to the Traxx UK (electric locomotive) that is available with a small diesel engine plus battery, allowing last mile operation without a shunting locomotive.

(c) Shorter headways and the relative costs of expanding electric capacity

As made clear in QRN's September submission, 30 minute headway separations in the Blackwater system are not a consequence of the electric infrastructure but rather are a function of the sectional run times across single line sections of track on the Blackwater system, together with allowances for through-running trains on the North Coast Line. QRN does not therefore understand that any additional expenditure in the electric assets is required to reduce headway separation. Indeed, once the Blackwater system is duplicated, the constraint becomes the longest sectional run time in the coal system – particularly that of the Windah to Westwood section. This section is traversed by diesel trains in 20 minutes and electric trains in 13 minutes.

(d) Superior performance of electric locomotives is not reflected in the actual run times

It is no surprise that actual run times do not reflect the superior performance of electric locomotives, because actual run times in Blackwater reflect the continued inefficiency of diesel locomotives being present in the system. For example, the current layout of Callemondah yard requires electric trains to queue behind diesel trains while the latter provisions, which essentially eliminates the faster provisioning advantage of electric traction locomotives.

In this respect, referring to actual run-times misunderstands the purpose of the TCO analysis, which is to show the efficient utilisation of the below-rail asset normalised for variables other than the choice of traction, not to demonstrate the present-day operational efficiency of electrics. As noted in the September submission, this means that Pacific National's use of actual run time data is fundamentally flawed. Of particular concern is Pacific National's failure to adjust for technology that is not specific to traction choice and the use of green light running as the benchmark rather than taking into consideration actual operations, namely stop start running, particularly over ruling grades. It is for these reasons, as discussed in the September submission, we understand that QR Network used simulated data in the TCO model.

(e) Reasonableness of assumed refuelling times

QRN is not convinced that the refuelling times provided by Downer as evidence to discount the reasonableness of the 1.3 hour differential[29] between the provisioning of diesel versus electric locomotives sufficiently takes into consideration that, as the scale of refuelling activity increases, the complexity and associated delays increase commensurately. In particular, criticisms of the 1.3 hour difference does not appear to take into consideration the operational constraints of Callemondah yard and of 'in-field refuelling' more generally. QRN notes that the differential between diesel and electric locomotives was supported by Rio Tinto in their April submission to the QCA,[30] and considers that the 1.3 hour differential is reasonable, and reflects operational practice in Blackwater.

Question 3: Object of Part 5

The QCA has sought further views on s 69E of the QCA Act, particularly, the QCA's view that the objects clause is solely concerned with the efficiency of the below-rail infrastructure. QRN reiterates its view that the Draft Decision incorrectly interpreted the statute, and expresses its agreement with NERA Economic Consulting, who submitted to the Draft Decision that:

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[29] Diesel trains take an average of 1.3 hours more than electrics to provision in Callemondah with the differential substantially a result of the requirement for diesel locomotives to re-fuel every trip. Refer QR Network, *Submission to QCA: Electric Access Draft Amending Access Undertaking*, December 2011, p.43

[30] Rio Tinto Submission to the QCA, QR Network's Electric Traction Services Draft Amending Access Undertaking, April 16 2012, Attachment 2, p.4; *"A diesel locomotive hauled train will nominally require an additional 60 minutes to 120 minutes for provisioning compared to an EL hauled train."*

> "From an economic perspective, the QCA's interpretation of its task involves two related missteps. First, the QCA has adopted an overly narrow interpretation of efficiency, by limiting the concept to cost minimisation. Second, the QCA has applied its cost minimisation principle to just one functional element of the supply chain." [31]

QRN also reiterates that the QCA's position on the objects clause contradicts its approach in other decisions. In particular, since lodging its September submission on the Electric Traction DAAU, QRN has responded to the QCA's Draft Decision on the Alternate Standard Access Agreement. QRN would note to the QCA that much of that decision was premised on the need to promote supply chain efficiency and 'flexibility', rather than simple below-rail cost minimisation. [32] For example, the QCA has proposed requiring QR Network to implement shorter scheduling deadlines (and thereby incur higher operating costs) to support cargo assembly operations. It is difficult to see how this mode of analysis, which QRN otherwise supports, could be justified on the basis of the public interest criterion (as suggested by the QCA in the Electric Traction Draft Decision) rather than as part of the core efficiency objective of third party access.

Question 4: Competition in locomotive supply market

The QCA has asked stakeholders how the DAAU might affect competition in the locomotive supply market, given the response of several electric locomotive suppliers to the QCA's mistaken finding that electric locomotives were supplied by a monopoly. Considerable evidence has now been provided to the QCA showing that the electric locomotive market is highly competitive, global in scale, and growing strongly. Given this, QRN does not consider that increased utilisation of electric locomotives in Blackwater could have an appreciable impact on competition. In this respect, of note is Toshiba's analysis showing in excess of 5,000 *new* electric locomotives sold annually, whereas only ~150 locomotives are needed to haul the total Blackwater output.[33]

Question 5: Competition in rail haulage market

The QCA has asked for further submissions on how the DAAU might impact on competition in the haulage market, in light of QR Network's argument that the Goonyella and Blackwater systems are not separate markets.

QRN does not consider there to be much doubt that the market for haulage services is broader than a 'Blackwater market' or a 'Goonyella market'. Train operators manage their fleets interchangeably across all major systems given near uniformity in rollingstock standards, an increasingly interconnected network, the absence of constraint on rollingstock specification in the access arrangements, and improved, centralised maintenance practices. As depicted in Figure 2, QRN manages the allocation of rollingstock as a fleet, cascading and allocating these assets across corridors to meet customer obligations and fluctuations in demand.

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31 QR Network, *Submission to the QCA's Draft Decision on Electric Traction*, September 2012, Attached Report by NERA Economic Consulting, Economic Aspects of the QCA's Decision on QRNN's DAAU, p. 7

32 QRN notes the following statements from the QCA's Draft Decision (July 2012) on the Alternate Form of Access:

(p.ii) *"The Authority's key focus in this decision is therefore on draft amendments to QR Network's proposed alternative SAAs to give end users greater flexibility in managing their access rights which, in turn, increases competition in the above rail market and the competitiveness of the Queensland coal industry."*

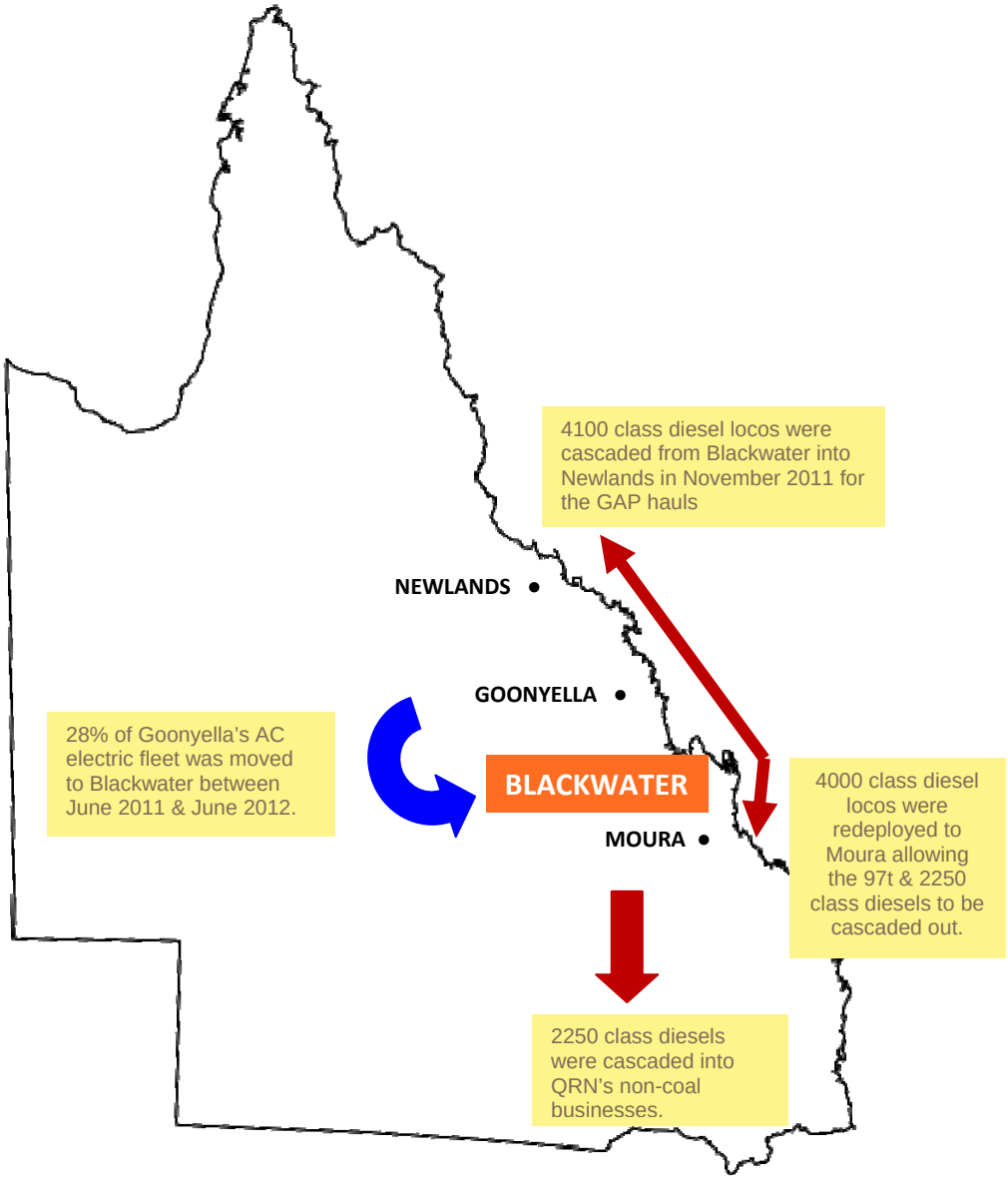
(p.7) *"The Authority is also currently assessing QR Network's proposed system rules for the Capricornia (Blackwater and Moura) and Goonyella systems. This will provide a further opportunity for all parties to consider in more detail measures that promote flexible and efficient systems operations."*

(p.18) *"The system rules, once approved, will provide a detailed operating framework which will impact on coal chain participants and QR network's operations."*

(p.12) *"In the case of cargo assembly mode of operation, port and rail requirements constantly change as the day of operation draws closer. Having a requirement that gives QR Network 3 weeks notice to use an alternate operator will prevent the end user from having the ability to respond to the environment in which they operate. It may also jeopardise the end users ability to effectively manage the use of their access rights."*

33 Toshiba, *Submission to the QCA on Sustainable Electric Traction Pricing- Draft Amending Access Undertaking (DAAU)*, 25 September 2012, p.3

Figure 2: QRN Allocation of Coal Rollingstock in Queensland



There is obviously no ability for either operator in Queensland to impose a small but significant and non-transitory increase in price (SSNIP)[34] in any one system, given the ability of the other, competing operator to re-deploy rollingstock from another system in response, or purchase new rollingstock. This is clearly evident from the strong competition for the Blackwater and Goonyella haulage tenders that are currently being contested.

In this respect, QRN notes that the QCA's own initiative with respect to the Alternate Form of Access will give even greater prominence to fleet interoperability and the flexible management of access rights by end users across the Goonyella, Blackwater and Newlands systems. This greater flexibility and scope for cross system traffics by end users will be enhanced when additional planned port capacity becomes available in the Central Queensland coal region (i.e. at Dudgeon

[34] Merger Guidelines, ACCC, June 1999, p.33; Defining the market when assessing the impact of competition "…*can be viewed as establishing the smallest area of product, functional and geographic space within which a hypothetical current and future profit maximising monopolist would impose a small but significant and non-transitory increase in price (SSNIP)…if consumers would switch their demand to close substitutes … it would not be profit maximizing for the hypothetical monopolist to impose a SSNIP and the relevant market would need to be expanded to include these sources of substitute products."*

Point, Abbot Point, WICET), with the extent of such cross system traffic governed by a mine's ability to gain access to port capacity and the economics of coal production.

There are, of course, some clear limitations on fleet movements, but none of these are such as to suggest separate markets. In this respect, other than the obvious constraint on the inability to deploy electric locomotives outside the electric network, there are some constraints on geographic re-deployment of locomotives due to the operational requirement to have available reasonably proximate maintenance and provisioning facilities. This would imply that major entry into a corridor by an operator from another system might require some investment in provisioning facilities. QRN does not however, consider that this investment is of such magnitude as to so significantly limit the possibility of supply-side substitution by operators across Queensland coal systems as to suggest separate markets. This is supported by Pacific National's statements to the effect that its Nebo facility will support its entire northern operations, not just Goonyella.[35]

QRN notes the discussion in the QCA's Draft Decision on the implications for market definition of a miner not having port allocations in different coal systems. QRN does not consider this to be a relevant consideration. That a Blackwater miner might not have a port allocation in, say, Goonyella, is not clearly relevant to above-rail market definition, and it is unclear why the QCA considered it in the Draft Decision.[36]

In particular, the QCA's Draft Decision found that producers were unlikely to be able to switch their volumes between systems due to long-term port allocations, and reasoned that the lack of such switching implied separate above-rail coal markets for Goonyella and Blackwater. The Draft Decision does not, however, appreciate that one does not clearly follow the other. This is because, if an operator imposed a SSNIP on Route A to B, the availability or otherwise of Route A to C as a substitute might be relevant to below-rail market definition (and particularly, whether Route A to B is uneconomic to duplicate), but it is hard to see what consequence it has to above-rail market definition. Given fleet/gauge technical interoperability and mixed diesel/electric fleets across the CQCN, both the existing operators could as equally serve A to B as they could A to C, or indeed, any other point-to-point combination. In other words, the QCA seems to be confusing the relevance of a SSNIP being imposed on the *below-rail tariff* for A to B with a SSNIP being imposed by an operator running trains on an A to B route. In this respect, the lack of an A to C substitute (due to port constraints) to defeat a *below-rail* SSNIP on A to B would suggest that the latter was uneconomic to duplicate – it is not relevant though to considering whether an operator on the A to C route could not supply A to B and defeat an *above-rail* SSNIP.

As regards the impact of the DAAU on competition, QRN provided extensive commentary to the QCA in September on the minimal impact of the DAAU on competition. To reiterate those earlier views, QRN does not consider that increasing the attractiveness of electric traction over diesel traction is equivalent to a proposal giving QRN an advantage over Pacific National, given the very small, non-sunk and re-deployable commitment of the latter to diesel in Blackwater. Further, QRN does not consider that traction choice is an essential, or even relevant, aspect of above-rail competition, given that both operators can and do offer either traction type. In any case, operators compete across many non-price points of differentiation other than traction choice, with competition being just as effective, if not more so, in single traction systems as it is in the hybrid Blackwater.

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35 QRN notes in this regard that Pacific National apparently plans to use its newly commissioned Nebo facility to support all its fleet in the Northern Systems, not just those in Goonyella. See: Pacific National, "Pacific National Coal officially opens new state-of-the-art $180m Nebo Train Maintenance Facility in regional Queensland", available at: http://www.asciano.com.au/resources/newsres/300812095842_120830_mr_nebo_opening_launch_final.pdf, which states: *"Pacific National said its $180 million new Nebo Maintenance Facility will support its coal haulage operations and further increase the efficiency of its coal haulage services in the Goonyella, Blackwater and Newlands rail systems. The five kilometre long facility will enable the provisioning and maintenance of Pacific National trains to ensure their reliable and efficient operation with a range of functions performed, including the refuelling of trains, routine train inspections and wagon and locomotive maintenance work."*

36 Draft Decision, p.34

Question 6: Strategic behaviour

The QCA has asked three specific questions with respect to strategic behaviour by Pacific National in the Blackwater system. QRN provided extensive consideration of this issue, including provision of the Ergas Report, in its September submission.

The QCA's three questions are answered as follows:

- First, the QCA has asked whether strategic behaviour is likely to occur when electric paths become available. QRN does not consider that electric path availability is the primary issue here, though it believes that the capital cost associated with those paths makes the issue more acute. In particular, strategic behaviour did not occur in the past as all electric paths were contracted to a single operator, QRN, which then inadvertently 'internalised' coordination of the system by fully utilising the available asset with its electric fleet. Given Pacific National's recent entry into the Blackwater system and the consequent risk to QRN's market share, the internalisation of patronage risk by QRN will inevitably result in QRN bearing the cost and risk of electric traction without additional return, and other market participants capturing the benefit. For a privately-owned company such as QRN, this is not a viable way to ensure efficient overhead utilisation.[37] QRN would note that reforms, such as the Alternate Form of Access, which 'de-link' long-dated access rights from operating agreements, will make this sort of internalised coordination by a single firm completely impossible.

- Second, the QCA has asked whether the DAAU can be considered 'on the same basis as having an adverse impact on competition as it would increase the cost of diesel traction'. QRN is concerned that the QCA appears to be likening the incentive for strategic behaviour by Pacific National with its unsubstantiated assumption in the Draft Decision that the DAAU was an attempt by QR Network to favour its related operator. There is plainly a difference between a transparent, public regulatory process designed to reform the pricing arrangements so as to ensure that essential economies of scale are realised, and an incentive for an entrant to use a flaw in the regulatory arrangements to impose costs on its rivals which, in turn, results in the loss of efficiency benefits to the overall supply-chain.

- Third, the QCA has asked whether the removal of average cost pricing would resolve concerns about strategic behaviour. QRN considers that this would depend on what replaced average cost pricing.

Question 7: Asset stranding

The QCA has asked whether the tipping point has been reached, and if not, at what point do stakeholders consider that it will be reached. QRN considers that the tipping point has been reached, in that the proportion of diesel locomotives operating in Blackwater results in an AT5 that further incentivises the use of diesel locomotives such that the efficiency of the electric traction infrastructure is unable to be realised without regulatory reform.

More generally, QRN considers that whether or not the tipping point has arithmetically been reached at any point in time is irrelevant to the DAAU, as the fact that the risk exists at all is inconsistent with below-rail returns being limited by the QCA to the cost of capital. Moreover, QRN would note that the outcome of current contract negotiations in Blackwater will be critical in

[37] QRN September Submission, p.13

determining longer term rollingstock allocation decisions, and thus the level of electric utilisation across the CQCN (c 60% of Blackwater tonnes are currently contestable).[38]

The QCA has also asked for stakeholders comments on how the CRIMP process might be improved. QRN is not eligible to vote in the CRIMP, but understands that its customers have expressed some dissatisfaction with the processes that have been run by QR Network to date. QRN welcomes industry discussion on this issue, as it would be in no-one's interest for the present situation to ever re-occur. However, QRN notes that improving the pre-approval mechanism for the future is an adjacent consideration to the Electric Traction DAAU. QRN would thus not wish to see this process unduly delayed by a redesign of the capex and expansion frameworks. QRN considers that this issue should occur when the investment framework is next considered, presumably through the course of UT4.

Question 8: Solutions

The QCA has sought views on three proposed solutions, one of which is the Sapere report. QRN provided extensive comments on this in a previous section.

(a) Review of AT2 and the capacity multiplier

The QCA's letter indicates that stakeholder responses to the DAAU identified AT2 and the AT2 multiplier (congestion charge) as part of the solution to the issues raised in the Draft Decision. QRN considers that while AT2 should be reviewed and updated for accuracy, it can only ever be a small part of the solution and that the role of the AT2 multiplier should not change. QRN submits that, instead, a sustainable solution to the electric traction issue will only be achieved if the following issues are addressed:

1. the need to signal efficient use of the electric assets, that is to promote allocative efficiency in traction choice, for example via some 'per unit' tariff (AT5) based on marginal cost, or some kind of average cost assuming full utilisation of electric assets;

2. QR Network's revenue adequacy, specifically related to recovery of the costs of sunk investments in electric assets, consistent with the QCA's commitment to not strand the electric assets and to minimise any distortion; and

3. the investment pathway for future expansions and renewals of the electric network, which must ensure QR Network is incentivised to continue to invest in electric overhead.

While QRN sees that a recalculated AT2 and capacity multiplier might go someway to addressing these issues, it does not consider that these issues are readily solvable by tweaks to existing price structures. This is consistent with QRN's view that the electric traction issue is not readily solvable by a market-based mechanism that preserves traction choice.

(i) Review of AT2

AT2 is designed to reflect the causal relationship between infrastructure usage and the cost of capacity expansion.[39] That is, it represents the cost of providing incremental capacity on the network, specifically, the current forward looking incremental cost of creating a new train path. AT2 is therefore critical to the efficient usage decisions of users and should be accurate and up-to-date.

[38] QR Network, *Submission to the QCA's Draft Decision on Electric Traction*, September 2012, Attachment B

[39] QCA Rail Access Arbitration Guideline No. 1: Incremental Capacity Consumption Charge, November 2002, p.5

QRN considers that, regardless of whether a particular user chooses to operate a diesel or an electric train, the consumption of a train path will impact on the capacity available to both electric and diesel train operators. QRN therefore considers that forward-looking electrical investment costs should be reflected in AT2. This is consistent with the fact that it is not operationally efficient to expand the Blackwater mainline, without also electrifying the expansion. Consequently, the costs of an additional (new) train path will nearly always include both electric and diesel infrastructure costs.

In this respect, while QRN understands that AT2 does in fact include the forward looking costs of both diesel and electric capacity, QRN considers that these costs have clearly changed substantially since AT2 was first determined. Consequently, QRN can see the need for AT2 to be updated to reflect the present cost of incremental capacity expansions.

Further, while the AT2 tariff includes forward looking costs for expansion, QR Network's Maximum Allowable Revenue (**MAR**) only includes costs that are actually incurred in providing access to the existing infrastructure. Consequently, AT2 is balanced by reducing costs allocated to AT3 and AT4 in order to ensure that QR Network does not exceed its MAR. QRN believes more accurate price signalling would be achieved where the future electric capacity costs included in AT2 are used to balance (that is, reduce) AT5 rather than AT3 and AT4. While QR Network's MAR would remain unchanged, this would assist in encouraging the use of electric traction in Blackwater.

Lastly, and noting all the above, QRN does not consider that updating the quantum of AT2, nor changing the way in which AT2 is set-off against other tariffs, will resolve the electric traction issue. In particular, these changes would only assist in signalling to users the investment pathway for future expansions and renewals of electric (as well as diesel) capacity. The remaining elements of the solution, namely the recovery of sunk investment in electric assets in Blackwater and the removal of the asset stranding risk, together with setting a price that signals efficient use of electric assets, are outside the scope of AT2 and must be dealt with separately.

(ii) Review of the AT2 multiplier

QRN considers that the AT2 multiplier should, like AT2, be accurate and based on up-to-date network capacity assumptions, but that it should continue to be applied to diesel trains that do not meet the performance standards of an electric Reference Train. The AT2 multiplier aims to reflect the additional cost of operating a train that does not conform to the performance characteristics of a Reference Train, particularly with respect to sectional run times. Trains which differ in other characteristics, such as axle load or train length are subject to their own separate Reference Tariff.[40]

There are a range of issues associated with determining the AT2 capacity multiplier, including for example, that it measures the difference in capacity consumption between the Reference Train and a non-Reference Train, but provides no pricing signal about the relative capacity consumption of two non-Reference Trains. The potential complexity of the multiplier is driven by the fact that the impact of a single train service on the network will vary depending on the total mix of trains operating in the system at any particular time, together with numerous other factors. The QCA has previously argued that the "capacity consumption of a particular train should be determined by the simple ratio of the network's capacity for the predominant train relative to the proposed train"[41], where predominant train refers to a Reference Train. This approach has the benefit of simplicity and reflects the cost of an operator's choice of train type, relative to the Reference Train.

[40] QCA Rail Access Arbitration Guideline No. 1: Incremental Capacity Consumption Charge, November 2002, p.16

[41] QCA Rail Access Arbitration Guideline No. 1: Incremental Capacity Consumption Charge, November 2002, p.14

At issue is the relevance of a capacity multiplier that is effectively a cost-reflective price signal to operators about the type of trains they choose to operate. In the context of traction choice in Blackwater, the role of a multiplier should be to signal to the operator the impact on network capacity of a decision to operate a diesel train where sectional run times are not met. QRN acknowledges that the exact impact is likely to differ depending on whether the particular diesel train in question is the only diesel train, or the next of many diesel trains operating.

QRN doubts that this level of operational complexity can be effectively dealt with by a price-signal. While it supports a review of the capacity multiplier, it does not consider that the multiplier is the panacea to this issue, for the reasons given in the body of the submission. Namely, it is unclear how an imperfect, regulated price-signal will effectively ensure against coordination failure around traction choice. QRN will continue to support reviews of the capacity multiplier, but considers that the capacity multiplier is ultimately a highly-complex adjacent issue that will not resolve the main issues, particularly, the need to mitigate stranding risk while ensuring the supply-chain obtains the benefit of coordinated decision-making.

(b) QR Network reduces AT5 voluntarily, or optimises the electric RAB

The QRC has suggested that QR Network voluntarily reduce AT5, thereby promoting increased patronage. QRN would, of course, support a reduction in its Blackwater customers' below-rail tariffs where consistent with reasonable regulatory practice and theory, but considers it unlikely that QR Network, or indeed any regulated infrastructure provider[42], would defer revenue in the absence of utilisation commitments.

In particular, QRN, as an operator, is not supportive of any mechanism that would send negative signals to infrastructure owners or investors (including investment by user funders) and ultimately put at risk the industry's common objective of increasing coal exports. As a regulated business, QR Network's return is limited to the regulated WACC precisely because it does not have to respond to patronage risk by revenue deferral, as an investor in a another asset class might be expected to do. In this respect, for the QRC to suggest revenue deferral, in the absence of a mechanism to ensure revenue adequacy, does not appear to be consistent with the status of the asset as being regulated. In effect, the suggestion is for QR Network to earn less revenue immediately, with no certainty about the timing of recovery, without the underlying asset stranding problem being resolved. This would plainly seem inconsistent with below-rail returns being limited to the regulated WACC, as it would imply both stranding and patronage risk. The existence of such a risk in Queensland regulated assets would create investment uncertainty, including for investors in supply-chain assets other than the below-rail network.

[42] QRN notes the comments by the North Queensland Bulk Ports Corporation in their submission to the QCA on the Draft Decision, dated 20 September 2011. In particular that the *"NQBP supports the QCA's stance to avoid infrastructure pricing which may result in stranding of previously approved investments."*