Rio Tinto

Rio Tinto Coal Australia

Submission to the Queensland Competition Authority in response to Aurizon Network proposed 2013 draft access undertaking (UT4)

10 October 2013

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1 Summary

Aurizon Network's attempt to use UT4 to introduce U.S-style deregulation threatens the competitiveness and future growth of the Queensland coal industry

- Aurizon Network has sought to use UT4 to achieve substantial deregulation of the Central Queensland Coal Network (**CQCN**), following the example of the United States (**US**) railroads in the 1970s and 1980s. In doing so, UT4 seeks to unwind a number of the regulatory protections for users contained in UT3 and abandon the "deal" between the State Government with the coal industry at the time of privatisation, which secured continued investment in rail infrastructure at an efficient, regulated rate of return.

- The Queensland (and Australian) coal industry faces unprecedented cost and margin pressure. Aurizon Network's own proposal acknowledges the finding of the independent report of Port Jackson Partners in 2012 that capital costs had contributed to thermal coal projects being 66% more expensive than the global average, putting the majority of the current project pipeline at risk.[1]

- Based on its recent experience, Rio Tinto Coal Australia (**RTCA**) estimates that the share of new project capital costs associated with rail infrastructure in Queensland has risen to approximately 30% of the effective commitment for a new mining project.

- At the same time, in a year in which the Queensland coal industry has been under such immense cost and margin pressure, and in which **volumes grew by only 4%**, Aurizon Network by its own account increased regulated revenues by **22%** and EBITDA by **48%**.[2]

- For Aurizon Network to argue as it does, against this evidence, that the current regulatory framework is having a detrimental impact on its shareholders or exposing them to *"unacceptable levels of risk"*,[3] is clearly unjustified.

- It is inconsistent with the statutory criteria in section 138(2) of the *Queensland Competition Authority Act 1997* (Qld) ("**QCA Act**"), legal and regulatory precedent, and commercial reality to sacrifice long term certainty and predictability for current and future coal producers simply to advance and "protect" the interests of Aurizon Network shareholders.

Aurizon Network relying on a "commercial negotiation-arbitration" model without a detailed, transparent and well enforced UT4 framework will undermine investment and confidence in the Queensland coal industry

- Over the early 2000s, there were over 140 access disputes in the telecommunications sector under the 'negotiate / arbitrate' model then in place under Part XIC of the *Competition and Consumer Act 2010* (Cth) (**CCA**). This painful experience resulted in its overhaul and replacement in 2011 by a framework which provided for detailed, up front regulatory determinations by the Australian Competition and Consumer Commission (**ACCC**).

- In explaining the change, the Commonwealth Parliament found:

> *… the negotiate-arbitrate model is very slow, cumbersome and open to gaming (if not outright obstruction), and that Part XIC in its current form does not provide sufficient regulatory certainty for investment. It is ineffective largely because it has not effectively*

[1] Port Jackson Partners, Opportunity at Risk, Regaining our competitive edge in Minerals Resources, Report commissioned for the Minerals Council of Australia, at p12. Quoted in the UT4 Proposal at page 30.

[2] Aurizon Network, *Further information on Aurizon Network*, May 2013, slide 12.

[3] UT4 Proposal at page 33.

constrained the incentive of the vertically-integrated Telstra to provide access to its network on terms that are not as favourable as those it supplies to its own retail business…[4]

- Aurizon Network's inflexible commercial arrangements have constrained the ability of producers to quickly and commercially resolve a range of straightforward issues, such as the connection of new infrastructure and transfers of capacity. Producer negotiations with Aurizon Network over more significant long term issues have also proven increasingly difficult as the following examples demonstrate:

  - **GAPE negotiations** – the timing of (unregulated) funding negotiations for the GAPE project under UT2 were consistently 'gamed' by Aurizon Network to permit it to achieve monopoly rents.

  - **WICET negotiations** – once again, Aurizon Network gamed funding negotiations (this time under the UT3 access condition process). Aurizon Network then used litigation against the QCA to seek to prevent proper consultation with other affected stakeholders around the terms of funding.

  - **SUFA** – Aurizon Network took over two years to deliver a set of SUFA documents. The process was characterised by an unwillingness on the part of Aurizon Network to accept basic commercial concessions needed in order to make the framework operate and the final set of agreements was filed with the QCA "sight unseen" by the QRC working group and without any supporting Expansion process drafting.

  - **Blackwater Electrification DAAU** – Following the dysfunctional CRIMP process which was characterised by a lack of transparency and disclosure by Aurizon Network, it has subsequently tried various means over the last two years to seek to have costs of the Blackwater electrification recovered from users and providers of diesel services that do not benefit from the use of electric assets. While claiming that this process has involved 'commercial negotiation', the most recent attempt as reflected in UT4 (Schedule G) does not reflect *any* compromise or shift in position.

  - **2011-12 RFP processes (including Study Funding)** – Aurizon Network commenced three parallel RFP processes during 2011-12. These were characterised by a lack of transparency, demands for unreasonably detailed and sensitive commercial information and unbalanced commercial terms for carrying out the concept and feasibility studies. Ultimately, and remarkably, Aurizon Network abruptly terminated the processes because it identified that $50m had already been levied on access holders to undertake the work as part of the 2010 CRIMP.

- In lodging UT4 in its current terms, Aurizon Network has invited the QCA to ignore this history and to adopt the now abandoned approach in telecommunications of reliance on the arbitration of disputes to determine key issues. Needless to say, several years of repeated, public and highly contentious disputes between coal producers and Aurizon Network would risk seriously eroding investor confidence in Queensland as a stable environment for resources investment and development, at a time when the State of Queensland can least afford it.

- Amongst other things, this risk should have obvious consequences for the QCA's assessment of whether UT4 satisfies the public interest criterion in s 138(2)(d) and the objects of Part V of the QCA Act.

[4] Explanatory Memorandum, *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Bill 2010,* p 48.

Privatisation of Aurizon Network and expanding vertical integration within the Aurizon Group has increased the importance of effective regulation, not reduced it

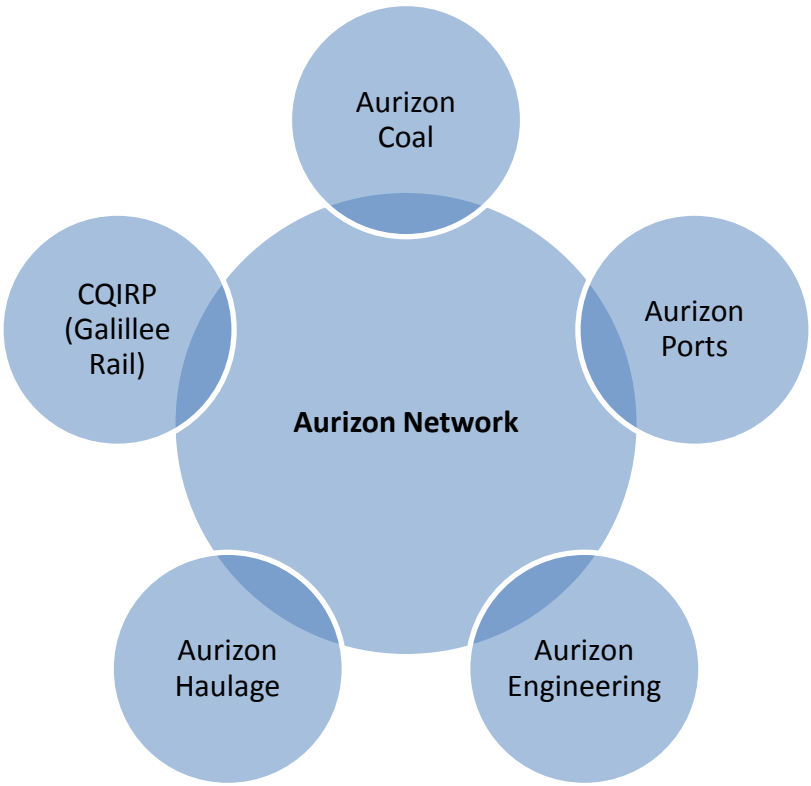
- Aurizon Network argues that privatisation has been a "game changer" and that the QCA needs to now take into account the different expectations of private capital when assessing UT4. This is both legally and economically wrong.

- In *Telstra Corporation Limited v The Commonwealth,*[5] the High Court unanimously found that Telstra shareholders accepted at the time of privatisation a "bundle of rights" that was limited and subject to the regulatory access obligations imposed on Telstra (both current and future). In the case of Aurizon Network, this would include the commitment to capital investment at the regulated rate of return.

- Economically, privatisation and increasing vertical integration has *increased* the ability and incentive for Aurizon Network to discriminate in favour of its related (unregulated) commercial activities, to engage in cost shifting and cross subsidisation and to seek to avoid scrutiny by customers and the regulator.

- The increasing degree of integration between Aurizon Network and other activities of the Aurizon Group highlights the importance of a transparent, well-defined and clearly enforced UT4 regime.

Figure 1. Aurizon Network's increasing degree of commercial integration with activities in other parts of the Aurizon Group



[5] (2008) 234 CLR 210.

What is needed is not to radically depart from UT3, but for UT4 to provide a stable framework that builds on UT3 and focuses on fixing areas where it has failed

- Over the UT2 and UT3 periods, the State of Queensland has fallen behind the Hunter Valley, which has developed more integrated, transparent, flexible and efficient regulatory arrangements.

- UT4 should not involve radical and disruptive changes to the regulatory framework. Instead, RTCA submits that the emphasis should be on targeted improvement in three key areas:

  – improving the structure of the capital planning process to provide for greater transparency, direct involvement by coal producers and other stakeholders, and a more integrated process with the rest of the coal chain;

  – improved operational flexibility – including in key areas such as the management of take or pay entitlements, scheduling and the development of System Rules; and

  – realigning the cost of capital to reflect market developments.

An improved capital planning process that provides transparency, certainty and stability

- In its draft "Expansion Process", Aurizon Network removes or dilutes most of the important capital planning obligations in UT3, reducing transparency (and increasing Aurizon Network's discretion) and removing stakeholders from direct involvement in the planning process.

- The practical effect of the draft UT4 proposal would be to enable Aurizon Network to dictate the terms, location and timing of investment throughout the Queensland coal industry, by ignoring the planning assumptions of others in the coal chain and effectively avoiding any oversight over rail investment and capacity by producers, the regulator or the Government.

- While capital planning has been a key weakness of the regulatory arrangements under UT3, to a large extent the failings of UT3 were due to processes not being clearly enough defined or properly enforced. These are the areas that can be easily fixed and should be the focus of improvement under UT4.

- RTCA's approach is therefore to *build on the UT3* framework, in the following ways:

  – The establishment of a process for coal producers to directly participate in the development of system capacity and demand assumptions through the establishment of 'rail capacity groups' (**RCGs**). RCGs can then play the critical 'transparency' role – that has been missing under the Queensland regime to date – of developing and approving capacity and demand assumptions, undertaking customer capex votes and reviewing and endorsing annual maintenance plans and spending.

  – Provide an integrated 'end to end' process where each of the components works with and supports other parts of the process (e.g. the NDP supports concept studies and customer vote processes, that support funding negotiations etc.), rather than each operating largely separately and in isolation.

  – Regular demand testing by Aurizon Network, including where required by defined "trigger events".

  – An annual master planning process that provides the definitive public statement of all critical demand and capacity inputs used by Aurizon Network in its capital planning and

sufficient detail to enable all stakeholders to understand the key costs, timeframes and planning options for each system and project to meet the next required 'stages' in growth.

- A genuine, commercially balanced customer vote process should form a standard feature of *all* major capital expenditure projects the cost of which is intended to be socialised across users through regulated tariffs. Votes must cover all of project scope, standard cost allocation. The RCGs should be used for this purpose, as occurs in the Hunter Valley.

- The existing UT3 "capacity shortfall" process needs to be retained. Aurizon Network must not be permitted to remedy a capacity shortfall only where this is consistent with its "commercial objectives".[6] This would defeat the purpose of the clause, which is intended to support investment confidence by ensuring that a producer can be confident of aligning investment in capacity across its mine, rail, rolling stock and terminal.

- Retain existing funding obligations – including both the $300m capital expenditure commitment and the "access conditions" process. If Aurizon Network is not prepared to provide this continued and stable regulatory environment, it should be prevented from obtaining any above regulated return in respect of capital expenditure on the CQCN (i.e. including any future Expansion expenditure).

- Oversight of the capital planning and customer vote process must remain with the QCA.

- Capital planning is one area where important lessons can be taken from the experience of Australian Rail Track Corporation (**ARTC**) in the Hunter Valley. While there are differences between the Hunter Valley and Queensland, RTCA does not accept the submission made by Aurizon Network that this limits the value of the ARTC as a 'best practice' regime with features that could be emulated. To the contrary, the structure of the Goonyella system (a mainline linking to two neighbouring terminals) is very similar to the Hunter Valley. While there is some limited cross-system traffic in the north and south of the system, this would certainly not limit the practicality of introducing valuable elements from the ARTC and HVCCC arrangements into the Goonyella (or other Queensland systems).

- RTCA refers the QCA to clause 9 of ARTC's Hunter Valley Access Undertaking (**HVAU**) which provides for the establishment of RCGs and sets out their voting arrangements and role in the planning process. Clause 9 of ARTC's HVAU is reproduced in full at Annex C to this submission.

- An RTCA overview of key elements in an effective capital planning process, which seeks to integrate best practice from the Hunter Valley with the key features of the CQCN framework, building on UT3, is set out at Annex A.

Creating a framework with the operational flexibility to enable each coal chain to develop its own "local solutions"

- For a number of years, inflexibility and a lack of contractual alignment in Queensland coal chains has imposed substantial costs and inefficiencies on the Queensland coal industry that prevent investment, constrain growth, and which impair its global competitiveness.

- RTCA agrees with Aurizon Network that it is time coal producers, and not Aurizon Network, take over leadership of the development of "local solutions" to improve contractual alignment (between port and rail rights) and their flexible use (aligning port and rail modes of operation).

[6] Clause 8.10 of proposed UT4.

- To do so, however, UT4 must provide producers with the tools they need to be able to develop and implement such solutions. Instead, as currently proposed, UT4 would take coal chain coordination in Queensland *backward* by granting Aurizon Network *more* discretion and effectively "killing off" any chance for material improvement over the term of the undertaking.

- RTCA therefore submits that the QCA needs to take the opportunity afforded by UT4 to establish a framework within which the industry can develop and implement genuine 'best practice' approaches to coal chain operating arrangements. This will require:

  - A new "coal chain" orientated objective modelled on those proposed by the QCA for the Capricornia System Rules.

  - A defined and transparent process for the development, approval and oversight of System Rules, with clear rights for producer involvement through RCGs.

  - Greater flexibility in the scheduling of train paths and a direct role for coal producers in the development of alternative scheduling principles.

  - Allowance for scheduling and contract management to be performed in the future by a system coordination body on behalf of multiple producers / access holders.

  - Tools to implement "local solutions" that deliver flexibility associated with contractual "take or pay" entitlements, including a short term transfer mechanism for rail capacity in the coal chain (modelled on clause 16.4 of the Hunter Valley ARTC Access Holder Agreement (**AHA**)). The concept of "operator capping" currently proposed in UT4 is unfair as it benefits large operators (notably Aurizon Coal) over producers and smaller operators and should therefore be rejected.

Pricing principles

- Aurizon Network has sought to use UT4 to introduce U.S-style deregulation of pricing, including allowing for substantially greater pricing flexibility and price discrimination between individual access holders, based on non-standard access terms.

- RTCA does not support greater price discrimination between access holders, without any such pricing, and the justification for that pricing, being made transparent and available to other access seekers or access holders. Without these features, UT4 would not satisfy the fundamental statutory requirement in section 137 of the QCA Act (that it contain provisions for identifying, preventing and remedying unfair differentiation).

- RTCA objects to any attempt to move away from RAB-based valuations to a DORC methodology for the purpose of setting new standalone tariff ceilings. Using a DORC valuation for individual service types was rejected in telecommunications in 2011 as being slow, dispute-prone and unfair, and this would be particularly the case in the CQCN in circumstances where only *some* reference tariffs would be set on this basis.

- RTCA objects to any greater flexibility for Aurizon Network to establish differential pricing based only on differences in its *commercial* terms with producers. The high degree to which costs and risks associated with the CQCN are socialised across producers mean that it is not correct to argue, as Aurizon Network does, that it is the only party accepting "risk" associated with non-standard terms.

- In relation to future expansion pricing, RTCA submits that the GAPE DAAU and WICET processes highlight the need for clear "default" pricing principles to provide certainty for future investment. These should not be left for 'case by case' development and approval. UT4 should

include default principles that adopt the "incremental up/socialisation down" approach referred to with approval by the QCA in its recent capacity pricing discussion paper.[7]

- The very substantial "greenfield" investments that have been undertaken in recent years at GAPE and WICET also need to be recognised, and UT4 should ensure that future pricing of any capacity that leverages off these investments includes a levy that ensures a fair pricing outcome that socialises any tariff benefits with foundation GAPE and NAPE producers.

- Finally, the UT4 process also highlights the absence of clear and transparent cost allocation rules in UT4 (or in UT3), a gap evident also recently during the GAPE DAAU process. RTCA submits that a set of allocation rules should be specified by the QCA and incorporated into UT4 to guide future tariff setting.

Tariff structure and cost of capital

- Aurizon Network has taken an approach to the rate of return which consistently adopts an upward bias in the estimate of individual parameters and therefore the overall cost of capital.

- The adoption of upper bound WACC values has no justification either in economic theory or in the legislative framework. It is an approach which puts undue emphasis on Aurizon Network's commercial interests, at the expense of the legitimate interests of network users and the promotion of efficient investment.

- RTCA's view on the appropriate rate of return for UT4 is summarised in Table 1 below (which reflects and endorses the views of the QRC).

Table 1: Summary of RTCA view on UT4 WACC parameters

Parameter	RTCA proposed value	Summary of reasons
Gearing	0.55	No change proposed to UT3 gearing.
Risk free rate	2.98%	QCA should maintain its approach of using 5-year CGS yields to measure the risk-free rate.
Debt margin	2.60%	The debt margin should be based on 5-year corporate bond yields, as this better reflects efficient financing practices of infrastructure businesses such as Aurizon Network.
Debt raising costs	0%	No justification or evidence is provided in support of Aurizon Network's claim for debt raising costs. In the absence of any evidence as to the efficient cost of raising debt finance, no allowance should be made.
MRP	5% - 6%	A balance of the empirical evidence supports a range for the MRP of between 5% and 6%.
Equity beta	0.4 – 0.6	Given the very low risk of Aurizon Network's business and the trend of risk reduction achieved by QR / Aurizon Network, a reduction in the equity beta is justified, not an increase as proposed by Aurizon Network. The available evidence supports a range for the equity beta of between

[7] QCA, Capacity Expansion and Access Pricing for Rail and Ports, April 2013

Parameter	RTCA proposed value	Summary of reasons
		0.4 and 0.6.
Gamma	0.50	A balance of the empirical evidence supports a value for gamma of 0.5, as previously adopted by the QCA.
Nominal WACC	**5.65%**	Combining the above parameter values results in a nominal vanilla WACC for UT4 of 5.65%.

Notes: (1) where a range of values is proposed, the midpoint value is adopted; (2) risk-free rate and debt margin values are averaged over the last 20 business days of June 2013 (the 20 business days to 28 June 2013).

Maintenance

- RTCA agrees with the QRC submission that:
  - There continues to be a lack of transparency and engagement with industry around Aurizon Network's approach to maintenance. As a consequence, costs are too high and are not being reduced in a manner consistent with an efficient owner.
  - The claimed cost savings associated with internal sourcing are not supported by evidence and the process for internal sourcing is non-transparent.
  - Volume forecasts appear overly high and unrealistic and there is no evidence sufficient to support shifting AT1 into the revenue cap.
  - The attempted shift by Aurizon Network from cost-based to "replacement cost" asset valuations is inappropriate and out of step with regulatory practice.
  - Aurizon Network's benchmarking approach is flawed.
- RTCA therefore supports the conclusions of the QRC that a new approach is needed that provides genuine transparency and involvement for stakeholders in defining and overseeing the maintenance task. This is an activity which RTCA considers should be one of the matters given to RCGs.

Operational expenditure

- Aurizon Network has not provided sufficient information or transparency around the basis for a number of its operational expenditure claims to enable them to be properly tested by industry.
- However, from what information has been provided, it appears to RTCA that Aurizon Network's operational expenditure claim does not reflect reasonable benchmarking or current market realities.
- RTCA has had the benefit of reviewing the draft submission of the QRC and endorses and supports those submissions.
- In addition to the arguments raised by QRC, RTCA is concerned that the operational expenditure claimed may include the Powerlink contract costs which were part of the Blackwater electric traction DAAU process. RTCA submits that the QCA should investigate whether, or to what extent, Aurizon Network has sought to recover these imprudent costs in the

opex allowance under UT4 and maintains that these should be excluded (see section 4.13 of this submission).

Blackwater Electric Traction

- RTCA repeats its earlier submission that it remains open to a commercial solution to Aurizon Network's commercial concern about the electric traction costs of Blackwater, however this must involve genuine compromise and flexibility not yet apparent in Schedule G of draft UT4.

- RTCA also strongly objects to:

  – the socialisation of electrification costs in relation to Rolleston (which appears implicit in the volume assumptions underpinning Schedule G);

  – any change to the description of the reference train service on the Blackwater system to include only electric traction services; and

  – a change to the standard reference train description for the Blackwater system, to be electric-only.

Ballast fouling

- In UT3 the QCA decided that QR Network, not users, should bear the risk of higher costs associated with QR Network's imprudent maintenance practices. Aurizon Network's UT4 ballast fouling proposal is an attempt to reverse the decision made by the QCA in UT3 in relation to the costs of Aurizon Network's imprudent ballast maintenance practices.

- Aurizon Network has not demonstrated that its past approaches to ballast fouling have been cost effective or that it has adopted an efficient approach to maintaining a sound ballast. Accordingly, the adjustment made by the QCA in UT3 for ballast fouling should be maintained.

Access Agreements

- RTCA endorses and supports the views and recommendations of the QRC in relation to the changes to the Standard Access Agreement (**SAA**) proposed as part of UT4.

- In particular, RTCA is concerned that:

  – the proposal makes a number of changes that undermine access holders' security over their rights, including increased relinquishment and resumption powers for Aurizon Network; and

  – the agreement introduces further commercial imbalance as between Aurizon Network and access seekers, and is not consistent with efficient terms that would be agreed in a workably competitive market;

  – the amendments introduce greater scope for pricing differentiation between different "Train Service Types" (see comments made under 'pricing principles' above).

- RTCA also notes earlier comments that a short term capacity transfer process needs to be introduced to facilitate the development by industry of more effective and flexible coal chain coordination and efficiency arrangements.

- Aurizon Network has also reorganised a number of obligations that were covered under both the SAA and the undertaking. It is important that a number of these obligations can continue to

be enforced directly by the QCA and not only through contractual or access disputes. UT4 must therefore, at the least, include a clear statement that any obligations under the SAA or other ancillary documents (including the System Rules) take effect as part of UT4 and may be enforced on that basis by the QCA.

Ring fencing

- RTCA shares the concerns of the QRC that the 'simplified' ring fencing obligations in the proposed UT4 are inadequate:
  - The Aurizon Group's increasing involvement in above rail projects, ports and non-regulated rail infrastructure (e.g. Surat Basin Railway and the Central Queensland Integrated Rail Project (**CQIRP**)) mean that Part 3 of UT4 must go beyond simplified ring-fencing and directly address the numerous actual or potential conflicts of interest that exist between Aurizon Network and its related companies;
  - the risk of discrimination and conflicts of interest is magnified by moving key Aurizon Network functions (such as Engineering and Project Delivery and Specialised Track Services) out of Aurizon Network and in to a centralised function, shared with other unregulated parts of the business;
  - it is contrary to the interests of access seekers and the public interest that Aurizon Network can structure the UT4 arrangements so as to benefit its own above rail and other unregulated businesses; and
- QCA should require Aurizon Network to wholly rewrite Part 3 of UT4. RTCA therefore endorses the re-draft of the ring fencing and conflict of interest rules proposed by the QRC.

Dispute resolution and reporting

- RTCA supports the continued and important role of the QCA as arbitrator in any disputes under UT4, the SAA and associated documents (e.g. the System Rules).
- RTCA adopts the submissions made by the QRC in relation to Aurizon Network's proposed dispute resolution framework and the reporting and auditing framework in Part 10 of UT4 proposed by the QRC.

RTCA comments on the application of the statutory criteria

- The statutory criteria under section 138(2) of the QCA Act are broad and, contrary to Aurizon Network's submissions, precedent from other industries has clearly established that no individual criteria is to be given fundamental weight over the others.
- Aurizon Network's attempt to expand the scope of its "legitimate business interests" so that it becomes a dominant consideration should be rejected. This has been found to be an "open textured" criterion, and one which should not be given undue weight against other important issues, such as the interests of access seekers and the importance to investment of a stable and transparent regulatory process.
- Aurizon Network's privatisation (and positioning of itself as a 'growth stock') does *not* affect the interpretation of what constitutes its "legitimate business interests". To the contrary, if anything, privatisation and related incentives heighten the need for effective regulation under UT4.
- For the various reasons set out in this submission, RTCA submits that UT4 is not capable of acceptance and should be rejected.

2 RTCA recommendations

The statutory criteria and Aurizon policy assumptions

Recommendation	Comments
1. The QCA should not accept the claim that the "legitimate business interests" criterion imposes significant constraints on the QCA's discretion under section 138(2). **Of greater relevance is the link between the legitimate business interests of *access seekers*, and the need for a transparent and non-discriminatory UT4 regime.**	Judicial and regulatory precedent clearly shows that the "legitimate business interests" criterion: · to the extent that it is relevant to pricing matters, means no more than that Aurizon Network is entitled to an efficient regulated rate of return on any investment; · neither requires "risk or cost neutrality" in relation to a decision of the QCA nor otherwise protects Aurizon Network from the risk of optimisation or asset stranding; · does not require any change in the approach to regulation merely due to the introduction of private capital (and internal management incentives) through privatisation. Accordingly, in the case of Aurizon Network, the: – expectations of shareholders as to what it is in the company's and their legitimate business interests; and – mix of regulated and unregulated business that Aurizon Network now engages in, will not affect what constitutes Aurizon Network's "legitimate business interests" under s 138(2)(b) of the QCA Act; and · requires, in relation to the interests of access seekers, that UT4 provide sufficient transparency and certainty to enable them to compete effectively on their own merits, without their individual competitiveness being distorted by the actions and incentives of Aurizon Network.
2. The QCA should not accept the proposition that an assessment of the "efficiency" object in section 69E should focus on contestability in related markets.	The object provisions in s 69E of the QCA Act: · properly focus on the conduct of the service provider rather than the conditions for competition in dependent markets; and · require major shocks or unwarranted changes in regulatory approaches to be avoided – particularly where this involves markets like the coal industry where large, long-term sunk investments have been made in reliance on the regulatory framework.
3. UT4 should not move to "negotiate-arbitrate" model involving greater commercial discretion for Aurizon Network and an increased role for resolving specific terms of access through QCA-arbitrated disputes.	· Practical experience in Queensland (and other regulated sectors, such as telecommunications) has demonstrated that an effective negotiate-arbitrate outcome is only possible where the framework within which agreement is negotiated is clearly defined and well enforced.

Recommendation	Comments
4. The QCA should not accept the proposition that privatisation has "changed the game" so that substantial deregulation is required in UT4 to protect the interests of Aurizon Network shareholders.	· The existence of private capital does not affect the economic or legal rationale for access regulation. To the contrary, to the extent that private capital increases the incentive to integrate and engage in monopolistic behaviour (in order to provide a greater return to shareholders), privatisation *increases* the justification for effective regulation. · It is not correct that the risks of regulation are asymmetric. Based on RTCA's experience with the GAPE project, it estimates that below rail investment constitutes approximately 30% of the effective commitment for a new project. The risk of getting UT4 "wrong" is therefore more significant for the growth pipeline of coal producers and other coal chain stakeholders, because, unlike Aurizon Network, the coal industry is not protected from the cost pressure of a highly competitive global market. · Aurizon Network has acknowledged that the existing UT3 framework substantially insulates it from volume and patronage risk.

Capital Planning

Recommendation	Comments

5. UT4 should not abandon the key elements of the planning process in UT3.
To the contrary, it should build on and fix past implementation issues in order to deliver a genuine process for coal producers to participate in the development of capacity assumptions through "rail capacity groups".
	· *Rail capacity groups*. Aurizon Network should convene a monthly meeting of a RCG for each coal system with, at least, the following roles:
	  · developing or approving all demand and system capacity assumptions used by Aurizon Network for system planning;
	  · the customer vote process – regarding capital planning;
	  · consultation and approval of System Rules, and any variations; and
	  · approval of the new annual Maintenance Plan (see section 7.9 below).
	· *Capacity assumptions.* Aurizon Network must either use system assumptions approved by a majority of an RCG or, alternatively, submit its own system assumptions to each RCG for approval.
	· *Oversight.* If Aurizon Network does not agree or adopt system assumptions proposed by a RCG, it must publish the assumptions proposed by the RCG in the NDP and specify the assumptions with which it disagrees, and its grounds for doing so, as well as the assumptions which Aurizon Network instead intends to use for planning purposes.
	· *Disputes.* Members of a RCG may dispute a refusal by Aurizon Network to accept or use capacity assumptions for the purpose of the NDP where a majority of stakeholders

Recommendation	Comments
	support the alternative assumptions.
6. UT4 should retain a set of "trigger events" for demand testing as well as including a new annual assessment of demand as part of the Network Development Plan (NDP) process.	Aurizon Network should be required to: · undertake demand testing not less than once each year, as part of its development of the NDP and publish the aggregated demand requirements over the next 2-5 years for each system as part of the NDP (although without identifying specific producers or mine locations); and · update its demand assessment following the specific trigger events identified in the QRC submission.
7. The NDP and its related process must have the minimum features of a "best practice" rail planning regime.	· It must be published on an annual basis and updated quarterly (or as otherwise required, given developments). · It must provide the definitive public statement of all critical demand and capacity inputs used by Aurizon Network in its capital planning – and must enable stakeholders to identify when and why Aurizon Network has not agreed with their own demand and capacity assumptions, where these have not been adopted. · It must require Aurizon Network to provide sufficient detail to enable all stakeholders to understand the key costs, timeframes and planning options for each system and project to meet the next required "stages" in growth. The obligation on Aurizon Network must be substantially higher than merely "having regard" to a range of factors, when preparing the NDP. · It must provide transparency around any identified or forecast capacity shortfalls, including the cause(s) and steps being taken by Aurizon Network to remedy them. · It must keep all stakeholders updated on the progress of projects at any stage (concept, pre-feasibility, feasibility and/or construction). · Most importantly, the NDP must provide a real role for all stakeholders and must play a concrete role that links into the commencement of concept studies and the Expansion Process. · To the extent that the NDP is inadequate, there must be a process for stakeholders to have the QCA require additional material to be included. This could be through an independent review of the NDP and whether it provides sufficient technical information to support a threshold set of planning requirements by other stakeholders.
8. The proposed Extension Process must be rejected in its entirety.	· The QRC, with input from industry, has developed a set of key principles which it considers need to guide the Expansion Process. · The QCA and QRC should work together to develop a workable alternative process, incorporating those principles.

Recommendation	Comments
9. The QCA should offer Aurizon Network the choice of retaining the existing $300m investment and "access condition" requirements, or limit all capex to the regulated rate of return.	· Aurizon Network should be entitled to recover capital expenditure invested in network capacity (including any Extension) but only through including the capital expenditure in the RAB and System Allowable Revenues (**SAR**), and recovering that expenditure through reference tariffs at the regulated rate of return. · Aurizon Network should not be entitled to include *any* new capital expenditure in the RAB/SAR unless it has previously been disclosed to producers through the NDP.
10. The proposed SUFA framework requires amendment as proposed by the QRC. **The QCA should recognise the limitations of this type of proposal generally, but also recognise the limitations with Aurizon Network's particular proposal.**	· The SUFA documents are complex, commercially unbalanced and are unlikely to be bankable for any but the largest projects, if at all. At the least, the amendments proposed by the QRC in its SUFA submission should be required to be adopted by Aurizon Network. · The SUFA documents do not provide a basis for relaxing other UT3 capital planning or investment obligations. · For SUFA to operate as intended, it must also be supported by a workable capital planning and Expansion process, as outlined in this chapter. This is not currently the case with the draft UT4.
11. The customer vote mechanism is important and all capital expenditure to be recovered through regulated revenues should be subject to one. **However the proposed UT4 customer vote process is entirely unacceptable and must be replaced with a balanced and transparent process through RCGs.**	At a minimum, any customer vote process needs to have the following features: · Customer voting should occur through RCGs. · RCGs should be able to anticipate possible votes well in advance, through monthly meetings with Aurizon Network and the NDP. · The existence of a customer vote and the associated project needs to be publicly notified to all stakeholders, together with any other stakeholders that Aurizon Network considers are eligible to vote – so that any dispute as to eligibility occurs *before* the vote. · A vote must relate to **all** of scope, standard and cost allocation – it is not appropriate for Aurizon Network to be able to cherry pick. · If a majority of voting producers wish to have the vote postponed, to allow for them to take further advice on the project, they can do so. · must set out clearly the information which must be provided by Aurizon Network to voting customers (the information requirements which form part of the 60/60 voting process at DBCT provides a useful guide in this regard[8]). · There must be no limitation on the reasons for a 'no' vote and no discretion for Aurizon Network to determine which votes are counted. · Any failure to vote should be treated as an abstention (neither

[8] See clause 12.5(h)(2).

Recommendation	Comments
	'yes' nor 'no'), and any uncertainty should be deemed to be a 'no' vote. This is justified given that Aurizon Network retains the right to seek QCA approval irrespective of the outcome and so should not be favoured by 'deemed' support for a proposal. · Any audit or dispute that identifies a flaw or irregularity in the process that the auditor (or QCA) consider may have affected the outcome, will require a fresh vote – although potentially under a shorter timeframe.
12. RTCA repeats its earlier submission that it remains open to a commercial solution to Aurizon Network's commercial concern about the electric traction costs of Blackwater, however any solution must involve genuine compromise and flexibility from Aurizon Network, not yet apparent in the earlier DAAU or in Schedule G.	Any commercial solution to Blackwater electrification costs must respond to the four key concerns of industry, which have not been addressed in the DAAU: · The costs associated with the Powerlink contracts were never submitted to producers through CRIMP and their prudency has not been QCA approved (and is disputed) – so they are not appropriate for socialisation across diesel users. · The rules around possible socialisation of any remaining costs (i.e. non-Powerlink) electrification need to be clearly specified and commercially agreed. · Any existing diesel services must be grandfathered (this has been accepted by Aurizon Network in the past, but is not reflected in Schedule G). · There must be *no* connection between any proposed electrification of the Rolleston spur line and the Blackwater system electric charging issue, including in terms of any volume assumptions underlying modelling. RTCA vigorously opposes including Rolleston electrification expenditure in the RAB, which would expose Blackwater users to substantial "single mine" risk and would be directly inconsistent with Aurizon Network's own position in relation to the costs of other customer specific infrastructure under UT4. · UT4 must not alter the standard reference train service in the Blackwater system so that it is electric only – which would fundamentally undermine the regulatory assumptions on which RTCA and other diesel users made significant sunk investments in rolling stock.

Coal chain coordination and operational flexibility

Recommendation	Comments
13. A new and clear set of "coal chain" objectives should be introduced in UT4, modelled on those proposed by the QCA for the Capricornia System Rules and the ARTC Coal	The objectives of UT4 should be: · ensure the delivery of long term contractual entitlements; · establish a reliable process through which access to Capacity can be negotiated within the broader context of the Queensland coal chains; · maximise the system available pathing to achieve an

Recommendation	Comments
Chain Principles.	equitable outcome of train service entitlements taking into account the operating mode of the relevant terminals; and · maximise system throughput and efficiency.
14. A defined process for the development, approval and oversight of System Rules, with clear rights for producer involvement through RCGs.	The process for development and approval of System Rules proposed under UT4 (in clause 7.6.3 and 7.6.4) needs to be overhauled and address the following: · The development of System Rules for each system should be a task which is undertaken by Aurizon Network in conjunction with the RCG for that system. · A review of System Rules should be able to be triggered by a majority of the RCG. · Like capital planning processes, a voting process should then be used to support adoption of amendments to System Rules – in which all coal chain stakeholders are able to participate (including service providers and producers). · System Rules should be designed and implemented in order to give effect to the amended UT4 objectives above – including maximising total coal chain throughput. · The System Rules should explicitly form part of UT4 and any failure by Aurizon Network to comply with them should be enforceable under the standard dispute processes in UT4, as well as by the QCA under the QCA Act.
15. UT4 must improve the degree of flexibility in the scheduling of train paths and provide a direct role for coal producers in developing alternative scheduling principles.	· *System Rule flexibility.* The System Rules should be as flexible as possible unless otherwise agreed between all relevant stakeholders. The flexibility in the System Rules would respect the differences in participant operating modes within the CQCN and seek to strike appropriate balances between these participants in order to achieve more efficient outcomes. · *A default 48-hour "lock down" scheduling period*. The default scheduling lock down period in clause 8.2 of Schedule H should be the shortest currently in place (i.e. 48-hours) and not the longest, recognising that a coal chain can elect to have a longer standard period specified in the relevant System Rules if they choose to. · *A more flexible 'Reference Train Service' definition.* The definition of Reference Train Service should be defined as providing for even *monthly* railings at most and removing the current reference to weekly railings from the definition, or at the least clarifying that this does not reflect the basis for calculation of any scheduling entitlement. · Scope for coal chain stakeholders to agree alternative scheduling principles. The current reference in the definition of Reference Train Service to "other matters agreed between Aurizon Network and other service providers in the coal supply chain" is inadequate. Aurizon Network should be required to comply with any alternative scheduling assumptions agreed by a majority of members of a coal chain

Recommendation	Comments
	and, if agreement is not able to be reached, this should then be determined by the QCA taking into account the need for scheduling principles to achieve the three core regulatory objectives (referred to above).
16. UT4 needs to anticipate and allow for scheduling and contract management to be performed in the future by a system coordination body on behalf of multiple producers / access holders.	· The Contested Train Path principles (now in clause 8.3 of Schedule H) need to explicitly recognise scope for agreed scheduling arrangements between Access Holders to involve a centralised body.
17. The following amendments are needed to provide industry with tools to develop and implement "local solutions" that deliver flexibility and reduce costs.	· Aurizon Network needs to include in UT4, following consultation with industry, a short term trading mechanism for rail capacity in the coal chain – including an ability for producers to transfer capacity up to 48 hours prior to the day of operation (and subject to any capacity effects or accounting required). · While a capacity accounting arrangement needs to be developed in conjunction with industry, the UT4 Access Agreement should provide for short term capacity transfers, modelled on clause 16.4 of the AHA. · The proposed concept of "operating capping" is unfair, benefits large operators (notably Aurizon Coal) over producers and smaller operators and should be rejected. If any form of capping is to be introduced, it needs to be in addition to short term trading (and not a substitute for it) and enable take or pay offsetting / capping to be managed on a shared basis by producers or other third parties (such as a centralised body on behalf of a number of producers). · In all cases, the QCA should be empowered to resolve any disputes and impose any amendments required to implement appropriate arrangements, where these are not agreed.

UT4 pricing principles

Recommendation	Comments
18. DORC is not an appropriate cost methodology for individual service pricing.	· The QCA should reject any proposed use of a DORC methodology by Aurizon Network to establish the Stand Alone Cost ceiling for either individual services or any revaluation of the entire RAB. · As set of clear and transparent cost allocation rules need to be included in UT4, as occurs in other regulated access regimes.
19. UT4 must limit differences permitted in access	Differences in revenues permitted in relation to access should be

Recommendation	Comments
pricing, justified only on the basis of "commercial risk" and, if any are to be allowed, alternative "risk-price" arrangements must be made fully transparent and available to all other access seekers.	limited to: · objective differences in performance attributes which can be shown to impact upon the costs of providing the service (including capacity impacts), and *not* Aurizon Network's commercial views about contractual risk; or · those identified through the existing "access conditions" process in relation to expansion capacity where, as presently, Aurizon Network can demonstrate that the risk associated with the Expansion are not compensated through regulated tariffs.
20. RTCA supports "incremental up / socialisation down" pricing of Expansion capacity – and endorses the approach of the QRC.	· A set of clear pricing principles is needed as part of UT4 that provide for the "incremental up / socialisation down" pricing of new expansion capacity. · The same principles and approach need to apply to all expansions (regardless of whether an existing tariff applies or not). · For the purpose of averaging down, the *highest* existing tariff in the system should be used, rather than the current reference to a "relevant" tariff (cl.6.5.2(d)). · All allocation modelling used by Aurizon Network associated with allocating common costs or "economic benefits" between expansion users and any existing users must be fully disclosed to all stakeholders. · Any expansion pricing should be approved by the QCA (applying the pricing principles referred to at 1. rather than through a customer vote process). RTCA has separately addressed its concerns with the approach adopted to customer votes at section 4.12 of this submission. · RTCA similarly endorses the proposed objectives and drafting set out in the QRC submission. · RTCA also submits that a levy be incorporated to implement socialisation of any future tariff reductions in respect of the GAPE and WICET projects.

Cost of capital and tariff structure

Recommendation	Comments
21. Aurizon Network's proposed approach of adopting an "upper bound" cost of capital has no economic justification.	· Aurizon Network has taken an approach to the rate of return which leads to a significant upward bias in the overall estimate. Aurizon Network has proposed a range for most parameters in the weighted average cost of capital (**WACC**) formula and then simply adopted the upper bound value for each one for the purposes of calculating the WACC. · The adoption of upper bound values has no justification either in economic theory or in the legislative framework. It is an

Recommendation	Comments
	approach which puts undue emphasis on Aurizon Network's commercial interests, at the expense of the interests of network users and the promotion of efficient investment. · None of the reasons given by Aurizon Network for adopting this approach are valid.
22. RTCA endorses the QRC submission of a nominal vanilla WACC for UT4 of 5.65%.	· Aurizon Network's rate of return proposal does not properly reflect the regulatory framework in which it operates, and the degree to which it is protected from risk under this framework. · The proposed rate of return, which seeks to adopt the 'upper bound' limit of a number of estimates is not commensurate with the regulatory and commercial risks involved in providing access, but rather would significantly overcompensate Aurizon Network for the risks that it actually faces.
23. RTCA endorses the principles that have been proposed by the QRC to improve transparency and rigour around maintenance costs (modified slightly to include the RCG as the appropriate new coal chain body to manage user votes on maintenance issues, as for capex).	· Aurizon Network should develop a Maintenance Plan and Scope for each rail system on a rolling 5 year basis, with a detailed 12 month scope setting out specific planned interventions and quantities. · The Maintenance Plan should be published as part of, or alongside, the NDP and should be approved by an agreed majority (e.g. 75%) of each RCG (and failing approval by access holders, the QCA to approve or otherwise require changes). · Changes to the Maintenance Plan should be approved by the RCG in the same way. · The Maintenance Plan should be required to include strategies to competitively tender certain maintenance activities across the CQCN where there is potential value to be gained and it makes good business sense. Aurizon can also undertake emergency repairs to the network using an approved schedule of rates. · Aurizon Network must progressively report on the delivery of the Maintenance Plan through the 12 month review period, variances to plan and forecast end of year outcomes. · The annual maintenance allowance must be based on the approved Maintenance Plan with adjustments for approved scope changes and unscheduled work. · Aurizon Network will be accountable for non-delivery of the maintenance scope (i.e. the maintenance allowance will be decreased) accept for issues that are outside its reasonable control.
24. Aurizon Network's UT4 operating expenditure submission should be reviewed on the basis of the established regulatory principles	· RTCA endorses the QRC submission on operating expenditure. · The operating expenditure claim (including corporate costs) made by Aurizon Network is unreasonable and inefficient, and does not reflect market realities (. · In doing so, it is submitted that particular weight should be

Recommendation	Comments
	given to Australian, structurally separated rail providers, including ARTC and Queensland Rail. Limited weight should be provided to rail operators that operate in different markets, with different operational structures – including the vertically-integrated, unregulated US railways, that predominantly service a domestic (and not global) market.
25. Aurizon Network's UT4 ballast fouling proposal is an attempt to reverse the decision made by the QCA in UT3 in relation to the costs of Aurizon Network's imprudent ballast maintenance practices. **This proposal should be rejected.**	· In UT3 the QCA decided that QR Network should properly bear the risk of higher costs associated with its imprudent maintenance practices. · If Aurizon Network's proposal for UT4 were to be accepted, this would amount to "re-opening" and reversing the allocation of risks associated with imprudent maintenance practices made in UT3 back on to users, contrary to the QCA's original decision. This would be fundamentally inconsistent with ensuring regulatory certainty.

Access Agreements

Recommendation	Comments
27. The Standard Access Agreement proposed as part of UT4 requires significant amendment.	· RTCA supports and endorses the specific amendments proposed by the QRC to the SAA. · Many of the amendments proposed by Aurizon Network in UT4 substantially erode certainty and security of access rights. · A new short term transfer mechanism needs to be introduced modelled on the approach in the ARTC AHA (set out in Annex B). · The QCA should not accept the attempt by Aurizon Network to define different "train services" in SAAs – with different price structures, and non-standard commercial "risk sharing" arrangements. · The proposed SAA terms are commercially unreasonable, unbalanced and not consistent with those that would be struck in a workably competitive market. · The QCA should ensure that any removal of obligations in UT4 does not limit the QCA's power to directly enforce obligations in the SAAs as a regulatory obligation.

Ring fencing, disputes and reporting

Recommendation	Comments
30. The proposed ring fencing arrangements are clearly inappropriate and require	· RTCA endorses the views of the QRC in relation to the risks arising from Aurizon Network's vertical integration and the inadequacy of the proposed ring fencing arrangements in

Recommendation	Comments
complete rewriting.	addressing these risks.
31. Aurizon Network's proposed dispute resolution framework requires significant amendment.	· RTCA endorses the amendments to the proposed dispute resolution framework put forward by the QRC and described in section 9.2 of this submission.
32. The proposed reporting and auditing obligations require significant amendment.	· RTCA endorses the amendments to the reporting and auditing framework in Part 10 of UT4 proposed by the QRC as described in section 9.3 of this submission.

3 UT4 requires a balanced approach to the application of the statutory criteria in section 138(2)

3.1 Summary

In its UT4 Proposal, Aurizon Network has largely sought to collapse the statutory criteria in section 138(2) into a debate about only one criterion – the legitimate business interests of the access provider.

In light of privatisation, it argues that its legitimate business interests require a fundamental shift in regulatory emphasis – to allow it greater discretion and "negotiated" outcomes, with reliance on arbitration in the event of any failure to agree.

Notwithstanding the number of times over several years that Aurizon Network has repeated these arguments, both are wrong. In relation to the QCA's task of approaching and applying the statutory criteria in section 138(2), RTCA makes the following observations:

- The QCA retains a *broad discretion* to approve or reject a draft access undertaking, limited only by the general requirement to "have regard to" the various section 138(2) criteria.

- The QCA can balance factors as it sees fit. No factor is required to be given fundamental or principal weight.

- The "legitimate business interests" criterion is broad and open-textured. In relation to pricing, it means no more than that Aurizon Network is entitled to a reasonable and efficient regulated rate of return. It does *not* mean or require:

  - "risk or cost neutrality", so that any changes do not impact the overall commercial balance implicit in the regulatory framework;

  - protection for Aurizon Network from the risk of optimisation or asset stranding – including, but not limited to, cases of inefficient or imprudent capital expenditure; or

  - a need to deregulate (or otherwise permit higher returns) in the event of privatisation.[9]

- Similarly, the concept of "economically efficient investment" as interpreted by the Tribunal in *Re Seven Network Limited (No 4)*[10] does *not* guarantee an investor a return on its investment.

- The QCA must balance the legitimate interests of Aurizon Network with those of access seekers. Under Part IIIA processes, this has been found to require a focus on ensuring that an undertaking provides sufficient transparency and certainty for access seekers so that they are positioned to be able to compete effectively on their own merits without competitiveness being distorted by the actions and monopoly incentives of the access provider.

- The QCA should not accept the proposition that an assessment of the "efficiency" object in section 69E should focus on contestability in related markets. Rather, the object provisions in s 69E of the QCA Act properly focus on the conduct of the service provider rather than the conditions for competition in dependent markets.

- The model proposed by Aurizon Network – of permitting greater discretion under UT4, with less transparency and more reliance on disputes and arbitrated outcomes to determine the specific

[9] See *Telstra Corporation Limited v The Commonwealth* (2008) 234 CLR 210.

[10] [2004] ACompT 11.

terms of access – would result in the painful and costly experience of the telecommunications industry over the early 2000s being played out again in the Queensland coal industry.

- Several years of numerous, repeated, public and highly contentious disputes about access would risk seriously eroding investor confidence in Queensland as a stable environment for resources investment and development, at a time when the industry can least afford it.

3.2 The statutory criteria and "legitimate business interests" argument

The approval of an access undertaking by the QCA under Part V of the QCA Act is guided by the criteria in section 138(2), which give weight to a range of factors.

The QCA is required to have regard to:

- the objects of Part 5 – 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."*
- the legitimate business interests of the owner or operator of the service;
- the public interest (including the public interest in having competition in markets);
- the interests of access seekers;
- the pricing principles set out in section 168A; and
- any other issues that the authority considers relevant.

Over recent times, Aurizon Network has sought to collapse these statutory criteria into an argument about only one of the criteria – the legitimate business interests of the asset owner.

RTCA submits that the QCA should make two policy observations clearly in any decision regarding UT4:

- *First, the "legitimate business interests" criterion is simply one of a number of important criteria – none of which individually are fundamental or determinative*.

  Despite the constant and repeated references by Aurizon Network to its "legitimate business interests", this criteria is of no more importance than the interests of access seekers, the public interest or other factors which may be considered relevant by the QCA under section 138(2), such as the importance of providing a stable and predictable regulatory framework to support investment by all participants in the Queensland coal industry.

- *Second, the concept of "legitimate business interests" as used in section 138(2) is broad and "open textured"*

  The concept of "legitimate business interest" certainly does not insulate Aurizon Network from the QCA imposing reasonable commercial terms that constrain its monopoly conduct or which seek to insulate it from all risk and cost associated with the ownership and management of the CQCN. While acknowledging Aurizon Network's legitimate claims in relation to matters like safety, RTCA refers to the finding of the Australian Competition Tribunal that the legitimate business interest test means only that, as owner, Aurizon Network is entitled to recover a normal rate of return on the efficient costs of capital investment it makes, together with efficient operating costs, and no more.

Both issues are briefly discussed below.

In "having regard to" these factors, it is not appropriate for the QCA to give fundamental weight to any one criterion

The QCA retains a broad discretion to approve or reject a draft access undertaking, limited only by the requirement to reasonably take the above factors into account.

The assessment of access undertakings (or similar) in accordance with criteria of broadly this kind is common under Australian access regimes.[11] In each case, the first and most critical observation is that none of the statutory criteria are to be treated as "fundamental" or "determinative". This has been made clear on a number of occasions by both the Tribunal and Federal Court.

In a recent Queensland Supreme Court decision, Justice Jackson considered the requirement to "have regard to" in the context of similar factors that the QCA was to weigh up in making a price determination under the *Electricity Act 1994* (Qld) and made the following comments:[12]

> *In the particular context of this case, to identify s 90(5)(a)(i) as carrying some particular weight as a fundamental factor would raise other questions: what is the weight as a factor to be given to the effect of the price determination on competition? Or the matters QCA is required by delegation to consider? Or the matters that the pricing entity considers relevant? Are they to be gauged one against another? If so, how? In my view, these are not questions which, objectively speaking, it is likely that the legislature intended would have to be answered, as a matter of law, in order for the pricing entity to be able to validly determine prices under s 90(1) of the Act.*[13]

His Honour's comments demonstrate that "having regard" to a factor in the making of an administrative decision, requires no more than that the factor is to be regarded, and that no factor is required to be given fundamental weight.

This is consistent with similar observations in other regulatory contexts, for example, in *Telstra Corporation Ltd v ACCC*,[14] a case concerning the broadly analogous telecommunications access regime in Part XIC of the CCA, Telstra submitted that the ACCC was required to take certain statutory criteria into account as "fundamental" elements in its decision making process or give certain of those criteria "fundamental weight". In particular, in relation to the proposed "pooling and allocation method", Telstra submitted that the ACCC failed to take the long term interests of end users into account because it did not take into account, and "give fundamental weight to" Telstra's legitimate commercial interests, namely its ability to exploit economies of scale and scope.[15]

Lindgren J said in reference to the criteria in s 152CR of the *Trade Practices Act 1974* (Cth) that:[16]

> *While I accept that the authorities establish that a decision-maker must give weight and genuine consideration to matters to which the decision-maker is required to "have regard" or which the decision-maker is required to "take into account", none of the cases suggest that one or some of those matters must necessarily be given "fundamental weight" as against the others. Everything depends on the natural meaning of the words, and the subject matter, scope and purpose of the particular legislation.*

[11] See for example the access regimes in Parts IIIA and XIC of the CCA and industry specific gas and electricity access regimes.

[12] *Origin Energy Electricity Ltd & Anor v Queensland Competition Authority & Anor* [2012] QSC 414, [90] – [91].

[13] *Origin Energy Electricity Ltd & Anor v Queensland Competition Authority & Anor* [2012] QSC 414, [91].

[14] (2008) 171 FCR 174.

[15] At para 100(d).

[16] At para 120.

The concept of "legitimate business interests" of the access provider is broad and does not require Aurizon Network to be shielded from risk and cost

Aurizon Network has long-argued, incorrectly, that the notion of 'legitimate business interests" under section 138(2) of the QCA Act places significant constraints on any attempt by the QCA to impose costs or risks on Aurizon Network.

To the contrary, the concept of "legitimate business interests" allows the QCA significant regulatory discretion. The Tribunal has found it to be "open textured" and allowing for what is "appropriate in commercial or business terms". In a pricing context, it means little more than ensuring that the service provider recovers its efficient costs.[17] The concept certainly does not prevent costs from being imposed on Aurizon Network by the QCA or from Aurizon Network being required to accept risks.

The concept of "legitimate business interests" when used in the context of regulated access, has a broad meaning, which does *not* require the regulator to "protect" the access provider from commercial costs or risks.

The Tribunal in considering the telecommunications access regime in Part XIC of the CCA, described the "legitimate business interests" concept as "open-textured" and open to a wide meaning. It observed:[18]

> *The expression "legitimate business interests" is a general expression and is somewhat open-textured. What is "legitimate" conduct or a "legitimate" interest in business may be open to a number of differing interpretations. We consider that a carrier's "legitimate business interests" is a reference to what is regarded as allowable and appropriate in commercial or business terms. In the context of s 152AH(1)(b), the expression connotes something which is allowable and appropriate when negotiating access to the carrier's infrastructure. When looked at through the prism of a charge term and condition of access and its relationship to a carrier's cost structure, it is a reference to the interest of a carrier in recovering the costs of its infrastructure and its operating costs and obtaining a normal rate of return on its capital.*

At its simplest, the criterion provides only for a service provider to "legitimately" recover a normal rate of return on the efficient costs of capital investment and operating costs, and no more. This interpretation is confirmed by the Explanatory Memorandum to the *Trade Practices Amendment (Telecommunications) Bill 1996* that introduced Part XIC into the CCA, and which said:

> *Consistent with Part IIIA of the TPA, the references here to the 'legitimate' business interests of the carrier or carriage service provider and to the 'direct' costs of providing access are intended to preclude arguments that the provider should be reimbursed by the third party seeking access for consequential costs which the provider may incur as a result of increased competition in an upstream or downstream market.*

To the extent that costs are relevant, they are only *legitimate* to the extent that they are needed to ensure a normal rate of return is earned on capital invested by Aurizon Network.

The history of regulated access demonstrates that this criterion does *not* mean or require:

- "risk or cost neutrality", so that any changes do not impact the overall commercial balance implicit in the regulatory framework;
- protection for Aurizon Network from the risk of optimisation or asset stranding – including, but not limited to, cases of inefficient or imprudent capital expenditure; or

[17] See *Telstra Corporation Limited* [2006] ACompT 4 and *Telstra Corporation Limited* [2006] ACompT 4.

[18] Telstra Corporation Limited [2006] ACompT 4, [89].

- a need to deregulate (or otherwise permit higher returns) in the event of privatisation.[19]

Moreover, to the extent that regulatory arrangements create risks for Aurizon Network associated with exposure to competitive market forces (such as through allowing for step in rights or providing for workable contestable funding), this is not a matter which is relevant to any assessment of the *legitimate* business interests of Aurizon Network. The criterion is not intended to protect Aurizon Network's monopoly power and associated rents.

Similarly, the concept of "economically efficient investment" was interpreted by the Tribunal in *Re Seven Network Limited (No 4)*[20] as *not* guaranteeing an investor a return on its investment.

Privatisation is not a 'game changer'

Aurizon Network argues that privatisation has provided a fundamental change to its incentive structure and, given the existence of private capital, it is now appropriate for regulatory obligations to be wound back in favour of more commercial flexibility.

Aurizon Network submits: [21]

> *For the Aurizon Group, the change from privatisation has been profound. The Aurizon Group, and indirectly, Aurizon Network, is no longer subject to the mixed mandate of public ownership. Instead, Aurizon Network is now clearly required to act with the predominant and central objective of advancing the interests of its shareholders. This has implications for a regulatory framework that previously has all too readily assumed that the commercial interests of Aurizon Network could be subordinated to the larger purpose of promoting the development of Queensland coal mines. In this respect, the 2013 Undertaking presents an opportunity to develop a regulatory framework that balances the commercial interests Aurizon Network with the interests and access seekers and the public interest.*

Aurizon Network argues that it is therefore no longer reasonable to impose a constraint on its shareholders' ability to earn an appropriate return on capital invested, because of a combination of:

- the introduction of private capital as part of privatisation – and the expectations of shareholders due, in part, to Aurizon Holding's marketing of itself as a "growth stock";
- funding contestability through the filing of a SUFA framework; and
- the greater complexity and risk associated with new capex, which Aurizon Network states is more likely to be integrated with new port developments.

In fact, Aurizon Network has already informed RTCA that its Board will not sign off on investments at the regulated rate of return because it does not meet shareholder expectations.

None of these arguments justify the significant move towards deregulation of the CQCN which the draft UT4 represents.

Indeed, the opposite is true: the prospect of greater integration across its regulated and unregulated activities *increases* the ability and incentives for Aurizon Network to discriminate and engage in cost shifting / subsidisation.

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[19] See *Telstra Corporation Limited v The Commonwealth* (2008) 234 CLR 210.

[20] [2004] ACompT 11.

[21] Aurizon Network submission volume 2, p 25.

In this context, it is important to consider what Aurizon Network's shareholders have invested in. Relevantly, RTCA refers to the decision in *Telstra v The Commonwealth,*[22] where the High Court unanimously found that the sale of assets to Telstra and its subsequent privatisation did not affect the "bundle of rights" which was associated with the regulation of Telstra – and which limited the scope or extent of the rights which any subsequent private shareholder could say they enjoyed.

In this case, there can be little doubt that private shareholders of Aurizon Network (or Aurizon Group) understood and accepted the regulated nature of the asset they were acquiring, including the obligation to continue to invest in the network at the regulated return. This is not, or should not, change simply because Aurizon Holdings has marketed itself on some other basis, such as being a "growth stock".

As noted above, the legitimate business interests of Aurizon Network go no further than to enable it to recover a normal rate of return on the efficient costs of capital investment and operating costs.

The legitimate interests of the access provider must also be balanced with the legitimate business interests of access seekers – which requires greater transparency

In considering the concept of the "legitimate business interests of access seekers", within the context of Part IIIA, the ACCC has stated that issues it will take into consideration when determining if this criterion has been satisfied include whether:

- the access terms and conditions are reasonable;
- the undertaking incorporates non-price barriers to access;
- the processes for negotiating and setting prices are clear and transparent; and
- the service provider has made sufficient information available to access seekers.[23]

Given the history of non-transparent processes under UT3, the emphasis here on transparency is of particular relevance for the QCA when considering what section 138(2) requires for UT4. There are a number of examples of draft access undertakings where the ACCC has considered that the service provider has not provided a sufficient level of information to satisfy the interests of access seekers criterion (and public interest criterion) including:

(a) **Co-operative Bulk Handling Limited's** 2011 draft Port Terminal Services Access Undertaking, where the ACCC:

  (i) reiterated that proposed undertakings must provide certainty and clarity in order to enable access seekers to make informed decisions; and

  (ii) required the access provider to provide greater transparency around pricing;[24]

(b) **Australian Bulk Alliance Proprietary Limited's** 2011 draft Port Terminal Services Access Undertaking where, in its draft decision, the ACCC's preliminary view that the Loading Protocol that formed part of the draft access undertaking did not provide sufficient information regarding the respective rights and obligations of access seekers ;[25]

[22] (2008) 234 CLR 210.

[23] ACCC, Perth Airport: Draft Determination of Access Undertaking, May 1998.

[24] ACCC, Co-operative Bulk Handling Limited – Port Terminal Services Access Undertaking Draft Decision 23 August 2011, pp. 9-10.

[25] ACCC, Australian Bulk Alliance Proprietary Limited, Port Terminal Services Access Undertaking Draft Decision 11 August 2011, p. 8.

(c) **Viterra Operations Limited's** 2011 draft Port Terminal Services Access Undertaking, where the ACCC requested in its Draft Determination that, in the interests of the access seekers, the access provider provide further information as to factors such as pricing and available capacity;[26] and

(d) **GrainCorp Operations Ltd's** 2009 draft Port Terminal Services Access Undertaking, where the ACCC expressed that some of the draft undertaking's terms, due to lack of clarity and certainty, did not appropriately balance the legitimate business interests of the access provider with the interests of access seekers.[27]

More generally, the Tribunal has found that the legitimate interests of access seekers criterion requires that access seekers be put in a position, to the extent possible, to ensure that they can compete on their own merits (that is, on the basis of their own efficiency).[28]

RTCA Recommendation

The QCA should not accept the proposition that the "legitimate business interests" criterion imposes significant constraints on the QCA's discretion under section 138(2). Of greater relevance is the clear link between the legitimate business interests of *access seekers*, and the need for a transparent and non-discriminatory regime.

Judicial and regulatory precedent clearly shows that the "legitimate business interests" criterion:

- to the extent that it is relevant to pricing matters, means no more than that Aurizon Network is entitled to an efficient regulated rate of return on any investment;
- neither requires "risk or cost neutrality" in relation to a decision of the QCA nor otherwise protects Aurizon Network from the risk of optimisation or asset stranding;
- does not require any change in the approach to regulation merely due to the introduction of private capital (and internal management incentives) through privatisation;
- requires, in relation to the interests of access seekers, that UT4 provide sufficient transparency and certainty to enable them to compete effectively on their own merits, without their individual competitiveness being distorted by the actions and incentives of Aurizon Network.

3.3 The Part V objectives - efficiency

(a) *The focus of any "efficiency" assessment must be on the below rail market, not the contestability of downstream markets*

In its UT4 Proposal, Aurizon Network proposes that when considering the objects of Part 5 of the QCA Act, the QCA should be guided by the degree of competitiveness in the ultimate downstream market.[29] In essence, this is a "bootstraps" argument that regulation of the below rail bottleneck is not required if dependent markets are competitive – presumably because competition in the related market will, by itself, drive efficient outcomes in the below rail infrastructure.

[26] ACCC, Viterra Proposed 2011 Undertaking - Draft Decision 11 Aug 2011, p. 6.

[27] ACCC, GrainCorp Operations Ltd, Port Terminal Services Access Undertaking Draft Decision, 6 August 2009, p. 60.

[28] *Telstra Corporation Limited* [2006] ACompT 4 at [138].

[29] Aurizon Network, sub. no. 2, p. 171.

This is clearly not correct. The focus of the objects in section 69E of the QCA Act is efficient investment in, and operation of, the rail network – precisely because this cannot be assumed simply by competition in related markets. The object provisions in s 69E of the QCA Act focus on the conduct of the service provider rather than the conditions for competition in dependent markets.

RTCA considers that it is precisely because the global market for coal is competitive (and price sensitive) that any failure to effectively constrain inefficient monopoly pricing and other behaviour will have a material impact on the cost competitiveness of Queensland in global markets, and in so doing, reduce investment, jobs and export revenues.

(b) *Regulatory certainty and predictability is critical to efficient investment*

It is well acknowledged that the object of providing for efficient investment requires regulatory stability and predictability. Unwarranted shifts in regulatory practice are not consistent with this objective, as has been recognised by the High Court.[30]

Further, in the case of the Queensland coal industry, the QCA must have regard to the substantial sunk investment by producers in long lived assets (such as mines and terminals), made in part in reliance on stable rail arrangements. It is not possible or appropriate to try to look at the efficiency of investment in the rail network in isolation from the efficiency of other investment in related coal chain assets.

The objects of Part V, and good regulatory practice, require major shocks or unwarranted changes in regulatory approaches to be avoided – particularly where this involves markets like the coal industry where large, long-term sunk investments have been made in reliance on the regulatory framework.

RTCA Recommendation

The QCA should not accept the proposition that an assessment of the "efficiency" object in section 69E should focus on contestability in related markets.

The object provisions in s 69E of the QCA Act:

- properly focus on the conduct of the service provider rather than the competitive dynamics in dependent (export) markets; and
- require major shocks or unwarranted changes in regulatory approaches to be avoided – particularly where this involves markets like the coal industry where large, long-term sunk investments have been made in reliance on the regulatory framework.

3.4 An access undertaking which focusses unduly on a "negotiate-arbitrate" model is out of step with current regulatory practice and will lead to inefficient market outcomes

In support for winding back key elements of UT3, Aurizon Network has argued that UT4 seeks to more closely align with the "negotiate-arbitrate" model.

[30] *East Australian Pipeline Pty Limited v Australian Competition and Consumer Commission* (2007) 233 CLR 229 at [243].

While this is a theme throughout the UT4 Proposal, Aurizon Network endorses it in particular in its discussion about funding negotiations, where it notes in arguing for the removal of "access conditions":[31]

> *Requiring Aurizon Network to secure QCA approval for access conditions that it negotiates with access seekers on a commercial basis is not consistent with encouraging commercially negotiated outcomes. The 2013 Undertaking subsequently provides Aurizon Network with the ability to negotiate non-standard terms and conditions with access seekers regarding the funding of network extensions, without having to obtain QCA approval for these conditions.*
>
> *By reinforcing the founding principle of the negotiate-arbitrate model which gives primacy to commercial negations, this approach should achieve outcomes that better promote the Objects Clause of the QCA Act.*

This conclusion is inconsistent with recent regulatory and legislative practice in which the negotiate-arbitrate model has been shown to be ineffective in longstanding, industry specific contexts.

For example, over the period 2000 – 2005 there were over 140 access disputes in the telecommunications industry under the negotiate-arbitrate model in place under Part XIC of the CCA. This was time consuming, costly, complex, inefficient and ultimately led to the Government abandoning the approach in favour of the ACCC determining up front terms of access for the industry in the form of "access determinations".

The Explanatory Memorandum to the amending legislation which removed that regime from the CCA highlighted the drawbacks of relying too greatly on the "negotiate-arbitrate" model in the context of an industry-specific regime:

> *The negotiate-arbitrate model has proven to be complex and delay-prone. Each access dispute has to be arbitrated individually – even if it is very similar to disputes that have previously been arbitrated….*
>
> *Stakeholders' main areas of concern have been that the negotiate-arbitrate model is very slow, cumbersome and open to gaming (if not outright obstruction), and that Part XIC in its current form does not provide sufficient regulatory certainty for investment. It is ineffective largely because it has not effectively constrained the incentive of the vertically-integrated Telstra to provide access to its network on terms that are not as favourable as those it supplies to its own retail business…*[32]

In place of the traditional "negotiate-arbitrate" model, Part XIC of the CCA now implements a regime for telecommunications where prices and non-price terms are determined up-front for declared services.

The preference for certainty in regulating monopoly infrastructure providers via an appropriate degree of prescription can also be observed in the National Energy Law (**NEL**) and National Gas Law (**NGL**). Under the NEL and NGL, a service provider is required to comply with detailed and very specific mandatory rules in submitting its regulatory proposal or access arrangement.

[31] Aurizon Network volume 2, pp 148 – 149.

[32] Explanatory Memorandum, *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Bill 2010,* p. 48.

The QCA should consider the experience of participants in Queensland and under other regimes when assessing Aurizon Network's negotiate-arbitrate claims.

The QCA should also have regard to the history of commercial negotiation between Aurizon Network and industry over the last decade. This history is perhaps the best evidence of why, in the context of UT4, providing Aurizon Network with greater scope for "negotiated outcomes" would be inappropriate, having regard to the statutory criteria.

Over recent years, Aurizon Network has shown itself consistently unable to act reasonably or commercially in its negotiations with industry. Almost every coal producer in Queensland, including RTCA, can share stories of the delays and costs dealing with Aurizon Network's lack of transparency, entrenched monopolistic mindset, around even straightforward commercial issues such as connecting new customer-owned infrastructure or transferring capacity.

The day to day frustrations of dealing with Aurizon Network are compounded by its high profile "structural" failures to develop commercially reasonable outcomes with industry, on a wider scale, including in relation to:

- **GAPE negotiations** – in which the timing of (unregulated) negotiations under UT2 were consistently "gamed" to permit Aurizon Network to exert maximum monopoly pressure to achieve monopoly rents.

- **WICET negotiations** – once again, Aurizon Network gamed funding negotiations (this time under the UT3 access condition process). Aurizon Network then used litigation against the QCA to seek to prevent proper consultation with other affected stakeholders around the terms of funding.

- **SUFA** – Aurizon Network took over two years to deliver a set of SUFA documents, which ultimately are likely to be ineffective. The process was characterised by an unwillingness on the part of Aurizon Network to accept fundamental commercial concessions needed in order to make the framework operate. Having negotiated with industry for over two years, the final set of documents were then fundamentally amended following discussions with Government and filed "sight unseen" by the industry working group, and without the supporting Expansion process.

- **Electric Traction DAAU** – Following the dysfunctional and non-transparent CRIMP process which was characterised by a lack of transparency and disclosure by Aurizon Network (and the entry into a Powerlink contract worth over $200m, purportedly as "operational expenditure" which was not disclosed at all to users), Aurizon Network has subsequently tried various means over the last two years to seek to have the costs recovered from users and providers of diesel services, that do not benefit from the use of electric assets (and in so doing to ensure its above rail operations are advantaged). While claiming that this process has involved "commercial negotiation", the result reflected in UT4 (Schedule G) does not reflect *any* compromise or shift in position.

- **2011-12 RFP processes (including Study Funding)** – Aurizon Network commenced three parallel RFP processes during 2011-12. These were characterised by a lack of transparency, demands for unreasonably detailed and sensitive commercial information and unbalanced commercial terms for carrying out the concept and feasibility studies. Remarkably, Aurizon Network abruptly terminated the processes midway through 2012 because it identified that $50m had already been levied on coal producers to undertake the work as part of the 2010 CRIMP and so the RFPs were not required.

These examples demonstrate that, in the absence of clearly defined processes, Aurizon Network is unlikely to reach agreement with coal producers or other stakeholders in a timely or cost-effective way, and outcomes will be subject to gaming and monopoly rents.

RTCA endorses the concerns raised by the QCA in its consultation paper (at page 3):

> *… the dispute resolution process underpinning the access undertaking has to be perceived as effective by all parties. Otherwise, arbitration does not offer a viable solution to an unsuccessful negotiation. The access undertaking, as approved, plays an important role in the particular 'negotiate-arbitrate' model of the QCA Act as the Authority must not make an access determination in an arbitration that is inconsistent with that approved access undertaking. Finally, for a negotiate-arbitrate approach to be effective, parties must have access to relevant, accurate and timely information.*

Practical experience in Queensland (and other regulated sectors, such as telecommunications) has demonstrated that an effective negotiate-arbitrate outcome is only possible where the framework within which agreement is negotiated is clearly defined and well enforced.

The alternative proposed by Aurizon Network – of permitting greater discretion under UT4, with less transparency and more reliance on disputes and arbitrated outcomes to determine the specific terms of access – would result in the painful and costly experience of the telecommunications industry over the early 2000s being played out again in the Queensland coal industry. Several years of numerous, repeated, public and highly contentious disputes about access would risk seriously eroding investor confidence in Queensland as a stable environment for resources investment and development, at a time when the industry can least afford it.

RTCA Recommendation

The QCA should not accept the proposition that UT4 should move to "negotiate-arbitrate" model involving greater commercial discretion for Aurizon Network and an increased role for resolving specific terms of access through QCA-arbitrated disputes

Practical experience in Queensland (and other regulated sectors, such as telecommunications) has demonstrated that an effective negotiate-arbitrate outcome is only possible where the framework within which agreement is negotiated is clearly defined and well enforced.

3.5 Other policy arguments

As well as traditional arguments about its "legitimate business interests", Aurizon Network has also sought to justify its demand for a radical shift in UT4 based on a number of wider policy arguments, that require a response.

Aurizon Network has argued:

- Privatisation has been a "game changer" and the QCA needs to take into account the different expectations of private capital, when assessing the reasonableness of UT4 (which RTCA has discussed above at pages 28-29).
- The costs associated with below rail infrastructure are low as a proportion of the total cost stack for coal producers in Queensland, and so it is appropriate for the QCA to err on the side of favouring Aurizon Network.
- It also generally appropriate (under both the general regulatory framework and when determining individual WACC variables) to err in favour of the facility owner, so as not to inhibit investment in the network.

A number of these arguments are addressed, in context, in other sections. However it is appropriate for RTCA to make a number of discrete observations about the general policy approach in response to such claims.

Aurizon Network's "cost stack" argument is clearly inappropriate

Aurizon Network argues that the QCA should recognise that below rail costs are a small component of overall coal export costs. In its UT4 Proposal it estimates that below rail charges constitute less than 4% of Average FOB costs.[33]

The implication of this argument is that the risk of getting UT4 wrong is asymmetrical and impacts Aurizon Network more than producers and, as such, that the QCA should err on the side of allowing Aurizon Network a higher return and greater protection from risk.

This analysis is wrong, both in absolute terms and in principle.

The object of providing efficient incentives for investment must be targeted at the next incremental tonne of capacity. The cost calculation undertaken by Aurizon Network focusses however, wrongly, on the existing (depreciated) asset base and sunk costs. Based on RTCA's experience with the GAPE project, the reality of future expansion tonnes in the Queensland coal supply chain is that below rail investment constitutes approximately 30 per cent of the effective commitment for a new project. In a market where capital costs in Queensland are already 66% more expensive than competitive markets[34] – the continued increase in rail infrastructure costs is a serious competitive impediment to the industry.

The risk of getting UT4 "wrong" is as much, if not more, significant for the growth pipeline of coal producers and other coal chain stakeholders, because unlike Aurizon Network the coal industry is not protected from the cost pressure of a highly competitive global market.

UT3 has been generous to Aurizon Network in shielding it from volume and patronage risk

RTCA notes that the QRC's submission to the QCA in respect of UT4 sets out a list of the numerous features of the regulatory framework which protect it from risk to a degree substantially greater than other regulated entities, such as Telstra.

They include:

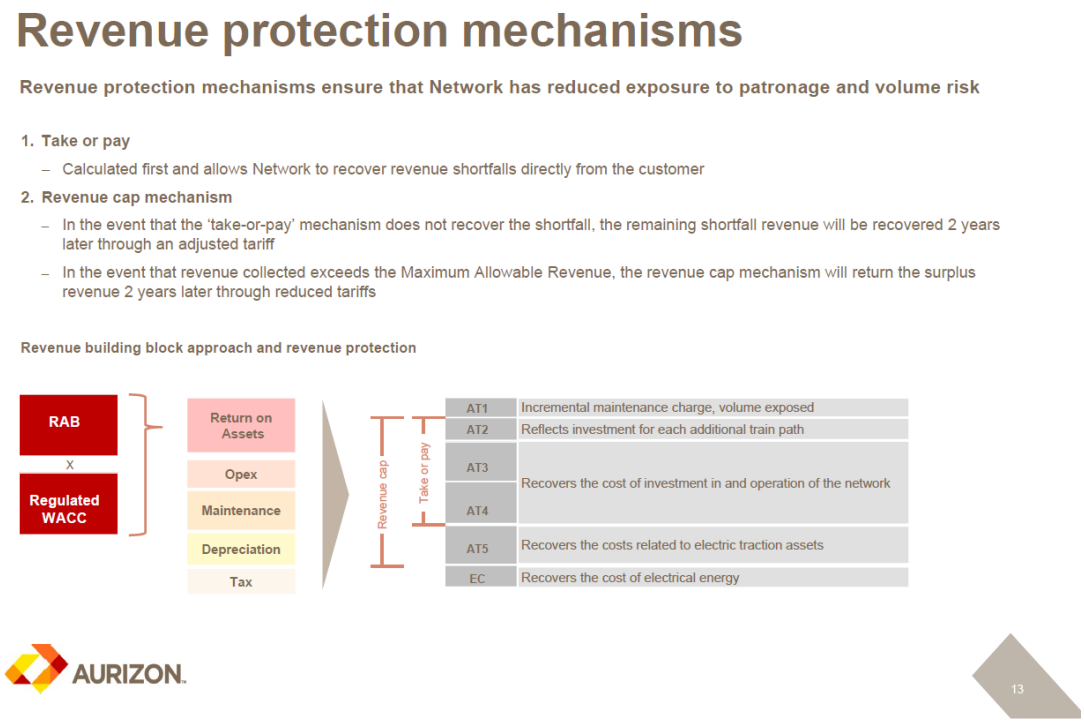
- a revenue cap pricing mechanism that insulates from volume risk;
- long term take or pay arrangements that provide protection against timing and cashflow risks;
- various regulatory provisions allowing Aurizon Network protection against optimisation (through capex pre-approval), review events to deal with volume changes, maintenance cost reviews, annual adjustments to costs such as energy, annual cost index updates); and
- accelerated 25-year depreciation, further reducing the risk of asset stranding (particularly in light of long term take or pay contracts).

This generous framework has allowed Aurizon Network to sells itself to debt markets as largely insulated from volume and patronage risks.

[33] Overview and Summary, at page 12.

[34] Port Jackson Partners at page 12.

Figure 2. Aurizon ASX update on debt refinancing (May 2013)



These mechanism are clearly demonstrated in Aurizon Network's financial performance, in which Aurizon Network's revenue is forecast to grow year on year over 2012-13 by 22% and EBITDA by 48%, in an environment in when coal volumes are only forecast to grow by 4%.[35]

RTCA Recommendation

The QCA should not accept the proposition that privatisation has "changed the game" so that substantial deregulation is required in UT4 to protect the interests of Aurizon Network shareholders.

- Privatisation does not weaken the economic or legal rationale for access regulation. To the contrary, to the extent that private capital increases the incentive to integrate and engage in monopolistic behaviour, privatisation *increases* the justification for effective regulation.
- It is not correct that the risks of regulation are asymmetric. Based on RTCA's experience with the GAPE project, it estimates that below rail investment constitutes approximately 30 – 40 per cent of incremental cost of future expansion tonnes. The risk of getting UT4 "wrong" is therefore more significant for the growth pipeline of coal producers and other coal chain stakeholders, because unlike Aurizon Network the coal industry is not protected from the cost pressure of a highly competitive global market.
- Aurizon Network has itself acknowledged that the existing UT3 framework substantially insulates it from volume and patronage risk.

[35] Aurizon ASX update on debt refinancing (May 2013), p. 12.

4 The capital planning and expansion process

4.1 Chapter summary

It is critical that UT4 establish a transparent and effective framework for capital planning, in order to provide a basis for efficient investment and growth in the Queensland coal industry.

While capital planning has been a weakness of the regulatory arrangements, to date, the solution is not to remove oversight or transparency. To the contrary, UT4 must build on and fix those elements which have not worked well, including adding features from other regimes where capital planning process operate far more transparently and effectively (notably the Hunter Valley).

RTCA submits that the QCA should therefore use UT4 to build on the *UT3* framework, in the following ways:

- *Most importantly, adopt the establishment of "Rail Capacity Groups" (**RCGs**) for each coal system*, comprising coal producers that use the system, and with Aurizon Network and rail operators in observer roles. RCGs can then perform the critical 'transparency' role that has been missing under the Queensland regime to date of developing and approving capacity and demand assumptions, undertaking customer capex votes and reviewing and endorsing annual maintenance plans and spending.

- *The "end to end" process needs to provide interconnections between each stage of the process.* Currently, the elements of capital planning under UT3 operate largely independently (i.e. demand testing, RFP process, capital planning). This is illogical and undermines the stability and predictability of the process. This lack of integration would be made worse by the UT4 proposal.

- *The master planning and vote process needs to genuinely involve producers.* Many of the difficulties associated with capital planning under UT3 have been caused by the poor quality of information provided about projects, assumptions, costs and timeframes. This needs to be fixed by involving producers directly in the development of these elements (through RCGs) and by requiring improved transparency, consistent with that provided by ARTC, and other regulated infrastructure providers across energy, transport and telecommunications.

- *The existing UT3 "capacity shortfall" process needs to be retained.* Aurizon Network must not be permitted to remedy a capacity shortfall only where this is consistent with its "commercial objectives".[36] This would defeat the purpose of the clause, which is intended to support investment confidence by ensuring that a producer can be confident of aligning investment in capacity across its mine, rail, rolling stock, terminal etc.

- *Retain existing funding obligations – including both the $300m capital expenditure commitment and the "access conditions" process.* If Aurizon Network is not prepared to provide this continued and stable regulatory environment, it should be prevented from obtaining *any* above regulated return in respect of capital expenditure on the CQCN (i.e. including any future Expansion expenditure).

By contrast, Aurizon Network has proposed the opposite – largely unwinding any meaningful transparency or role for coal producers in the process.

[36] Clause 8.10 of proposed UT4.

UT4 as proposed would enable Aurizon Network to dictate the terms, location and timing of investment throughout the Queensland coal industry, by ignoring the planning assumptions of others in the coal chain and effectively avoiding any oversight over rail investment and capacity by producers, the regulator or the Government.

4.2 Aurizon Network's capital planning proposal would allow it to seize control over the development of, and investment in, the Queensland coal industry

Capital planning of the CQCN forms an important part, but nonetheless only *part*, of the wider and substantial capital program required by all stakeholders in the coal chain – including producers, terminal operators and both below and above rail operators.

Nonetheless, UT4 would enable Aurizon Network to dictate the terms, location and timing of investment throughout the Queensland coal industry, by ignoring the planning assumptions of other in the coal chain and effectively avoiding any oversight over rail investment and capacity – by producers, the regulator or the Government.

The capital planning process proposed by Aurizon Network permits it to exploit its monopoly position as owner of the rail network to "hold up" investment across the industry to extract inefficient monopoly rents.

Over the course of UT3, there were a string of failed planning processes that highlighted the serious deficiencies in the UT3 planning process (e.g. Electric Traction DAAU, the terminated RFP processes in 2011). As RTCA previously noted in the course of the Electric Traction DAAU process, the former CRIMP process:

- occurred irregularly and only when it was in Aurizon Network's interest to do so (usually where it needs a customer vote to protect projects from the risk of optimisation);
- consistently failed to provide facilitate meaningful engagement by coal producers in planning decisions, including because Aurizon Network offered producers occasional "planning by powerpoint" with little, if any, detailed technical information or engagement provided by Aurizon Network;
- did not provide any transparency over how projects approved through the CRIMP were being delivered and any confidence for coal producers that the projects they are funding are being delivered on time and on budget;
- was characterised by Aurizon Network seeking to rush through customer approval (or, more often, deemed approval), whilst minimising consultation and limiting information, particularly in relation to alternatives and cost; and
- provided little, if any, practical oversight over Aurizon Network's scope of works or construction activities.

In a period in which the Queensland coal industry faces unprecedented cost pressures, such significant and costly failings threaten its continued expansion and competitiveness.

To answer the specific questions raised by the QCA in its consultation paper (at page 32) – the approach proposed by Aurizon Network is entirely unbalanced, provides no scope to reflect the legitimate business interests of access seekers or satisfaction of other important elements of the statutory criteria in s 138(2), including the public interest and the need to ensure efficient investment (by ensuring that demand is satisfied and appropriate planning assumptions are relied upon).

4.3 UT4 must build upon UT3, rather than abandon regulatory and industry involvement in rail capital planning

While capital planning has been a weakness of the regulatory arrangements, to date, to a large extent the failings of UT3 were due to processes which were put in place not being clearly enough defined or properly enforced. These are the areas that should be the focus of improvement under UT4.

The important elements of UT3 which need to be retained and further developed are set out below.

Demand triggers

- The request for proposals (**RFP**) process, in which Aurizon Network was required to test demand for a system regularly, including in the event of certain defined events occurring (e.g. a new terminal development being undertaken).

Master Planning

- UT3 proposed the establishment of "Supply Chain Groups" comprising all stakeholders in a coal chain, and which are tasked with preparing a "Supply Chain Master Plan" governing capital planning *across the system*, including a set of supply chain operating assumptions. Ultimately, while these groups provided of limited value, this was caused by their structure, membership and the need for unanimity in decision making – both issues which have been overcome in relation to RCGs, as discussed below.

- A separate rail "master planning" process undertaken by Aurizon Network that provides for input from all stakeholders through a 'planning forum' for each coal system.

- UT3 specified minimum information requirements aimed at ensuring that the master plan was sufficiently detailed to provide coal producers with the information which they needed to be plan (and to participate in the customer vote process).

- Aurizon Network was required to specify where its assumptions or investment plans (in the CRIMP) departed from those that had been identified by the wider coal chain in the Supply Chain Master Plan.

- Participants in a Supply Chain Group retained a right to refer matters or planning disputes to the QCA.

Funding

- Aurizon Network committed to fund incremental expansion in the network (up to a $300m cap per project). For "Significant Investments" above this level, it was entitled to an above regulated rate of return only where it could justify this on the basis of risks not already compensated through the regulated tariff, and where relevant "Access Conditions" had been provided to the QCA and consulted upon with industry.

- The obligation to develop and implement a workable arrangement for introducing private funding into major projects, where this was more efficient than Aurizon Network, through contestable user funding.

- A clear obligation to invest in capacity where this was necessary in order to rectify an identified "capacity shortfall".

These elements of the planning process are positive and need to be retained and built upon – rather than being largely abandoned, as proposed by Aurizon Network.

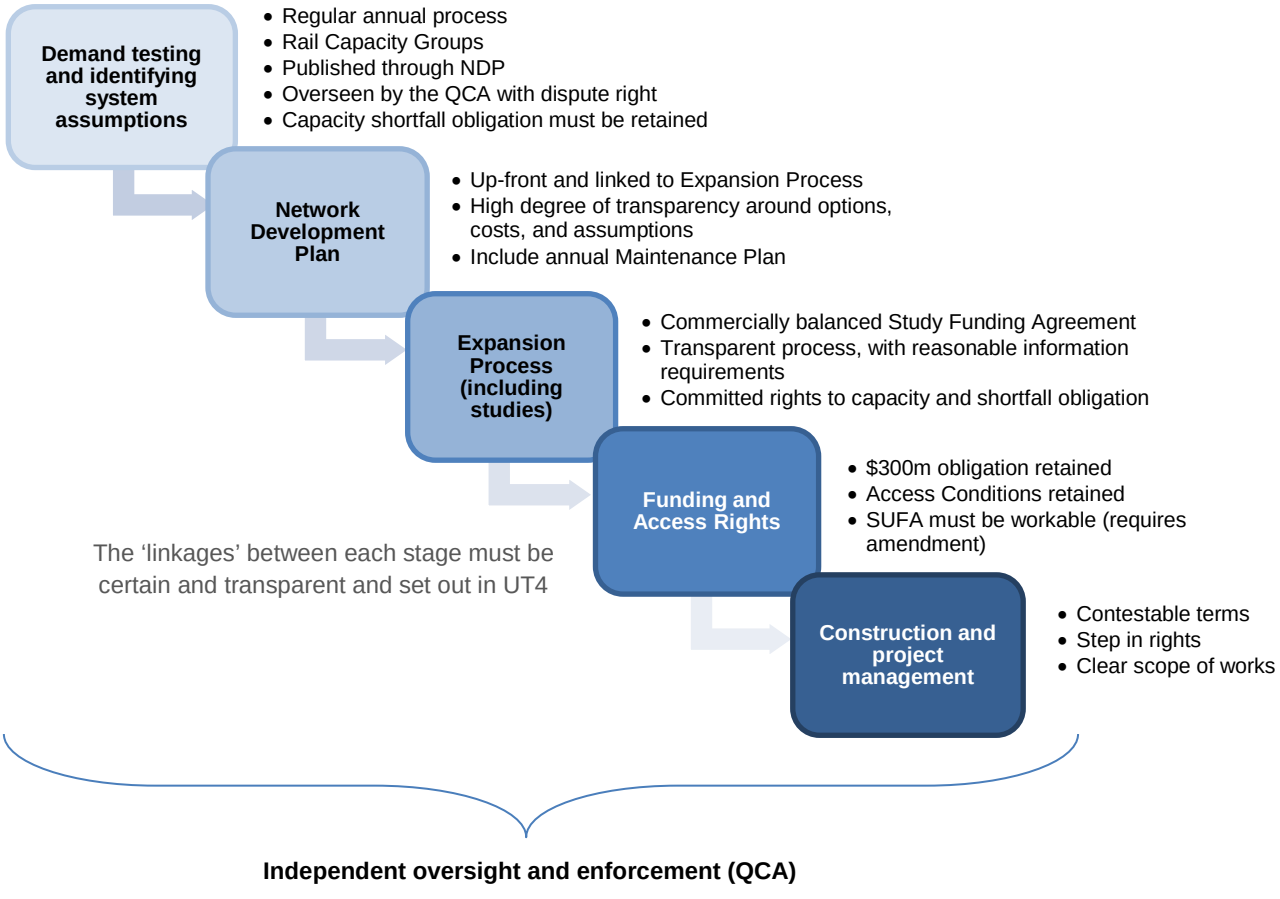
4.4 Improving the 'end to end" capital planning process – with greater transparency throughout

RTCA's experience in the Hunter Valley is that the greater degree of independence of ARTC and a more central role for users in planning through the Hunter Valley Coal Chain Coordinator (**HVCCC**)in that system, has led to better, more efficient and more transparent planning outcomes.

RTCA has previously offered an overview of the key elements in any effective capital planning process, which sought to integrate best practice from the Hunter Valley with the key features of the UT3 framework, and an updated version is set out at Annex A.

The simplified elements of an effective and "best practice" capital planning process are set out below.

Figure 3 Capital planning elements and linkages



In this section, RTCA will review each of the elements above and the approach which it submits should be adopted in UT4.

4.5 Rail capacity groups

The simplest and best way to achieve greater transparency under UT4 is to provide a process that gives coal producers a meaningful role and "seat at the table" in capital planning (and other related processes, such as System Rules development and maintenance planning).

It is not efficient or appropriate for a single participant to determine the assumptions which govern all of these arrangements or to plan its part of the coal chain in isolation from those inputs.

UT3 included a relatively detailed process for assessing "system capacity" and for involving all coal chain stakeholders in the planning process. At the time it was developed, this model broadly reflected a similar approach used in the Hunter Valley, with more success, where RCGs contribute directly to the capacity assumptions used by ARTC in its master planning activities.

Unfortunately, however, the use of "supply chain groups" as contemplated in UT3 has had limited effectiveness, which RTCA submits has mostly been due to their membership (all stakeholders) and structure (unanimity required for voting).

Given the competitive pressures facing the Queensland industry, the objective of ensuring transparency and producer involvement in the development of system assumptions (both capacity and demand) is more important than ever. Rather than abandon UT3 stakeholder involvement in planning, RTCA submits that this needs finally to be delivered and that this should be done by replacing the current UT3 "supply chain groups" with the same model used with greater success in the Hunter Valley under the ARTC Undertaking, and which provides for input into planning by RCGs.

An extract of clause 9 of the ARTC Undertaking, which deals with industry consultation processes and the constitution and role of the RCG, is set out in Annex D.

Based on the Hunter Valley model, RTCA proposes the following:

- UT4 should require Aurizon Network to convene monthly meetings of a RCG for each coal system, comprising all coal producers that use the system (and with rail operators attending as observers).

- Voting arrangements should be specified, but could be based on the ARTC precedent (see Annex D).

- RCGs will be responsible for developing capacity and demand inputs and system assumptions to be used by Aurizon Network in its system capital planning. Alternatively, if a RCG agrees to do so, it may consider and assess assumptions developed or proposed by Aurizon Network (this is the current approach contemplated under UT3).

- From experience with the ILC, it is important that this group does not require unanimous decision making, but only a strong majority before any assumptions are adopted and proposed to Aurizon Network. Alternative voting arrangements can be agreed by each RCG, but a default structure should be set out in UT4 (see clause 9.8 of the ARTC Undertaking, in this regard).

- Aurizon Network must be required to use any RCG-approved assumptions developed in its capital planning, unless it transparently identifies why it is departing from those assumptions. This decision must be overseen and capable of being reviewed by the QCA (or an independent technical expert).

- RCGs will also provide the producer forum that will be used to undertake customer approval of proposed capital expenditure projects (see section 4.12 below) and approval of the new annual Maintenance Plan (see section 7.9 below).

- Separate to RCGs, any other "supply chain group" (which may include other members, such as rail operators) should also be able to participate in the planning process, but in a consultative rather than binding role.

Recommendation

UT4 should not abandon the key elements of the planning process in UT3. To the contrary, it should build on and fix past implementation issues to deliver a genuine process for coal producers to participate in the development of capacity assumptions through RCGs:

UT4 should require Aurizon Network to convene a monthly meeting of RCGs with, at least, the following roles:

- developing or approving all demand and system capacity assumptions used by Aurizon Network for system planning;
- the customer vote process – regarding capital planning (section 4.12);
- approval of the new annual Maintenance Plan (section 7.9 below); and
- consultation and approval of System Rules, and any variations (section 5.4 below).

4.6 Demand testing and capacity assumptions

UT4 must provide for a regular (ideally annual) process for "testing" market demand.

While UT3 did not have an annual demand testing mechanism, it defined a number of specific trigger events that required Aurizon Network to undertake a "request for proposal" process aimed at identifying system demand (clause 7.5.2).

In UT4, Aurizon Network proposes to abandon *any* specified triggers for planning – so that it is no longer answerable at this critical stage of the process to any of its customers, funders or the regulator. In justifying this departure, it says in its UT4 Proposal:

> *In prior access undertakings, the question has arisen as to whether Aurizon Network's assessment of prospective demand is sufficient, or whether an additional level of prescription is required. The intent of such as been to make the scoping of a project essentially determined by prospective users rather than Aurizon Network's market assessment, or at least, objective criteria …*
>
> *Aurizon Network does not consider that any level of regulatory prescription as to how prospective demand for an expansion is discovered, and the expansion process commenced.* (emphasis added)

This is entirely inappropriate and would enable Aurizon Network to determine, at its discretion, when and where it tests demand. Evidently, during a period when Aurizon Network has indicated that it is looking to integrate regulated activities with a range of other activities in parts of Central Queensland (including the Central Queensland Integrated Rail Project from the Galilee Basin and its proposed involvement in the expansion of Abbot Point Coal Terminal) it remains critical that decisions about where and when capital investment occurs must be transparent, non-discriminatory and reflect the intentions and planning input of all stakeholders.

RTCA therefore endorses the demand triggers identified by the QRC in its negotiations with Aurizon Network for inclusion as part of the Expansion Process, being where:

- the operator of an existing or proposed coal terminal publicly announces that it has commenced a process to expand an existing coal terminal or to build a new coal terminal which is likely to create demand for additional below rail capacity; or
- an Access Seeker submits an Access Application for Access that Aurizon Network concludes cannot be satisfied without Aurizon Network undertaking an Expansion and that Access Seeker requests in writing that Aurizon Network carry out a Concept Study for that Expansion; or
- a minimum number of Access Seekers (e.g. 5) make a written request to Aurizon Network for it to conduct a demand assessment.

In addition, RTCA also considers that a standard annual assessment of demand should be undertaken by Aurizon Network as the basis for the planning activities included in the NDP.

RTCA Recommendation

UT4 must retain a set of established "trigger events" for demand testing as well as including a new annual assessment of demand as part of the NDP process.

Aurizon Network should be required to:

- undertake demand testing not less than once each year, as part of its development of the NDP, and must publish the aggregated demand requirements over the next 2-5 years for each system as part of the NDP (although without identifying specific producers or mine locations); and
- update its demand assessment following the specific trigger events identified in the QRC submission.

4.7 Network Development Plan

The most significant and persistent failing with capacity planning in Queensland has been the lack of effective transparency.

Aurizon Network has proven unable or unwilling, over a long period, to provide industry with the kind of open and detailed system and planning information which is needed to ensure efficient investment and business planning – and which is the kind of information regularly and routinely provided to stakeholders in other rail environments, and across most other regulated industries.

RTCA therefore welcomes the introduction of the Network Development Plan as a potentially useful starting point in resolving the lack of detail provided to stakeholders about the CQCN.

However, the publication of a NDP by Aurizon Network, of itself, is not sufficient. For it to remedy the current problems, the NDP must:

- be produced through a clear and well understood process that involves – and takes into account – input from other stakeholders;
- be published on an agreed schedule and be updated reliably and regularly;

- provide sufficient detail around all key elements of the network to be a useful tool for all stakeholders' planning; and

- link directly and meaningfully to the rest of the capital planning process – notably concept studies.

RTCA submits that the HVCCC/ARTC process in the Hunter Valley, while not perfect, provides a useful benchmark for the QCA to use in assessing the approach proposed by Aurizon Network. The ARTC produces a Corridor Capacity Strategy for its Hunter Valley network each year, a draft of which is published and consulted on with users.

A copy of the 2013-2022 Hunter Valley Corridor Capacity Strategy (**Capacity Strategy**) is attached at Annex C. For each segment, the Capacity Strategy sets out context, current issues and options for increasing capacity – both through infrastructure and other initiatives (e.g. train speed). It also reports on congestion and system issues associated with the terminals (PWCS Carrington, PWCS Kooragang Island and NCIG Kooragang Island).

As well as the Capacity Strategy, the HVCCC separately publishes to all participants a detailed annual capacity declaration and system assumptions document, which sets out key assumptions around asset capacity, availability and demand for the following year.

The level of detail provided by Aurizon Network in its consultation version of the NDP is substantially inferior to that made available by the HVCCC and ARTC in these documents.

The UT4 provisions governing the NDP, as well as the draft NDP itself, indicate that what Aurizon Network currently proposes is inadequate in both *process* and *content.*

Specifically:

- The NDP provisions sit at the *end* of the capacity planning provisions in clause 8 and do not directly relate to any other part of the Expansion processes. The annual planning (and demand testing) process set out in the NDP must be "up front" and provide the transparent basis that triggers and clearly connects to later stages in the process.

- Aurizon Network need only use "reasonable endeavours" to keep its most recent version of the NDP even available. This must be an absolute obligation.

- The NDP appears to be limited to a "long term" view of capacity requirements (5+ years), which makes it unhelpfully high level and lacking in detail over short to medium term planning. Aurizon Network argues that this short term planning is the subject of concept studies. RTCA does not agree that it is not practical for the detailed results of these studies to be included in the NDP, and to the contrary RTCA submits this is the most sensible approach. As currently drafted, the results of concept studies are only published in part and even then only to identified stakeholders selected by Aurizon Network.

- There is no commitment to the NDP being published on an annual (or any other periodic) basis – and in fact Aurizon Network has complete discretion over whether it gets updated at all.

- Aurizon Network retains a broad, unfettered discretion about what information is included and the level of detail which is reported on – this is particularly troubling given the significant deficiencies over recent years in the level of detail provided to industry through CRIMP reporting (and this lack of transparency was a key contributor to the ongoing and contentious Electric Traction issues in the Blackwater system).

- Most concerning, the NDP plays no formal or concrete role in the capital planning process. It is, for all intents and purposes, an "information only" document of no direct relevance to the actual planning and capital management decisions of Aurizon Network – and therefore other stakeholders.

These various significant problems fatally undermine the effectiveness of the NDP as proposed by Aurizon Network.

RTCA Recommendation

To be effective, the NDP and its related process must have the following features:

- It must be published on an annual basis, and updated quarterly (or as otherwise required, given developments).
- It must provide the definitive public statement of all critical demand and capacity inputs used by Aurizon Network in its capital planning and must enable stakeholders to identify when and why Aurizon Network has not agreed with RCG demand and capacity assumptions, where these have not been adopted (see section 4.6 above).
- It must require Aurizon Network to provide sufficient detail to enable all stakeholders to understand the key costs, timeframes and planning options for each system and project to meet the next required "stages" in growth. The obligation on Aurizon Network must be substantially higher than merely "having regard" to a range of factors, when preparing the NDP.
- It must provide transparency around any identified or forecast capacity shortfalls – including the cause(s) and steps being taken by Aurizon Network to remedy them.
- It must keep all stakeholders updated on the progress of projects at any stage (concept, pre-feasibility, feasibility and/or construction).
- Most importantly – the NDP must provide a real role for all stakeholders and must play a concrete role that links into the commencement of concept studies and the Expansion Process.
- To the extent that the NDP is inadequate, there must be a process for stakeholders to have the QCA require additional material be included – this could be through an independent review of the NDP and whether it provides sufficient technical information to support a threshold set of planning requirements by other stakeholders.

4.8 The Expansion Process – including concept and pre-feasibility studies

RTCA, together with others in industry, have repeatedly raised concerns about the lack of an effective Expansion Process in UT3. This has been particularly problematic for industry during SUFA negotiations, where Aurizon Network's failure to set out a clear path for developing projects limited the ability of all parties to work towards agreeing a framework for funding them.

The draft Expansion Process proposed just prior to, and reflected in UT4, is unbalanced and inadequate, and is not capable of acceptance by the QCA in this form.

RTCA is aware, and has been part of, further engagement between the QRC and Aurizon Network in relation to the Expansion Process. RTCA understands that those negotiations may in due course give rise to an alternative proposal. The observations below are therefore subject to any subsequent process being submitted by Aurizon Network.

RTCA generally adopts the comments and specific amendments to the Expansion Process proposed by the QRC. In addition, however, RTCA makes the following specific observations about the process in the draft UT4 as submitted:

- **Determination of sufficient demand (Clause 8.2.3)** – There is no reason why this demand testing process cannot, and should not, be included in as part of the NDP process. As noted above at section 3.4, the process of demand testing (and associated capacity assumptions) are of critical importance to the process and have wide ranging potential impacts for all stakeholders in a coal chain.

  Demand and capacity inputs must therefore be published to the whole market through a regular and transparent process, which is (or should be) the role of the NDP.

  By contrast, as currently drafted, the demand testing for Expansions is divorced from the NDP process and occurs in a "black box". Aurizon Network can take any information it considers relevant into account and is not required to make the results of its demand assessment publicly available. The results are not open to independent review or QCA dispute processes.

- **Concept studies (Clause 8.3).** Aurizon Network is under no obligation to undertake concept studies, even where it has identified a capacity shortfall or where demand is otherwise forecast to exceed available capacity – and despite the fact that Aurizon Network is able to recover the costs of any such studies through its regulated tariffs.

  Aurizon Network's refusal to accept even a fundamental obligation to undertake concept studies (for which it recovers a return through tariffs), where this is required to meet demand, highlights the extent to which the attitude underlying UT4 is profoundly flawed and inconsistent with the statutory requirements.

  Aurizon Network also undertakes to publish only "general details" of concept studies. It is not clear why in most cases the entire study is not able to be published, in full (subject only to any confidential producer or operator information being withheld).

- **Prefeasibility and Feasibility Studies.** The proposed process lacks transparency and allows Aurizon Network wide discretion over which projects are selected, on what timescales and how and when studies occur. There is almost no effective oversight over costs and no step in rights for coal producers.

- **Study Funding Agreement.** The Study Funding Agreement proposed by Aurizon Network is one-sided, uncommercial and entirely inappropriate. It fails to take into account any of the numerous concerns raised by industry in relation to the SFA which it sought to impose in 2012 as part of the aborted RFP processes. Given that undertaking technical studies of this kind is a "contestable" activity (there are a number of engineering firms capable of doing so) – the terms proposed for this process must be consistent with reasonable industry standards.

- **Timing and negotiation of funding.** Finally, a key lesson from the GAPE and WICET processes is that Aurizon Network has the ability and incentive to "game" the negotiation process and timeframe in order to achieve maximum commercial leverage in funding discussions with coal producers – which in turn forces inefficient monopoly outcomes. In the

case of GAPE, both substantial mine and terminal investments had been committed[37] before Aurizon Network was prepared to meaningfully progress funding negotiations. RTCA understands that similar tactics were used during WICET and, without litigation being commenced by the QCA, the process would have lacked any effective oversight or transparency.

Put simply, the proposed Expansion process would place the planning and development of the Queensland coal industry entirely in the hands of Aurizon Network, a below-rail provider with a history of exploiting its monopoly power to leverage inefficient and costly outcomes. This is an outcome that would place the future growth and competitiveness of the industry in Queensland at risk.

In terms of content, process and market outcome, this is not, and simply cannot be found to be, consistent with the statutory principles in section 138(2) or the objects of Part V of the QCA Act, or the underlying object of declaration.

RTCA Recommendation

The proposed Extension Process must be rejected in its entirety.

- The QRC, with input from industry, has developed a set of key principles which it considers need to guide the Expansion Process. The QCA and QRC should work together to develop a workable alternative process, incorporating those principles.

4.9 Capacity shortfalls

The current process in UT3 which requires Aurizon to immediately commence studies to remedy any capacity shortfall needs to be retained, and any such capacity shortfall (and associated concept studies and pre-feasibility work) need to also be included in the NDP.

However, under UT4, Aurizon Network has proposed that it not be obliged to comply with the Capacity Shortfall obligations to the extent inconsistent with its "commercial objectives".[38] Evidently, the uncertainty created by this approach would undermine efficient investment in the coal chain, and associated growth in the industry and Queensland economy.

A producer needs to fund 'matching' capacity across the coal chain – aligning capacity across its mine, rail, rolling stock, terminal etc. A producer is not able to invest with confidence unless it can be certain that the full capacity of the rail expansion will be delivered, and so it will not be left with unusable excess capacity in other parts of the coal chain because Aurizon Network is not prepared to deliver the full rail capacity projected. To be left at the mercy of Aurizon Network's "commercial objectives" in these circumstances is no comfort, and only likely to lead to higher costs.

This amendment therefore fundamentally undermines the purpose of the capacity shortfall provision, which requires that such failures to meet capacity commitments will be remedied. The investment framework under UT4 should retain the existing "capacity shortfall" obligations (in UT3) which provide an appropriate balance between the needs of Aurizon Network and access seekers, and provide confidence about the capacity to be delivered by projects which is needed to support efficient investment in both rail and other parts of the supply chain.

[37] The Abbot Point X25 and X50 projects, which involved capital expenditure of just under $1 billion, were approved by the State Government in early-mid 2008. GAPE negotiations were not concluded with Aurizon Network until early 2010.

[38] Clause 8.10 of proposed UT4.

4.10 Funding and Access Rights

The removal of the $300m funding commitment is a serious breach of faith with the Queensland coal industry

Aurizon is looking to use the opportunity presented by UT4 to remove two critical elements of the UT3 "deal" struck between government and the coal industry during privatisation, and which support funding for future growth of the Queensland coal industry:

- the obligation on Aurizon Network to continue to fund investment in new capital expenditure associated with incremental growth up to a value of $300m, at the regulated rate of return; and

- the "access conditions" process (which has been a longstanding feature of the regulated environment in Queensland) and which provided a transparent process for producers to agree terms of investment above $300m, where any above regulated rate of return was required to be justified on the basis that risks not already compensated through regulated tariffs. Importantly, the QCA retained an important role in approving access conditions (where these were not otherwise agreed) and ensured that other industry stakeholders – who may themselves be affected in the future – were also consulted, and had an opportunity to participate.

In seeking to remove these protections (and which in the case of the minimum investment commitment was given only 4 years ago), Aurizon Network would severely undermine regulatory predictability and certainty at a time when investment confidence in the Queensland coal industry is already fragile, given global cost and supply challenges.

Regulatory stability around investment in the CQCN is critical to support continued growth and investment throughout the coal industry. It should not be permitted to be undermined because of a commercial decision by Aurizon Holdings to seek to position itself as a "growth stock" and so, on that basis, argue that it is no longer prepared to continue to undertake regulated investment.

RTCA submits that neither the commercial nor legal grounds which Aurizon Network has sought to use to justify its position are valid and neither should be accepted by the QCA.

The commercial justification for withdrawing a commitment to funding investment is flawed

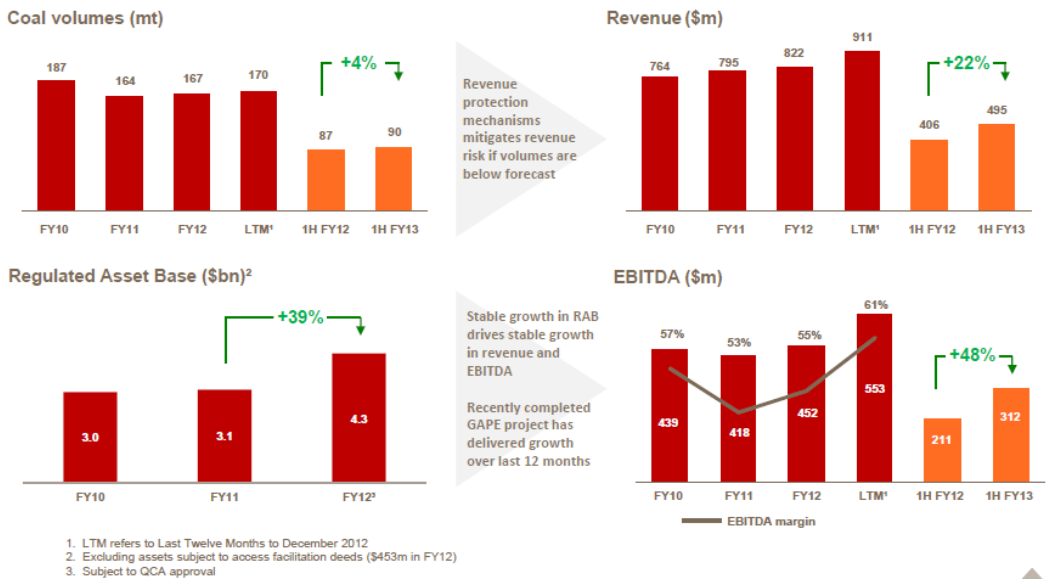
RTCA has already noted, in section 3, that Aurizon Network argues that a combination of the introduction of private capital and proposed funding contestability (through the draft SUFA framework) should mean that it is no longer reasonable for the QCA to impose a constraint on its shareholders' ability to earn an appropriate return on new capital invested.

There can be little doubt that private shareholders of Aurizon Network (or Aurizon Group) understood and accepted the regulated nature of the asset at the time of privatisation (and subsequently), including the obligation to invest in the network at the regulated return. Both formed part of the "bundle of rights" which were acquired by investors as part of privatisation (indeed, both the $300m obligation and access conditions were part of the regulatory framework during privatisation).[39]

In addition, the public results of Aurizon Network tell a different story. They highlight that in a market in which its customers' margins are being impacted and projects are being delayed or withdrawn, Aurizon Network has *grown* the revenues and profitability of its regulated Aurizon Network business.

The following slide was included by Aurizon Network in its ASX announcement in support of debt refinancing on 28 May 2013.

[39] Note discussion of this issue at section 3.2 of this submission.



In a year in which the Queensland coal industry has been under unprecedented cost and margin pressure, and in which volumes grew by only 4%, Aurizon Network increased regulated revenues by **22%** and EBITDA by **48%**. For Aurizon Network to argue, against this evidence, that the current regulatory framework which includes the obligation to invest incrementally in capacity (up to $300m) is uncommercial or exposing shareholders to uncompensated risks, is clearly absurd.

Finally, RTCA does not accept that the introduction of a complex, unbalanced and untested SUFA framework means that it may well prove unbankable (or usable for only the largest projects). It is therefore not an appropriate basis for removing or relaxing any other investment obligations – either the current $300m incremental investment requirement or Access Conditions.

In any event, in line with evidence-based regulatory best practice, the QCA should not rely upon the *existence* of the SUFA framework, but needs to wait until it has been shown to be effective by delivering genuine contestable funding on multiple projects and across the cycle.[40]

The legal framework does not justify the approach being adopted

Aurizon Network has argued that the QCA Act does not permit the QCA to require it to bear the cost of expansions and, in addition, that doing so would not be consistent with its "legitimate business interests".[41]

Neither of these provisions supports the view adopted by Aurizon Network:

- While s 119 of the QCA Act applies to *extensions*, it does not prevent the QCA from imposing obligations on Aurizon Network to fund replacement capex and maintenance etc.

- There is nothing in relation to either obligation which is inconsistent with the "legitimate business interests" of Aurizon Network, as the owner of the network. As noted earlier in this submission at section 3, the concept of "legitimate business interests" in s 138(2) has been found to be both

[40] See COAG Principles of Best Practice Regulation (2007), principles 6 and 8 of which both require regulators to ensure that regulation remains *effective over time*.

[41] Sections 119 and 138(2) of the QCA Act.

flexible and broad (described as "open textured" by the Tribunal). It requires only that the access provider can return a reasonable rate of return consistent with an efficient operator. In other contexts, it has been found to be satisfied where the owner has been allowed a regulated return on investment.

- The QCA must also balance Aurizon Network's interests under s 138(2) of the QCA Act with a range of other statutory criteria in s 138(2) which include the object of Part V (i.e. promotion of competition and efficient operation/investment), legitimate interests of access seekers and the public interest. The commercial interests of Aurizon Network do not hold any "fundamental weight" when compared with these other statutory criteria.[42]

- There is nothing in the statutory criteria that could be said to *require* the QCA to allow Aurizon Network an above regulated rate of return in new capex. To the contrary, the pricing principles in s 168A of the QCA Act are defined in a way that is more consistent with an efficient, regulated tariff.

In the absence of Aurizon Network maintaining its UT3 funding commitment, the QCA should refuse to permit Aurizon Network to invest in the CQCN above the regulated rate of return

The regulated network is, and continues to be, a highly profitable and lucrative business for Aurizon Network. For a regulated business to increase EBITDA by 44% in a year in which volumes increased by only 4% highlights this fact.

Aurizon Network should be given a simple choice, either:

- *Voluntarily retain both of the existing mechanisms above (i.e. the $300m investment obligation and access condition process for above regulated returns)* – modified where necessary to improve the capital planning/Expansion process as developed by industry (QRC).[43]

or

- *Aurizon Network will be prevented from obtaining an above regulated return in respect of <u>any</u> investment associated with the CQCN (including any Expansions)*.

Under either model, Aurizon Network should be required to continue to invest in replacement capex and maintenance, where this is necessary to support existing capacity and the safe operation of the network – this should not be removed from UT4 but should be made explicit under both UT4 as well as Access Agreements (so that it can be enforced by the QCA as well as contractually).

[42] See *Telstra Corporation Ltd v ACCC* (2008) 171 FCR 174.

[43] Note: section 119 does not apply where an obligation to fund has been accepted by AN under a voluntary undertaking (s 119(4)) – so in circumstances where Aurizon Network accepts and investment obligation in UT4 voluntarily, the obligation is enforceable by the QCA.

RTCA Recommendation

The QCA should offer Aurizon Network the choice of voluntarily retaining the existing $300m investment and "access condition" requirements, or implement the following alternative:

- Aurizon Network should be entitled to recover capital expenditure invested in network capacity (including any Extension) only through including the capital expenditure in the RAB and System Allowable Revenues (**SAR**), and recovering that expenditure through reference tariffs at the regulated rate of return
- Aurizon Network should not be entitled to include *any* new capital expenditure in the RAB/SAR unless it has previously been disclosed to producers through the NDP.
- In either case, the obligation to continue to invest in replacement capex should remain explicit under both UT4 as well as Access Agreements, so that it takes effect as a regulatory (and not purely contractual) requirement.

4.11 SUFA

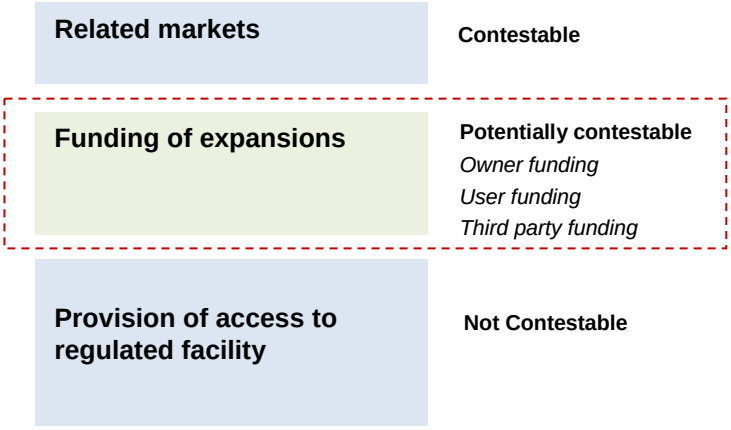
A bankable SUFA regime is critical because it addresses the single most important cost to the Queensland coal industry – the cost of capital

The most significant cost for coal producers (as for any other part of the economy) is the cost of capital. Reducing the cost of raising capital is the single best way to promote efficient investment in rail infrastructure.

Over $4-5 billion has been raised over recent years by a variety of coal producers, predominantly from debt markets, to fund investment in coal terminal expansions in Queensland and Newcastle (notably WICET, NCIG and PWCS). In each case, flexible project finance structures and the competitive global market for capital has allowed producers to achieve a cost of capital on expansions which is *substantially* lower than what has been demanded by Aurizon Network over the same period in order for it to undertake expansion of the Queensland rail network (WIRP and GAPE).

The absence of "contestable" funding has enabled Aurizon Network to hold up investment in rail infrastructure, in order to extract a higher rate of return than would be available to producers if they were able to access their own balance sheets or other funding sources.

Figure 4. Funding for rail projects needs to be made contestable



In assessing the draft SUFA documents, the QCA should recognise that Aurizon Network therefore has an incentive to deliver a SUFA that either prevents it from being actively used, or which ensures that the risk and complexity associated with SUFA means that banks or other sources of capital will demand a premium to invest in rail expansions using the arrangements.

This improves the competitive position of Aurizon Network when trying to negotiate its own funding with coal producers under Access Conditions and/or provides Aurizon an opportunity to purchase SUFA interests at a discount at a later time.

The SUFA documents proposed by Aurizon Network are complex and unlikely to be bankable for any but the largest Expansion projects

RTCA was a member of the industry group that worked with the QRC over two years to seek to negotiate a workable set of SUFA arrangements with Aurizon Network. RTCA endorses the submissions and conclusions made by the QRC in its detailed submission to the SUFA process, including the proposed amendments to the SUFA documentation.

Without limitation to those submissions, RTCA simply notes that the draft SUFA documents as submitted by Aurizon Network are not bankable in their current form. The SUFA documents proposed are complex, unreasonable, unbalanced and uncommercial – and provide Aurizon Network with significant discretion.

The QRC has found (at page 5 of its submission) that SUFA offers only:

- a barely workable framework through which mining companies may invest their own capital;
- some prospect of transferring the investment to a third party (most likely at a discount to the investment cost, and only post-construction);
- no possibility of third party equity investment during the construction phase; and
- no possibility of third party debt funding at any stage, other than through corporate debt held by the individual user-funders.

Evidently, this is not a framework which opens up the CQCN to genuine, workable and truly contestable new sources of capital. The SUFA framework does not represent the kind of efficient funding structure that would be available in a workable competitive market. To meet this requirement (which is implicit in the objects of Part 5 of the QCA Act), significant amendments are required.

Conclusions on SUFA

RTCA is disappointed that, ultimately, Aurizon Network could not deliver a reasonable and balanced framework for consideration by the QCA. This reinforces RTCA's view that it is not in Aurizon Network's commercial interest to do so, given that it would expose Aurizon Network to the discipline of a contestable market for capital funding.

The SUFA documents as filed by Aurizon Network (and included as part of UT4) do not promote efficient investment in infrastructure (s 138(2)(a)) or satisfy other requirements of s 138(2), including:

- the legitimate interests of users (s 138(2)(e));
- the public interest, including the benefits associated with competition in the related markets for funding (and the downstream coal market) (s 138(2)(d)); and

- pricing for capital that provides an incentive and means to reduce costs and improve productivity – through reducing "hold up" risk and achieving a lower cost of capital for expansion (s 168A(d)).

Most of all, the existence of the SUFA documentation, of itself, does not provide any genuine competitive discipline of the kind which the QCA would need to be satisfied existed before other capital planning and investment obligations were relaxed or changed.

For the SUFA framework to operate it is also critically dependent on a well-designed, transparent capital planning and Expansion process. As noted above, the UT4 proposal does not currently provide this framework.

RTCA Recommendation

The QCA should reject the draft SUFA framework.

- The SUFA documents are complex, commercially unbalanced and are unlikely to be bankable for any but the largest projects, if at all. At the least, the amendments proposed by the QRC in its SUFA submission should be required to be adopted by Aurizon Network.
- The SUFA documents do not provide any basis for relaxing other UT3 capital planning or investment obligations. The QCA should not even consider this to be the case until there is evidence of them providing genuine pricing discipline on a range of projects and across the cycle.
- For SUFA to operate as intended, it must also be supported by a workable capital planning and Expansion process, as outlined in this chapter. This is not currently the case with the draft UT4.

4.12 Prudency of capital expenditure – the customer vote process

It is necessary to briefly comment on the amended customer vote process, which Aurizon Network has proposed apply under clause 8.10 of the draft UT4.

RTCA accepts and endorses the principle that coal producers should play a direct role in determining which projects are progressed, and a customer vote process is an important part of that process. The Electric Traction DAAU process highlights the inefficiency and substantial commercial damage that can be caused by a failure to implement a thorough, transparent and regular customer voting process for major capital expenditure.

However, the process as proposed in clause 8.10 is extraordinarily one-sided and non-transparent, and one that remains fundamentally inconsistent with the statutory criteria.

The problems with the proposed UT4 customer vote mechanism are many, and include:

- A vote will occur on six weeks' notice, with no mechanism to enable customers to require this to be pushed back to allow for further analysis or information to be obtained.
- Aurizon Network retains full control over which projects are put to a vote and whether only some or all of a particular capital project are voted on – this decision is not subject to oversight or a right of dispute.

- Aurizon Network may seek a vote on any of project scope, standard or cost allocation principles – but is not required to seek a vote on all three (as such, it can seek approval as to the prudency of scope of a project without indicating to users, or seeking acceptance of, the standard or cost allocation associated with the same project).

- Approval of projects that have been endorsed by users do not trigger an obligation to fund or construct.

- Only those stakeholders which have access charges directly affected by a project are entitled to participate.

- Aurizon Network seeks to limit the grounds on which a customer is entitled to vote "no" to a narrow set of criteria.

- A "no" vote must be accompanied by detailed reasons, and Aurizon Network can choose to ignore the vote if it does not consider they relate to one of the stated criteria.

- Any doubt as to the intention of a vote is deemed to be a "yes" vote.

- If an audit shows a flaw in a vote that would be expected to change the outcome, Aurizon Network is nonetheless not required to redo the voting process.

It will be immediately apparent that this process is not commercial, reasonable or consistent with statutory requirements and must be rejected.

In its place, RTCA submits that a genuine, balanced customer vote process is required and, in fact, should form a standard feature in **all** major capital expenditure the cost of which is intended to be socialised across existing users through regulated tariffs. While the QCA may not ultimately be bound by a 'no' vote, it should have this information at the time it is otherwise asked to assess the prudency of any such investment.

RTCA Recommendation

The customer vote mechanism is important and all capital expenditure to be recovered through regulated revenues should be subject to one – however the proposed UT4 customer vote process is entirely unacceptable and must be replaced with a balanced and transparent process through RCGs.

At a minimum, any customer vote process needs to have the following features:

- The RCGs should be able to anticipate possible votes well in advance, through monthly meetings with Aurizon Network and through the NDP.

- The existence of a customer vote and the associated project needs to be publicly notified to all stakeholders, through the RCG process, together with those that Aurizon Network considers are eligible to vote – so that any dispute as to eligibility occurs *before* the vote.

- A vote must relate to **all** of scope, standard and cost allocation – it is not appropriate for Aurizon Network to be able to cherry pick.

- If a majority of voting producers wish to have the vote postponed, to allow for them to take further advice on the project, they can do so.

- UT4 must set out clearly the information which must be provided by Aurizon Network to voting customers (the information requirements which form part of the 60/60 voting process at DBCT provides a useful guide in this regard[44]).
- There must be no limitation on the reasons for a 'no' vote and no discretion for Aurizon Network to determine which votes are counted.
- Any failure to vote should be treated as an abstention (neither 'yes' nor 'no'), and any uncertainty should be deemed to be a 'no' vote. This is justified given that Aurizon Network retains the right to seek QCA approval irrespective of the outcome and so should not be favoured by 'deemed' support for a proposal.
- Any audit or dispute that identifies a flaw or irregularity in the process that the auditor (or QCA) consider may have affected the outcome, will require a fresh vote – although potentially under a shorter timeframe.

4.13 Electric Traction and Rolleston electrification (Schedule G)

Aurizon Network has again sought to incorporate its attempted socialisation of "electric traction" costs in the Blackwater system, this time through Schedule G of draft UT4. Schedule G reflects the same approach previously submitted to the QCA as a DAAU in April 2013.

RTCA has responded on a number of occasions on this issue, both in formal submissions and informal discussions with the QCA, and there seems little value in restating all of those submissions in this UT4 context. RTCA therefore adopts and refers the QCA to its earlier submissions.

In short:

- While Aurizon Network claims that its remodelled Electric Traction approach in Schedule G is a form of compromise in relation to this issue, it is not.
- Schedule G does not involve any meaningful response to the concerns raised by producers to previous processes, but restates its earlier position under which under-recovery of all Blackwater electric infrastructure costs would be underwritten in full by non-electric users (either across the Blackwater system or the entire CQCN).
- RTCA maintains the view it has repeatedly put in this process that diesel is a more efficient traction choice on a total cost of ownership basis and that investment in electrification of Blackwater (and the associated Powerlink contracts) was imprudent and inefficient, given falling demand for this traction type.

RTCA is concerned that Aurizon Network appears to link Schedule G pricing and volume assumptions with an assumption that Rolleston will be electrified.

RTCA is also concerned that the standard "reference train service" for the Blackwater system has been changed to be electric only. This represents a fundamental change in the regulatory framework for Blackwater which undermines the operating assumptions which have been in place for a number of years and upon which RTCA (and other diesel users) invested in rolling stock. There is no justification for this change, which is inefficient, unjustified and a clear attempt to further advance their above rail interests in the Blackwater system, at the expense of customers and other operators with a diesel fleet.

[44] See clause 12.5(h)(2).

Aurizon Network has also made a substantial change to the investment assumptions in Schedule G by removing diesel trains out of the definition of "reference trains". Such a change is clearly inappropriate. There must be no connection allowed between any proposed electrification of the Rolleston spur line and the Blackwater system electric charging issue, including in terms of any volume underlying the 85% utilisation assumption in Schedule G, clause 3.

RTCA vigorously opposes including Rolleston electrification expenditure in the RAB, which would expose Blackwater users to substantial "single mine" risk and would be directly inconsistent with Aurizon Network's position in relation to the costs of other customer specific infrastructure under UT4.

The QCA must take into account the legitimate commercial interest of producers in relation to their substantial sunk investment in diesel locomotives.

It has long been recognised that a settled and certain regulatory environment is critical to efficient investment in infrastructure. This is an issue which RTCA raised in its first submission in response to the original electric traction DAAU in April 2011 and which it repeated in its submission in June 2013.

RTCA has previously observed that it invested in diesel locomotives in the Blackwater system in 2007 when it first supported the entry of Pacific National to the above rail market. This decision to underwrite a fleet of trains though a long term (10-15 year) haulage contract is a significant investment. RTCA did so amongst other things on the understanding that the Queensland regulatory environment would provide a certain and predicable approach to regulated pricing.

RTCA also did so based on its analysis of the economics of different train and traction types and Aurizon Network's (at that time, QR Network's) confirmation that the electrical system in Blackwater could not support AC electric traction (Siemens locomotives that PN were evaluating for the haulage) and that the necessary work to support AC traction would not be completed in time for the project start up in 2009 when RTCA's then current haulage contract expired.

Section 138(2) of the QCA Act requires the QCA to have regard to both the object of Part 5 (including the efficient investment in infrastructure) and the legitimate interests of access seekers, when deciding whether to approve a DAAU. Any modification to charges which has the effect of introducing a substantial cross-subsidy between electric and diesel traction – years after investments in haulage and rolling stock have been sunk – is fundamentally inconsistent with both:

- the object of promoting efficient investment; and
- the legitimate interests of access holders.

If the QCA is minded to permit some form of recovery of Blackwater electrification costs, it is inconsistent with the QCA Act and good regulatory practice for this to apply to existing diesel assets and haulage arrangements – which must be grandfathered. This is also required in order to comply with section 138(2)(e), which requires the QCA to be satisfied that any DAAU adequately protects the rights of users (in this case producers using diesel assets) which are adversely affected:

> *the interests of persons who may seek access to the service, <u>including whether adequate provision has been made for compensation if the rights of users of the service are adversely affected;</u>*

This is a principle that has previously been accepted by Aurizon Network – and was accepted again at the industry workshop in January 20133 – but which it has not reflected in Schedule G.

Schedule G proposes an explicit cross subsidy in favour of its own above rail operations – and therefore in direct contravention of the QCA Act

Schedule G proposes an explicit cross-subsidy be paid by non-electric users (either diesel users of the Blackwater system or all users of the CQCN) – see clause 2(c).

As the QCA is aware, Aurizon Network's above rail operations have invested heavily in electric locomotives, whereas its competitor (PN) currently runs diesel trains on this system. The cross subsidy is therefore one that directly and anti-competitively seeks to "equalise" the costs of both traction types through a cross subsidy, in a manner that has the effect of favouring its own downstream operation.

The proposed approach produces clear anti-competitive cost shifting – in that it shifts the cost and risk of underutilisation of electric assets (including rolling stock) from Aurizon Network's above rail business to other users, forced to subsidise a high level of electric utilisation (i.e. 85%). That is, it shifts costs from electric to diesel users in a manner that ensures that Aurizon Network's above rail electric fleet is not disadvantaged *vis a vis* the lower cost diesel alternative.

For these reasons, Schedule G contravenes sub-sections 104(2) and (3) of the QCA Act, which provides:

> *(2) An access provider who is the owner or operator of a declared service engages in conduct for preventing or hindering a user's access to the declared service if, having regard to the relevant criterion, the access provider provides, or proposes to provide, access to the declared service to itself, or a related body corporate of the access provider, on more favourable terms than the terms on which the access provider provides, or proposes to provide, access to the declared service to a competitor of the access provider.*
>
> *(3) For subsection (2), the relevant criterion is the terms, taken as a whole, on which the access provider provides, or proposes to provide, access to the declared service to itself and the competitor having regard, in particular, to—*
>
> *(a) the fees, tariffs or other payments to be made for access to the declared service by the access provider and the competitor; and*
>
> *(b) the nature and quality of the declared service provided, or proposed to be provided, to the access provider and competitor.*
>
> (emphasis added)

In this case, Aurizon Network proposes an adjustment to the pricing framework to "equalise" the costs of electric and diesel traction – in circumstances where it understands that its own above rail operations have already invested in electric rolling stock and its competitor has (successfully) entered the market using a diesel fleet.

It is no response to this argument to claim that all users benefit from an increased ability to switch at a later stage. To the contrary – this lower switching cost highlights that the pricing framework intentionally places Aurizon Network's above rail business in a stronger competitive position to win future contracts than Pacific National, which needs to then invest in new electric rolling stock (stranding its own investment in diesel).

As well as not being allowable under section 138(2) of the QCA Act, RTCA submits that approving and implementing the new pricing structure under Schedule G would be clearly unlawful – contravening fundamental non-discrimination requirements under section 104 of the QCA Act.

RTCA Recommendation

RTCA repeats its earlier submission that it remains open to a commercial solution to Aurizon Network's commercial concern about the electric traction costs of Blackwater, however this must involve genuine compromise and flexibility not yet apparent in the earlier DAAU or in Schedule G.

Any commercial solution must respond to the four key concerns of industry, which have not been addressed in the DAAU:

- The costs associated with the Powerlink contracts were never submitted to producers through CRIMP and their prudency has not been QCA approved (and is disputed) – so they are not appropriate for socialisation across diesel users.
- The rules around possible socialisation of any remaining costs (i.e. non-Powerlink) electrification need to be clearly specified and commercially agreed. The way in which this has been dealt with in the DAAU – by reference to a range of uncertain options – is not sufficient.
- Any existing diesel services must be grandfathered (this has been accepted by Aurizon Network in the past, but is not reflected in the DAAU).
- There must be no connection between any proposed electrification of the Rolleston spur line and the Blackwater system electric charging issue, including in terms of any volume assumptions underlying modelling. RTCA vigorously opposes including Rolleston electrification expenditure in the RAB, which would expose Blackwater users to substantial 'single mine' risk and would be directly inconsistent with Aurizon Network's own position in relation to the costs of other customer specific infrastructure under UT4.
- UT4 must not alter the standard reference train service in the Blackwater system so that it is electric only – which would fundamentally undermine the regulatory assumptions on which RTCA and other diesel users made significant sunk investments in rolling stock.

5 A UT4 framework that gives producers the operational flexibility needed to develop "local solutions" for Queensland coal chains

5.1 Summary

For a number of years, inflexibility and a lack of contractual alignment in Queensland coal chains has imposed substantial costs and inefficiencies on the Queensland coal industry that prevent investment, constrain growth, and which impair its global competitiveness.

Over this period, Queensland has fallen behind the Hunter Valley, which has developed more integrated, transparent, flexible and efficient regulatory arrangements.

RTCA agrees that coal producers, and not Aurizon Network, should take over leadership of the development of "local solutions" to improve contractual alignment (between port and rail rights) and their flexible use (aligning port and rail modes of operation).

To do so, however, UT4 must provide producers with the tools needed to be able to develop and implement such solutions. Instead as currently proposed, UT4 would take coal chain coordination in Queensland *backward* and effectively "kill off" any chance for material improvement over the term of the undertaking.

Aurizon Network's proposal:

- avoids any commitment to participate in coal chain coordination – and fails to recognise coal chain maximisation as an overarching objective of the regulatory regime;
- whilst acknowledging the need for a framework that enables more flexible and efficient management of contractual entitlements – the draft UT4 establishes a limited take or pay "capping" arrangement that favours *operators* over *producers* and which puts back development of more critical issues, such as short term trading, until UT5 (at the earliest);
- maintains inflexible operating and scheduling assumptions – such as a "weekly" lock down period for train path orders, and an assumption of even weekly railings;[45]
- remains entirely non-transparent around the development of critical operational processes, such as the development of System Rules, which to a large extent define the capital expenditure and contractual requirements of the system;
- the form of "pooling" proposed by Aurizon Network for scheduling of paths is limited and in fact *narrows* an existing right to substitute train entitlements under the UT3 Contested Train Path principles.

RTCA is in the process of exploring a number of significant coal chain initiatives, which it hopes to be in a position to discuss with the QCA prior to the end of the year. For these, and any other similar initiatives, to deliver on their potential, UT4 must establish a best practice framework to enable flexible scheduling and contracting.

[45] While individual System Rules have moved to a shorter period (e.g. Northern Bowen Basin), UT4 sets a longer 'weekly' lock down as the default. See section 5.5 of this submission.

The importance of achieving this outcome for the Queensland coal industry through UT4 cannot be understated.

The specific changes proposed by RTCA

Simply, UT4 as proposed by Aurizon Network does not provide operational or coal chain provisions which satisfy the statutory criteria in section 138(2).

RTCA submits that the QCA needs to take the opportunity afforded by this regulatory reset to require Aurizon Network to put in place a regulatory framework within which the industry can develop and implement genuine "best practice" approaches to coal chain operating arrangements.

This will require:

- New "coal chain" orientated objectives modelled on those proposed by the QCA for the Capricornia System Rules. These will guide Aurizon Network when making a range of operational and capital planning decisions and the QCA in resolving disputes under UT4 or Access Agreements.

- UT4 should establish a defined process for the development, approval and oversight of System Rules, with clear rights for producer involvement.

- UT4 should improve the degree of flexibility in the scheduling of train paths and provide a direct role for coal producers in the development of alternative scheduling principles. This needs to include:

  - removing the rigid and inefficient "even weekly railings" assumption;

  - moving to a standard "48 hour" scheduling lock down period, which maximises flexibility – unless otherwise agreed with the coal chain stakeholders; and

  - improving the scope for coal producers to participate and agree alternative scheduling principles to those specified by Aurizon Network – where this is in the best interests of the wider coal chain.

- UT4 should anticipate and allow for scheduling and contract management to be performed in the future by a system coordination body on behalf of multiple producers / access holders.

- UT4 should provide the tools needed to implement "local solutions" that deliver flexibility and reduce costs associated with contractual "take or pay" entitlements:

  - A short term trading mechanism for rail capacity in the coal chain – including an ability for producers to transfer capacity up to 48 hours prior to the day of operation. While an capacity accounting arrangement needs to be developed to support this, the Access Agreement should provide for such short term transfers modelled on clause 16.4 of the Hunter Valley ARTC Access Holder Agreement (**AHA**).

  - The proposed UT4 concept of "operator capping" is unfair, benefits large operators (notably Aurizon Coal) over producers and smaller operators and should therefore be rejected. If a form of capping is to be introduced, and RTCA sees merit in this approach, it needs to be in addition to short term trading (and not a substitute for it) and enable take or pay offsetting/capping to be managed on a shared basis by *producers* or other third parties (such as a centralised body on behalf of a number of producers) as well as operators.

5.2 Background

Inflexibility and a lack of coordination have been longstanding and acute problems in Queensland coal chains, imposing significant costs and inefficiencies, preventing investment, and impairing Queensland's global competitiveness.

The value of improved coordination and flexibility is substantial:

- In 2007, Stephen O'Donnell estimated the value of lost revenues and demurrage charges associated with inefficiency in the Goonyella Coal Chain at **$1.2B per annum (being $900m in lost revenue and $300m in demurrage charges)**.[46]

- Mr O'Donnell has indicated elsewhere that he considers that a rigid scheduling approach, such as that adopted to date by Aurizon Network in Queensland, requires other stakeholders in the coal chain to invest **up to 10-20% more in capital expenditure than would otherwise be the case**.[47]

- In 2008, NSW Maritime noted a **15% increase in output** from the Hunter Valley due to improvements in coordination over the period from 2004 to 2008.[48] RTCA estimates this as having a value of approximately **$1B per annum**.

- RTCA considers that rail inflexibility is contributing to 15-20% underperformance at DBCT (or 10-15Mtpa). Improved utilisation and contractual alignment, to enable use of this "lost" capacity could therefore result in **up to $1.5B capex savings**.

In its UT4 submission, Aurizon Network itself has acknowledged the risk of coordination failures in complex and fragmented supply chains such as the CQCN, and that these cause capacity losses and bottlenecks.[49]

Aurizon Network argues that, to be effective, solutions to these issues need to be driven by producers, and not by the rail or port operators. RTCA agrees with Aurizon Network that coal producers, and not Aurizon Network, need to empowered to "own" the process of improving contractual alignment (between port and rail rights) and their flexible use (aligning port and rail modes of operation).

However, in order to do so, UT4 must provide producers with the tools that are needed in order for producers to be able to develop and implement such solutions. Aurizon Network cannot argue that industry should take a leadership role in coal chain coordination, if the proposed regulatory framework under UT4 would prevent anyone but Aurizon Network from effectively being able to do so.

The problems with UT3 which have prevented producers from implementing "best practice" coal chain solutions to date, when compared with the Hunter Valley, are:

- while Aurizon Network has recently introduced a "system objective" in its draft System Rules for the Capricornia System, to date there has not been any similar overarching objective in UT3 (or UT4) that focusses operation and scheduling of the CQCN on *system* throughput (rather than contractual compliance);

[46] Goonyella Coal Chain Review, 2007.

[47] Affidavit of S O'Donnell, 21 December 2007, filed on behalf of BHP Billiton Iron Ore Pty Ltd in *Application by Fortescue Metals Group Limited for Review of the deemed decision by the Commonwealth Treasurer of 23 May 2006 under section 44H(9) of the Trade Practices Act 1974 (Cth) in relation to the application for declaration of services provided by the Mt Newman Railway Line.*

[48] NSW Maritime, Improving competitive outcomes and landside productivity at NSW ports, September 2008.

[49] Aurizon Network, sub. no. 2, p. 168

- a rigid rail operating model under UT3 and associated System Rules (based on an assumption of 'even weekly railings' and which requires locking down of train orders one week ahead) which is incompatible with the flexible cargo assembly mode at Dalrymple Bay;

- an approach to management of "take or pay" entitlements that is becoming *less* flexible over time and that has been dictated by below rail operating preferences and arrangements – preventing producers and rail operators from actively managing their rights to ensure capacity is aligned between different producers and different port and rail requirements, to reflect the constantly changing needs of the coal chain; and

- the limited effectiveness of coal chain bodies – including the structure of the Integrated Logistics Company (**ILC**), which has limited its ability to replicate the Hunter Valley coal chain model, and sidelined its role to high level planning.

While Aurizon Network and RTCA agree that producers should be the ones to lead development of coal chain solutions, the draft UT4 proposal would take the industry *backward* and prevent it from achieving industry-led flexibility and improvement.

This failure has direct consequences for costs. There is a direct link between operational efficiency, system throughput and capital expenditure. The inflexibility which Aurizon Network has built into its System Rules and scheduling arrangements, in particular, has constrained coal chain performance and required coal producers to invest inefficiently in capital expenditure (both in rail and other parts of the coal chain) in order to maintain throughput.

UT4 needs to provide a framework which offers coal producers the "tools" to implement genuine, improved coordination and flexibility, reflecting the unique needs of, and stakeholders in, each coal chain.

5.3 A new UT4 objective of maximising coal chain throughput

RTCA has argued, for some time, that the most important priority for UT4 is to shift the "centre of gravity" in decision making about the coal chain from the monopoly rail network to the best interests and maximum throughput of the total coal chain.

This is especially important in relation to operational aspects of the coal chain, such as path scheduling, take or pay rights and integration with port operations, which for too long have been dictated by the preferences and commercial interests of the below rail operator, and not what is in the best interests of the coal chain (and therefore the Queensland economy).

The starting point for this process, in RTCA's view, is to introduce a set of objectives for UT4 that reflect a "whole of coal chain" focus.

The ARTC Undertaking in the Hunter Valley includes both a comprehensive set of objectives as well as recognition of certain "coal chain principles", which are (clause 1.3):

> ***1.3 Recognition of Coal Chain Principles***
>
> *In preparing the Access Undertaking, ARTC has sought to recognise the importance of the following principles to coal producers seeking to export coal to the Port of Newcastle:*
>
> (a) *coal producers require long term certainty of access to a contracted portion of Coal Chain Capacity, of which one component is contracted Capacity with ARTC;*
>
> (b) *the availability of a reliable process through which access to Capacity can be negotiated within the broader context of the Hunter Valley Coal Chain;*

(c) *the development of a set of System Assumptions to apply across the Coal Chain and for ARTC to participate in the development of these System Assumptions in so far as they relate to the Network and to reflect the applicable Relevant System Assumptions in Access Holder Agreements; and*

(d) *there should be workable alignment between the allocation and utilisation of Capacity and the allocation and utilisation of capacity at the coal terminals at the Port of Newcastle.*

Currently, there is no similar overriding set of objectives or principles governing UT3 or UT4 (as proposed). While Aurizon Network has introduced a set of guiding principles for the limited purpose of its Contested Train Path decision making process at clause 8.1 of Schedule H – these restate the UT3 focus on ensuring contractual compliance and equality, and do not reflect coal chain maximisation.

RTCA therefore welcomes the recent System Rules proposed by Aurizon Network for the Capricornia System, which include a set of principles to guide how it will manage delays in the day of operation for that system:

Aurizon Network would use the following principles in preparing the intermediate train plan:

(a) *maximise the system available pathing for the equitable distribution of train service entitlements;*

(b) *maximise system throughput; and*

(c) *minimise parcel build times, which refers to how long it takes to assemble the coal from various miners at a port ready to load onto a ship.*

This is a generally well-crafted set of objectives which RTCA considers should, with some amendment, be incorporated as the principle objectives to be applied under UT4. These objectives should then be taken into account in relation to a wide range of matters under UT4 – including providing a guiding principle for Aurizon Network when making scheduling (replacing those in clause 8.1 of Schedule H), capital planning decisions and by the QCA in resolving any disputes under UT4 or Access Agreements.

RTCA acknowledges that the reference in paragraph (c) above on minimising build times may not be suited to all terminals and so the objectives above may need to be amended for use in UT4, but this set of objectives provides a useful starting point.

RTCA Recommendation

Clear "coal chain" orientated objectives for UT4, modelled on those proposed by the QCA for the Capricornia System Rules and the ARTC Coal Chain Principles:

The objectives of this undertaking are to:

(a) ensure the delivery of long term contractual entitlements;

(b) establish a reliable process through which access to Capacity can be negotiated within the broader context of the Queensland coal chains;

(c) maximise the system available pathing for the equitable distribution of train service entitlements; and

(d) maximise system throughput and efficiency.

5.4 Ensuring a producer role in System Rules' development

The System Rules are a critical operational and commercial document within the regulatory framework. They define for each coal system:[50]

- how key rights are defined – including how "System Paths" are defined for each system;
- the scheduling process, including the rights of all of the various stakeholders to directly participate in this process;
- the degree of flexibility within the scheduling process (i.e. the "lock down" period after which changes to a train schedule cannot be met without an Access Holder consuming rights[51]);
- what objectives Aurizon Network is to apply when scheduling Train Services;
- the methodology that Aurizon Network is to apply when determining consumption of train paths by Access Holders – both contractually (i.e. for the purpose of 'take or pay' rights) as well as for scheduling purposes; and

In doing so, the System Rules effectively *define* the capacity of each coal system and significantly affect the capital expenditure and other investments that all stakeholders must make to other parts of the coal chain to achieve capacity requirements. They also define the practical "envelope" of legal and operational rights within which stakeholders can develop new approaches to coordination and scheduling.

By defining practical capacity and contractual entitlements, the System Rules shape capital expenditure requirements for the system – and so have a direct effect on efficient investment in the CQCN (and other parts of the coal chain).

RTCA therefore sees the process for developing System Rules as being as important, in practical terms, as the process used by Aurizon Network for capital planning.

RTCA acknowledges that over the last two years, Aurizon Network has made some effort to listen to, and take into account, the views of industry when developing draft System Rules, albeit the process has been slow. That being said, the process for developing and approving System Rules proposed under UT4 is not defined, lacks transparency (and an appropriate and understood role for producers and other stakeholders), and does not provide any meaningful oversight or dispute resolution role to the QCA.

UT4 does this in a number of ways:

- There is no mechanism for any party other than Aurizon Network to trigger a review of the System Rules, including producers, rail operators or the QCA.
- There is no requirement for Aurizon Network to give effect to, or even engage with, the majority view of other participants in a coal chain. There is no Access Holder vote or other type of transparent "collective" development process.
- Aurizon Network has made clear that, once approved, it sees the operation of System Rules continuing to sit "outside" the undertaking.

[50] This was previously in Appendix 1 of Schedule G (Network Management Principles) but has been moved to the definition of "System Rules" under UT4.

[51] As noted above, Aurizon Network has sought to establish a 'one week' default lock down period under clause 8.2 of Schedule H, unless otherwise agreed in System Rules.

As noted, the position under UT4 is not new and reflects similar problems with UT3, under which the only grounds for a stakeholder to challenge new or amended System Rules was on the basis that the new or amended System Rules were inconsistent with an Access Agreement, or would otherwise operate inequitably. There is no reference here to the need to consider a range of other issues, including maximising throughput from the coal system, the operational mode of any connected terminal and/or the agreed position of a group of coal chain participants or scheduling body associated with the system.

RTCA Recommendation

A defined process for the development, approval and oversight of System Rules, with clear rights for producer involvement through RCGs.

The new process for development and approval of System Rules proposed under UT4 (in clause 7.6.3 and 7.6.4) needs to be overhauled and address the following:

- The development of System Rules for each system should be a task which is undertaken by Aurizon Network in conjunction with the RCG for that system.
- A review of System Rules should be able to be triggered by a majority of the RCG.
- Like capital planning processes, a voting process should then be used to support adoption of amendments to System Rules – in which all coal chain stakeholders are able to participate (including service providers and producers).
- System Rules should be designed and implemented in order to give effect to the amended UT4 objectives above – including maximising total coal chain throughput.
- The System Rules should explicitly form part of UT4 and any failure by Aurizon Network to comply with them should be enforceable under the standard dispute processes in UT4, as well as by the QCA under the QCA Act.

5.5 Fixing the inflexible and rail-centric "even railings" assumption

The difference in operating modes between DBCT (cargo assembly) and the CQCN is a key reason for inefficiency in the Northern Bowen Basin. Aurizon Network has recognised this in its UT4 Proposal:

> *a cargo assembly operating mode at the port may require significant variability in rail operations. To support this, significant peaking capacity may be required in the rail infrastructure, which may reflect an inefficiently scaled rail system.*[52]

The "even railings" assumption which Aurizon Network underlies CQCN scheduling and the System Rules does not operate efficiently with the cargo assembly operating mode at DBCT and, as a consequence, this creates a critical lack of flexibility and coordination between rail and port.

Under UT3 as well as its proposed NBB System Rules,[53] Aurizon prioritises scheduling of users of the rail network based on whether, or to what extent, they have already utilised their entitlement to train

[52] Aurizon Network, sub. no. 2, p. 172

paths, calculated on the basis that each user consumes an evenly distributed number of rail services each week, month and year.[54] Evidently, that this is inconsistent with the practical, "day to day" requirements of cargo assembly ports – where the consumption of train paths is dependent on the arrival of ships at the Port.

An individual producer's need for rail paths at a cargo assembly terminal will vary significantly over the course of each week, month (and potentially year) – depending on the arrival of ships. Where due to unpredictable ship arrivals, producers struggle to schedule rail paths when they need them, but then fail to utilise their full entitlement at other times, the overall efficiency and capacity of the coal chain suffers.

This is exacerbated by a scheduling process under which Aurizon Network has sought, in the past, to establish a "lock down" period of one week, whereby a producer or operator is not able to modify their train orders within a week of the day of operation, without being treated as having "consumed" that train path for scheduling purposes.

Aurizon Network has acknowledged that the current definition of "Reference Train Service" creates inflexibility by establishing an "even railings" assumption. In doing so, it has proposed replacing current Schedule F, Part B, clause 1.2(b), with a new clause 1.3(e), which defines "Train Service Entitlement" in the following manner (emphasis added):

> *… has a Train Service Entitlement:*
>
> *(i) based on Trains being available for operation 24 hours per day and 360 days per year; and*
>
> *(ii) specified in terms of Cyclic Traffic which will:*
>
> *(A) operate evenly throughout each monthly and weekly period consistent with the monthly distribution published by Aurizon Network by 30 May prior to the relevant Year;*
>
> *(B) have regard to Planned Possessions and any other matters agreed between Aurizon Network and other service providers in the coal supply chain; and*
>
> *(C) comply with applicable scheduling procedures as set out in the Network Management Principles.*

Aurizon Network argues that the introduction of paragraph (B) enables variation in the even railings assumption by agreement (although it refers in the UT4 Proposal to limited matters such as outages and maintenance).

New rules governing consumption of train paths (in clause 8.2 of Schedule H) have also been introduced that set a default consumption rule of a one week "lock down" period, unless otherwise specified in System Rules. Given that Aurizon Network retains management and control of the System Rules, this is likely to lead to this becoming a standard operating parameter – greatly reducing flexibility in scheduling.

While RTCA welcomes this acceptance by Aurizon Network that more flexibility is needed, it makes the following comments in response to these proposed amendments:

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[53] See the approach to determining "Contracted TSE Orders" at page 19 of draft NBB System Rules, which refers to this entitlement being *"the MTP [Monthly Train Paths] TSE allocation for the Weekly Period of the Access Holder will be treated as the Contracted TSE Orders."*

[54] Aurizon Network discusses the 'even railings" assumption in the definition of Train Service Entitlement at page 185 of its UT4 Proposal.

- The default scheduling lock down period in clause 8.2 should be the shortest currently in place (i.e. 48-hours) and not the longest, recognising that a coal chain can elect to have a longer standard period, to suit the relevant mode of operation.

- The reference to *weekly* railings appears inconsistent with the amendments made to the Contested Train Path decision making process (notably clause 8.3) – which is intended, Aurizon Network says, to clarify that only *monthly* entitlements are used in determining consumption of scheduled paths. This should be clarified.

- The scope of agreed variations is limited to agreements between it and *service providers* – so does not provide Access Holders (including producers) with any right to participate or agree alternative scheduling arrangements. More generally, UT4 should acknowledge the potential role of producers and coal chain bodies as direct participants in the scheduling process (this is discussed below at section 5.9).

- The amendment does not require Aurizon Network to apply agreed alternative operating assumptions, but merely requires it to "have regard" to these in scheduling paths.

- The change does not provide any concrete mechanism for how such alternative scheduling assumptions are to be developed or agreed, including what role producers have in this process and any right to dispute a refusal by Aurizon Network to accept an alternative operating assumption.

RTCA Recommendation

UT4 must improve the degree of flexibility in the scheduling of train paths and provide a direct role for coal producers in development alternative scheduling principles.

- **A default 48-hour "lock down" scheduling period**. The default scheduling lock down period in clause 8.2 of Schedule H should be the shortest currently in place (i.e. 48-hours) and not the longest, recognising that a coal chain can elect to have a longer standard period specified in the relevant System Rules.

- **A more flexible "Reference Train Service definition".** The definition of Reference Train Service should be defined as providing for even *monthly* railings, at most – and removing the current reference to weekly railings from the definition, or at the least clarifying that this does not reflect the basis for calculation of any scheduling entitlement.

- **Scope for coal chain stakeholders to agree alternative scheduling principles**. The current reference in the definition of Reference Train Service to "*other matters agreed between Aurizon Network and other service providers in the coal supply chain"* is inadequate. Aurizon Network should be required to comply with any alternative scheduling assumptions agreed by a majority of members of a coal chain and, if agreement is not able to be reached, this should then be determined by the QCA – taking into account the need for scheduling principles to achieve the three core regulatory objectives (referred to above).

5.6 Developing "local solutions" for producers to flexibly manage their contracted rights

Under current arrangements, Train Service Entitlements are "consumed" by Access Holders in two respects

- a right to a path may be consumed for scheduling purposes – where a path is treated as having been used by an Access Holder in a way that impacts the priority given to that Access Holder in the event of a future scheduling conflict;[55] and

- separately, paths are accounted for under Access Agreements in terms of the total number of paths which an Access Holder is entitled to operate under their 'take or pay" rights under an Access Agreement. Above this level, the Access Holder must acquire additional or "ad hoc" paths from Aurizon Network.

Paths may be consumed for the purpose of one but not the other. How each of these rights are accounted for may also differ by system and will be set out in System Rules – again reinforcing the importance of System Rules in terms of defining and giving effect to contractual rights.

The two concepts are linked, because an Access Seeker only has a right to have a train path scheduled in priority to other "ad hoc' traffic" if it is a train path that falls within its *contracted entitlement*. As such, the manner in which contracted rights are defined and accounted for by Aurizon Network and the ability of Access Holders to manage these rights flexibly is critical.

As previously noted, RTCA agrees with Aurizon Network that coal chain coordination must reflect "local solutions". A central focus of any "local solution" however will be improving the contractual alignment between port and rail and ensuring that take or pay rights are used and managed flexibly – and UT4 must support this.

Arguably the most important part of delivering greater efficiency in the operation of CQCN is providing a framework within which Access Holders can more flexibly manage their access rights. This could occur in a variety of ways, including:

- **A centralised agent holding and managing rights** – Consolidating access rights under a single access agreement held by a coal chain coordination body that planned and managed rights on an integrated basis, including potentially across rail and port.

  While this model would involve some commercial realignment and development (and potentially ACCC approval), if successful, it offers coal producers the closest equivalent to the type of efficiencies enjoyed by vertically integrated rail-port operations on the West Coast.

- **Short term capacity transfers/trading** – Matching contractual entitlements (i.e. "take or pay" rights) to the changing operational needs of users through the establishment of short term trading of rights, potentially over a clearing house mechanism.

- **"Producer capping"** – **An ability for producers to offset monthly take or pay entitlements between load points with similar use of rail capacity** – An alternative approach would be to enable producers and rail operators to group their contractual rights and account for them (or appoint a single entity to manage them) on a collective basis, while retaining direct ownership under separate access agreements.

  This is currently done, although to a limited extent, under some UT2 access agreements where the use of "cluster pricing" under those contracts has been found (following an access dispute involving Aurizon Network) to enable rail operators to pool train entitlements involving different points of origin and different destinations but within the same price cluster.

[55] Under the Contested Train Path Decision-making process (in Schedule G, Appendix 2 of UT3 and clause 8.3 of Schedule H of UT4).

5.7 The UT4 needs to provide a framework that facilitates improved flexibility and contractual alignment

The proposal for "operator capping" of take or pay rights is inadequate

The scope for flexibility in the management of take or pay rights has gone *backwards* in Queensland over recent years.

Under UT2, there was some scope for coal producers pooling and managing their take or pay entitlements because of the use of cluster pricing and a definition of a "Train Service Entitlement" that recognised that a train path may have more than one origin and destination (i.e. it may involve one of a number of origin mines within the same pricing cluster area). These features of the framework were removed by Aurizon Network as part of UT3.

Other than some limited "mine capping" under Schedule F (which is predominantly for the benefit of operators), there is little flexibility available to stakeholders in managing their take or pay entitlements under UT3 and this inflexibility is further entrenched under the UT4 proposal.

Aurizon Network has acknowledged the important benefits that flow from greater flexibility in the management of take or pay rights, but only from the limited viewpoint of rail *operators*, stating in its Proposal:

> *The primary purpose of open access regulation is to promote competition in the relevant downstream market. The benefits of competition in this market will be maximised by providing participants in the rail haulage market with sufficient flexibility to innovate, not just in terms of the productive efficiency of an individual train service, but also in terms of how the operator is able to maximise total resource efficiency and implement risk management strategies that maximise overall value to the operator and its customers. Dynamic efficiency and innovation, which is the creation of competitive markets that access regulation seeks to facilitate or replicate, is not fostered through standardisation.*
>
> *These efficiencies could be realised by providing operators with a greater degree of discretion in terms of how they transfer or manage take or pay risk on behalf of their customers.*[56]

Based on this rationale, Aurizon Network proposes to introduce a new form of 'capping" which is for the exclusive benefit of operators – and under which an operator may pool and offset take or pay rights across multiple haulage contracts/customers which the operator has nominated as grouped for this purpose (clause 2.4 of Schedule F).

While RTCA recognises the potential value of this kind of offsetting of take or pay entitlements – this should not be limited to operators, and is not as important or valuable as other forms of contractual flexibility (such as short term transfers).

RTCA shares the concerns of the QRC that:

- because operators will be able to offset their take or pay obligations (while others will not) this form of capping will increase take or pay charges payable by other access holders who do not have this benefit, including smaller operators and producers that directly hold access rights (potentially distorting the market by forcing producers away from the split contracting model);

[56] Page 270

- "operator capping" of its nature will favour large operators over smaller operators (with few rights to "pool") and will therefore distort the haulage market in favour of Aurizon Coal – and will establish a barrier for entry to the Queensland haulage market;

- the contractual arrangements in place between operators and producers do not currently provide for how any benefits associated with capping would be shared as between the operator and coal producers. There is a risk that for existing agreements, this will result in the operators obtaining a windfall gain from this form of capping, while other coal producers (that hold rights direct) – pay increased take or pay charges.

Simply, the operator capping proposal is flawed, but is based on a sound underlying principle.

RTCA submits that the first priority for the QCA in this area should be short term transfers – which achieve the same benefit of more efficient use of take or pay rights, without the potential to disadvantage smaller operators or "unaligned" producers.

If capping or pooling is introduced, and RTCA can see some benefits to this approach, it needs to be made available to *all stakeholders* in the coal chain, and must permit producers to appoint a third party (which may not be an operator) to group and manage/offset take or pay rights on behalf of a group of producers or an entire system/coal chain.

Aurizon Network's proposed approach to "pooling" of scheduled rights is too limited

In UT4, Aurizon Network has removed a form of scheduling flexibility that was available under the Contested Train Path principles – under which an Access Holder could 'swap' *any* under-scheduled path, with an over-scheduled one for the same week (formerly in clause (c) of Appendix 2).

In its place, Aurizon Network has proposed a more limited concept of "pooling" under which it has proposed that Access Holders be entitled to schedule from a "pool" of mainline paths, for the purpose of the Contested Train Path decision making process (at section 11.4.7.3). In practical terms, this amounts to Access Holders being able to "pool" their own train entitlements (i.e. pool for scheduling purposes a set of origins and destinations (i.e. different mine/port combinations), which use a common main line). In essence, it appears to simply be an attempt to the right that existed under UT3 on a geographic basis (to mines which use the same main line path).

As such, while keeping this right available for producers that have mines in close proximity to each other, it does not constitute a material improvement on UT3, including because:

- First, it replaces and narrows an existing right to pooling rather than creating a new entitlement.

- Second, it is limited to pooling (for scheduling purposes) of train paths held *by the same Access Holder.* This means that it is not possible for rights of different Access Holders to be pooled, even if their mines are also in close proximity and they would otherwise be using the same mainline paths. Current "mine capping" therefore favours large producers with multiple load points, over small producers in close proximity.

- Third, it does not amount to pooling of *contractual* entitlements – and so each Access Holder remains entitled to have scheduled only the amount of capacity over which it holds take or pay rights.

RTCA has previously noted (as part of the new standard access agreement process in late 2012) that the introduction of "split contracting" must not reduce scope for pooling in the system. It follows that the second of these issues – the need for pooling of rights between different Access Holders – is particularly important in light of the introduction of the new SAA structure.

An effective short term capacity transfer process must form part of UT4

Industry demands for short term capacity transfers have been longstanding – and RTCA, amongst others, pushed for the QCA to include this mechanism as part of its development of the 'split contracting' model under UT3.[57]

Aurizon Network recognises the benefits of short term trading/transfers of contracted entitlements in its UT4 Proposal (at section 6.8.2.2). In doing so, however, it links the development of this mechanism to the question of "accountability" for utilisation of capacity entitlements – although Aurizon Network does not explain how or why this link is appropriate or relevant.

The UT4 proposal then concludes:

> *In the event that users are fully accountable for their use of their capacity, Aurizon Network agrees that it would be necessary for this to be accompanied by a simplified short term capacity transfer mechanism that allows them to defray this liability in the event that their usage requirements change.*
>
> *However, until such time, Aurizon Network considers that short term variations in capacity usage are best accommodated in the scheduling environment.*

This fails to acknowledge the link (discussed above) between the rights of parties in relation to scheduling and their *contracted* entitlements. Producers can only have a right to have train paths scheduled to the extent that they have a contracted right to those paths.

RTCA agrees with the comments made by Aurizon Network (and extracted above) that note the efficiencies that are able to be released through more flexible management of rights – although RTCA does not accept that this ought to be limited to operators.

Flexibility must therefore be introduced in relation to both the management of contracted capacity (by producers) and scheduled rights – otherwise any scheduling flexibility will be of little value.

5.8 Allowing scope for scheduling and contract management by a single coal chain coordinator – and which goes beyond the role of the ILC

A central recommendation of the Goonyella Coal Chain Review was the establishment of a centralised coordination body to help resolve the mismatch of contractual entitlements across rail and port, simplify the contractual structure (by avoiding individual contracting by each producer with rail and port operators) and to increase the degree of transparency and coordination across the system.[58]

The recommendations of the O'Donnell Review led to the establishment of the Integrated Logistics Company (**ILC**) in March 2008 and its operations centre in Mackay opened in September 2009. The structure of the ILC is modelled on the approach adopted in the Hunter Valley, where the Hunter Valley Coal Chain Coordinator (**HVCCC**), with membership comprising all of the stakeholders in the supply chain.[59]

[57] See RTCA submission in response to Standard Access Agreement consultation, November 2012.

[58] See http://www.tmr.qld.gov.au/business-industry/Transport-sectors/Rail-services-and-infrastructure/Goonyella-Coal-Chain-Capacity-Review.aspx

[59] Current ILC members are: DBCT Pty Ltd and DBCT Management, North Queensland Bulk Ports (formerly Ports Corporation of Queensland), Aurizon Network, the rail operators and each of the eight coal producers that use the terminal (RTCA, Anglo Coal, BMA, Bowen Central Coal Management, Macarthur Coal, Peabody, Vale and Xstrata).

However, the structure and design of the ILC have meant that, other than providing a forum for discussion about high level planning intentions, it is unlikely to achieve substantial improvements in the overall operation of the Goonyella system.

RTCA is currently exploring an initiative to promote and foster improvements in the operation of the DBCT coal chain. In doing so, it is endeavouring to develop a framework that overcomes a number of the structural problems that have limited the effectiveness of the ILC. RTCA proposes to further engage with the QCA about this initiative over coming months.

RTCA submits that the establishment "local solutions" of the kind which RTCA is working to develop, and which Aurizon Network has indicated it wishes to support, require UT4 to deal with a number of significant limitations under UT3.

5.9 The scheduling process needs to contemplate the involvement of a centralised coordinator

While UT3 provided in a limited manner for the possibility of a system coordinator, this has not been carried forward into UT4. Moreover, there is no explicit recognition of this possibility in either the draft System Rules or the Contested Train Path principles (now moved to clause 8.3 of Schedule H).[60]

In the circumstances, RTCA submits that the possibility of a centralised body acting on behalf of producers in a coal chain needs to be reflected in key elements of UT4 (and supporting documents, such as the Access Agreement and System Rules).

RTCA is open to engaging with Aurizon Network about the best way to provide for this to be done. One option would be to provide explicitly for this as one means by which an Access Holder may exercise its rights for the purpose of the Network Management Principles in Schedule H.

RTCA Recommendation

UT4 needs to anticipate and allow for scheduling and contract management to be performed in the future by a system coordination body on behalf of multiple producers / access holders.

The Contested Train Path principles (now in clause 8.3 of Schedule H) need to explicitly recognise scope for agreed scheduling arrangements between Access Holders to involve a centralised body.

5.10 Best practice in flexible rail contracting: the Hunter Valley experience

The Hunter Valley coal chain has implemented a range of measures to facilitate more flexible and efficient use of rail and port capacity – particularly at Port Waratah (**PWCS**).

[60] RTCA acknowledges that there is some scope for this to occur **implicit** in the contested path rules, under which Aurizon Network gives preference to any approach to resolving a scheduling conflict agreed between Access Holders:

> *(ii) Where the relevant Access Holders agree amongst themselves who should be allocated the Contested Train Path, the Contested Train Path will be allocated as agreed by the Access Holders.*

There is evidently no reason why such "agreement" could not include or involve a central coordinator or scheduler.

The Hunter Valley highlights the improvements and efficiency that are achievable where a coal chain's operation is orientated around maximising *total coal chain throughput* (based on responding to the cargo assembly requirements at the terminal) with the direct involvement of coal producers, rather than being dictated by the interests and commercial demands of a single element in the supply chain – the below rail provider.

A high level summary of key mechanisms that have been adopted under the PWCS access protocol and the ARTC access undertaking (and access holder agreement) to introduce contractual flexibility in the Hunter Valley are set out below:

PWCS Terminal – Capacity Trading System (CTS)

Under a 'Capacity Trading System' protocol introduced in June 2010, the HVCCC operates an online clearing house mechanism for terminal capacity at PWCS. Under this mechanism, coal producers which identify that they will have excess capacity in the following month lodge offers on an online platform, that are capable of acceptance by other producers who require additional capacity and which lodge their own requests to receive the trade.

Both long and short term trades can be made over the CTS. Short term trades are assessed and approved within 48 hours. Long term trades are approved within 5 days.

In each case, the HVCCC assesses the proposed trade and makes a recommendation to PWCS as to whether it should be accepted – based on an assessment of overall system capacity.

Taking into account the recommendation of the HVCCC, the terminal operator (PWCS) then determines whether to accept the transfer. This will be based on its assessment of the transfer on operation of the terminal and capacity – including how issues associated with the transfer, such as changes in load point, vessel size, and stockpiling/assembly arrangements may affect overall terminal throughput.

In some case, where a transfer involves a reduction in terminal capacity (usually because the transfer is from a producer which uses a larger train size to a producer using smaller trains), PWCS may apply a "transfer ratio" which imposes the "cost" of this inefficiency on the receiving producer. Where a trade improves the capacity/throughput of the terminal (because it results in the use of larger trains), no adjustment is made.

Subject to demand for rail capacity, it has also previously been possible for rail capacity to be "stapled" to terminal capacity trades. Rail trades are discussed below.

ARTC – short term transfers of rail entitlements

As well as terminal capacity, producers are able to undertake short term trades of monthly contracted rail capacity. These trades are not currently completed over the CTS clearing house platform, although this is being developed and is expected to be available at some stage in 2014.

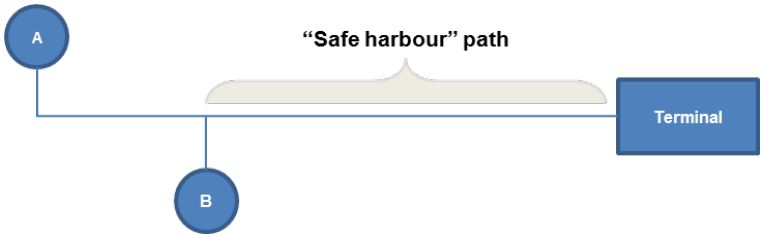
There are two limitations on transfers being approved by ARTC, both based on an assessment of the impact of a transfer on rail capacity:

1. "***Safe harbour" vs "non safe harbour" trades***

   A transfer will be approved as a "safe harbour" trade where the coal producer receiving the trade is using the same, or less, of the path then the original trade. For this purpose, the concept is not limited (as proposed by Aurizon Network) the concept of a train path is not limited strictly to "point of origin to point of destination purposes".

A simplified example of this concept is set out below.

Figure 5 "Safe harbour" path for rail trades



In this example, a transfer from Mine A to Mine B would be treated as a "safe harbour" trade because both parties would be using the same train path (i.e. the mainline from Mine B to the Terminal).

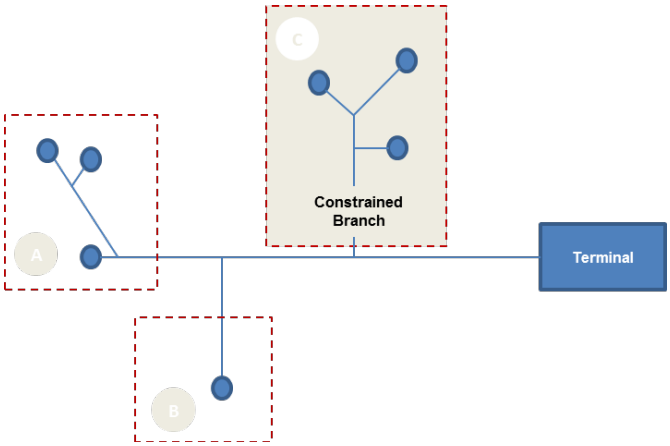
However, a transfer from Mine B to Mine A would be a "non safe harbour" trade and would not be automatically accepted by the HVCCC, because it may require additional rail capacity beyond that already reflected in the path entitlement held by Mine B.

2. A trade's effect on a constrained branch

In addition to the safe harbour concept, HVCCC may also reject a requested transfer where it would result in further capacity requirements being imposed on an already constrained branch line. By contrast, where a trade relieves capacity demands on a constrained branch, it will be approved by the HVCCC.

The concept of whether a branch line is "constrained" for this purpose refers to the degree to which the level of contracted entitlements is close to the capacity of the branch when viewed as part of a system.

Figure 6 Constrained branches and rail trades



In this simplified example, a trade between mines in Zones A or B would not give rise to increased system constraints. A trade from a mine in Zone C to either A or B would *reduce* constraints on the Zone C branch line. All of those trades would therefore be acceptable.

However, a trade from a mine in Zone A or B into Zone C would potentially increase the constraint in Zone C and would be rejected.

The HVCCC intends to publish these constraints at regular intervals.

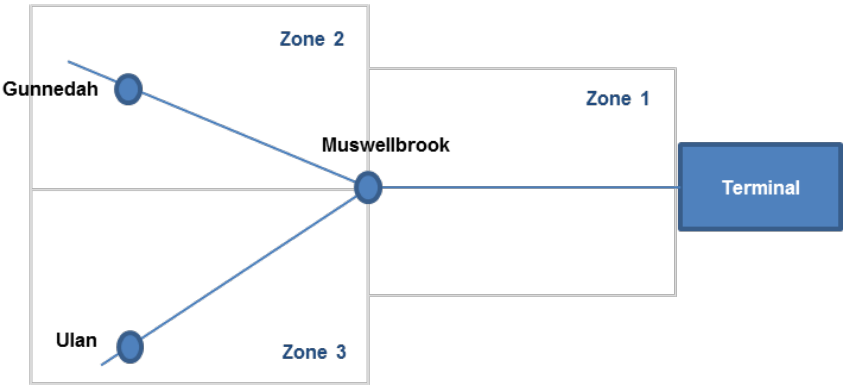
ARTC – monthly "flex" in contracting allowances

The third form of flexibility offered to coal producers in the Hunter Valley is a degree of "flex" allowed in their monthly take or pay entitlement.

Currently, in Queensland, each coal producers' entitlement to have paths scheduled is strictly limited to their contracted entitlement – above which they are required to schedule "ad hoc" paths, which are not prioritised over other traffic.

Under the ARTC mechanism, the coal chain is divided into three broad zones, as set out in a simplified diagram below. Within each region, a producer is entitled to up to 10% variance across all load points, within each month – provided that across all load points in the Zone there is no more than 6% variance from contracted entitlements for the month.

Figure 7 Zones for permitting contractual "flex"



This mechanism enables coal producers a degree of flexibility to manage their monthly requirements, without requiring any formal transfer or trade of capacity, within the coal producer's annual take or pay entitlement.

5.11 Conclusions for Queensland coal chains and UT4

The Hunter Valley demonstrates the importance of flexibility in the way contracted rights are managed and scheduled. It also highlights that this can be achieved.

At the same time, RTCA acknowledges that none of the mechanisms currently in operation in the Hunter Valley should necessarily be replicated in precisely the same form across the Queensland network. RTCA also agrees with Aurizon Network that the right mechanism will often vary between coal chains and should be developed collaboratively with all stakeholders – as a "local solution".

RTCA does not accept however that there are insurmountable difficulties preventing the development of much greater contractual flexibility and management – of the kind introduced in the Hunter Valley over recent years.

This is apparent in the following:

- The existence of some limited pooling of contractual entitlements already under UT2 access agreements (based around “cluster pricing”), without apparent operational difficulties.

- The welcome introduction by Aurizon Network of a “mainline” path concept, for the purpose of pooling of scheduled paths under the draft NBB System Rules – and the proposed new Contested Train Path principles under UT4 (clause 8.3 of Schedule H).

- The introduction of “operator capping” under UT4 (clause 2.4(j) and (k) of Schedule F).

- Recognition by Aurizon Network itself that it may develop a short term transfer mechanism at a later time, albeit linked to an accountability mechanism (see section 6.8.2.2 of the UT4 Proposal).

RTCA considers that provisions providing for short term transfers could and should be introduced into the Access Agreement as part of the UT4 process, modelled on clause 16.4 of the ARTC standard access holder agreement (**AHA**) – which is extracted and set out in Annex B.

RTCA Recommendation

RTCA proposes the following amendments to provide industry with the tools needed to implement “local solutions” that deliver real flexibility and reduce costs over the term of UT4

1. UT4 needs to include in UT4, consultation with industry, a short term trading mechanism for rail capacity in the coal chain – including an ability for producers to transfer capacity up to 48 hours prior to the day of operation (and subject to any capacity effects or accounting required).

2. While a capacity accounting arrangement needs to be developed in conjunction with industry, the UT4 Access Agreement should provide for short term capacity transfers, modelled on clause 16.4 of the AHA.

3. The proposed concept of “operating capping” is unfair, benefits large operators (notably Aurizon Coal) over producers and smaller operators and should be rejected. If any form of capping is to be introduced, it needs to be in addition to short term trading (and not a substitute for it) and enable take or pay offsetting/capping to be managed on a shared basis by producers or other third parties (such as a centralised body on behalf of a number of producers) as well as operators.

In all cases, the QCA should be empowered to resolve any disputes and impose any DAAU required to implement appropriate arrangements, where these are not agreed. In doing so, it should apply the ‘coal chain objectives’ discussed at section 5.3 of this submission.

5.12 QCA consultation questions regarding coal chain issues

In reviewing Aurizon Network’s coal supply chain coordination proposals, the QCA has asked:

- Whether Aurizon Network's approach, and its justification thereof, to supply chain coordination is consistent with the criteria in s 138(2) of the QCA Act; and

- What, if any, alternative approaches are available?

RTCA has already set out above a number of alternative approaches that are necessary in order for "local solutions" to be able to be developed and implemented.

For completeness, however, RTCA notes that Aurizon Network's approach to the issue of coal chain coordination is *not* consistent with the statutory criteria in s 138(2) of the QCA Act – and on that basis should be rejected by the QCA in its current form. It is also necessary to say something in response to a number of the claims raised by Aurizon Network in its UT4 Proposal in support of its approach to coal chain issues.

Objects of Part 5

Aurizon Network states that the access framework is directed at improving the efficient use of the below rail asset by ensuring that dependent markets (particularly, the above rail market) are contestable; not to provide a framework for control of the entire supply chain.[61]

RTCA does not agree with this narrow interpretation of the object of Part V.

First, the *"economically efficient operation of, use of and investment in"*, the CQCN cannot be isolated from the efficiency of the wider coal chain it serves. In every respect (productive, allocative and dynamic), the efficiency of the rail network is intrinsically linked to the manner in which it serves, and facilitates, the efficient operation of the system.

Second, both contestability and economic efficiency (under s 69E) require UT4 to provide a framework that ensures that Aurizon Network is not in a position to use its monopoly position and power to *prevent* stakeholders from developing arrangements that deliver greater flexibility and efficiency across mine-rail-port, and in so doing reducing capital expenditure requirements and improving throughput across the system.

By not obliging AN to make any meaningful commitment or take action to support supply chain activities, clause 8.8.1 of UT4 clearly does not promote the economically efficient operation of, use of or investment in AN's network.

Similarly, to satisfy the objective, UT4 needs to provide a regulatory framework which effectively constrains Aurizon Network from exercising monopoly power to prevent the kind of coordinated and efficient outcomes discussed earlier in this chapter.

The legitimate interests of Aurizon Network

As for other parts of its submission, Aurizon Network argues that it would be contrary to its legitimate business interests if it was obliged to make any binding commitment or take any action as a result of its participation in supply chain activities.

Aurizon Network quotes the QCA's previous recognition of the cause of coordination issues:

> *… [S]upply chain coordination issues have not arisen by accident or by chance. Indeed, these issues are the accumulated result of individual entities acting in their own best interests and, inadvertently, not in the collective interests of the supply-chain as a whole.*[62]

To this and related arguments, RTCA makes the following points:

- It is not necessary for there to be 'symmetrical' obligations imposed on other supply chain participants before they are justified under UT4.[63] To the contrary, specific obligations are

[61] Aurizon Network, sub. no. 2, p. 171.

[62] QCA, October 2008, Issue Paper: QR Network 2009 Draft Access Undertaking, p.iv in AN, sub. no. 2, p. 169

needed in relation to Aurizon Network because it holds a unique position (with very asymmetrical power) in the market.

- Aurizon Network also submits that UT4 only governs one element of a complex and integrated supply chain and as a result it cannot create or impose an effective coordination model across the supply chain – this can only be done effectively on the basis of industry driven, cooperative arrangements.

  While this is true, it again misses the point. Without the participation of Aurizon Network and suitable mechanisms in UT4, it is impossible to establish *any* system-wide coordination. While UT4 may not create or impose an effective model across the supply chain, the terms of UT4 will absolutely define the "envelope" within which industry is able to develop and implement those arrangements.

- Aurizon Network argues that while UT4 can play a constructive role in supporting the cooperative efforts of industry to address coordination issues, to do this it needs to be sufficiently flexible to be able to accommodate and adapt to changes in supply chain coordination and planning that may develop over time.[64]

  RTCA notes that the amendments proposed in this chapter strike the appropriate balance between flexibility and certainty – and enable industry to develop solutions that take into account the unique circumstances of each coal chain.

  Removing all obligations from Aurizon Network in respect of coal chain coordination and efficiency (as proposed) does not promote "flexibility" but rather consigns Queensland to four more years of little or no progress.

Other statutory criteria

Finally, as noted in section 3 above, Aurizon Network has also failed to consider or address the range of other significant statutory criteria that must be considered by the QCA under section 138(2), including:

- the legitimate interests of access seekers;
- the public interest – including the public interest in competition;
- any other issues the QCA may consider relevant (which RTCA would submit would include matters such as regulatory best practice, investor confidence in the Queensland coal industry, policy consistency etc).

RTCA would submit that using UT4 to put in place a "best practice" framework that enables industry to develop practical arrangements that give effect to the long-held Queensland policy objective of a flexible, coordinated and efficient coal system, is clearly consistent with all of these criteria.

[63] Aurizon Network, sub. no. 2, p. 174.

[64] Aurizon Network, sub. no. 2, p. 168.

6 UT4 pricing principles for existing and new capacity

6.1 Summary

RTCA has sought to use UT4 to introduce scope for substantially greater pricing flexibility and price discrimination than has existed to date, including under UT3.

As well as flexibility, subject to a customer vote, Aurizon Network has expressed a preference to "socialise" any costs associated with expansion of the CQCN to existing users, even where this increases the tariffs of existing users that do not obtain any direct benefit from the additional capacity.

RTCA does not support greater price discrimination between access holders, without any such pricing being made transparent and available to other access seekers or access holders, as has been introduced in telecommunications.

In relation to the specific amendments proposed:

- RTCA objects to any attempt to move away from RAB-based valuations to a DORC methodology for the purpose of setting new standalone tariff ceilings. Using a DORC valuation for individual service types was rejected in telecommunications in 2011 as being slow, dispute-prone and unfair – and this would be particularly the case in the CQCN in circumstances where only *some* reference tariffs would be set on this basis.

- RTCA objects to any greater flexibility for Aurizon Network to establish differential pricing based only on differences in the *commercial* terms. The high degree to which costs and risks associated with the CQCN are socialised across producers, mean that it is not correct to argue, as Aurizon Network does, that it is the only party accepting 'risk" associated with non-standard terms.

- In relation to future expansion pricing, RTCA submits that the GAPE DAAU and WICET processes highlight that need for clear "default" pricing principles to provide certainty for future investment. These should not be left for "case by case' development and approval. UT4 should include default principles that adopt the "incremental up / socialisation down" approach referred to with approval by the QCA in its recent capacity pricing discussion paper.[65]

  To this end, RTCA also submits that the very substantial "greenfield" investments that have been undertaken in recent years at GAPE and WICET need to be recognised, and UT4 should ensure that future pricing of any capacity that leverages off these investments include a levy that ensures a fair pricing outcome that socialises any future tariff benefits with foundation GAPE and NAPE producers.

The process also highlights the absence of clear and transparent cost allocation rules in UT4 (or in UT3), a gap evident also recently during the GAPE DAAU process when Aurizon Network sought to prevent meaningful access to its cost and allocation modelling for the GAPE reference tariffs.

In other regulated sectors and regimes, allocation principles are set out in regulations or regulatory determinations, and service providers are then required to set out the specific rules they will apply in setting tariffs for their services as part of their pricing proposals (e.g. NER, Chapter 6A, Part J, particularly clauses 6A.23 and 6A.24).

RTCA submits that a set of allocation rules should be specified by the QCA and incorporated into UT4 to guide future tariff setting.

[65] QCA, Capacity Expansion and Access Pricing for Rail and Ports, April 2013.

6.2 Aurizon Network is seeking a U.S.-style deregulation of pricing for rail access in Queensland

Aurizon Network has made clear in its UT4 Proposal that it is seeking much greater flexibility and freedom in the manner in which it prices individual train services.

It seeks to do this by making two important changes:

- First, by increasing the price "ceiling" for individual services through a change in the way in which the standalone price is calculated (from the share of the RAB value associated with the assets used to supply the service to the DORC value of assets used to supply the service).

- Second, by allowing for the definition of a "reference train service" to be narrowly construed, so that any difference in risk or cost associated with the commercial terms of access (including where Aurizon Network agrees to a different commercial position), can be said to create a non-reference train service for which a different price is determined.

It is no secret that in trying to allow itself far greater discretion over prices, Aurizon Network is attempting to move the industry towards U.S.-style deregulation of below rail pricing.

In the mid-1970s and early 1980s, the U.S. introduced a major program of deregulation of Class I railways.[66] At the time, there was a generally held view that railways in the U.S. were in a severe and prolonged decline. This deregulation led to an environment in which almost all regulatory oversight of the pricing of Class I railways (including those used to service the coal industry) has been removed.

The consequence of this process, in recent years, has been that Class I railways in the U.S. have exercised monopoly power over freight charges and this in turn has given them effective control over the export coal market, with nominal rates for transporting coal by rail from mines to electric generators increasing 46% from US$11.83 to US$17.25 over the 2001-2010 period, or on average 10% per year.[67]

This has also been aided by three Class 1 operators also integrating East Coast coal terminals. In short, the U.S. experience highlights that left only to commercial agreement, a monopoly railway operator will extract monopoly rents, allowing it to dictate the competitiveness of users in the downstream market.

6.3 A move to using DORC values (instead of depreciated RAB values) for pricing new services is unsound and will lead to costly disputes

Aurizon Network has proposed lifting the standalone cost "ceiling" used to determine tariffs for new reference train services from a RAB-based valuation (that is, using costs consistent with those for the remainder of the asset base), to a valuation based on the optimised replacement cost of the assets employed in providing the new service.

Aurizon Network states that it is *"not proposing to systematically re-price all individual services on the basis of DORC"* and that *"the proposed amendment may result in no change to prices in the short term."* However, it is clearly the case that Aurizon Network wishes to leave itself with the opportunity to increase the "baseline" across all regulated tariffs in the future, and no doubt sees this as the first step in that process.

[66] Railroad Revitalization and Regulatory Reform Act 1976 (the **4R Act**) and the Staggers Rail Act 1980.

[67] Coal Transportation Rates to the Electric Power Sector, U.S. Energy Information Administration, http://www.eia.gov/coal/transportationrates/trend-coal.cfm

RTCA objects to any attempt to move away from the existing RAB valuation to an ORC approach, for the purpose of setting reference tariffs, particularly in circumstances where only *some* reference tariffs would be set on this basis.

There are both practical and fairness considerations that weigh against this change.

Allowing tariffs to apply to different users or systems based on inconsistent approaches is discriminatory, complex and unfair

The approach proposed by Aurizon Network would almost certainly give rise to circumstances in which reference tariffs for different access seekers were determined on the basis of different valuation methodologies – with the existing tariff ceiling set on the basis of a modified historical cost valuation,[68] and new train services based on a DORC.

While Aurizon Network supports its approach with reference to the NER (clause 6A.22.3), these do not support an inconsistent approach of this kind. Instead, in that case, a consistent valuation methodology is used to value the new service assets and the total transmission assets.

In any event, the NER provision cited by Aurizon Network does not provide for a calculation of standalone costs based on a DORC valuation. The provision referred to has a fundamentally different role and purpose to what has been proposed by Aurizon Network in its draft undertaking. Clause 6A.22.3 of the NER provides for attribution of building block costs among categories of services, based on the ratio of the ORC value of assets directly attributable to each category of service to the total ORC value for the transmission system. The NER provision cited is an allocation rule based on ratios of ORC values which are applied to building block costs, whereas Aurizon Network proposes to set a ceiling for individual tariffs based on DORC values, with no reference to building block costs.

It is inconsistent with the interests of access seekers (and pricing principles in s 168A and s 168C) to price services on the basis of different and inconsistent cost methodologies.

The determination of DORC values is a contentious practice, which is seldom undertaken in Australian regulatory processes for anything other than establishing the opening asset value

Aurizon Network concedes that forward looking replacement cost methodologies, such as DORC, are seldom used in Australian regulatory practice for any purpose other than setting the opening asset base value. Almost unanimously, asset bases are "locked in" and rolled forward.

It is also not the case that regulatory practice supports using DORC for individual service pricing as proposed by Aurizon Network (at page 198). The last industry to use DORC as the basis for *service* pricing was telecommunications,[69] and the ACCC abandoned it in that context in 2010. In the course of doing so, the ACCC found:[70]

> *In the context of falling replacement costs, re-valuation of the RAB creates uncertainty for access providers in relation to whether they will be able to recover their costs (even those that are efficiently incurred). On the other hand, in the context of rising replacement costs, re-valuation of the RAB creates uncertainty for access seekers and consumers in relation to possible cost over-recovery by the access provider — that is, access seekers and consumers will pay prices that reflect costs that are above those the access provider has actually incurred.*

[68] While the original QR asset base was valued based on DORC, it has been rolled forward at CPI since that time.

[69] In that context a Total Service Long Run Incremental Cost (or TSLRIC) approach was used for service pricing, which was based on the use of a new depreciated optimised replacement cost value for relevant assets at each price reset.

[70] ACCC Review of 1997 Guide to Telecommunications Access Pricing Principles for Fixed Line Services, Discussion Paper, December 2009 at page 29.

In contrast, locking-in the value of the asset base can reduce this shifting of risk between, and ensure a greater level of certainty for, access providers, access seekers and consumers.

(emphasis added)

In 2010, the ACCC moved from the use of a DORC value for setting service pricing to a more stable "building block model', which it found was more consistent with the statutory criteria under Part XIC, including a number of the same criteria as under section 138(2).

A clear and transparent cost allocation methodology needs to be introduced in UT4

RTCA submits that a set of clear and transparent cost allocation rules need to be introduced into UT4.

In other regulated sectors and regimes, allocation principles are generally set out in regulations or regulatory determinations, and service providers are required to set out the specific rules they will apply in setting tariffs for their services as part of their pricing proposals (e.g. NER, Chapter 6A, Part J, particularly clauses 6A.23 and 6A.24).

Currently, however, there are no clear allocation rules set out in Aurizon Network's draft undertaking, other than a general requirement for tariffs to lie somewhere between incremental and standalone costs.

RTCA Recommendation

The QCA should reject any proposed use of a DORC methodology by Aurizon Network to establish the Stand Alone Cost ceiling for either individual services or any revaluation of the entire RAB.

As set of clear and transparent cost allocation rules need to be included in UT4, as occurs in other regulated access regimes.

6.4 Aurizon Network seeks non-transparent price differentiation that risks cost shifting

Aurizon Network has sought to introduce flexibility to establish differential pricing based on differences in the commercial terms agreed with individual access seekers. It says (at 202):

Aurizon Network considers it important that the 2013 Undertaking makes it clear that an access seeker can seek to negotiate:

- *a train service that has different operating characteristics to the reference train service; and/or*
- *terms and conditions of access that differ from the Standard Access Agreement terms, noting that one of the general characteristics of the reference train service is that it operates in accordance with the Standard Access Agreement terms (in other words, if an access seeker proposed to operate a train service with the same operational characteristics as the reference train service but agrees terms that are different to the Standard Access Agreement terms, it would be classified as a non-reference train service).*

To the extent that an access seeker an Aurizon Network agree to either or both of the above, this could give rise to cost or risk differences. This in turn potentially justifies a (higher or lower) price.

…

The agreement of different commercial terms and conditions of access could also have cost implications, usually by changing the allocation of risk between the parties.

Examples of "non-standard" commercial terms given by Aurizon Network include currency risk, acceptance of higher credit risk (then standard access seekers) and differential take or pay terms. Aurizon Network then wants an ability to recover any amounts that reflect the cost of these non-standard risks outside of regulated revenues (i.e. not including above regulated revenues under these agreements in system allowable revenues).

It is apparent that, as well as allowing for new risk sharing arrangements, this kind of flexibility could also be used to increase 'non-standard' pricing arrangements, such as integrated above and below rail pricing, which reduce transparency and potentially provide for cost shifting (both between above and below rail, between rail and port (where commonly owned) and between different users).

RTCA is extremely concerned about the introduction of greater price discrimination of this kind for the following reasons:

- **The approach proposed by Aurizon Network wrongly assumes that risks and costs associated with different access terms can be insulated from other users**.

  The high degree to which costs and risks associated with the CQCN are socialised across producers, mean that it is not correct to argue, as Aurizon Network does, that it is the only party accepting "risk" associated with non-standard terms. The mere fact that the standard take or pay provisions are still required to be calculated on the basis of standard terms (i.e. clause 3.2.3(b) of Part B of Schedule F) is not to the point.

  There are clear interactions between the commercial risks applicable across access agreements and between users. For example:

  – Because of the socialisation of costs through tariffs, all users are exposed to the credit and default risk of other parties. Where Aurizon Network waives security or credit rating requirements, the parties most exposed to the likely cost of the risk are *other producers*.

  – Where Aurizon Network accepts a "cost share" approach to volume through take or pay entitlements, this will fundamentally change its incentives in terms of management of train pathing. For example, if Aurizon Network stands to lose more from the failure of one user to meet its contractual entitlement than another, the incentive to schedule services in favour of the first user is obvious.

  – Differential pricing models may allow Aurizon Network to shift costs up or down the value chain, impacting on operational priorities. One operator which utilises its own dedicated terminal (or which uses Aurizon Network's own terminal) may favour one form of operating assumption that is not consistent with other users of another terminal connected to the same system. This will evidently drive incentives for Aurizon Network to develop and implement System Rules and other operational activities to benefit these commercial interests – a problem exacerbated by the lack of any transparent process around development of System Rules, or any basis for these to be challenged or disputed (refer to discussion at section 5.4).

- **The approach fundamentally lacks transparency – and would amount to extending the WIRP Deed experience to <u>all</u> users and access agreements**.

  As will be clear from the discussion above, a fundamental problem with the approach proposed by Aurizon Network is that it lacks transparency.

  In essence, Aurizon Network appears to be looking to extend to all access agreements a similar model to the "access conditions" model in UT3 for expansion pricing, which allow Aurizon Network to seek to renegotiate and obtain revenues outside the regulated cap where it can demonstrate to the QCA that this return is needed to reflect risk(s) not compensated already through the regulated tariffs – see clause 5.4.3 of UT3.

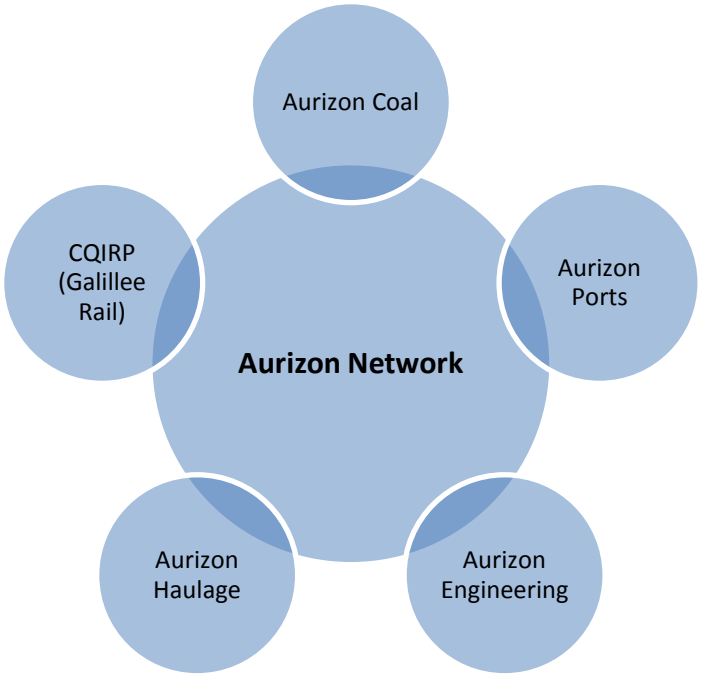
  The principal occasion on which access conditions were used under UT3 was the WICET funding negotiations, and that process highlighted that Aurizon Network does not provide transparency or comply with such processes easily, quickly or well. In that case, Aurizon Network refused to accept the potential for other (non-funding) stakeholders to be affected by the terms of funding for WICET and then used litigation to seek to restrain the QCA from disclosing details of the WIRP Deed as part of its consultation with stakeholders.

  Based on experience to date, RTCA has no confidence that Aurizon Network will recognise interactions between risks and costs under one access agreement and those of other users, or provide adequate transparency to ensure that these assumptions are properly understood and tested by the QCA and all other relevant stakeholders.

- **As an increasingly vertically-integrated operator, the proposal would further entrench Aurizon Network's ability to discriminate in favour of different users, and particularly its own related above rail operations**

  Aurizon Network has a range of areas in which it is seeking to integrate its activities or to leverage from its control of the regulated network, as set out below:

Figure 8. Aurizon Networks increasing degree of commercial integration



The importance to investment certainty of standard access terms and transparent reference pricing in the mining industry cannot be understated.

It is critically important to the coal industry that Aurizon Network is not permitted to continue to leverage its monopoly network position to discriminate in favour of unregulated upstream or downstream activities – whether this is its own above rail business, other parts of its corporate group, particular access seekers or producers which have accepted more favourable haulage terms (with Aurizon Coal) or its own integrated port or other (unregulated) rail operations.

The importance of maintaining a clean separation of regulated and unregulated activities is a longstanding feature of Australian regulatory regimes. For example, this was the basis of the "dual till" model used for the regulation of airports, which separates the "aeronautical" services (for which price regulation, and more recently monitoring) applies from other non-aeronautical services. The key rationale for this approach is to reduce scope for cross-subsidisation between regulated and unregulated activities, and thus minimise the potential for distortion of incentives for investment in each activity.

The difficulties and competitive imbalance created where a vertically integrated access provider is free to discriminate in pricing and other terms (both between access seekers and within its own operations) has also been the subject of sustained criticism in relation to Telstra over a long period of time.

With the introduction of the NBN, provisions were introduced in 2010 in the legislative framework governing regulated access in Part XIC of the CCA to explicitly strengthen the non-discrimination requirements to address this longstanding frustration.

Under the new provisions:

- NBN Co (and any other supplier of declared Layer 2 services) must comply with a strict non-discrimination standard in relation to all activities associated with the supply of regulated (i.e. declared) services as well as the terms of access agreements;[71]
- Where the terms of an access agreement differ from those of a standard access agreement (or a special access undertaking), NBN Co must provide the ACCC with a "statement of differences";[72] and
- the ACCC is required to maintain a public register of these statements of differences, to ensure transparency.[73]

It follows from this that, to satisfy the legal standard, access seekers in the same or equivalent position are entitled to the same terms, including any non-standard pricing or other service terms – and these are made publicly available. Where an access seeker considered that terms offered to another access seeker are discriminatory, it may challenge the agreement as contravening NBN Co's statutory obligations.

This strong and transparent approach to non-discrimination was explained as follows in the Explanatory Memorandum:[74]

[71] Sections 152ARA, 152ARB, 152AXC, 152AXD.

[72] Sections 152BEBA to 152BEBG.

[73] Section 152BEBD, 152BEBG.

[74] Telecommunications Legislation Amendment (National Broadband Network Measures – Access Arrangements) Bill 2011.

The non-discrimination measures in the draft bill recognise that, even though NBN Co is a wholesale-only provider, it may have incentives to favour certain access seekers. For example, it may focus on its largest and most remunerative customers, at the expense of smaller players.

In the bill, the proposed section 152AXC of the CCA requires NBN Co not to discriminate between access seekers. This means that the 'base case' scenario is that every access seeker would be offered the same terms and conditions. However, the bill recognises that price or service differentiation can increase efficiency and innovation, and therefore provides scope for access seekers to negotiate outside these standard terms. In this regard, the bill simply puts into statutory language something that is already common practice in the telecommunications industry.

The bill recognises that differentiation could, if not tightly controlled, deliver anti-competitive outcomes. The circumstances for allowable discrimination are confined to:

- *discrimination in relation to creditworthiness;*
- *discrimination on grounds or in circumstances specified in a legislative instrument made by the Australian Competition and Consumer Commission (ACCC); or*
- *discrimination that aids efficiency, and that all access seekers with like circumstances have an equal opportunity to benefit from.*

To ensure that access seekers are able to judge whether they have like circumstances, proposed sections 152BEBA, 152BEBB and 152BEBC require NBN Co to publish a statement about the differences between an access agreement it has made with an access seeker and its standard terms and conditions. NBN Co must publish the statement within seven days after the day the access agreement was entered into. This statement must:

- *identify the parties to the access agreement;*
- *describe the differences between the terms and conditions set out in the access agreement and the terms and conditions set out in the standard form of access agreement; and*
- *if any or all those differences are said to aid efficiency, identify the circumstances that aid efficiency and describe what access seekers must do in order to have the like circumstances.*

The ACCC has also published a guide on its application of the "non-discrimination" requirement, which concluded:[75]

The ACCC considers … that network access providers should offer access seekers in the same class the same terms and conditions. This would mean that, if a network access provider bilaterally negotiates different terms and conditions with access seekers from those set out in existing Access Agreements, the ACCC would consider this to be non-discriminatory if the network access provider subsequently offers these terms to all access seekers in the same class.

This would require that network access providers offer to amend existing Access Agreements. However, the network access provider would not be required to amend the Access Agreement of those access seekers that elect not to adopt the new terms and conditions.

[75] ACCC Part XIC Non-discrimination Guidelines, April 2012 at page 11.

For these various reasons, RTCA submits that the proposal for greater price discrimination set out in UT4 should be rejected as inconsistent with a number of the statutory requirements, including:

- the objects of promotion of efficient investment (and competition) under section 69E;
- the interests of access seekers and public interest in stable and transparent regulation of below rail arrangements under the statutory criteria in section 138(2);
- the prohibition on undue price discrimination under both section 104 and the pricing principles in section 168A;
- the pricing principle in section 168C, which limits an access provider from unfairly differentiating between users, in a way that has a material adverse effect on the ability of one or more users to compete; and
- contemporary regulatory practice in Australia, including in telecommunications (which is the regime with most experience addressing the incentive concerns caused by a vertically-integrated access provider).

RTCA Recommendation

The QCA must limit differences permitted in access pricing only on the basis of "commercial risk" and, if any are to be allowed, any such alternative "risk-price" arrangements must be made fully transparent and available to all other access seekers

RTCA considers that differences in revenues permitted in relation to access should be limited to:

- objective differences in performance attributes which can be shown to impact upon the costs of providing the service (including capacity impacts), and *not* Aurizon Network's commercial views about contractual risk; or
- through the existing "access conditions" process in relation to expansion capacity where, as presently, Aurizon Network can demonstrate that the risk associated with the Expansion are not compensated through regulated tariffs.

6.5 Pricing principles are needed that provide for an incremental up / socialisation down approach to expansion pricing

Aurizon Network appears to have adopted an approach in which the decision of how the costs of future capacity expansions would be determined on a case by case basis, and where sharing the incremental costs would result in an increase in tariffs for existing users, this approach would be put to a customer vote.

Aurizon Network does not consider that it is appropriate to specify any general pricing principles for new capacity "up front" as part of UT4.

While not entirely clear, in taking this approach, Aurizon Network appears to prefer a "socialisation" of the pricing of new capacity – under which the costs of new capacity are averaged and shared across both new and existing users. It says in this regard (at page 224):

Aurizon Network considers that where the expansion is to shared network infrastructure that will be utilised by new or expanding users and existing users, it is appropriate for the costs of the expansion to be shared between these users. There are a number of reasons for this, the most important one being to avoid price discrimination between new and existing users of a homogenous service based on a user's time of entry into the market.

Because this approach would have the effect of increasing the costs of users that are not directly benefiting from an expansion, it would also then be subject to a wider customer vote. Where an existing tariff needed to then be adjusted, this would be done through triggering a "Review Event".

RTCA fundamentally disagrees with this proposed approach.

The QCA has recently looked at the issue of capacity pricing mechanisms – both in the context of the GAPE DAAU and separately in its discussion paper, *Capacity Expansion and Access Pricing for Rail and Ports*. RTCA has also previously outlined its views on this issue to the QCA in May 2013, in response to Aurizon Network's draft GAPE DAAU – and its views align with those of the QRC (which dates back to its proposed Investment Framework in March 2011).

In its discussion paper, the QCA described the "incremental up / socialisation down" approach supported also by the RTCA and QRC as follows:

… there are some key propositions that are based on relevant economic efficiency, fairness and governance principles, which can help in arriving at fair, efficient and practical regulatory decisions.

The key propositions that apply when capacity is already committed to 'established' users through long-term take-or-pay contracts are as follows.

(a) *If average costs are decreasing substantially with capacity, adding the expansion costs to the cost base of the established capacity will usually provide an acceptably efficient and fair outcome. An exception would be if foundation customers signed take-or-pay contracts which included a clause that enabled them to pay the price of the lowest cost tranche of capacity.*

(b) *If average costs are increasing substantially with capacity, a separate access price should normally be calculated and charged to those whose capacity underwrites the new tranche of capacity that reflects the average cost of that new capacity.*

RTCA strongly agrees with the QCA's conclusion, which is supported by a number of economic and policy principles, all of which are directly relevant to the statutory criteria in section 138(2):

Requiring the incremental cost of higher cost expansions to be borne by new users:

- *is cost reflective* (as required by section 168A), in that expanding users pay any incremental additional cost associated with their capacity;
- *prevents cross-subsidies* between existing users and new users;
- *supports more efficient investment decisions*, because it avoids new users from seeking or proceeding with capacity expansions which are high cost (and would otherwise not be undertaken) – where the new user is shielded from having to incur the full incremental cost, but are able to have this cost socialised (section 69E);

- *provides for a stable and predictable price path* for existing users (section 138(2)(h)). The risk that future investment may impose substantial additional cost on a coal producer, not able to be determined at the time of investment, is likely to inefficiently chill investment; and

- *avoids a forced "cross collateralisation" of new users by existing users* – by effectively socialising the investment and stranding risk associated with any new Expansion / capacity;

- *prevents existing users from preventing higher cost expansions*, through a customer vote process, where the higher costs are nonetheless acceptable to the new and investing users.

Providing for socialisation of lower cost expansions:

- *prevents free riding*, by socialising any cost advantages which flow from additional investment, thereby mitigating the risk that users would seek to "game" the timing of their investment, to benefit from the lowest incremental cost expansion stage. This is of particular importance given Aurizon Network's own plans to invest, and so it has a heightened incentive and ability to engage in this behaviour (section 104).

- *socialises cost benefits from future expansion is fair and risk-reflective* – given that it rewards foundation or greenfield investors that took the initial investment and construction risk at the start of a project. This is more likely to incentivise future, similar investment (section 69E and 138(2)(h)).

In the circumstances, the approach proposed by Aurizon Network to pricing of new Expansion capacity is inconsistent with the statutory principles in section 138(2). The QCA should therefore require Aurizon Network to adopt the approach and pricing principles proposed by the QRC of "incremental up / socialisation down".

GAPE and WICET investment

Moreover, RTCA considers that UT4 must recognise the very substantial "greenfield" investments that have been undertaken in recent years at GAPE and WICET, and ensure that future pricing of any capacity that takes advantage of these investments includes a levy that provides for a fair pricing outcome that socialises the benefits of these investments with foundation producers.

6.6 Process for approving pricing of expansion capacity

RTCA submits that the GAPE DAAU and WICET processes highlight that clear "default" pricing principles are needed in UT4 to provide certainty for future investment.

Aurizon Network has proposed that these be developed on a case by case basis and that, where existing tariffs are proposed to be increased, the costs and allocation methodology would then be shared with stakeholders as part of a customer vote process.

RTCA does not consider that leaving such principles to be developed or proposed by Aurizon Network on a case by case basis is appropriate, or provides the certainty and transparency required to support investment. Aurizon Network has consistently failed to offer meaningful transparency around pricing and similar processes, and recent experiences do not suggest improvement:

- the CRIMP process has been an abject failure due, largely, to the lack of detail provided around costs of expansions and associated assumptions (these were little more than short 'powerpoint' packs shared with customers on an irregular basis, and usually days before a vote to approve the capex was sought);

- the GAPE DAAU submission provided almost no meaningful detail or supporting modelling around how costs were allocated across and between systems;

- the Electric Traction DAAU process has been characterised by a lack of transparency and ”gaming” by Aurizon Network from the outset – most recently, by its refusal to openly and publicly make available the “total cost of ownership” model on which its flawed claim of efficiency was based; and

- in the WIRP process, Aurizon Network went as far as litigation against the QCA to *prevent* the disclosure of the WIRP Deed to stakeholders as part of consultation processes.

Simply, RTCA has no confidence that a process that lacks a set of clearly defined pricing principles will result in anything but more of the same.

RTCA Recommendation

RTCA endorses the following approach of the QRC:

1. A set of clear pricing principles is needed as part of UT4 that provide for the ‘incremental up / socialisation down” pricing of new expansion capacity.

2. The same principles and approach need to apply to all expansions (regardless of whether an existing tariff applies or not).

3. For the purpose of averaging down, the *highest* existing tariff in the system should be used, rather than the current reference to a “relevant” tariff (cl.6.5.2(d)).

4. All allocation modelling used by Aurizon Network associated with allocating common costs or “economic benefits” between expansion users and any existing users must be fully disclosed to all stakeholders.

5. Any expansion pricing should be approved by the QCA (applying the pricing principles referred to at 1. rather than through a customer vote process). RTCA has separately addressed its concerns with the approach adopted to customer votes at section 4.12 of this submission.

6. RTCA submits that a levy be incorporated into UT4 to implement socialisation of any future tariff reductions in respect of the GAPE and WICET projects.

RTCA endorses the proposed objectives and drafting set out in the QRC submission.

7 Cost of capital and tariff structure

7.1 Chapter summary

RTCA endorses the QRC submission on Aurizon Network's rate of return proposal for UT4. RTCA considers that Aurizon Network has significantly overstated the required rate of return for UT4.

Aurizon Network's rate of return proposal does not properly reflect the regulatory framework in which it operates, and the degree to which it is protected from risk under this framework. The proposed rate of return is not commensurate with the regulatory and commercial risks involved in providing access, but rather would significantly overcompensate Aurizon Network for the risks that it actually faces.

Further, on a number of key parameters, Aurizon Network's proposal does not reflect a balanced view of the available empirical evidence. This is most apparent in Aurizon Network's approach to the market risk premium (**MRP**) and gamma.

This section provides a summary of reasons why Aurizon Network's proposed rate of return should not be accepted. More detailed reasons are set out in WACC chapter of the QRC submission.

7.2 Aurizon Network's overall approach to the rate of return

Aurizon Network has taken an approach to the rate of return which leads to a significant upward bias in the overall estimate. Aurizon Network has proposed a range for most parameters in the WACC formula and then simply adopted the upper bound value for each one for the purposes of calculating the WACC.

The adoption of upper bound values has no justification either in economic theory or in the legislative framework. It is an approach which puts undue emphasis on Aurizon Network's commercial interests, at the expense of the interests of network users and the promotion of efficient investment.

None of the reasons given by Aurizon Network for adopting this approach are valid. In particular:

- while it may be true that there is some potential for some error in estimation of individual parameters, there is no reason to believe that this would be skewed in one direction or the other, such that an arbitrary adjustment to the overall WACC in one direction or the other would be justified;
- to the extent that there is any uncertainty around financial market conditions, this is properly addressed in the estimation of individual parameters (such as the market risk premium). An arbitrary upward adjustment to the overall WACC cannot be justified on the basis of market uncertainty;
- RTCA does not accept that Aurizon Network necessarily faces risks that are not compensated for through the WACC. However to the extent that there may be some risks that are diversifiable (e.g. performance risks), these should not be compensated for by some arbitrary adjustment to the rate of return.

The expert report of Professors McKenzie and Partington, prepared for the QRC, includes a detailed review of each of the reasons given by Aurizon Network for its proposed approach. McKenzie and Partington find no justification for the proposed approach, and note that it introduces scope for significant error in the rate of return estimation process.

7.3 Risk free rate

Averaging period for the risk-free rate

Aurizon Network's submission includes a value for the risk-free rate (and also the debt margin) which it refers to as "indicative", as it is based on an indicative averaging period. Aurizon Network says in its submission that it intends to seek confidential approval of its proposed UT4 averaging period from the QCA. It is said that providing confidential advance notice of the averaging period is common regulatory practice.

RTCA does not know whether an averaging period has been agreed, and if so when the period was or will be. However If Aurizon Network has not yet nominated a period, then they should be required to do so as soon as possible. The standard regulatory practice is for the service provider to nominate a future averaging period at the *beginning* of the regulatory review process, and for this period to be reasonably close to the commencement of the new regulatory period. It is not standard practice for the service provider to be allowed to delay nomination of the averaging period until well into the review process.

If Aurizon Network is not prepared to nominate an averaging period, or if Aurizon Network's proposal for the averaging period is otherwise unreasonable, then the QCA should itself choose a period for measurement of the risk-free rate and debt margin. RTCA considers that a reasonable choice of period would be the last 20 business days of June 2013. This would be the last 20 business days preceding the commencement of the UT4 undertaking period, and would thus be consistent with the standard practice of choosing a period that is reasonably close to the commencement of the new regulatory period.

Method of measurement

RTCA supports the QCA current practice of seeking to match the term of the risk free rate and debt margin to the length of the regulatory cycle (i.e. five years). This approach is consistent with previous QCA practice and with the expert advice of Associate Professor Lally.[76]

7.4 Market risk premium

Aurizon proposes a range for the market risk premium (**MRP**) of between 6% and 7%. However, as with all WACC parameters, Aurizon adopts the upper bound of its range in calculating its proposed rate of return for UT4, which means that it is effectively proposing a value of 7% for the MRP.

Adopting a value of 7% for the MRP would represent a significant departure from past regulatory practice. The QCA (and other regulators) have consistently adopted a value of 6% for the MRP in past decisions, recognising that this reflects the weight of empirical evidence on this parameter.

RTCA would not support an increase in the MRP above 6%. RTCA considers that a reasonable range for the MRP is between 5% and 6%.

A value of no more than 6% is consistent with the recommendation of Professors McKenzie and Partington, as set out in their report for the QRC. McKenzie and Partington state that, if anything, 6% is likely to be an over-estimate of the MRP, given the upward bias in some of the underlying measures.[77]

[76] Lally M, *The Appropriate Term for the Risk Free Rate and the Debt Margin*, 27 April 2010.

[77] Michael McKenzie and Graham Partington, *Review of Aurizon Network's Draft Access Undertaking*, 5 October 2013.

A range of 5% to 6% for the MRP is supported by a balanced view of the available evidence on the MRP. In particular:

- Historical data indicates a range for the MRP of approximately 3% to 6%, depending on the method of averaging (i.e. whether arithmetic or geometric averages are used) and the method of adjusting for inflation.[78] However, the QCA and some experts, including Professors McKenzie and Partington, have suggested that these historical estimates may overstate the true MRP, due to "survivorship bias".[79] Therefore, these estimates should be seen as an upper bound for the MRP.

- Survey evidence indicates a range for the MRP of between 5.5% and 6%.[80]

- Dividend growth models produce varying estimates of the MRP, depending on the dataset, methodology, assumptions and time period used. Recent estimates from dividend growth models indicate a wide range of values for the MRP, from 5.9% to 8.4%.[81] The QCA has recently estimated an MRP value of 8.7% as at October 2012 based on the 'Cornell method', which is a form of the dividend growth model.[82] However, many regulators and experts tend to interpret these results with caution, including because of the sensitivity of the models to input assumptions.[83] McKenzie and Partington note that the dividend growth model has significant problems, and caution that it relies heavily on input assumptions around future growth.[84] The QCA refers to its Cornell estimate as "unequivocally biased upwards", and an "upper bound only" for the MRP.[85]

- Past regulatory decisions and Tribunal decisions have consistently adopted a value for the MRP of 6%.[86] Moreover in a number of recent cases, the Australian Competition Tribunal has upheld decisions of regulators to adopt a value of 6%, most recently in *Application by APA GasNet* (decided in September 2013).[87]

A balanced view of this evidence supports a value for the MRP of no more than 6%. Only one estimation method (the dividend growth model) produces an estimate materially above 6%, and that method has been described by the QCA as being "unequivocally biased upwards". All other methods produce values around or below 6%.

[78] The QCA has noted that Ibbotson historical averaging produces an estimate of 6.2%, while Siegel historical averaging (which adjusts for the effects of inflation) produces an estimate of 4.3%, both as at October 2012 (QCA, *Discussion Paper: The Risk-free Rate and the Market Risk Premium*, November 2012, p 11). In a recent report for the AER, Associate Professor Handley estimated the long-run historic MRP to be 3.0% to 4.7% based on geometric averaging, or 4.9% to 6.1% based on arithmetic averaging (Handley, *An estimate of the historical equity risk premium for the period 1883 to 2011*, April 2012, p. 6).

[79] Survivorship bias refers to the fact that excess returns are only measured for those stocks that survive, and exclude stocks that no longer exist. Since those stocks that have survived are likely to have been those with higher returns over time, this may create a bias in the estimate of historical returns. Refer to: QCA, *Discussion Paper: The Risk-free Rate and the Market Risk Premium*, November 2012, p 11; Michael McKenzie and Graham Partington, *Review of Aurizon Network's Draft Access Undertaking*, 5 October 2013.

[80] The QCA recently estimated an MRP value of 5.8% as at October 2012 based on survey evidence (QCA, *Discussion Paper: The Risk-free Rate and the Market Risk Premium*, November 2012, p 11).

[81] Lally, *The Dividend Growth Model*, 4 March 2013.

[82] QCA, *Discussion Paper: The Risk-free Rate and the Market Risk Premium*, November 2012, p 11.

[83] For example, the AER notes growing scepticism around estimates from dividend growth model estimates, largely for this reason (AER, *Access arrangement final decision, Envestra Ltd, 2013-17*, Part 2, March 2013, pp 138-140).

[84] Michael McKenzie and Graham Partington, *Review of Aurizon Network's Draft Access Undertaking*, 5 October 2013.

[85] QCA, *Discussion Paper: The Risk-free Rate and the Market Risk Premium*, November 2012, p 11.

[86] Refer to the QRC submission for a list of these decisions.

[87] *Application by APA GasNet Australia (Operations) Pty Limited (No 2)* [2013] ACompT 8, [227]-[308]. See also: *Application by Envestra Limited (No 2)* [2012] ACompT 3; *Application by WA Gas Networks Pty Ltd (No 3)* [2012] ACompT 12; *Application by DBNGP (WA) Transmission Pty Ltd (No 3)* [2012] ACompT 14.

7.5 Equity beta

Aurizon proposes a range for the equity beta of between 0.9 and 1. As with the MRP and all other WACC parameters, Aurizon adopts the upper bound of its range in calculating its proposed rate of return for UT4, which means that it is effectively proposing a value of 1 for the equity beta.

An equity beta of 1 would be a significant change from the equity beta set for UT3 and previous periods. RTCA considers that an increase in the equity beta for UT4 is not justified, given Aurizon Network's very limited exposure to risk under the regulatory framework.

The QRC submission provides a detailed review of the risk protection mechanisms built into the regulatory framework, and shows that Aurizon Network's exposure to risk is in fact very limited, particularly when compared to its infrastructure peers. The QRC analysis shows that Aurizon Network's exposure to risk has in fact been significantly *reduced* in recent years through introduction of various risk protection mechanisms into the regulatory framework. Aurizon has sought a continuation of this trend in its UT4, by proposing several new risk protection mechanisms, such as accelerated depreciation for legacy assets. This implies that if anything, Aurizon Network's equity beta should be reduced for UT4, and should certainly not be increased.

The QRC asked Professors McKenzie and Partington to assess Aurizon Network's proposal for an increase in the equity beta to a value of 1.0. McKenzie and Partington find no evidence to support Aurizon Network's proposal.

As is clear from Aurizon Network's submission and the supporting report from SFG, the proposed estimate of the equity beta can only be sustained if significant weight is given to beta estimates for US railroad businesses and Australian-listed industrial transportation firms. However has previously considered the comparability of US railroad and transportation firms, and has concluded that these businesses do not have comparable risk profiles to Aurizon, and are therefore not useful comparators.[88]

As Table 35 of Aurizon Network's submission shows, if these other comparators are removed from the analysis, and energy network businesses and OLS estimates are relied on instead, the asset beta estimate would be 0.35, which implies an equity beta of 0.55.[89]

The QRC also engaged Castalia to benchmark Aurizon Network's risk profile and proposed equity value against other infrastructure businesses. Castalia compares Aurizon Network's proposed equity beta with five other infrastructure businesses, and also compares exposure to various risk factors across these businesses. Castalia find that while Aurizon Network contends for a significantly higher equity beta than what is allowed for these other businesses, its overall exposure to risk is in fact much lower. Castalia's relative risk analysis indicates that Aurizon Network's equity beta should be *lower* than its infrastructure peers, not higher.

RTCA considers that a reasonable range for the equity beta for Aurizon Network is 0.4 to 0.6, with a midpoint value of 0.5. This range is consistent with all of the evidence referred to above and in the QRC submission, including:

- McKenzie and Partington's review of the Aurizon Network proposal, which concludes that the available evidence does not support Aurizon Network's proposed equity beta of 1.0;[90]
- SFG's analysis for Aurizon Network, with US railroads and transport companies stripped out, indicates an asset beta value of 0.35, which implies an equity beta of 0.55;

[88] QCA, *Draft Decision: QR Network's 2010 DAU - Tariffs and Schedule F*, June 2010, p. 44.

[89] This assumes a debt beta of 0.12 (as previously determined by the QCA), gearing of 55% and a corporate tax rate of 30%.

[90] Michael McKenzie and Graham Partington, *Review of Aurizon Network's Draft Access Undertaking*, 5 October 2013.

- Castalia's relative risk analysis suggests that the equity beta for Aurizon Network should be no higher than 0.7 based on 60% gearing (equivalent to 0.6 at Aurizon Network's 55% gearing), which is the value applied to the Sydney Desalination Plant, a businesses which bears greater risk than Aurizon Network; and

- empirical analysis of the equity beta for energy network businesses (which the QCA considers to be the most relevant comparators), indicates that the equity beta for these businesses is in the range of 0.4 to 0.7.

Therefore, RTCA submits that Aurizon Network's proposal for an increase to the equity beta should not be accepted. Instead, the QCA should adopt an equity beta value of 0.5, reflecting the midpoint of the range referred to above.

RTCA makes this submission on the assumption that Aurizon Network's risk profile for UT4 will be broadly in line with its UT3 risk profile. Of course, if some of those elements of the undertaking proposal which provide for increased risk protection in UT4 are accepted, then the equity beta would need to be lowered further to reflect this.

7.6 Debt margin

Proposed term to maturity

RTCA considers that the estimate of the debt margin should also be based on a five year term to maturity. This approach would align the assumptions regarding debt financing practices with the term of the regulatory period, and would also be more consistent with recent evidence of Aurizon Network's actual debt financing practices and the practices of other regulated businesses.

Recent debt raising activities by Aurizon Holdings have involved issues debt at maturities of significantly less than ten years. Aurizon Holdings has recently announced that $3.0 billion of floating rate facilities will be placed at Aurizon Network with a spread of tenors up to five years.[91]

RTCA further notes that the AER has recently indicated that it will use a shorter term of debt assumption in estimating the debt margin for energy network businesses. Whereas previously the AER has assumed a ten year term of debt for these businesses, it has recently signalled that it will adopt a seven year term of debt assumption in future. The AER has cited a range of evidence to support this shift, including evidence which indicates that the average debt term at issuance for regulated energy businesses is less than ten years.[92]

Extrapolation method proposed by Aurizon

Alternatively, if a ten-year term to maturity assumption is to be adopted in estimating the debt margin (as proposed by Aurizon), then the QCA should not accept the proposed method for extrapolating the Bloomberg seven year BBB yield to estimate a ten-year yield.

The extrapolation method adopted by Aurizon Network (the AAA method) relies on data that is now three years out of date.[93] For this reason, Aurizon Network's consultants (VAA) do not recommend

[91] Aurizon Holdings, 'Aurizon completes its debt refinancing', ASX Announcement, 27 June 2013.

[92] AER, *Better Regulation: Explanatory Statement: Draft rate of return guideline*, August 2013, pp 105-109.

[93] Although Aurizon Network's submission refers to the AAA method and the matched pairs method, the WACC calculation in fact only relies on the AAA method, because the upper bound value is adopted.

adopting this approach.[94] VAA recommends using the matched pairs method of extrapolation, which is method now routinely adopted by regulators.[95]

Therefore if any extrapolation is to be applied in order to estimate a ten year debt margin, this extrapolation must be based on the matched pairs method, as recommended by VAA and as adopted in recent regulatory decisions.

Proposed allowance for debt raising costs

RTCA does not agree with the inclusion of a debt raising cost allowance of 12.5 basis points in the debt margin.

Aurizon has not provided any justification for its proposed allowance, other than to note that it is consistent with previous QCA decisions. There is no evidence that the proposed allowance accurately reflects the costs that would be incurred by a prudent and efficient service provider in raising debt finance.

To the extent that any allowance is to be made for debt raising costs, this should reflect an assessment of the costs an efficient service provider would be expected to incur. There is no evidence to suggest that Aurizon Network's proposed allowance reflects such an assessment. A more rigorous method of assessing debt raising costs is the method adopted by the AER, as outlined in the QRC submission.

7.7 Gamma

RTCA supports the QCA's current (and past) practice of adopting a value for gamma of 0.5. RTCA does not support the lower gamma value proposed by Aurizon Network for UT4.

A value for gamma of 0.5 is supported by the weight of empirical evidence on the distribution ratio and the value of distributed imputation credits.[96] In particular:

- the available evidence on the distribution ratio indicates that a reasonable estimate of this parameter is 0.7. This is consistent with the most recent tax data, and analysis of this data conducted by NERA in a recent report for the Energy Networks Association.[97]
- the available evidence on the value of distributed imputation credits indicates that a reasonable estimate of this parameter is also 0.7. This includes:
  - evidence on the proportion of investors who are eligible to redeem imputation credits. Data from the Australian Bureau of Statistics indicates that approximately 70% of equity in Australian enterprise groups (including companies and unit trusts) is held by domestic investors who are eligible to redeem imputation credits;[98]

[94] Dr Steven Bishop and Professor R. R. Officer (Value Adviser Associates), *Review of Debt Risk Premium and Market Risk Premium: Prepared for Aurizon*, February 2013, [56].

[95] Since Bloomberg has ceased publishing AAA yields out to ten years, the AER has moved away from the AAA extrapolation method and has generally applied the matched pairs method. For example: AER, *Access arrangement final decision, Envestra Ltd, 2013-17*, Part 1, March 2013, pp. 29-30.

[96] Under the Officer framework, the value for gamma is typically calculated as the product of the distribution rate (or payout ratio) and the value of distributed imputation credits (referred to as the utilisation rate, or theta (R. R. Officer, 'The cost of capital under an imputation tax system', *Accounting and Finance*, Vol. 34, Issue 1, May 1994).

[97] NERA, *The Payout Ratio: A Report for the Energy Networks Association*, June 2013.

[98] Australian Bureau of Statistics, *Feature Article: Foreign Ownership of Equity*, September 2007.

- recent analysis of tax statistics indicates that between 65% and 81% of distributed imputation credits are actually redeemed by investors (estimates differ slightly depending on the period over which this is measured);[99] and

- estimates of the implied value of imputation credits from econometric studies indicate a range of values, from 0.35 and 0.8, depending on the dataset and input assumptions.[100]

Combining the above estimates of the distribution rate and the value of distributed credits delivers a value for gamma of 0.5. This represents the most reasonable estimate of this parameter.

A value of 0.5 is supported by the expert report of Professors McKenzie and Partington for the QRC. McKenzie and Partington support taking into account a wide range of evidence in estimating gamma, and on this basis support a value of 0.5, as previously adopted by the QCA.

A value of 0.5 is also consistent with recent analysis undertaken by the AER. In its recently released draft rate of return guidelines, the AER has indicated that it will adopt a value for gamma of 0.5 in future decisions. This is based on careful analysis by the AER of the body of evidence available on this parameter, including the evidence referred to above.[101]

Aurizon Network's proposal for a gamma of 0.25 does not reflect the weight of the empirical evidence in relation to the value of imputation of distributed credits. Rather, Aurizon relies on a single study of the implied value of imputation credits, being a study conducted by SFG for QR National.

McKenzie and Partington recommend against the approach proposed by Aurizon which relies on a single study and ignores the wider body of empirical evidence. McKenzie and Partington recommend "triangulating" across a number of estimation methods, and they conclude that when this is done non-selectively the evidence supports a gamma of 0.5.

7.8 Summary of RTCA's position on the WACC

RTCA's view on the appropriate rate of return for UT4 is summarised in Table 2 below.

Table 2: Summary of RTCA view on UT4 WACC parameters

Parameter	RTCA proposed value	Summary of reasons
Gearing	0.55	No change proposed to UT3 gearing.
Risk free rate	2.98%	QCA should maintain its approach of using 5-year CGS yields to measure the risk-free rate.

[99] Analysis by Handle and Maheswaran (2008) indicates that over the period 1988-2000 the redemption rate was 67%, while over the period 2001-2004 it was 81% (J. C. Handley and K. Maheswaran, 'A measure of the efficacy of the Australian imputation tax system', *The Economic Record*, Vol. 84, No. 264, March 2008). More recent analysis by Hathaway (2010) indicates that over the period 2004-2008 the redemption rate was 65% (N Hathaway, *Comment on "A measure of the efficacy of the Australian imputation tax system" by John Handley and Krishan Maheswaran*, July 2010).

[100] Recent research by the Economic Regulation Authority of Western Australia indicates an implied value of between 0.35 and 0.55 (ERA, *Explanatory statement for the draft rate of return guidelines: Meeting the requirements of the National Gas Rules*, August 2013, pp 201-205). Earlier research by Brown and Clarke (1993) had indicated a higher value, of around 0.8 (P. Brown and A. Clarke, 'The ex-dividend day behaviour of Australian share prices before and after dividend imputation', *Australian Journal of Management*, Vol. 18, June 1993). Other studies have estimated different values, generally within a range of 0.35 to 0.7.

[101] AER, *Better Regulation: Explanatory Statement: Draft rate of return guideline*, August 2013, section 8 and appendix K.

Parameter	RTCA proposed value	Summary of reasons
Debt margin	2.60%	The debt margin should be based 5-year corporate bond yields, as this better reflects efficient financing practices of infrastructure businesses such as Aurizon Network.
Debt raising costs	0%	No justification or evidence is provided in support of Aurizon Network's claim for debt raising costs. In the absence of any evidence as to the efficient cost of raising debt finance, no allowance should be made.
MRP	5% - 6%	A balanced of the empirical evidence supports a range for the MRP of between 5% and 6%.
Equity beta	0.4 – 0.6	Given the very low risk nature of Aurizon Network's business and the trend of risk reduction achieved by QR / Aurizon Network, a reduction in the equity beta is justified, not an increase as proposed by Aurizon Network. The empirical evidence supports a range for the equity beta of between 0.4 and 0.6.
Gamma	0.50	A balanced of the empirical evidence supports a value for gamma of 0.5, as previously adopted by the QCA.
Nominal WACC	**5.65%**	**Combining the above parameter values results in a nominal vanilla WACC for UT4 of 5.65%.**

Notes: (1) where a range of values is proposed, the midpoint value is adopted; (2) risk-free rate and debt margin values are averaged over the last 20 business days of June 2013 (the 20 business days to 28 June 2013).

7.9 The UT4 maintenance cost claim is unreasonable and does not reflect the needs of customers

RTCA supports the QRC submissions in relation to Aurizon Network's maintenance claim.

As for many other parts of the CQCN framework, there continues to be a lack of transparency and engagement with industry around Aurizon Network's approach to maintenance. As a consequence, costs are too high and are not being reduced in a manner consistent with an efficient owner. The proposed FY14 allowance of $212M is a 16% increase in real terms compared with the FY13 allowance of $182M.

At the same time as maintenance costs continue to climb, Aurizon Network have also sought to substantially shift the AT1 charge to within the SAR cap – which would transfer volume risk in relation to this cost to users.[102]

RTCA supports the conclusions of the QRC that a new approach is needed that provides genuine transparency and involvement for stakeholders in defining and overseeing the maintenance task. This is an activity which RTCA considers should be one of the matters given to new RCGs.

[102] UT4 Proposal at pages 256 – 258.

UT4 maintenance objectives need to considered and developed by Aurizon Network, with industry, each year, as part of the annual NDP development process.

RTCA Recommendation

RTCA endorses the principles that have been proposed by the QRC to improve transparency and rigour around maintenance costs (modified slightly to include the RCG as the appropriate new coal chain body to manage user votes on maintenance issues, as for capex).

- Aurizon Network should develop a Maintenance Plan and Scope for each rail system on a rolling 5 year basis, with a detailed 12 month scope setting out specific planned interventions and quantities.
- The Maintenance Plan should be published as part of, or alongside, the NDP and should be approved by an agreed majority (e.g. 75%) of each RCG (and failing approval by access holders, the QCA to approve or otherwise require changes).
- Changes to the Maintenance Plan should be approved by the RCG in the same way.
- The Maintenance Plan should be required to include strategies to competitively tender certain maintenance activities across the CQCN where there is potential value to be gained and it makes good business sense. Aurizon can also undertake emergency repairs to the network using an approved schedule of rates.
- Aurizon Network must progressively report on the delivery of the Maintenance Plan through the 12 month review period, variances to plan and forecast end of year outcomes.
- The annual maintenance allowance must be based on the approved Maintenance Plan with adjustments for approved scope changes and unscheduled work.
- Aurizon Network will be accountable for non-delivery of the maintenance scope (i.e. the maintenance allowance will be decreased) accept for issues that are outside its reasonable control.

The cost benefits of internal sourcing is not supported by evidence

RTCA is concerned that only 45% of the maintenance budget is sourced externally, and is therefore subject to even fundamental "open market" forces.[103] This means that over half of the maintenance budget is internally sourced.

While Aurizon Network makes a bald assertion that this high degree of "in house" delivery method results in cost savings of approximately 20%, it has provided no evidence to support the claim. The QCA is encouraged to test this assertion independently to identify how much of the current maintenance task is contestable – and to ensure the reasonableness and prudency of the claim.

Aurizon Network should be required to report to RCGs on those elements of work that are being tendered, and these bodies can then also oversee the tendering of major elements.

[103] UT4 Proposal at page 58.

Where RCGs have approved tendering processes, the actual costs of that work can be passed through, provided these are within the approved scope. Material increases and adjustments in scope require approval of the RCG through the standard customer vote process.

Volume forecasts appear unrealistic and RTCA does not accept a shift of maintenance costs (AT1) into the revenue cap

There has been consistent overstatement of forecast system tonnages in previous Undertakings.

RTCA agrees with the QRC that the analysis commissioned from Energy Economics[104] by the QCA in relation to forecast coal railings over the CQCN during the UT4 period is likely to be more representative of conditions and growth. Energy Economics has forecast total railings of 816Mt from FY14 to FY17, compared with Aurizon Network's forecast of 910Mt.

This concern is exacerbated by Aurizon Network's proposal to substantially shift the AT1 tariff charge to within system allowable revenues, through a mechanism that appears to shift volume risks associated with departure from forecasts from Aurizon Network to users. That is, having based a calculation of maintenance costs on consistently over-stated volume assumptions, Aurizon Network wants to avoid downside risk associated with those assumptions by passing that risk to users. This provides another clear example of why demand and capacity assumptions must be adopted by users through the RCG process, as occurs in the Hunter Valley.

More fundamentally, RTCA does not accept the claim that most (62%) of maintenance costs are fixed and not able to be varied (either in time or cost) to reflect volumes – a conclusion which is directly inconsistent with the long run linear regression analysis undertaken by Aurizon Network (at page 253).

While Aurizon Network makes a number of assumptions about what may cause this "difference", no evidence is provided to support it. RTCA considers that the QCA should have the claim independently tested. There is no reasonable basis to support users having to accept the volume-risk associated with AT1. If the QCA were minded to require this, it would be further evidence of the need for all volume assumptions to be developed and/or approved by users – and not by Aurizon Network unilaterally.

The attempted shift by Aurizon Network from cost-based to "replacement cost" asset valuations is inappropriate and out of step with regulatory practice

RTCA has already noted the attempt by Aurizon Network to move to a DORC-based standalone cost ceiling, for the purpose of pricing new train services.

Similarly, Aurizon Network also seeks to shift from a historic cost-based valuation of maintenance plant costs to a "Gross Replacement Annuity" valuation, which like DORC is a forward-looking replacement cost methodology RTCA strongly opposes this shift in methodology as unnecessary, contentious and out of step with regulatory practice, and repeats the observations already made above at section 6.3, which apply equally to GRV.

Shifts in asset valuation approaches are significant and have long term impacts on pricing and regulatory certainty. This has been recognised by various regulatory authorities, and is reflected in the general practice of "locking in and rolling forward" asset values, rather than constantly revaluing assets. This has been reflected most recently by the ACCC in its approach to regulation of telecommunications services.

[104] Energy Economics, *Central Queensland Coal Railings Forecast – A Report for the QCA* , July 2013.

Aurizon claims that its GRV methodology for valuation of maintenance plant and equipment overcomes the deficiencies inherent in other replacement cost methodologies. In particular, it is claimed that GRV will not be as information intensive or contentious as DORC valuation.

However, in seeking to distinguish the GRV methodology from other replacement cost methods, Aurizon is drawing a distinction without a difference. As is clear from Aurizon Network's description of the GRV methodology, it still requires an assessment of the gross replacement value of the relevant assets (or their modern equivalent) and therefore still gives rise to scope for significant controversy around the appropriate valuation.

There is very little detail in Aurizon Network's submission in relation to its derivation of gross replacement values for its maintenance assets. In the absence of more detailed information, it is difficult to assess whether the replacement values used, or the methodologies applied in deriving these values, are reasonable. As far as RTCA can tell, the proposed replacement values appear to have been derived in a black box.

Given the deficiencies in replacement cost methodologies, and the lack of transparency around Aurizon Network's proposed replacement values for maintenance assets, the proposed shift to use of replacement values should not be accepted. Rather, maintenance asset values should continue to be based on book values.

Aurizon Network's benchmarking approach is flawed

Finally, RTCA endorses the view of the QRC that the comparison sought to be made by Aurizon Network with ARTC, in respect of maintenance costs, is inappropriate given that this comparison is on a track kilometre basis.

Any such comparison should be made on a cost per gross tonne kilometre (gtk) or net tonne kilometre (ntk) basis, as this is the basis on which activity and capacity is contracted in Queensland.

The basic benchmarking analysis undertaken by the QRC highlights the extent to which the UT4 maintenance claim is inflated well beyond a reasonable comparator, such as ARTC.

RTCA Recommendation

Aurizon Networks proposed approach to calculating maintenance costs is flawed, resulting in inefficient and increasing costs (increasing by 16% in real terms from UT3) that are not reflective of market or growth trends.

- The volume assumptions made by Aurizon Network look to be overstated. The QCA should prefer those of Energy Economics, which look more consistent with conditions and growth prospects.
- Having consistently overstated volume forecasts, with the effect of increasing the maintenance allowance, Aurizon Network's proposal would pass the volume risk associated with those forecasts substantially to users through including AT1 in the revenue cap. There is no evidence to support or justify this major change in tariff structure, which should be rejected.
- Over half of the maintenance costs claimed in UT4 relate to work that is sourced internally – with little, if any, practical measures in place to test whether this is a prudent and efficient approach. A rigorous and transparent approach to identifying what work can be tendered is needed – see prior Recommendation.

- Aurizon Network has sought to change the cost methodology used to determine the asset base used for maintenance costs – to base it on a forward looking replacement cost methodology (Gross Replacement Annuity). Given the deficiencies in replacement cost methodologies, and the lack of transparency around Aurizon Network's proposed replacement values for maintenance assets, the proposed shift to use of replacement values should not be accepted. Rather, maintenance asset values should continue to be based on book values.

- The benchmarking approach adopted by Aurizon Network to justify its maintenance claim is flawed. The QCA should commission its own independent benchmarking process to be undertaking, giving precedence to Australian, vertically separated railway owners (e.g. ARTC and QR).

7.10 Operational expenditure AT2 increases

Aurizon Network's operational expenditure claim does not reflect reasonable benchmarking or current market realities

In an environment in which the Queensland coal industry – across the board – has been forced to undertake deep reductions in operating and corporate "overhead" costs, Aurizon Network's operational expenditure claim highlights the extent to which it is out of touch with its customers and market realities.

RTCA has had the benefit of reviewing the draft submission of the QRC and endorses and supports those submissions.

The claim by Aurizon Network that the cost of rail infrastructure as a share of total FOB coal costs is both wrong (see section 3.5) and, in any event, does not justify inappropriate and inefficient increases in opex costs in UT4.

Despite the current environment, Aurizon Network has proposed a number of significant increases in operational expenditure, including:

- UT4 System Wide and Regional Cost allowance is $123.6M in FY14, which is a 103% increase over the average UT3 annual allowance of $60.1M (noting also that the UT3 allowance represented an increase of 130% over the UT2 allowance)

- Aurizon Network's UT4 submission includes $68.3M for FY14 (and increasing forecasts in subsequent years) for traction electricity transmission connection costs, which is more than double the amount allowed in UT3 ($33M).

- Aurizon Network has proposed a total UT4 risk and insurance allowance of $39M, which is a 46% increase over the $26.7M allowance in UT3. The self-insurance component of the UT4 submission is $23.8M or 61% of the total claim.

Aurizon Network has not provided sufficient information or transparency around the basis for a number of these claims to enable them to be properly tested by industry. Given that volumes are not forecast to increased significantly (the UT4 estimate is 8%), and given operational expenditure allowances in other regulated industries, the estimates look substantially too high.

In particular, RTCA notes that:

- Total forecast volumes in UT4 (i.e. from FY14 to FY18) are 910Mt, which is only an 8% increase in UT3 forecast volumes (i.e. FY10 to FY13) of 841Mt.

- Changes in the structure of the Aurizon Group do not justify the substantial increase and, in any event, are not relevant given that the greater independence following privatisation was used previously as part of UT3 as one of the justifications for the last major increase (of 130%).

- While costs appear to have increased across the board, the increase in opex is dominated by a substantial in increase in corporate costs (47% of the total). These costs appear too high and are inconsistent with the most immediate and obvious comparison – ARTC.

In addition to the arguments raised by QRC, RTCA is concerned that the operational expenditure claimed may include the Powerlink contract costs which were part of the Blackwater electric traction DAAU process. RTCA submits that the QCA should investigate whether, or to what extent, Aurizon Network has sought to recover these imprudent costs in the opex allowance under UT4 and maintains that these should be excluded (see section 4.13).

Benchmarking

RTCA supports the QRC view that a benchmarked approach to operational expenditure is appropriate, provided that this is done properly and independently.

Benchmarking is particularly important in this case, given that:

- 47% of Aurizon Network's claim (or $280M) are allocated corporate costs; and

- the increasingly integrated nature of Aurizon Network's "corporate" function makes it difficult, if not impossible, to accurately identify where and how corporate costs are accounted for within its business. Benchmarking is therefore the only transparent and independent means of testing the efficiency and prudence of Aurizon Network's claim.

The benchmarking approach undertaken by Ernst & Young appears to be subject to significant flaws, including:

- There appears to be considerable duplication and inefficiency in Aurizon Network's business and management structure, which is not reflected in other operators (including ARTC).

- As noted above, corporate costs appear to be recovered from various parts and levels of Aurizon Network, such that it is not possible to accurately identify where or to what extent the actual costs claimed represent double recovery. This is not an issue addressed by Ernst & Young.

- The Ernst & Young study refers to other government-owned operators on a "no names" basis, which makes it impossible to properly test whether they represent appropriate and reasonable comparison firms for the purpose of benchmarking Aurizon Network.

- The choice of benchmarking parameters (e.g. track kilometres versus gross tonne kilometres) and benchmarking partners can support completely different conclusions on the efficiency of Aurizon Network.

RTCA Recommendation

QCA should commission its own independent benchmarking process of Aurizon Network's corporate cost claim.

The operational expenditure claim (including corporate costs) is unreasonable and inefficient.

In doing so, it is submitted that particular weight should be given to Australian, structurally separated rail providers, including ARTC and Queensland Rail. Limited weight should be provided to rail operators that operate in different markets, with different operational structures – including the vertically-integrated, unregulated US railways, that predominantly service a domestic (and not global) market.

7.11 Ballast fouling

Aurizon Network's UT4 ballast fouling proposal is an attempt to reverse the decision made by the QCA in UT3 in relation to the costs of Aurizon Network's imprudent ballast maintenance practices.

In UT3 the QCA decided that QR Network should properly bear the risk of higher costs associated with its imprudent maintenance practices. If Aurizon Network's proposal for UT4 were to be accepted, this would amount to "re-opening" and reversing the allocation of risks associated with imprudent maintenance practices made in UT3 back on to users, contrary to the QCA's original decision. This would be fundamentally inconsistent with ensuring regulatory certainty.

Moreover, Aurizon Network has not demonstrated that its past approaches to ballast fouling have been cost effective or that it has adopted an efficient approach to maintaining a sound ballast. Accordingly, the adjustment made by the QCA in UT3 for ballast fouling should be maintained.

8 Access Agreements

8.1 Summary

RTCA endorses and supports the views and recommendations of the QRC in relation to the changes to the Standard Access Agreement proposed as part of UT4.

8.2 Security over access rights

There are a considerable number of changes to the SAA which weaken a user's access rights and its security over those rights, examples include the significant changes proposed to the relinquishment, renewal and transfer mechanisms, as well as the introduction of a broad "supply chain" trigger for Aurizon Network to withdraw rights.

As a fundamental principle, coal producers are required (and do) undertake very substantial investments across their mine, rail and port operations. It is not appropriate or efficient for one part of the logistics chain (Aurizon Network) to have power to interfere with the security and long term certainty of this investment.

Examples include:

- The concept of "supply chain rights" appears to be introduced to give Aurizon Network an ability to withdraw or vary rail access rights in the event that it forms the view that the access holder does not continue to hold matching port or other coal chain rights.

  Simply put, while RTCA recognises the importance of contractual alignment in coal chains, it is not Aurizon Network that should be the "king maker" in the Queensland coal industry. Aurizon Network itself, when asked to contribute to coal chain coordination initiatives, has agreed in UT4 that this is not its role and that coal producers should take this responsibility. RTCA agrees. The need for Aurizon Network to modify system rights would also not be as relevant if access holders had a workable short term transfer framework which they could use to manage their own contractual alignment – as occurs today in the Hunter Valley (see section 5.10).

  RTCA agrees with the QRC submission that this concept should be removed and the current approach in clause 5.11 of Schedule B of UT3 retained.

- There are numerous changes to the resumption, renewal and transfer rights from the UT3 SAA, which substantially undermine contractual certainty – and in respect of which Aurizon Network does not have liability.

  While all of these are problematic, the power to resume capacity in particular is heavy handed and, as currently drafted, is broad and provides Aurizon Network with significant discretion – seriously undermining security of access.

- The definition of "Access Rights" has been removed.

RTCA considers that none of these changes should be made – which do not promote greater efficiency, but rather undermine security of contractual rights and thereby investment certainty for coal producers and other access holders. This is especially the case as Aurizon Network has excluded liability for itself from exercising a number of these powers.

8.3 Commercial imbalance

As in many other parts of the proposed UT framework (e.g. SUFA and Aurizon Network's proposed Study Funding Agreement), the commercial terms in the SAA lack balance and are not consistent with those that would be agreed in an efficient and contestable market.

Examples include:

- A reduction in the nominated monthly train services (said by Aurizon Network to be intended where payloads increase so that the same tonnage can be carried using less services) is only triggered *by Aurizon Network*, and not the access holder/end user.
- An end user is not able to dispute a number of important operational and commercial issues – including changes to train payloads.
- Aurizon Network appears to have a broad discretion to cancel train services (so that it is not obliged to reschedule – clause 19.2 and 19.3).
- There are broadened obligations on access holders to provide Aurizon Network with information to support its relinquishment of capacity.
- The set off (clauses 5.3 and 5.6), indemnity (clause 31.3) and consent (clause 44.6) provisions are not reciprocal.

8.4 Transparency and discrimination

RTCA refers again to its concerns about Aurizon Network's attempts in UT4 to create far wider scope for commercial differentiation in the terms and pricing of access between access holders.

This is reflected in the draft SAA by introducing a concept of "Train Service Type", which allows for different service types to be defined in the SAA Schedules.

RTCA reiterates that:

- setting a new standalone cost ceiling for individual service pricing based on DORC is inefficient, contentious, inconsistent, disruptive and out of step with regulatory practice – for no benefit to the market – see the discussion at 6.3 above; and
- given experience to date with the access condition process, permitting Aurizon Network to discriminate on the basis of commercial "risks" which Aurizon Network adopts under individual SAAs will almost certainly lead to discriminatory cost and risk shifting between Aurizon Network and its related operations and particular other access holders. If this approach were to be considered by the QCA (which RTCA submits denies), then all access agreements should be published and the terms and justification for any non-standard terms justified and made available to all other access holders. See generally the discussion at section 6.4 above.

8.5 Short term transfers

RTCA reiterates that amendments need to be made to the SAA to provide for a short term transfer mechanism as part of UT4. It is not possible for industry to develop "local solutions" to coal chain coordination and contractual alignment, unless this mechanism is in place. This is also critical if Aurizon Network also wishes to expand its ability to resume capacity on the basis of a failure by access holders to establish "supply chain rights".

While RTCA would be pleased to work with Aurizon Network to discuss the form of the mechanism, the approach used in the ARTC AHA (and set out at Annex B is offered as an appropriate model.

8.6 Interaction with UT4 and regulatory enforcement

Finally, as part of UT4, Aurizon Network has reorganised a number of the obligations which were previously reflected in both the undertaking and SAA.

RTCA notes that a number of the obligations that have been moved only to the SAA. While RTCA is not opposed to simplification of the documentation, where this is possible, it would be concerned if this had the effect of weakening the ability of the QCA to directly enforce these obligations or converting them from regulatory into strictly contractual obligations.

This would both place the onus on Access Holders to monitor and enforce these obligations, which is not a task for which they are well suited (given that they do not enjoy the QCA's expertise and statutory powers). Relying on individual access disputes or contractual disputes to resolve issues is also highly efficient, as they can only occur on a bilateral basis (this was one of a number of the problems with the structure of the negotiate-arbitrate model used in the telecommunications sector until 2011, as discussed at section 3.4 above). The QCA must be able to take steps to enforce obligations on behalf of the whole of industry under UT4.

At the least, UT4 must therefore include a clear statement that any obligations in a SAA or other ancillary documents (e.g. System Rules) take effect as part of UT4 and may be enforced on that basis by the QCA, without the need for any dispute to be raised.

RTCA Recommendation

The Standard Access Agreement proposed as part of UT4 requires significant amendment.

- Amendments propose by Aurizon Network that substantial erode certainty and security of access rights must be removed.
- A new short term transfer mechanism needs to be introduced modelled on the approach in the ARTC AHA (set out in Annex B) to enable coal producers to develop "local solutions" that improve contractual alignment and accountability.
- The QCA should not accept the attempt to define different "train services" in SAAs – with different price structures, and non-standard commercial "risk sharing" arrangements.
- The proposed SAA terms are commercially unreasonable, unbalanced and not consistent with those that would be struck in a workably competitive market.
- The QCA should ensure that any removal of obligations in UT4 does not limit the QCA's power to directly enforce obligations in the SAAs as a regulatory obligation.

RTCA supports and endorses the specific amendments proposed by the QRC to the SAA.

9 The proposed UT4 ring fencing, disputes and reporting arrangements should not be accepted

9.1 The proposed ring fencing arrangements are unacceptable

RTCA shares the concerns of the QRC that the 'simplified' ring fencing obligations in the proposed UT4 are inadequate:

- The Aurizon Group's increasing involvement in above rail projects, ports and non-regulated rail infrastructure (e.g. Surat Basin Railway and the Central Queensland Integrated Rail Project (**CQIRP**)) mean that Part 3 of UT4 must go beyond simplified ring-fencing and directly address the numerous actual or potential conflicts of interest that exist between Aurizon Network and its related companies;

- the risk of discrimination and conflicts of interest is magnified by moving key Aurizon Network functions (such as Engineering and Project Delivery and Specialised Track Services) out of Aurizon Network and in to a centralised function, shared with other unregulated parts of the business;

- it is contrary to the interests of access seekers and the public interest that Aurizon Network can structure the UT4 arrangements so as to benefit its own above rail and other unregulated businesses; and

RTCA submits that the QCA should require Aurizon Network to wholly rewrite Part 3 of UT4. RTCA therefore endorses the re-draft of the ring fencing and conflict of interest rules proposed by the QRC.

9.2 Aurizon Network's proposed dispute resolution framework requires significant amendment

RTCA adopts the submissions made by the QRC in relation to Aurizon Network's proposed dispute resolution framework.

RTCA also endorses the following proposed amendments to that framework in Part 11 of UT4:

- The reinstatement of the requirement under UT3 for all disputes to be referred in the first instance to the respective chief executives as this is commercially sensible and encourages the parties to resolve the Dispute without the need to resort to more formal dispute resolution mechanisms.

- The reinstatement of the requirement under UT3 for the parties to agree to refer a Dispute to mediation rather than allowing either party to unilaterally refer the Dispute as this undermines the value of the pre-mediation dispute resolution steps.

- The softening of the requirement to spend 4 months attempting to mediate a Dispute in the circumstances described by the QRC. For example, where one party fails to participate in the mediation in good faith, a Dispute should be able to be escalated prior the expiry of 4 months.

- The replacement of the currently proposed procedure for arbitration from UT4 with the procedure for arbitration established under the QCA Act in order to prevent any inconsistency and maintain the important role of QCA as arbitrator.

- The reinstatement of the requirement under UT3 that any costs imposed by the Safety Regulator be borne by the parties "in such proportion as the QCA determines".

- The removal of the prohibition on the QCA from making a determination that could prejudice the land or Rail Infrastructure tenure of Aurizon Network. RTCA concurs with the QRC that this prohibition is unreasonable as it is based on a mere possibility and no concession is made for any potential fault of Aurizon Network.

- The requirement that where a party unreasonably causes delay to a project or delays or frustrates the enforcement of a QCA Decision, that party be liable for the costs of such delay or frustration.

- Removal of the extensive list of considerations upon which a Decision of the QCA must be made in favour for a requirement for the QCA to make a Decision which is not inconsistent with the QCA Act, *Judicial Review Act 1991* (Qld) or any applicable common law rules of natural justice. The QRC considers this will provide increased certainty and prevent the risk of inconsistency with the established laws.

9.3 Aurizon Network's proposed reporting and auditing obligations require significant amendment

RTCA endorses the following amendments to the reporting and auditing framework proposed by the QRC:

- The reinstatement of the operational reporting regime contained in UT3 which obliges Aurizon Network to provide quarterly operational reports;

- The reinstatement of the ability for the QCA to publicly disclose "Below Rail" details of Access Agreements (subject to the exclusion of nominated confidential information) contained in UT3 as this is a significant mechanism for providing access seekers and access holders with confidence about non-discriminatory treatment by Aurizon Network;

- The inclusion of a requirement for the format of all reports required under UT4 to be approved by the QCA in advance;

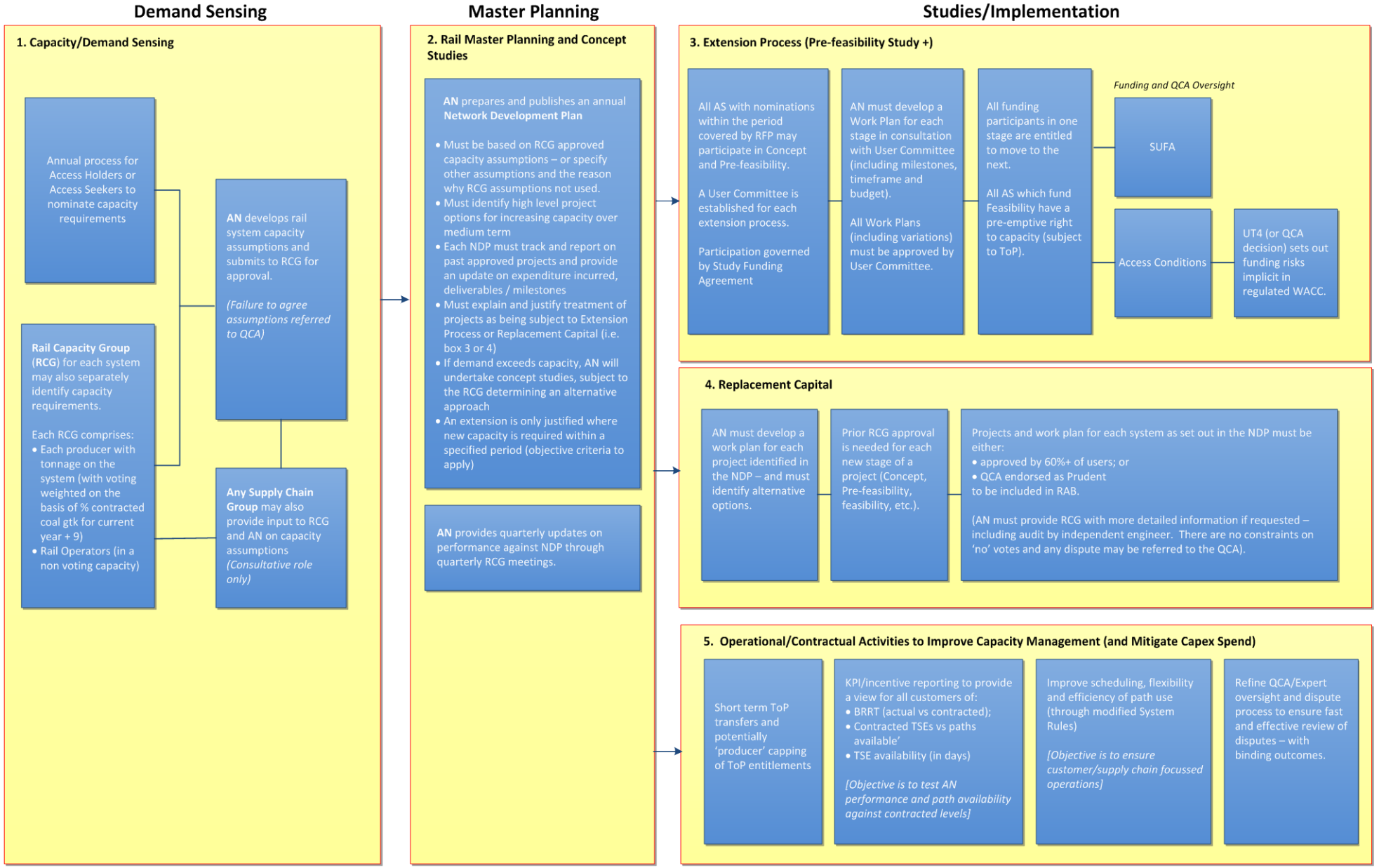
- The inclusion of a mandatory annual audit of Aurizon Network's reporting obligations under UT4 and a separate ability for the QCA to require an audit of those obligations as required;

- The inclusion of a mandatory annual audit of Aurizon Network's compliance with its ring fencing obligations under Part 3 of UT4 and a separate ability for the QCA to require an audit of those obligations as required;

- The ability for Aurizon Network to recover its costs of undertaking a compliance audit to be subject to QCA approval in order to ensure that Aurizon Network's cost recovery is reasonable in the circumstances; and

- The reinstatement of QCA involvement in the appointment of auditors. This is necessary to ensure impartiality, it is also desirable because the QCA has been involved in appointing auditors under rail undertakings in Queensland since 2001.

ANNEX A: A Capital planning and investment framework for the CQCN



ANNEX B: Short term transfers – extract of clauses 16.4, 16.5 and 16.6 of the indicative ARTC Access Holder Agreement (AHA)

16.4 Temporary trade of Path Usages

(a) (**Safe harbour trades**) An access holder ("**Former Access Holder**") may trade ("**Trade**") a Path Usage (for a period of less than 12 months) to a person who has an access holder agreement with ARTC ("**New Access Holder**") without ARTC's consent subject to the following conditions:

(i) the Former Access Holder, and New Access Holder must give ARTC at least three days' notice of the Trade;

(ii) the New Access Holder's load point for the traded Path Usage must be:

(A) closer to the Port of Newcastle than the Former Access Holder's load point; and

(B) within the same or a closer Pricing Zone as the Former Access Holder's load point;

(iii) the destination of the traded Path Usage when utilised by the New Access Holder will be the same destination had the traded Path Usage been utilised by the Former Access Holder. To avoid doubt, a discharge point of Kooragang Coal Terminal, Carrington Coal Terminal, the Newcastle Coal Infrastructure Group Terminal at Newcastle or any other export coal terminal at Newcastle will be considered the same destination;

(iv) the Former Access Holder and New Access Holder must provide evidence that the HVCCC accepts that the Trade will not have an adverse impact on Coal Chain Capacity and on the Capacity entitlements of other access holders (in the form of a recommendation made by the HVCCC) and each warrant that the Trade will not adversely impact Coal Chain Capacity and agree that ARTC is entitled to rely, and is under no obligation to review the accuracy of, this warranty;

(v) the New Access Holder must only use an Operator for a traded Path Usage who has an unconditional Operator Sub-Agreement with ARTC and endorsed by the New Access Holder;

(vi) the New Access Holder's nominated Operator must comply with the Service Assumptions relating to the Train Path;

(vii) the Former Access Holder and the New Access Holder have the same Allocation Period in the Contract Year the Trade takes place and the Trade is for an unconditional Base Path Usage of the Former Access Holder in that Contract Year; and

(viii) the New Access Holder must only use the Path Usage in the same Period the Path Usage was available for use by the Former Access Holder.

(b) For each Trade carried out in accordance with this clause 16.4:

(i) the Former Access Holder remains liable to ARTC for the TOP Charges for the traded Path Usage;

(ii) the New Access Holder will be liable for Non-TOP Charges relating to the traded Path Usage (but only to the extent of actual usage); and

(iii) to avoid doubt, the New Access Holder will not be liable for any Ad Hoc Charge when using the traded Path Usage.

(c) If the Access Holder is a Former Access Holder or a New Access Holder for a Trade, it agrees to be bound by the obligations listed above which apply to a Former Access Holder and to a New Access Holder respectively in relation to that Trade.

(d) (**Non-safe harbour trades**) If an Access Holder requests to Trade a Path Usage which does not meet the conditions in clause 16.4(a), subject to satisfying clause 16.4(a)(viii), ARTC:

(i) will not unreasonably refuse its consent if the HVCCC advises under clause 16.6(c), that the Trade will not have an impact on Coal Chain Capacity and the Capacity entitlements of other access holders and will, in the absence of such advice from the HVCCC be entitled to refuse consent;

(ii) will use reasonable endeavours to inform the HVCCC of its decision whether or not it approves a trade as soon as practicable;

(iii) in any case, must inform the HVCCC of its decision within two weeks of ARTC being notified of the Trade, or in such other period (which may not be more than two weeks) as notified by ARTC to all access holders and the HVCCC as a result of clause 16.8 or from time to time following consultation with the HVCCC by ARTC; and

(iv) may impose reasonable conditions on an approval of a Trade, including the period in which the Path Usage may be used.

(e) The entering into a Trade by the Access Holder will not abrogate, impair, release or extinguish any debt, obligation or liability of the Access Holder to ARTC under this agreement which may have accrued before entering into such Trade or which may accrue thereafter.

(f) If ARTC reasonably considers that either the Former Access Holder or New Access Holder has breached any of the conditions in clause 16.4(a) then it may immediately terminate the Trade and the rights and obligations for the relevant Path Usages will from termination revert to the Former Access Holder.

(g) ARTC will not be considered to have agreed that a Trade does not breach clause 16.4(a) because it does not object to a Trade at the time of being notified or any delay in terminating a Trade.

(h) If there is more than one Train Path Schedule or the Access Holder has more than one access agreement for the Network with ARTC, this clause 16.4 also applies to a Trade by the Access Holder of a Path Usage for one train path for use in relation to another train path of the Access Holder.

16.5 Treatment of traded Path Usages

(i) For the purposes of this agreement where a Path Usage has been the subject of a Trade under clause 16.4 of this agreement, the Former Access Holder will be deemed to have utilised the Path Usage traded to the New Access Holder in the Period in which it was available for use by the Former Access Holder, and the Path Usage the subject of the Trade:

(i) will not be counted towards the number of path usages actually used by the New Access Holder for the purposes of clause 5.4 of this agreement and clauses 2.3 and 2.4 of Schedule 2 of this agreement; and

(ii) will be treated as part of the Former Access Holder's base path usages.

(j) To avoid doubt, where a Path Usage is the subject of more than one Trade, the Path Usage will continue to be treated as part of the original Former Access Holder's base path usages and will not form part of the base path usages of any New Access Holder to who receives the traded Path Usage.

16.6 CTS Administrator and HVCCC

(k) The Access Holder may use the CTS Clearing House, in accordance with the procedures and functionality of the CTS Clearing House, to identify an access holder willing to participate in a Trade.

(l) In accordance with the timeframes in clause 16.4, ARTC will consider all Trades notified to ARTC by the CTS Administrator and will inform the CTS Administrator whether a Trade meets the requirements in clause 16.4(a) (and that explicit ARTC consent is therefore not required) and if ARTC consent is required under clause 16.4, whether ARTC consents to that Trade.

(m) In deciding whether consent should be given under clauses 16.3 or clause 16.4(d), ARTC will seek the advice of the HVCCC.

(n) ARTC will consider in good faith, and is entitled to rely on, the information provided by, and recommendations or opinions of, the HVCCC under clauses 16.4(a)(iv) and 16.6(c) as to the impact of the Trade on Coal Chain Capacity and the Capacity entitlements of access holders and has no Liability to access holders where it has relied on an HVCCC recommendation. ARTC will not be taken to be unreasonably withholding its consent or terminating a Trade where the HVCCC raises material objections to the assignment, novation or trade.

ANNEX C: ARTC Hunter Valley Access Undertaking industry consultation provisions

9 INDUSTRY CONSULTATION

INTRODUCTION

9.1 Overview

(o) If a Project to provide Additional Capacity is initiated under **section 8** and proceeds to concept assessment, ARTC will undertake industry consultation in relation to the Project in accordance with this **section 9**.

(p) ARTC may also use the industry consultation process to obtain endorsement for projects to the extent they do not involve Additional Capacity (for example asset replacement, cost reduction or safety related projects).

(q) The objectives of the consultation process are to:

(i) inform Hunter Valley Coal Chain participants of Additional Capacity requirements and investment strategies;

(ii) provide a process for Hunter Valley Coal Chain participant input, aimed at, among other things the alignment of projects to provide. Additional Capacity with projects to expand capacity at the coal terminals at the Port of Newcastle; and

(iii) provide a process for the applicable industry participants to participate in the development and management of projects and to endorse Capital Expenditure incurred by ARTC in providing Additional Capacity or incurred in relation to the Network as Prudent.

(r) The depth of analysis and documentation prepared at each stage of consultation will reflect the cost, benefits and risks of a project.

(s) The stages of consultation set out below will be followed in accordance with this **section 9** except where:

(i) ARTC considers that the process would unjustifiably compromise timely delivery of the project, and the RCG consents to a modified consultation process for that project; or

(ii) ARTC considers that a project is minor in its scope or cost in which case ARTC will consult on the group of minor projects rather than each minor project individually. A project would typically be considered minor in scope or cost if it relates to ongoing annual programmes for asset replacement rather than a project to deliver Additional Capacity and if a project does not relate to an ongoing annual programme for asset replacement, then ARTC may only consult on it as part of a group of minor projects with the consent of the RCG.

(t) Any endorsed costs incurred in complying with the provisions of this section 9 will normally be included in the RAB where a project is commissioned, or otherwise expensed in the year incurred.

(u) ARTC will use reasonable endeavours, to the extent within its control, to undertake the stages of consultation set out in **sections 9.3 to 9.7** below as HVAU ARTC Hunter Valley Coal Network Access Undertaking 23 June 2011 (as varied on [ ]) 64 applicable, having regard to the objective of delivering Capacity in line with demand as forecasted by the industry, or as sought by an Applicant.

9.2 The RCG

(v) ARTC will convene, and conduct, regular monthly meetings with the RCG for the purpose of consulting with applicable industry representatives and obtaining endorsement of Capital Expenditure associated with Additional Capacity or other Capital Expenditure on the Network. ARTC will prepare an agenda for meetings and provide a secretariat. ARTC may seek to consult or seek endorsement from the RCG outside of regular monthly meetings where ARTC considers this will assist project development and delivery.

(w) At the commencement of this Undertaking, the RCG will comprise the following membership (as selected by the relevant industry participants).
One representative of:

(i) each Access Holder who holds the largest volume of contracted coal gtkm in each Pricing Zone;

(ii) any other Access Holder with more than 7% of contracted coal gtkm on the Network who is not already eligible to appoint a representative under **sub-section (i)**;

(iii) all Access Holders with less than 7% of contracted coal gtkm on the Network and the Representative may split its vote according to the percentage of contracted coal gtkm held by each represented party if requested;

(iv) each Operator, in its capacity as an Operator, with more than 10% of contracted coal gtkm on the Network who is not an Access Holder with more than 10% of contracted coal gtkm on the Network (in a non-voting capacity); and

(v) the HVCCC (in a non-voting capacity).

(x) The composition of the RCG may change from time to time as agreed by ARTC and the current members of the RCG at the time. RCG members may, but do not have to be participants in the HVCCC.

(y) Only those RCG members who represent Access Holders will be entitled to vote and each RCG member will vote in accordance with the wishes of Access Holders that it is representing, or, where the Access Holder is an Operator, those Coal Customers on whose behalf the Access Rights are held.

(z) Subject to **sub-section (f)**, RCG member voting will be weighted on the basis of contracted coal gtkm for the current calendar year and the next nine calendar years, in the Pricing Zone in which a project is proposed to occur.

(aa) In determining voting entitlement, other than for the purposes of endorsing project assessment at **section 9.4(d)** and any stage beyond that, ARTC may, at its discretion, include any coal gtkm in the Pricing Zone which ARTC reasonably expects will become contracted coal gtkm, for the current calendar year or for any of the following nine calendar years, immediately following the completion of the proposed project. To avoid doubt ARTC may, in HVAU ARTC Hunter Valley Coal Network Access Undertaking 23 June 2011 (as varied on [ ]) 65 exercising this discretion,

determine that a prospective access holder which is not a current member of RCG has a voting entitlement.

(bb) The RCG will be involved at each stage of project development and will have the opportunity to endorse each stage before ARTC proceeds to the next stage.

(cc) ARTC may elect to continue to the next stage of project development without RCG endorsement. Where this occurs, ARTC may elect to seek endorsement of the expenditure from the ACCC in respect of project development and delivery to the extent not endorsed by the RCG. Expenditure incurred by ARTC on project development or delivery will be included in the RAB or expensed when incurred as endorsed by the ACCC. ARTC may seek the ACCC's endorsement in advance of, or subsequent to, incurring the expenditure.

PROJECT DEVELOPMENT STAGES

9.3 Concept assessment

(dd) Where ARTC prepares a Concept Assessment Report under **section 8**, it will use reasonable endeavours to ensure the report complies with **sub-section (b)** unless agreed otherwise with the RCG, HVCCC or an Applicant (as applicable).

(ee) The objective of the Concept Assessment Report will be to enable a preliminary assessment of the potential costs, benefits and risk involved and unless ARTC and the RCG, HVCCC or an Applicant (as applicable) agrees otherwise, will include an indicative assessment of:

(i) project objectives;

(ii) broad cost estimates and associated benefits;

(iii) preliminary financial analysis;

(iv) preliminary risk assessment; and

(v) indicative timeframes for the development and the delivery of the project.

(ff) At the time ARTC submits a Concept Assessment Report to the RCG, ARTC will advise whether it intends to fund the project feasibility stage of the project, subject to project feasibility being endorsed by the RCG.

(gg) ARTC may seek endorsement from the RCG to proceed to project feasibility. Endorsement to proceed to project feasibility would include:

(i) endorsement of any variation to the estimated costs endorsed under **section 8.2** or ARTC's costs of preparing the Concept Assessment Report for the HVCCC or an Applicant (as applicable), incurred in undertaking concept assessment; HVAU ARTC Hunter Valley Coal Network Access Undertaking 23 June 2011 (as varied on [ ])66

(ii) endorsement for ARTC's estimated costs and proposed timeframe to undertake project feasibility,

to be included in the RAB or expensed in the year incurred.

9.4 Project Feasibility

(hh) For each project endorsed at the concept assessment stage, ARTC will provide a project feasibility report to the RCG.

(ii) Unless ARTC and the RCG agree otherwise, the project feasibility report will include:

(i) confirmation of project objectives, including a preliminary functional specification;

(ii) brief outline of scope;

(iii) identification of estimated project costs (with a +/-20% range);

(iv) potential benefits, including capacity, maintenance and operating benefits;

(v) preliminary risk assessment;

(vi) preliminary project management plan, including initial estimate of timeline for milestones;

(vii) details of any variation to the budgeted costs to undertake Project Feasibility; and

(viii) outline of project assessment stage, including an estimate of budget.

(jj) At the time ARTC submits a project feasibility report to the RCG, ARTC will advise whether it intends to fund the project assessment stage of the project, subject to project assessment being endorsed by the RCG.

(kk) ARTC may seek formal endorsement from the RCG to proceed to project assessment. Endorsement to proceed to project assessment would include:

(i) endorsement of any variation to the estimated costs endorsed under **section 9.3(d)(ii)** incurred in undertaking project feasibility; and

(ii) endorsement for ARTC's estimated costs and proposed timeframe to undertake project assessment,

to be included in the RAB or expensed in the year incurred.

9.5 Project Assessment

(ll) For each project endorsed at the project feasibility stage, ARTC will provide a project assessment report for endorsement to the RCG.

(mm) Unless ARTC and the RCG agree otherwise, the project assessment report will include:

(i) project objectives report, including functional specification;

(ii) scope of work report, including:

(A) assessment of technical and operating requirements;

(B) developed concept design, with survey if required; and

(C) independent design verification if required;

(iii) project schedule including time tolerances and project budget with a+/-10% margin or a larger margin where appropriate for larger projects, an estimate of contingency supported by risk assessment, cost analysis, and basis for contingency;

(iv) financial evaluation, including estimated impact on access pricing;

(v) developed project management plan which may include:

(A) project configuration management plan;

(B) project delivery strategy;

(C) resource management plan;

(D) cost management plan;

(E) quality management plan;

(F) safety management plan;

(G) procurement management plan;

(H) interface management plan;

(I) scope and budget change management plan;

(J) environmental plan;

(K) project phases, milestones and deliverables;

(L) project risk assessment report; and

(M) regulators notification, if needed.

(nn) At the time ARTC submits a project assessment report to the RCG, ARTC will advise whether it intends to fund project procurement for the project, subject to project procurement being endorsed by the RCG.

(oo) ARTC may seek formal endorsement from the RCG to proceed to project procurement. Endorsement to proceed to project procurement would include any variation between the endorsed estimated cost range identified during project assessment and the project budget identified during project feasibility and:

(i) endorsement of any variation to the estimated costs endorsed under section 9.5(b)(iii) incurred in undertaking project assessment; and

(ii) endorsement of ARTC's estimated costs and proposed timeframe to comply with the provisions of project procurement, including costs incurred in obtaining independent expert determination as applicable,

to be included in the RAB or expensed in the year incurred.

9.6 Project implementation

(pp) Procurement

(i) ARTC may, at its discretion, commence procurement in parallel with project assessment, prior to endorsement to proceed to project implementation.

(ii) For each project endorsed at the project assessment stage, ARTC will undertake, through a tender process, alliance or internal evaluation, detailed confirmation of project scope and cost.

(iii) Where a cost outside of the range, or contingency endorsed in the project assessment stage is confirmed **("Cost Variation")** and/or there is a material variation from the project schedule **("Schedule Variation"**) under **section 9.4(b)(iii)**, ARTC will seek the endorsement of the RCG for those variations.

(iv) Where ARTC undertakes confirmation of scope, project timing and cost through an alliance or internal evaluation, the RCG may, at its cost, seek to review the scope, project timing and cost, having regard to all elements of the selected method of project delivery.

(v) If the RCG endorses the Cost Variation and/or Schedule Variation, ARTC will proceed with project implementation.

(vi) If the RCG endorses less than the Cost Variation, or does not endorse the Schedule Variation, ARTC may refer the matter to an agreed independent expert for a determination as to whether the Cost Variation is Prudent or whether the Schedule Variation is reasonable (having regard to whether it arose from a matter outside of ARTC's reasonable control or which could not have been reasonably anticipated by ARTC), in accordance with **section 9.6(d)**.

(vii) Upon the independent expert determining on the cost to be taken as Prudent in accordance with **sub-section (vi)** (which, to avoid doubt, must take into account any change in project schedule which the independent expert considers reasonable), then subject to **sub-section (viii)**, ARTC will proceed with project implementation regardless of whether the independent expert determines the full amount of the Cost Variation as Prudent.

(viii) If the independent expert determines the cost which is Prudent is less than the Cost Variation and/or the Schedule Variation is not reasonable, then ARTC may either:

(A) proceed with the project implementation by way of alliance or internal evaluation, at the costs determined by the independent expert as Prudent and in accordance with the project schedule determined by the independent expert; or

(B) proceed by way of an open competitive tender and undertake project implementation in accordance with the costs and project schedule determined as a result of that independent tender process.

(ix) Any cost of delay resulting from following this process will be deemed Prudent with respect to the project.

(qq) Project management plan

(i) ARTC will:

(A) finalise the project management plan developed during project assessment, including a contract management plan and operational readiness plan and provide the finalised project management plan and project schedule including time tolerances and project budget to the RCG for endorsement; and

(B) advise whether it intends to fund the project delivery stage of the project in accordance with the revised project budget and/or project schedule resulting from project procurement, subject to project delivery being endorsed by the RCG.

(ii) Endorsement of the finalised project management plan would include endorsement of the project budget and schedule for project delivery to be included in the RAB or expensed in the year incurred.

(rr) Project delivery

(i) ARTC will implement the finalised project management plan.

(ii) ARTC will provide progress reports to the RCG at RCG meetings, the nature and frequency of which will be agreed with the RCG. Unless ARTC and the RCG agree otherwise, a progress report will include:

(A) a report on the physical status of work commenced;

(B) an assessment of remaining time and required resources to complete the project;

(C) an assessment of expected resource availability;

(D) identification of any issues; and

(E) exceptions, where ARTC would advise the RCG that the project will deviate outside of its planned cost margins, as set out in the project budget, or outside of the planned timing tolerance margins, as set out in the project schedule, both included with the project assessment report to be provided under **section 9.5(a**).

(iii) Where a variation to the endorsed project budget or project schedule identified at **section 9.5(b)(iii)** including contingency, or an endorsed variation at **section 9.6(a)(iii)** or approved by an independent expert at **section 9.6(a)(viii),** arises the following will apply:

(A) ARTC will submit a revised project schedule and/or costing to the RCG for endorsement having regard to the prudency of the revised costing and the reasonableness of the revised project schedule but will continue with project delivery while a decision in respect of the endorsement is pending;

(B) the RCG may endorse all or part of the variation and where the RCG endorses all of the variation, ARTC will continue with project delivery;

(C) where the RCG endorses less than the full variation and/or endorses a different project schedule, ARTC may refer the matter to an agreed independent expert for review in accordance with **section 9.6(d).** ARTC will continue with project delivery while that expert determination is pending;

(D) the review of the independent expert will have regard to whether the variation is Prudent and/or whether the variation to the project schedule is reasonable and

arose from a matter outside of ARTC's reasonable control or which could not have been reasonably anticipated by ARTC;

(E) If the independent expert decides the full extent of the variation to be taken is Prudent and/or the variation to the project schedule is reasonable, ARTC will continue with project delivery;

(F) If the independent expert decides the full extent of the variation to be taken is not Prudent or the variation to the project schedule is not reasonable, ARTC may cease project delivery, or, having regard to the findings of the independent expert, propose a variation to the RCG in accordance with **section 9.6(c)(iii)(A**); and

(G) Any cost incurred by ARTC in complying with this subsection including any cost of delay resulting from following this process will be deemed Prudent with respect to the project. To avoid doubt, any expenditure incurred by ARTC in continuing a project pending endorsement by the RCG or an independent expert, will be deemed Prudent with respect to the project.

(ss) Independent expert review

(i) Unless the parties agree otherwise, where ARTC refers a matter to an agreed independent expert under **section 9.6(a)(vi)** or **section 9.6(c)(iii)(C),** the independent expert will:

(A) if the parties are unable to agree on the appointment of an independent expert within 10 Business Days of the matter being referred to expert determination, be appointed by the President of the Institute of Arbitrators and Mediators Australia **("IAMA")**;

(B) act as an expert and not an arbitrator;

(C) proceed as quickly as possible and consistent with a fair and proper assessment of the matter;

(D) observe the rules of natural justice but will not be required to observe the rules of evidence;

(E) while having the right to decide on the form of presentations, encourage a written presentation by each party to be exchanged with the other party, with the opportunity for each party to respond to the other party's presentation; and

(F) have regard to the principles, methodologies and provisions set out in the Undertaking.

(ii) The finding of the independent expert will be final and binding on the parties subject to any rights of review by a court of law.

(tt) Commissioning

(i) ARTC will commission the project into operation upon completion of project delivery.

(ii) If the project has a delivery time frame of more than 12 months, and the RCG consents to a staged delivery of the project, upon completion of any stage, any capital expenditure and interest cost incurred during construction associated with that stage will be deemed Prudent at the date of completion of that stage.

(iii) If a project is commissioned after the latest of:

(A) the project delivery date set out in the project schedule at **section 9.5(b)(iii)** finalised and provided as part of the project management plan under **section 9.6(c)(iii)(C)**;

(B) if a new project schedule has been endorsed by the RCG under **section 9.6(c)(iii)(B)**, the project delivery date set out in that endorsed project schedule; and

(C) if a new project schedule has been determined by an independent expert under **section 9.6(c)(iii)(C)**, the project delivery date set out in that project schedule, then, any interest incurred in respect of construction during the period between the (new) project delivery date and the project actual commissioning date will not be deemed Prudent.

9.7 Project close-out

(uu) Upon completion of project implementation, ARTC will provide a project close-out report for the RCG. Unless ARTC and the RCG agree otherwise, a project close-out report will include:

(i) formal acceptance of works;

(ii) outstanding works and if necessary a completion plan;

(iii) cost report; and

(iv) verification of benefits delivered.

(vv) Any Capital Expenditure incurred by ARTC in providing Additional Capacity that is within the cost range, including any contingency endorsed at the project assessment stage, or endorsed by the RCG or determined by the independent expert at the project implementation stage, will be taken as Prudent.

9.8 Endorsement of project development stages

(ww) Where Additional Capacity is provided in relation to a particular Pricing Zone, the endorsement of coal producers that hold Coal Access Rights under an Access Holder Agreement and any coal gtkm included under **clause 9.2(f),** either directly or through RCG representatives, with over 50% of contracted coal gtkm in that Pricing Zone will constitute endorsement by the RCG of that stage of project development.

(xx) Where Additional Capacity (delivered by way of a single project or series of projects) is provided in relation to a particular Pricing Zone, and that Additional Capacity results in an increase in the Indicative Access Charge for that Pricing Zone by more than 10%, the endorsement of Coal Customers that hold Coal Access Rights under an Access Holder Agreement and any coal gtkm included under clause 9.2(f), either directly or through RCG representatives, with over 70% of contracted coal gtkm in that Pricing Zone will constitute endorsement by the RCG of that stage of project development.

(yy) To avoid doubt, **sub-section (a)** will apply if a Contributor agrees to fund Additional Capacity such that the increase in the Indicative Access Charge for that Pricing Zone is equal to or less than 10%.

ANNEX D: ARTC 2013 Hunter Valley Corridor Capacity Strategy

See attached.

2013-2022 Hunter Valley Corridor Capacity Strategy

ARTC

June 2013

2013-2022 Hunter Valley Corridor Capacity Strategy

June 2013

Contents

Photography Credits

Pages 1, 24 & 28 - Henry Owen | Pages 9 &37 - Peter Reading | Pages 11 & 30 - Lionel Camilleri | Page 12 & 31 - Michelle Delaney| Page 33 - Mark Woodhead

1

Introduction

On 5 September 2004, the Australian Rail Track Corporation (ARTC) commenced a 60-year lease of the interstate and Hunter Valley rail lines in New South Wales.

ARTC had previously controlled the interstate rail network within the area bounded by Albury on the NSW/ Victoria border, Kalgoorlie in Western Australia and Broken Hill in western NSW. The commencement of the NSW lease consolidated control of most of the interstate rail network under ARTC.

In early 2005, ARTC began to release annual Hunter Valley infrastructure enhancement strategies setting out how ARTC planned to ensure that rail corridor capacity in the Hunter Valley would stay ahead of coal demand.

This 2013—2022 Hunter Valley Corridor Capacity Strategy is the seventh of these annual strategies. It updates the 2012 - 2021 Hunter Valley Corridor Capacity Strategy (2012 Strategy).

In common with the earlier strategies, it identifies the future constraints on the coal network's capacity in the Hunter Valley, the options to resolve these constraints and a proposed course of action to achieve increased coal throughput.

The fundamental approach of ARTC in developing this Strategy has been to provide sufficient capacity to meet contracted volumes based on the principles of the ARTC Hunter Valley Access Undertaking (HVAU), while also having regard to and identifying those projects that would be desirable to accommodate prospective volumes that have not yet been the subject of a contractual commitment. In particular, this Strategy identifies a preliminary scope of work to accommodate prospective volumes for 2016 and beyond that would require the proposed Terminal 4 (T4) on Kooragang Island or other terminal capacity expansion.

Over the past year there has been a notable decline in the price of coal, which in turn has impacted future volume expectations. At the same time, ARTC has completed a number of major projects. There has also been a notable increase in average train size, which facilitates volume increases without additional track infrastructure. As a result, the scale of work in this Strategy is notably lower than in recent years.

It is important to note that the whole Hunter Valley coal supply chain is interlinked. The stockpiling and loading capability of the mines affects the trains required, the train numbers affect the rail infrastructure and so on. The capacity and performance of the system is entirely interlinked and the capacity of the rail network needs to be considered in that context.

In determining capacity ARTC makes certain assumptions which are generally covered in this Strategy. The delivery of throughput to align to capacity can be impacted by a range of performance issues across the supply chain. While some of these performance issues are covered in this document, it is not the key purpose of the Strategy.

Volume Forecasts

The move to the new Hunter Valley contractual arrangements within the framework of the Hunter Valley Access Undertaking occurred over late 2011 and early 2012 and has provided greater certainty over volume forecasts.

Currently contracted export coal volumes are around 158 mtpa in 2013 and may be as high as 188 mtpa in 2014 and 197 mtpa in 2015 where they approximately stabilize until increasing to around 204 mtpa in 2018 and 206 mtpa in 2019. Forward contract volumes are in part conditional on ARTC projects and HVCCC Coal Chain Capacity assessment.

During 2012 it became apparent that due to system-wide congestion issues it would not be possible for the coal chain to handle the conditional volumes of coal contracted by producers for 2013, but that at the same time delays in mine project developments and demand conditions were leading some producers to prefer to defer increments of

growth. In late 2012, ARTC offered producers the opportunity to provide revised 2013 volumes with the result that actual unconditional contracted volume for 2013 is approximately 22 m tonnes lower than contracted at the time of the 2012 Strategy.

For 2014 ARTC intends to work through a similar process. This is discussed in more detail in section 6.

In addition to contracted volumes, ARTC, in consultation with the Hunter Valley Coal Chain Coordinator (HVCCC), has identified new and existing mines that producers have plans to develop in the medium term. These projects have not proceeded to a stage where producers would want to commit to take-or-pay contracts, but to ensure that ARTC is able to plan appropriately for future growth are considered in this Strategy as a prospective volume scenario.

Under the provisions of the Hunter Valley Access Undertaking it is a matter for the Rail Capacity Group (RCG) to determine the prospective volumes that are to be used for the purposes of this Strategy. The RCG comprises representatives of the coal producers, along with HVCCC and rail operators. At the March meeting the RCG was given two options for prospective volumes to consider based on different views as to the timeframe over which T4

Figure 1 - The general location of the Hunter Valley network on the east coast of Australia.

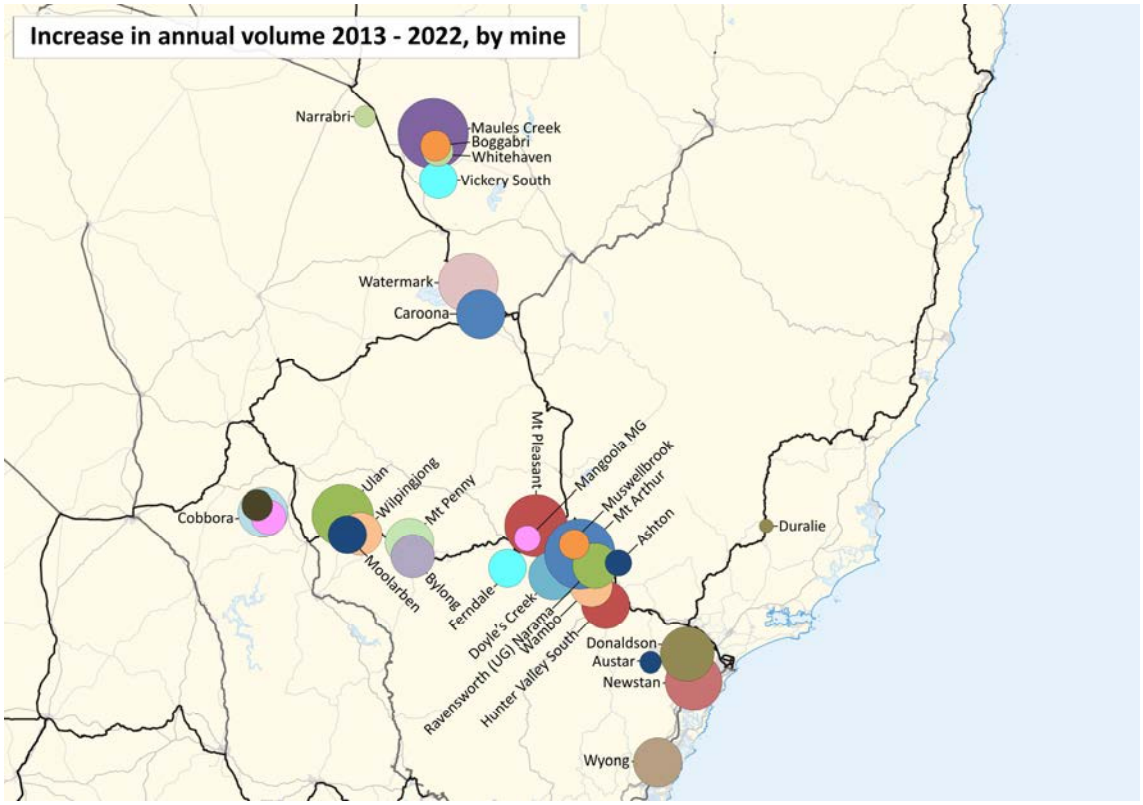


Figure 2 - Volume forecasts by mine, contracted plus prospective. Note that growth is represented by circle width, not by area.

might be developed. The RCG elected to adopt a relatively early ramp up to a T4 capacity of 70 mtpa. Under this scenario prospective volume had been estimated at around 10 mtpa in 2015, 13 mtpa in 2016, 17 mtpa in 2017, 41 mtpa in 2018, 58 mtpa in 2019 and stabilizing at 71 mtpa in 2020. This is consistent with a T4 scenario that provides for two dump stations to be developed with a progressive ramp up of volume from Q4 2017 to Q4 2019.

PWCS has subsequently announced that the T4 project has been deferred. This is discussed in detail later in the Strategy.

Traffic Patterns

All but a very small proportion of the export coal shipped through Newcastle is transported by rail for shipping from Carrington (Port Waratah), or one of the two terminals on Kooragang Island.

Most of this coal comes from a series of mines and coal loaders strung out along the Hunter Valley, conveyed to the terminals on the railway that runs between Muswellbrook and Newcastle. Coal also feeds onto this line from Ulan and the Gunnedah basin, west and northwest of Muswellbrook respectively, and, much closer to the terminal, from Stratford, Pelton and the southern suburbs of Newcastle (Figure 1).

Domestic coal is also transported over the same network. This sector has grown rapidly in recent years, especially on the Ulan and Upper Hunter lines, though it has recently stabilised. The largest volume is for Macquarie Generation at Antiene, which receives significant volumes of coal originating from mines on the Ulan line.

Export coal also arrives at the terminal from the Newstan and Teralba mines to the south of Newcastle, and in recent times from mines in the Lithgow area. This traffic operates on the RailCorp network as far as Broadmeadow. There are no identified capacity issues for this coal on the short section of the ARTC network which traverses outside the port areas, and accordingly this strategy does not discuss the network between the port terminals and Sydney.

The Hunter Valley coal network consists of a dedicated double track 'coal line' between Port Waratah and Maitland, a shared double track line (with increasingly significant stretches of third track) from Maitland to Muswellbrook, and a shared single track with passing loops from that point north and west.

The heaviest coal volumes are at the lower end of the Hunter Valley, but the expected growth in coal mining along the Ulan line and in the Gunnedah basin is producing high rates of growth in percentage terms (Figure 2 and Figure 3[1]), necessitating a strong focus in this Strategy on the single track sections of the network.

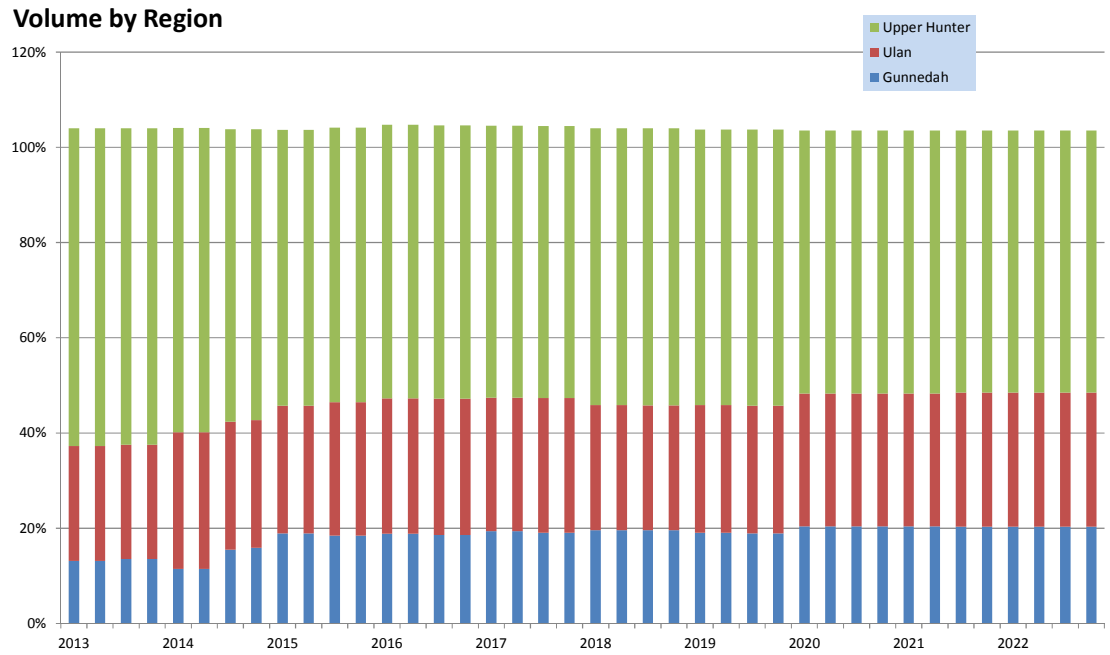


Figure 3 - Percentage of Trains by Sub-Network by Year, including prospective volume.

Operations

Most of the Hunter Valley coal network is capable of handling rolling stock with 30 tonne axle loadings (i.e. 120 gross tonne wagons), but the corridor from Dartbrook Junction (near Muswellbrook) to the Gunnedah Basin is currently only rated for 25 tonne axle loads (100 tonne wagons).

Weighted average coal capacity per train averaged 7,139[2] net tonnes in 2012. This compares to a figure of approximately 6,932 net tonnes in 2011. For the 2013 year to date, average train weight is 7,729 net tonnes, which aligns very closely to the average net capacity estimated from contracted train sizes (see table 3).

At the 2013 Hunter Valley system capacity declared by the HVCCC, an average of around 51 loaded trains need to be operated each day, or one train every 28 minutes. This is a material decline in train frequency since 2012, reflecting an HVCCC declared inbound throughput similar to 2012 but with a larger average train size.

Train lengths vary from around 1,250 metres to 1,565 metres, apart from the approximately 600 metre trains servicing the Austar mine.

Trains made up of '120 tonne' wagons are generally restricted to 60 km/h loaded and 80 km/h empty, while '100 tonne wagon' coal trains are allowed to travel at 80 km/h. Because most of the coal trains are '120 tonne wagon' trains, the coal network tends to be limited to a planned maximum speed of 60 km/h in the loaded direction and 80 km/h in the empty direction.

There are four above-rail operators in the Hunter Valley coal business: Pacific National (PN); Aurizon (formerly QR National); Freightliner (as the operator in a joint venture with Xstrata) and; Southern Shorthaul Railroad (SSR).

How this Strategy has been developed

The development of this 2013—2022 Hunter Valley Corridor Capacity Strategy fully retains the methodology of the 2012 Strategy.

In accordance with the ARTC Hunter Valley Access Undertaking, ARTC has taken a number of formal consultation steps to develop this draft Strategy. Specifically:

- The RCG, which is the official approval body representing miners under the Undertaking, has selected the prospective volume assumptions required to be used as the basis for the development of the Strategy.
- Consultation has been undertaken with PWCS and NCIG on the terminal capacity assumptions.
- Formal additional consultation has been undertaken with the HVCCC on system issues.

1. Note total train numbers in figure 3 are calculated as trains from each of the three zones as a proportion of all trains arriving at the port. The total number of trains exceeds 100% due to domestic coal.
2. Note that the average is calculated on trains arriving at the Port. As the 100 tonne wagons generally travel further, they make fewer cycles and hence have a lower weighting in the calculation of the average than if a straight arithmetic average of train size was calculated.

This document is released as a draft Strategy for consultation and a final version will also be released prior to 30 June 2013 having regard to stakeholder feedback.

In common with the previous Strategies, coal capacity is analysed using a set of principles for the practical utilisation of track. Capacity is calculated using headways. On single track the headway is defined as the time the front of a train enters a section between loops until the time that the rear of the train clears the turnout for the loop at the other end of the section. The longest headway between two loops on a section of track defines the capacity limit for that section. This is then adjusted to reflect practical rather than theoretical capacity using an adjustment factor of 65%. On double-track, the headways are calculated on the basis of a 'double-green' principle. Under this principle both the next signal and the one after are at green, meaning that the driver will never see a yellow signal. This ensures that drivers should always be able to drive at full line speed.

On single track there is also a transaction time applied to recognise the time incurred by trains executing a cross, specifically signal clearance time, driver reaction time, acceleration and delays to the through train when it approaches the loop before the train taking the loop has fully cleared the mainline. Simultaneous entry loops and passing lanes reduce this transaction time by reducing both the probability and time delay from both trains arriving at the loop at around the same time. This Strategy has adopted a transaction time of 5 minutes for a standard crossing loop, 4 minutes where a simultaneous entry loop is involved and 3 minutes where a passing lane is involved.

After removing capacity lost to background (ie non-coal) trains, saleable paths are calculated as a percentage of practical coal paths. This adjustment covers maintenance, cancellations and a buffer.

With the approval of the Hunter Valley Access Undertaking, the buffer has been formalised in the form of the Target Monthly Tolerance Cap (TMTC). The RCG stated preference is for a 10% TMTC, but due to the lead time for projects it is only feasible to apply this factor from 2015, as shown in Table 1.

The consequent calculation of the adjustment factor, based on cancellation and maintenance loss assumptions as determined by the HVCCC for 2013, is shown in Table 2. Note that the adjustments are cumulative (that is, sequentially multiplied) rather than additive.

To the extent that cancellation or maintenance loss assumptions change in future years it will flow through to the required adjustment factor, which in turn may trigger the addition or deletion of projects.

The adjustment factor of 67.8% used from 2015 in this Strategy compares to a value of 69.7% used in the 2012 Strategy. This has the effect of bringing some projects forward and increasing the total scope of work compared to what would otherwise be the case.

Terminal Capacity

Critical to the volume forecasts is Terminal capacity.

ARTC's understanding of port capacity is that as from the full availability of KCT Dump Station 4 (DS4) in around August 2013 overall port capacity is nominally 195 mtpa. NCIG stage 2F is expected to be complete in 2014 and will lift capacity to 208 mtpa.

Growth beyond 208 mtpa had been expected to be met by the PWCS development of Terminal 4 (T4). Development of T4 had been triggered by producers entering into contracts for the threshold volumes required to initiate the project and this was reflected in the 2012 Strategy.

Since the 2012 Strategy was released market conditions and delayed mine projects have resulted in a number of miners scaling back their expansion plans. On 2 May 2013, PWCS announced that through a contractual handback process the requirement for Terminal 4 (T4) had been untriggered. As a result it does not intend to proceed to construction at this stage, though it will continue to

Year	1	2	3	4	5	6	7	8	9	10
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Pricing Zone 1	≈6.5%	≈6.5%	10%	10%	10%	10%	10%	10%	10%	10%
Pricing Zone 2	≈6.5%	≈6.5%	10%	10%	10%	10%	10%	10%	10%	10%
Pricing Zone 3	≈5.5%	≈5.5%	10%	10%	10%	10%	10%	10%	10%	10%

Table 1 - Target Monthly Tolerance Cap

Adjustment factor calculation	With TMTC at 5.5%	With TMTC at 6.5%	With TMTC at 10.0%
Cancellations	16.4%	16.4%	16.4%
Maintenance	15.2%	15.2%	15.2%
TMTC	5.5%	6.5%	10.0%
Adjustment Factor	**70.7%**	**70.0%**	**67.8%**

Table 2 - Adjustment Factor

pursue the environmental approvals for the project to ensure that it can be developed to a faster timeframe in the event that coal demand again indicates that it should be built.

For the purposes of this Strategy, the RCG selected a volume scenario that would align with T4 being delivered with the first two dump stations in a single stage to give a throughput of 70 mtpa, with first coal in Q4 2017 and full throughput reached over a two year ramp-up.

While this scenario is unlikely to eventuate, the Strategy is still required under the terms of the HVAU to be based on the RCG endorsed volumes. This does provide a useful indication of the scale of work required to achieve particular volume outcomes and is useful in guiding future decision making.

The relationship between contractual volumes, prospective volumes as determined by the RCG, and terminal capacity, is shown in Figure 4.

HVCCC Master Planning

The HVCCC is responsible for the co-ordination of coal chain planning on both a day-to-day and long term basis. It is continuously developing a Hunter Valley Master Plan that deals with the optimisation of capacity enhancements across all elements of the coal chain with a view to providing an integrated planning road map for all elements of the logistics chain.

ARTC is strongly supportive of this master planning process. It sees this Hunter Valley Strategy as both needing to provide the supporting rail infrastructure analysis for the master planning process, and to respond to the investment options identified in the master plan.

Continuous Review

ARTC is continuously analysing and reviewing the available options to ensure that the value for money of projects is optimised. This process continues right up to the commencement of construction.

As such, this strategy only represents a snapshot in time. Although the formal written strategy is only produced annually, in practice it is regularly reviewed internally to reflect the best available information and analysis.

Project Costs

This document is a strategy document and the indicative project costs are generally orders of magnitude only unless a project is in or close to construction. Costs are not ARTC's anticipated outturn costs as there are too many unknowns at the strategy phase to attach any reliability to the estimates. Scope and construction conditions are progressively better defined until a project cost is established for approval by the industry in accordance with the HVAU.

Capacity Shortfalls

For 2013 the HVCCC determined a declared inbound throughput that fell short of contracted volumes. The primary constraint on throughput was the HVCCC assessment of 'track system capacity'. Track system capacity covers loadpoint and terminal discharge capacity and above rail operations including scheduling, as well as the capability of the ARTC network, having regard to the projected daily demand profile and utilisation peaks.

As part of the process to agree a way forward on 2013 volumes, ARTC undertook a review of contracted volumes

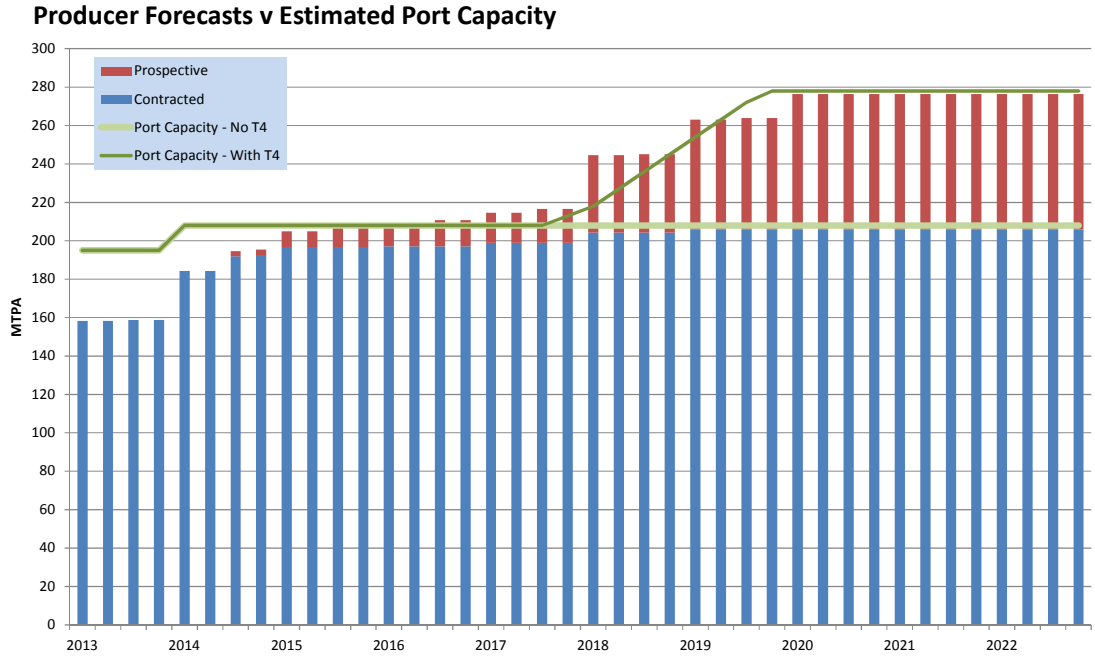


Figure 4 - Forecast volume at Newcastle Port compared to estimated port capacity (mtpa)

with producers which resulted in some producers aligning contracts with expected increments of growth. ARTC also engaged closely with the HVCCC and industry to help identify short-term initiatives that would assist with throughput. ARTC committed to and has implemented all of the initiatives that were identified as within its control and which would make a positive contribution to throughput.

The review of forward volumes referenced above was focussed primarily on 2013 and ARTC has initiated a similar process for 2014 following the completion of the PWCS contracts review. Specifically, ARTC is engaging with industry in order to review 2014 growth increments to help determine likely actual demand. Concurrent with this review ARTC continues to work with the HVCCC to;

- Understand and determine the impact of congestion on the Hunter Valley Coal Chain given likely demand scenarios and the timing of delivery of projects identified to address congestion, and
- Identify and progress further operational improvements to maximise throughput.

Based on the above it is expected that ARTC, with the input of HVCCC, will be in a position to have resolution around final volume positions for 2014 and future years in the third quarter of this year.

Operational Initiatives

While this Strategy principally focuses on infrastructure upgrades, ARTC supports industry initiatives to deliver operational efficiencies. ARTC is driving or supportive of the following important initiatives within the Hunter Valley:

- The continued support & involvement in the Live Run Implementation Team establishment as proposed by the Live Run Management Group Steering Committee.
- Continued regular forums with rail operators, to jointly consider improvements to operational performance.
- Consideration jointly with the HVCCC of a potential train parkup strategy to provide for efficient management of excess rollingstock at lower demand periods.
- Revised corridor shutdown program reducing the need for short mid-week possessions.
- Continued assessment of maintenance practices to reduce the need for track based inspections and physical maintenance interventions.
- Completion of the review as required under clause 5.8 of the Hunter Valley Access Undertaking to assess incentive mechanisms to minimise coal chain capacity losses.
- Development of train staging and storage initiatives during close-down possessions.

Network Control Optimisation

During 2008 ARTC completed the implementation of new train control systems and automated signalling systems during the Train Control Consolidation Project (TCC). Under the project all 28 of the 19th century manually operated signal boxes within NSW were fully automated to Phoenix train control system technology and consolidated to ARTC's two Train Control Centres, Network Control Centre North (NCCN) at Broadmeadow and Network Control Centre South (NCCS) at Junee. This project realised significant operational gains, both in improved train transit times through the use of technology in addition to reduced budget

expenditure. More recently ARTC is nearing finalisation of the Advanced Train Management System (ATMS) safety case and is in the process of evaluating the potential for its implementation within the Hunter Valley.

The industry is acutely aware there are inherent inefficiencies within an integrated system such as the Hunter Valley Coal Chain when there is not transparent real time access to information which could enhance the decision making capability of both ARTC and our customers. This is exemplified by the introduction of the Hunter Valley Live Run Integration Team which consists of above and below rail service providers to overcome some of these issues.

The existing complexity of the system and the expected increase in volumes requires tools which enable informed decisions to be made in a live run environment that are based on accurate and timely information. ARTC believes there is a strong case for the introduction of a suite of technological solutions to enhance decision making and reduce variability within the chain. Primarily these systems will allow real time data feeds across organisations inclusive of train forecast times which are deduced using live information, and provide the capacity to manage disruption through optimised scenario modelling.

In addition to reducing the future requirement for further investment in additional Network Control workstations and associated personnel costs these systems would also allow for detailed analysis of network performance to enhance the coal chain's capacity to identify areas in which operational improvement can be made and offset potential infrastructure investment.

ARTC intends to move forward with investigation of options for the delivery of such a system and will involve HVCCC and other service providers in the project as appropriate. Key Inclusions expected in the system are:

- Train Monitoring & Planning
- Live Run Disruption Management & Scenario Modelling
- Reporting
- Trackwork Possession Management

Advanced Train Management System (ATMS)

ARTC's ATMS project has completed the proof of concept stage, and is now moving into a field trial phase to demonstrate the functionality of the system in a live environment.

ARTC has previously identified that there exists a commercial case for roll-out of the ATMS system in the Hunter Valley, where the capabilities of the system may both allow some projects to be deferred, and reduce the construction cost of others.

Previously the concern was that ATMS may not be available for roll-out in a timeframe that would precede the growth associated with T4. With the deferral of the T4 project, ATMS is still likely to be a highly desirable initiative, however, in this environment it means that more of the commercial justification needs to come from the system performance benefits that are harder to quantify than direct cost savings.

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Narrabri - Boggabri	6,027	6,027	7,634	7,634	7,634	7,634	7,634	7,634	7,634	7,634
Boggabri - Gunnedah	6,027	6,027	7,634	7,634	7,634	7,634	7,634	7,634	7,634	7,634
Gunnedah - Watermark	6,027	6,027	7,634	7,634	7,634	7,634	7,634	7,634	7,634	7,634
Watermark - Caroona	6,027	6,027	7,634	7,634	7,634	7,634	7,634	7,634	7,634	7,634
Caroona - Werris Creek	6,027	6,027	7,634	7,634	7,634	7,634	7,634	7,634	7,634	7,634
Werris Creek - Muswellbrook	5,897	6,027	7,634	7,634	7,634	7,634	7,634	7,634	7,634	7,634
Cobbora - Ulan	-	-	-	-	-	-	-	-	-	-
Ulan - Moolarben	9,016	9,016	9,016	9,016	9,016	9,016	9,016	9,016	9,016	9,016
Moolarben - Wilpingjong	8,404	8,600	8,519	8,519	8,519	8,519	8,519	8,519	8,519	8,519
Wilpingjong - Bylong	8,253	8,412	8,374	8,374	8,374	8,365	8,365	8,365	8,365	8,365
Bylong - Ferndale	8,253	8,412	8,374	8,374	8,374	8,365	8,365	8,365	8,365	8,365
Ferndale - Mangoola	8,253	8,412	8,374	8,374	8,374	8,365	8,365	8,365	8,365	8,365
Mangoola - Mt Pleasant	8,450	8,501	8,463	8,463	8,463	8,454	8,454	8,454	8,454	8,454
Mt Pleasant - Bengalla	8,450	8,463	8,434	8,434	8,434	8,427	8,427	8,427	8,427	8,427
Bengalla - Muswellbrook	8,415	8,435	8,412	8,412	8,412	8,406	8,406	8,406	8,406	8,406
Muswellbrook - Antiene	7,526	7,749	8,163	8,163	8,163	8,161	8,161	8,161	8,161	8,161
Antiene - Drayton	7,526	7,749	8,163	8,163	8,163	8,161	8,161	8,161	8,161	8,161
Drayton - Newdell	7,753	7,894	8,236	8,236	8,236	8,234	8,234	8,234	8,234	8,234
Newdell - Mt Owen	7,785	7,901	8,161	8,161	8,163	8,164	8,165	8,165	8,165	8,165
Mt Owen - Camberwell	7,873	7,970	8,211	8,211	8,212	8,212	8,213	8,213	8,213	8,213
Camberwell - Whittingham	7,839	7,936	8,168	8,168	8,169	8,170	8,172	8,172	8,172	8,172
Whittingham - Maitland	7,953	8,028	8,212	8,212	8,212	8,207	8,208	8,208	8,208	8,208
Maitland - Bloomfield	7,719	7,741	7,995	7,995	7,997	7,998	8,001	8,001	8,001	8,001
Bloomfield - Sandgate	7,729	7,749	8,000	8,000	8,002	8,003	8,005	8,005	8,005	8,005
Kooraganag / Carrington	7,747	7,766	8,009	8,008	8,011	8,011	8,013	8,013	8,013	8,013

Table 3 - Assumed Average Train Capacity under Contracted Volumes (tonnes)

This Strategy focuses on the scope of work required for prospective volumes under a 'without ATMS' scenario. However, section 7 also provides an indication of changes to scope that would occur if ATMS was adopted.

The 2012 Strategy identified a likely need to make a decision on ATMS by late 2012. With the changes in the HV environment and a separate initiative by ARTC to move ATMS into the field trial phase, this decision has been able to be deferred.

ARTC has developed an initial analysis of the commercial benefit of ATMS in the Hunter Valley which considers the reduced scope of work from implementing ATMS, as well as identifying the other consequential benefits from adoption of the technology. This needs to be extended to consider its impact on system performance and to this end ARTC is proposing a formal engagement with the HVCCC and others to consider ways to model system capacity incorporating ATMS.

Other Assumptions and Qualifications

The following additional qualifications apply to the analysis and proposals in this Strategy:

- Estimates of the numbers of trains required to carry the forecast coal tonnages are generally based on train consists nominated by producers under the contracting process. Assumed average train capacity by section by year is shown in Table 3. Average train size has increased significantly in the last year and this is also reflected in the estimated train sizes going forward. It should be noted that for the Gunnedah basin it has been assumed that 30 tonne axle loads will apply from Q1 2015 even though no final decision has been made.
- Trains are, on average, loaded to 98% of their theoretical capacity.
- It is assumed that track closures for maintenance purposes will consume the same relative proportion of capacity as at present. That is, it is assumed that the same amount of maintenance time is required. As paths become more closely spaced this will increase the absolute number of paths lost but the percentage of paths lost will remain constant.
- The capacity gains referred to in this Strategy take no account of the capabilities of loading and unloading interfaces, including the capabilities of private rail sidings and loops. In other words, at the conclusion of each project the identified rail capacity will be available, but this does not necessarily mean the coal supply chain will be able to make use of this capacity at that stage. This broader capacity analysis is undertaken by the HVCCC.
- Infrastructure is treated as being available for a quarter if it is projected to be available by the end of the first month of the quarter. If it is not expected to be available until later than the first month of the quarter it is treated as being available in the following quarter. For example, if a project is projected to be completed by 30 April, it is treated as being available for the second quarter. If it will not be competed until 1 May it would be treated as being available for the third quarter.
- It is assumed that a flyover for access to the NCIG facility will be constructed as part of Stage 2F of the development in accordance with its planning approvals.

2

What has changed between the last strategy and this one

This section summarises the key methodology, assumption and outcome changes between the 2012 Strategy and this 2013 Strategy to allow ready comparison between the two.

Volume forecasts

Volume forecasts have been updated based on contracted volumes. This Strategy maintains the distinction between those volumes that are subject to a binding contract and those that are associated with projects that are moving forward but not yet at a stage where producers wish to commit to a contract. The latter category is referred to as prospective volumes.

Figures 5 to 8 compare the forecast volumes from the 2012 Strategy with the forecasts used for this Strategy. A comparison is made at the terminal, at Muswellbrook, for the Bylong – Mangoola section (which is the majority of the Ulan line), and Werris Creek – Muswellbrook (which is representative of most of the Gunnedah basin line).

Capacity Calculation Inputs

As outlined in Chapter 1, the capacity calculation methodology uses the industry nominated cancelation losses and non-aligned maintenance losses as determined by the HVCCC as inputs into the capacity calculation, together with the target monthly tolerance cap (TMTC) as determined by the RCG. While the TMTC is constant, the forecast cancellation and maintenance rates will vary from year to year.

Ideally the HV Capacity Strategy would be based on forward estimates of cancellations and maintenance losses on a year by year basis. However, at this time the HVCCC only finalises these losses for the year ahead and only does so when determining the Declared Inbound Throughput (DIT). Accordingly this HV Strategy is based on the HVCCC estimates of cancellations and maintenance losses for the 2013 year.

For 2012 the estimated cancellations rate was 15.7% and the maintenance losses were 12.6%. For this 2013 Strategy these have been updated to 16.4% and 15.2%

The 16.4% cancellation rate equates to the 14.1% loss rate as per the 2013 DIT assumptions released by the HVCCC, but is expressed as 16.4% as it is applied as an escalation rather than a reduction.

Concept Assessments

Following the identification in the 2012 Strategy of a large program of works likely to be required in conjunction with T4, ARTC has undertaken an extensive program of

concept assessments to firm up the likely scope and cost of the identified projects. The analysis in this Strategy draws on those concept assessments.

Completed Projects

The following projects were incomplete at the time of the 2012 Strategy but will be completed prior to 30 June 2013, and the benefits of the projects are now built into the starting assumptions:

- Minimbah—Maitland Third Track.
- Nundah Bank third track.
- Drayton Junction upgrade.
- Bylong West loop extension on the Ulan line.
- Pages River, Chilcotts Creek and Watermark loops on the Gunnedah basin line.
- Kooragang Island Arrival Roads Stage 1 (reconfiguration of the weighbridge road).

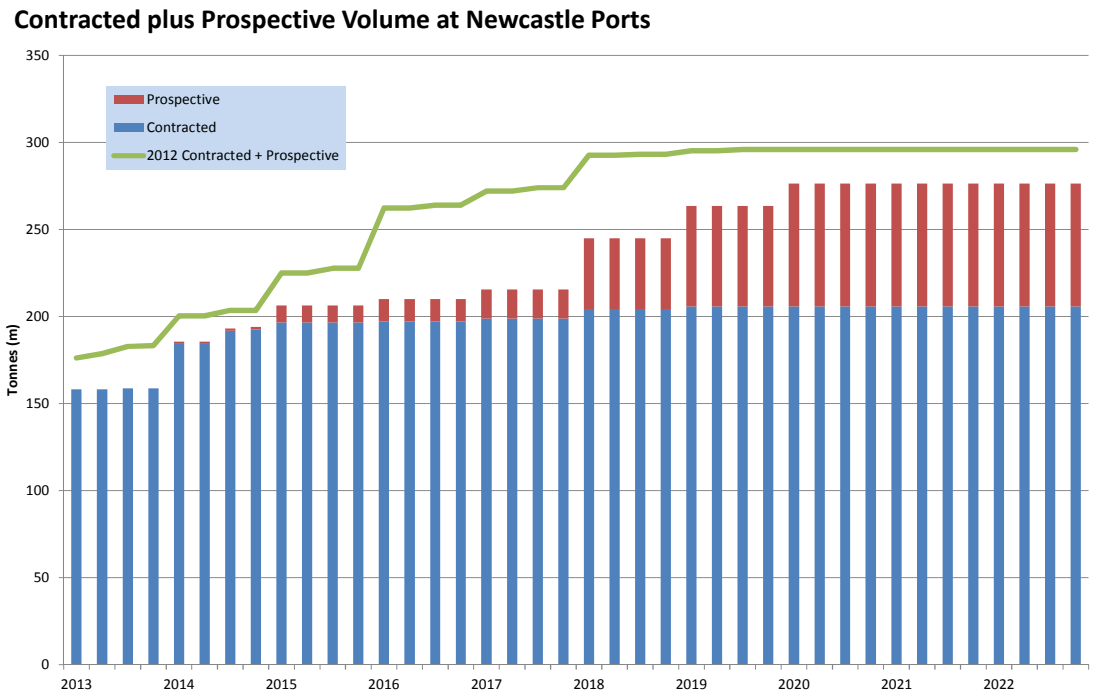


Figure 5 - Current Volume Forecasts vs 2012-21 Volume Forecast, Newcastle Terminals (mtpa)

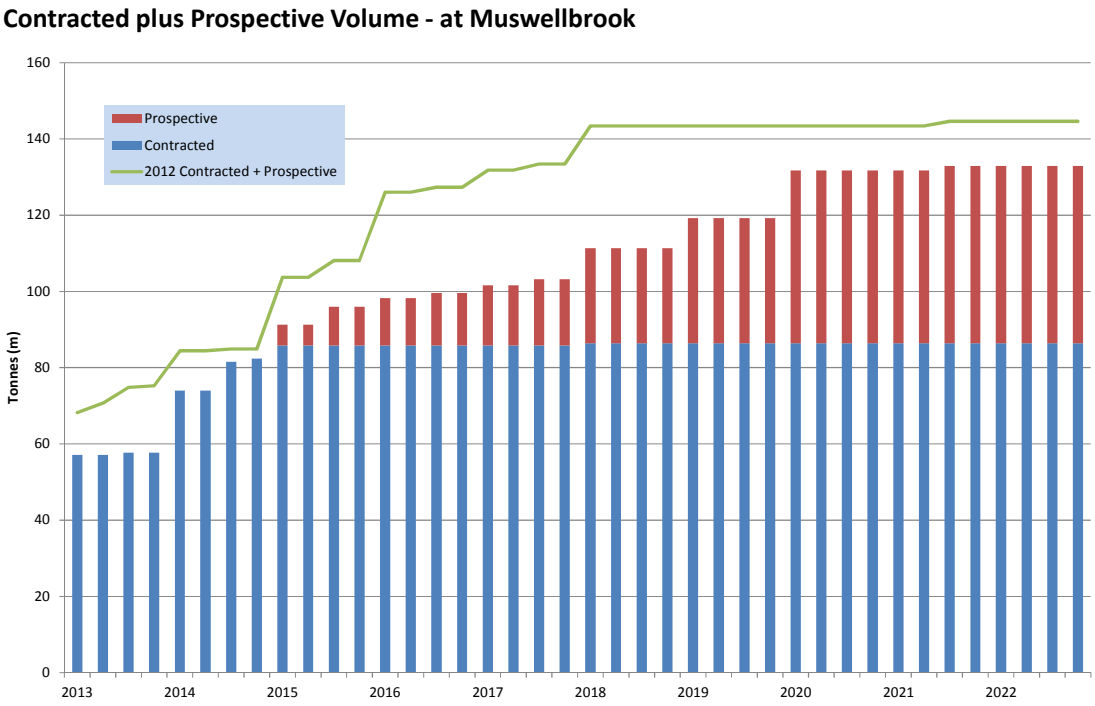


Figure 6 - Current Volume Forecasts vs 2012-21 Volume Forecast, Muswellbrook (mtpa)

Train Length

Over the past year there has been a significant increase in average train length. This is also reflected in contracts and hence the assumed average train size going forward. This has had a material effect on the timing of some projects, particularly on the Ulan line.

Recommended projects and timing

A summary of the recommended projects comparing previous and new proposed delivery timeframes is shown in Tables 8 & 9 in Chapter 7, for both contracted and prospective volumes.

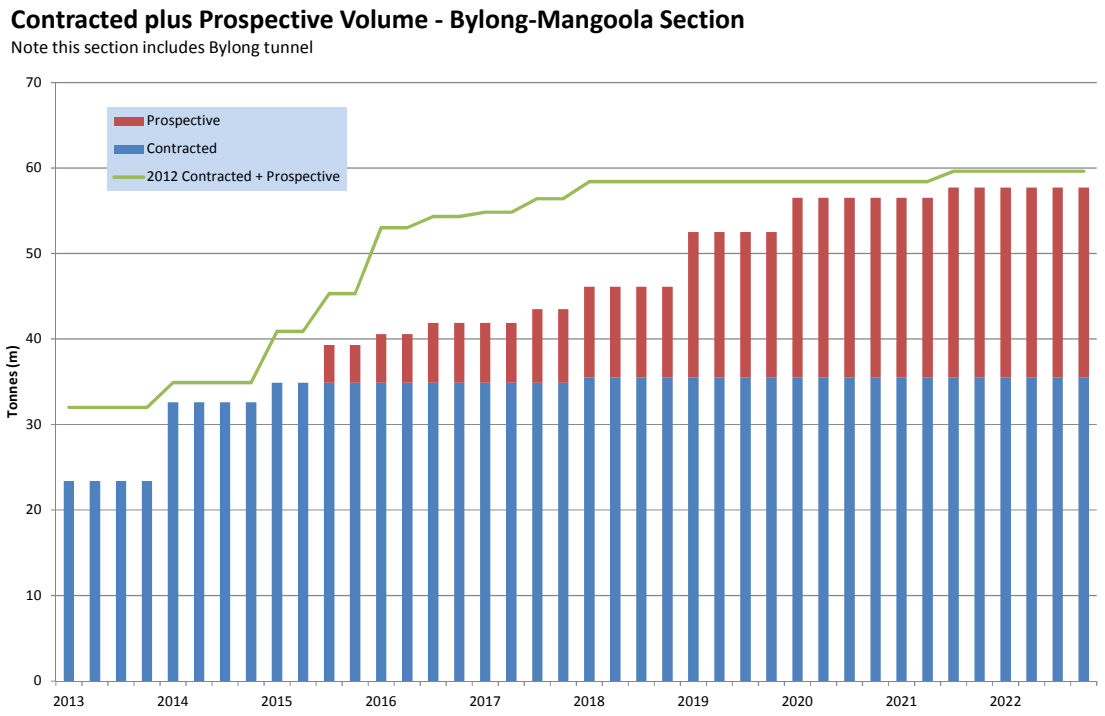


Figure 7 - Current Volume Forecasts vs 2012-21 Volume Forecast, Bylong—Mangoola (mtpa)

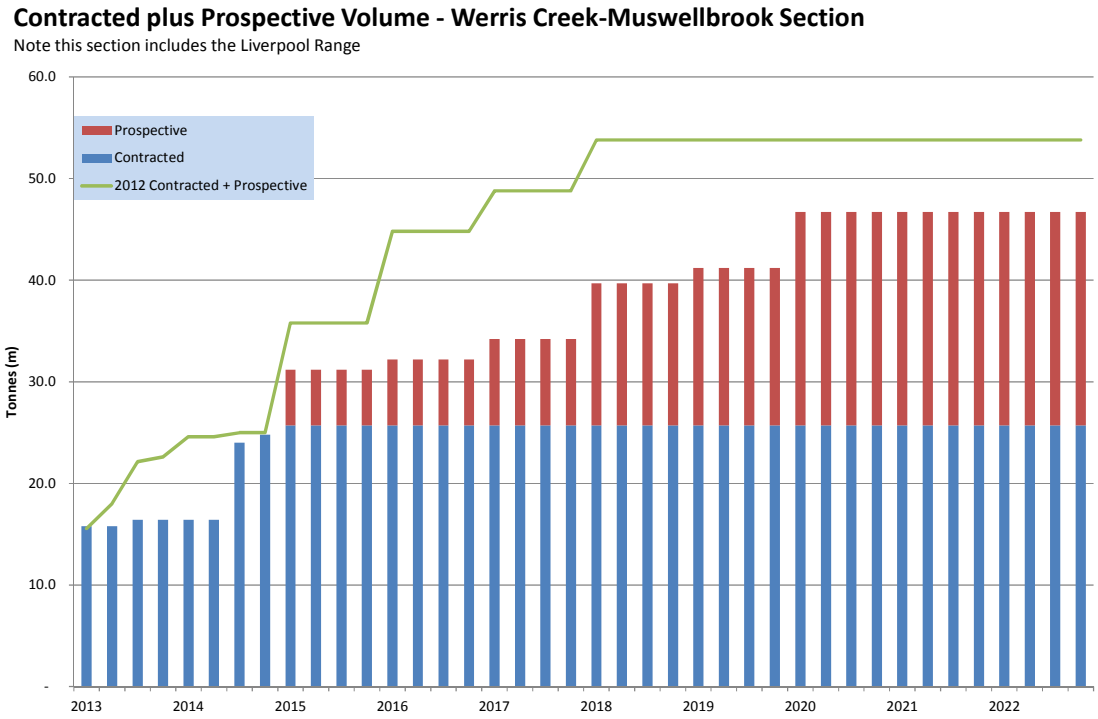


Figure 8 - Current Volume Forecast vs 2012-21 Volume Forecast, Werris Creek—Muswellbrook (mtpa)

3

Increasing Capacity between Narrabri and Muswellbrook

Context

The Gunnedah Basin line extends from the junction for the Narrabri mine to Muswellbrook.

This single-track line is highly complex. In addition to its coal traffic, it carries passenger trains (CityRail services to and from Scone and CountryLink services to and from Moree / Armidale) and a proportionately high level of grain, cotton and flour train activity. This 'background' traffic is up to seven trains each way between Narrabri and Scone, and 10 trains each way per day south of Scone.

Coal demand on the line has already increased significantly and is forecast to continue to increase very rapidly. Considerable increases in capacity continue to be needed to accommodate this growth.

There are four coal train origins / destinations along the route, at Turrawan, Boggabri , Gunnedah and Werris Creek. Four major new mines are proposed for the Gunnedah basin: Maules Creek, Vickery South, Caroona and Watermark.

Maules Creek is assumed to load from a balloon loop on a new branch connecting close to the existing Boggabri balloon loop. The Boggabri mine will also in future load from a balloon loop off this new branch. Vickery South is assumed to load in the vicinity of Gunnedah. It is understood that Watermark and Caroona will load from new load points either side of Breeza, at approximately the 443.5 km and 424 km points respectively.

The Ardglen bank, crossing the Liverpool Range, is a particular impediment on this corridor. The severe grades on the short section between Chilcotts Creek and Murrurundi dictate limits for train operations on the whole Werris Creek to Newcastle route. The need to use 'banker' locomotives for loaded coal and grain trains on this section means it carries greater train volumes than the rest of the line, because the return of the 'banker' locomotives adds a northbound train path for each southbound coal or grain train, though this is mitigated to some extent by the ability of bank engines to use the short loop at Kankool and the ability to bank from Chilcotts Creek following the opening of the new loop with purpose built bank engine sidings.

Passing loops on the Muswellbrook–Narrabri route had highly variable lengths when ARTC first started investing in capacity enhancement on this corridor. The majority of loops are now 1350 m – 1450 m with only a small number of short loops remaining. Of these short loops, Gunnedah, Quirindi, Kankool and Scone have specific challenges that make extension impractical.

The track north of Dartbrook is only rated for 25 tonne axle loads (i.e. '100 tonne' wagons), compared to 30 tonnes on the rest of the network.

All of the network carrying coal is CTC controlled.

Axle Load Increase

Axle loads beyond Dartbrook are currently limited to 25 tonnes. Increasing axle loads to 30 tonnes would permit the use of 120 tonne wagons and thus increase the carrying capacity of each train. This would deliver significant cost savings to producers as well as allowing some capacity projects to be deferred.

ARTC has a program in place that will shortly see all sleepers on the Narrabri—Muswellbrook section upgraded to concrete. While a number of other investments would be required to achieve 30 tonne axle loads, all of this expenditure would be bringing forward upgrading that would anyway be required in future years.

ARTC has been engaging closely with the two current Gunnedah basin producers to determine whether 30 tonne axle loads are a desirable step, including undertaking a detailed risk assessment of infrastructure and train configuration options. Through this process previous concerns about banking on the Liverpool Range, together with the scope and timing of track upgrades, have been addressed.

While no final decision has been made, moving to 30 tonne axle loads is the clear preference at this time and accordingly this Strategy has assumed 30 tonne axle loads, effective from Q1 2015, as the base case.

As already noted, the reduced investment in loops / passing lanes would need to be offset by bringing forward some track renewals as well as undertaking some other track strengthening activities that would not otherwise be required. This represents a cost of $23 m on top of the existing renewals program of $32 m up to Q1 2015.

A key issue for 30 tonne axle loads is train performance given the introduction of train configurations and speed constraints not previously used to the Gunnedah basin. The necessary reduction in the permitted speed of loaded

trains to 60 km/h, in line with 30 tonne axle loads elsewhere in the Hunter Valley, has different section time effects on different parts of the corridor. As a result, 30 tonne axle loads will have an effect on the sequencing of projects as well as their timing.

It will also not be possible to be confident about actual performance until operational trials are undertaken, which may lead to some adjustments to the program in the future.

For the purposes of the Strategy, it has been assumed that two different locomotive combinations will operate to the Gunnedah basin, two x 5020 class and three x TT class. These have different performance characteristics and a 30% / 70% ratio has been assumed.

Liverpool Range

In 2007 ARTC completed a study looking at options for a new rail alignment across the Liverpool Range in the vicinity of Ardglen. This report assessed four tunnel options and two surface alignment options as well as duplication of the existing alignment.

In the 2011-2020 Strategy ARTC indicated that its assessment of the costs and benefits of the options suggested that staged duplication of the existing line on the existing gradient was the best solution and that duplication would be treated as the default solution.

The Liverpool Range poses some particular complexities due to grades, curvature and geology. However, the decision to proceed with, initially, additional loops, followed by progressive duplication, means that in practical terms the Liverpool Range will essentially see a similar approach to capacity enhancement as the rest of the corridor. As such the staging of the enhancements is discussed in the context of 'Loops & Passing Lanes' below.

Scone Reconfiguration

The passing loop at Scone is short (410 m) and has an asymmetric layout, requiring all trains to negotiate a curved turnout leg and slowing speeds through the station area to 25 km/h. Level crossings and the proximity of the town make an extension of the loop impractical.

Passenger trains are the only services that stop at Scone. It is therefore proposed that the track arrangement at Scone should be altered to give an unrestricted run for through trains. This would save approximately 4 minutes in the section between Togar and Parkville.

At the time of the 2012 Strategy, ARTC had placed this project on hold due to a number of complexities and uncertainties associated with crossing of the New England Highway and construction / environmental issues. While these issues are not fully resolved it has now been recommended to the RCG that this project progress to construction to avoid the Parkville-Murulla section becoming a capacity bottleneck.

Werris Creek Bypass

Long coal trains standing in Werris Creek loop create operational complexities at Werris Creek, where a large proportion of non-coal trains need to access the yard, which can be blocked by a coal train in the loop.

An opportunity exists to resolve this problem and achieve a number of other desirable operational outcomes through reopening and reconfiguration of the alternative Gap – Werrris Creek line. This line is understood to have been constructed in the 1940's to allow trains from the cross-country line from Dubbo to proceed toward Tamworth (and ultimately Brisbane) without reversing. It fell into disuse during the 1980's but was partially reinstated in 2005 to provide the track for the Werris Creek mine coal loader.

If the line was reinstated the full way to Gap and a triangle connection established at the Werris Creek end, it would provide an effective bypass of Werris Creek. It would also give tremendous operational flexibility, with trains able to cross through the use of both lines.

The Burilda—Bells Gate section, which includes the Werris Creek bypass option, has now been subjected to a full concept assessment. This assessment looked at loop options as well as the bypass and concluded that the bypass at an estimate cost of $88.9 m could not be justified by the operational benefits compared to the alternative of two loops at an estimated cost of $52.0 m.

Accordingly the Strategy will now focus on the provision of loops north and south of Werris Creek at 414 km and 407 km respectively.

Gunnedah Yard

Gunnedah Yard is an important rail hub. The yard's configuration and condition is such that it will increasingly become a constraint on the network between the Gunnedah Basin and the Port of Newcastle:

- The Gunnedah Yard is currently un-signalled and therefore requires the mainline route to be set (and locked) via the Platform Road to facilitate both freight and passenger movements.
- Shunting in the yard necessitates the "release" of the entire yard (including mainline operations) to private operators for manual yard operating.
- The normal train speed through the yard is currently limited by permanent speed restrictions through the turnouts in the main line where through traffic diverts to the Platform Road. These turnouts limit speeds to a maximum of 25km/h. The main line track speed in both directions either side of the yard is 75/70 km/h;
- Due to the rates of wear on a number of switch blades in critical turnouts, poor track condition, clearance issues between the Platform Road and the Station Platform and between the Platform Road and the Through Road, a further speed restriction of 20 km/h has been imposed through the yard.
- The 20 km/h speed restriction blocks road traffic in the centre of town at two level crossings for extended periods.

A number of condition issues in Gunnedah Yard need to be addressed to maintain the track in a fit for purpose state recognising the significant increases in volume through this location. A scope of works that addressed both the condition and functionality issues would have cost synergies and offers the potential to defer construction of

South Gunnedah loop by increasing the speed through Gunnedah yard. On this basis it was recommended to the RCG that South Gunnedah loop be placed on hold while a concept assessment of Gunnedah yard upgrade was completed.

For the purposes of this Strategy it is assumed that Gunnedah yard is the preferred option. If it is determined that the yard project does not offer value for money then South Gunnedah loop will need to be accelerated to provide the necessary capacity.

Train Lengths

Refinement of wagon designs has led to the recent introduction of new wagons that are materially shorter than the previous fleet. Approximately 82 of these wagons can fit in the loops built for 72 wagon trains. ARTC has now approved the introduction of trains of up to 1329 metres. This represents a practical limit given current loop lengths and the need to allow a margin at the loop ends. There will be no further increase in length until the track configuration changes to facilitate it.

For various operational reasons ARTC has been building an increasing number of loops with a 'simultaneous entry' configuration. This configuration allows for a more efficient cross to occur when opposing trains arrive at the loop at around the same time, an event which becomes increasingly probable as the distance between loops decreases. A simultaneous entry configuration requires a minimum extra 300 metres 'overlap' to be added to the loop length, making the loops nominally 1650 metres, though in the simultaneous entry configuration the extra length is not available to use for longer trains. However, if and when ATMS is introduced into the Hunter Valley it will be possible to allow simultaneous entry without the additional overlap, meaning that loops built in this style would immediately be available for trains of the standard Hunter Valley length of 1565 metres.

Given this opportunity to move progressively towards the introduction of the standard Hunter Valley train to the Gunnedah basin, ARTC is moving toward an approach of building all new loops to the simultaneous entry configuration where this is practical, which provides short-term operational benefits and the ability to easily move to longer trains if and when ATMS is introduced.

Loops & Passing Lanes

Progressive lengthening of selected existing passing loops, and constructing additional passing loops, has been the primary mechanism for accommodating volume growth to date. However, only two loops (Aberdeen and Murrurundi) remain for potential extension. Opportunities to insert additional mid-section loops are becoming constrained due to the effects of grades and level crossings, while the increasingly short distances between loops mean that additional mid-section loops are of declining benefit due to the transaction times at the loop.

Notwithstanding this, the concept assessments undertaken over the past year on projects required to accommodate prospective volumes have tended to conclude that a mid-section loop remains the preferred solution. In some cases these new loops will be quite close to existing loops. However, where it is practical to construct a mid-section loop the additional cost associated with building a passing lane does not justify the additional benefit. As a result, passing lanes have only been recommended where there are physical constraints to a mid-section loop.

Specifically, the previous Togar North extension has been replaced by a loop centered around the 311 km point while the Parkville south extension on the other side of

Project Name	Contracted	Prospective
Scone reconfiguration	Q3 2013	Q3 2013
Gunnedah Yard Upgrade / South Gunnedah loop	Q3 2014	Q3 2014
Aberdeen loop extension		Q1 2017
311 km Loop (previously Togar North extension)		Q1 2016
316 km loop (previously Parkville South extension)		Q1 2020
Wingen loop		Q1 2016
Blandford loop		Q1 2017
Kankool - Ardglen		Q1 2017
Bells Gate south extension		Q1 2018
414 km loop (previously Werris Creek bypass)		Q1 2019
South Gunnedah loop		Q1 2015
Collygra loop (504 km)		Q1 2016

Table 4 - Narrabri to Muswellbrook Loops - Timing under contracted and prospective volume scenarios assuming 30 tonne axle loads from Q1 2015

Scone has been replaced by a loop centered around the 316 km point. The replacement of the Werris Creek bypass with two loops is discussed earlier in this section.

The passing lane / double-track sections on the Liverpool Range remain as it is not practical to stop trains on either the up or down grade across the range, while Bells Gate south extension is preferred to Quipolly due to the high cost of extending the exisiting loop at Quipolly given level crossing and environmental constraints. The length of each of these passing lanes is determined by physical constraints.

With regard to the Liverpool Range, previous analysis has identified that Ardglen—Kankool and Pages River—Pages River North were both required once volumes exceeded 27 mtpa. With the change to an assumed 30 tonne axle load, the threshold for Pages River—Pages River North has changed to approximately 36 mtpa, reflecting the full benefit of the heavier trains. Simulations suggest though that train speed between Chilcotts Creek and Ardlgen will be lower with the proposed train configurations, which has meant that the threshold has only increased to approximately 31 mtpa. Following construction of Ardglen—Kankool as a passing lane, the capacity of Ardglen—Pages River is assumed to further improve, to 45 mtpa, due to the reduced transaction time assumption.

Table 4 shows the new loops, loop extensions and passing lanes proposed on the basis of addressing the capacity constraint on each local section as demand requires, for both contracted and prospective volume assuming 30 tonne axle loads from Q1 2015. The location of each of the projects is shown on Figure 9.

Transitional Capacity Shortfall

If 30 tonne axle loads are introduced from Q1 2015 as assumed, there will be a transitionary capacity shortfall of 0.5 mtpa in Q4 2014 under the scope of works proposed in this document. To mitigate this shortfall would require the 311 km loop to be constructed, even though the capacity it provides would only be required for three months.

ARTC will work with the Gunnedah basin producers on the options to address this transitional shortfall with a view to ensuring ARTC delivers a solution that best meets producer needs.

Additional Contracted Volume

Subsequent to the determination of the volumes for the purposes of the Strategy by the RCG, ARTC has been approached by one current and one prospective producer to formally commence the contractual process for some additional increments of volume.

The additional volume from the current producer would trigger a requirement for the 311 km loop, Wingen loop and Collygra loop, all from Q1 2016.

The additional volume from the prospective producer, if considered cumulative to the additional volume from the existing producer, would trigger a further requirement for Aberdeen loop extension in Q1 2016, and Blandford loop, Ardglen—Kankool duplication and Bells Gate south extension in Q1 2017.

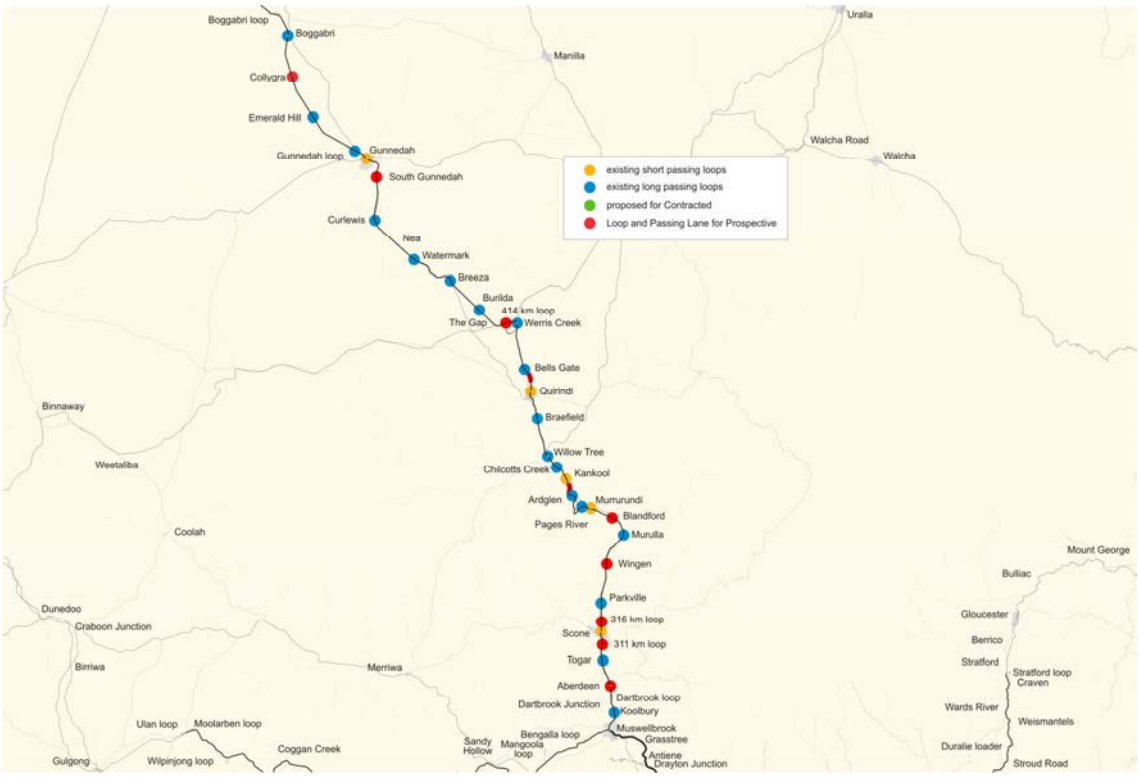


Figure 9 - Muswellbrook to Narrabri Loops

4

Increasing capacity between Ulan and Muswellbrook

Context

The Ulan line extends approximately 170 km, from Ulan, west of the dividing range, to Muswellbrook in the upper Hunter Valley. It is a single track line, with passing loops at Bengalla, Mangoola, Yarrawa, Sandy Hollow, Kerrabee, Baraemi, Murrumbo, Bylong, Coggan Creek, Wollar, Wilpinjong and Ulan (though the Ulan loop is only 980 m), and is CTC controlled.

Although the line is used mainly by coal trains, it is also used by one or two country ore and grain trains per day and occasionally by interstate freight trains that are bypassing Sydney during possessions. The line services long-standing mines at Bengalla and Ulan. The Wilpinjong, Moolarben and Mangoola mines have all commenced production in recent years.

Five new export coal mines (Mt Pleasant, Ferndale, Bylong and Mt Penny) are at various stages of the development and approval process.

A fifth mine, Cobbora, located approximately 33 km north-west of Gulgong, is being developed primarily to produce coal suitable for domestic power generation. The Cobbora Coal Project is a NSW government initiative linked to the privatisation of the NSW electricity industry. Last year the Cobbora volumes were treated as contracted as contracts were expected to be completed in the short-term, but for this Strategy they have been treated as prospective.

The mines on this sector are clustered either at the start of the line near Muswellbrook (Bengalla, Mangoola, Mt Pleasant) or at the end of the line around Ulan (Ulan, Wilpingjong, Moolarben). This gives rise to a long section in the middle with homogenous demand. The proposed Mt Penny and Bylong mines will be toward the Ulan end, but 30 km closer to Muswellbrook.

The Ulan line has some difficult geography which constrains the location of loops. As sections become shorter, the scope to adjust the location of the loop declines. Accordingly, as investigation of nominal sites has progressed, it has become necessary to consider alternative solutions. Specifically, in some cases it has become necessary to construct “passing lanes”, which are effectively short sections of double track. These will necessarily be materially more expensive than straightforward loops.

An unusual capacity constraint is posed by the ventilation in the tunnels on the Ulan line, in particular the Bylong tunnel. Although the line only opened in 1982, the four tunnels were built as part of the original uncompleted construction of the line which commenced in 1915. Accordingly the tunnels were built to a relatively small outline and ventilation in the tunnels has been considered a problem. Train spacing and track maintenance has been limited by the ‘purge times’ for air in the tunnel. Extensive monitoring and analysis has allowed the previous operating rule that limited trains to operating at an arbitrary 30 minute minimum frequency to be reduced to 20 minutes. This has largely addressed the ventilation issue.

This analysis of the Ulan line assumes that there is no change to the current pattern of limited background (non-coal) trains on this line.

Tunnel Ventilation

As noted above, it has been possible to manage the immediate tunnel ventilation issue.

In the longer term, it will be necessary to extend the Bylong loop to the western tunnel portal for prospective volumes. This extension would be built to a new vertical alignment, with the track cresting at a point around one kilometre before the portal so that trains are able to start on an acceptable gradient. This will also reduce the requirement for trains to be powering as they enter the tunnel, providing further mitigation of the air quality issue.

Cobbora — Ulan

The Cobbora mine is located approximately 50 km west of Ulan. It is proposed to connect a new branch line with balloon loop to the Gulgong – Merrygoen line at Tallawang. This would add approximately 40 km of track to the network used by coal services.

A key issue for this traffic is train length. Existing facilities at the Eraring and Vales Point power stations, which connect to the RailCorp network, are length constrained. ARTC has indicated that it would be unacceptable to operate trains on the Ulan line that were significantly shorter than the current fleet. While the power generators have been investigating this issue in detail, it remains unresolved at this time.

The track between Ulan and Tallawang will require upgrading to accommodate 30 tonne axle loads and the signalling system will need improvement. An additional loop, nominally north of Gulgong, may be required depending on final train size. The indicative Cobbora volumes would also require loops at Mt Pleasant, and Widden Creek and either the Murrumbo west or Bylong east extension.

Denman Bypass

The 2011 Strategy identified an option to construct a bypass of Denman, from just east of Sandy Hollow to just west of Mangoola, as an alternative to an additional loop (nominally at 324 km) on this section. The 11.5 km bypass would provide operational efficiencies (reducing route length by 8.7 km) as well as creating capacity by effectively making the section double track.

The HVCCC has identified the Denman bypass as a potential option for creating additional train park-up capacity. The bypass option will continue to be assessed in the context of all three of these potential sources of benefit noting that the likely trigger for such a project, the construction of a loop at 324 km, is now only required under the prospective volume scenario and only by Q1 2018.

Increasing Train Speed

The default solution for increasing capacity is to build additional loops or track. However, there is also an option to reduce section running times, and hence increase capacity, by lifting train speed. This option was reviewed in the context of the 2011 Strategy and it was determined that there was no scope for significant benefit from this option since in most cases speed is limited by train performance and curve speeds rather than the maximum speed. However, to ensure that the program is optimised this option will be reviewed periodically.

Additional Passing Loops/Passing Lanes

Additional passing loops, or where necessary passing lanes, represent the main mechanism to deliver further incremental increases in capacity on the line. Site investigation and concept development is ongoing to allow refinement of the proposed solutions.

The currently identified scope is set out in Table 5. The location of existing and proposed loops is shown in Figure 10.

It should be noted that following a full review of the options for the Bengalla—Mangoola section that a midpoint loop, Mt Pleasant at around the 300 km point, is now preferred to the previous Bengalla extension. It should also be noted that Bylong East extension is required for prospective volumes and makes the Murrumbo West extension, which was previously identified as the preferred option for contracted volumes, redundant. Although Bylong East is significantly more expensive it is being progressed as the likely solution.

Project Name	Contracted Volumes	Prospective Volumes
Mt Pleasant loop (previously Bengalla west extension)	-	Q3 2016
Mangoola West Extension (to 310.5)	-	Q1 2020
324 km loop (or Denman bypass)	-	Q1 2018
337 km loop	-	Q1 2019
Baerami West Extension	-	Q1 2020
Widden Creek loop	-	Q1 2016
Bylong East Extension (to 377.0 km)	-	Q1 2018
Coggan Creek west extension (to 399.6)	-	Q3 2021
Gulgong loop	-	Q3 2016
Gulgong - Tallawang CTC	-	Q3 2015
Ulan - Tallawang track upgrading	-	Q3 2015

Table 5 - Ulan - Muswellbrook Loops, timing under contracted and prospective volume scenarios

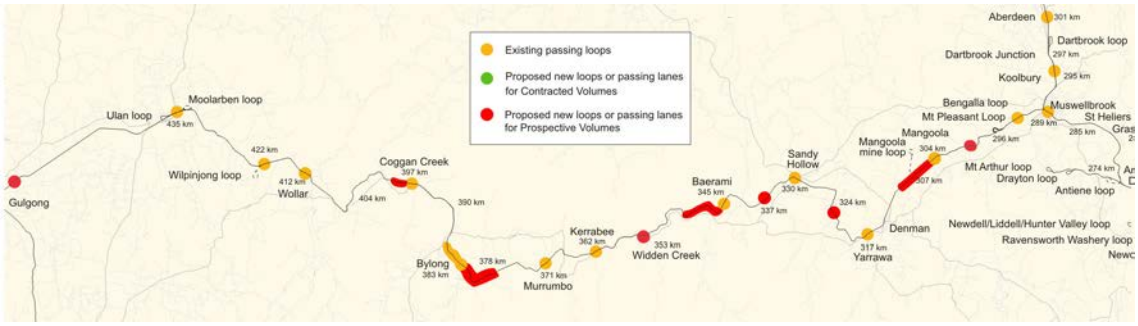


Figure 10 - Ulan Loops

5

Increasing capacity between Muswellbrook and Hexham

Context

The major issues affecting the line between Maitland and Muswellbrook are:

- Headways
- Junctions
- Continuous flow of trains

Headways are fundamentally a function of signal spacing and design. Drivers should ideally only ever see a green signal on double track, so that they do not slow down in anticipation of potentially encountering a red signal. To achieve this outcome, a train needs to be at least 4 signals behind the train in front so that the signal a driver encounters, and the next one beyond, are both at green. Signal spacing also needs to take into account train speed and braking capability. Signals need to be spaced such that a train travelling at its maximum speed and with a given braking capability can stop in the distance between a yellow and a red signal. In some cases these constraints start to overlap, in which case it becomes necessary to go to a fifth signal, with a flashing yellow indication.

Ideally, headways on the whole corridor from Muswellbrook to the Terminal should be consistent so that trains can depart at regular intervals, and as additional trains join the network they can slot in to a spare path without impacting a mainline train. This headway target needs to be around 8 minutes[3] once volume exceeds around an average of 84 paths per day, or 245 mtpa at current train lengths.

While this principle has been adopted in the signalling design for new works, there have not as yet been any specific projects directed specifically at reducing signal spacing. At this stage effective headway is at around 8 minutes south of Minimbah, but increases further up the line. Spacing is as high as 16 minutes in the vicinity of Drayton Junction.

It should also be noted that in a live operating environment, all trains will ideally operate at consistent speeds and achieve the section run time. To the extent that they do not it results in drivers encountering yellow signals, which causes them to slow, creating a cascading effect on following trains that will cause a loss of capacity.

There are three major banks (sections of steep grade) on the Muswellbrook - Maitland section that particularly affect the headways for trains; Nundah Bank, Minimbah Bank and Allandale Bank (Figure 11). The steep grades on these banks slow down trains to such an extent that it is not possible to obtain an adequate frequency of trains irrespective of how closely the signals are spaced. This requires a third track to be constructed at the banks. All three of the major banks are now on three track sections.

There are numerous junctions on the Hunter Valley rail network where train conflicts at the at-grade interfaces impact on capacity (Figure 12).

The connection between the main lines north of Maitland and the main lines to the east is through a set of old slow-speed high-maintenance turnouts. There are also a number of similar turnouts on the city side of Maitland. The main issue this raises is the amount of possession time required to maintain these turnouts. Congestion is also exacerbated by the slow speed turnouts, but at current forecast volumes this is manageable. There is also a small amount of conflict with trains off the Pelton branch line.

Whittingham junction turnout speeds were upgraded to 70 km/h in conjunction with the 80 km/h approach to Minimbah bank project, and the junction now has a three track configuration as a result of the Minimbah bank third track project. This allows loaded trains to exit the branch without needing to find a slot between loaded mainline trains. Accordingly this junction is now highly efficient.

Camberwell Junction was upgraded to high speed turnouts in conjunction with the Nundah bank third track project, though the speed on the balloon loop limits the practical speed.

Mt Owen Junction has slow speed turnouts. However, the volume from Mt Owen means that its junction does not have a significant impact on capacity.

Newdell and Drayton Junctions have been upgraded with high-speed, low maintenance turnouts. While this was primarily maintenance driven, the speed upgrade means that these junctions are now highly efficient.

With the strong growth of coal volume from both the Ulan and Gunnedah basin lines, the junction of these two lines at Muswellbrook will come under increasing pressure.

3. Signal clearance times depend on the length and speed of trains, so there is no single absolute number for actual signal spacing.

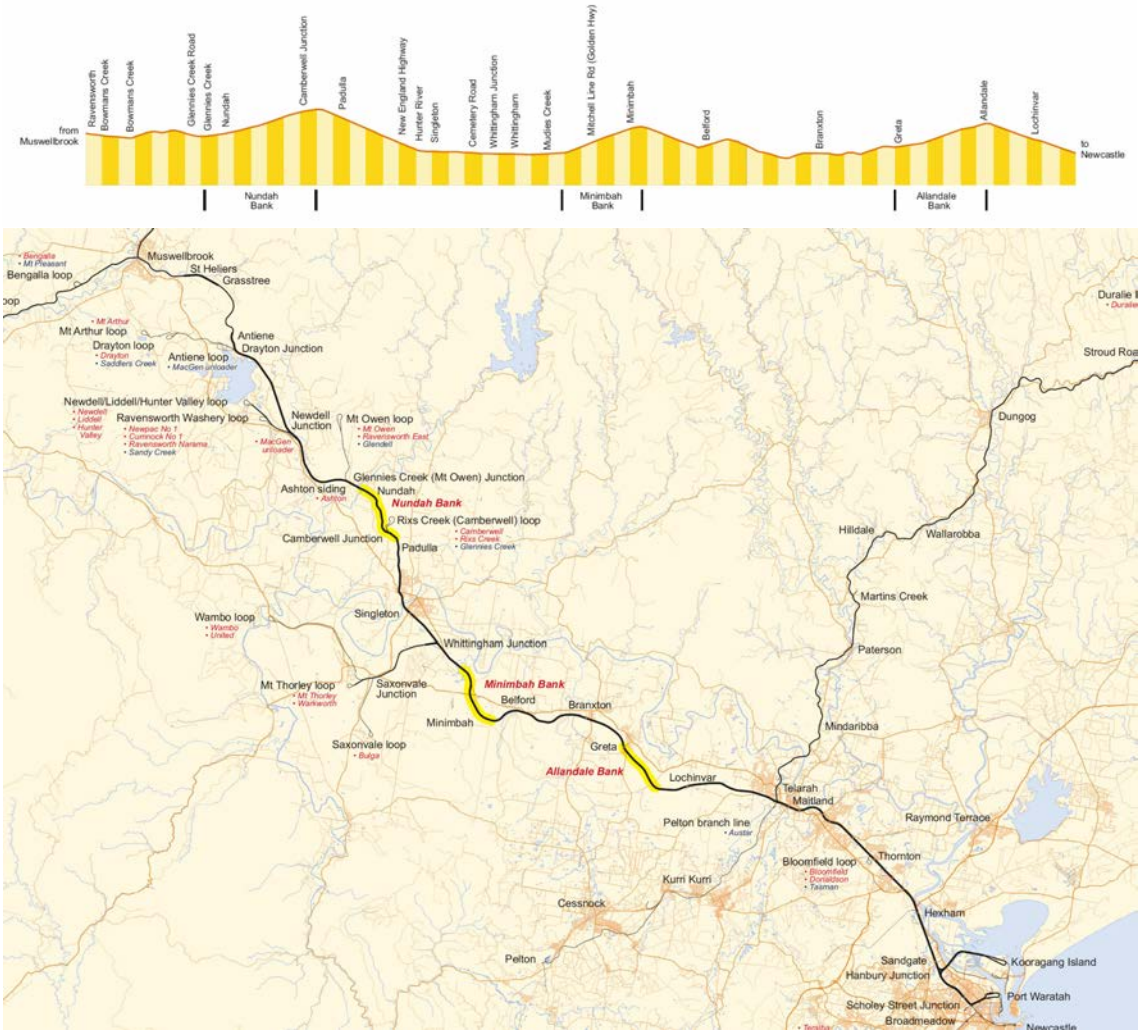


Figure 11 - The Nundah, Minimbah and Allandale Banks.

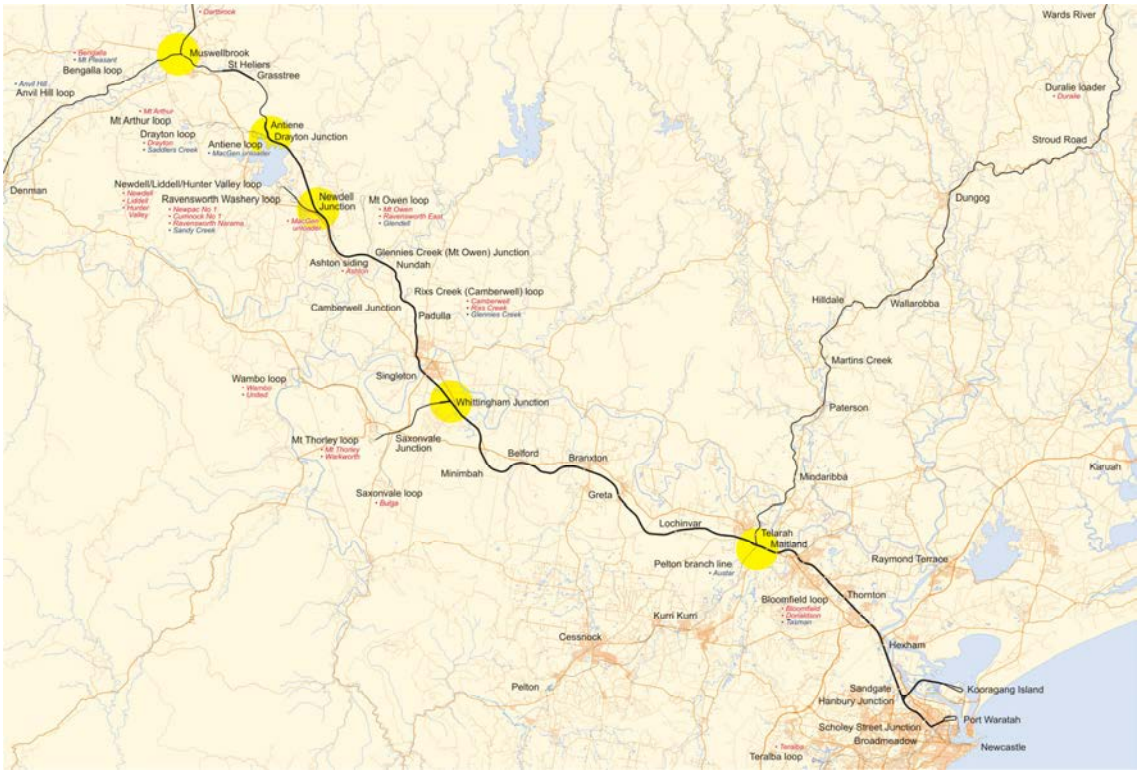


Figure 12 - Maitland, Whittingham, Newdell, Drayton and Muswellbrook Junctions

Two new junctions are being added to the network between Muswellbrook and Maitland by producers. The current Ravensworth loop, which is integrated into the Newdell loop, has been separated and given a new junction at approximately the 259.9 km point, along with a holding loop, while a new balloon loop for the Rix's Creek mine is proposed with the junction at approximately the 243.5 km point.

A key issue for efficiency at the terminal is the need for the dump stations to receive a continuous flow of trains. When the flow of trains at the dump station is interrupted, this creates a direct unrecoverable loss of coal chain capacity, except to the extent that maintenance downtime of the terminal infrastructure can be aligned to the rail side disruption. A critical consideration for the coal chain as a whole is therefore maximising the continuity of trains rather than simply total track capacity.

The following sections discuss in turn each of the major projects arising from the need to address these issues:

Muswellbrook Junction

In the medium term, the continuing growth from both the Ulan and Gunnedah basin lines means that the capacity of the at-grade junction at Muswellbrook will become stretched. The 2011 Strategy included a discussion that noted that for the then indicatively contracted volumes:

- Southbound trains are likely to be delayed around 20% of the time for an average of 6 minutes.
- Northbound trains are likely to be delayed around 16% - 20% of the time for an average of 10 minutes.

It noted that while these levels of delay are material, they do not reach a level where they are likely to have a major negative impact on capacity, or the efficient operation of the coal chain, and that on this basis it would be possible to do nothing at Muswellbrook for contractual volumes.

However, it also noted that the HVCCC had floated the concept of having some holding / resequencing capacity in the vicinity of Muswellbrook and recommended that further assessment of options be undertaken, including the feasibility of a long-standing concept to bypass Muswellbrook by connecting the Drayton branch to the Ulan line in the vicinity of Bengalla.

The 2012 Strategy noted that both the Muswellbrook Junction third track and Muswellbrook Bypass options had had further analysis undertaken on them and that the best solution for the Muswellbrook Junction Third Track involved building a new track mostly on the Up side. Due to track geometry issues this would need to extend to the 286.3 km point, giving a third track of approximately 2.6 km standing room.

Further options, including a flyover in Muswellbrook, and duplication of both the Ulan line between Muswellbrook and Bengalla and the Gunnedah line between Muswellbrook and Koolbury, have been assessed, and it has been concluded that the option of a Third Track heading east from Muswellbrook offers the best operational outcome and value for money.

As noted in the 2011 Strategy, the level of congestion at Muswellbrook, while material under contracted volumes, is tolerable, and the work done to date would suggest that all of the solutions are only worth pursuing once volume growth, and hence congestion, approach a level where a solution is unavoidable. This threshold was nominally set at 130 mtpa, which equated to approximately 45 paths/day. Given the increase in average train size and changes to volume forecasts this threshold is anticipated to now not be reached until Q1 2020 under the prospective volume scenario.

Muswellbrook—Drayton Signal Headways

Signal headways on the Muswellbrook—Drayton section are currently as high as 16 minutes based on the double-green principle. Under the prospective volume scenario this headway will limit capacity from Q1 2020.

A concept assessment of options to address this headway constraint with the objective of achieving 8 minute headways was undertaken, which would then allow a consistent path pattern from Muswellbrook to the port terminals.

This analysis concluded that due to the rising gradient encountered by loaded trains an 8 minute headway would only be possible by construction of a third track or with ATMS.

A 14 minute headway is the best achievable with a signaling solution on its own. However, this is largely dictated by differentials in speed and hence braking capability of different train types. If non-coal freight trains are limited to a lower speed it would be possible to achieve either 12 minute or 10 minute headways with a signaling solution.

On this basis the preferred way forward is to pursue a 12 minute headway. While this does not allow an 8 minute pattern of trains from Muswellbrook, it will allow for an 8 minute pattern from Drayton with 2/3 paths able to start from Muswellbrook based on a 24 minute repeating pattern.

Drayton—Whittingham Bi-directional Signalling

The 2012 Strategy identified that there was increasing pressure for the bi-directional signalling of the Drayton – Whittingham section (the balance of the Muswellbrook—Mailtand corridor is already bi-directionally signalled). This is primarily driven by the growing pressure on maintenance, with maintenance demands growing as volume increases, while the tonnage loss from the same amount of maintenance possession time is also increasing with train frequency. The proposed timing of the project equated to a volume of 175 mt at Camberwell Jct, or approximately 63 trains / day. Under the 2013 assumptions this limit will be reached in Q1 2019 under prospective volumes

However, subsequent to the 2012 Strategy ARTC has been considering alternative maintenance strategies. A

new regime whereby all renewals and capital tie-ins would take place during eight 60 hour possession per year, or a similar approach, appears to have considerable potential. If this approach was adopted it would mean that the Drayton—Whittingham bi-di project may not be required.

Drayton—Whittingham Signal Headways

The Nundah Bank Third Track project was completed in late 2012 and cleared the Newdell—Whittingham section for 10 minute headways.

The 2012 Strategy indicated that to achieve an 8 minute headway it may be necessary to extend the Nundah Bank third track toward Singleton as well as undertaking some resignalling.

A concept assessment of the requirements for this section to achieve 8 minute headways concluded that it would not be necessary to extend the Nundah Bank third track. However, there will be some requirement for resignalling to reduce the headway in some locations between Drayton and Whittingham. It is important to note that this applies in both the Up and Down directions. It is also important to note that this approach will require coal trains to pass a key signal on Nundah bank under full power even when it is at yellow. This approach would be technically acceptable as loaded coal trains are travelling at around 20 km/h at this point and would still have adequate ability to stop if the following signal was red. However, this solution breaches the double-green principle and will therefore require further investigation with rail operators before a solution is confirmed.

At the time of the 2012 Strategy it was anticipated that any resignalling would be undertaken in conjunction with the installation of bi-directional signaling between Drayton and Whittingham, to ease the impact of track possessions and achieve cost synergies. However, recent consideration of options for future maintenance (discussed above) may make the bi-directional signaling unnecessary. The Nundah—Whittingham resignaling has therefore been split out of the bi-di project and the two projects will be assessed separately.

It will be desirable to implement consistent 8 minute headways once train numbers at Whittingham Jct exceed an average of 80 per day. This is now expected in Q1 2020.

Minimbah Bank Resignalling

The 2012 Strategy identified that to achieve 8 minute headways on Minimbah bank would probably require the removal of the tonnage signal on the Up Main at the bottom of Minimbah bank and some signal adjustments on the Up Main on Minimbah bank.

The constraints have now been analysed in more detail and it has been concluded that trains can operate to an 8-minute headway on Minimbah bank provided they alternate between the Up Main and Up Relief and two additional signals are provided on the Up Main to close up the signal spacing.

Minimbah bank has a tonnage signal on the Up Main that ensures a train does not get onto the bank unless it has a clear run to the top of the bank. This applies to the Up Main due to its 1 in 80 grade but not the Up Relief, which has a 1 in 100 grade. This solution would retain the tonnage signal.

Better than 10—minute headways are required south of Whittingham Junction from Q1 2020.

Branxton—Greta Third Track

The 2012 Strategy identified that it may be necessary to complete the Third Track between Branxton and Greta as part of the works to achieve a consistent 8 minute double-green headway.

Detailed analysis of headways has found that it will not be necessary from a headway perspective. There was also a question as to whether the merging of the Main and Relief tracks at Branxton will create undesirable delay. However, the approach developed as part of the concept assessment provides for trains to alternate between the Up Main and Up Relief to achieve 8 minute headways on Minimbah bank. Trains should therefore remerge at Branxton in a regular pattern provided all coal trains operate at a consistent speed.

Farley—Maitland and Maitland Junction

The primary issues at Maitland are related to the maintenance of the old slow-speed turnouts and accordingly the primary focus in the past has been the most effective way to replace these turnouts with low-maintenance high-speed units. Leveraging this renewal to increase capacity by improving train speeds and reducing crossing conflicts has been a secondary consideration, but the 2012 Strategy noted that under the prospective volumes it may be desirable to review the junction arrangement. The primary objective of a reconfiguration would be to ensure that conflicts between Up coal services and Down non-coal services, which conflict to the west of Maitland, can be efficiently managed.

A concept assessment of the Farley—Maitland section has been undertaken and has identified that the most effective option would provide for a bi-directional third track between Farley and Maitland, which would allow both Up and Down non-coal trains to stand waiting for a path without blocking the flow of coal trains. Analysis to date has found that the path benefits of the reconfiguration are relatively modest and that the main benefit would be experienced in live-run. However, at this stage there has been no quantification of this benefit. Given the changes in demand this project is now considered a longer–term initiative.

Project Name	Contracted Volumes	Prospective Volumes
Muswellbrook Junction	-	Q1 2020
Muswellbrook - Drayton Resignalling	-	Q1 2020
Drayton - Whittingham Bi-Di	-	Q1 2019
Drayton—Whittingham resignalling	-	Q1 2020
Minimbah bank resignalling	-	Q1 2020

Table 6 - Muswellbrook—Maitland Projects, timing under different volume scenarios

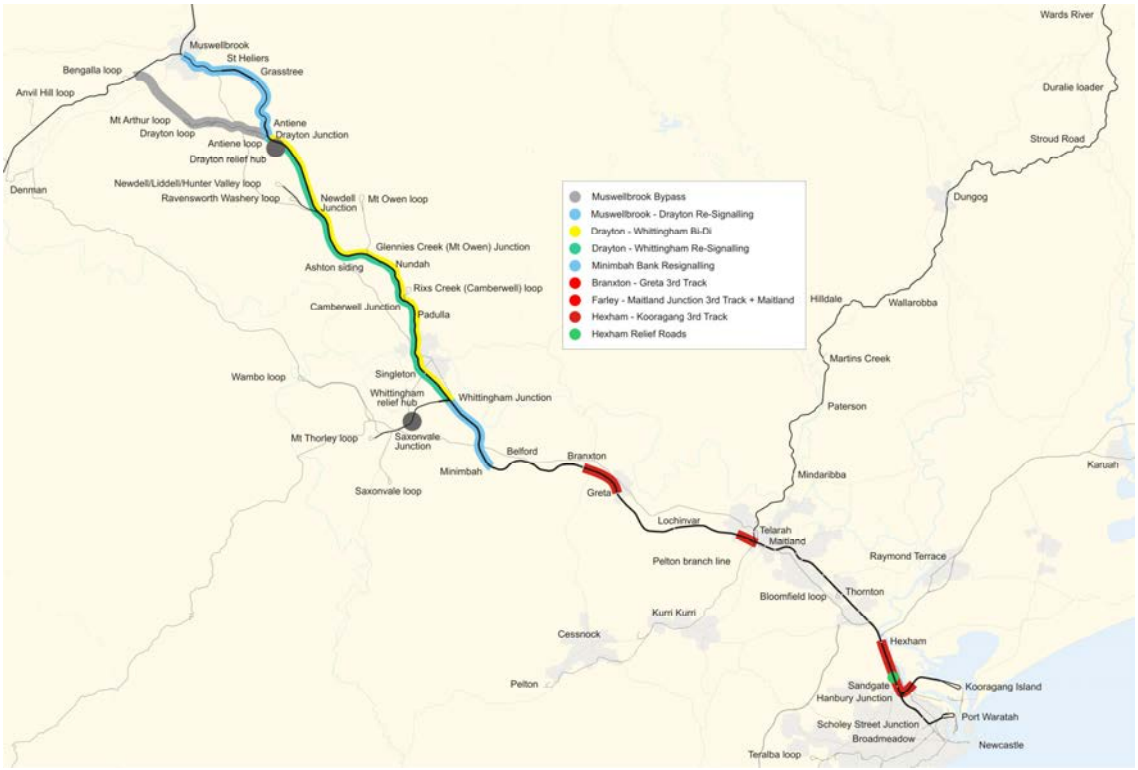


Figure 13 - Muswellbrook—Terminal Projects

6

Terminals, Congestion and System Issues

Context

The Hunter Valley coal industry is serviced by three coal loader terminals, PWCS Carrington (CCT), PWCS Kooragang Island (KCT) and NCIG Kooragang Island. While the coal loaders are owned by Port Waratah Coal Services (PWCS) and the Newcastle Coal Infrastructure Group (NCIG), most of the track in and around the terminals is leased by ARTC and all train operations are controlled by ARTC.

The Carrington loader is the oldest of the facilities and is located in the highly developed and constrained Port Waratah yard area, with extensive rail facilities servicing a variety of activities. This includes steel products for OneSteel, grain for the GrainCorp loader, ore for the Pasminco loader, general freight through Toll / R & H Transport and other minor customers. There are also locomotive and wagon servicing and maintenance facilities.

The Carrington coal facilities include 3 arrival roads and 2 unloaders. While there are nominally 10 departure roads, these range in length from 414 metres to 863 metres, all of which are shorter than all coal trains, other than the short trains used for Pelton services. Only two of the 3 arrival roads can accommodate 80 wagon and longer trains.

The Carrington facility has an environmental approval limit of 25 mtpa. There is some opportunity to expand this slightly, though there may be environmental challenges in doing so.

PWCS Kooragang Island is better configured for modern rail operations. However, while it now has 8 departure roads for its four dump stations (shortly to be 9), there is only one arrival road for each dump station. As a result, trains need to queue on the mainline before being called forward into the arrival road as the preceding train moves through the dump station.

With the recent opening of the Pacific National Greta train provisioning facility all provisioning and inspection activity has now been moved out of the departure roads. Departure road No 3, which had been dedicated to PN use as a provisioning road, has now been acquired by ARTC and is being extended to become an additional dedicated departure track.

Aurizon has also discontinued all provisioning and maintenance activities on Kooragang Island. Locomotives are instead shuttled between Kooragang and Port Waratah and this is expected to continue until its Hexham provisioning facility is constructed.

KCT dump station four (DS4) on the existing PWCS Kooragang Island loop is expected to be fully available from around August 2013 at which point PWCS capacity as a whole will be a nominal 143 mtpa.

NCIG has also completed Stage 2AA of its development, lifting capacity to a nominal 53 mtpa. Further committed development will take capacity up to 66 mpta. NCIG now has three arrival roads for its two dump stations. Completion of the project will include a full grade separation with the Kooragang branch, eliminating conflicts between loaded NCIG trains and empty trains from KCT.

ARTC's objective in its infrastructure strategies has been to provide track capacity ahead of demand. ARTC is in a good position to assess the track capacity required and to identify optimised solutions and timing to provide that capacity.

There are, however, a number of operational challenges that potentially constrain capacity and for which the provision of additional track is one potential mitigation. 'Congestion' has become a common term used to describe these challenges, which include resequencing, provisioning, crew changes, brake tests, roll-by inspections, empty train holding and the management in general of peaks and troughs caused by the demand profile. These challenges are whole-of-chain issues that ARTC is not in a good position to model and for which it looks to the HVCCC to take the lead through its analysis of system capacity.

In seeking to mitigate congestion it is important to understand that these 'congestion' issues are system issues for which additional rail infrastructure is one option to enable the full capacity of the rail network to be realised. Equally, delivering improvements to network operations to ensure that utilisation of the network is optimised offers other potential solutions. Infrastructure solutions can offer

a high degree of confidence in the outcome but usually require a much longer lead time than operational solutions.

The 2012 Strategy continued the commentary on the congestion issues arising from growth in the task. Congestion remains a concern and for 2013 the congestion issues resulted in the HVCCC declared inbound throughput falling short of contracted volumes.

HVCCC has nominated a number of projects to deal with the congestion issue and ARTC has been working with the HVCCC on concept assessments of these projects for consideration by the RCG. The focus has primarily been in relation to the challenges of managing empty trains given variability in the task, and constraints on train arrivals due to train speeds into KCT.

Finally, any future development of T4 would push the double track corridor between Hexham and the terminals toward its limits. To accommodate the full T4 potential volume of 120 mtpa it would be necessary to provide at least an additional track for arriving trains. Notwithstanding that PWCS has now deferred T4, this Strategy includes an overview of the options for a third track between Hexham and Kooragang.

Hexham Holding Roads

The 2012 Strategy noted the analysis undertaken in previous years that had found that a four track resequencing facility at Hexham was desirable to be able to manage disruption for volumes above 180 mtpa. It also noted that the number of trains out of sequence had been estimated to increase by 55% as a result of the 15% increase in volume in going from 180 mtpa to 207 mtpa and that in recognition of this it would be desirable to take advantage of the space available to construct a fifth holding track.

The RCG has now approved construction of a five track facility at Hexham. It will sit between the Up and Down coal roads and will only be accessible from the Up. The design allows for future use as a crew change facility but the physical works are not included in the approved scope. The facility is opposite the proposed Aurizon provisioning facility but does not have any operational interaction with it.

KCT Arrival Roads

HVCCC modelling has found that the current configuration of the KCT arrival roads is not capable of processing the required volume of trains and is a major constraint on current volumes. Both permissible and observed speeds contribute to the issue.

The primary causes of the low speeds appear to be crew changes at the throat of the terminal (K9 signal) delaying trains, and the appropriate speed of trains in a yard environment, where drivers need to use discretion as to an appropriate speed given the conditions.

Subsequent to the 2012 Strategy, ARTC identified an opportunity to partially mitigate this issue through a minor reconfiguration of the arrival roads junction. The opportunity has been taken to use a previously redundant crossover to reconfigure the junction so that trains to dump stations 1 & 2 diverge from those going to 3 & 4 approximately 650 metres sooner. This is shown in figure 14.

HVCCC has proposed that there should be the ability to hold four trains in parallel before the KCT arrival roads. ARTC has now developed concept designs for such an arrangement.

Provision of a single additional track, which would allow two trains to be held in parallel, can be done without the need to move the Jemena gas main that runs parallel to the track, but would require a major retaining wall which may present issues with obtaining environmental approvals. In table 7 this is shown as stage 2.

Provision of the full four track arrangement will require relocation of the gas pipeline and needs to be engineered to accommodate T4, as well as further encroaching on the wetlands. In table 7, this is described as stage 3.

It has also been noted though that train speed is a major issue. As discussed above, this arises due to crew changes, and operation under yard conditions, whereby drivers need to use their judgment to stop behind the next train and will drive at a speed they consider safe given train handling and sighting distance conditions.

The train crewing issue is challenging as the current institutional arrangements do not provide an obvious mechanism for developing a whole of system approach to crewing. ARTC has decided to take the initiative on this issue and has commenced a process with operators to develop a crewing strategy. Clearly, eliminating crew changes at the entrance to the KCT arrival roads would improve network performance, but needs to be considered within the broader context of operator crewing requirements.

Train speed within an unsignaled environment is primary determined by driver judgement as to what is a safe speed given the circumstances. An option to address this is to provide signaling within the arrival roads so that drivers have confidence to travel at higher speeds. ARTC is also therefore looking in more detail at the signaling requirements for both the proposed additional arrival roads and the existing arrival roads to determine what scope of signaling is required to ensure trains travel at the speed

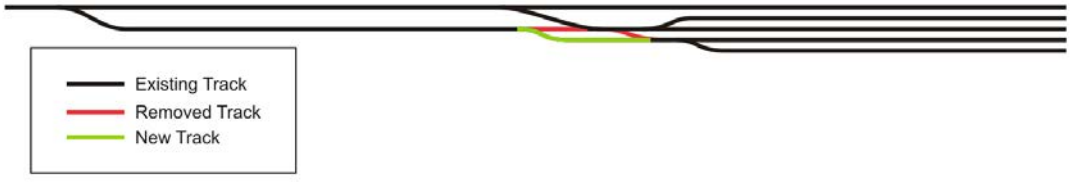


Figure 14 - KCT Arrival Roads Reallignment

necessary to achieve the required clearance time at the junction of the arrival roads, and the extent to which improved signaling may mitigate the requirement for additional arrival roads.

KCT Departure Roads

The HVCCC previously identified that to address congestion there was a need for eight to ten clear departure roads at KCT, at least two for each dump station (including dump station 4, then under construction). This physical infrastructure recognised that despite a focus on train departure compliance to plan a significant proportion of departures exceeded the target of departure within one hour of plan.

KCT originally had six departure roads, though one of these was used by PN for provisioning. As part of the DS4 project, PWCS constructed an additional three departure roads, of which one was to become the future exit track for T4. With the completion of the DS4 project, there are, therefore, the required eight departure roads.

In addition, ARTC has acquired departure road No 3 from PN now that PN has relocated its provisioning functions to the new Greta facility. The RCG has endorsed a proposal to extend and reconfigure the junction for this track to give an additional clear departure road. This will increase the number of clear departure roads to nine.

ARTC had also developed an initial concept to extend cripple roads 3 and 4, which are on the inside of the KCT balloon loop, to give an additional two departure roads, which would deliver a total of 11.

The RCG has endorsed work on this project proceeding based on analysis by HVCCC that showed they provided a material benefit to total throughput. These two additional roads may become more of the nature of train park-up tracks, which is discussed further below.

Down Relief Hubs

An issue that was first highlighted in the 2012 Strategy is empty train management. This issue is essentially one of what to do with empty trains while they await departure for their next outbound trip. This wait can either be a matter of minutes, or at the extreme, a period of days, particularly when there is a major close-down.

On a day-to-day basis, the key issue is that there is regularly a mismatch between the time a train becomes available for its next trip and the time that that train can depart given path constraints (particularly on the single track sections), load point constraints, coal availability constraints and limitations on which load points a train type / operator can service.

To ensure that the departure roads at KCT and NCIG are kept clear to allow trains to dump, the HVCCC has set a target that all trains should depart within one hour of plan. Essentially the issue that arises is where these trains go to if there is no load point ready to receive them.

HVCCC identified a proposal for a number of down relief hubs to address this issue. Since the 2012 Strategy, the primary focus has been on:

- Drayton Down Relief Hub, which is a single holding track adjacent to the mainline immediately before the Drayton Branch and connecting directly to both the mainline and the Drayton branch.
- Whittingham Down Relief Hub, which is a set of up to three holding tracks adjacent to the Whittingham branch somewhere between the junction and the Golden Highway overbridge.

The Drayton facility is now at a relatively advanced stage with the RCG approving detailed design. The Whittingham facility is still at the concept stage.

The current HVCCC analysis of the Whittingham facility suggests that the marginal benefit of each additional relief track declines significantly. In light of this the current proposal is to pursue a facility with two tracks. Two options are currently being assessed in greater detail. Locating the facility close to the Whittingham Junction provides the lowest cost solution, while locating it close to the Golden Highway bridge provides additional operational benefit, including the ability to use the track as a loop and thereby effectively split the single track section in two, increasing capacity and flexibility.

Train Park-up

The HVCCC has identified the need for additional train park-up options as among the measures to help address congestion. These options would be for the longer term standing of trains (say, longer than 6 hours), particularly on constrained days when it is preferable to get trains out of the system.

The HVCCC has suggested that there is a need for around 5-8 tracks for this year and 2014, rising to 7-10 tracks in 2015 and then 10-12 in 2017.

The ideal configuration of park-up locations is that they be located close to crew sign-on points, suitable for trains to be stabled un-crewed, and away from possible vandalism, recognising that few sites will meet all these criteria and that different operators have different sign-on locations.

ARTC has identified locations to construct up to 15 train park-up tracks ranging in cost per track from $8.6 m to $40 m as shown in table 7. The total cost of all 15 tracks would be $300 m. Not all of the options are consistent with the preferred features for a park-up location.

The RCG has approved work proceeding on KCT departure roads 7 & 8. These have the potential to be used as either train park-up if they are built in an unsignaled form, or both park-up and short term holding if they are fully signaled.

Hexham – Kooragang Third Track

The 2012 Strategy considered the need for a third track between Hexham and Kooragang Island. It concluded that provided trains operated at close to line speed a third track would only be required when T4 moved beyond two dump stations. However, it also recognised that trains do not typically travel at line speed and recommended that work commence on a concept assessment of the project.

The concept assessment work to date has identified a number of possible engineering options for the Hexham—Kooragang Third Track, with variations on both the Up and Down sides of the corridor. The order of magnitude cost of the third track is $385 m to $460 m depending on the option.

The current focus of work on this project is refinement of the signalling solution. In the context of the project it was noted that the signalling for the new track should replicate the signalling of the existing Up track, provided the existing signalling was optimised. However, there has been no recent analysis done of the existing signalling and whether it is providing appropriate trade-offs to maximise throughput. Accordingly the project team is now reviewing the existing signalling. It is anticipated that this review will also help establish what an appropriate trigger is for the construction of the third track.

The 2012 Strategy proposed a date of Q4 2017 as a target for the project. This approximately aligned with train volumes onto the island exceeding an average of 100 per day. Current volume projections do not reach 100 trains per day, even under the prospective volumes scenario. As such it does not now feature in the future program, but the requirement for and the timing of the project will be reviewed again once the concept assessment is complete and an appropriate recommendation will be made to the RCG.

Option	Number of Tracks	Estimated Cost	Cost per track	Earliest Commissioning
KCT Departures 7 & 8	2	$ 45.0	$22.5	Q2 2014
Carrington Yard	3	$ 25.9	$8.6	Q1 2015
Bengalla to Mangoola Train 1 extension	1	$ 40.0	$40.0	Q4 2014
Bengalla to Mangoola Train 2 extension	1	$ 24.5	$ 24.5	Q3 2015
Bengalla to Mangoola Train 3 extension	1	$ 35.7	$ 35.7	Q1 2016
Bengalla to Mangoola Train 4 extension	1	$ 24.8	$ 24.8	Q2 2014
Rutherford	2	$ 35.1	$ 17.6	Q1 2016
Pothana Lane	2	$ 34.5	$ 17.3	Q1 2016
Minimbah bank	2	$ 34.5	$ 17.3	Q1 2016
Total	**15**	**$ 300.0**	**$ 20.0**	

Table 7 - Potential train park-up options

7

Overview of the recommended projects

A summary of the recommended projects for contracted volumes comparing previous and new proposed delivery timeframes, together with estimated costs at a p75[4] level, is shown in Table 8.

Proposed delivery dates have been developed based on the 'required by' timing, recognising the need to manage resource levels, particularly for project commissioning.

Table 9 shows the same detail as Table 8, for the scope of work required for prospective volumes. In Table 9, costs are shown as both unescalated and escalated based on the 'proposed by' delivery dates.

Projects required for both contracted and prospective volumes are shown in both tables as the timing can vary, though congestion projects only appear in table 8.

ATMS

As noted in Chapter 1, ATMS has the potential to replace a number of signalling projects as well as defer and / or save on the costs of other projects. Of the projects required for prospective volumes it could replace:

- Minimbah bank resignalling
- Drayton—Whittingham bi-di
- Drayton—Whittingham resignalling, and
- Muswellbrook—Drayton resignalling

4 A P75 value indicates that the project has been assessed as having a 75% probability of being delivered for the identified cost, or less.

Contracted Volume	2012 Strategy – Proposed by	2013 Strategy – Required by	2013 Strategy – Proposed by	Change 2012 Strategy to 2013 Strategy (Proposed)	Estimated Cost ($m, escalated P75)
Ulan Line					
Mt Pleasant (formerly Bengalla West extension)	Q1 2014	Not Required	-	-	-
Widden Creek	Q2 2015	Not Required	-	-	-
Murrumbo West (to 374.1 km)	Q1 2016	Not Required	-	-	-
Gulgong	Q1 2016	Not Required	-	-	-
Gulgong - Tallawang CTC	Q2 2015	Not Required	-	-	-
Ulan - Tallawang upgrading	Q2 2016	Not Required	-	-	-
Gunnedah Line					
30 tonne axle load upgrade	New	Q1 2015	Q1 2015	-	$23 see note
Scone reconfiguration	Q2 2013	Q3 2013	Q1 2014	+ 3 months	$8
Wingen loop	Q3 2014	Not required	-	-	-
Gunnedah Yard Upgrade / South Gunnedah loop	Q3 2013	Q3 2014	Q4 2014 / Q3 2014	+ 15 months	$15 / $23
Congestion Projects					
Port Holding Roads (Hexham)	Q2 2014	ASAP	Q4 2014	+ 6 months	$163
Kooragang Departure Road no 3	Q2 2015	ASAP	Q1 2014	- 15 months	$32
Kooragang Arrival Roads Stage 2	Q3 2017	ASAP	Q3 2015	- 24 months	$30
Kooragang Arrival Roads Stage 3	Q3 2017	ASAP	Q2 2016	- 15 months	$60
Drayton Relief Hub see note	Q4 2017	ASAP	Q1 2015	- 30 months	$33
Whittingham Relief Hub see note	Q4 2017	ASAP	Q1 2016	- 21 months	$42
Train Parkup	Q3 2017	-	See Table 7	-	See Table 7

Notes:

All the above projects (including scope, timing, and funding arrangements) are subject to consultation with and endorsement by the industry.

Dollar estimates are based on current known: Scope; survey and geotechnical knowledge; legislation and tax regimes. Project dollars are order of magnitude estimates only and do not represent concluded project dollars.

The HVCCC has identified other relief hub options that may be progressed subject to further operational and engineering analysis . At this stage the scope of such projects is too uncertain to provide indicative timeframes or costs.

The cost of the Gunnedah basin 30 tonne axle load scope refers to the incremental cost of renewal works brought forward and required before 30 tonne axle loads is introduced. Total expenditure, including already planned renewals, prior to 30 tonne axle loads is $55 m.

Table 8 - Recommended Projects, Delivery Schedule and Costs for Contracted Volumes

Contracted plus Prospective Volume	2012 Strategy – Required by	2013 Strategy - Required by	Estimated Cost ($m) unescalated 2013, order-of-magnitude	Estimated Cost($m) escalated, order-of-magnitude	Estimated Concept Assessment Cost (see note)
Port—Maitland					
Hexham - Kooragang 3rd Track	Q1 2020	Beyond 2022	$384	-	
Maitland - Muswellbrook					
Farley - Maitland 3rd track (incl Maitland yard)	Q1 2017	Beyond 2022	$152	-	
Branxton - Greta 3rd track	Q1 2017	Beyond 2022	$119	-	
Minimbah Bank resignalling	Q1 2016	Q1 2020	$2	$3	
Drayton - Whittingham bi-di	Q2 2016	Q1 2019	$31	$43	
Drayton - Whittingham resignalling (incl Nundah)	Q2 2016	Q1 2020	$26	$38	
Nundah Bank third track extension	Q1 2017	Not required	-	-	
Muswellbrook - Drayton resignalling	Q1 2016	Q1 2020	$15	$22	
Muswellbrook Junction	Q1 2017	Q1 2020	$69	$101	
Ulan Line					
Mt Pleasant (formerly Bengalla West)	Q3 2015	Q3 2016	$23	$27	
Mangoola west	Q3 2017	Q1 2020	$37	$54	$230 k
324 km	Q3 2017	Q1 2018	$27	$35	
337 km	Q1 2016	Q1 2019	$26	$36	$180 k
Baerami west	Q3 2017	Q1 2020	$62	$91	$320 k
Widden Creek	Q3 2015	Q1 2016	$39	$45	
Bylong east	Q3 2015	Q1 2018	$98	$127	
Coggan Creek west	Q1 2016	Q3 2021	$48	$74	
Gulgong	Q3 2016	Q3 2016	$21	$24	$205 k
Gulgong - Tallawang CTC	Q3 2015	Q3 2015	$15	$16	$220 k
Ulan - Tallawang upgrading	Q3 2015	Q3 2015	$96	$109	$1,620 k
Gunnedah Basin Line					
Aberdeen	Q1 2015	Q4 2014	$16	$16	
311 km loop (Previously Togar north)	Q1 2015	Q3 2014	$23	$24	
Scone reconfiguration	Q1 2014	Q3 2013	$8	$8	
316 km loop (Previously Parkville south)	Q1 2016	Q1 2020	$39	$57	$240 k
Wingen	Q3 2014	Q3 2014	$23	$24	
Blandford	Q1 2015	Q1 2015	$32	$35	
Blandford south	Q1 2017	Beyond 2022	$58	-	
Pages River—Pages River North	Q1 2016	Q1 2020	$21	$30	
Pages River North - Pangella	Q1 2016	Beyond 2022	$62	-	
Ardglen - Kankool	Q1 2015	Q1 2016	$78	$90	
Willow Tree north	Q1 2016	Beyond 2022	$37	-	
Braefield north	Q3 2017	Beyond 2022	$49	-	
Bells Gate south	Q2 2015	Q1 2016	$40	$46	
407 km loop (previously Werris Creek bypass)	Q1 2015	Q1 2020	$26	$38	
414 km loop (previously Werris Creek bypass)	Q1 2015	Q1 2018	$26	$33	
Burilda South (previously Werris Creek north)	Q1 2017	Beyond 2022	$28	-	
Burilda north	Q1 2016	Beyond 2022	$21	-	
Breeza north	Q1 2016	Beyond 2022	$39	-	
South Gunnedah	Q3 2013	Q1 2015	$22	$24	
Gunnedah Yard Upgrade	New	Q3 2014	$15	$15	
486 km	Q1 2015	Beyond 2022	$22	-	
Collygra	Q1 2015	Q1 2015	$22	$24	

Notes:

All the above projects (including scope, timing, and funding arrangements) are subject to consultation with and endorsement by the industry.

Dollar estimates are based on current known: Scope; Survey and geotechnical knowledge; legislation and tax regimes. Project dollars are order of magnitude estimates only and do not represent concluded project dollars.

In accordance with the provisions of the HVAU, an estimated cost for a concept assessment is shown for all projects required within the Strategy timeframe that have not yet had concept assessments either completed or funding approved by the RCG.

Table 9 - Recommended Projects, Delivery Schedule and Costs for Prospective Volumes

8

Network capacity with revised project scope and timing

Following the release of the 2012 Strategy, industry indicated that it found the style of presentation of capacity data used in the 2011 Strategy more useful than the 2012 format. Accordingly this Strategy reverts to the 2011 format.

Demand and capacity by sector, based on the project timings recommended in this Strategy, and using the calculation methodology set out in Chapter 1, is shown in figures 15, 16 and 17. These charts show both contracted and prospective volumes.

Saleable coal train capacity and coal tonnage capacity by sector for the contracted volume scenario is shown in tables 11 and 12 respectively. Tables 13 and 14 show the equivalent information for prospective volumes, for train numbers and tonnage respectively.

The HVAU also requires that the Capacity Strategy provide details of net capacity, that is total capacity less contracted coal and non-coal volumes. This is shown in general in figures 15, 16 and 17. It is not possible to provide both total capacity and net capacity by line section as this would allow volume by load point to be backsolved.

To give an indication of net capacity table 10 provides net capacity for 3 key line sections for contracted volumes and is intended to complement figures 15, 16 and 17.

Net Capacity (paths)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Pricing Zone 3 (at Werris Creek)	2.4	5.6	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Pricing Zone 2 (at Bylong)	6.1	3.3	1.9	1.9	1.9	1.7	1.7	1.7	1.7	1.7
Pricing Zone 1 (at Whittingham)	42.9	37.1	31.0	31.0	30.4	29.6	29.1	29.1	29.1	29.1

Table 10 - Surplus coal path availability (total capacity less contracted volume) for indicative line sectors for each zone.

	2013				2014				2015				2016				2017				2018			
Narrabri - Boggabri	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
Boggabri - Gunnedah	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
Gunnedah - Watermark Jct	8.1	8.1	8.4	8.4	8.4	8.4	8.4	10.9	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7
Watermark Jct - Caroona Jct	8.1	8.1	16.6	16.6	16.6	16.6	16.6	16.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6
Caroona Jct - Werris Creek	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8
Werris Creek - Scone	9.7	9.9	9.9	9.9	13.0	13.0	13.0	13.0	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
Scone - Muswellbrook	10.4	10.4	10.4	10.4	11.1	11.1	11.1	11.1	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2
Cobbora - Ulan	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
Ulan - Moolarben	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3
Moolarben - Wilpingjong	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3
Wilpingjong - Bylong	15.1	16.6	16.6	16.6	16.6	16.6	16.6	16.6	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9
Bylong - Ferndale	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3
Ferndale - Mangoola	20.9	20.9	20.9	20.9	20.9	20.9	20.9	20.9	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Mangoola - Mt Pleasant	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.7	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9
Mt Pleasant - Bengalla	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.7	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9
Bengalla - Muswellbrook	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0
Muswellbrook - Drayton	45.2	45.2	45.2	45.2	45.2	45.2	45.2	45.2	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4
Drayton - Newdell	76.8	76.8	76.8	76.8	76.8	76.8	76.8	76.8	73.6	73.6	73.6	73.6	73.6	73.6	73.6	73.6	73.6	73.6	73.6	73.6	73.6	73.6	73.6	73.6
Newdell - Mt Owen	109	109	109	109	109	109	109	109	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104
Mt Owen - Camberwell	83.4	83.4	83.4	83.4	83.4	83.4	83.4	83.4	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
Camberwell - Whittingham	83.4	83.4	83.4	83.4	83.4	83.4	83.4	83.4	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
Whittingham - Maitland	87.7	87.7	87.7	87.7	87.7	87.7	87.7	87.7	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1
Maitland - Bloomfield	141	141	141	141	141	141	141	141	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136
Bloomfield - Sandgate	141	141	141	141	141	141	141	141	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136

Table 11 - Saleable capacity in coal train numbers (round-trips per day) for contracted volume

	2013				2014				2015				2016				2017				2018			
Narrabri - Boggabri	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2
Boggabri - Gunnedah	22.1	22.1	22.1	22.1	22.1	22.1	22.1	22.1	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5
Gunnedah - Watermark Jct	17.9	17.9	18.5	18.5	18.5	18.5	18.5	24.0	24.2	24.2	24.2	24.2	24.2	24.2	24.2	24.2	24.2	24.2	24.2	24.2	24.2	24.2	24.2	24.2
Watermark Jct - Caroona Jct	17.9	17.9	36.6	36.6	36.6	36.6	36.6	36.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6
Caroona Jct - Werris Creek	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6
Werris Creek - Scone	20.9	21.2	21.2	21.2	28.6	28.6	28.6	28.6	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3
Scone - Muswellbrook	22.4	22.4	22.5	22.5	24.3	24.3	24.3	24.3	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6
Cobbora - Ulan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ulan - Moolarben	59.5	59.5	59.5	59.5	59.5	59.5	59.5	59.5	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0
Moolarben - Wilpingjong	55.4	55.4	55.4	55.4	56.7	56.7	56.7	56.7	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9
Wilpingjong - Bylong	45.4	49.9	49.9	49.9	50.9	50.9	50.9	50.9	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.5	48.5	48.5	48.5
Bylong - Ferndale	41.8	41.8	41.8	41.8	42.6	42.6	42.6	42.6	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.6	40.6	40.6	40.6
Ferndale - Mangoola	64.4	64.4	64.4	64.4	64.8	64.8	64.8	64.8	61.9	61.9	61.9	61.9	61.9	61.9	61.9	61.9	61.9	61.9	61.9	61.9	61.8	61.8	61.8	61.8
Mangoola - Mt Pleasant	60.6	60.6	60.6	60.6	60.7	60.7	60.7	60.7	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0
Mt Pleasant - Bengalla	60.4	60.4	60.4	60.4	60.5	60.5	60.5	60.5	57.9	57.9	57.9	57.9	57.9	57.9	57.9	57.9	57.9	57.9	57.9	57.9	57.8	57.8	57.8	57.8
Bengalla - Muswellbrook	160	160	160	160	165	165	161	161	167	167	167	167	167	167	167	167	167	167	167	167	167	167	167	167
Muswellbrook - Drayton	124	124	124	124	128	128	125	124	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129
Drayton - Newdell	218	218	218	218	221	221	217	217	219	219	219	219	219	219	219	219	219	219	219	219	219	219	219	219
Newdell - Mt Owen	313	313	312	312	317	317	311	311	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313
Mt Owen - Camberwell	239	239	238	238	242	242	238	237	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239
Camberwell - Whittingham	242	242	242	242	244	244	241	241	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240
Whittingham - Maitland	247	247	247	247	248	248	245	245	245	245	245	245	245	245	245	245	245	245	245	245	245	245	245	245
Maitland - Bloomfield	399	399	398	398	400	400	395	395	396	396	396	396	396	396	396	396	396	396	396	396	396	396	396	396
Bloomfield - Sandgate	400	400	399	399	401	401	396	396	396	396	396	396	396	396	396	396	396	396	396	396	397	397	397	397

Table 12 - Saleable capacity in tonnes for contracted volume

	2013				2014				2015				2016				2017				2018			
Narrabri - Boggabri	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
Boggabri - Gunnedah	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6
Gunnedah - Watermark Jct	8.1	8.1	8.4	8.4	8.4	8.4	10.9	10.9	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4
Watermark Jct - Caroona Jct	8.1	8.1	16.6	16.6	16.6	16.6	16.6	16.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6
Caroona Jct - Werris Creek	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	20.5	20.5	20.5	20.5
Werris Creek - Scone	9.7	9.9	9.9	9.9	13.0	13.0	13.2	13.2	11.2	11.2	11.2	11.2	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5
Scone - Muswellbrook	10.4	10.4	10.4	10.4	11.1	11.1	14.3	26.5	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Cobbora - Ulan	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
Ulan - Moolarben	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3
Moolarben - Wilpingjong	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3
Wilpingjong - Bylong	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9
Bylong - Ferndale	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.3	13.3	13.3	13.3	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	17.5	17.5	17.5	17.5
Ferndale - Mangoola	20.9	20.9	20.9	20.9	20.9	20.9	20.9	20.9	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Mangoola - Mt Pleasant	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.7	18.9	18.9	18.9	18.9	18.9	18.9	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0
Mt Pleasant - Bengalla	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.7	18.9	18.9	18.9	18.9	18.9	18.9	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0
Bengalla - Muswellbrook	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0
Muswellbrook - Drayton	45.2	45.2	45.2	45.2	45.2	45.2	45.2	45.2	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4
Drayton - Newdell	76.8	76.8	76.8	76.8	76.8	76.8	76.8	76.8	73.6	73.6	73.6	73.6	73.6	73.6	73.6	73.6	73.6	73.6	73.6	73.6	73.6	73.6	73.6	73.6
Newdell - Mt Owen	109	109	109	109	109	109	109	109	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104
Mt Owen - Camberwell	83.4	83.4	83.4	83.4	83.4	83.4	83.4	83.4	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
Camberwell - Whittingham	83.4	83.4	83.4	83.4	83.4	83.4	83.4	83.4	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
Whittingham - Maitland	87.7	87.7	87.7	87.7	87.7	87.7	87.7	87.7	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1
Maitland - Bloomfield	141	141	141	141	141	141	141	141	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136
Bloomfield - Sandgate	141	141	141	141	141	141	141	141	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136

Table 13 - Saleable capacity in coal train numbers (round-trips per day) for prospective volume

	2013				2014				2015				2016				2017				2018			
Narrabri - Boggabri	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2
Boggabri - Gunnedah	22.1	22.1	22.1	22.1	22.1	22.1	22.1	22.1	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5
Gunnedah - Watermark Jct	17.9	17.9	18.5	18.5	18.5	18.5	24.0	24.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0
Watermark Jct - Caroona Jct	17.9	17.9	36.6	36.6	36.6	36.6	36.6	36.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6
Caroona Jct - Werris Creek	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	57.2	57.2	57.2	57.2
Werris Creek - Scone	20.9	21.2	21.2	21.2	28.6	28.6	28.9	28.9	31.2	31.2	31.2	31.2	43.3	43.3	43.3	43.3	43.3	43.3	43.3	43.3	43.3	43.3	43.3	43.3
Scone - Muswellbrook	22.4	22.4	22.5	22.5	24.3	24.3	31.5	58.2	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5
Cobbora - Ulan	-	-	-	-	-	-	-	-	-	-	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8
Ulan - Moolarben	59.5	59.5	59.5	59.5	59.5	59.5	59.5	59.5	57.0	57.0	54.7	54.7	54.3	54.3	53.9	53.9	53.9	53.9	53.5	53.5	53.5	53.5	53.5	53.5
Moolarben - Wilpingjong	55.4	55.4	55.4	55.4	56.7	56.7	56.7	56.7	53.9	53.9	53.0	53.0	52.7	52.7	52.6	52.6	52.6	52.6	52.3	52.3	52.3	52.3	52.3	52.3
Wilpingjong - Bylong	49.9	49.9	49.9	49.9	50.9	50.9	50.9	50.9	48.6	48.6	48.1	48.1	48.0	48.0	47.9	47.9	47.9	47.9	47.8	47.8	47.6	47.6	47.6	47.6
Bylong - Ferndale	41.8	41.8	41.8	41.8	42.6	42.6	42.6	42.6	40.7	40.7	40.3	40.3	43.9	43.9	43.8	43.8	43.8	43.8	43.7	43.7	52.5	52.5	52.5	52.5
Ferndale - Mangoola	64.4	64.4	64.4	64.4	64.8	64.8	64.8	64.8	61.9	61.9	61.3	61.3	61.2	61.2	61.0	61.0	61.0	61.0	60.9	60.9	60.6	60.6	60.6	60.6
Mangoola - Mt Pleasant	60.6	60.6	60.6	60.6	60.7	60.7	60.7	60.7	58.0	58.0	57.6	57.6	57.5	57.5	97.5	97.5	97.5	97.5	97.3	97.3	96.9	96.9	96.9	96.9
Mt Pleasant - Bengalla	60.4	60.4	60.4	60.4	60.5	60.5	60.5	60.5	57.9	57.9	57.5	57.5	57.4	57.4	97.4	97.4	97.4	97.4	97.2	97.2	96.9	96.9	96.9	96.9
Bengalla - Muswellbrook	160	160	160	160	165	165	161	161	167	167	167	167	166	166	166	166	166	166	166	166	165	165	165	165
Muswellbrook - Drayton	124	124	124	124	128	128	125	124	129	129	129	129	129	129	129	129	129	129	128	128	128	128	128	128
Drayton - Newdell	218	218	218	218	221	221	217	217	219	219	219	219	218	218	218	218	218	218	218	218	217	217	217	217
Newdell - Mt Owen	313	313	312	312	317	317	311	311	312	312	312	312	312	312	311	311	311	311	311	311	310	310	310	310
Mt Owen - Camberwell	239	239	238	238	242	242	238	237	238	238	238	238	238	238	238	238	237	237	237	237	237	237	237	237
Camberwell - Whittingham	242	242	242	242	244	244	241	241	239	239	239	239	239	239	239	239	239	239	238	238	238	238	238	238
Whittingham - Maitland	247	247	247	247	248	248	245	245	245	245	245	245	245	245	245	245	245	245	245	245	244	244	244	244
Maitland - Bloomfield	399	399	398	398	400	400	395	395	395	395	396	396	395	395	395	395	395	395	395	395	395	395	395	395
Bloomfield - Sandgate	400	400	399	399	401	401	396	396	396	396	390	390	390	390	388	388	388	388	385	385	386	386	386	386

Table 14 - Saleable capacity in tonnes for prospective volume

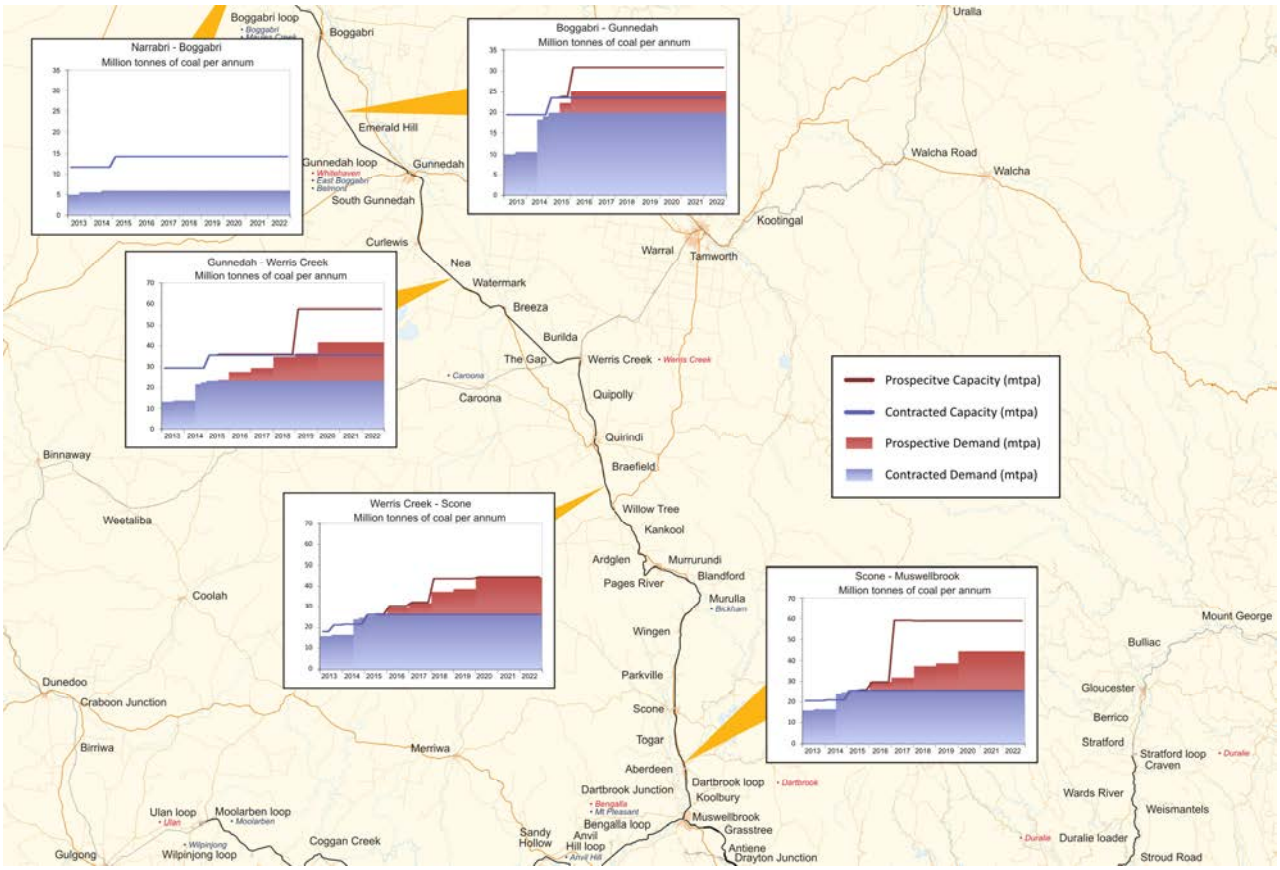


Figure 15 - Volume and capacity on the Gunnedah basin line.

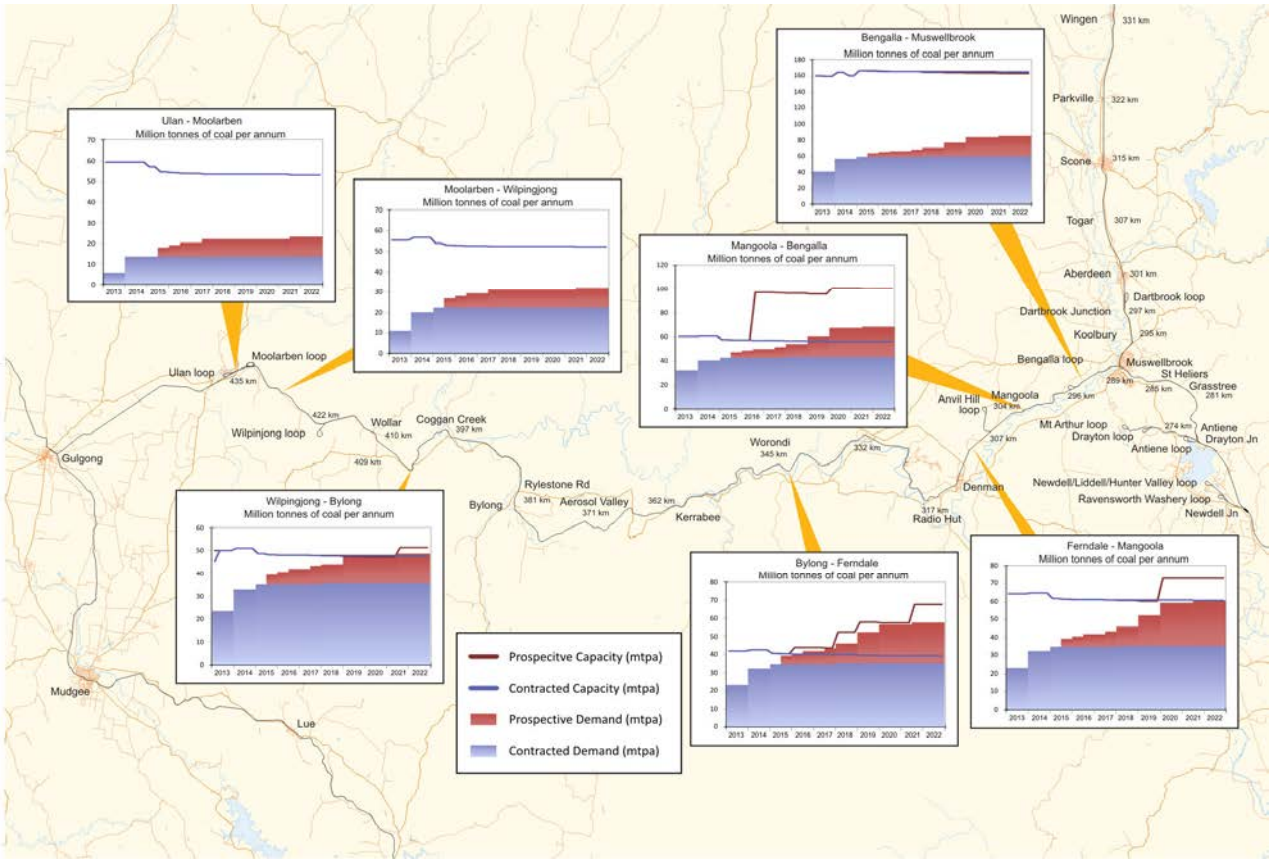


Figure 16 - Volume and capacity on the Ulan line

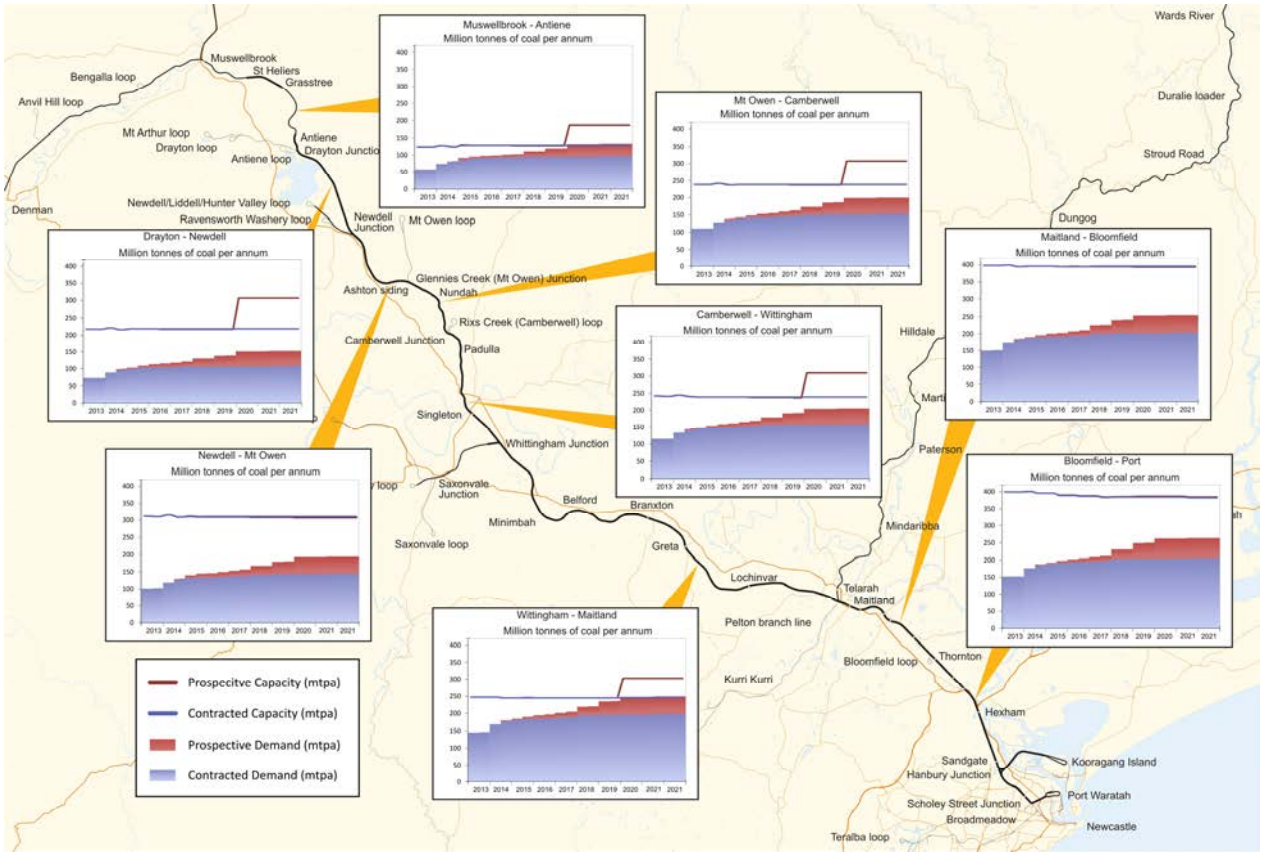


Figure 17—Volume and capacity Muswellbrook—Newcastle