

**AUSTRALIAN RAIL TRACK CORPORATION LTD**  
**HUNTER VALLEY COAL NETWORK ACCESS UNDERTAKING**  
**OPTIONS FOR POSITIVE PERFORMANCE INCENTIVE**  
**MECHANISMS – NON TRUE-UP TEST**  
**ARTC REPORT AND PROPOSAL**



**JULY 2012**

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## 1. Background to the development of options for consideration

This report follows on from a consultation document provided to stakeholders in December 2011 (**Consultation Document**). ARTC has elected not to repeat detailed sections and information in relation to the Consultation Document in this report, but rather summarise relevant parts of the document and develop this report around outcomes of that consultation and further consideration by ARTC. As such, this report should be read in conjunction with the Consultation Document.

### **ARTC's 2011 Hunter Valley Access Undertaking (2011 HVAU)**

In June 2011, the 2011 HVAU lodged by ARTC was accepted by the ACCC. This followed previous versions in April 2009 (**2009 HVAU**), September 2010 (**2010 HVAU**) and April 2011 that were subject to a substantial level of consultation and ACCC review. As part of that consultation process, it became clear that:

- there were concerns that the 2011 HVAU (and earlier versions) contained only negative incentives for ARTC to perform as this may cause ARTC to adopt a 'minimum risk' position; and
- coal stakeholders were supportive of the concept of ARTC having positive incentives to perform where this delivered better outcomes for the coal chain (e.g. increased capacity through better use of use of existing infrastructure).

As a result, ARTC has incorporated at Sections 13.3 and 13.5 of the 2011 HVAU provisions to develop:

- within 6 months of the Commencement Date (by December 2011) options for performance incentives which have the objective of encouraging ARTC, through financial reward, to improve operating, maintenance and capital expenditure, and achieve desirable safety outcomes (Section 13.3 of the 2011 HVAU); and
- either in parallel with, or following completion of, a review of the system-wide true up test (**TUT**) to be undertaken following the completion of the first two calendar years after the Commencement Date (early 2014), options for performance incentives which have the objective of encouraging ARTC, through financial reward, to improve performance in relation to making Capacity available for use either on a contracted or ad hoc basis and

balancing the negative consequences of failing the TUT (Section 13.5 of the 2011 HVAU).

Options will be provided to access holders and other stakeholders, and submissions invited. ARTC will consider submissions in good faith and provide a report addressing the options to the ACCC together with lodgement of a variation consistent with that report. This report and proposal to vary the 2011 HVAU (**Report and Proposal**) is submitted by ARTC in order to comply with its obligations under Section 13.3 of the 2011 HVAU. ARTC submits this Report and Proposal in conjunction with an application to vary the 2011 in a manner consistent with the Report and Proposal (**Variation**) in accordance with Section 13.3 of the 2011 HVAU. The Variation includes a copy of the Consultation Document.

## 2. The Consultation Document

ARTC developed and published on 30 December 2011 for stakeholder consultation the Consultation Document that set out to discuss the issues relating to the adoption of positive incentive mechanisms which have the objective of encouraging ARTC, through financial reward, to improve operating, maintenance and capital expenditure, and achieve desirable safety outcomes and to consider some options available. The Consultation Document raised questions and sought comments from stakeholders in relation to the proposed options to assist in the formulation of positive incentive mechanisms that would have the broad support of stakeholders.

The Consultation Document was intended to address ARTC's commitment made at Section 13.3 of the 2011 HVAU, to develop options for performance incentives which have the objective of encouraging ARTC, through financial reward, to improve operating, maintenance and capital expenditure, and achieve desirable safety outcomes (non-TUT related ARTC performance incentives). The consultation document did not address ARTC's commitment made at Section 13.5 of the 2011 HVAU in relation to TUT related ARTC performance incentives.

The Consultation Document initially considered a number of aspects of the consultation conducted by the ACCC in relation to the 2011 HVAU and previous versions that resulted in the inclusion of Sections 13.3 and 13.5 in the 2011 HVAU including:

- The expression of concerns by the ACCC in relation to the application of the TUT proposed in the 2009 HVAU that sought to rebate take or pay charges to access holders where ARTC failed to deliver system capacity on a monthly or quarterly basis, and access holders did not utilise their base entitlement to path usages in that month or quarter. Specifically, the ACCC expressed concern as to the negative asymmetric nature of the test and the absence of balancing mechanisms to positively incentivise ARTC to invest in, and maximise utilisation of, the Hunter Valley coal network.
- In separate discussions with ARTC, the ACCC also indicated that it could see benefit in incorporating a mechanism that encouraged ARTC to seek to continually improve productivity.

- Following ARTC's proposal of some options to address the ACCC concerns to the ACCC and/or stakeholders, including:
  - a mechanism to positively incentivise ARTC to make capacity, in excess of that contracted and available to users, contrasting the negative incentives in this regard arising under the TUT;
  - a mechanism to incentivise ARTC to improve productivity by enabling ARTC to capture any benefits for delivering services at costs below pre-agreed benchmarks; and
  - permitting ARTC to earn an increment on the regulated return, where it matched agreed benchmarks in relation to Key Performance Indicators.

ARTC detected some acceptance of the need to have such mechanisms and the broad nature of some of the mechanisms proposed. In addition, stakeholders also sought some consideration of mechanisms that reward ARTC for:

- the development of additional capacity through innovative rather than capital intensive means; and
  - achievement of safety targets.
- Following discussions with stakeholders and the ACCC and, in order not to unnecessarily delay finalisation of a Hunter Valley access undertaking, ARTC proposed to incorporate provisions that facilitated development and proposal of performance incentive scheme(s) during the formal consultation process, which were subsequently amended, following ACCC and stakeholder consultation to provide for the development of options and further consultation within a reasonable timeframe following approval of the 2011 HVAU. The provisions of Sections 13.3 and 13.5 reflect this.

The Consultation Document addressed in detail a range of considerations that ARTC believed were relevant to the development of a positive performance incentive scheme (**PPIS**) to apply to ARTC in the Hunter Valley, and in particular focussing on coal services. These considerations included:

- The specific regulatory circumstances proposed for the Hunter Valley;
- The nature of the Hunter Valley coal chain;

- The objective of a performance incentive mechanism;
- The need for a performance incentive mechanism;
- The success factors inherent in a performance incentive mechanism;
- The means for applying a performance incentive mechanism;
- Any specific circumstances that may affect the mechanism; and
- ACCC concerns with the negative asymmetric nature of the performance incentive mechanisms existing in the 2011 HVAU.

Having regard to views above expressed by the ACCC and stakeholders above during formal consultation and the above considerations, the Consultation Document presented four incentive mechanisms that attempt to address a variety of service attributes, which may be considered appropriately in combination, as adopting a single individual measure may result in too much emphasis on one particular aspect of ARTC's performance. Mechanisms presented included:

- *A positive performance incentive mechanism to improve ARTC productivity*, based on encouraging ARTC to continuously seek improvement in productivity and reductions in the cost of service provision to offset the negative asymmetric application of the Ceiling Limit under the 2011 HVAU. Unit costs are set in advance over a multi-year period. Prices are determined in accordance with these costs, taking into account the actual scope of work, inflation and any extenuating circumstances. ARTC is allowed to keep any revenues in excess of actual costs up to the pre-determined amount based on the unit rates. ARTC risks under-recovery to the extent its actual unit costs exceed the previously determined rates and ARTC is unable to demonstrate to the regulator that the variation was justifiable and reasonable (efficient). A number of issues were raised in relation to this mechanism including the nature of the Ceiling Limit under the 2011 HVAU requiring costs to be Efficient and any productivity gains to be passed onto users, as well as some complexity regarding measurement.
- *A positive performance incentive mechanism linked to 2011 HVAU Network Key Performance Indicators (**Network KPIs**)*, designed around ARTC's reported Network KPIs for the Hunter Valley Network, could be used in combination with the other mechanisms discussed or as a substitute for one or more of them. The precise form of a Network KPI based incentive would need to take into consideration any other incentives adopted as this would influence matters such

as identifying the relevant Network KPI and determining suitability, agreeing standards and benchmarks, and prioritisation and quantification of the incentives.

- *A positive performance incentive mechanism directly linked to achievement of safety targets*, which recognised that there is a risk that incentives based purely on economics or efficiency may work against maintaining the focus on safety, both as in regard to ARTC's rail operations and to people working on and around the track. ARTC proposed a suite of specific measures targeting performance in relation to specific safety attributes. Composite measures covering more than one specific measure could also be considered.
- *A positive performance incentive mechanism focussed around encouraging the use of innovation (soft assets) to achieve outcomes that could be delivered through hard assets (infrastructure)* to address the fact that ARTC is not rewarded for solutions derived from innovation that extract additional productivity from an existing asset base as the Ceiling Limit under the 2011 HVAU operates to return the additional revenue to access holders. This has the potential to encourage ARTC to seek solutions that are based on the construction of 'hard' assets in preference to solutions derived from innovation. To overcome this, ARTC proposed an incentive mechanism based on 'capitalising' into the asset base 50% of the value of the equivalent 'hard' asset that would have produced the same additional capacity as is achieved through innovation, subject to endorsement by the Rail Capacity Group (**RCG**).

The Consultation Document sought comments from stakeholders as to the structure and composition of a PPIS that is intended to encourage desired behaviours in ARTC and balance the negative incentives already contained in the 2011 HVAU.



### 3. Stakeholder Submissions

Three submissions were received from stakeholders in response to the Consultation Document. Stakeholders responding were:

- Asciano;
- Coal & Allied; and
- Vale.

These submissions have been provided (where ARTC has been permitted to do so) with the Variation.

In broad terms submissions were supportive of the concept of ARTC having positive performance incentives. However concerns and suggestions were noted in relation to the options presented in the consultation document, but which were often contrasting between submissions. Nevertheless a few more common themes have been identified by ARTC (in its view) as follows:

- Any performance incentive scheme must aim to encourage ARTC to do things that maximise coal chain throughput (system capacity).
- Any reward must be set against value to the Access Holder.
- A performance scheme should be based on the combined performance in relation to individual measures.
- The concept of incentivising ARTC performance in relation to safety by third parties through an economic model may not be appropriate. If such incentives were to exist, satisfactory performance in relation to a safety performance incentive should act as a 'trigger' to accessing any rewards under other performance incentives.
- Productivity based incentives are either not favoured or considered less important.
- Incentives around Network KPIs under the 2011 HVAU were favoured but should focus on elements such as transit time or system capacity.

- An innovation based performance incentive received mixed reaction noting difficulties around definition and recognising innovation, and strong support for involvement of the RCG in the process. A concern was expressed in relation to creating a mechanism that may result in a very large and permanent increase to capital base not commensurate with innovation, and where the capacity increase may be temporary but capital base gain is permanent.

It should be noted that these are ARTC's conclusions from reviewing the stakeholder submissions. ARTC directs the reader to those submissions provided in order to confirm this conclusion or otherwise.

## **4. ARTC's Response to Stakeholder Submissions**

In addressing the options and preparing proposals, ARTC has sought to have regard to stakeholder submissions.

ARTC notes the importance placed by users on performance incentives that relate to network and system capacity and coal chain throughput. The 2011 HVAU (specifically Access Holder Agreements) provides for a mechanism intended to incentivise ARTC to meet contracted capacity obligations, being the TUT. Section 13.5 of the 2011 HVAU specifically provides for consideration of TUT related performance incentives to offset the negative asymmetric nature of the TUT either in conjunction with or following a future review of the TUT. As such, performance incentives that relate to capacity and throughput will be fully considered at that time.

Nevertheless, this common theme in submissions suggests that stakeholders consider the development of TUT related positive performance incentives as perhaps more important than non-TUT related performance incentives.

Due to the interdependencies that exist between different elements of the coal chain, it can be difficult to clearly identify responsibilities ex post for improvements in the coal chain or failures in performance. Nevertheless, increasing accountability for each participant's contribution to performance could assist in optimising throughput in the long-run. In ARTC's case this is the intent of the TUT.

It is ARTC's view that the consideration of performance and incentives intended to bring about improvement or reduce failure of the Hunter Valley coal chain 'system' is more a matter for the consideration and commitment of a 'whole-of-coal-chain' forum rather than tasking an individual service provider such as ARTC to develop incentive mechanisms designed to maximise or increase coal chain performance.

Despite this, and in recognition of stakeholder views, ARTC has proposed to incorporate performance incentives around Network KPIs that focus on encouraging controllable behaviours linked to capacity and throughput as an interim measure ahead of the more comprehensive development of these types of performances in the review under Section 13.5 of the 2011 HVAU that would be more focussed on capacity utilisation. Performances that are incentivised should be directly controllable by ARTC and should be relatively independent of each other.

In relation to the option for a productivity incentive, it is ARTC's view that the application of the revenue ceiling provided for under the 2011 HVAU provides no incentive for ARTC to perform in excess of existing benchmarks where the benefits of better performance (even where brought about by innovation or through scale benefits) are fully and immediately passed on to Access Holders.

ARTC notes that stakeholders do not favour a productivity incentive (or at least consider it less important than other incentives) and the reasons for these views. Stakeholders would seem to value increased throughput as more important than cost of service. ARTC recognises that the option put forward does raise some concerns (some even raised by ARTC in the consultation document) but is not aware of many other satisfactory mechanisms to achieve an outcome where a revenue ceiling exists. ARTC is concerned that the very nature of the Revenue Limits requiring costs to be Efficient, and rewards require out-performance of 'Efficient', will serve to work against incentives arising from attempting to obtain those rewards.

To this end, ARTC has decided not to incorporate a productivity related positive incentive mechanism at this time.

In relation to the use of a safety performance incentive, ARTC now agrees with the view held by some stakeholders that incentivising ARTC's safety performance through an economic model may not be appropriate where such incentives already exist through the application of other forms of regulation and ARTC's own corporate values and responsibilities. ARTC sees the possibility of unintended consequences arising where third parties are financially rewarding ARTC for performance in relation to safety.

ARTC does not agree with the use of the safety positive performance incentive as a trigger or threshold for achieving rewards in relation to other positive performance incentives. ARTC considers that an 'all or nothing' concept may deliver adverse incentives in relation to performance other than safety.

In order to recognise these views and ARTC's further considerations in this regard, ARTC no longer proposes to incorporate a positive incentive in relation to safety performance in the PPIS.

In relation to an innovation based positive performance incentives, and in recognition of stakeholder views, ARTC has further refined the mechanism to improve certainty of definition and clarify the role of the RCG in the process.

ARTC notes the concern that a mechanism as proposed may result in a very large and permanent increase to capital base not commensurate with innovation, and that a capacity increase may be temporary but capital base gain is permanent. ARTC intends to propose a stronger role for the RCG (and an independent expert where required) in reasonably determining the innovation incentive outcome that reflects the value of the Additional Capacity created. In relation to whether or not a capacity increase is 'temporary' or not, ARTC finds it difficult to establish where Additional Capacity created through hard investment, as opposed to innovation, could be treated differently in this regard. Irrespective of how the Additional Capacity is created, Access Holders, through TOP contracts, pay for that Additional Capacity over the life of that investment (based on average mine life under the 2011 HVAU). The market risk (on constrained parts of the Network) underlying utilisation of the Additional Capacity made available is borne by Access Holders.

ARTC is not convinced that a performance incentive scheme should be based on a composite of individual measures (weighted or otherwise). Positive performance incentive are in most cases intended to address and balance specific negative asymmetric measures existing under the 2011 HVAU. To develop a composite approach is likely to water down or break the linkage between positive and negative incentives impacting on the effectiveness of the scheme in meeting stated objectives.

## **5. QR National Network Draft Incentive Mechanism (DIM)**

The QR National Network (QRNN) 2010 Access Undertaking (2010 AU) covering the central Queensland coal network was accepted by the Queensland Competition Authority (QCA) in October 2010. One of QRNN's obligations under the 2010 AU is to submit to the QCA draft amendments to the revenue cap adjustment provisions that give effect to an incentive framework within 12 months of approval of the 2010 AU. In doing so, QRNN must consult with industry. QRNN submitted to the QCA, in April 2012, a paper titled 'Draft Incentive Mechanism' (DIM Paper) that proposes amendments to the 2010 AU intended to meet this obligation.

Whilst there are certain differences in relation to the circumstances and objectives surrounding QRNN's development and the ARTC's developments under Section 13.3 and 13.5 of the 2011 HVAU, it is likely that there are certain aspects of the development undertaken by QRNN to date that are relevant to ARTC's considerations in preparing this Report and Proposal.

In order to facilitate recognition of the QRNN development, the ACCC has permitted ARTC an extension to the date by which ARTC is required to submit this Report and Proposal.

This section of the Report and Proposal details ARTC's consideration of QRNN's DIM Paper and identifies any adjustments to ARTC's position arising from its own development and consultation to date as summarised in section 4 of this Report and Proposal, that will then be taken into account in developing ARTC's proposed PPIS in section 6.

### **5.1 Circumstances and objectives surrounding QRNN's development of the DIM.**

#### **5.1.1 History – the 2007 'incentive framework'**

An incentive framework was approved by the QCA as part of QRNN's transition to a revenue cap (from a pricing cap) at that time that provided for:

- an adjustment to QRNN's revenue allowance where QRNN failed to provide access due to its own negligence or breach of an access agreement, subject to materiality;
- an ability for QRNN to recover up to 2% of any under-recovery if it can demonstrate to the QCA that additional revenue was either wholly or partly due to a supply chain initiative implemented by QRNN; and
- scope for the QCA to assess whether an adjustment to allowable revenue is required as part of its assessment of variations to reference tariffs.

In the DIM Paper, QRNN indicated that industry had indicated that it did not see that the mechanism was providing an effective performance incentive.

### ***ARTC consideration***

ARTC notes that the 2007 incentive framework has some of the characteristics of the some of the existing 2011 HVAU incentive mechanisms and the options already canvassed by ARTC as described earlier.

The adjustment to QRNN's revenue allowance where QRNN failed to provide access due to its own negligence or breach of an access agreement, subject to materiality, is, not dissimilar to the application of the TUT under the 2011 HVAU in that revenue is adjusted where access is not provided, except that performance would appear to be based around specific contractual obligations addressed on an individual case by case basis rather than around the provision of access to the system as a whole through perhaps a simpler and objective, but proxy test mechanism.

In either case however, the nature of the incentives under both approaches is asymmetric where under-performance against contractual obligations is penalised.

ARTC considers that the TUT may have certain characteristics such as a broader application based around objective measurement that may mitigate against some of the negative aspects of a case by case

performance assessment mechanism that may have been hampered by more confrontational and convoluted application.

ARTC also understands that the existing mechanism providing an ability for QRNN to recover up to 2% of any under-recovery if it can demonstrate to the QCA that additional revenue was either wholly or partly due to a supply chain initiative implemented by QRNN may have been hampered by difficulties faced by QRNN in establishing a clear nexus between its initiatives and supply chain performance, which could be expected in an environment where the performance of several supply chain participants is inter-related and spread across that supply chain.

#### **5.1.2 QRNN's obligation to develop the DIM**

Under the 2010 AU, QRNN is required to consult with industry to develop an incentive framework linked to revenue cap adjustments provisions that provides QRNN with an incentive to operate, and invest in, the network efficiently and in a way that promotes efficiency of a coal supply chain.

ARTC notes that in assessing the DIM, the QCA is required to have regard to certain factors (including the Pricing Principles) and that the DIM:

- will operate in a manner 'such that the objective is reasonably related to contracted entitlements;
- will include a positive incentive QRNN can obtain for outperformance proportionate to the negative incentive for under-performance (symmetry); and
- will not have the effect of increasing or decreasing allowable revenue (at a system level) by more than 5%.

It was also noted that the last factor above was also intended to recognise the need for the DIM to operate at a system level, to mirror the application of annual linked revenue adjustment.



### **ARTC consideration**

ARTC sees certain aspects of the obligation to develop the DIM and the basis for assessment as consistent with ARTC's development under the 2011 HVAU in that:

- incentives would focus around efficient network and supply chain operation and investment;
- there would be a link to contractual obligations;
- there would be a focus on positive incentives to offset existing negative incentives; and
- there would be a system focus.

To this end, ARTC considers that a number of incentives already existing in the 2011 HVAU, specifically the application of the TUT and Ceiling Limit, and the Capacity Investment Framework, are aligned to DIM development obligations and assessment framework, albeit currently framed around providing for negative incentives.

## **5.2 Issues considered by QRNN in developing the DIM.**

ARTC notes that in developing the DIM, QRNN considered a number of principles that should underpin the design of incentives regimes generally. These are described below.

### **5.2.1 Objectives of an incentive framework**

QRNN noted that an incentive framework limited to annual revenue cap adjustments as required could only really address productive efficiency (as opposed to allocative and dynamic efficiency), and that an incentive to invest to promote supply chain efficiency could not be effectively addressed via a revenue cap adjustment. It also noted that R&D expenditure in regulated industries had materially declined since the commencement of regulation, and that any incentive to innovate was

diminished by existing regulatory process which does not support any capture of innovation benefits by the regulated business.

### ***ARTC consideration***

ARTC has considered, and made similar observations in relation to the design of its incentive framework.

## **5.2.2 Design aspects of an incentive framework**

QRNN noted that the success of an incentive framework is a function of a number of factors described below.

- Identification of service attributes that users value most highly

Attributes need to have regard to aspects of supply chain performance that QRNN could directly influence being mainly:

- undertaking sufficient and timely investment;
- undertaking adequate maintenance whilst recognising the impact that maintenance possessions have on network availability; and
- maximising efficient utilisation of network capacity via service scheduling.

QRNN also noted that the existence of differences in customer preferences for service quality represent a design difficulty and unless there was a high level of consistency between users, it may only be possible to reflect specific user preferences under contracts.

- the ability to clearly articulate the desired level of performance

ARTC notes that the QCA identifies a need for service levels to link back to contractual requirements, further strengthening the basis for service quality to be addressed through contract rather than through a revenue adjustment.

QRNN noted the use of a 'dead band' in some regimes, where no adjustment is applied to small performance deviations, to reduce revenue and price variation for small variances, but which limits incentives for management control at the margin where material investment is not required.

- identifying meaningful indicators of performance

QRNN noted the difficulty in attributed responsibility for performance between below rail, above-rail and other causes and the need for measures to be within QRNN's control.

- the strength of the financial incentive provided by the scheme for performance improvement

QRNN noted the difficulties associated with implementing a high powered incentive (resulting in more profit being at risk) under the regulatory regime, where in a capacity and revenue constrained environment, outcomes are asymmetric with limited upside and considerably more downside. A way to address this would be for forecasts to be set at a level well short of capacity to permit more symmetrical outcomes, but such an approach may not be acceptable to the regulator or stakeholders.

QRNN also noted another issue being the extent that a business is able to retain benefits of investments that it makes in quality improvements, and the 'ratchet' effect arising from resetting the bar in the future to reflect improving performance.

- performance is under the control of the regulated business to a significant extent

QRNN noted to challenge associated in designing an incentive regime that isolated factors that QRNN was able to control; an issue for quality regulation in rail generally. The specific QRNN influences on supply chain performance described earlier have implications for other supply chain participants, and the complexities of a coal supply chain and interdependencies between participants make attribution of responsibility for performance difficult. Given such uncertainties, QRNN indicated that a cautious approach is required.

### ***ARTC consideration***

ARTC notes the strong similarity between the factors considered important by QRNN in the design of a successful incentive framework, and the range of considerations that ARTC believed were relevant to the development of a PPIS to apply to ARTC in the Hunter Valley. ARTC's considerations were detailed in the Consultation Document and summarised in section 2 of this Report and Proposal.

ARTC has drawn similar conclusions in many respects to those of QRNN in relation to the difficulties associated with design of an incentive regime in a supply chain environment. ARTC agrees with the aspects of supply chain performance that QRNN considered it could directly influence described earlier and notes that specific performance and incentive arrangements (albeit negative asymmetric) already exist under the 2011 HVAU in relation to these aspects, being the Capacity Investment Framework dealing with network investment, and TUT mechanism dealing with network availability and utilisation.

ARTC similarly notes that the existence of differences in customer preferences for service quality represent a design difficulty and unless there was a high level of consistency between users, it may only be possible to reflect specific user preferences under contracts. However ARTC considers that there is consistency in service quality preferences among the predominant users of Hunter Valley network capacity and is prepared to contemplate system wide performance incentives in recognition of this.

ARTC also notes the advantages and disadvantages associated with the application of a performance 'dead band' and, consistent with QRNN's position, considers that, on balance, the disadvantages associated with applying a dead band outweigh the advantages.

ARTC agrees with QRNN's concerns in relation to the use of high powered incentives in a supply chain environment and where in a capacity constrained environment, outcomes are negative asymmetric. ARTC considers that the focus on only positive incentives, intended to offset the negative asymmetry of existing incentives under the 2011 HVAU as

provided under Sections 13.3 and 13.5 of the 2011 HVAU will mitigate such concerns.

### **5.2.3 Existing features of the regime**

Within the existing regulatory regime, QRNN noted a range of existing performance obligations including:

- development of the Coal Rail Infrastructure Master Plan;
- participation in Supply Chain Groups;
- approval of all operating and capital expenditure by the QCA;
- a rigorous capacity allocation and management framework;
- CPI-X pricing;
- compliance and reporting obligations; and
- contractual obligations.

QRNN noted that the presence of such obligations could also constrain its ability to pursue service quality improvements where these served to increase risk for QRNN in relation to these obligations.

### ***ARTC consideration***

ARTC notes a number of mirror obligations to those identified by QRNN that exist under the 2011 HVAU, but acknowledges that the intent of introducing of performance incentives in both regimes as contemplated is to mitigate the constraints to the pursuit of service quality improvements noted by QRNN.

## **5.3 QRNN's proposed DIM**

QRNN has proposed the following DIM:

1. *'Service standard metrics* which will apply to the Blackwater and Goonyella Systems and is subject to a maximum revenue adjustment of 1% of System

Allowable Revenue in aggregate. The adjustments will apply proportionally across the following three service standard metrics:

- a. *Asset Availability*. The percentage of below rail cancellations directly attributable to QR Network;
  - b. *Asset Reliability*. The number of infrastructure faults which cause a delay in excess of 15 minutes; and
  - c. *Asset Performance*. The number of lost below rail transit minutes attributable to temporary speed restrictions.
2. An *operational and throughput performance incentive* which allows QRNN to retain revenue from services which were not scheduled to operate in the daily train plan where the number of train paths used by coal carrying train services in that month are greater than 110% of contracted coal carrying train paths; and
  3. A *supply chain coordination and efficiency incentive* which allows QR Network to seek additional revenue in its revenue cap submission where it can demonstrate its performance or actions have promoted the efficiency of a coal supply chain.

The operational and throughput performance incentive and the supply chain coordination and efficiency incentive shall not increase the System Allowable Revenue in aggregate by more than 2%.<sup>1</sup>

### **5.3.1 Service Standard Metrics**

#### Service standard metrics proposed by QRNN

- Focus on service quality aspects that QRNN indicate that it provides being path availability, reliability in delivering planned paths and transit time elements within QRNN's control.
- Path Availability - % of scheduled train services cancelled due to a reason directly attributable to QRNN as the track manager. Currently subject to regulatory reporting. For consistency, measurement of available train paths are to be based on scheduled possessions. The performance target should be based on the number of paths typically

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<sup>1</sup> QR National Network Services, Draft Incentive Mechanism, April 2012. P3.  
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required to be available in order to meet contracted throughput, adjusted for specified excusals resulting from such things as force majeure events and closures required for capital works and major maintenance.

QRNN recognised that this measure does not incentivise QRNN to quickly re-open a system following a major disruption, even if this means lower than normal performance for rectification works. QRNN also recognised the complicated aspects arising where path availability on mainlines is generally aligned to port capacity, whilst path availability on feeder branch lines relates more to flexibility needed for different operations (e.g. cargo assembly) and that this may create undesirable incentives to provide paths where there is little or no demand (or value).

- Reliability – infrastructure faults causing a delay in excess of 15 minutes. Not currently publicly reported by QRNN. QRNN noted stakeholder suggestions that an incentive framework should include reference to time frame for the network to recover from major disruptions. QRNN indicated that it did not support this given that recovery times are specific to the nature of the event and quantifying benchmark performance is not feasible.
- Asset Performance – transit time – lost below rail transit minutes attributable to temporary speed restrictions. Already reported by QRNN. It was proposed that speed restriction impact on transit time (difference between restricted and unrestricted journey transit time) is a more appropriate measure than number and/or percentage track under speed restriction. QRNN also identified difficulties in classification of speed restrictions as temporary or permanent where re-instatement to a previously posted speed may not be economic or required due to a changed traffic task. QRNN proposed that it is necessary to adjust for the impact of whether events (monthly average system rainfall).
- Safety– QRNN did not propose a measure of safety in the DIM on the grounds that it is already sufficiently incentive to promote the safety of staff, operators, customers and the community.

### Setting performance standards

QRNN notes a key requirement for QCA approval of the DIM is that mechanisms operate such that the objective is reasonably related to contractual entitlements and the positive incentives are proportionate to negative incentives for under-performance. QRNN further notes that the proposed metrics are reasonably related to contractual entitlements.

In order to ensure that there is a reasonable expectation that performance standards will be met and so satisfy the latter requirement, QRNN has based performance standards on recent historical performance. It has assessed historical performance over most recent 2-3 years.

QRNN has also proposed to limit the scope of assessment to only certain parts of the coal network on the basis that that the latter requirement above cannot be reasonably satisfied on other parts due to recent upgrades resulting a material change in service levels, and lower statistical robustness of historical data. In these cases, specific KPIs could be included in contracts.

Following a statistical review of historical performance in relation to each of the proposed metrics, QRNN noted high correlation, sometimes lagging, between temporary speed restrictions and rainfall intensity.

QRNN concluded that the most reliable approach to achieving the latter requirement above was to use percentiles of sample data to establish an equal probability of a negative and positive outcome, and so determined a target using the 50<sup>th</sup> percentile (expected outcome). The range of outcomes should not include outliers, should be consistently applied across all metrics and should include achievable outcomes without material investment or change in maintenance cost. On this basis QRNN established a lower bound of performance at the 33.33 percentile and upper bound at the 66.66 percentile.

### Financial and revenue impacts

QRNN has proposed that, in the initial stages of the operation of these metrics, the maximum revenue at risk should be set at +/-1% of allowable revenue. This will allow QRNN and stakeholders a period to gauge the



effectiveness of the mechanism. QRNN highlighted the consistency of this approach with that in other jurisdictions<sup>2</sup>.

QRNN also noted that financial consequences should only apply for performance where the targets, ranges and consequences are determined prior to commencement of the period of application, and so proposed application of these incentive mechanisms after the performance targets were endorsed by the QCA.

QRNN proposed that each of these metrics should contribute equally (one-third) towards total revenue exposure of the DIM at 1% of allowable revenue.

For each metric, the revenue adjustment is determined on a prorated basis for actual under or over-performance between the lower and upper bounds and capped for actual performance above or below the upper and lower bounds respectively.

### ***ARTC consideration***

In section 4 of this Report and Proposal, and in recognition of stakeholder views, ARTC has proposed to incorporate performance incentives around Network KPIs that focus on encouraging controllable behaviours linked to capacity and throughput as an interim measure ahead of the more comprehensive development of these types of performances in the review under Section 13.5 of the 2011 HVAU that would be more focussed on capacity utilisation. Performances that are incentivised should be directly controllable by ARTC and should be relatively independent of each other.

In this regard, ARTC considers that its consideration of performance incentives in relation to the Network KPIs is not substantially different from that submitted by QRNN in relation to the services standard metrics it has proposed.

The service standard metrics proposed by QRNN broadly satisfy a number of criteria that ARTC would consider desirable being that;

- performance is largely within QRNN's control;

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<sup>2</sup> AER, Quality of services incentives for Transmission Network Service Providers.  
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- performance is focussed at a system level;
- measurement is relatively convenient;
- performance measures are reasonably related to contractual requirements;
- performance standards are based on historical performance, and are set such that there is a reasonable expectation of the standards being met;
- performance measurement and standards exclude the impact of certain factors that beyond the control of the party being assessed;
- there is a reasonable cap on the extent that allowable revenue is adjusted as a result of the DIM;
- management performance is incentivised at a marginal level, where material investment is not required in order to achieve a positive performance; and
- there is a period during which financial consequences are limited, in order for parties to satisfy themselves of the effectiveness of the mechanism; and
- key aspects of the mechanism are settled ahead of the application of the mechanism.

To this end, ARTC has had regard to a number of aspects of QRNN's consideration and proposal in relation to service standard metrics.

On the other hand, ARTC also recognises that there are some key differences in the circumstances under which ARTC's proposal will be made. The most significant difference is that, whilst there are certain consequences for QRNN under-performance through contracts, a Tier 1 element of Access Holder Agreements for Coal Access Rights in the Hunter Valley is the TUT. The explicit focus of provisions under Sections 13.3 and 13.5 of the 2011 HVAU is to develop performance incentives which have the objective of encouraging ARTC, through financial reward, to improve behaviour. These incentives would serve to offset the asymmetric nature of existing mechanisms under the 2011 HVAU and

Access Holder Agreements' including the TUT, that focus on limiting upside for over-performance and/or penalise under-performance only.

As such, in developing its proposal, ARTC has sought to create positive incentives only, intended to act to balance the existing negative incentives under the 2011 HVAU or Access Holder Agreements rather than, as QRNN has proposed, to develop symmetric mechanisms using service standard metrics, and seek to address the negative incentives in contracts through other means, including the separate positive performance incentive mechanism relating to operational and throughput performance described in the next section. ARTC considers that this is reasonable, in the absence of a similar positive performance incentive as described below, and given that it is proposing metrics (Network KPIs) that are reasonably related to contractual obligations intended to be enforced in agreements through the TUT.

### **5.3.2 Operational and Throughput Performance Incentive**

QRNN has sought to include a further operational and throughput performance incentive in the DIM to create a balanced framework in the presence of the negative consequences for breach of an access agreement. This is in addition to the services standard metrics that are designed to operate symmetrically in their own right.

QRNN notes a reference in the Consultation Document to the preference of producers to operate ad-hoc services under the capacity balancing system.

QRNN has proposed to retain access revenue from:

- a train service operated that was not scheduled in the daily train plan;  
and
- the number of train services operated in an individual coal system exceeds 110% of monthly contracted entitlements (or relevant prorate);  
and
- total revenue does not exceed 2% of allowable revenue.

QRNN has proposed the 110% threshold to ensure that it is not compensated for managing variations to the daily train plan where there is likely to be capacity to accommodate additional services, and incentivise QRNN to ensure possessions are planned with consideration of foreseeable demand.

QRNN has proposed that this mechanism is symmetric in that the probability of making capacity available for an unscheduled movement in a period of high utilisation is reasonable proportional to the probability of not making train paths available under an access agreement. QR argues a planning assumption of 100% of contractual entitlement equates to approximately 75% asset utilisation, and then 110% of contracted entitlement is consistent with 83-85% of asset utilisation. The probability of a positive revenue outcome is consistent with the probability of a negative outcome arising from not providing at least 90% of contracted entitlements.

### ***ARTC consideration***

ARTC notes that the operational and throughput performance incentive proposed by QRNN has many of the characteristics of the option for dealing with the negative asymmetric nature of the TUT put forward by ARTC to stakeholders during consultation on the 2011 HVAU. Essentially, ARTC could retain Ad Hoc Revenue from applicable services operated when it satisfies the TUT. During consultation ARTC noted a degree of stakeholder support for its proposal in this regard.

Nevertheless, the design of an incentive mechanism of this nature is closely related to the nature and application of the TUT. As the 2011 HVAU incorporates a near term review of the TUT, Section 13.5 of the 2011 HVAU provides for the development of an incentive that will offset the negative asymmetric nature of the TUT at that time.

ARTC remains of the view that a positive incentive framework that is closely linked to the application of the TUT cannot reasonably be established ahead of a review of the TUT itself. As such, ARTC is not proposing a similar performance incentive dealing with retention of ad hoc revenue, as proposed by QRNN, at this time.

On the other hand, and as described by ARTC in the previous section of this paper, ARTC is proposing positive incentives around Network KPIs that focus on encouraging controllable behaviours linked to capacity and throughput as an interim measure ahead of the more comprehensive development of these types of performances in the review under Section 13.5 of the 2011 HVAU that would be more focussed on capacity utilisation. Performance in relation to such Network KPIs provide a less direct, but still valid, offsetting positive incentive to the negative asymmetric nature of the TUT, to a more direct operational throughput performance incentive proposed by QRNN.

The absence of such a positive performance incentive in ARTC's proposed PPIS underlines the need to provide a positive incentive only in respect of Network KPIs.

### **5.3.3 Supply Chain Coordination and Efficiency Incentive**

QRNN has proposed to retain a provision in the 2010 AU that allows it to submit to the QCA a claim for a performance increment where total revenue has exceeded allowable revenue and QRNN can identify that the whole or part of the difference is a result of whole of coal chain activities or initiatives of QRNN. The increment cannot exceed 2% of allowable revenue.

QRNN has noted that this incentive provides a mechanism for QRNN to recover cost (not otherwise included in the RAB) which has been incurred to assist in the system outcome, and that may exceed the strength of the financial outcome; and is consistent with the 2% upside market based incentive applied in another jurisdiction<sup>3</sup> (although QRNN proposes that the 2% cap on allowable revenue applies in aggregate for the operational and throughput performance incentive and the supply chain coordination and efficiency incentive).

#### **ARTC consideration**

ARTC recognises the benefits of aligning behaviours of services providers generally, and the below rail infrastructure provider specifically, with broader coal supply chain objectives. Providing a positive incentive

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<sup>3</sup> AER under the National Electricity rules  
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mechanism that encourages desirable and align behaviours by the below rail infrastructure provider will strengthen align decision making and should benefit the beneficiaries of coal supply chain improvements.

As stated earlier in this section of the Report and Proposal, ARTC has some concerns with certain aspects of the application of QRNN's proposal. In particular, ARTC understands that the existing mechanism may be hampered by difficulties faced by QRNN in establishing a clear nexus between its initiatives and supply chain performance, which could be expected in an environment where the performance of several supply chain participants is inter-related and spread across that supply chain.

The Capacity Investment Framework, acts to provide incentive (negative) for ARTC to act in a Prudent manner in financing and delivering Additional Capacity and also acts to ensure delivery of Additional Capacity is aligned to broader coal supply chain objectives by providing the coal industry and other coal supply chain participants greater control over the planning and delivery of additional Capacity through the RCG and attendant industry consultation.

As such, ARTC considers that the benefits of application of a supply chain coordination and efficiency incentive as proposed by QRNN framework may be limited to both the coal supply chain (through the existence of the Capacity Investment Framework in the 2011 HVAU), and to ARTC (where the application of the Capacity Investment Framework may limit opportunity for ARTC to pursue the benefits of the incentive).

ARTC is, alternatively, proposing an incentive in the PPIS that seeks to reward innovative behaviour (as an alternative to, but not excluding, behaviour beneficial to coal chain objectives). The application of ARTC's proposed incentive mechanism is not substantially different from that proposed by QRNN in that, cost recovery from investments in excess of that provided by inclusion in the RAB may be retained by ARTC (shared with beneficiaries) where Additional Capacity in excess of that which may arise from a conventional investment can be delivered through innovation.

## **6. ARTC's proposed PPIS**

ARTC has sought to develop the proposed PPIS having regard to:

- ARTC's obligations under section 13.3 of the 2011 HVAU, requiring the development and proposal of performance incentives which have the objective of encouraging ARTC, through financial reward, to improve operating, maintenance and capital expenditure, and achieve desirable safety outcomes;
- feedback received from stakeholders in response to the Consultation Document and during earlier public consultation during development of the 2011 HVAU;
- views expressed by the ACCC in the Position Paper and other formal and informal advice provided during development of the 2011 HVAU;
- the range of considerations that ARTC believes are relevant to the development of a PPIS to apply to ARTC in the Hunter Valley as set out in section 2 of this Report and Proposal;
- the DIM proposed by QRNN and QRNN's consideration of relevant factors expressed in the DIM Paper;
- any other relevant regulatory precedents; and
- ARTC's own views as to what measures and mechanisms are appropriate for inclusion in a PPIS under Section 13.3 of the 2011 HVAU.

ARTC has experienced some difficulty in developing an appropriate PPIS arising from a range of various circumstances surrounding that development including:

- the existence of a number of short term reviews of certain key elements of the 2011 HVAU;
- varying views expressed by industry and the ACCC in relation to the objectives and application of a PPIS;
- the complex nature of the Hunter Valley coal supply chain and the inter-relationships and responsibilities that exist between coal chain participants;

- the development of a PPIS that seeks to deliver wider coal supply chain performance benefits, sought by stakeholders, by a single coal chain participant;
- the nature of existing elements of the 2011 HVAU that act to mitigate incentives that might arise from a PPIS; and
- uncertainty surrounding the effectiveness and future financial implications for ARTC and stakeholders of the PPIS.

To this end, ARTC is seeking to include in this Variation, provision to re-visit elements of the proposed PPIS during the development of TUT-related performance incentives as contemplated under Section 13.5 of the 2011 HVAU in order to ensure that the overall PPIS, including non-TUT and TUT related positive performance incentives, remains appropriate and effective and balanced in the context of the prescribed objectives.

This is particularly appropriate given that ARTC now seeks to include in this Variation incentives relating to Network KPIs that focus on encouraging controllable behaviours linked to capacity and throughput as an interim measure ahead of the more comprehensive development of these types of performances in the review under Section 13.5 of the 2011 HVAU that would be more focussed on capacity utilisation.

ARTC notes that QRNN has also proposed further consultation and development in relation to the proposed DIM for similar reasons.

In order to further address the above uncertainties faced by ARTC in developing the PPIS at this time, and consistent with QRNN's proposed DIM, ARTC is seeking to include in this Variation provision for the PPIS not to apply until the commencement of the calendar year following approval of this proposal. This is to ensure that the financial consequences would only apply for performance where the targets, ranges and consequences are determined and approved as part of this proposal prior to commencement of the period of application. This could also provide an opportunity for the development of a number of relevant System Assumptions and performance parameters that normally occurs throughout the second half of a calendar year to have regard to these targets, ranges and consequences. Should the ACCC approve this Variation prior to 31 December 2012, application of the PPIS would commence on 1 January 2013.

Also consistent with QRNN's proposed DIM, ARTC is proposing a PPIS that focuses on providing positive incentives that relate to performance at a system level rather



than an individual contract level. This is aligned to the focus of existing incentives in the 2011 HVAU and Access Holder Agreement such as the TUT, Revenue Limits and the Capacity Investment Framework, which the proposed PPIS seeks to balance against.

Consistent with the intent of Section 13.3 of the 2011 HVAU, the proposed PPIS only incorporates mechanisms that seek to reward ARTC for improving performance in a range of relevant areas. This is contrasted to the DIM proposed by QRNN that contains some metrics that introduce symmetric incentives; but is recognised that the proposed DIM also includes a key mechanism focussed around operational and throughput performance that introduces positive incentives only to offsets negative asymmetry present in QRNN's contracts. ARTC's proposed PPIS does not at this stage incorporate such a mechanism.

## **6.1 Proposed PPIS**

ARTC proposes the following PPIS to apply from the commencement of the calendar year following the approval of this Variation:

### Network KPIs focussed on controllable behaviours related to capacity and throughput

*Coal Chain Losses – ARTC cause.* Paths (measured in terms of tonnage) as a percentage of total planned tonnage unavailable or cancelled due to ARTC cause.

*Transit Time – impact of temporary speed restrictions.* The difference between transit time over the Network, delivered by the infrastructure given its configuration (as measured by Transit Time – Infrastructure Configuration Capability defined at Schedule D of 2011 HVAU) and transit time over the Network also reflecting the simulated transit time impact of temporary speed restrictions (measured in minutes). The transit time impact of temporary speed restrictions is determined by applying the temporary speeds restrictions in place on the Network to a simulation model designed to determine the total of time lost by reference Indicative Service subject to each temporary speed restriction.

### Network KPIs focussed on other controllable behaviours

*Track condition measured by index.* Track Quality Index (TQI) averaged over the Network. The TQI is calculated over 100m sections, using 0.5m raw data from the AK

car. TQI is the sum of the standard deviations (x3) in each rail for a 20m inertial top (average over left and right rail), horizontal alignment (versine over a 10m chord (average over left and right rail)), twist over 2.0m and gauge.

#### Innovation related performance incentive

##### *Additional Capacity investment innovation incentive.*

1. The objective of the Additional Capacity Investment Innovation Incentive is to provide an incentive for ARTC to identify, develop and implement projects intended to provide Additional Capacity on the Network that result from wholly or partly through an innovation that has been identified and/or developed by ARTC either solely or with another party. Characteristics of innovation may include the creation or development of better or more effective products, processes, services, technologies, or ideas, and may result in the creation of Additional Capacity on the Network that has not resulted from the installation or replacement of infrastructure assets arising through Capital expenditure being incurred by ARTC or a third party.
2. Where ARTC is able to demonstrate to the Rail Capacity Group that it has made available, or will make available, Additional Capacity (that is available to the industry to use to increase Coal Chain Capacity) that has arisen through innovation and without Capital Expenditure being incurred, or less being incurred than might otherwise have been the case (even where partially offset by increased operating expenditure) (Innovation Project), then the RCG may endorse for inclusion in the RAB an amount (Innovation Incentive Amount (IIA)) that will result in ARTC receiving an incentive payment over the economic life of the Additional Capacity. The IIA for the Additional Capacity to be endorsed by the RCG will be an amount up to the amount determined according to the following methodology (or as otherwise agreed by ARTC):

$$\text{NPV} \left( \sum_i^L (\text{IRIA}_i) \right) = 0.5 * \text{NPV} \left( \sum_i^L (\text{ICHA}_i - \text{ICIA}_i) \right)$$

Where:

L is the economic life in years of the Innovation Project.

$IRIA_i$  is the annual payment to ARTC arising from inclusion of IIA for the Innovation Project in the annual roll forward of the RAB Floor Limit as contemplated at Section 4.4(b), being applicable Depreciation and a return determined by applying a real, pre-tax Rate of Return in year  $i$ .

$ICHA_i$  is the capital cost of the Capital Expenditure that would have been incurred on a Prudent basis to initiate, develop and implement Additional Capacity on the Network that is equivalent to that arising from the Innovation Project without innovation in year  $i$ , and includes any incremental operating expenditure associated with that Additional Capacity. Where this is not able to be readily determined for the Innovation Project, this amount may be based on the average unit cost of Additional Capacity applying to the next creation of Additional Capacity where the existing level of Capacity is that level to which ARTC is proposing to increase through the Innovation Project. This may be determined having regard to the most recent Hunter Valley corridor capacity strategy and, where applicable, the most recent relevant and available cost of Additional Capacity endorsed by the RCG in accordance with Section 9. The calculation may be undertaken by dividing the cost of the next creation of Additional Capacity by the amount of increased throughput (mT) arising from that Additional Capacity.

$ICIA_i$  is the capital cost of the Capital Expenditure that will be incurred on a Prudent basis to initiate, develop and implement the Innovation Project, and includes incremental operating expenditure associated with the Innovation Project in year  $i$ .

3. An IIA may result where ARTC can demonstrate that Capacity that is in excess of what might otherwise have been made available through Capital Expenditure is made available without (or through reduced) Capital Expenditure.
4. For the purposes of RCG endorsement, the IIA would, where applicable, be treated on a similar basis to Capital Expenditure in relation to the industry consultation and endorsement process set out at Section 9 of the 2011 HVAU and, where applicable, the approved RCG Charter at the time.
5. Independent expert determination applies to whether:

- ARTC has demonstrated that it has made available, or will make available, additional Capacity without Capital Expenditure being incurred; and
- the RCG has been reasonable in relation to endorsement of the IIA

in the event that the RCG has endorsed an IIA less than the amount determined in accordance with the methodology set out in paragraph 2 above. The independent expert determination will take into account factors considered relevant to the reasonableness of the RCG endorsement of the IIA including (but not limited to):

- the extent of any innovation that is attributed to ARTC, as opposed to other parties;
- ICHA and ICIA as contemplated in paragraph 2 above in the context of the extent of the role innovation played in delivering the benefits of the Additional Capacity created through the Innovation Project; and
- the extent, considered at the time, to which the Additional Capacity created through the Innovation Project ICIA may not be available for utilisation by the industry over the economic life of the Additional Capacity

but excluding the extent to which the industry does not utilise the benefits with the Additional Capacity arising through the Innovation Project over the economic life of the Additional Capacity arising through the Innovation Project.

## **6.2 Service metrics & performance targets**

### **6.2.1 Coal Chain Losses – ARTC cause**

This metric is currently reported by the HVCCC on an a monthly basis (and in a different form as a Network KPI by ARTC on a quarterly basis for the Network in accordance with Section 13.1 of the 2011 HVAU). ARTC is identified as the party responsible for performance in relation to this metric at Schedule D of the 2011 HVAU. ARTC proposes to measure performance against this metric for the purpose of determining an incentive

increment on a quarterly basis consistent with the time frame for other metrics in the PPIS. ARTC considers it important that measurement and determination of incentive increments in carried out consistently across all metrics.

The metric measures percentage of paths (expressed in terms of tonnage) unavailable or cancelled due to ARTC cause with reference to total system planned tonnage.

The development and reporting of this metric is carried out monthly by the HVCCC (independent of ARTC) following an ongoing monitoring and causal attribution process undertaken by the HVCCC in consultation with service providers including ARTC.

The application of the TUT serves to incentivise ARTC to minimise the impact of actual system losses caused by ARTC on its ability to make capacity available to meet contractual commitments. Where actual system losses caused by ARTC are excessive, ARTC's ability to make capacity available to the system to meet contractual entitlements is reduced and TOP rebates may arise. The application of a countervailing positive incentive to reduce system losses caused by ARTC to a level that not only ensures capacity is available to meet contractual entitlements, but results in capacity becoming available for other uses including ad hoc paths is appropriate, of value to the industry (as indicated through stakeholder consultation) and is consistent with the intent of developing positive performance incentives under the 2011 HVAU.

Whilst not directly related to the TUT, a positive incentive associated with this service metric indirectly balances against the broader negative asymmetric nature of the TUT. Whilst the introduction of a positive incentive intended to balance the asymmetry of the TUT is not strictly required under Section 13.3 of the 2011 HVAU, ARTC does not consider its introduction as unreasonable on the basis that it would apply on an interim basis ahead of the development of TUT-related positive performance incentives contemplated under Section 13.5 of the 2011 HVAU, particularly given the level of stakeholder support to include Network KPIs that relate to capacity utilisation and availability.

As stated above, in the absence of a more direct positive incentive intended to offset the asymmetric nature of under-performance of contractual obligations as proposed by QRNN<sup>4</sup>, this metric should only reward over-performance and not penalise under-performance to properly balance the negative asymmetric nature of the TUT, and remain consistent with the requirement to develop positive incentives under the 2011 HVAU.

Consistent with QRNN's considerations, this metric will need to be adjusted for those factors where ARTC's performance in making capacity available is excused such as force majeure events and major maintenance activities. This is also consistent with the application of Availability Exceptions in the TUT, which serves to exclude such excusals from the determination and reporting of this in any event.

As indicated earlier, ARTC considers that a desirable characteristic of QRNN's DIM is that performance standards are based on historical performance, and are set such that there is a reasonable expectation of the standards being met.

With respect to this metric, ARTC has developed a data set, illustrated at Figure 1 below, showing performance for the Network covering the period January 2010 to June 2012, and containing 30 observations.

In setting the performance targets, ARTC has adopted an approach that is similar to that proposed by QRNN in the DIM and applied consistently across all proposed metrics. ARTC's approach:

- seeks to determine a range of outcomes that excludes outliers, and within the control of ARTC management at the margin (includes outcomes that are achievable without material investment or change in maintenance cost);
- targets values determined at the 50<sup>th</sup> percentile (expected outcome); and
- establishes an upper performance band at the 75<sup>th</sup> percentile.

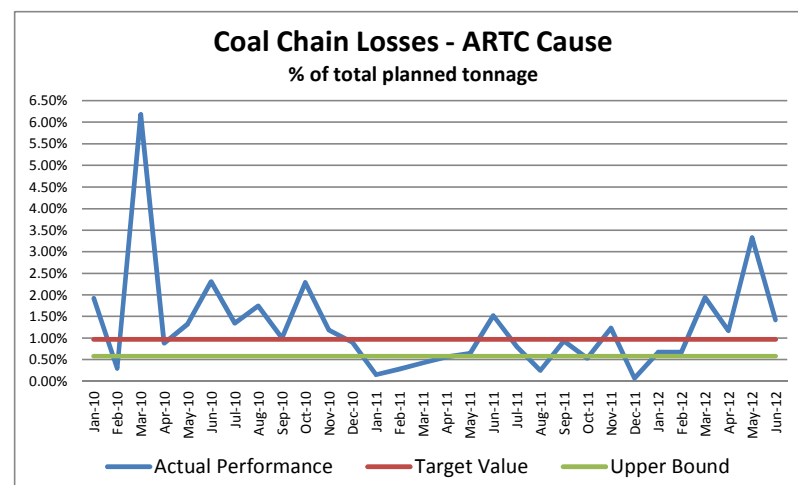
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<sup>4</sup> DIM Paper, section 6.2 Operational and Throughput Performance Incentive, p26  
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ARTC notes that the lower and upper bounds proposed by QRNN have been determined at the 33.33 and 66.66 percentiles respectively based on QRNN's consideration that outcomes should not include outliers and should include achievable outcomes without material investment or change in maintenance cost. ARTC has considered similar factors, but in the context of establishing a reasonable performance band for a *positive* performance incentive, in coming to a view that using the 75<sup>th</sup> percentile for the upper bound is reasonable.

Figure 1 below shows the resulting target value and upper bound determined using this approach for this metric.

Figure 1



As a result of this assessment, the target value and upper bound for this metric (applicable to quarterly measurement and determination of incentive increments) are shown at Table 1 below.

Table 1

	Target Value	Upper Bound
Network	0.97%	0.58%

## 6.2.2 Transit Time – impact of temporary speed restrictions

This metric is currently reported (implicitly) by ARTC on a quarterly basis for each Pricing Zone by ARTC in accordance with Section 13.1 of the

2011 HVAU. ARTC is identified as the party responsible for performance in relation to this metric at Schedule D of the 2011 HVAU. ARTC proposes to measure performance against this metric for the purpose of determining an incentive increment on a quarterly basis consistent with the time frame for other metrics in the PPIS and reporting of the related Network KPI. ARTC considers it important that measurement and determination of incentive increments is carried out consistently across all metrics.

The metric, by and large, represents the differential between:

- transit time over the Network, delivered by the infrastructure given its configuration (alignment, grades, curves and associated permanent speed restrictions) measured by simulated operation of a reference Indicative Service over the Network and reported under Section 13.1 of the 2011 HVAU and as indicated by Transit Time – Infrastructure Configuration Capability as defined at Schedule D of 2011 HVAU; and
- transit time over the Network also including the simulated transit time impact of temporary speed restrictions and reported under Section 13.1 of the 2011 HVAU as indicated by Transit Time – Infrastructure Practical Capability defined at Schedule D of 2011 HVAU.

The transit time impact of temporary speed restrictions (measured in minutes) is determined by applying the temporary speeds restrictions in place on the Network to a simulation model designed to determine the total of time lost by reference Indicative Services subject to each temporary speed restriction.

The application of the TUT serves to incentivise ARTC to minimise the impact of actual maintenance requirements on its ability to make capacity available to meet contractual commitments. Where actual maintenance requirements are excessive, ARTC's ability to make capacity available to the system to meet contractual entitlements is reduced and TOP rebates may arise. The extent of temporary speed restrictions on the network is closely related to the need to maintain the network over time. The application of a countervailing positive incentive to reduce the impact of temporary speed restrictions on transit time over the Network to a level that not only ensures capacity is available to meet contractual entitlements, but results in capacity becoming available for other uses including ad hoc paths is appropriate, of value to the industry (as indicated through



stakeholder consultation) and consistent with the intent of developing positive performance incentives under the 2011 HVAU.

Whilst not directly related to the TUT, a positive incentive associated with this service metric indirectly balances against the broader asymmetric nature of the TUT. Whilst the introduction of a positive incentive intended to balance the asymmetry of the TUT is not strictly required under Section 13.3 of the 2011 HVAU, ARTC does not consider its introduction as unreasonable on the basis that it would apply on an interim basis ahead of the development of TUT-related positive performance incentives contemplated under Section 13.5 of the 2011 HVAU, particularly given the level of stakeholder support to include Network KPIs that relate to capacity utilisation and availability.

As stated above, in the absence of a more direct positive incentive intended to offset the asymmetric nature of under-performance of contractual obligations as proposed by QRNN<sup>5</sup>, this metric should only reward over-performance and not penalise under-performance to properly balance the negative asymmetric nature of the TUT, and remain consistent with the requirement to develop positive incentives under the 2011 HVAU.

Consistent with the application of the PPIS at a system level, and the treatment of other metrics, and in recognition that coal trains traverse over more than one Pricing Zone, this metric will be applied over the Network as a whole rather than individual Pricing Zones.

ARTC agrees with QRNN's view that the extent of speed restrictions is materially influenced by weather conditions that are not within its control. ARTC considers that removing the impact of events beyond the control of the party being assessed is a desirable and appropriate component of a performance incentive scheme. However, ARTC is yet to determine an appropriate approach and mechanism for adjusting this mechanism for weather conditions and will consider this refinement ahead of any review of this metric that may take place under Section 13.5 of the 2011 HVAU.

Consistent with QRNN's considerations, ARTC considers it important that this metric does not create an incentive to delay re-opening the Network following a force majeure event. It is better to re-open for operations as

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<sup>5</sup> DIM Paper, section 6.2 Operational and Throughput Performance Incentive, p26  
ARTC Hunter Valley Access Undertaking – Non TUT Positive Performance Incentives Consultation Document

soon as possible after such an event, even where this means imposing speed restrictions. As such, this metric will exclude the impact of temporary speed restrictions imposed in such circumstances.

Also consistent with QRNN's considerations, ARTC considers that the assessment as to whether a speed restriction is temporary will depend on whether its removal is intended. For example, it may not be economic to remove a restriction (consistent with ARTC's contracted obligation to maintain the network in a condition that it is fit for the purpose of provision of contracted entitlements). Also, the introduction of a speed restriction may occur where the original design track speed is no longer achievable due to altered traffic task, or never been achievable. In determining whether a temporary speed restriction is to be included in this metric, ARTC will have reasonable regard to such considerations.

As indicated earlier, ARTC considers that a desirable characteristic of QRNN's DIM is that performance standards are based on historical performance, and are set such that there is a reasonable expectation of the standards being met.

ARTC considers it appropriate that simulation of the impact of temporary speed restrictions on transit time should be based on Indicative Services, reflecting common utilisation of the system. Historical performance has been measured on the basis of the existing Indicative Services.

With respect to this metric, ARTC has developed a data set, illustrated at Figure 2 below, showing performance for the Network covering the period March quarter 2009 to the June quarter 2012, and containing 14 observations. To improve the validity of this assessment, ARTC intends to extend the data set to include more observations ahead of approval of the PPIS.

In setting the performance targets, ARTC has adopted an approach that is similar to that proposed by QRNN in the DIM and applied consistently across all proposed metrics. ARTC's approach:

- seeks to determine a range of outcomes that excludes outliers, and within the control of ARTC management at the margin (includes

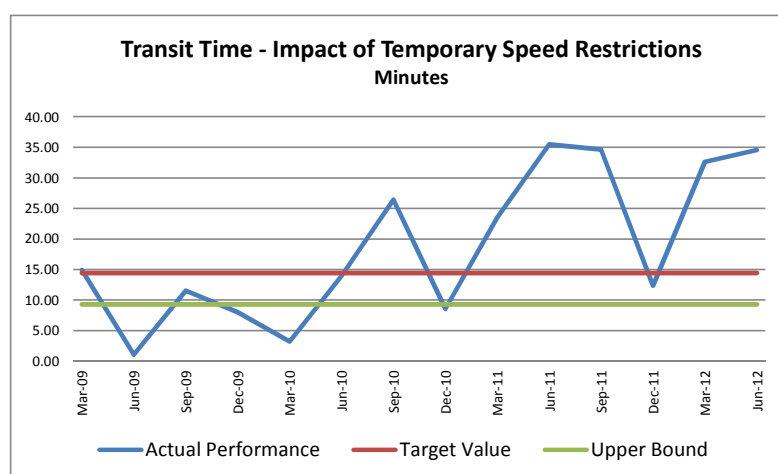
outcomes that are achievable without material investment or change in maintenance cost);

- targets values determined at the 50<sup>th</sup> percentile (expected outcome); and
- establishes an upper performance band at the 75<sup>th</sup> percentile.

ARTC’s consideration in relation to the use of the 75<sup>th</sup> percentile has been stated earlier in the Report and Proposal.

Figure 2 below shows the resulting target value and upper bound determined using this approach for this metric.

Figure 2



As a result of this assessment, the target value and upper bound for this metric are shown at Table 2 below.

Table 2

	Target Value	Upper Bound
Network	14.41	9.31

### **6.2.3 Track condition measured by index**

This metric is currently reported by ARTC on a quarterly basis for each Pricing Zone in accordance with Section 13.1 of the 2011 HVAU. ARTC is identified as the party responsible for performance in relation to this metric at Schedule D of the 2011 HVAU. ARTC proposes to report performance against this metric for the purpose of determining an incentive increment on a quarterly basis consistent with the time frame for other metrics in the PPIS and reporting of the related Network KPI.

The metric measures TQI (averaged over the Network), which is an industry standard measure of average variability of geometric alignment of the track across four perspectives described below. TQI is measured across the Network three times a year.

The TQI is calculated over 100m sections, using 0.5m raw data from the AK car. TQI is the sum of the standard deviations (x3) in each rail for a 20m inertial top (average over left and right rail), horizontal alignment (versine over a 10m chord (average over left and right rail)), twist over 2.0m and gauge.

Whilst there is some relationship between condition/alignment of the Network, the overall level of maintenance required and subsequent availability and capability of the Network, the relationship between incentives to ensure track condition/alignment and incentives under the TUT are less tangible than those for the other measures described above, which relate more closely to network capacity and throughput. Nevertheless, there are certain elements of the 2011 HVAU, such as the Ceiling Limit, that create incentives for ARTC to reduce expenditure by reducing maintenance and track condition/alignment where there are no balancing counter-incentives of a financial nature. Reducing expenditure in this way may have both short and long term consequences (including reduced asset life and/or increased maintenance) for the Network.

The application of a countervailing positive incentive to maintain track condition/alignment over the Network at an appropriate level is of value to the industry and is consistent with the intent of developing positive performance incentives under the 2011 HVAU.

In order to balance incentives to under-perform (maintain track condition/alignment at a less than appropriate level) arising from the application of the Ceiling Limit, this metric should only reward performance that ensures track condition/alignment at a level that is appropriate and provide positive incentives within a band with a lower bound representing track condition/alignment that is at a minimum level to maintain capability, and an upper bound where maintenance to achieve a higher level of track condition/alignment is unnecessary (gold-plating). This would properly balance the negative asymmetric nature of the elements of the 2011 HVAU (Ceiling Limit), and remain consistent with the requirement to develop positive incentives under the 2011 HVAU.

Consistent with the application of the PPIS at a system level, and the treatment of other metrics, and in recognition that coal trains traverse over more than one Pricing Zone, this metric will be applied over the Network as a whole rather than individual Pricing Zones.

ARTC is of the view that (like the extent of temporary speed restrictions on the Network) track condition/alignment can be materially influenced by weather conditions that are not within its control. ARTC considers that removing the impact of events beyond the control of the party being assessed is a desirable and appropriate component of a performance incentive scheme. However, ARTC is yet to determine an appropriate approach and mechanism for adjusting this mechanism for weather conditions and will consider this refinement ahead of any review of this metric that may take place under Section 13.5 of the 2011 HVAU

As indicated earlier, ARTC considers that a desirable characteristic of QRNN's DIM is that performance standards are based on historical performance, and are set such that there is a reasonable expectation of the standards being met.

With respect to this metric, ARTC has developed a data set, illustrated at Figure 3 below, showing performance for the Network covering the period April/May 2007 to June 2012, and containing 16 observations.

In setting the performance targets, ARTC has adopted an approach that is similar to that proposed by QRNN in the DIM and applied consistently across all proposed metrics. ARTC's approach:

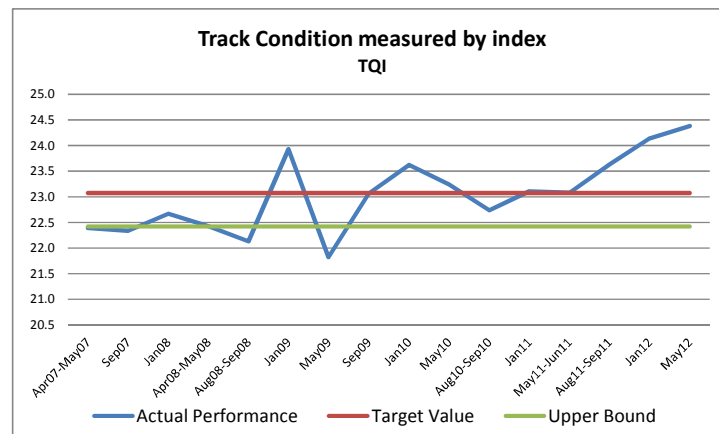
- seeks to determine a range of outcomes that excludes outliers, and within the control of ARTC management at the margin (includes outcomes that are achievable without material investment or change in maintenance cost);
- targets values determined at the 50<sup>th</sup> percentile (expected outcome); and
- establishes an upper performance band at the 75<sup>th</sup> percentile.

ARTC's consideration in relation to the use of the 75<sup>th</sup> percentile has been stated earlier in the Report and Proposal.

ARTC has taken the target value with respect to historical performance to represent a minimal minimum level of track condition/alignment to maintain capability, and the upper bound with respect to historical performance to represent a reasonable level of maintenance where maintenance to achieve a higher level of track condition/alignment is unnecessary (gold-plating).

Figure 3 below shows the resulting target value and upper bound determined using this approach for this metric.

Figure 3



As a result of this assessment, the target value and upper bound for this metric are shown at Table 3 below.

Table 3

	Target Value	Upper Bound
Network	23.07	22.42

### 6.3 Financial Increments

The 2011 HVAU does not prescribe any limit to the financial increments that may arise from an approved performance incentive scheme.

Nevertheless, in developing the proposed PPIS, ARTC has had regard to the following considerations:

- the view expressed by stakeholders that the reward should reflect the value of rewarded performance to the Access Holder;
- the development and use of performance incentive schemes is not common in regulated rail networks in Australia;
- many aspects of the 2011 HVAU, including some aspects resulting in incentives that or not considered symmetric, are relatively new and unique to the Hunter Valley coal network commercial and operation environment; and
- the relative risks of setting the level of rewards too low to act as an effective incentive or too high to be greater than the value of the rewarded performance to the Access Holder.

#### The reward should reflect the value of rewarded performance to the Access Holder

In ARTC's view, the level of the reward for out-performance of a target level of performance should lie between a lower bound reflecting what would be considered by ARTC as being a sufficient incentive to undertake the actions necessary to deliver a certain level of out-performance, and an upper bound reflecting the value to Access Holders of ARTC delivering that level of out-performance.

Although not required under Section 13.3 of the 2011 HVAU, some of the metrics that have been proposed above relate to Network capacity and throughput. Where ARTC out-performs in relation to these metrics, benefits should manifest to the industry in terms of increased capacity available to be utilised by Access Holders to increase coal

throughput to the port and domestic locations. ARTC is unable to provide detail in relation to the profit derived by an Access Holder through delivering an additional tonne or consist of coal, but ARTC expects that the level of profit derived would reflect the value to the Access Holder of ARTC's out-performance on a per-tonne or consist basis. ARTC would expect that the value to the Access Holder associated with the out-performance would be significantly higher than the cost of access to the Network for transport of that additional tonne or consist.

#### The relative risks of setting the level of rewards too low to act as an effective incentive

On the other hand, ARTC would consider that a minimum incentive sufficient to drive positive behaviour would be at a level around the same as the level of access revenue ARTC would derive from an additional tonne or consist on the Network. On this basis, the bounds for revenue increments in relation to metrics that have been proposed above relating to Network capacity and throughput should be average Access revenue per tonne (or per consist) at the lower end and average Access Holder profit from an additional tonne (or consist) at the upper end (upper end not prescribed).

To reflect the above considerations, ARTC conservatively proposes revenue increments at this time at the lower end for the relevant metrics.

#### Relevant Network capacity and throughput related metrics

The two proposed metrics that relate to Network capacity and throughput are *Coal Chain Losses – ARTC cause*, and *Transit Time – impact of temporary speed restrictions*.

- *Coal Chain Losses – ARTC cause.* As this metric is proposed in terms of percentage of planned tonnage lost, it would seem logical (and ARTC proposes) to increment revenue to the extent of an amount equivalent to the average Access revenue associated with each percentage increment of planned tonnage that ARTC performance exceeds the target value for this metric. The extent of revenue increment for this metric would be capped at amount equivalent to the Access revenue associated with the percentage difference between the upper bound and the target value. As described earlier, ARTC does not propose any revenue adjustment in relation to under-performance in relation to the target value, which would not be consistent with the requirement to develop positive incentives under the 2011 HVAU.



Based on existing pricing and volume levels, ARTC estimates a quarterly incentive increment of around \$60,000 per 0.1% of quarterly planned tonnage achieved for performance exceeding the target value up to a quarterly cap (at the upper bound) of around \$240,000.

- *Transit Time – impact of temporary speed restrictions.* The capability of a network to accommodate train paths and increased throughput is often driven by prevailing section running times. For example, the Network Path Capability measure under Access Holder Agreements is closely linked to the prevailing (longest) section run time on each part of the Network. Where all other things are equal a 1% reduction in the longest section run time on part of the Network would manifest in a 1% increase in the capability of that part of the Network to accommodate train paths and throughput. In such circumstances, it may not be unreasonable to relate prorated transit time performance in excess of target value to increased capability of the Network to accommodate train paths and throughput. ARTC has proposed this metric to be expressed in terms of minutes. ARTC proposes to apply out-performance in this metric above target value (minutes) to determine an overall % improvement (reduction) in transit time on the Network resulting from that out-performance. This would, in turn, result in an equivalent overall improvement in the practical capability of the Network to accommodate train paths and throughput. ARTC then proposes to increment revenue to the extent of an amount of Access revenue equivalent to the % improvement in transit time on the Network resulting from the outperformance of the target value for this metric. The extent of incentive increment for this metric would be capped at amount equivalent to the Access revenue equivalent to the % improvement in transit time on the Network resulting from outperformance at the upper bound. As described earlier, ARTC does not propose any revenue adjustment in relation to under-performance in relation to the target value, which would not be consistent with the requirement to develop positive incentives under the 2011 HVAU.

Based on the above approach, and existing transit and revenue levels, ARTC estimates a quarterly incentive increment of around \$100,000 per minute of transit time gained through reduced temporary speed restrictions for performance exceeding the target value up to a quarterly cap (at the upper bound) of around \$550,000.

### Other relevant metrics

- *Track Condition measured by index.* In the absence of any clear guidance establishing the value to Access Holders of out-performance in relation to this metric, ARTC proposes to nominally cap any revenue increment to an amount equivalent of one-third of one per cent of Access revenue for the Network (as determined by the ACCC under Section 4.10 of the 2011 HVAU). This is not inconsistent with the approach taken under the proposed DIM for a single metric (notwithstanding that a cap applies across more than one metric). Consistent with other metrics above, ARTC proposes to increment revenue on a prorated basis between the target level and the upper bound where ARTC performance exceeds the target value for this metric. The extent of revenue increment for this metric would be capped at the amount as described above where performance exceeds the upper bound. As described earlier, ARTC does not propose any revenue adjustment in relation to under-performance in relation to the target value, which would not be consistent with the requirement to develop positive incentives under the 2011 HVAU.

Based on existing revenue levels, ARTC estimates a quarterly incentive increment of around \$25,000 per 0.1 index increment achieved for performance exceeding the target value up to a quarterly cap (at the upper bound) of around \$170,000.

- *Additional Capacity investment innovation incentive.* As described at section 6.1 of this Report and Proposal, this positive performance incentive is intended to result in an incentive amount being endorsed for inclusion in the regulatory asset base up to half of the NPV of the financial savings accruing over the economic life of the Additional Capacity resulting from innovation. Where the incentive amount is rolled forward into the regulatory asset base, the resulting revenue increment will broadly reflect a return of and return on the incentive amount for each year over the economic life of the Additional Capacity.

ARTC proposes to roll forward any endorsed incentive amount in accordance with the provisions of section 4.4(a) of the 2011 HVAU (RAB roll forward) and Section 4.4(b) of the 2011 HVAU (RAB Floor Limit roll forward) as applicable.

As such, where the Network is constrained, annual revenue increments will be recovered each year and in Pricing Zone 3, where RAB is greater than the RAB Floor Limit, any revenue increment that is unable to be recovered will be an additional loss to be capitalised for future recovery where the market permits.

## **6.4 PPIS Evaluation against the checklist**

In the Consultation Document, ARTC provided a checklist comparison of each of the proposed options at that time against the success factors of a performance incentive mechanism identified in the Consultation Document.

ARTC considers that the prescribed success factors are consistent with factors considered by QRNN in the DIM Paper as contributing to the success of an incentive scheme (refer section 5.2.2 of this Report and Proposal).

At Table 5 below, ARTC has provided a checklist comparison of the proposed PPIS against these success factors.

In order not to align ARTC's positive incentives in any one particular direction, possibly giving rise to adverse incentives elsewhere, ARTC has adopted a number of different metrics in the proposed PPIS. This was foreseen in the Consultation Document and received no clear adverse reaction from stakeholders.

ARTC has also is proposed to include, in conjunction with the proposed PPIS, an opportunity to revisit the metrics forming part of the PPIS in the context of the development of TUT-related performance incentives under Section 13.5 of the 2011 HVAU and how these might interact with or replace the relevant metrics forming part of the proposed PPIS that have, at this time, been included on an interim basis in recognition of stakeholder preferences.

Table 5

	<b>Network KPIs focussed on controllable behaviours related to capacity and throughput</b>		<b>Network KPIs focussed on other controllable behaviours</b>	<b>Innovation related performance incentive</b>
	<b>Coal Chain Losses – ARTC cause</b>	<b>Transit Time – impact of temporary speed restrictions</b>	<b>Track condition measured by index</b>	<b>Additional Capacity investment innovation</b>
<b>1. The identification and focus on those performances that are most valued by users.</b>	Indirectly related to delivery of contracted entitlements and availability of capacity for increased throughput. Included to recognise stakeholder preference.	Indirectly related to delivery of contracted entitlements and availability of capacity for increased throughput. Included to recognise stakeholder preference.	Determinant of short and long term network condition and maintenance requirement. Network capability and cost impacts.	Considered important by some stakeholders during consultation.
<b>2. Clear description of the performance level required.</b>	Performance band based on assessment of historical performance intended to result in achievable performance level.	Performance band based on assessment of historical performance intended to result in achievable performance level.	Performance band based on assessment of historical performance intended to result in achievable performance level.	Prescribed process (under 2011 HVAU) to achieve endorsement of any incentive amounts, subject to independent expert (or ACCC) resolution.
<b>3. Performance indicators which are both meaningful and measurable.</b>	Network KPI currently approved and reported under the 2011 HVAU.	Network KPI currently approved and reported under the 2011 HVAU.	Network KPI currently approved and reported under the 2011 HVAU.	Direct industry involvement (RCG) in determining endorsement of incentive amounts.
<b>4. The appropriateness of any financial implication compared to the impact of success or failure.</b>	Incremental incentive based on average charge is aligned to TUT incentives. Capped.	Incremental incentive based on average charge is aligned to TUT incentives. Capped.	Incremental and capped amount at a certain level of revenue to provide an effective incentive in the absence of value advice.	Direct industry involvement (RCG) in determining endorsement of incentive amounts. Must be reasonable and may reflect known impacts on economic life of the Additional Capacity.
<b>5. Performance must largely be within the control of the owner of the infrastructure.</b>	Within ARTC control, other than for certain excluded events.	Within ARTC control other than for certain excluded events, including climate.	Within ARTC control other than for certain excluded events, including climate.	Under 2011 HVAU, ARTC may propose Additional Capacity based on innovation to RCG for endorsement. In determining incentive amount RCG must be reasonable and independent expert of ACCC resolution is available.