2016 Hunter Valley Coal Network Access Undertaking

Explanatory Guide

December 2015

ARTC

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1 Introduction

1.1 Purpose Of Explanatory Guide

The purpose of this Explanatory Guide (**Guide**) is to detail, and provide context that aids understanding of the features of the Hunter Valley Coal Network Access Undertaking to commence 1 July 2016 (**2016 HVAU**) submitted to the Australian Competition & Consumer Commission (**ACCC**) in December 2015 for approval. The 2016 HVAU is an evolution from the undertaking currently in place (**2011 HVAU**) which is due to expire on 30 June 2016. Therefore, the focus of this Guide is to identify key changes to the 2016 HVAU compared to the 2011 HVAU, rather than attempt to explain the operation of the 2016 HVAU from first principles.

1.2 Status Of This Document

This Guide is intended as a public document and may be published by the ACCC at its discretion. A confidential document incorporating the price modelling underpinning the prices in the 2016 HVAU is being provided separately to the ACCC,

This Guide does not comprise part of the 2016 HVAU nor does it seek to repeat the contents thereof, but rather it seeks to aid understanding of the 2016 HVAU through provision of supplementary information and clarification. To the extent there may be any apparent inconsistency between this Guide and the 2016 HVAU, the 2016 HVAU shall prevail.

A number of terms used in this document are defined in the 2016 HVAU. Readers are directed to the 2016 HVAU section 16 for those definitions. To the extent that there is any difference in the use of a term in this Guide and its definition in the 2016 HVAU, the definition in the 2016 HVAU prevails.

1.3 Outline Of Explanatory Guide

This Guide is set out as follows:

Section 1.4 provides background to the preparation of the 2016 HVAU including the consultation process that has taken place prior to submission of this application to the ACCC.

Section 2 outlines the key changes in the 2016 HVAU compared the 2011 HVAU. Section 2.1 covers areas that impact across a number of parts of the undertaking. The remainder of the sub-sections discuss specific areas.

Section 3 discusses key changes to the schedules to the 2016 HVAU.

Section 4 reviews the key changes to the Indicative Access Holder Agreement (**2016 IAHA**). The 2016 IAHA forms Annexure A to the 2016 HVAU.

Section 5 reviews the key changes to the Schedules to the 2016 IAHA.

Appendix A discusses the change to ‘path pricing’ structure that simplifies pricing.

Appendix B details the consideration with regard to remaining mine life, a key input into the determination of depreciation charges.

Appendix C discusses the rate of return included in the 2016 HVAU.

Appendix D details the changes to the allocation of Non-Segment Specific costs and the change to using a Costing Manual.

Appendix E provides a detailed summary of the changes to the 2016 HVAU and 2016 Indicative Access Holder Agreement (**IAHA**).

Appendix F sets out how prices for July to December 2016 have been calculated, including the estimated opening value for the regulatory asset base (**RAB**) and RAB Floor Limit.

Attachment 1 is a clean version of the 2016 HVAU.

Attachment 2 is the 2016 HVAU marked-up in comparison to the 2011 HVAU, as amended and approved by the ACCC on 25 June 2014.

Attachment 3 is a clean version of the 2016 IAHA.

Attachment 4 is the 2016 IAHA marked-up in comparison to the 2011 IAHA.

Attachment 5 is a clean version of the 2016 Indicative Operator Sub-Agreement (**IOSA**). Note that there are no changes being proposed to the IOSA.

Attachment 6 is a paper provided by Synergies Economics Consultants discussing the parameters for the determination of the rate of return applicable to the 2016 HVAU.

Attachment 7 is an update prepared by Synergies Economic Consulting for ARTC detailing the rationale for the modified inputs used to calculate the rate of return.

Attachment 8 contains the 2016 HVAU Costing Manual.

Attachment 9 contains a review of cost allocation methods.

1.4 Background

1.4.1 2011 HVAU

The 2011 HVAU was approved by the ACCC in June 2011 and applied from 1 July 2011. Subsequently, amendments to the 2011 HVAU were approved by the ACCC on two occasions, October 2012 and June 2014. The June 2014 amendment provided for inclusion of the part of ARTC's rail network between Gap and Turrawan (near Narrabri) into the Network covered by the 2011 HVAU. The 2011 HVAU terminates on 30 June 2016.

1.4.2 General Approach

ARTC has approached the 2016 HVAU on the basis of evolving the undertaking from the 2011 HVAU rather than attempting to completely redesign it. This approach is a reflection of several factors, including:

- Commercial arrangements in the Hunter Valley - A number of Access Holder Agreements were entered into prior to the commencement of the 2016 HVAU and will continue into the period covered by the 2016 HVAU. It should be noted however, that the 2016 HVAU does not diminish existing contractual rights nor preclude the parties from agreeing to principles outside of the scope of the 2016 HVAU. ARTC's key objectives in relation to the 2016 HVAU (consistent with its lease objective) has been to actively cooperate and support industry arrangements and forums. ARTC has sought to incorporate into the 2016 HVAU, to the extent possible, principles which provide reasonable certainty and consistency with the existing commercial arrangements.
- Successful operation of 2011 HVAU - ARTC considers that the 2011 HVAU has generally worked well as a framework to provide certainty for Access Holders, Applicants and ARTC. It is noted that no disputes have been raised by Applicants under the operation of the 2011 HVAU. Given this view, it is appropriate to focus changes for the 2016 HVAU on those areas where ARTC or Access Holders believe that improvements can be made. Notwithstanding that the circumstances of the Network have evolved during the life of the 2011 HVAU, e.g. the Network has extended to include Gap to Turrawan and the major additions to Capacity to meet increased demand have been completed, the underlying task and operation of the Network remains the same. Therefore, there is no compelling need to radically transform the regulatory framework that governs the commercial relationships between ARTC and Access Holders.
- Changing market conditions – In the development of the 2016 HVAU ARTC has sought to recognise the changing market conditions and ARTC's role as a service provider forming part of the Hunter Valley coal supply change. In particular there has been a change in focus from capacity investment in the Hunter Valley coal network, which was a key driver

for the 2011 HVAU, to consolidation, productivity improvement and reduction. ARTC has sought to recognise this in its development of the 2016 HVAU.

In developing the 2016 HVAU, ARTC has, where relevant and to the extent it considers it is able, taken into consideration the views expressed by stakeholders. In particular, many of the changes included in the 2016 HVAU are in direct response to requests from Access Holders, particularly members of the HRATF. For example, in response to requests from Access Holders for a greater degree of transparency regarding ARTC's underlying cost base, ARTC has responded substantially by increasing the role of the Rail Capacity Group (**RCG**) under the 2016 HVAU as a forum for ARTC to disclose much greater detail with regard to forecast costs, the reporting of performance against forecasts and incentive and innovation proposals.

1.4.3 Preparation Of 2016 HVAU

In preparation for the 2016 HVAU, ARTC has engaged in an extensive consultation process with stakeholders and the ACCC.

In March 2015, ARTC published a stakeholder consultation paper,[1] seeking feedback in relation to the operation of the 2011 HVAU and to identify issues that would inform ARTC's development of the 2016 HVAU. A number of stakeholders took the opportunity to provide valuable input into the process.

Subsequently, the majority of Access Holders formed the Hunter Rail Access Task Force (**HRATF**) as a body that would facilitate the consultation process between ARTC and industry. The HRATF was able to present its position on a number of matters.

However, there were a number of issues that could not be agreed and finalised during consultation. ARTC has carefully considered these issues and believes that the 2016 HVAU lodged with the ACCC is consistent with its stated objectives and represents a balance of wide-ranging industry views, and seeks to minimise those areas of difference prior to commencing a more formal public consultation by the ACCC.

ARTC formally met with the HRATF on four occasions and provided the group with a number of papers and drafting throughout the process. The meetings provided the opportunity for wide-ranging discussion regarding all elements of the undertaking, including the opportunity for the HRATF to table their own proposals with regard to particular issues. In addition, ARTC engaged in a weekly phone call with the HRATF's convenor. As a result, the changes set out in the 2016 HVAU have largely been made to address concerns of industry with respect of the 2011 HVAU, and to satisfy the needs of Access Holders, to identify improvements in the Hunter Valley Network to increase utilisation, network efficiency and performance without incurring significant capital expenditure.

ARTC has also consulted with other stakeholders who were not represented by the HRATF through individual meetings prior to the lodgement of this application.

1.4.4 Status With Regard To Revenue Allocation Review

At the time of preparing this application, the ACCC is conducting a review of the methodology applied by ARTC for the allocation of revenue. This review is related to the ACCC's assessment of ARTC's compliance with the 2011 HVAU for the 2013 calendar year.

The results of that review have not been finalised at the time that this application was lodged. It is also noted that the result of the review may impact on the unders and overs account for customers, capitalisation of losses in Pricing Zone 3 and roll forward of the RAB and RAB Floor Limit for the subsequent years 2014, 2015 and 2016.

As the review is on-going, ARTC is not in a position to make any modification to the relevant parts of the 2016 HVAU that might be affected with any certainty. As a result of the lack of regulatory certainty in respect of the 2013 compliance assessment, ARTC has not made any changes to

[1] This paper can be accessed on ARTC's website at https://www.artc.com.au/projects/2016-hvau/.

section 4 of the 2011 HVAU to address issues raised in the ACCC Draft Determination published on 30 October 2015.[2] Where it has been necessary for ARTC to forecast values for the purposes of the 2016 HVAU, e.g. in the determination of prices commencing 1 July 2016, ARTC has adopted forecasts based on ARTC's current practices as there is considerable uncertainty as to the forecast values that might otherwise apply. An exception to this is that indicative prices provided for the future years 2017 and 2018 for Pricing Zone 3 have not assumed that capitalised losses will have been fully recouped prior to the commencement of the 2017 calendar year. As such these values may be subject to change on finalisation of the 2013, 2104, 2015 calendar year and 2016 January to June compliance assessments by the ACCC.

2 Key Changes To The 2016 HVAU

2.1 Path Based Pricing & Removal Of Indicative Services

The 2011 HVAU recognised that different train configurations may represent the most efficient utilisation of Coal Chain Capacity on different parts of the Hunter Valley Network, given infrastructure constraints. The 2011 HVAU required ARTC to define an 'indicative service'. Characteristics of the 'indicative service' were intended to provide pricing signals to Access Holders regarding the efficient consumption of Coal Chain Capacity. Services with different characteristics to that of the indicative service were priced differentially, taking into account a number of matters that are set out in the 2011 HVAU.

Since the commencement of the 2011 HVAU, ARTC defined the initial indicative service in consultation with the HVCCC and industry following modelling of scenarios for a range of train configurations. The 2011 HVAU also required ARTC to develop and select characteristics of a 'final indicative service. Notwithstanding that ARTC complied with the requirements of the 2011 HVAU for consultation with industry in 2014, it became clear that there remained divergent views within industry on what characteristics should constitute the final indicative service. With the consent of the ACCC, and based on the lack of consensus by industry, ARTC withdrew the variation to adopt the final indicative service.

Due to the divergent views within industry on the final indicative service, for the 2016 HVAU ARTC has chosen to move away from pricing based on the characteristics of an indicative service and has elected to adopt a 'path based' approach to pricing. A 'path based' price is made up of a fixed Take Or Pay (**TOP**) component, on a $/Train kilometre (**Train Km**) basis, that applies to all train services within a specified range. Consistent with the 2011 HVAU non-TOP pricing structure, the variable access charge component will continue to be charged on a gross tonne kilometre (**GTK**) basis based on actual usage, though without the application of the differentiation factors required under the 2011 HVAU.

Path based pricing allows for any train that comes within the criteria specified in the 'Services Envelope' to be priced the same, only taking into account any difference in the distance travelled on the Network. This has a number of advantages both for ARTC and Access Holders, not the least of which is that it significantly simplifies pricing for the majority of coal train services and is not reliant on ARTC imposing train service characteristics on Access Holders which it considers to represent the most efficient consumption of Coal Chain Capacity. In meetings with the HRATF, the majority of Access Holders have indicated support for the move to path based pricing, noting some have reserved their position.

A number of changes to the 2016 HVAU have been made to implement path based pricing. To ensure that a consistent pricing methodology is adopted across the Hunter Valley network, the 2016 HVAU categorises the charging formulas set out in the indicative Access Holder Agreement as

[2] ACCC, "Draft Determination Australian Rail Track Corporation's compliance with the Hunter Valley Coal Network Access Undertaking financial model for the 2013 calendar year", 30 October 2015. Available at https://www.accc.gov.au/system/files/ACCC%20Draft%20Determination%20-%20HVAU%20Annual%20Compliance%202013_1_0.pdf

a new 'Tier 1 (Mandatory) Provision). This means that these changes will be automatically incorporated into each existing Access Holder Agreements.

Under the 2016 HVAU, the rights to dispute a standard access charge published by ARTC, vote at the RCG and endorse a capacity project, innovation project or incentive proposal have been amended to be on a contracted Train Kilometre basis, rather than on a 'GTK' basis. This is consistent with the adoption of path based pricing.

Path based pricing is described and discussed in Appendix A.

2.2 Section 1 Preamble

Section 1 remains largely the same as under the 2011 HVAU. The main changes to this section are in sections 1.1 and 1.2, relating to the Introduction and Objectives. These changes have been made at the request of stakeholders to reflect that the Network has now entered into a phase that is more directed towards overall efficiency and maintenance of existing Network capabilities rather than an emphasis under the 2011 HVAU towards investment in and expansion of the Network.

2.3 Scope & Administration

2.3.1 Grant, Duration & Review Of Undertaking (Sections 2.2, 2.3)

The initial termination date under the 2016 HVAU is set at 31 December 2026, giving the undertaking an initial term of 10.5 years. There is a rolling 5 year extension process which is exercisable at ARTC discretion and with the consent of the ACCC.

The 2011 HVAU has a term of 5 years. ARTC was always supportive of a longer term as it provided ARTC with the certainty needed to underpin long term investment decision making in the Hunter Valley and was more consistent with the term of Access Holder Agreements. As part of the 2011 HVAU, ARTC conceded to a shorter 5 year term under pressure from producers and the ACCC.[3]

The change to a 10.5 year term was included by ARTC in response to requests from stakeholders. The HRATF supports a longer turn undertaking.

The additional half year is to bring the undertaking into alignment with calendar years which is consistent with Access Holder Agreement. It also ensures that any future undertaking can commence at the beginning of a calendar year and thus simplify the transitional arrangements, as well as the implementation of amendments arising from the periodic reviews.

At the request of its Shareholder, an additional clause has been added which defines a potential process for ARTC to follow in respect of the continuation of the 2016HVAU in the event of the transfer or grant of the lease for the Network to an entity other than ARTC.

Periodic Review

Given the extended duration, the 2016 HVAU sets out a process for the periodic review of selected elements of the undertaking. The periodic review process is a mandatory obligation on ARTC and commences at a time 6 years before the then termination date with the objective that any amendments to the 2016 HVAU will be approved by the ACCC and take effect on and from the following year.

To provide ARTC with sufficient flexibility to respond to changing market conditions over an extended term and comfort to Access Holders, ARTC is required to review the following key terms of the 2016 HVAU:

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[3] ACCC, Decision In relation to Australian Rail Track Corporation's Hunter Valley Rail Network Undertaking ", 29 June 2011 p.38 available at https://www.accc.gov.au/system/files/ACCC%20Final%20Decision%20on%2023%20June%202011%20application.pdf

a) the calculation of depreciation (which includes both the remaining mine life and the depreciation mechanism);

b) the rate of return;

c) loss capitalisation for Pricing Zone 3; and

d) whether to extend the 2016 HVAU for a further 5 year term (i.e. to extend the then existing termination date by 5 years; e.g. at the first review, ARTC would consider whether to extend the term to 31 December 2031.)

ARTC also has the discretion to undertake a review of other matters relevant at the time of the review.

As part of the mandatory review, ARTC is required to publish an issues paper and seek stakeholder views on the matters raised. The paper is required to include ARTC's preliminary view as to whether it will extend the undertaking. ARTC is required to consider any submissions received from stakeholders.

Following completion of the mandatory review, ARTC is obliged to seek ACCC approval to amend the undertaking, at least with regard to the calculation of depreciation and the rate of return. If the variation is rejected by the ACCC, ARTC has the obligation under the 2016 HVAU to apply to the Australian Competition Tribunal to review the ACCC's rejection and accept and incorporate the outcome of the Tribunal's decision by submitting a revised variation application to the ACCC consistent with the Tribunal's decision.

It is intended that the outcomes of the review are implemented for the remaining 5 years of the 2016 HVAU term. Accordingly, irrespective of the timing of the ACCC's decision, the variation application and amended 2016 HVAU terms will apply on and from 1 January 5 years prior to the expiry of the undertaking.

Extension Decision

ARTC is required to consider an extension of the 2016 HVAU on a rolling 5 year basis. The option for ARTC to extend the 2016 HVAU with the consent of the ACCC is required to be made at the same time ARTC submits changes to the HVAU arising as a result of the mandatory review.

The purpose of the extension of the term is to provide certainty of the existence of an undertaking for an additional 5 years should circumstances be appropriate. ARTC adopted this approach specifically to address concerns by HRATF members that there could be contractual misalignment between Access Holder Agreements and the undertaking. HRATF have expressed a strong desire for an undertaking to remain in force.

The rolling nature of the term under the 2016 HVAU is consistent with the 10 year rolling nature of train paths under Access Holder Agreements (i.e. fixed for an initial term and which may be extended annually on a rolling basis).

The HRATF initially suggested a perpetual undertaking with no termination date. However, this is inconsistent with the terms *Competition and Consumer Act 2010* (Cth) (**CCA**) which requires that an undertaking must specify an expiry date. In addition, ARTC believes that it would be inappropriate to adopt such a position as it would remove all flexibility for ARTC to respond to changing market conditions including where an undertaking may no longer be appropriate.

ARTC considers a 10.5 year commitment with a mandatory review and a reoccurring option to extend for an additional 5 years reasonable in the circumstances. It provides an appropriate level of regulatory certainty while still retaining flexibility to amend the 2016 HVAU to address changes to market conditions. ARTC believes this provides stakeholders with an appropriate level of certainty because, if ARTC decides not to extend the term, stakeholders will have 5 years notice and this will give time to ensure that appropriate arrangements are put in place noting that the NSW Rail Access Undertaking under section 6AA of the *Transport Administration Act* will reapply to the network.

The earliest commencement date is 1 July 2016 to coincide with the termination of the 2011 HVAU. The 2016 HVAU provides for an 'Effective Date' which relates to the date when the ACCC has approved the undertaking, whereas the 'Commencement Date' is set as 1 July 2016. This allows for the 2016 HVAU to operate potentially retrospectively in case ACCC approval occurs after 1 July 2016. As there are a number of matters such pricing, billing and ARTC's contractual obligations that relate to at least whole months, this provides a point of considerable administrative convenience. For example, it will be necessary to conduct a part year compliance assessment under the 2011 HVAU (see 2016 HVAU sections 4.4(b) and 15) as well as a part year assessment under the 2016 HVAU for the remainder of calendar 2016 and these processes will be substantially more efficient to undertake if the transition occurs at the change of a month, and even more so as the transition occurs mid-year.

2.3.2 Minor Variation (Section 2.4)

ARTC has introduced a new variation process (**minor variation process**) in the 2016 HVAU to allow for the amendment of selected administrative provisions without triggering the formal CCA variation process. The minor variations process covers the following provisions:

- the Costing Manual;
- section 2.16 (insurance);
- section 2.7(a) (contact details);
- section 4.15(c) (the assumptions and characteristics of the Services Envelope);
- section 13.1 and Schedule D (Network Performance Indicators); and
- Schedule B and Schedule E (Network and Segments).

In order for an amendment to come into effect, the RCG must approve the change with Access Holders controlling at least 70% of the contracted Train Km plus any prospective coal Train Km under section 9.2(g). The 70% threshold is consistent with the RCG endorsement threshold for capacity projects.

Experience with the 2011 HVAU has shown that the characteristics of the Network and associated administrative arrangements change from time to time. Amendment of the undertaking under CCA Section 44ZZA(7) is a very formal process that requires the commitment of substantial time and resources by ARTC, Access Holders, other stakeholders and the ACCC. Under an extended 2016 HVAU term, ARTC requires additional flexibility to implement minor variations without undertaking the arduous process in the CCA. It is often not appropriate to seek an amendment through the CCA process for minor adjustments to elements of the undertaking to enable ARTC to update its practices to ensure the undertaking remains relevant.

The minor variation process addresses this problem by allowing ARTC to vary the undertaking with RCG approval. This is also a reflection of the expanded role that the 2016 HVAU gives to the RCG. The process requires ARTC to provide 60 days' notice to the RCG, setting out the details of the proposed amendment. There is provision for consultation between ARTC and the RCG prior to a vote being taken. It is noted that the RCG membership has been modified to include all Access Holders with an Access Holder Agreement and therefore provides a forum for all Access Holders to directly express any concerns prior to a vote being taken.

2.3.3 Existing Access Holder Agreements (Section 2.5)

Section 2.5(b) has been deleted as it is a historical provision to ensure a smooth transition from the NSW Rail Access Undertaking to the 2011 HVAU and is now redundant.

Section 2.5 has also been amended to make it clear that existing Access Holder Agreements are subject to automatic modification for changes to Tier 1 provisions (see section 3 of this Guide for further details).

2.4 Negotiation (Section 3)

Section 3, dealing with the negotiation of Access Rights remains largely as it is under the 2011 HVAU except for section 3.4(e) and the new 3.4(f).

- Section 3.4(e) provides (amongst other things) that before or during any negotiation process for an Access Agreement, ARTC may require that the Applicant demonstrate its Solvency and that it has a legal ownership structure with a sufficient capital base of assets to meet the actual or potential liabilities under an Access Holders Agreement. The 2016 HVAU extends the prudential requirements under sections 3.4(e)(i) and (iv) to apply to a party being proposed as a parent guarantor, expressly requiring that they must meet the same requirements as an Applicant.
- The Material Default provision in 3.4(e)(ii) is expanded to cover a Former Related Access Holder. A Former Related Access Holder includes an Access Holder who held an Access Agreement with ARTC in the previous 2 years, for which a Related Entity (as that term is defined in the Corporations Act) of the Applicant was also a Related Entity of that previous Access Holder. The expansion of section 3.4(e)(ii) is to protect ARTC from having to negotiate with, and provide Access to, what is often referred to as a 'phoenix corporation', being a situation where a new company presents itself seeking Access, having close links (often with the same directors) as a company that has previously defaulted on an agreement. Such a situation has arisen in recent years on ARTC's Interstate network, causing considerable difficulties.

  In response to a concern raised by the HRATF, ARTC has included a new section 3.4(f) which excludes the phoenix corporation provision where a defaulting party has been purchased by an unrelated entity that was not itself in Material Default of an agreement with ARTC.

2.5 Access Pricing Principles

2.5.1 Floor Limit & Ceiling Limits (Sections 4.2, 4.3)

ARTC is not seeking to change the calculation methodology for the revenue limits for the 2016 HVAU if and until the ACCC's annual compliance assessment for the 2013 calendar year is finalised. See comments in section 1.4.4 of this guide.

During the preparation of the 2016 HVAU, consideration was given to two particular issues:

a) the removal of Pricing Zones; and

b) the removal of Loss Capitalisation.

As noted above, due to the regulatory uncertainty surrounding the 2013 compliance assessment these issues have been unable to be pursued under the 2016 HVAU.

Removal Of Pricing Zones

ARTC considered the removal of Pricing Zones in the context of adopting a single price per path ($/Train Km) for the TOP component of Access Charges or retaining the existing geographically defined pricing zones but not differentiating access prices in each zone (i.e. the same TOP charge would apply in each zone). This would introduce a further degree of simplification to pricing.

However, notwithstanding some of the potential advantages, the structure of existing Access Holder Agreements would make the removal of Pricing Zones cumbersome to achieve. In the circumstances, and consistent with ARTC's object to have consistency in the commercial arrangements, ARTC chose not to pursue this change.

Removal Of Loss Capitalisation (Section 4.3)

Loss capitalisation for Pricing Zone 3 was included in the 2011 HVAU to deal with the fact that large increases in Capacity in Pricing Zone 3 were required in order to allow for increased coal volumes. The nature of such increases is that it is necessary for the infrastructure to be in place ahead of when it is required. As such, the additional cost could not immediately be covered by Access Charges from the volumes existing at the time.

Under the 2011 HVAU, the loss capitalisation mechanism permitted the capitalisation of economic losses in Pricing Zone 3 into the regulatory asset base to enable long term economic cost recovery i.e. it provided for the recovery of any shortfall against economic cost in a future period. It moved revenue shortfalls in one year into the RAB and allowed it to be recovered in future years once volumes and/or the ability to pay increased sufficiently.

The major expansions in Capacity in Pricing Zone 3 are largely in place for the contracted volumes and no major Network investments are currently planned. Except for any adjustments arising through the ACCC's final decisions with regard to compliance assessments for 2013 through to the first half of 2016, ARTC anticipates that losses currently capitalised into the RAB for Pricing Zone 3 would have been recouped by the end of calendar 2016.

In light of these circumstances, ARTC considered removing the loss capitalisation provisions. Any losses outstanding at the termination of the 2011 HVAU would be dealt with through a transitional arrangement.

However, given the uncertainty surrounding the final value of capitalised losses and a strong preference by Pricing Zone 3 Access Holders for the retention of the mechanism, ARTC has decided to leave the mechanism in place. ARTC has undertaken to review the loss capitalisation mechanism as part of the mandatory 5 year review process.

Exclusion of Innovation Payment Or Efficiency Incentive Amount (Section 4.3(c)(ii))

The 2016 HVAU contemplates two new incentive mechanisms, one that would result in a payment where ARTC introduces an innovation (see 2016 HVAU section 14) and one relating to cost efficiency that would reward ARTC where it reduced costs (see section 9.3).

The resulting payments in both cases are excluded from the Ceiling Revenue, otherwise any benefit arising to ARTC would be offset by a reduction in Access revenue allowed under the Ceiling, thereby frustrating the intended incentive.

2.5.2 Regulatory Asset Base (Section 4.4)

The major changes to section 4.4 are provision for the opening values for the RAB and RAB Floor Limit to roll-over from June 2016 closing values.

In addition to this, some of the terms have been clarified to aid with readability and understanding, e.g. the Net Capex term has been broken into its components. It has not been the intention to modify the meanings of these terms from their current use.

2.5.3 Economic Cost & Cost Allocation (Sections 4.5, 4.6)

The major changes to sections 4.5 and 4.6 relate to the allocation of Non-Segment Specific Costs and the depreciation, return costs and loss on disposal associated with Non-Segment Specific Assets (for the purposes of this Explanatory Guide referred to in combination as "**indirect costs**"). The 2011 HVAU allocated indirect costs on the basis of either GTK and Train Km depending on the nature of the cost. These are, for the most part, very broad-brush allocators and are relatively poor in providing even an approximation of the allocations that one might expect to achieve through a more rigorous method and even less so in comparison to what costs might apply to a stand alone entity.

During 2015, both for internal management purposes and in preparation of the 2016 HVAU, ARTC conducted a rigorous review of the allocation of indirect costs and came to the view that the existing GTK and Train Km allocators significantly understated the costs that should appropriately be applied to the Network.

To address this issue, the 2016 HVAU has replaced these simple allocators with a more detailed set of allocation mechanisms. These are contained in a Costing Manual that is submitted to the ACCC for approval as part of this application.

As a general principle, the Costing Manual provides, in the first instance, for those indirect costs that can be specifically identified with the Network to be allocated to the Network. Where this cannot be done, a causal cost allocator is applied. Lastly, where no causal allocator is available, a more general allocator is used.

This approach is consistent with a number of examples of cost allocation mechanism both in Australian rail infrastructure owners and also electricity network owners. It is also consistent with the intent of the allocation principles in the 2011 HVAU section 4.6, the change being the adoption of a more detailed set of allocation mechanisms.

In addition to the need to amend the allocation mechanisms to produce a more accurate allocation of indirect costs, ARTC wished to address a concern expressed by many stakeholders of the need for greater degree of transparency as to how the Network costs are derived. A useful mechanism to provide greater transparency and information to stakeholders regarding the treatment of costs under the undertaking is to provide a descriptive document. ARTC notes that a number of regulated entities in Australia provide such a document in the public domain.

For the 2016 HVAU, recognising the call for greater transparency from stakeholders, ARTC has included a Costing Manual that describes the treatment of costs. As part of the consultation process for the 2016 HVAU, the HRATF members were provided with a working draft of the Costing Manual and the contents of the manual were adjusted in response to their comments, including the removal of a section describing the allocation of revenues which the HRATF felt did not belong in a Costing Manual.

Appendix D contains a more detailed discussion of the allocation mechanism and Costing Manual. The Costing Manual is included as Attachment 8. Attachment 9 contains a report commissioned by ARTC, prepared by Lacertus Verum, to canvas the most appropriate method for allocating corporate costs and communicating the allocation mechanism to stakeholders.

2.5.4 Depreciation Of Segment Specific Assets (Section 4.7)

Changes to 2016 HVAU section 4.7 are either for the purposes of:

- consequential changes resulting from other areas (e.g. the different circumstances for the commencement of the undertaking); or
- clarification, e.g. the title has been changed to make it clear that the depreciation mechanism in this section applies to Segment Specific Assets only, and that a single mine life can be applied across the whole Network as is the current practice.

2.5.5 Rate Of Return (Section 4.8)

The 2016 HVAU includes a rate of return of 6.74% real pre-tax and 8.50% nominal. See Appendix C for details.

2.5.6 Unders & Overs Accounting (Section 4.9)

The changes to section 4.9 dealing with the unders and overs accounting are restricted to:

- consequential changes arising from the change to path based pricing;
- exclusion of the Innovation Payment and Efficiency Incentive Payment; and
- minor clarifications.

2.5.7 Annual Compliance (Section 4.10, 4.11)

The changes to the annual compliance section 4.10 are largely to deal with the 6 months from July to December 2016 as the first period under the 2016 HVAU to which a compliance assessment process will be required. In accordance with section 4.10(b), ARTC will agree with the ACCC the amendments to the documentation to be provided for that 6 month process prior to submission.

See also section 15.1 in relation to the compliance assessment process for the 6 month January – June 2016 under the 2011 HVAU.

For ease of reference and flow, the annual True Up Test (**TUT**) audit has been moved from its former location at 4.10(f) to its own sub-section 4.11. Otherwise, this provision has not been changed apart from consequential amendments to the references.

2.5.8 Structure Of Charges – Coal Access Rights (Section 4.12 Formerly 4.11)

Section 4.12 (formerly section 4.11) has been amended to the $/Train Km that will apply to TOP Charges under path based pricing. See comments in section 2.1 above.

2.5.9 Pricing Objectives (Section 4.14 Formerly 4.13)

The changes to section 4.14 relate to the removal of the redundant distinctions between FCC (fixed component of costs) and NCC (new capital component of costs). These distinctions relate to an early version of the 2011 HVAU (prior to its original approval) and the 2011 HVAU does not distinguish between fixed and new capital costs in practice. For the 2016 HVAU, this redundant distinction has been removed.

2.5.10 Standard Access Charge (Section 4.15 Formerly 4.14)

The former section 4.14 set out the indicative Access Charges. Indicative Access Charges no longer apply under path based pricing. In their place, the term Standard Access Charge is used to refer to the TOP Charge and Non-TOP Charge for each Pricing Zone that will apply under path based pricing.

Similarly references to indicative services have been removed as these no longer exist. In their place, the section now references the Services Envelope which identifies the limits that apply to the application of Standard Access Charges.

2.5.11 Charge Differentiation (Section 4.16 Formerly 4.15)

Section 4.16 has been reoriented to reflect path based pricing with the removal of indicative services and indicative prices and their replacement by the Services Envelope and Standard Access Charges. Charge differentiation now occurs only in respect to Services that operate outside of the Services Envelope.

A new section 4.16(b) has been added to cater for Services that fall within the Services Envelope but also operate on other networks which have significant operating restrictions that prevent them from operating a train configuration more akin to those typically operated in the Hunter Valley. This provides ARTC with the flexibility to set prices by reference to the constraints of interconnecting rail networks and has been inserted to address concerns from Access Holders operating on both the Hunter Valley network and another network.

With the move to path based pricing, the former sections 4.17, 4.18, 4.19 relating to indicative services have become redundant and have been removed.

For completeness, the former section 4.15(a)(iii) related to the grandfathering of certain train configurations is now redundant and has been removed.

2.5.12 Process For Finalising Standard Access Charges (Section 4.18 & 4.19 Formerly 4.20, 4.21)

Sections 4.18 and 4.19 (formerly 4.20 and 4.21) deal with the preparation and communication of Standard Access Charges. These sub-sections have been revised to adopt path based pricing and to take into account other consequential changes, e.g. the Relinquished Capacity provision.

The HRATF members expressed a concern that the provision of pricing by the end of October, as required under the 2011 HVAU caused them difficulties in their internal budgetary processes. In order to assist, ARTC has moved the date for providing prices to 30 September of the year prior to year for which prices are to be provided. ARTC is confident that the change will not have a material impact on the accuracy of information available for the preparation of prices.

Also in response to requests from HRATF members, ARTC has included a provision at 4.19(iii)(B) to provide an indicative forecast of prices for the two subsequent years. A new Schedule F sets out a pro-forma for the information to be supplied. ARTC will provide the forecast prices as a range, recognising the increased uncertainty in the future periods. These forecast prices are being provided to Access Holders for information purposes only. They are to be treated as indicative, based on information available at the time, and are non-binding. These indicative prices are provided in the form of a range.

2.5.13 Relinquished Capacity (Section 4.20)

At the request of the HRATF, ARTC has included a new provision at section 4.20 that provides for ARTC to facilitate the voluntary relinquishment of contracted Capacity by an Access Holder. There is an established principle under the 2011 HVAU, continued under the 2016 HVAU, that ARTC is not permitted to voluntarily waive TOP charges in a year on the basis that the shortfall in revenue would result in an 'under' for the year, which would then be socialised amongst all relevant Access Holders through the 'unders and overs' accounting process. ARTC is therefore unable to allow directly for the voluntary relinquishment of Capacity that would be to the detriment of other Access Holders.

However ARTC is willing to assist Access Holder's in managing their take or pay exposure by assisting Access Holders wishing to relinquish Capacity trade that Capacity with another party seeking to contract additional Capacity. Any assignment of Capacity to be relinquished is required to be undertaken in accordance with clause 16.3 of the indicative Access Holder Agreement.

2.6 Capacity Management

Section 5.8 of the 2016 HVAU relating to the assignment of Capacity losses has been removed. Otherwise section 5 has remained largely unchanged from the 2011 HVAU. HRATF members indicated they preferred a less negative approach to achieving efficiency and this has been pursued through other mechanisms such the inclusion of an innovation incentive (see 2016 HVAU section 14) and the operating cost incentive process (see 2016 HVAU section 9.3).

2.7 Investment & Industry Consultation

2.7.1 Investment Processes

Apart from the specific areas addressed below, ARTC is not proposing any substantial changes to the sections of the 2016 HVAU associated with the investment process (2016 HVAU sections 6 – 9).

2.7.2 Changes To RCG (Section 9.2)

The role of the RCG has been expanded to include a greater level of consultation and decision making (e.g. the RCG role in the minor variation mechanism). ARTC has reviewed the membership and operation for the RCG and concluded that it is preferable to have all coal Access Holders as direct members rather than being represented by an elected representative member. Accordingly, 2016 HVAU section 9.2 now provides for this and the provisions relating to the representative member have been removed.

In keeping with the move to path based pricing and the adoption of Train Km as the primary unit for levying TOP Charges, the weighting for voting has been adjusted from GTK to Train Km.

Section 9.2(a) has also been amended to clarify that meetings do not have to be monthly. This amendment was included to avoid situations, e.g. through the Christmas period, when meetings held at strictly monthly intervals would be unduly restrictive.

2.7.3 Additional Maintenance Obligations (Section 9.2)

Stakeholder submissions in relation to the development of the 2016 HVAU identified that Access Holders are seeking increased transparency of costs and allocation, pricing development and maintenance plans. In addition the HRATF are seeking further commitments from ARTC with regard to disclosing maintenance forecasts, budgets, scope, planning and reporting. Industry have made it clear that the RCG is an appropriate forum for the discussion and consultation of maintenance activities.

In response to stakeholder requests, ARTC has strengthened the provisions in section 9.2 for reporting to the RCG on maintenance plans and operating cost forecasts, and actual performance against these. It also deals with efficiency measures and general operational performance. ARTC is also seeking to:

- incorporate additional maintenance obligations in the RCG Charter consistent with the strengthened provisions of the 2016 HVAU; and
- develop an efficiency incentive scheme (see section 2.7.4 below).

These changes and initiatives are intended to provide an increased level of transparency to Access Holders.

2.7.4 Operating Costs & Incentive Proposal (Section 9.3)

In response to a request by the HRATF, ARTC has included a process to agree an operating cost incentive mechanism with the RCG.

The HRATF provided an 'Opex Incentive Scheme' proposal to ARTC. Following consultation with the HRATF it was agreed that it would not be feasible for an incentive scheme to be developed, negotiated and finalised within the time period available to submit to the ACCC as part of the 2016 HVAU. An incentive mechanism of this nature is complex and will require a substantial degree of work by both ARTC and RCG members to arrive at a workable solution. While this is not possible to be completed within the specified timeframe, ARTC is committed to developing the operating cost and incentive proposal.

Under the new section 9.3, ARTC is required to prepare and publish a proposed incentive mechanism to reduce operating costs, as soon as practicable, but in any event within 18 months of the commencement of the undertaking. The drafting sets out some broad principles which the proposal should contain. These principles reflect a proposal promoted by the HRATF during the consultation process.

The nature of the proposal is that ARTC may choose to 'opt-in' to the incentive scheme but is not required to do so. The mechanism would set a baseline for operating costs and an amount would be agreed for the relevant period with the RCG. Where ARTC performs at below the agreed cost levels, the difference would be shared between ARTC and Access Holders in accordance with a previously agreed percentage and the costs would be deemed to be efficient (in the same way that a capital project endorsed by the RCG is deemed to be Prudent).

As part of the scheme, ARTC has agreed to engage an independent party to conduct an efficiency study prior to each review period (i.e. the period set in section 2.3) and for ARTC to reset the baseline of costs in accordance with the results of the study.

2.8 Performance Measurement (Section 13)

Access Holders have expressed a view that the existing suite of performance indicators do not provide significant value to their understanding of the operation of the network. In responding to this, and in keeping with the expanded role of the RCG, the 2016 HVAU provides for the performance indicators to be modified over time through agreement with the RCG via the minor variation process (see section 2.3.2 above). This is achieved through the changes to section 13.1, Schedule D and inclusion of performance indicators in the minor variation mechanism under section 2.4.

For completeness, the former sections 13.3, 13.4 and 13.5 of the 2011 HVAU have been removed. These provided for reviews of various components of the 2011 HVAU which have been completed and are no longer relevant.

2.9 Innovation Incentive Mechanism (Section 14)

Section 14 of the 2016 HVAU provides for ARTC to be rewarded for innovations that benefit Access Holders, including benefits that might manifest themselves in other parts of the coal chain. The objective of the mechanism is to provide an incentive to ARTC to identify, develop and implement projects or change practices or technologies which are innovative and not in the ordinary course of

ARTC's business where ARTC would not otherwise have an incentive to do so under the undertaking.

For example, it might be that ARTC is able to undertake an investment or an operating practice that assists train operators reduce their costs; but which would not be an expenditure that ARTC would normally be able to recoup under the Ceiling Limit as it would not come under the stand alone requirements for the Network. Without this mechanism, ARTC would have no incentive to engage in the new investment or practice, to the detriment of the coal chain overall.

The mechanism provides for ARTC to bring a proposal to the RCG and agree a scheme of payments outside the Ceiling Limit where the RCG endorses a project. Section 14 sets out the information requirements that ARTC is required to provide to the RCG, principles for the pricing of the project and the process for endorsement by the RCG.

It is noted that an area of complexity exists in the charging for an incentive project in that there is the potential for a project to benefit only some Access Holders, in which case only those Access Holders should pay. However this gives rise to a potential free rider problem whereby some Access Holders may wish to obtain the benefit without contributing. These two issues are in tension. To address this, section 14.6 sets out an endorsement process that provides for a project expected to benefit all Access Holders to be endorsed when Access Holders with 70% of contracted Train Km vote in favour, but in the case where the benefits are expected to apply to only a subset of Access Holders then all of the identified group must endorse the project. Any recovery of an innovation payment will be done in accordance with the endorsed proposal. This provides a reasonable compromise that ARTC believes will allow the mechanism to be flexible and workable without being unduly onerous.

2.10 Transitional Arrangements (Sections 4 and 15)

The 2011 HVAU will apply in relation to the Hunter Valley coal network until 1 July 2016. Ideally the 2016 HVAU will be accepted by the ACCC and become effective by such time. Due to a number of factors, this creates issues in relation to the scope and timing of the annual compliance assessment and True-up test audit required under the two undertakings.

Section 15 of the 2016 HVAU is a new section, covering the transitional arrangements required to give effect to the compliance assessment requirements for January to June 2016 under the 2011 HVAU (**Transitional Period**). On expiry of the 2011 HVAU, the obligation to undertake a compliance assessment and true-up test for the Transitional Period also expires. Therefore, it is necessary to cover the 6 month requirement to undertake a compliance assessment and true-up test in the 2016 HVAU.

ARTC has considered these factors and proposed the following transitional arrangements for transitioning between the two undertakings in relation.

2.10.1 Annual Compliance Requirements

2016 HVAU section 15.1 provides for ARTC to provide compliance documentation for the Transitional period within 4 months of the close of the period, i.e. by 30 October 2016. The documentation remains the same as for a normal compliance process under the 2011 HVAU except that it will be for a 6 month period only.

In adopting this approach, ARTC is confident that the curtailment of the various contractual processes and entitlements to Access Holders that normally run for a full calendar year will not be materially affected. Those matters include:

a) the annual contracted Train Path Usages;

b) the availability of Tolerance; and

c) several parameters such Network Path Capability, Monthly Tolerance Cap.

For the most part these matters are either not affected by the transition between undertakings (e.g. the annual contracted Train Paths is not, itself, impacted), or the matter is specified on a monthly or quarterly basis (the Monthly Tolerance Cap is set for each month and is not impacted by the change of undertaking) and presents no special issues due to the transition.

A similar approach is proposed to be adopted in respect of the initial 6 month period under section 4 of the 2016 HVAU. ARTC will work with the ACCC to demonstrate compliance with the assets roll forward, compliance with the Ceiling Test and operation of unders and overs for the initial period of the HVAU. This approach is consistent with the approach adopted as part of the transition from the NSW Rail Access Undertaking to the 2011 HVAU.

2.10.2 Annual TUT and TUT Audit

Under the 2011 HVAU ARTC is required to undertake the system true-up test to determine whether ARTC has met its contracted commitments by comparing network availability with the Access Holders requirements on a Pricing Zone basis. 2016 HVAU section 15.2 provides for ARTC to undertake the TUT and TUT Audit in respect of the Transitional Period. This section adopts a similar approach to that described above in respect of the annual compliance assessment.

2.10.3 Calculation of TOP Rebate and Ad-Hoc Rebate

Similar to the approach adopted in respect of the annual compliance assessment, ARTC will conduct the Annual Reconciliation process set out in IAHA clause 5.4 within the 35 business days of the end of June 2016 for the Transitional Period. A new ‘Tier 1’ provision has been inserted into the IAHA to impose this obligation on ARTC.

Under the IAHA, ARTC will also conduct the Annual Reconciliation in February 2017 for the initial six month period under the 2016 HVAU (being from July to December 2016).

2.11 Definitions (Section 16 Formerly Section 14)

Section 16 contains definitions. The majority of these remain unchanged. However, there are a number of new terms included. See Appendix E for details of the changes to definitions.

3 Key Changes To Schedules

3.1 Schedule A1 Tier 1 Provisions

As the majority of Access Holder Agreements have a rolling 10 year term, it was acknowledged as part of the 2011 HVAU that there needed to be protections to deal with changes over time. Accordingly the 2011 HVAU and associated indicative Access Holder Agreement set out a mechanism allowing ARTC to roll Access Holders onto new terms in the event that the ACCC approves a new undertaking containing revised material terms which need to be the same for all Access Holders. This was done through the operation of ‘Tier 1 clauses’. As part of the 2016 HVAU ARTC has added several clauses of the IAHA as Tier 1 clauses. These include:

New IAHA Clause 5.4A, Schedule 3 Clauses 4, 5 Relating To Innovation & Efficiency Incentive Charges

The new IAHA clause 5.4A provides for the payment of an Innovation Charge or an Efficiency Incentive Charge in accordance with an endorsed Efficiency Incentive Proposal and Innovation Proposal (as applicable). Both of these payments will fall outside the revenue calculated in the Ceiling Limit and will be invoiced specifically.

IAHA Schedule 3 clauses 4 and 5 relate to these payments and are also new.

IAHA Schedule 3 Clauses Relating To Charges

IAHA Schedule 3 clauses 1 (TOP Charges), 2 (Non-Top Charges) and 3 (Ad Hoc Charges) require substantial modification to reflect the change in pricing structure to the new path based pricing. Going forward, it is important that all Access Holder Agreements are able to be modified to reflect changes to the pricing structure.

Removal Of IAHA Clause 16.8

Clause 16.8 relates to the reduction in time for the approval of trades. This provision was originally included as an obligation early in the operation of the 2011 HVAU. The task is now complete and this provision is redundant and has been removed. Therefore it is no longer required as a Tier 1 provision going forward.

3.2 Schedule A1 Tier 2 Provisions

Item 6 in the list of Tier 2 provisions relating to the payment of Access Charges on the basis of take or pay charges etc, has been deleted from the list as the Schedule 3 clauses have now been moved to Tier 1 to reflect the need for uniform application of the basis for the application of Access Charges.

3.3 Annexure 1 To Schedule B

Annexure 1 To Schedule B is the Network map. The drafting has been amended to reflect that the map may be changed through the minor variation mechanism.

3.4 Schedule D Performance Measurement

The main change to this schedule is to incorporate it into the minor variation mechanism. It is anticipated that ARTC will progressively over time, in consultation with the RCG, add, remove or amend the suite of performance measures currently in the schedule.

Minor drafting changes have also been made to remove references to indicative services and recognise the Services Envelope and other matters consequential to the adoption of path based pricing. References to incentives have also been removed to reflect that these are now dealt with separately.

3.5 Schedule F Forecast Indicative Prices

Schedule F is a new schedule that provides a pro-forma for the forecast prices now required under section 4.19(a)(iii)(B).

3.6 Schedule G (Formerly Schedule F) Principles To Guide ARTC/HVCCC Consultation

Schedule G sets out the principles which underpin the consultation process between ARTC and the HVCCC. At the request of members of the HRATF, these principles have been strengthened to clarify the process, particularly with regard to any disagreement between ARTC and the HVCCC. ARTC is not able to commit the HVCCC to any matter under the undertaking and therefore the matters that can be covered in this schedule are necessarily limited to those things to which ARTC can commit.

3.7 Schedule H (Formerly Schedule G) Annual Compliance Assessment Information Provision & Timing

The changes to Schedule H reflect the change in opening valuation for existing assets to the closing value as at 30 June 2016.

Other changes are consequential on changes in the main body of the undertaking or minor clarifications in drafting (e.g. references to the Ceiling test have been changed to Ceiling Limit as Ceiling test is an undefined term but was always intended as Ceiling Limit).

4 Key Changes To Indicative Access Holder Agreement

The majority of changes to the IAHA have been made to reflect changes to the 2016 HVAU.

4.1 Definitions (Clause 1)

Changes to the definitions largely reflect changes required as a consequence of changes to the 2016 HVAU.

The two coal terminal owners have been separately defined to reflect the move to destination specific train paths.

4.2 Condition Precedent (Clause 2.2)

Clause 2.2 now has an express requirement that an Operator Sub Agreement (**OSA**) be in place as a condition precedent. This has been added to remove any ambiguity regarding the need to have an OSA in place prior to commencement.

4.3 Removal Of Clause 3.3(e)

IAHA clause 3.3(e) related to a review of Tolerance levels that was to be conducted within 12 months of the commencement of the 2011 HVAU. This review has been conducted. The clause is now redundant and has been removed.

4.4 Changes To Clause 5.4

4.4.1 Change To Train Path Schedule Format (Clause 5.4(c), Schedule 3 & Train Path Schedule)

The table for the Train Path Schedule was previously contained in the body of the Schedule itself. In practice, this table is in the form of a spreadsheet which could not reasonably be represented within the format of the Train Path Schedule in a meaningful sense. This has now been removed from the schedule to be an Annexure to the schedule, reflecting all executed Access Holder Agreements. This has an impact on the drafting of clause 5.4, Schedule 3 and the Train Path Schedule.

4.4.2 Change To TOP Rebate & Ad Hoc Charge Rebate (Clause 5.4(d))

To facilitate a transition between the 2011 HVAU and 2016 HVAU, clause 5.4(d) has been added to deal with the requirement to deal with two part year reconciliations. The drafting clarifies that for the purposes of the Annual Reconciliation (which impacts the TOP Charge Rebate) and Ad Hoc Charge Rebate, the calculations will be performed with reference to the relevant part of the year rather across the full calendar year. This drafting is also given effect by corresponding changes to Schedule 2 clause 2.4.

4.5 Innovation Charge (Clause 5.4A)

Clause 5.4A is a new clause dealing with the payment of the charge arising from an innovation project (see HVAU section 14). There is also a consequential change to Schedule 3 clause 4 (see comments in section 2.9 above for further details on the Innovation proposal).

4.6 Removal Of Specific Newspaper Reference (Clause 5.7(a))

Clause 5.7 sets out the interest charge rate applicable to overdue amounts. Previously this specified a rate published by the National Australia Bank in the Australian Financial Review. Given that the important matter is the fact of publication rather than the actual journal in which the publication occurs, this restriction has been deleted as irrelevant.

4.7 Credit Support (Clause 7)

The changes to clause 7.1 extend the new Prudential Requirements in the section 3.4(e) of the 2016 HVAU to the IAHA. This change includes the requirement that a party providing a guarantee must be solvent and demonstrate it has an appropriate legal structure and capital base.

4.8 Pricing Differentiation (Clause 8.4)

Clause 8.4 previously prevented price discrimination where two like indicative services were being operated. This is no longer required as price discrimination of this nature cannot occur under path based pricing within the Services Envelope. Accordingly the drafting has been removed. The clause number has been retained to avoid renumbering later clauses.

4.9 Use Of Non-Compliant Services (Clause 11.5)

Notwithstanding that ARTC is no longer using train configurations which represent efficient utilisation of Coal Chain Capacity as a factor in determining prices, the Hunter Valley Network is still a key component of the Hunter Valley coal chain. To ensure coordinated capacity planning continues to occur to optimise coal chain performance, ARTC has retained the requirements under the IAHA for changes to Service characteristics to be approved. If an Access Holder was permitted to unilaterally change its train configurations (either permanently or temporarily) this could negatively impact on Capacity, Coal Chain Capacity or ARTC's ability to fulfil its obligations to other Access Holders. Notwithstanding this requirement, ARTC cannot unreasonably refuse to allow an Access Holder to change train configurations.

4.10 Temporary Trade Of Path Usages (Clause 16.4)

An issue of some concern for Coal Chain Capacity is the aggregation of Train Paths to a single Newcastle port destination. This creates substantial uncertainty for the planning of certain elements of the coal chain. To assist with this, ARTC has agreed to modify its contracting approach to require that Access Holders specify the use of the Port Waratah Coal Services or Newcastle Coal Infrastructure Group coal terminals. Such a change is in keeping with the principles of contractual alignment and will greatly assist in planning by the coal terminals and the HVCCC.

The major impact of this change arises in the specifics of the Train Path Schedule and is not a matter of drafting per se. However, as a consequence of this changed approach IAHA clause 16.4(a)(iii) has been modified to remove the previous specification that all of the Newcastle coal terminals would be treated as the one destination for the purposes of 'safe harbour' trades. This is in keeping with the intention that a safe harbour trade is one that could be assumed to consume no more Capacity or Coal Chain Capacity than the original Train Path.

4.11 Removal Of Redundant Clause 16.8 Reduction In Time Period For ARTC Approval Of Trades

Clause 16.8 dealt with a requirement for ARTC to conduct a review of its administrative processes for the approval or disapproval of a trading application. That review has been conducted and the matter is no longer relevant. Accordingly, this clause has been removed.

5 Key Changes To IAHA Schedules

5.1 Schedule 2 True Up Test & Annual Reconciliation

The True Up Test remains unchanged. However, recognising the requirement to deal with two part year reconciliations, Schedule 2 clause 2.4 dealing with the TOP Rebate clarifies that the average for the TOP component of prices will be determined by reference to the relevant part of the year rather across the full calendar year. This also gives substance to the drafting changes in clause 5.4(d).

Schedule 2 clause 2.8 has been added to cater for the part-year outcomes relating to the TUT Audit.

5.2 Schedule 3 Charges

A number of changes have been made to Schedule 3 to take into account:

a) the change to path pricing; and

b) the removal of the Train Path Schedule spreadsheet to an annexure.

Schedule 3 also provides for the charging of an Innovation Charge or Efficiency Incentive Charge should either or both of these be approved by the RCG from time to time.

5.3 Train Path Schedule

As noted elsewhere, the spreadsheet setting out the details of the contracted Train Paths has been moved to an annexure to reflect current practice. The drafting changes of substance in the schedule reflect this change.

6 Indicative Operator Sub-Agreement

There are no changes of substance proposed to the Indicative Operator Sub-Agreement.

APPENDIX A PATH BASED PRICING

A.1. INTRODUCTION

For the 2016 HVAU, ARTC is moving to path based pricing. Specifically, the Take Or Pay (**TOP**) component of prices will be set using the unit of train kilometres (**Train Km**) by Pricing Zone, rather than gross tonne kilometres (**GTK**) as occurs under the 2011 HVAU. Unlike pricing under the 2011 HVAU, TOP prices will not be differentiated on the basis of the characteristics of the train contracted to be operated, provided that the train operates within the Services Envelope.

Prices for the Non-TOP component of Access charges will remain on a GTK by Pricing Zone basis, but also unlike the 2011 HVAU, Non-TOP prices will not be differentiated on the basis of train characteristics for trains within the Services Envelope.

A.2. REASON FOR THE CHANGE

In choosing a pricing scheme, it is necessary to consider whether it sends appropriate signals to customers in relation to the efficient use of the Network. The 2011 HVAU used an indicative train service as the mechanism for achieving this. The intention was that the indicative service would have characteristics that maximised efficient use of the Network and Coal Chain Capacity as a whole.

One difficulty with this approach is that what maximises efficient use of the rail network does not necessarily maximise Coal Chain Capacity. The 2011 HVAU included a three stage process to move to the most efficient train configuration from a coal chain perspective, utilising modelling provided by the HVCCC. Unfortunately, ARTC was unable to achieve a consensus with stakeholders as to the characteristics of the indicative service, leaving pricing to be determined through the application of an early estimate of what that train configuration should be.

A further difficulty is that the pricing of trains that differed from the indicative service relied on the application of differentiation factors that, in some cases, involved a degree of judgement or were reliant on the HVCCC modelling. Some stakeholders had concerns that the available modelling had limitations that made it difficult to place a high degree reliance on it. Again, ARTC was unable to achieve a consensus view as to the most appropriate values for the differentiation factors.

Combined, these difficulties resulted in a level of uncertainty with regard to pricing going forward. It is ARTC's judgement that the factors that made a consensus unachievable will continue through at least the medium term future. Further, it is a legitimate concern that the conduct of more robust modelling sufficient to satisfy all concerns would be prohibitively expensive and time consuming such that it must be questioned whether it would be practical to achieve, particularly in a situation where industry is seeking to reduce costs at every opportunity. Therefore, in ARTC's opinion, it is unlikely that future attempts to determine the most appropriate indicative service and differentiation factors will be any more successful than the previous attempts.

It is also notable that the characteristics of coal trains in use throughout the Hunter Valley have evolved significantly since the commencement of the 2011 HVAU. These changes have occurred in the absence of any agreement on the characteristics that should apply to an indicative service and strongly suggest that there are other factors than the specification of an indicative service that drive train specifications. This suggests that the pricing signal that the indicative service is intended to provide is not having a significant impact on the choices of train specifications offered by train operators nor the purchase of train haulage services by Access Holders.

A further consideration in the choice of a pricing scheme is that of complexity. The scheme in operation under the 2011 HVAU has proved to be administratively complex for both ARTC and Access Holders. In choosing an alternative, ARTC has taken into account the benefits to all parties from having a simplified pricing scheme.

The move to path based pricing reflects a fundamentally different approach, one where ARTC is not taking an active role in promoting a train with particular characteristics, but rather allows Access

Holders to make their choice regarding train characteristics in light of their wider requirements and economic drivers – the price for access will largely be independent of train characteristics.

The adoption of path based pricing will reward the consumption of Capacity by higher payload trains compared to lower payload trains and to that extent provides an appropriate incentive to utilise the Network efficiently, but it removes the requirement for ARTC to form (and impose on Access Holders) a judgement as to what is the most appropriate train configuration, provided that the train falls within the Services Envelope. To the extent that train characteristics fall outside of the Services Envelope, if a train service is permitted to operate on the Network, it will be priced on the basis of the principles in the 2016 HVAU section 4.16.

A.3. DETAILS OF PRICING SCHEME

The TOP component of prices will be set as a $/Train Km for each Pricing Zone regardless of train characteristics for those train configurations that fall within the Services Envelope.

The adoption of Train Km as a pricing unit is reflective of the length of journey for a train. This is necessary as a Train Path utilises the Network only for the Segments traversed. For example, the path required by a train from Ulan to the Kooragang Coal Terminal and Bloomfield to the same terminal are very different, even though they use a common portion of the Network between Thornton and the terminal. The adoption of a Train Km unit rate for each Pricing Zone overcomes the issue of paths covering different portions of the Network within a Pricing Zone.

The retention of the GTK based Non-TOP pricing component assists in providing a well-established method for identification of the Floor Limit – subject to any revisions required by the ACCC on completion of their revenue allocation review. The Floor Limit reflects the Direct costs caused by each train and is a minimum price that can be applied to any traffic. As these costs are related to the maintenance of the network, and maintenance is, in broad terms, related to the gross tonnes traversing each part of the network, it is appropriate to retain a component of pricing that reflects GTK which is a measure of gross tonnes and distance.

The Non-TOP component of prices will be set as a $/GTK for each Pricing Zone regardless of train characteristics for those train configurations that fall within the Services Envelope.

Non-TOP pricing under the 2011 HVAU is differentiated based on the characteristics of the train. Train parameters such as maximum axle load and maximum speed are assessed and applied to develop an index that varies the base Non-TOP charge that applies to the indicative service. For the 2016 HVAU the differentiation between train types is removed and a single GTK price is applied in each Pricing Zone. The rationale for doing this is two-fold:

Indicative Service: One of the reasons for adopting a path price for the TOP component of charges is to remove the need to differentiate prices between different train configurations. In turn, this removes the need to define an indicative service. It would be counterproductive to remove differentiation for the main component of pricing but retain it and therefore still require the specification of an indicative service for the much smaller Non-TOP component.

Simplicity: The removal of train characteristics as a determinant of prices will simplify the determination of prices, their communication to Access Holders and administration of the Access Holder Agreements.

Materiality: An overwhelming proportion of trains movements (and therefore GTK) have a differentiation factor of less than 1.5%. As the Non-TOP charge is, on average, between 8% -15% of the total access price through the period from the commencement of the 2016 HVAU in July 2016 to December 2018, the revenue impact of differentiating prices on this component is negligible.

A.4. SERVICES ENVELOPE

The adoption of path based pricing will remove ARTC from taking an active role in differentiating between train types that operate within the Services Envelope. The Services Envelope incorporates those parameters that are necessary for the efficient operation of the Network, taking into account the existing physical characteristics of the infrastructure and ARTC's contractual commitments. At the commencement of the 2016 HVAU, the Services Envelope will comprise the parameters set out in Table A 1.

Table A 1: Service Envelope Characteristics

	Pricing Zone 1	Pricing Zone 2	Pricing Zone 3
Maximum Length (m)	1,568m	1,568m	1,329m
Maximum Axle Load (t)	30t	30t	30t
Maximum Speed Empty	80 kph	80 kph	80 kph
Maximum Speed Loaded	60 kph	60 kph	60 kph
Sectional Running Times (must meet)	As published on ARTC Website from time to time.	As published on ARTC Website from time to time.	As published on ARTC Website from time to time.

All train services currently contracted by ARTC meet these criteria.

The Services Envelope parameters are included in the 2016 HVAU section 2.4 minor variation mechanism. This will allow for the criteria to be modified from time to time, if approved by the RCG, as the Network capability changes.

Any Applicant or Access Holder may apply to operate train services that fall outside of the Services Envelope. Any such application would be subject to the Capacity and Coal Chain Capacity assessment process described in the 2016 HVAU. The pricing of a train service outside of the Services Envelope will be determined in accordance with the principles set out in 2016 HVAU section 4.16.

A.5. MANAGEMENT OF CAPACITY

Notwithstanding that there is no differentiation between train characteristics for the purposes of pricing, ARTC retains an obligation to manage the Network to ensure that all contracted Capacity will be able to be operated on the Network. To this end, ARTC will still require an Access Holder to nominate the characteristics of the trains intended to be operated and the Access Holder Agreement will continue to document the contracted Train Paths according to the nominated criteria.

An Access Holder may seek to amend the Train Paths nominated in its Access Holder Agreement, in accordance with IAHA clause 11.1 and ARTC may not unreasonably withhold its consent to vary the Train Path. However, it would be reasonable for ARTC to refuse consent where the proposed change in train characteristics would negatively impact on ARTC's ability to provide contracted Train Paths to other Access Holders, or if the HVCCC advised ARTC that the change would have a negative impact on Coal Chain Capacity, regardless of whether the modified Train Path characteristics fall inside or outside of the Services Envelope.

A.6. PRICING & REVENUE

It is noted here for completeness, that the specification of prices on a Pricing Zone basis does not affect how the resulting revenues received are allocated between different Segments across the Network. This position is no different to that which applies under the 2011 HVAU.

The Floor and Ceiling Limits reflect revenue collected across the entire journey for each train movement and do not prescribe how that revenue is to be recognised other than that in order to meet the Floor Limit, sufficient revenue must be applied to Segments to at least cover the Direct

Costs imposed by that movement. The revenue limits apply in combinations of groups of traffics as well as to individual movements.

Subject to any decision to the contrary by the ACCC, ARTC will continue to apply the revenue limits in the same way for the 2016 HVAU as under the 2011 HVAU.

APPENDIX B REMAINING MINE LIFE ESTIMATE

Purpose

The purpose of this Appendix B is to describe the methodology for calculating the remaining mine life (**RML**) of coal mines in the Hunter Valley to determine whether the existing mine life under the 2011 HVAU required amendment.

This appendix provides a summary of the analysis supporting the conclusion that the RML should be unchanged for the 2016 HVAU, i.e. that RML should be 16 years at the commencement of the 2016 HVAU in July 2016.

Background

For the 2011 HVAU, ARTC adopted a methodology for determining the average RML for coal hauls in the Hunter Valley for the purposes of calculating economic depreciation. This methodology was ultimately accepted by the ACCC and utilized a weighted average mine life for the region based upon a comparison between mine reserves and annual production; with the weighting based on mine reserves. This method provided an estimate for an RML of 21 years from 2011 until 2032.

In discussions with the HRATF, the initial HRATF position was to retain the current RML (i.e. 16 years at 1 July 2016), although this position was being reconsidered late in the negotiations after further discussion as to how RML impacted the calculation of depreciation. A version of this appendix has been shared with the HRATF.

Methodology

ARTC advocated the use of a Weighted Average Mine Life in 2009. Under this approach, a set of mines is identified that make use of a particular group of Segments. For each of these mines, the remaining reserves and the average yearly coal output are determined. The expected life of an individual mine is simply the reserve quantity divided by average annual output. The useful life of the group of Segments is the weighted average of the expected lives of these mines. The mine reserves are used as the weighting factors.

Using the same approach, all operating mines in the Hunter Valley utilising the Network were identified along with proposed mines, which may commence operations between 2016 and 2021.

Appendix 1 lists all the mines that have been included in the RML calculations. Of the 72 mines identified by the NSW Coal Industry Profile, 46 mines can potentially use the Network and out of the 46 mines, 4 mines have been closed.

Coal reserves for the remaining mines were obtained from the latest available annual reports and other publically available information released by the listed companies. This approach is consistent with what the ACCC had recommended in 2009. Out of the 42 mines identified that could possibly be included in the RML calculations, 4 mines are owned by private companies and data is not readily available. For these mines, data was sourced from both the AME research database as well as the NSW Coal Industry Profile. Where applicable, data from the NSW Coal Industry Profile was preferred over the AME database due to the nature of the publication source.

Identified coal reserves are a sum of the marketable proven reserves and marketable probable reserves as determined under the 2012 JORC code, where the relevant classification of reserves is based on the probability of extraction. To ensure a balanced calculation for the purposes of determining RML, some adjustment is required to reflect the probabilistic determinations in reserves.

In establishing the reserves base, the treatment of proposed mines is required to be resolved. Only mines that have contracted for capacity in the Network are included in the calculation; with commitment to capacity representing a proxy economic test of the reality of the reserves as it demonstrates a commitment to develop them. It is the preparedness to commit capital to development that demonstrates the mine is economic.

Even if producing, there is a question on the extent of reserves reported for each mine as not all reserves will be extracted at a common cost. As production grows and reserves decline, the remaining reserves will be costlier to extract and, with lower prices, potentially uneconomic into the future.

The increasing nature of the marginal cost of extraction and its potential to decrease reported reserves is a function of the probabilistic determination of reserves, which are not reflected in the core numbers alone.

Proxy Economic Reserve Calculation

To develop a proxy assessment of the probabilistic definition of reserves, an adjustment factor was developed based upon the relationship between annual production and reserves for each individual mine compared to the weighted average of the largest mines in the region. This relationship was utilized on the basis it indicates a higher reliance on tail reserves as a function of total reserves; which reserves are most likely to reflect an increasing marginal cost of production and hence a lower probability of development for the tail. An adjustment can therefore be made to the level of reserves to reflect this potential for the tail to be uneconomic.

The methodology compares the ratio of production to reserves with weighted average. So, for example, a mine with large reserves but very low production will have a relatively low ratio. For those mines where the ratio is between 80% and 100% of the weighted average, a discount of 10% is applied to the RML of those mines. Mines with a ratio less than 80% are discounted by 20%.

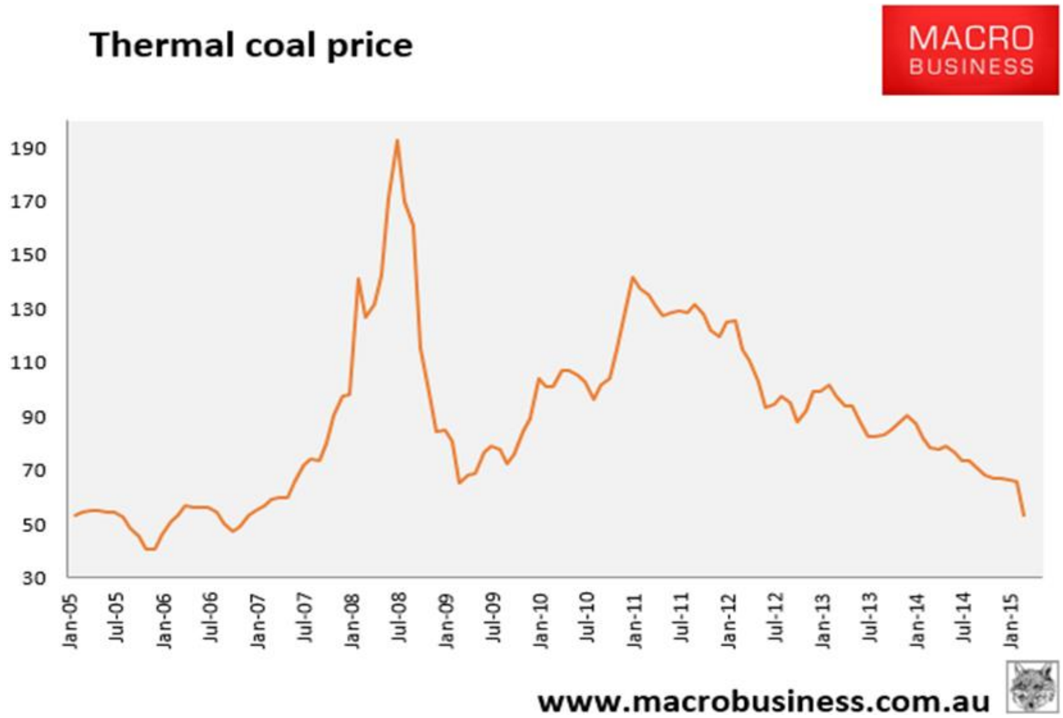
Production Rates

The best long term estimate of mine production is the capacity for which mines are prepared to contract.

Applying the probability adjusted reserves to the contracted rates of production delivers an estimate of the RML not significantly different from the previously approved estimate, being 16 years at 1 July 2016.

Price Discussion

As the chart below demonstrates, the price of coal dramatically increased in 2008 before falling in 2009 and then rising again until 2012. It is now at historical levels and a level similar to 2009; the point in time at which the original estimate of 2032 was developed.



This analysis therefore assumes that the remaining life of the Hunter Valley is not markedly different from the original 2009 analysis. With prices settling back at historic levels, this would seem an appropriate outcome reflecting some reserve increases offsetting increased production during the peak pricing period.

Conclusion

ARTC has developed a methodology to act as a proxy for an economic test on the reserves per mine and delivers an RML consistent with the original 2009 assessment of the remaining life of the Hunter Valley and reflects ARTC's original position to agree with the HRATF position to retain the current estimate of 16 years for the opening period of the 2016 HVAU.

Appendix 1: Coal Mines Included In RML Calculations

Mine	Producer	*Status*
Abel	Yancoal	*Include*
Ashto	Yancoal	*Include*
Austar	Yancoal	*Include*
Bengalla	Coal & Allied	*Include*
Bloomfield	Bloomfield Group	*Include*
Boggabri	Idemitsu	*Include*
Bulga	Glencore	*Include*
Drayton	Anglo American	*Include*
Hunter Valley Operations	Coal & Allied	*Include*
Liddell	Glencore	*Include*
Mangoola (Anvil Hill)	Glencore	*Include*
Maules Creek	Whitehaven	*Include*
Moolarbe	Yancoal	*Include*
Mount Arthur Coal	BHP Billiton	*Include*
Mount Owen Complex	Glencore	*Include*
Mount Thorley	Coal & Allied	*Include*
Muswellbrook	Idemitsu	*Include*
Narrabri	Whitehaven	*Include*
North Wambo	Peabody	*Include*
Ravensworth North	Glencore	*Include*
Rixs Creek	Bloomfield Group	*Include*
Rocglen (Belmont)	Whitehaven	*Include*
Stratford	Yancoal	*Include*
Teralb	Glencore	*Include*
Ula	Glencore	*Include*
Werris Creek	Whitehaven	*Include*
Wilpinjong	Peabody	*Include*
Camberw	Vale	*Merged with Integra*
Glennies	Vale	*Merged with Integra*
Glende	Glencore	*Merged with Mt Owen*
Ravensworth East	Glencore	*Merged with Mt Owen*
Ravensworth West/Narama	Glencore	*Merged with Ravensworth North*
Narrabri South	Whitehaven	*Merged with Narrabri*
Tarrawonga	Whitehaven	*Merged with*
Duralie	Yancoal	*Merged with*
Drayton South U/G &	Anglo American	*Propose*
Mount	Coal & Allied	*Propose*
Vickery	Whitehaven	*Propose*
Watermar	Shenhua	*Propose*
Integra	Glen.& Bloom.	*Include*
Newsta	Centennial Coal	*Care &*
Ravensworth UG (ex Newpac	Glencore	*Care &*
Dartbroo	Anglo American	*Close*
Donaldso	Yancoal	*Close*
Sunnysid	Whitehaven	*Close*
Unite	Glencore	*Close*

APPENDIX C RATE OF RETURN PROPOSAL

The rate of return is a key parameter in determining the tariffs applicable to a regulated network. In the 2011 HVAU lodged with the ACCC, ARTC engaged with industry and agreed a rate of return to apply for the 5 year term. ARTC has undertaken a similar process with industry for the purposes of the 2016 HVAU.

The 2011 HVAU, expiring 30 June 2016 applies a pre-tax real weighted cost of capital (**WACC**) of 9.10%.

The current market conditions in all markets are challenging, with the volatility inherent in the markets reflected in a large range of outcomes for the market sensitive parameters in the WACC calculation. In light of this volatility, ARTC engaged Synergies Economic Consulting as independent economic consultants to provide a review of the applicable WACC in July 2015. Their report is provided as Attachment 6 to this Explanatory Guide.

Synergies' analysis concluded that the most appropriate methodology to adopt in calculating WACC, and particularly the market sensitive parameters, is the NSW Independent Pricing And Regulatory Tribunal's methodology, presenting a combination of historical average WACC calculations with prevailing market estimates to determine returns on equity and debt.

On the presumption of no change in the systemic risk profile faced by ARTC (as evidenced by the asset beta in the calculations) since the 2011 HVAU, this independent analysis concluded that an appropriate return for ARTC would be 8.11% (pre-tax real).

When this position was put to industry, they requested ARTC re-evaluate the return calculation (and hence tariffs) in light of the changes in coal market dynamics with pricing levels seen in the market place reducing significantly in recent years back to long term average historical levels.

Whilst there is analysis which supports an increasing level of systemic risk faced by the ARTC in respect of its Hunter Valley assets, ARTC was prepared to consider shifting some of its assumptions to reach an agreement with industry. The key principles which underpinned this shift were:

- ARTC accepting a position that its risk was no greater than the market as a whole (so effectively an equity beta of 1);
- ARTC valuing all market based parameters at a rate consistent with current market outcomes (i.e. not reflecting long term historical averages);
- Inflation reflecting its actual rate rather than a long term forecast.

The valuation of inflation at its existing rate is critical to the ARTC position as it is accepting significantly greater systemic and funding risk through the changes in equity beta and market calculations based at historical lows; and cannot accept even greater risk of valuing inflation at a higher forecast level than current levels. The principle of valuing parameters at their current rates underpins the negotiated outcome being pursued by ARTC with Industry.

This approach calculates a pre-tax real return of 6.83%, based on individual parameters as detailed in the table below:

Parameter	Assumption
Rf (nominal)	**2.89%**
Debt	52.50%
Equity	47.50%
D/E	1.11
Debt margin (nominal)	**2.86%**
Debt raising costs	0.095%
MRP	**6.50%**
Inflation	**1.50%**
Gamma	0.40
Tax rate	30%
Domestic tax	18%
Asset beta	0.47
Equity beta	**0.98**
ke	9.26%
kd	5.85%
Post tax nominal (vanilla) WACC	**7.47%**
Pre tax nominal WACC	**8.43%**
Pre tax real WACC	**6.83%**

Attachment 7 is a paper provided by Synergies details the key assumptions underpinning these values.

ARTC has further discounted this calculation to 6.74% (pre tax real) to demonstrate its commitment to a workable solution with Industry.

APPENDIX D CHANGES TO COST ALLOCATIONS & COSTING MANUAL

D.1. INTRODUCTION

One significant area of change incorporated in the 2016 HVAU is the method for allocating Non-Segment Specific Costs and the depreciation and return related to Non-Segment Specific Assets (for the purposes of this appendix referred to in combination as "**indirect costs**"). Indirect costs are those costs that cannot reasonably be associated a Segment, what might colloquially be referred to as overheads. Under the 2011 HVAU these are reported in three categories:

1) Shared Maintenance (under the 2016 HVAU now Business Unit Management)
2) Network Control
3) Corporate Overheads

D.1.1. SHARED MAINTENANCE (BUSINESS UNIT MANAGEMENT)

These costs relate to the management of the Hunter Valley Business Unit. At the commencement of the 2011 HVAU, the local management of the Hunter Valley network was responsible for the operation and development of the Network, i.e. it was a functional administrative area rather than operating as a business unit. For example, commercial matters relating to Access to the Network were managed from a commercial group in ARTC's head office in Adelaide. Therefore the local Newcastle management was categorised as a shared maintenance cost, reflecting that the majority of costs (excluding Network Control which were identified and treated separately) related to the planning and oversight of the delivery of maintenance of the Network.[4]

In September 2014, ARTC restructured, resulting in the creation of a Hunter Valley Business Unit with full commercial responsibility for the Hunter Valley region including but not limited to the Network. With this restructure, it would no longer be appropriate to characterise the cost of business unit administration as Shared Maintenance, and for the purposes of reporting under the 2016 HVAU, ARTC will adopt the term Business Unit Management.

As part of the restructure, a number of functions that previously came under the Corporate Overhead category have been transferred into the Hunter Valley Business Unit.

The change in allocation methods will have a modest effect on the allocation of these costs to the Network.

D.1.2. NETWORK CONTROL

Network Control refers to the management of movement on the Network, e.g. the passage of trains, the granting of possessions (i.e. closure of the Network to other movements) for maintenance. This cost category has not changed under the 2016 HVAU.

D.1.3. CORPORATE OVERHEADS

Corporate Overheads include those elements of cost provided by functional units other than the Hunter Valley Business Unit. In a general sense this has not changed since the 2011 HVAU, but certain areas of responsibility have moved from the Corporate area into the Business Unit area. The allocation of Corporate Overheads to the Network is particularly affected by the change in allocation method as under the 2011 HVAU these were allocated on the basis of Train Km, a very broad-brush allocator.

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[4] It should be noted that the administrative costs associated with both major projects and corridor capital are capitalised into the relevant project and do not form part of the Shared Maintenance cost.

D.2. ALLOCATION UNDER THE 2011 HVAU

The underlying principles for the allocation of indirect costs under the 2011 HVAU (see 2016 HVAU section 4.6) have not changed in the sense that the first level of allocation is the direct attribution of any costs that can be directly associated with a Segment or group of Segments.

It is at the next level of allocation that the 2011 HVAU treats indirect costs differently, in principle, to the 2016 HVAU. Under the 2011 HVAU, section 4.6 directs that the residual indirect costs will be allocated using GTK for maintenance related costs and Train Km for all other costs. It is this very broad-brush approach to allocation that ARTC has modified under the 2016 HVAU.

D.3. ALLOCATION UNDER THE 2016 HVAU

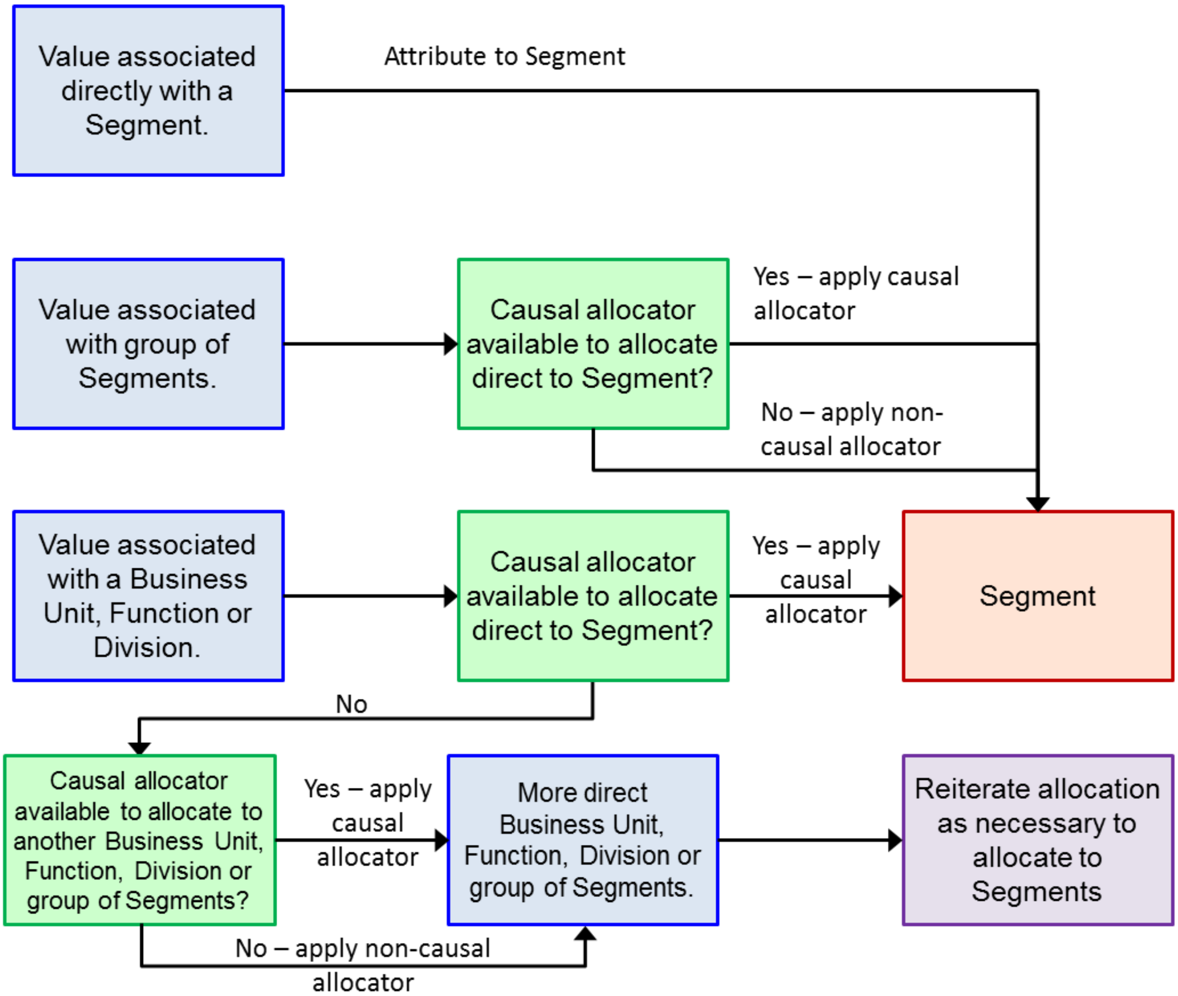
D.3.1. COST ALLOCATION PRINCIPLES

The approach to the allocation of indirect costs under the 2016 HVAU is based on the following principles:

1) Costs and capital expenditure directly associated with a Segment are attributed to that Segment.
2) Costs and capital expenditure directly associated with a group of Segments are attributed to that group of Segments.
3) Costs and capital expenditure directly associated with a Division or Business Unit are attributed to that Division or Business Unit.
4) Costs and capital expenditure attributed to a Business Unit, Function, Division or group of Segments, but not directly attributable to an individual Segment, will be allocated to individual Segments using the most appropriate practically available causal allocation method.
5) Costs and capital expenditure attributed to a Business Unit, Function, Division or group of Segments, but not directly attributable to an individual Segment, for which there is no practically available causal allocation method will be allocated using a non-causal allocation method.
6) Where a causal allocator is available to allocate a value to another Business Unit, Function, Division or group of Segments that is more directly associated with the value, then the value is allocated to that Business Unit, Function, Division or group of Segments and allocation to individual Segments, if necessary, will be carried out on an iterative basis.

These principles are set out schematically in Figure D 1.

Figure D 1: Hierarchy Of Cost Attribution & Allocation Principles



D.3.2. ALLOCATORS

In selecting the most appropriate cost allocators to apply to each area of cost, ARTC commissioned a report from Lacertus Verum to canvas the approaches taken by a selection of other regulated entities in Australia. This report forms Attachment 9.

After reviewing the alternatives reasonably available, ARTC selected the allocators with regard to the allocation of costs for supporting functional cost areas, as shown in Table D 1. These cost allocators are also used by ARTC for internal management reporting.

The selection of allocators is consistent with a number of other regulated entities in Australia and, in ARTC's opinion are a pragmatic choice to more fairly reflect the level of activity undertaken in each relevant area of support services than the more broad-brush Train Km that is currently used under the 2011 HVAU.

Table D 1: Cost Allocators For ARTC Support Divisions

Executive (CEO, Legal, Internal Audit, Board, Corporate Affairs)	Operating Costs
Finance (Accounting, Treasury, Procurement)	Operating Costs
People	FTEs
Strategy and Corporate Development	Operating Costs
Enterprise Services (Communications, Wayside)	Train Km
Enterprise Services (Engineering Services, Track Monitoring)	GTK
Enterprise Services (IT, WHS)	FTEs
Enterprise Services (Property, Corporate Safety)	Track Km
Enterprise Services (Plant, Rail Grinding, Risk, Environment)	Operating Costs

D.4. COMPARISON OF ALLOCATIONS FOR INDIRECT COSTS

Table D 2 sets out a comparison of Non-Segment Specific Costs between the proposed new method and the method under the 2011 HVAU.

Table D 2: Comparison Of Non-Segment Specific Costs Under New & Old Methods

	2017 Old Allocation Method Base	**2017 Proposed New Allocation**
	$m	**$m**
Hunter Valley Pricing Zones 1 & 2	42.1	45.3
Hunter Valley Pricing Zone 3	12.9	15.2
Total	**55.0**	**60.6**

The method proposed under the 2016 HVAU results in an additional $5.5m being recognised in 2017 than would have been allocated under the 2011 HVAU. ARTC recognises that the new allocation method results in a substantial increase in the indirect costs applied to the Network. It is ARTC’s contention that this is a demonstration of the level of under-recovery of these costs under the broad-brush approach in the 2011 HVAU.

D.5. BENCHMARKS

To provide context as to the appropriateness of the new allocation for indirect costs, ARTC conducted an internal desk-top assessment to compare the result from the new allocation method against two alternatives:

1) The corporate costs proposed by Aurizon Network for their central Queensland coal network (**CQCN**); and

2) An estimate of the cost of a hypothetical stand alone Hunter Valley coal network provider (**HV Coal**).

D.5.1. COMPARISON TO THE AURIZON CQCN

Aurizon Network operates the CQCN, a predominantly coal network in central Queensland. This is the most closely comparative business in Australia in terms of the type of business, scale of operation, cost structure and regulatory and competitive framework, notwithstanding that there are considerable differences that make any comparative analysis problematical.

The CQCN consists of four systems (some of which are interconnected), the Moura, Blackwater, Goonyella and Newlands systems. These systems combined form a 2,670 track km network. The CQCN forms the entire network operated by Aurizon Network and economic regulation of the network is by a single access undertaking. A significant difference to ARTC is that Aurizon is a vertically integrated railway and therefore a key focus for the allocation of shared corporate costs is to separate costs between Aurizon's regulated below rail business and its unregulated above rail business.

By comparison, ARTC operates a network of approx. 9,000 track kilometres, of which the Hunter Valley coal network covered by HVAU2 comprises 867 track km. ARTC's below rail business is subject to three distinct economic regulatory structures and two regulators. The allocation issue for ARTC is focussed more on the separation of costs into the different below rail business units and separate regulatory frameworks. Notwithstanding these differences, the two coal networks share a degree of similarity.

The Hunter Valley network is more heavily trafficked than the Aurizon Network lines. The statistics in Table D 3 indicate that the Hunter Valley coal network is very roughly half of the combined CQCN systems in terms of network value, revenue and GTK and rather more than half in terms of net tonnes.

Table D 3: Comparative Statistics CQCN vs Hunter Valley

	Aurizon Network#1	Hunter Valley#2
Regulated network (km)	#3 2,670	867
Network asset value	#4 $5.4b	$2.2b
Total revenue	$1,124m	$523m
GTK (billion)	90.2	47.5
Net Tonne Kilometres (**NTK**) (billion)	56.7	30.3
Net Tonnes (coal only) (million)	222	201

#1 Figures are for 2014/15, taken from the UT4 Coal System Aggregate Model[5]

#2 Values based on 2017 contracted volumes and modelled revenue.

#3 http://www.aurizon.com.au/Network-site/CQCN/Pages/default.aspx

#4 Excluding electric traction system assets. Total CQCN regulatory value for 2014/15 is $6.2b including these assets.

As part of its April 2013 submission to the Queensland Competition Authority (**QCA**) seeking approval of a new access undertaking, Aurizon included a report prepared by Ernst & Young

[5] Available at http://www.qca.org.au/getattachment/9084ca9d-9b4d-4c4c-a2c5-a8881ac6d87b/UT4-Coal-System-Aggregate-Model.aspx

comparing the corporate cost allocations claimed as part of the cost base used to determine the upper revenue limit.[6] This report provides a useful comparison for a stand alone cost in the ARTC Hunter Valley network, notwithstanding that such comparisons are difficult to interpret. The costs included are all corporate costs (i.e. costs from outside of Aurizon Network and reasonably analogous to ARTC's Corporate costs) either directly attributed or allocated using one of the methods described in the Aurizon Network Costing Manual.

The Ernst & Young report indicated Aurizon Network's allocated overhead costs (including directly attributable costs) were $62.6m. The report found that this represented 6.6%[7] of Aurizon revenues. The report also found that overall, the Aurizon Network allocated costs were comparable to the benchmarks.

In its subsequent draft decision[8], the QCA rejected some aspects of the Aurizon Network claim and discounted the corporate allocations. Areas of concern identified by the QCA include:

- Double (and in some cases triple) counting of some costs;
- The inclusion of allocations for investor relations, company secretary and corporate branding, which the QCA indicated were either:
  - not necessary (branding, where the entity was a monopoly and customers were fully aware of the available service provider) or;
  - were overstated for an entity in Aurizon Network's circumstances (investor relations and company secretary functions).
- Criticism of the Ernst & Young benchmarking study which based comparisons solely on revenue. This criticism highlights the difficulty in applying benchmarking to determine an appropriate stand alone cost across different industries and even within an industry. The QCA also suggested that some of the chosen comparative entities had elsewhere been demonstrated to be inefficient.
- Duplication between Aurizon Network's "system-wide and regional costs" (the Aurizon Network equivalent to the Hunter Valley Business Unit Management) and corporate costs.
- Costs for corporate restructuring and commercial 're-engineering' as these are not part of the efficient costs of a business.
- A number of other adjustments were made where the QCA felt the claimed costs were too high or otherwise inappropriate.

In December 2015, the QCA issued an updated, consolidated draft decision.[9] This revised draft decision incorporated all of the above previous concerns but allowed a higher level of corporate cost allocations than the September 2014 position.[10]

The QCA's December 2015 draft decision sets Aurizon Network's corporate overheads at $56.4m for the 2015/16 financial year. It is recognised that this remains a draft position. However, as it is the second assessment provided by the QCA, and taking into account the level of review and analysis undertaken, it would be reasonable to expect that the final determination for the allocation of Aurizon Network's corporate costs to its network business is likely to be around this value.

The QCA's December 2015 value for the 2015/16 financial year equates to 5.0% of revenue and would yield $26.2m for the Hunter Valley Network. This compares to a forecast value for ARTC

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6 Ernst & Young, QR National Benchmarking of Corporate Overhead Costs for QR Network Pty Ltd, July 2012 forming Annexure G to Aurizon Network's 2013 submission to the Queensland Competition Authority.

7 The % does not exactly match the result using the 2014/15 revenue as the Ernst & Young report was using 2012 data.

8 QCA, Draft Decision Aurizon Network 2014 Draft Access Undertaking – Maximum Allowable Revenue, September 2014 pp 73-74

9 QCA, Consolidated Draft Decision Aurizon Network 2014 Draft Access Undertaking — Volume IV Maximum Allowable Revenue, December 2015 pp 59-80

10 Ibid. Table 34 p.72

corporate costs allocated to the Network of $20.3m plus $2.4m for Non-Segment Specific asset depreciation and return (total $22.7m) for the whole of calendar 2017[11], suggesting that ARTC is well within the level of the most closely matched comparator even after adopting the regulator's assessed allocation.

In coming to this conclusion, it is noted that revenue could not be considered to be a particularly good measure as it suggests some level of relationship between cost and revenue. While it may be an appropriate assumption in some comparisons, it is unlikely to be strongly correlated between different businesses especially businesses in different industries. The measure is also sensitive to which functions are performed at a corporate rather than divisional level. Notwithstanding these caveats, the result is strongly suggestive that the quantum of ARTC's corporate costs claimed for the Hunter Valley Network under the new allocation method are reasonable and well within the most obvious comparison.

To provide a sensitivity, a comparison using GTK would yield an outcome of $29.7m,[12] again higher than the amount allocated to the Hunter Valley Network by the new allocation method. Using net tonne kilometres yields a similar result at $30.1m. The publicly available data for Aurizon Network did not include Train Km, so a comparison on that basis was not available.

D.5.2. STAND ALONE HUNTER VALLEY ENTITY

An estimate was made of a hypothetical stand alone owner of the Network, HV Coal. The estimate was based on a desktop estimate of the people and resources required to provide the corporate functions for such an entity. The estimate identified those functions, roles and resources likely to be required by HV Coal to effectively manage the Network business in the absence of the wider ARTC support services. A summary of the relevant resources and costs is provided below.

D.5.2.1. People

An estimate was made of the roles and number of people required to fill each for a HV Coal corporate and support office. The estimated total was 138. This covered a wide range of roles including a board, executive, finance, human resources, IT and technical specialists. While it is arguable which of these roles would be outsourced to contractors, it is doubtful that the costs could be avoided or substantially reduced when the requirements are considered for a separate entity. Total labour costs for the corporate area would be $23.6m (including on-costs). The number of people is set out by major functional area in Table D 4.

These labour costs are reduced by 6 roles at $1.4m that would not be required due to the amalgamation of roles under a stand alone structure. For example, it has been assumed that the role of Executive General Manager Hunter Valley Business Unit would be subsumed into the role of HV Coal CEO. The result would be a total net corporate labour cost of $22.2m.

[11] 2017 has been used as it is the first whole year of operation for the 2016 HVAU.

[12] QCA allowed value of $56.4m/90.2b * 47.5b, GTK figures from Table D 3.

Table D 4: HV Coal Corporate & Support Manning Levels & Cost (Including On-Costs)

	(FTEs)	Cost $m
CEO & Board, Executive Group	16	
Finance	31	
Human Resources	10	
Enterprise Services Group	78	
Strategy & Corporate Development	3	
Total	**138**	**23.6**

D.5.2.2. Non-Payroll Costs

Estimates of non-payroll costs have been made on the assumption that the head office for HV Coal is in Newcastle, not Adelaide as is the case for ARTC. To give effect to this, office rental costs in the Newcastle area have been estimated. As this was a desktop exercise, a number of the cost areas such as IT contracts were scaled down from ARTC's existing contract costs. For major cost items such as insurance, brokers were invited to quote to provide insurances on the basis of a stand alone HV Coal.

These costs are summarised by major area in Table D 5.

Table D 5: HV Coal Corporate Office Non-Payroll Costs

	Estimated Cost $m
People Related Costs (e.g. Travel, Training, Computing)	1.5
Building/Office Equipment	1.0
Utilities	0.1
Vehicles	0.6
Professional Services	2.4
Insurance	2.9
Track Accreditation Fees	0.1
Additional Train Control System Fees	0.4
Total Non-Payroll Costs	**9.1**

D.5.2.3. Total Cost

The estimated net combined cost of HV Coal corporate and support services is $31.3m. It is recognised that a desktop exercise of this nature can be challenged on a number of grounds and it would surprising if a more detailed investigation did not yield some areas where lower costs could be achieved. By the same token, such exercises inevitably under-estimate some areas of resource requirement. So it should not be assumed that a more detailed investigation and planning for a stand alone Hunter Valley Network business would necessarily result in a substantially lower cost.

It is ARTC's view that the estimate for HV Coal should be viewed a 'ball-park' costing. It could be discounted by more than 25% and still validate ARTC's corporate and support services allocation under the new method.

D.5.3. CONCLUSION

While great caution should be used in making comparisons either against benchmark entities or through a bottom-up estimate of stand alone costs, both methods result in values considerably higher than the value ARTC is seeking to recover through the revised allocation method. This is not a surprising outcome as ARTC has long been of the view that Access Holders gain a significant benefit from the Hunter Valley Network being part of a larger entity, delivering economies of scale.

Notwithstanding that any comparative exercise should only be used as a broad indicator of the true values, ARTC is of the view that the costs claimed under the revised corporate cost allocation are justifiable when compared to reasonable alternative measures and that the allocations made under the 2011 HVAU methods significantly understated the costs that should reasonably be borne by the Network.

D.6. COSTING MANUAL

With the adoption of a more detailed cost allocation method, ARTC recognised that it would be more appropriate for the methods to be described in a separate document rather than attempt to include them in the actual drafting of the 2016 HVAU. In reviewing the approach being adopted by other regulated entities in Australia, both in the rail industry and electricity network owners, it became clear that the preferred mechanism was for a description of cost allocation methods to be contained in a document separate from the main regulatory instrument. In the case of Aurizon Network this document is termed a Costing Manual.

For the 2016 HVAU, ARTC has prepared a Costing Manual for approval by the ACCC. Once approved, the Costing Manual will govern the treatment of costs under the undertaking.

One advantage of the Costing Manual approach is that a more expansive description can be given regarding the treatment of costs than is practicable in legal drafting. The document can, therefore, serve a dual purpose of informing stakeholders more fully of the treatment of costs than might otherwise be the case. This serves to address a concern expressed by Access Holders that they do not have sufficient visibility of the mechanism used to calculate costs under the undertaking.

ARTC has included the Costing Manual as a document that can be varied through the "minor variation" process described in the 2016 HVAU section 2.4. Variation can be achieved through agreement with the RCG and this provides a more flexible mechanism than if the document could only be varied through a formal CCA s.44ZZA(7) variation application. This is important as it is likely that ARTC's organisational structure will vary from time to time and/or the mechanisms included in the manual will require periodic adjustment to reflect changes in circumstances.

An early draft of the Costing Manual was provided to the HRATF for review. That draft included a section on the allocation of revenue. ARTC had included the section in order to address a perception that Access Holders did not understand how revenues were treated by ARTC under the undertaking. However, the HRATF requested that the section be removed as it was felt that it was not appropriate to include matters relating to revenue in a document relating to costs. Accordingly, ARTC has removed the section on revenue in the final version. Nevertheless, ARTC recognises that it is important that stakeholders understand the treatment of this important element of the economics of the Network and intends to publish a version of the revenue section on its internet.

The Costing Manual forms Attachment 8 to this Explanatory Guide.

APPENDIX E SUMMARY OF AMENDMENTS TO THE 2016 HVAU & 2016 IAHA

This document provides a summary of the amendments proposed by ARTC to the Hunter Valley Rail Access Undertaking accepted by the ACCC on 29 June 2011 (as amended) (**2011 HVAU**) which if accepted will form part of the 2016 HVAU.

Note: Not all changes made to the relevant documents which merely correct minor typographical, auto-referencing and formatting errors are documented in the tables below. However, every change made to the 2011 HVAU will be conceptually reflected in the below table.

1 Amendments to the HVAU

No	HVAU Section	Amendments	Explanation
1	1.1	**Introduction** *(d) The predominant usage of the Network is for rail services to the Hunter Valley coal markets, ~~. S~~subject to legislative requirements in relation to other traffic, and in particular ARTC's obligations to provide and maintain priority for passenger services under the Transport Administration Act 1988 (NSW). ARTC recognises that the operation, maintenance ~~of,~~ and investment in the development of, the Network is primarily to improve utilisation and performance of such rail services and to optimise coal export throughput in the Hunter Valley.* *(h) ARTC acknowledges that there is a Hunter Valley coal industry objective to ensure that Coal Chain Capacity is maintained, developed and utilised efficiently. ARTC will, subject to confidentiality obligations, work cooperatively with coal producers, the HVCCC and other parties as required to achieve this objective.* *(j) As an access provider, maintenance of, and investment in, the Network and Associated Facilities is a large component of ARTC's current cost structure. These services are either outsourced, and managed under contracts entered into on commercial terms as a result of a competitive tender*	ARTC has made changes to section 1.1 to explicitly recognise the change market conditions and stakeholder's focus from capacity investment and expansion in the Network to a focus on ensuring that the Coal Chain Capacity is maintained, developed, and utilised efficiently.

No	HVAU Section	Amendments	Explanation
		process, or, in ARTC's view, otherwise managed on an efficient basis. ARTC has adopted this practice with a view to ensuring that the management, operation and maintenance of the Network and Associated Facilities by ARTC and ARTC's cost structure is Efficient.	
2	1.1	**Introduction** *(e) ARTC recognises that the Network facilitates provision of rail services to the coal supply chain primarily serving the export coal market through the Port of Newcastle, and also the NSW domestic coal market. ARTC recognises its role as an active participant in the HVCCC, and the role that the HVCCC plays with Hunter Valley Coal Chain Service Providers and Coal Customers in the integrated and coordinated planning of the coal supply chain serving the export coal market through the ~~p~~Port of Newcastle, as well as the NSW domestic coal market. ARTC also recognises the role that the HVCCC plays in identifying, and in facilitating expansion of, Coal Chain Capacity.*	ARTC has amended this provision to ensure consistency with its approach under the IAHA to require Access Holders specify the use of Port Waratah Coal Services or Newcastle Coal Infrastructure Group coal terminals (see section 4.10 of the Explanatory Guide).
3	1.2	**Objectives** *(B) identifying improvements to the Network and Associated Facilities to facilitate optimal performance of the Hunter Valley Coal Chain; and*	ARTC has made changes to section 1.2 to explicitly recognise the change market conditions and Access Holder's focus from capacity investment and expansion in the Network to a focus on ensuring that the Coal Chain Capacity is maintained, developed, and utilised efficiently.

No	HVAU Section	Amendments	Explanation
4	**2.2**	**Grant and Duration of 2016 HVAU** (a) Subject to section 2.2(d)~~2.2(c)~~: (i) this 2016 HVAU takes effect on and from the later of 1 July 2016 and twenty one (21) days after the ACCC has published its decision to accept the 2016 HVAU under section 44ZZA(3) of the CCA (“Effective Date”); (ii) on and from the Effective Date, all provisions of the 2016 HVAU are taken to have commenced operation on 1 July ~~2011~~ 2016 (“Commencement Date”).~~; and~~ (iii) ~~to the extent that the provisions of the~~ 2016 HVAU ~~are applicable to the New Segments, such provisions are taken to have commenced operation on the New Segments Commencement Date.~~ (b) The 2016 HVAU will continue until the earlier to occur of: (i) ~~the fifth (5th) anniversary of~~ 31 December 2026 ~~the Commencement Date~~ (Initial Term) as may be extended for Further Terms in accordance with section 2.3(e) (End Date); or (ii) the withdrawal of this 2016 HVAU in accordance with the CCA or section 2.2(c), being, the Term of the 2016 HVAU. Insertion of the following new definitions in clause 16.1: *“End Date” has the meaning given in section 2.2(b)(i).* *“Further Term” means five (5) years.* *“Initial Term” has the meaning given in section 2.2(b)(i).*	The initial term of the 2016 HVAU is 10.5 years commencing on 1 July 2016. In proposing a 10.5 year term, ARTC is seeking to provide certainty for both industry and ARTC going forward. At Access Holder’s requests for a longer term, the initial term may be extended by ARTC on a rolling basis for an additional 5 years. References to New Segments were included into the 2011 HVAU as part of the variation to incorporate the Gap to Turrawan Segments of the Network. These provisions are now redundant as the Gap to Turrawan Segments form part of the Network.

<table>
<tr><th>No</th><th>HVAU Section</th><th>Amendments</th><th>Explanation</th></tr>
<tr><td>5</td><td>2.2</td><td>Grant and Duration of 2016 HVAU
(c) If during the Term the lease for the Network is transferred or granted to an entity other than ARTC:
(i) ARTC may by written notice to the ACCC withdraw this Undertaking; and
(ii) if the notice in paragraph (i) is given, ARTC must at the same time as issuing a withdrawal notice use best endeavours to procure that the lessee of the Network give an undertaking to the ACCC on the same terms of this Undertaking.
The ACCC will approve a withdrawal of this Undertaking and submission of a new undertaking which complies with section 2.2(c)(ii) above.</td><td>ARTC has made this amendment at the request of its Shareholder.</td></tr>
<tr><td>6</td><td>2.3</td><td>Mandatory review of 2016 HVAU
This clause provides for ARTC to undertake a mandatory review of the 2016 HVAU every 6 years before the next Termination Date. Under the review:
• The calculation of Depreciation, Rate of Return, loss capitalisation mechanism and extension of the 2016 HVAU for a further 5 years must be considered.
• An issues paper must be prepared by ARTC and stakeholders invited to comment on such matters and any other matters relating to the 2016 HVAU (which ARTC must consider in good faith).
• ARTC must undertake a variation application process with the ACCC to amend the 2016 HVAU at least in respect of the calculation of Depreciation and Rate of Return.
• If the ACCC accepts the variation, the amended terms will take effect from</td><td>ARTC recognises that over a 10.5 year period, there is some uncertainty over market conditions, commercial arrangements and industry structure. In order to address these concerns, ARTC has proposed to undertake a mandatory review of the key commercial terms of the 2016 HVAU. The review must commence at least 12 months prior to the 5th anniversary date with the objective that any amendments set out in the variation approved by the ACCC, or as decided by the Australian Competition Tribunal, will take effect for the remaining 5 years of the term.
As part of the review process ARTC must</td></tr>
</table>

No	HVAU Section	Amendments	Explanation
		the date 12 months after the commencement of the review. If the ACCC refuses the variation, ARTC must apply to the Australian Competition Tribunal to review the decision and ARTC must submit a revised variation application in accordance with the decision of the Tribunal. • The option to extend the undertaking for an additional 5 years is at ARTC's discretion. If ARTC decides not to extend the 2016 HVAU, it must publish a report on its website with its reasons. Insertion of the following new definition in clause 16.1: *"Review Date" means a date that is at least six (6) years prior to the expiry of the then current End Date;*	elect to extend the term for 5 years at ARTC's discretion. This provides stakeholders with certainty of the existence of an undertaking for at least the immediate 5 years following its scheduled expiry (see section 2.3.1 of the Explanatory Guide).

No	HVAU Section	Amendments	Explanation
7	2.4	**Variation of 2016 HVAU** This clause provides for ARTC to: • vary the HVAU with the consent of the ACCC; or • vary Costing Manual and specified administration provisions with the endorsement of the RCG and the consultation process set out in the 2016 HVAU, but not with the consent of the ACCC. *Insertion of the following new definitions in clause 16.1 as follows:* • *"Administrative HVAU Provisions" means each of the following provisions of this 2016 HVAU:* (a) section 2.6 ("Insurance"); (b) section 2.7(a) ("Contact details"); (c) section 4.15(c) ("Standard Access Charge") in relation to the assumptions and characteristics of the Service Envelope only; (d) section 13.1 ("Network Key Performance Indicators"); (e) Schedule B ("Network"); (f) Schedule D ("Performance Measurement and Incentives"); and (g) Schedule E ("Segments")"; • "*Costing Manual" means the costing manual published by ARTC on its website, as approved by the ACCC as at the Commencement Date and varied by ARTC from time to time in accordance with this section 2.4;* • *"Variation Application" has the meaning given in section 2.3(d)(i).*	While the majority of variations will require the consent of the ACCC, the 2016 HVAU provides that variations to the Costing Manual or selected administrative provisions may be undertaken with the endorsement of the RCG and without the ACCC's consent. Following consultation with, and endorsement of, the RCG ARTC will be able to make minor variations to the 2016 HVAU and avoid the formal variation process set out in the CCA which is often time consuming and costly (see section 2.3.2 of the Explanatory Guide).

No	HVAU Section	Amendments	Explanation
8	**2.5**	**Existing agreements and rights** *~~(a)~~This 2016 HVAU applies only to the negotiation of new Access Agreements and the negotiation of Access Rights in addition to those already the subject of an Access Agreement. Subject to a negotiated Access Agreement being required to incorporate those clauses from the Indicative Access Holder Agreement identified as Tier 1 (mandatory) provisions for Coal in Schedule A:1 and Tier 1 (mandatory) Non-Coal provisions in Schedule A:2 (as applicable), ~~N~~nothing in this 2016 HVAU can require a party to an existing Access Agreement to vary a term or provision of that agreement.* *~~(b) ARTC will reserve, at no charge, existing train paths used for non-coal traffic under agreements existing immediately before the Commencement Date. ARTC will reserve the existing train paths for the purpose of making them available to Applicants who submit an Access Application for Non-Coal Access Rights, to be used for substantially the same purpose and in respect of the same end-market as the existing train paths, within 30 Business Days from the Commencement Date. To avoid doubt, an Applicant seeking access to a reserved train path under this section will be offered an Access Agreement in accordance with section~~ 3.14(b) ~~and will be able to negotiate the terms and conditions of that Access Agreement in accordance with section~~ 3 ~~of the Undertaking.~~*	Amendments to clarify that clauses under the IAHA identified as 'Tier 1' provisions are to be automatically incorporated into existing AHAs. This is consistent with the intent of 'Tier 1' provisions and clause 19.1 of the IAHA.
9	**2.7(a)**	**Contact Details** Amendments to ARTC's contact details.	This change has been to update ARTC's contacted details to the Hunter Valley business unit.
10	**2.7(b)** **3.14(b)(i)(A), 3.14(c)(i), 4.9(e),**	**Contact Details** *(a) Standard ~~Indicative~~ Access Charges for Services within the ~~Indicative~~ Services Envelope;* *(b) prices for which Access has been granted to Services outside of the~~other~~*	ARTC proposes introduce path based pricing and move away from pricing based on the characteristics of an indicative services (see section 2.1 of the Explanatory Guide). Amendments removes the 2011

No	HVAU Section	Amendments	Explanation
	4.10(a)(iii), 9.9(b) and (c), 14.16(a), (d), (e) and (f), 4.18 and 4.19	*~~than~~ ~~Indicative~~ Services Envelope, together with a general description of the Services to which such prices relate;* *(c) indicative section running times for Services which have the ~~Indicative~~ Services Envelope characteristics;* Consequential amendments consistent with the above have been made to sections 3.14(b)(i)(A), 3.14(c)(i), 4.9(e), 4.10(a)(iii), 9.9(b) and (c), 14.16(a), (d), (e) and (f), 4.18 and 4.19. Insertion of the following new definitions in clause 16.1: • "*Services Envelope" means the assumptions and characteristics of a Service set out in section 4.15;* • *"Standard Access Charges" means the Charges for Services with characteristics within the Services Envelope determined by ARTC under section 4.15 from time to time;*	HVAU concept of: • 'Indicative Service' and replaces it with 'Services within the Services Envelope'; and • 'Indicative Access Charges' and replaces it with 'Standard Access Charge'
11	**3.4**	**Parties to negotiate** (e) At any time, before or during the negotiation process, ARTC may require the Applicant to demonstrate to ARTC's reasonable satisfaction that it is able to meet the following prudential requirements ("Prudential Requirements"): *(i) the Applicant and any proposed guarantor under a Parent Guarantee must be Solvent;* *(ii) subject to sub-section (f), the Applicant, or a Related Body Corporate or Former Related Access Holder of the Applicant, must not be currently, or have been in the previous (2) two years, in Material Default of any agreement with ARTC, or any agreement in accordance with which access to rail infrastructure not managed by ARTC has been provided to the Applicant or a Related Body*	If an Applicant proposes to provide a Parent Guarantee under the IAHA as credit support, then ARTC requires under amendments to (e)(i) and (iv) that the proposed guarantor is: • solvent; and • able to demonstrate that it has a legal ownership structure with sufficient capital base and assets to meet the actual or potential liabilities under the proposed Parent Guarantee. Amendments under (e)(ii) and (f) require that, in addition to the Applicant, a Former

No	HVAU Section	Amendments	Explanation
		Corporate or Former Related Access Holder of the Applicant; *(iii) the Applicant has an Acceptable Credit Rating or will agree to provide credit support in the form of a Security or a Parent Guarantee before the Access Agreement becomes effective; and* *(iv) the Applicant must be able to demonstrate to ARTC (acting reasonably) that it (or any proposed guarantor under a Parent Guarantee) has a legal ownership structure with a sufficient capital base and assets of value to meet the actual or potential liabilities under an Access Agreement, including timely payment of access charges and payment of insurance premiums and deductibles under the required policies of insurance.* (f) The prudential requirement in sub-section (e)(ii) does not apply to the extent the entity in Material Default is not the Applicant and was not a Related Body Corporate or Former Related Access Holder of the Applicant at the time of the Material Default. Insertion of the following new definitions in clause 16.1: • *"Former Related Access Holder" means a previous Access Holder who held an Access Agreement with ARTC in the previous 2 years, for which a Related Entity of the Applicant was also a Related Entity of that previous Access Holder;* • *"Prudential Requirements" has the meaning given in section 3.4(e);* • *"Related Entity" has the meaning given to Related Entity in the Corporations Act 2001 (Cth);*	Related Access Holder must not be in Material Default under a rail access agreement in the past 2 years. This was considered necessary to prevent 'Phoenix Corporations' who have previously been in Material Default reapplying for access under the façade of being a new Applicant (see section 2.4 of the Explanatory Guide).
12	**4.3**	**Ceiling Revenue Limits** (c) Access revenue for the purposes of this section 4.3 does not include:	To ensure the intended benefit from an Innovation Project and incentive from an Efficiency Incentive Proposal are retained by

No	HVAU Section	Amendments	Explanation
		(i) Access revenue returned to a Contributor as a result of the operation of a user funding agreement between the Contributor and ARTC; (ii) any Innovation Payment; and (iii) any Efficiency Incentive Amount.	ARTC these payments are required to be excluded from the ceiling test and excluded from Access revenue (see sections 2.5.1, 2.7.4 and 2.9 of the Explanatory Guide).
13	4.4	**Regulatory Asset Base** (b) *The initial value of the RAB ("Initial RAB") will be:* (i) in relation to those Segments that have been ascribed a regulatory asset value in accordance with the ~~NSW Rail Access Undertaking~~2011 Hunter Valley Access Undertaking in force at the time immediately preceding the Commencement Date, set at the value of those Segments determined in accordance with the 2011 Hunter Valley Access Undertaking~~NSW Rail Access Undertaking as at the Commencement Date and if the date those values took effect is earlier than the Commencement Date, that part of the Initial RAB will be~~ and rolled forward to the Commencement Date in accordance with the asset valuation roll forward principles under the 2011 Hunter Valley Access Undertaking and as approved by the ACCC under section 15.1(b)(i) ~~NSW Rail Access Undertaking as at August 2010 or as otherwise agreed between ARTC and the Independent Pricing and Regulatory Tribunal to determine an opening Initial RAB~~; and (ii) in relation to other ~~S~~segments not forming part of the Network as at the Commencement Date, initially valued using the depreciated optimised replacement cost method of valuing assets, and approved by the ACCC. The optimised replacement cost means the cost of replacement by commercially efficient application of	Amendments clarify that the initial RAB value will be determined in a matter consistent with the roll forward principles in the 2011 HVAU, and that the ACCC will need to approve this value following completion of the compliance assessment for the transition period, being 1 January 2016 until 30 June 2016. Changes to (b)(ii) make clear that if additional segments are in the future incorporated into the Hunter Valley network then they will initially be valued using the depreciated optimised replacement cost method. This is consistent with the methodology used to incorporate the Gap to Turrawan section in 2014. As the regulatory asset base for pricing zones 1 and 2 have a different value, and a rolled forward separately, to pricing zone 3 a new (c) has been inserted to enable the separate roll forward of the RAB Floor Limit. For completeness, historical references to

No	HVAU Section	Amendments	Explanation
		best known currently available technology based on existing capacity and performance characteristics of the asset. (c) *The initial value of the RAB Floor Limit ("Initial RAB Floor Limit") will be:* (i) in relation to those Segments that have been ascribed a regulatory asset value in accordance with the 2011 Hunter Valley Access Undertaking in force at the time immediately preceding the Commencement Date, set at the value of those Segments determined in accordance with the 2011 Hunter Valley Access Undertaking and rolled forward to the Commencement Date in accordance with the asset valuation roll forward principles under the 2011 Hunter Valley Access Undertaking and as approved by the ACCC under section 15.1(b)(i); and (ii) in relation to other segments not forming part of the Network as at the Commencement Date, initially valued using the depreciated optimised replacement cost method of valuing assets, and approved by the ACCC. The optimised replacement cost means the cost of replacement by commercially efficient application of best known currently available technology based on existing capacity and performance characteristics of the asset.	the NSW Rail Access Undertaking and roll forward of the regulatory asset value under the NSW Rail Access Undertaking to the 2011 HVAU have been removed.
14	**4.4(d)**	**Determination of RAB for Pricing Zone 3** *$RAB_{t-1\ end}$ is the RAB at the end of the ~~preceding~~ calendar year (t-1).* *$RAB_{t-1\ start}$ is the RAB at the start of the ~~preceding~~ calendar year (t-1).* *RoR is the nominal pre tax Rate of Return.* *Out-turn $Revenue_{t-1}$ is the total Access revenue earned by ARTC in the preceding calendar year (t-1) but will not include:*	The definition of Net Capex has been amended to aid in its interpretation. Change to remove the word 'preceding' is to correct an error as the relevant calculation is being undertaken for t-1. These amendments are not intended to change the current application of the RAB roll forward.

No	HVAU Section	Amendments	Explanation
		(a) a Capital Contribution received from an Applicant or an Access Holder; or *(b) Access revenue returned to a Contributor as a result of the operation of a user funding agreement between the Contributor and ARTC.* *Out-turn Opext-1 is the total operating expenditure incurred by ARTC in the preceding calendar year (t-1), on an Efficient basis, determined in accordance with sections 4.5(a)(i), (iv) to 4.5(a)(iv) and 4.5(b).* *Net Capex t-1 is the net additions to the RAB in the ~~preceding~~ calendar year (t-1) which is calculated as:* *(a) the Prudent Capital Expenditure incurred by ARTC in the calendar year (t-1); plus~~, that is out turn Capital Expenditure by ARTC less the written down value of any disposals during the preceding calendar year (t-1) on a Prudent basis, including~~* *(b) interest cost incurred during construction up until 1 July in the calendar year the asset was commissioned, ~~capitalised in the year the asset was commissioned and~~ determined by reference to the relevant form of the Rate of Return (to the extent that Capital Expenditure is incurred on a Prudent basis, including interest cost); less* *(c) the opening escalated value reduced by accumulated depreciation, of any assets disposed of in the calendar year (t-1).* *To avoid doubt, Net Capex $_{t-1}$ does not ~~, but will not~~ include Capital Contributions.*	
15	**4.4(e)**	**Determination of RAB Floor Limit** *The RAB Floor Limit for a Segment or group of Segments will be:* *(a) as at the Commencement Date ~~or the New Segments Commencement Date (as applicable)~~, the Initial RAB Floor Limit;*	The definition of Net Capex has been amended to aid in its interpretation. Change to remove the word 'preceding' is to correct an error as the relevant calculation is being undertaken for t-1. These amendments are not intended to change the current

No	HVAU Section	Amendments	Explanation
		(b) rolled forward annually according to the following methodology $\text{RAB Floor Limit}_{t\ start} = \text{RAB Floor Limit}_{t-1\ end} =$ $(1 + CPI_{t-1}) \times \text{RAB Floor Limit}_{t-1\ start} + \text{Net Capex}_{t-1} - \text{Depreciation}_{t-1}$ *where:* *RAB Floor Limit$_{t\ start}$ is the RAB Floor Limit at the start of the relevant calendar year (t) (which, for the ~~first~~ year in which ~~following~~ the Commencement Date occurs ~~or the New Segments Commencement Date (as applicable)~~, would be the Initial RAB).* *RAB Floor Limit$_{t-1\ end}$ is the RAB Floor Limit at the end of the ~~preceding~~ calendar year (t-1).* *RAB Floor Limit$_{t-1\ start}$ is the RAB Floor Limit at the start of the ~~preceding~~ calendar year (t-1).* *CPI$_{t-1}$ is the inflation rate for the ~~preceding~~ calendar year (t-1), determined by reference to the CPI for the September quarter of that year.* *Net Capex$_{t-1}$ is the net additions to the RAB Floor Limit in the ~~preceding~~ calendar year (t-1) which is calculated as:* *(a) the Prudent Capital Expenditure incurred by ARTC in the calendar year (t-1); plus* *(b) ~~that is out-turn Capital Expenditure by ARTC less the written down value of any disposals during the preceding calendar year(t-1) on a Prudent basis, including~~ interest cost incurred during construction up until 1 July in the calendar year the asset was commissioned, ~~capitalised in the year the asset was commissioned and~~ determined by reference to the relevant form of the Rate of Return (to the extent that Capital Expenditure is incurred on a Prudent basis, including interest cost); less~~, but will not include Capital Contributions.~~* *(b) the opening escalated value reduced by accumulated depreciation, of any*	application of the RAB Floor Limit roll forward. Historical references to New Segments, which were included into the 2011 HVAU as part of the variation to incorporate the Gap to Turrawan Segments of the Network, have been removed as they are now redundant.

No	HVAU Section	Amendments	Explanation
		assets disposed of in the calendar year (t-1). *To avoid doubt, Net Capext-1 does not include Capital Contributions.* *Depreciation$_{t-1}$ is Depreciation applicable to the RAB Floor Limit in the ~~preceding~~ calendar year (t-1).*	
16	4.5	**Economic Cost** (a) For the purposes of this section 4, the Economic Cost of a Segment in relation to a calendar year (t-1) means: *(i) Segment Specific Costs;* *(ii) Depreciation of Segment Specific Assets, where the value of those assets is determined in accordance with section 4.4(e)* *(iii) a return on Segment Specific Assets, being determined by applying ~~a~~the real pre-tax Rate of Return to (RAB Floor Limitt-1 start + RAB Floor Limitt-1 end) * 0.5, where the value of the RAB Floor Limit is determined in accordance with section 4.4(e);* *(iv) an allocation of Non-Segment Specific Costs;* *(v) an allocation of depreciation of Non-Segment Specific Assets, determined ~~on a straight line basis, by reference to a reasonable estimate of the economic useful life of Non-Segment Specific Assets, and determined from the time the assets become serviceable~~in accordance with the Costing Manual; and* *(vi) an allocation of return on Non-Segment Specific Assets, being determined in accordance with the Costing Manual.~~by applying a real pre-tax Rate of Return to the value of Non-Segment Specific Assets, from the time the assets become serviceable, where the value of those assets will include the capitalisation of interest cost incurred during~~*	ARTC has amended 4.5(a) to remove the high-level allocators of depreciation of, and return on, Non-Segment Specific Assets with a more detailed set of allocation mechanisms set out in the Costing Manual. This is consistent with industry's request for a more transparent allocation methodology. The Costing Manual will be submitted to the ACCC for approval as part of the 2016 HVAU application (see sections 2.5.3, Appendix D and Attachment 6 of the Explanatory Guide). Additional changes to clarify that the Economic Cost is determined on a retrospective basis as the end of the year.

No	HVAU Section	Amendments	Explanation
		~~*construction up until the time the assets become serviceable, capitalised at that time and determined by reference to the relevant Rate of Return; and*~~ ~~*(vi) the costs described in sub-sections (a)(i) to (vi) as applicable to Additional Capacity.*~~ (b) *All costs described in sub-sections (a)(i), (iv), (v) and (vi)~~, all applicable costs described in sub-section (a)(vii),~~ and all operating expenditure in section 4.4(b) and 4.4(d) are to be assessed on an Efficient basis.*	
17	**4.6**	**Cost allocation** (a) *For the purposes of section 4.5, Non-Segment Specific Costs and depreciation of, and return on, Non-Segment Specific Assets will be allocated to Segments in accordance with the following principles and the Costing Manual:* *(i) Non-Segment Specific Costs and depreciation of, and return on, Non-Segment Specific Assets identified with the Hunter Valley corridor or other ARTC corridors, or identified as system-wide, will be allocated to those parts of Segments in the Hunter Valley corridor or in other ARTC corridors, or, where identified as system wide, to Segments owned, leased or licensed by ARTC respectively~~, in proportion to:~~.* ~~*(A) gtkm with respect to Non-Segment Specific Costs and depreciation of, and return on, Non-Segment Specific Assets associated with track maintenance; and*~~ ~~*(B) Train kilometres with respect to Non-Segment Specific Costs and depreciation of, and return on, Non-Segment Specific Assets not associated with track maintenance.*~~	ARTC has amended 4.6(a) to refer to the allocation principles set out in the Costing Manual (see comments in row 16 above).

No	HVAU Section	Amendments	Explanation
18	4.7	**Depreciation of Segment Specific Assets** For the purposes of calculating the Depreciation allowance for Segment Specific Assets in any calendar year: (a) Depreciation is to be calculated for each calendar year, using a straight line methodology (unless otherwise agreed with an Access Holder and approved by the ACCC) with respect to specific assets and the estimate of the remaining useful life of the assets. (b) The useful life of a Segment or group of Segments is to be determined having regard to: (i) the average remaining mine life of coal mines utilising either the Network as a whole or the Pricing Zone of which that Segment or group of Segments forms part; (ii) average mine production levels anticipated during the Term having regard to Coal Chain Capacity at any time; and (iii) marketable coal reserves estimated for each mine existing at the time of the ~~determination~~ Commencement Date or Variation Application or expected to commence during the 5 year period following the ~~time of the determination~~Commencement Date or Variation Application. The average remaining mine life of coal mines may be determined by ARTC on a Network wide basis or ~~utilising a Pricing Zone~~ may vary between Pricing Zones as approved by the ACCC.	Amendments have been made: • to clarify that only Segment Specific Assets are depreciated in accordance with section 4.7. This is consistent with the application of section 4.7 under the 2011 HVAU; • that the mine life of coal mines can be undertaken on a Network wide basis. The current mine life approved by the • to take into account that ARTC is required under section 2.3 to review the mine life at regulator intervals (see row 6 above).

No	HVAU Section	Amendments	Explanation
19	4.8	**Rate of return** For the Term of the Undertaking, the real pre-tax Rate of Return is 6.74~~9.10~~% and the nominal pre-tax Rate of Return is 8.50~~11.83~~%.	Insertion of ARTC's proposed rate of return.
20	4.9	**Unders and overs accounting** *(b) For each Constrained Coal Customer, ARTC will:* (iii) determine an allocation of the total unders or overs amount, for each Constrained Coal Customer based on the proportion of Access revenue, paid for Access Rights over the Constrained Network, by each Constrained Coal Customer, net of any rebate of the take or pay component of the Charges paid to that Constrained Coal Customer following the application of the system ~~wide~~ true-up tests and the annual individual reconciliation, and where applicable, in accordance with the equitable allocation to be carried out under section 10.2~~10.3~~. …… *(c) section 4.9(b)(vi)(A) will not exceed the total Access Charge payments (excluding any Innovation Payment and Efficiency Incentive Amount) made by the Constrained Coal Customer in excess of Direct Costs in a calendar year.*	Amendments to clarify that only Access revenue is subject to the unders or overs mechanism. To ensure consistency with other references in the 2016 HVAU of true-up test and the title of Schedule of Schedule 2 of the IAHA, the word "wide" has been deleted.
21	4.9	**Unders and overs accounting** *(e) A waiver of TOP Charges by ARTC under clause 11 of the Indicative Access Holder Agreement ~~(including to facilitate a permanent change to the Service Assumptions for a Train Path as contemplated at clause 11.5(c)(iii) of the Indicative Access Holder Agreement)~~ that would result in the use of a~~n~~*	Amendments to remove pricing based on the characteristics of an indicative services (see section 2.1 of the Explanatory Guide and row 10 above).

No	HVAU Section	Amendments	Explanation
		~~Indicative~~ Service by that Access Holder ~~or, in ARTC's reasonable opinion, a non-indicative Service by that Access Holder~~ which provides for more efficient use of Capacity or Coal Chain Capacity will, for the purposes of subsection (d), be deemed to:	
22	**4.10**	**Annual ACCC compliance assessment** *(a) ARTC will submit to the ACCC by 30 April each year in respect of the previous calendar year, and for the part-year in which the Commencement Date occurs, the Months of the calendar year governed by the Undertaking:*	Amendment to address the transitional arrangements for the first year of the 2016 HVAU being a part-year.
23	**4.11**	**Annual TUT Audit** – Amendments to cross references.	Amendments to correct cross referencing errors arising as a result of creating making the 'Annual TUT' provisions a new section 4.11.
24	**4.12 / 4.13**	**Structure of Charges – Coal Access Rights** *(a)(ii) a take or pay component ($/KM for a Pricing Zone) for the Access Rights contracted for under the Access Holder Agreement irrespective of whether the Access Holder uses all or any of the Access Rights.* **Structure of Charges – Non-Coal Access Rights** *(a)(ii) a flagfall component, which is fixed and specific to each Train service type and Segment ($/KM~~km~~); and*	Amendments to introduce path based pricing on a $/km basis (see section 2.1 of the Explanatory Guide and row 10 above).

No	HVAU Section	Amendments	Explanation
25	4.14	**Pricing Objectives** (a) *In determining Charges, ARTC will have regard to separate cost elements as follows:* (i) *variable component of costs ~~("VCC")~~ being Direct Costs; and* (ii) *fixed component of costs ~~("FCC")~~ being fixed operating costs and Depreciation of, and return on, assets. ~~existing as at the Commencement Date and the New Segments Commencement Date (as applicable); and~~* ~~*(ii) new capital component of costs ("NCC") being Depreciation of, and return on, assets commissioned during the Term.*~~ (c) *In determining Charges, ARTC will have regard to the following objectives:* (i) *achieving full recovery of ~~VCC~~ the Direct Costs from all Access Holders on the basis of actual network usage;* (ii) *achieving maximum recovery of (or contribution to) ~~FCC and NCC from all users~~fixed operating and capital related costs;* (iii) *providing certainty to ARTC through the application of a take or pay ("TOP") component to fully recover fixed operating and capital related costs~~NCC over the economic life of new investments, and recover some or all of FCC from applicable Access Holders (coal users) on the basis of forecasted network usage, or otherwise recover some or all of FCC on the basis of actual network usage~~;* (iv) *the proportion of fixed operating and capital related costs~~FCC~~ recovered through a TOP component to be consistently applied to all Access Holders holding Coal Access Rights within a Pricing Zone; and* (v) *provide for an open and equitable mechanism for the application of*	Changes to remove variable component of costs and fixed component cost as a defined term. These are historical concepts from an earlier version of the 2011 HVAU and are redundant. Consequential changes made to section10.2(c)(i)(A), 10.2(d)(i)(A), 10.2(d)(i)(B) and 14. In addition, references to New Segments have been deleted as they were included into the 2011 HVAU as part of the variation to incorporate the Gap to Turrawan Segments of the Network and are now redundant. These provisions are now redundant as the Gap to Turrawan Segments form part of the Network.

No	HVAU Section	Amendments	Explanation
		TOP Charges. In clause 16.1, the definition of "VCC", "FCC" and "NCC" have been deleted. The reference to "NCC" in the definition of Financial Criteria has also been removed.	
26	**4.15**	**Standard Access Charge** Amendments to introduce path based pricing and to remove the 2011 HVAU concepts of: • 'Indicative Service' and replaces it with 'Services within the Services Envelope'. Service Envelope characteristics are set out in subsection 5.15(c); and • 'Indicative Access Charges' and replaces it with 'Standard Access Charges'	See section 2.1 of the Explanatory Guide and row 10 above. For completeness historical concepts set out in sections 4.17 (Initial Indicative Service and Initial Indicate Access Charges), 4.18 (Determination of the Final Indicative Services) and 4.19 (Interim Services and Interim Access Charges) of the 2011 HVAU and associated definitions of Final Indicative Services, Indicative Access Charges, Indicative Services, Initial Indicative Access Charges, Initial Indicative Services, Initial Period, Interim Access Charges, Interim Services and Interim Period have been deleted.
27	**4.16**	**Charge differentiation** *(b) In formulating Charges for Coal Access Rights, notwithstanding that a Service may be within or outside of the Services Envelope, if:* *(i) the relevant Service intended to utilise the Access Rights sought operates on the Network and an Other Network; and* *(ii) the Other Network is not capable of operating Services that have a maximum axle load or train length that is specified by the Services*	Amendments to permit ARTC to set prices having regard to the operating restrictions of interconnecting networks (see section 2.5.11 of the Explanatory Guide). This is intended to assist producers transition between the current pricing model based on an indicative service and the introduction of path based pricing.

No	HVAU Section	Amendments	Explanation
		Envelope, *ARTC will have regard to the particular characteristics of the Other Network required to utilise the Access Rights sought and the characteristics of Services capable of being operated on the Other Network.* Insertion of the following new definitions in clause 16.1: *"Other Network" means:* *(a) the Interstate Network; or* *(b) a network of railway lines connected to the Network that is not owned or controlled by an Access Holder, or a Related Body Corporate of an Access Holder, holding Access Rights in respect of the Network;*	
28	**4.16**	~~(vi) for the purpose of assisting transition between regulatory and contractual arrangements and to remove uncertainty to support investment decisions relating to Trains, charge the same price for the two primary existing services using the Network as at the Commencement Date in accordance with sub-paragraphs (A) and (B) below during the Regulatory Transition Period:~~ ~~(A) the Charges for the services described in section 4.19(c) as Interim Service 1 and Interim Service 2 in Pricing Zone 1 may be the same, and the Charges for Interim Service 1 and Interim Service 2 in Pricing Zone 2 may be the same, notwithstanding those services will no longer constitute Interim Services after the Interim Period; and~~ ~~*(B) for the purposes of this section 4.15(a)(iii), Charges are taken to mean the unit TOP price and unit Non-TOP price.*~~	Provision set out in section 4.16(a)(iii) of the 2011 HVAU was to assist the transition between the NSW Rail Access Undertaking and the 2011 HVAU. This provision is now redundant and has been deleted.

No	HVAU Section	Amendments	Explanation
29	4.18	**Process of finalising Standard Access Charge** (a) Before 1 July of each year ARTC may seek from each Access Holder, to the extent necessary, any proposed variations to the Access Holder's ~~c~~Contracted ~~c~~Coal ~~volumes~~ KM and tonnage requirement for the following calendar year and each of the next 9 calendar years including any proposed reduction in the Access Holder's Contracted Coal KM to be relinquished and recontracted (Relinquished Capacity) in accordance with the principles set out in section 4.19 and 4.20. (b) Each calendar year, ARTC will determine its annual forecast of costs for the Network in each Pricing Zone which are to be recovered by ARTC in the next calendar year. (c) The ~~Indicative~~ Standard Access Charges will be based on the ~~c~~Contracted ~~c~~Coal ~~volumes~~ KM for that calendar year, any additional ~~volumes~~ KMs that ARTC considers likely to be ~~c~~Contracted ~~c~~Coal ~~volumes~~ KM for that relevant year taking into account any Relinquished Capacity ARTC considers likely to be recontracted, and ARTC's forecast costs as determined under sub-section (b). (d) Subject to sub-section (e), ARTC will notify by 30 September ~~1 November~~ of each calendar year for the following calendar year: (i) the aggregate coal volumes and KMs which will include reasonably expected volumes and ~~c~~Contracted ~~c~~Coal ~~volumes~~KM, ARTC's annual forecast costs as determined under sub-section (b) to those Access Holder holding Coal Access Rights in each Pricing Zone; and (ii) the ~~Indicative~~ Standard Access Charges to those Access Holders holding Coal Access Rights for ~~Indicative~~ Services within the Services Envelope; and	At the request of Access Holders, subsection 4.18(a) and (c) have been amended to include a process for Access Holders to notify ARTC of capacity which it proposes to relinquish and permanently assign to another Access Holder (see section 2.5.12 of the Explanatory Guide and row 31 below). In addition subsection 4.18(d) has been amended to require ARTC to notify Access Holders of prices by 30 September each year. This has been amended at the request of Access Holders to ensure consistency with their internal budgeting process. Other changes to section 4.18 required to implement path based pricing and remove historical and redundant concepts in connection with the Indicative Services.

No	HVAU Section	Amendments	Explanation
		(iii) ARTC's forecast RAB value of the aggregate of Segments in Pricing Zone 3 as at both the start and the end of the next calendar year to those Access Holders holding Coal Access Rights in Pricing Zone 3. *(e) ARTC will not be required to provide information on aggregate coal volumes or KMs if it reasonably considers that the provision of such information will allow an Access Holder to determine the individual ~~c~~Contracted ~~c~~Coal ~~volumes~~ KM, volumes or anticipated coal volumes or Contracted Coal KM of another Access Holder.* *(f) If Access Holders holding two thirds or more of the ~~c~~Contracted Coal ~~gtkm~~KM for ~~Indicative~~ all Services within the Services Envelope in the relevant Pricing Zone for the next calendar year give ARTC a Dispute Notice within twenty (20) Business Days of being notified of the ~~Indicative~~ Standard Access Charges setting out that they disagree with the ~~Indicative~~ Standard Access Charges for that Pricing Zone, then the dispute will be resolved by arbitration under section 3.15(f). If less than two thirds of those Access Holders give a Dispute Notice within the required time for a Pricing Zone, the ~~Indicative~~ Standard Access Charges as notified for that Pricing Zone are final and not subject to arbitration under section 3.15(f). Additional Capacity in the Pricing Zone which has been contracted on a conditional basis and which will not be commissioned in the next calendar year will not count towards the two thirds test.* *(g) ARTC will promptly publish the final ~~Indicative~~ Standard Access Charges on its website in the format set out in section 4.14(c):* *(i) (if there is no arbitration - following the end of the twenty (20) Business Day dispute period; or* *(ii) if there is an arbitration - following the determination by the arbitrator.*	

No	HVAU Section	Amendments	Explanation
		~~*(h) All references to Indicative Services and Indicative Access Charges in this section 4.20 will be read as*~~ ~~*(i) Interim Services and Interim Access Charges respectively during the Interim Period; and*~~ ~~*(ii) Initial Indicative Services and Initial Indicative Access Charges respectively during the Initial Period.*~~ ~~*(i) To avoid doubt, the requirement in section 4.20(f) to give ARTC a Dispute Notice if Access Holders holding two thirds or more contracted gtkm in the relevant pricing zone dispute Interim Access Charges or Initial Indicative Access Charges applies separately to Access Holders operating Interim Services and Initial Indicative Services in the relevant Pricing Zone (as applicable).*~~	
30	4.19	**Provision of forecast information, pricing and coal volumes** *(a) In addition to the information provided to each Access Holder of Coal Access Rights under section 4.18(d), ARTC will provide to each Access Holder of Coal Access Rights before ~~1 November~~ 30 September of each calendar year:* *(i) subject to section 4.18(e):* *(A) the aggregate annual coal volumes contracted by Access Holders for each of the next 10 calendar years;* *(B) the forecast range of Standard Access Charges for each of the 2 calendar years following the year for which Standard Access Charges are notified under section 4.18(d) provided in the format set out in Schedule F; and* *(b) The ~~10 year~~ information provided by ARTC under this section:*	Subsection 4.19(a) has been amended to require ARTC to notify Access Holders of prices by 30 September each year. This has been amended at the request of Access Holders to ensure consistency with their internal budgeting process. To assist Access Holders in their internal budgeting process, amendments in subsection (a)(iii)(B) require ARTC to provide forecast Standard Access Charges for the following two calendar years in a specified format (see section 2.5.12 of the Explanatory Guide).

No	HVAU Section	Amendments	Explanation
		(i) *will include information for the calendar year for which ~~Indicative~~ <u>Standard</u> Access Charges ~~or the Interim Access Charges, as applicable,~~ are determined and information provided for under section 4.18(d)<u>; and</u>* *(ii)* *<u>is a forecast only based on the information available to ARTC and ARTC's reasonable expectation at the time the information is provided and is not binding on ARTC</u>.*	
31	**4.20**	**Facilitating assignments of Relinquished Capacity** Insertion of a new regime which requires ARTC to use reasonable endeavours to facilitate the permanent assignment of capacity notified by Access Holders to Access Holders seeking to increase their contracted capacity as part of ARTC's annual process for finalising the Standard Access Charges. This regime includes the following key principles: • notification by ARTC to all existing and prospective Access Holders of the aggregate capacity to be relinquished and requesting expressions of interests for the capacity; • facilitation by ARTC of negotiations for the assignment of the Relinquished Capacity; • requirement that Relinquished Capacity must be assigned or traded by an Access Holder to a third party in accordance with the assignment or trading provisions of that Access Agreement; and • acknowledgement that to the extent an Access Holder that nominated Relinquished Capacity is unable to assign or trade that capacity to a third party, then that Access Holder remains liable to ARTC for the TOP Charges.	At the request of Access Holders, subsection 4.18(a) and (c) have been amended to include a process for Access Holders to notify ARTC of capacity which it proposes to relinquish and permanently assign to another Access Holder (see section 2.5.12 of the Explanatory Guide).

No	HVAU Section	Amendments	Explanation
32	**5.1 / 5.3 / 8.1**	**System Assumptions** *(a) ARTC will participate in the development of System Assumptions via the HVCCC and will use reasonable endeavours to agree System Assumptions with the HVCCC, the ~~coal t~~Terminal ~~o~~Operators ~~at the Port of Newcastle~~ and other relevant service providers. To avoid doubt, if a System Assumption is based on a subset of assumptions (which at the Commencement Date includes the Relevant System Assumptions), then ARTC will also use reasonable endeavours to agree those assumptions.* **Identification of Shortfall in existing Capacity** *(a)(i) as soon as reasonably practicable, inform each Access Holder (if affected), ~~coal t~~Terminal ~~o~~Operators ~~at the Port of Newcastle~~ and the HVCCC of the expected duration of the Capacity Shortfall but to avoid doubt, ARTC's representation of the expected duration of the shortfall is not binding on ARTC; and* **Hunter Valley corridor capacity strategy** *(b)(ii) be aligned with ~~Newcastle port terminal~~Terminal Operators capacity forecasts; and* *…* *(d)(i) convene and conduct an annual meeting with the HVCCC and relevant ~~coal t~~Terminal ~~o~~Operators ~~at the Port of Newcastle~~. The objective of the consultation is to provide that any planned expansions to the Network in the Hunter Valley corridor capacity are aligned with expansions at the coal terminals at the Port of Newcastle;* Insertion of the following new definitions in clause 16.1: *"Terminal Operator" means an operator of a coal terminal at the Port of Newcastle"*	ARTC has amended this provision to ensure consistency with its approach under the IAHA to require Access Holders specify the use of Port Waratah Coal Services or Newcastle Coal Infrastructure Group coal terminals (see section 4.10 of the Explanatory Guide).

No	HVAU Section	Amendments	Explanation
33	**5.8**	Review of mechanism to identify and assign Capacity losses - Deletion of section in its entirety.	The review under section 5.8 has been completed and, as such, the provision is no longer required.
34	**7.1 / 7.4 / 8.5 / 9.1**	**Purpose** *(c) This section 7 does not prevent the industry consultation process set out in sections 8 and 9 being used for purposes other than relating to Additional Capacity.* **Step 2 – Industry consultation for a project** *(a) The industry consultation process must be used for Projects creating Additional Capacity and may be used by ARTC for projects which do not involve the creation of Additional Capacity (including Innovation Projects).* **Projects identified by ARTC** *ARTC may at any time prepare a Concept Assessment Report in relation to a project, for RCG endorsement to proceed to project feasibility (including an Innovation Project). The ~~P~~project may, but does not need to be, a project identified in the Hunter Valley corridor capacity strategy.* **Overview** *(b) ARTC may also use the industry consultation process to obtain endorsement for projects to the extent they do not involve Additional Capacity (for example an Innovation Project or for asset replacement, cost reduction or safety related projects).*	Amendments make clear that the industry consultation process may be used for an Innovation Project. Consequential change made to the title of sections 8.2 and 8.5 to remove references to Additional Capacity.

No	HVAU Section	Amendments	Explanation
35	9.1	**Overview** *(c)(iii) provide a process for the applicable industry participants to participate in the development and management of projects and to endorse:* (A) Capital Expenditure incurred by ARTC in providing Additional Capacity or incurred in relation to the Network as Prudent; and (B) stages of Innovation Projects and related incentives to be earned by ARTC. …. *(f) Any endorsed costs incurred in complying with the provisions of this section 9:* *(i) for a Project, will normally be included in the RAB where a project is commissioned, or otherwise expensed in the year incurred; and* *(ii) for an Innovation Project, will be recovered in accordance with the relevant Innovation Proposal prepared by ARTC under section 14.*	Consequential changes as a result of the incorporation of an innovation incentive mechanism (see section 2.7.4 of the Explanatory Guide).
36	9.2	**RCG** *(a) ARTC will convene, and conduct, regular monthly meetings with the RCG (unless ARTC reasonably considers that a meeting for a month is not required) for the purpose of:* *(i) consulting with ~~applicable industry representatives~~the RCG ~~-~~and obtaining endorsement of Capital Expenditure associated with Additional Capacity, ~~or~~ other Capital Expenditure on the Network;* *(ii) consulting with the RCG on Innovation Proposals and obtaining endorsement of Innovation Projects;*	Amendments to subsection 9.2(a) and (b) are to provide additional flexibility in convening meetings and to avoid having to call a meeting where it is not required or difficult due to Christmas periods (see section 2.7.2 of the Explanatory Guide). Changes to subsection 9.2(a)(i) – (iv) are to broadened the purpose of the RCG to include consultation by ARTC and endorsement by the RCG of Innovation Proposals and to strengthen ARTC's

No	HVAU Section	Amendments	Explanation
		(iii) providing information to the RCG in respect of planned maintenance and forecast maintenance costs; and (iv) reporting to the RCG on efficiency and operational outcomes, actual maintenance undertaken by ARTC and associated maintenance costs incurred. (a) ARTC will prepare an agenda for meetings and provide a secretariat. ARTC may seek to consult or seek endorsement from the RCG outside of regular RCG ~~monthly~~ meetings (as convened pursuant to section 9.2(a) where ARTC considers this will assist project development and delivery.	reporting obligations to the RCG on planned maintenance and forecast maintenance costs against actual maintenance outcomes and costs (see section 2.7.3 of the Explanatory Guide).
37		**The RCG** (c) At the commencement of this Undertaking, the RCG will comprise the following membership ~~(as selected by the relevant industry participants)~~. One representative of: (i) each Access Holder who holds Coal Access Rights ~~who holds the largest volume of contracted coal gtkm in each Pricing Zone~~; ~~(ii) any other Access Holder with more than 7% of contracted coal gtkm on the Network who is not already eligible to appoint a representative under sub-section (i);~~ ~~(iii) all Access Holders with less than 7% of contracted coal gtkm on the Network and the Representative may split its vote according to the percentage of contracted coal gtkm held by each represented party if requested;~~ (i~~v~~i) each Operator, in its capacity as an Operator, with more than 10% of ~~c~~Contracted ~~c~~Coal ~~gtkm~~KM on the Network who is not an Access Holder with more than 10% of ~~c~~Contracted ~~c~~Coal ~~gtkm~~KM	Changes to permit all Access Holders to be a member of the RCG in their own right and removal of the 7% threshold which triggered full RCG membership (see section 2.7.2 of the Explanatory Guide). Amendments to subsection 9.2(c)(ii), (f) and (g) are to update the voting entitlements of RCG members to reflect the introduction of path based pricing and that TOP Charges will be on a $/KM basis.

No	HVAU Section	Amendments	Explanation
		on the Network (in a non-voting capacity); and …. *(d) Only those RCG members who are ~~represent~~ Access Holders will be entitled to vote and where the Access Holder is an Operator, the ~~each~~ RCG member will vote in accordance with the wishes of ~~Access Holders that it is representing, or, where the Access Holder is an Operator,~~ those Coal Customers on whose behalf the Access Rights are held.* *(e) Subject to sub-section 0, RCG member voting will be weighted on the basis of ~~c~~Contracted ~~c~~Coal ~~gtkm~~KM for the current calendar year and the next nine calendar years, in the Pricing Zone in which a project is proposed to occur.* *(f) In determining voting entitlement of a RCG member under this Undertaking, other than for the purposes of endorsing project assessment at section 9.4(d) and any stage beyond that, ARTC may, at its discretion, include any coal KM~~gtkm~~ in the Pricing Zone which ARTC reasonably expects will become ~~c~~Contracted ~~c~~Coal ~~gtkm~~KM, for the current calendar year or for any of the following nine calendar years, immediately following the completion of the proposed project. To avoid doubt ARTC may, in exercising this discretion, determine that a prospective access holder which is not a current member of RCG has a voting entitlement.*	
38	**9.2**	**The RCG** *Except in respect of an Innovation Project:* *(a) ARTC may elect to continue to the next stage of project development without RCG endorsement. Where this occurs, ARTC may elect to seek endorsement of the expenditure from the ACCC in respect of ~~p~~Project development and delivery to the extent not endorsed by the RCG.*	RCG support and endorsement is required for an Innovation Project to be implemented, and ARTC to receive compensation for any Innovation Project. Accordingly, amendments to prohibit ARTC from proceeding with such a project without RCG endorsement on its on accord and/or with

No	HVAU Section	Amendments	Explanation
		(b) Expenditure incurred by ARTC on ~~p~~Project development or delivery will be included in the RAB or expensed when incurred as endorsed by the ACCC. ARTC may seek the ACCC's endorsement in advance of, or subsequent to, incurring the expenditure.	endorsement by the ACCC.

39	**9.3**	**Efficiency Incentive Proposal**
		Insertion of a process to develop, and consult with the RCG on, an Efficiency Incentive Proposal regime which must include the following key elements:
		• a process for establishing a baseline for each operating cost component the subject of the Efficiency Incentive Proposal;
		• an annual process to develop and consult with the RCG on operating costs and to agree one or more components of the operating costs with the RCG for the following calendar year consistent with the relevant baseline cost and the planned activities to be undertaken in that year ("Opex Component Allowance");
		• if an Opex Component Allowance is agreed with the RCG:
		    • as an incentive for ARTC to improve efficiency, ARTC will be able to recover from Access Holders up to 70% of the savings below the Opex Component Allowance in accordance with the methodology set out in the Efficiency Incentive Proposal ("Efficiency Incentive Amount");
		    • Access Holders will retain the benefit of at least 30% of savings below Opex Component Allowance through the annual individual unders and overs reconciliation under section 4.9; and
		• ARTC must report to the RCG on actual operational outcomes and associated costs against each Opex Component Allowance on a periodic
			To address concerns that the 2011 HVAU provided ARTC with limited incentives to drive efficiencies, Access Holder's requested that ARTC incorporate an incentive-based efficiency sharing scheme for managing operating costs in the Network.
			Following consultation with HRATF and in response to industry's concerns, an efficiency regime has been inserted into HVAU as a mechanism to incentivise ARTC to maximise cost efficient practices and operations of the Network. Revenue earned by ARTC as a result of the successful implementation of an Efficiency Incentive Proposal is excluded from the unders and overs mechanism in section 4 (see section 2.7.4 of the Explanatory Guide).

No	HVAU Section	Amendments	Explanation
		basis. Insertion of the following new definitions in clause 16.1: • *"Efficiency Incentive Amount" has the meaning given to it in section 9.3(a)(iv)(A);* • *"Efficiency Incentive Proposal" has the meaning given to it in section 9.3;* • *"Efficiency Study" has the meaning given to it in section 9.3(a)(vii);* • *"Opex Component Allowance" has the meaning given in section 9.3(a)(iii);*	
40	9.9	**Endorsement of project development states for Additional Capacity** (a) *Where Additional Capacity is provided in relation to a particular Pricing Zone, the endorsement of coal producers that hold Coal Access Rights under an Access Holder Agreement and any coal ~~gt~~km included under ~~clause~~ section 9.2(g), ~~either directly or through RCG representatives,~~ with ~~over~~ at least 50% of ~~c~~Contracted ~~c~~Coal ~~gtkm~~KM in that Pricing Zone will constitute endorsement by the RCG of that stage of project development.* *(b) Where Additional Capacity (delivered by way of a single project or series of projects) is provided in relation to a particular Pricing Zone, and that Additional Capacity results in an increase in the ~~Indicative~~ Standard Access Charge for that Pricing Zone by more than 10%, the endorsement of Coal Customers that hold Coal Access Rights under an Access Holder Agreement and any coal ~~gt~~km included under ~~clause~~ section 9.2(g)~~, either directly or through RCG representatives,~~ with ~~over~~ at least 70% of ~~c~~Contracted ~~c~~Coal ~~gtkm~~KM in that Pricing Zone and any coal km included under section 9.2(g) will constitute endorsement by the RCG of that stage of project development.*	Amendments to subsection 9.2(c)(ii), (f) and (g) are to update the voting entitlements of RCG members to reflect the introduction of path based pricing and that TOP Charges will be on a $/KM basis. Replacement of "over" with "at least" to clarify that once the relevant threshold is met, rather than exceeded, RCG will be considered to have been obtained.

No	HVAU Section	Amendments	Explanation
41	13.1	**Network Key Performance Indicator** *(a) ARTC will report on its website performance against the Network Key Performance Indicators set out in Schedule D as amended from time to time under section 2.4, at the frequency referred to in Schedule D. To avoid doubt, in reporting on the performance against the Network Key Performance Indicators, ARTC will not report on the performance of individual Access Holders or Operators.* *(b) ARTC's obligation to report performance under this section 13 will not arise until the completion of the first full period in respect of which performance is measured, this means that:* *(i) ARTC will not report quarterly performance until the completion of the first full quarter after the Commencement Date ~~or New Segments Commencement Date in respect of the New Segments (as applicable)~~; and* *(ii) ARTC will not report annual performance until the completion of the first full calendar year after the Commencement Date ~~or New Segments Commencement Date in respect of the New Segments (as applicable)~~.*	Amendment to subsection 13.1(a) make clear that the minor variations process applies to the Performance Indicators set out in Schedule D. In addition, references to New Segments have been deleted as they were included into the 2011 HVAU as part of the variation to incorporate the Gap to Turrawan Segments of the Network and are now redundant. These provisions are now redundant as the Gap to Turrawan Segments form part of the Network.
42	13.2	**Negotiation of key performance indicators for each Access Agreement** (b)(iii)(C) any particular incentives and measures of ARTC's performance contained in the Indicative Access Holder Agreement including the application of the system ~~wide~~ true-up tests, and	To ensure consistency with other references in the 2016 HVAU of true-up test and the title of Schedule of Schedule 2 of the IAHA, the word "wide" has been deleted.

No	HVAU Section	Amendments	Explanation
43	**13.3**	**Development of non TUT related performance Incentives -** Deletion of section in its entirety.	The review under section 13.3 has been completed. Having regard to the Efficiency Incentive Proposal under section 9.3 these provisions are no longer required.
44	**13.4**	**Review of system wide TUT** - Deletion of section in its entirety.	The review under section 13.4 has been completed and, as such, the provision is no longer required.
45	**13.3**	**Development of TUT related performance Incentives** - Deletion of section in its entirety.	The review under section 13.5 has been completed and, as such, the provision is no longer required.
46	**14**	Inn**ovation Project** Insertion of a new regime for the development and implementation of Innovation Projects, which includes the following key principles: • the objective of the mechanism being to incentivise ARTC to identify, develop and implement project or change practices in relation to the network which are innovative and not in the ordinary course of ARTC's business and provide benefits to Access Holders where ARTC would not otherwise have such an incentive; • endorsement of the proposal by the RCG which must address a prescribed criteria; • key prescribed pricing principles that ARTC must have regard to in determining the incentive to be earned by ARTC for an Innovation Project;	Following consultation with HRATF and in response to industry's concerns that the 2011 HVAU has limited incentive for ARTC to drive efficiency, an innovation regime has been inserted into HVAU as a mechanism to incentivise ARTC to develop, assess and maximise cost efficient practices in the Network. Revenue earned by ARTC as a result of the successful implementation of an Efficiency Incentive Proposal is excluded from the unders and overs mechanism in section 4 (see section 2.9 of the Explanatory Guide). Consequential changes made to sections

No	HVAU Section	Amendments	Explanation
		and • endorsement for the charging by ARTC of an Innovation Payment. Examples of such projects being the funding for research and development in network management projects which have the potential to reduce long term operational costs, a project that create Additional Capacity but in a manner that defers or displaces capex, a project where some or all of the benefits obtained are external to the Network (such that it would not be considered Prudent or Efficient ordinarily). Insertion of the following new definitions in clause 16.1: • *"Innovation Payment" has the meaning given in section 14.5(a);* • *"Innovation Project" means a project developed by ARTC in accordance with section 14;* • *"Innovation Proposal" has the meaning given in section 14.3;*	7.4(a), 8.5 and 9.1(b) to make clear that projects (undefined) includes 'Innovation Projects'.
47	**Clause 15**	**Transitional provisions** Insertion of a new clause (Transitional provisions) governing the transitional arrangements for the final 2011 HVAU compliance assessment and the final 2011 HVAU True-up test. Insertion of the following new definitions in clause 16.1: *"Transitional Period" has the meaning given in section 15.1(b).*	Amendments to ensure that ARTC is required to undertake the compliance requirements and true-up test for the part-year governed by the 2011 HVAU in accordance with the provision of the 2011 HVAU (see section 2.10 of the Explanatory Guide).

No	HVAU Section	Amendments	Explanation
48	**16.1**	**Definitions** In addition to the definitions referred to above, amendment to the following definitions in section 16.1:	
		"Proposed Auditor" has the meaning given in section 4.11(a).	Although a capitalised term in the 2011 HVAU, a definition was not provided in clause 16.1. Amendment made for completeness and consistency.
		"Segment Specific Assets" means assets that: *(a) form part of the* RAB *and RAB Floor Limit (as applicable) and are subject to section 4.4 of the 2016 HVAU; and* *either* *(b) ARTC can directly identify with a Segment because those assets are physically or functionally part of a Segment; or,* *(c) ARTC has otherwise directly identified with a Segment having regard to recovery of relevant costs associated with those assets consistent with the beneficial use of those assets;*	Amendment to the definition of Segment Specific Assets to correct an error as references to the RAB Floor Limit were incorrectly omitted.
		"Segment Specific Costs" means operating costs that ARTC can directly identify with a Segment and, for the avoidance of doubt, includes any loss or gain incurred on the disposal of an asset;	Clarification to make clear that Segment Specific Costs includes any loss or gain incurred on the disposal of an asset.

No	HVAU Section	Amendments	Explanation
49	**Schedule A:1 – Element of Coal Access Agreements**	*Amendments to the following Tier 1 (mandatory) provisions:* *1 IAHA Clause 1.1: Definition of 'Access 2016 HVAU' and each definition relevant to each Tier 1 (mandatory provision) set out in items 2 to 24 below* *8 IAHA Clause 3.13(d): Key Performance Indicators* *10 IAHA Clause 5.4A: Payment of Innovation Charge and Efficiency Incentive Charge* *~~19 IAHA Clause 16.8: Reduction in time period for ARTC approval of trades~~* *23 IAHA Schedule 2: System true-up test (all clauses)* *24 IAHA Schedule 3: Charges (all clauses) ~~Clause 4.1(c) Determination of TOP PricePZ and Non-TOP PricePZ, - dispute resolution provisions~~* ** Except if the Access Holder Agreement is for Access Rights to transport coal to a destination other than the Port of Newcastle, in which case:* • *the Tier 1 (mandatory) provisions are items 1, 2~~3~~, 4,~~5,~~ 6, 7, 8, ~~9,~~ 10, 11, 12, 13, 15, 16, 2~~0~~, 22, 23, 24 and 25; and* • *items ~~2~~3, ~~4~~5, ~~7~~9, ~~11~~,14,~~ 15, 16,~~ 17, 18, 19, 20 and 21 will be treated as Tier 2 (negotiable) provisions.* *Deletion of the following Tier 2 (negotiable) provision:* *~~6 Access Holders paying a Charge for Coal Access Rights based on a combination of actual usage (being a function of distance and gross mass ($/gtkm) for a Pricing Zone) and on a take or pay basis.~~*	Item 1 has been inserted to ensure that new and amended definitions which are relevant to 'Tier 1' Provisions are automatically incorporated into each Access Holder Agreement (see section 3.1 of the Explanatory Guide). Item 8 has been inserted to reflect the amendments to clause 3.13 under the IAHA. On the basis that the Network Key Areas may be reviewed on an annual basis, ARTC considers that reviewing the key performance indicators with each Access Holder should only be required every 2 years, rather than annually. Item 10 has been inserted to ensure that ARTC is able to recover from Access Holders innovation and Efficiency Incentive Charges (as applicable) to the extent endorsed under the RCG. Amendment to item 23 is for clarification purposes. Amendment to item 24 is to ensure that path based pricing is implemented on an industry wide basis. Consequential changes to changes to the Tier 1 and Tier 2 provisions for Coal Access Agreements which are not for export purposes and Tier 2 provisions for export

No	HVAU Section	Amendments	Explanation
			Coal Access Agreements.
50	Schedule D	**Performance Measurement** ARTC has inserted a new performance measurement regime which provides a framework for ARTC to negotiate and agree Network Key Result Areas with the RCG in accordance the minor variation process outlined with section 2.4(c). If amendments to the Network Key Result Areas are not endorsed by the RCG then the previous Network Key Result Areas will continue to apply.	Proposed Network Key Result Area regime provides flexibility for the Network Key Result Areas to change from year to year to reflect the priorities of the Hunter Valley Coal Chain through the operation of the minor variations process under section 2.4 (see row 7 above and section 3.4 of the Explanatory Guide).
51	Schedule F	**Forecast Standard Access Charge** Insertion of a new Schedule F – Forecast Standard Access Charge, which sets out the format of the non-binding forecasts of the range of Standard Access Charges ARTC is required to provide under clause 4.19(a)(iii)(B).	This is a consequential change as a result of the new section 4.19(a)(iii)(B) requirements.
52	Schedule G	**Principles to guide ARTC/ HVCCC Consultation** Amendments to Schedule G as follows: *1 Where ARTC is required to consult with the HVCCC under this 2016 HVAU or IAHA and a specific process is not set out in that provision, ARTC will use reasonable endeavours to follow the following steps set out in this Schedule G to the extent practical and in light of the specific circumstances:* *2 ARTC will use reasonable endeavours to work with the HVCCC to establish and monitor suitable mechanisms that assist them to carry out their respective roles under this 2016 HVAU in an effective, timely and consistent manner.*	Following consultation with the HRATF and in order to address requests by the HRATF to strengthen the principles governing ARTC / HVCCC consultation, amendments to Schedule G have been made to incorporate further principles and guidance (see section 3.6 of the Explanatory Guide).

No	HVAU Section	Amendments	Explanation
		~~1~~3 ARTC will~~-~~, as reasonably determined by it, request the HVCCC to provide ARTC with its view by a specified date, as reasonably determined by ARTC or as otherwise agreed between ARTC and the HVCCC.~~;~~ ~~2~~4 Where the HVCCC provides its view by the notified date, ARTC will consider that view in good faith.~~;~~ 5 Where ARTC disagrees with the view and there is sufficient time for the HVCCC to reconsider its view, as reasonably determined by ARTC, ARTC will provide its reasons to the HVCCC and will ask the HVCCC to reconsider in light of ARTC's reasons by a specified date, as reasonably determined by ARTC.~~;~~ ~~3~~6 If ARTC disagrees with a view of the HVCCC which materially affects an Access Holder's or a group of Access Holders' rights under their respective Access Holder Agreements, ARTC will notify the affected Access Holders of, and provide its reasons for, its disagreement with the HVCCC's view. 7 Where the HVCCC provides its revised view by the notified date, ARTC will consider the revised view expressed by the HVCCC in good faith.~~;~~ If ARTC materially does not agree with the views expressed by the HVCCC for any reasons: (a) ARTC and the HVCCC will use reasonable endeavours, acting in good faith, to resolve the issue by joint discussions; and (b) if following joint discussion, ARTC materially disagrees with the views expressed by the HVCCC then ARTC will publish the HVCCC views it disagrees and the reasons for its view. 8 Subject to any confidentiality restrictions, ARTC and the HVCCC will provide all information that is reasonably required to allow the other party to implement any element of this Schedule G. 9 ARTC will ensure that key ARTC personnel are aware of their responsibilities	

No	HVAU Section	Amendments	Explanation
		under this Schedule G and any processes agreed between the HVCCC and ARTC. *410 Ultimately, ARTC is not obliged to follow the HVCCC's recommendation.*	

No	HVAU Section	Amendments	Explanation
53	Schedule H	**Annual Compliance Assessment - information provision and timing** *(2)(b) documentation demonstrating ARTC's compliance with the annual RAB and RAB Floor Limit roll forward as set out at section 4.4 of this 2016 HVAU, including:* (i) evidence of disposals value including any endorsement by the RCG of any proposed disposals, and where possible, appropriate references to the original value of the asset~~Booz Allen Hamilton DORC database which established the regulatory asset base value as at 1 July 1999, and any references to the depreciated optimised replacement cost in relation to assets in Segments not ascribed a regulatory asset value in accordance with the NSW Rail Access~~ 2016 HVAU~~ in force at the time immediately preceding the Commencement Date of this~~ 2016 HVAU, and approved by the ACCC from time to time, and demonstrating adjustments to derive the current value of disposals; *(c) details as to ARTC's compliance with the ~~c~~Ceiling ~~test~~Limit, including allocation of the total unders or overs amount to Constrained Coal Customers, including…* *(d) where the documentation shows RAB to be greater than the RAB Floor Limit in Pricing Zone 3, documentation setting out the ~~Interim Access Charge or Indicative~~Standard Access Charge, as applicable for Pricing Zone 3 in that calendar year and the previous calendar year.*	Changes to item 2(b)(iv) removes the historical valuation methodology used in the transition from the NSW Rail Access Undertaking to the 2011 HVAU. Consequential changes to item (d) to remove historical references to the Interim Access Charge and Indicative Access Charge. For completeness, amendment to Table 1 to the replace the words "ceiling test" with the defined term "Ceiling Limit".
54	Schedule I	**Parent Guarantee** *Agreement means the [Access Holder Agreement/Operator Sub-Agreement] for ~~Indicative~~ Services in the Hunter Valley.*	Consequential amendment as a result of the removal of the Indicative Service regime.

2 Amendments to the AHA

No	Clause	Proposed amendment	Reason for amendment
1	**1.1**	**Definitions** *Access Undertaking means:* *(a) the undertaking accepted by the ACCC from time to time under Division 6 of Part IIIA of the CCA that covers the Network, or* *(b) if the ACCC has accepted an undertaking under Division 6 of Part IIIA of the CCA that covers the Network which has expired and:* *(i) the NSW Rail Access Undertaking is in force; or* *(ii) there is no access undertaking currently in force,* *the access protocols published by the ARTC after consultation with access holders, under which ARTC agrees to supplement the NSW Rail Access Undertaking in force or offer access to the Network (as applicable) from time to time;*	Amendments to clarify that the definition of “Access Undertaking” includes the NSW Rail Access 2016 HVAU in circumstances where an undertaking accepted by the ACCC has expired. In such circumstances ARTC will be required to supplement the NSW Rail Access Undertaking to the extent required for the operation of the AHA.
		Charges means the TOP Charge, Non-TOP Charges, ~~and~~ Ad Hoc Charges, Innovation Charge and Efficiency Incentive Charge calculated in accordance with Schedule 3;	Consequential changes as a result of the introduction of the Innovation Proposal under section 14 of the 2016 HVAU and Efficiency Incentive Scheme under section 9.3 of the 2016 HVAU.
		Contract Year means a year commencing 1 January and ending 31 December except that if this agreement does not start or end on those dates respectively, the first Contract Year will be from the Commencement Date to 31 December of that year and the last Contract Year will be from 1 January to the date this~~e~~ agreement ends;	Correction of a typographical error.

No	Clause	Proposed amendment	Reason for amendment
		Efficiency Incentive Charge means the efficiency incentive charge in respect of agreed operating cost savings made by ARTC and determined under clause 5 of Schedule 3.	Consequential changes as a result of the introduction of the Efficiency Incentive Scheme under section 9.3 of the 2016 HVAU.
		Innovation Charge means the innovation charge in respect of an innovation project developed by ARTC and endorsed by the RCG determined under clause 4 of Schedule 3.	Consequential change as a result of the introduction of the Innovation Proposal under section 14 of the 2016 HVAU.
		Network Key ~~Performance Indicators~~Result Areas means the ~~performance indicators~~key result areas included in Schedule D of the Access Undertaking;	Consequential change as a result of amendments to the Network Key Result Areas set out in Schedule D of the 2016 HVAU.
		Non-Compliant Service means: *(a) a Service using a Train Path that fails to comply with the applicable Service Assumptions prescribed for that Train Path in ~~the~~ each Train Path Schedule; and*	Amendment to make clear that the IAHA may have more than one Train Path Schedule attached. This is consistent with executed Access Holders Agreements.
		NCIGT means the Newcastle Coal Infrastructure Group terminal at the Port of Newcastle; *Port of Newcastle means each of PWCST and NCIGT;* *PWCST means the Port Waratah Coal Services terminal at the Port of Newcastle;*	Definitions have been inserted for clarification purposes to specify the port and terminal points at the Port of Newcastle (see row 32 above in section 1). For completeness, consequential changes to the definition of "Hunter Valley Coal Chain" and "Train Path" and clauses 3.3(c)(i), 2.1 of Schedule 3 and 3.1 in the

No	Clause	Proposed amendment	Reason for amendment
			Train Path Schedule to make provision for the specification of either PWCST or NCIGT for the Discharge Point details.
		Prudential Requirements has the meaning given in the Access Undertaking;	Consequential change as a result of amendment to clause 2.2 (see row 2 below).
		Services Envelope means the assumptions and characteristics of Services described as the Services Envelope in the Access Undertaking;	Consequential changes as a result of the implementation of path based pricing. For completeness definitions of 'Indicative Access Charge', 'Indicative Services', 'Interim Indicative Access Charge' and 'Interim Indicative Services' have been removed as they are no longer required under path based pricing.
		Standard Access Charges means the access charges for Services within the Services Envelope as determined in accordance with the Access Undertaking;	Consequential changes as a result of the implementation of bath based pricing.
		~~*System Assumptions Document means the document prepared by the HVCCC in consultation with ARTC and the Terminal Operators that details System Assumptions and simulation model outputs for the relevant Coal Chain Capacity scenarios;*~~	This term was not used in the document and was erroneously included in the 2011 IAHA. Accordingly, the definition has been deleted.

No	Clause	Proposed amendment	Reason for amendment
2	**2.2**	**Conditions precedent** (a) *If, at the Commencement Date, the Access Holder:* (i) *does not meet the Prudential Requirements under the Access 2016 HVAU and it has ~~a credit rating below the Acceptable Credit Rating and the Access Holder has~~ not delivered a Parent Guarantee or Security for an amount of at least three months' TOP Charges to ARTC; or* (ii) *not nominated an Operator who has entered into an unconditional Operator Sub-Agreement with ARTC which has been endorsed by the Access Holder as contemplated in clause 4~~,~~ .* *then clauses 3 to 11 do not take effect until this condition precedent is satisfied.* ~~(a)~~(b) *The conditions precedent ~~is~~ are for the benefit of ARTC and may only be waived by ARTC.* ~~(b)~~(c) *If the conditions precedent ~~is~~ are not satisfied within one month of the Commencement Date, ARTC may terminate this agreement on written notice to the Access Holder.* Consequential insertion of the following new definition: • Prudential Requirements has the meaning given in the Access 2016 HVAU;	The amendment to: • clause (a)(i) is made as a result of a consequential changes to the prudential requirements set out in 2016 HVAU (see row 11 above in section 1); • clause (a)(ii) is made to clarify that entry into an OSA by an Access Holder is a condition precedent to a number of clauses in the AHA applying. This is consistent with all existing access holder agreements.
3	**3.3**	**Determination of Monthly Tolerance Cap and Tolerance** ~~(e) Within twelve months from the date an Access Undertaking is accepted by the ACCC covering the Network first comes into effect, ARTC will commence a consultation with access holders on the level of Tolerance available and will provide a report to the RCG summarising the results of this review. The purpose of this review is to consider the impact of the level of tolerance on~~	The review under clause 3.3 has been completed and, as such, the provision is no longer required.

No	Clause	Proposed amendment	Reason for amendment
		~~Coal Chain Capacity.~~	
4	**3.5**	**Identification of Allocation Period** *(b) For each subsequent Contract Year, if the Access Holder and its Associates have aggregate load point allocations less than or equal to three Mtpa to the terminals operated by PWCS for any Contract Year ~~from 1 January 2012 until the expiry of this agreement~~, then the Access Holder is eligible to elect, by notice in writing to ARTC, an Allocation Period of a Quarter for that Contract Year.*	Reference to 1 January 2012 is redundant and has been removed.
5	**3.13**	**Key Performance indicators** *(d) The Key Performance Indicators will be reviewed in good faith by ARTC and the Access Holder at least once every two Contract Years ~~and, in any case, promptly following a review of the Network Key Performance Indicators~~.*	On the basis that the Network Key Result Areas may be reviewed on an annual basis, ARTC considers that reviewing the Key Performance Indicators under the IAHA with each producer on an annual basis to be administratively burdensome. ARTC considers that the review of these indicators every two years is sufficient.
6	**3.14**	**Network Exit Capability** *(b) To avoid doubt, the Access Holder's obligation to pay TOP Charges, Innovation Charges and Efficiency Incentive Charges (as applicable) ~~is~~ are not reduced as a result of ARTC not making available Path Usages under **clause 3.14(a)**.*	Amendments to make clear that, similar to the TOP Charge, the Innovation Charge and Efficiency Incentive Charge are not reduced as a result of ARTC not making a Path Usage available where the Access Holder has insufficient network exit capability.

No	Clause	Proposed amendment	Reason for amendment
7	**4.5**	**No valid Operator nomination** *(a) The Access Holder agrees that ARTC has no obligation to make a Train Path or Path Usage available for use where:* *(i) the Access Holder has failed to nominate an Accredited Operator for that Train Path or Path Usage;* *(ii) the nominated Operator is not, or is no longer, an Accredited Operator, or its Operator Sub-Agreement is conditional or has been suspended, terminated or expired; or* *(iii) the Operator seeking to use a Path Usage is not the Operator notified under the Daily Train Plan for that Train Path or Path Usage unless ARTC has given its consent to the change (not to be unreasonably withheld),* *and the occurrence of any of these events does not relieve the Access Holder's obligation to pay the TOP Charges, Innovation Charges and Efficiency Incentive Charges (as applicable).*	Amendments to make clear that, similar to the TOP Charge, the Innovation Charge and Efficiency Incentive Charge are still payable if ARTC is relieved from providing a Train Path as a result of the Access Holder's failure as set out in clause 4.5.
8	**5.4**	**Calculation of TOP Rebate and Ad-Hoc Charge Rebate** *(d) If a new Access 2016 HVAU is accepted by the ACCC and takes effect during a Contract Year, then ARTC will for each part-year period governed by the expired Access 2016 HVAU and new Access 2016 HVAU:* *(i) determine if there is an Ad Hoc Charge Rebate owing to the Access Holder for Ad Hoc Charges paid for each Train Path in accordance with the formula under clause 5.4(b); and* *(ii) undertake the Annual Reconciliation in accordance with the formula under clause 5.4(c),* *with adjustments to the formulae as necessary to calculate the Ad Hoc*	The insertion of this clause is made deal with transitional arrangements for the first year of the 2016 HVAU being a part-year. This clause is a Tier 1 provision (see section 4.4.2 of the Explanatory Guide).

No	Clause	Proposed amendment	Reason for amendment
		Charge Rebate and undertake the Annual Reconciliation (as applicable) for each part-year period governed by the expired Access 2016 HVAU and new Access 2016 HVAU during the Contract Year. Consequential changes to clause 5.4(a) to insert the words "subject to clause 5.4(d)" and clause 5.4(e) to include references to clause 5.4(d).	
9	**5.4A**	**Payment of Innovation Charge and Efficiency Incentive Charge** Insertion of provisions to govern the payment by Access Holders of innovation and efficiency incentive charges calculated in accordance with an Innovation Proposal or Efficiency Incentive Scheme (as applicable) endorsed by the RCG in accordance with the 2016 HVAU. The parties acknowledge that these charges do not constitute Access revenue received by ARTC for the purposes of annual compliance Consistent with the payment of TOP charges an Access Holders is prohibited from disputing an invoice in the absence of manifest errors.	Amendments required to provide a mechanism for ARTC to recover Innovation Charges and Efficiency Incentive Charges (see section 4.5 of the Explanatory Guide).
10	**5.7**	**Interest** *The interest rate will be 2 percentage points above the:* *(a) bench mark lending rate charged by the National Australia Bank or its successors ("NAB"), as published ~~in the Australian Financial Review newspaper~~, at the time of such default; or*	The Financial Review does not publish the benchmark lending rate for NAB. This amendment is consistent with all existing access holder agreements.

No	Clause	Proposed amendment	Reason for amendment
11	**7.1**	**Obligation to grant Credit Support – credit rating test** *(a) If, at any time after the Commencement Date, the Access Holder does not ~~have an Acceptable Credit Rating~~meet the Prudential Requirements, then ARTC may request the Access Holder to provide Credit Support on seven days' notice. If the Access Holder elects to provide Security, then that Security must be for an amount of at least three months' TOP Charges* *….* *(d) If the Access Holder's credit rating is upgraded to an Acceptable Credit Rating and the Access Holder meets the Prudential Requirements, ARTC will return the Credit Support provided under clause 2 or this clause 7.1.* Consequential insertion of the following new definition: • *Prudential Requirements has the meaning given in the Access 2016 HVAU;*	These amendments are made as a result of equivalent changes to the credit support regime under the HVAU (see row 11 in section 1 above and section 4.7 of the Explanatory Guide).
12	**8.4**	**Conduct of ARTC** Deletion of clause 8.4 (Conduct of ARTC) and insertion of the word "Not used".	Deletion of this clause is a consequential result of the deletion of the Indicative Services regime.
13	**11.1**	**Permanent variations to Train Paths** *(b)(i)(C) if the Requesting Party is ARTC, whether ARTC will relieve the Access Holder of its obligation to pay TOP Charges and Innovation Charges and Efficiency Incentive Charges to the extent applicable;* … *(e) The Notified Party's response as to whether it consents or not under **clause 11.1(b)(ii)** to the Requesting Party's notice given under **clause 11.1(b)(i)** and if the Notified Party is ARTC, its response as to whether it will adjust the Access Holder's TOP Charges (and to the extent*	Consequential amendments as a result of the incorporation of the Innovation Charge and Efficiency Incentive Charge.

No	Clause	Proposed amendment	Reason for amendment
		applicable, the Innovation Charges and Efficiency Incentive Charges), will be given to the Requesting Party within 28 days of such notice being received by the Notified Party or within such shorter time if reasonably practicable. If the Notified Party's response is to refuse consent, the Notified Party will within such time also provide full reasons for refusal in writing to the Requesting Party. *(f) Unless* ***clause 11.1(c)*** *applies or unless otherwise agreed by ARTC (in its absolute discretion), a variation agreed under this* ***clause 11.1*** *will not relieve the Access Holder of its obligations to pay the TOP Charges, Innovation Charges and Efficiency Incentive Charges (as applicable).* *(g) If ARTC has advised the Access Holder, in accordance with* ***clause 11.1(d)*** *that it will not adjust the Access Holder's TOP Charges, and to the extent applicable, any Innovation Charges and Efficiency Incentive Charges, then the Access Holder is entitled to withdraw a notice provided under* ***clause 11.1(b)(i)****, notwithstanding that ARTC may have consented to that notice.*	
14	**11.4**	**Removal of Path Usages for Under-utilisation** *(e) If ARTC elects to delete any Path Usage under* ***clause 11.4(a)*** *then the Access Holder's obligations to pay the TOP Charges from the date of deletion will, and the Access Holder's obligation to pay the Innovation Charges and Efficiency Incentive Charges may subject to the methodology for calculating such Charges, be reduced to reflect the removal of the Path Usage*	Consequential amendments as a result of the incorporation of the Innovation Charge and Efficiency Incentive Charge.

No	Clause	Proposed amendment	Reason for amendment
15	**11.5**	**Use of Non-Compliant Services** *(b) If ARTC consents to the use or operation of a Non-Compliant Service and that Non-Compliant Service is outside of the Services Envelope, ARTC may (but is not required to) update the TOP Charges, Innovation Charges and Efficiency Incentive Charges (as applicable) to be payable by the Access Holder to reflect the characteristics of the Non-Compliant Service used or operated by the Access Holder.*	Services within the Services Envelope will not have an increase in TOP Charge. Accordingly this provision only applies to Services outside of the Services Envelope.
		Permanent change to Service Assumptions (c)(iii) the variation of the Service Assumptions does not lead to a reduction in TOP Charges, Innovation Charges and Efficiency Incentive Charges (as applicable) that would otherwise be payable.	Amendments to take into account the Innovation Charges and Efficiency Incentive Charges.
		Clause 11.5(d) is deleted in its entirety: ~~(d) Despite clause 11.5(c)(iii), ARTC will not unreasonably withhold its consent to a permanent change to the Service Assumptions for a Train Path that would lead to a reduction in TOP Charges if, in ARTC's reasonable opinion reached in consultation with the HVCCC, the variation involves the transfer to a Service which provides for more efficient use of Capacity and Coal Chain Capacity.~~	Generally, and as a result of implementing path based pricing, reductions in TOP Charges will only occur if an Access Holder permanently changes its Services Assumptions from a train consist outside of the Services Envelope to a train consist within the Services Envelope. Trains outside of the Services Envelope will not provide for a more efficient use of Capacity and Coal Chain Capacity.

No	Clause	Proposed amendment	Reason for amendment
		*(d) If the Service Assumptions applicable to a Train Path have been permanently amended under **clause 11.5(c)**, the Access Holder agrees that the applicable **Train Path Schedule** will be amended to reflect the new Service Assumptions and the TOP Charges, Innovation Charges and Efficiency Incentive Charges (as applicable) payable by the Access Holder under **clause 5**~~.2~~ will be updated to reflect the new Service Assumptions.*	Consequential amendments as a result of the incorporation of the Innovation Charge and Efficiency Incentive Charge.
		(e) ARTC reasonably considers that there is a material difference in the TOP Charges, Innovation Charges and Efficiency Incentive Charges (as applicable) paid by the Access Holder for those Path Usages and the TOP Charges, Innovation Charges and Efficiency Incentive Charges that would otherwise be payable for those Path Usages had the Service Assumptions reflected the characteristics of the Non-Compliant Service or the Services used are Non-Compliant Services due to the train type used to operate the Services,	Consequential amendments as a result of the incorporation of the Innovation Charge and Efficiency Incentive Charge.
		(g) adjust the TOP Charges, Innovation Charges and Efficiency Incentive Charges (as applicable) to be paid by the Access Holder having regard to: *(A) the characteristics of the Non-Compliant Service when compared with the Service Assumptions set out in the applicable Train Path Schedule; and* *(B) the factors which impact on ARTC's business and Coal Chain Capacity which ARTC is able to have regard to in formulating its Charges*	Consequential amendments as a result of the incorporation of the Innovation Charge and Efficiency Incentive Charge.

No	Clause	Proposed amendment	Reason for amendment
		*(h) To avoid doubt, the Access Holder's obligation to pay TOP Charges, Innovation Charges and Efficiency Incentive Charges (as applicable) will be updated to reflect the revisions to the Service Assumptions made under **clause 11.5(g)(i)**.*	Consequential amendments as a result of the incorporation of the Innovation Charge and Efficiency Incentive Charge.
		(i)(i) the Access Holder's obligation to pay TOP Charges, Innovation Charges and Efficiency Incentive Charges (as applicable) in respect of that deleted Path Usage is unaffected.	Consequential amendments as a result of the incorporation of the Innovation Charge and Efficiency Incentive Charge.
16	**11.6**	**Cancellation of services** *(g) To avoid doubt, the Access Holder's obligation to pay TOP Charges, Innovation Charges and Efficiency Incentive Charges (as applicable) will be unaffected by the removal of Base Path Usages under this **clause 11.6**.*	Amendment to make clear that if a Base Path Usage is removed under clause 11.6 as a result of an Access Holder's cancellation then the obligation to pay the Innovation Charge and Efficiency Incentive Charge will not be reduced.
17	**12.3**	**ARTC termination rights** *(b) If ARTC terminates a Train Path Schedule or this agreement under this clause 12.3, then neither party has any Liability for the failure to provide any Path Usages on the relevant Train Paths or the applicable TOP Charges, Innovation Charges and Efficiency Incentive Charges (as applicable) following the termination.*	Consequential amendments as a result of the incorporation of the Innovation Charge and Efficiency Incentive Charge.
18	**12.5**	**Suspension for lack of ARTC Accreditation** *If ARTC's Accreditation is suspended or cancelled for a continuous period of longer than one month, the Access Holder has the right to suspend its payment of the TOP*	Consequential amendments as a result of the incorporation of the Innovation Charge and Efficiency Incentive Charge.

No	Clause	Proposed amendment	Reason for amendment
		Charges, Innovation Charges and Efficiency Incentive Charges (as applicable) for the period commencing from the date of suspension or cancellation of Accreditation until ARTC's Accreditation is restored.	
19	**12.7**	**Effect of termination or suspension** *(b) If ARTC elects to suspend a* ***Train Path Schedule*** *or this agreement, the Access Holder is still obliged to pay the TOP Charges, Innovation Charges and Efficiency Incentive Charges (as applicable) during the period of suspension. If the Access Holder elects to suspend a* ***Train Path Schedule*** *or this agreement, then the Access Holder has no obligation to pay the TOP Charges Innovation Charges and Efficiency Incentive Charges (as applicable) for the period of suspension.*	Consequential amendments as a result of the incorporation of the Innovation Charge and Efficiency Incentive Charge.
20	**13.3**	**Mutual exclusion of consequential loss** *Other than for liability for TOP Charges under* ***clause~~s~~ 12.8*** *and TOP Charges, Innovation Charges and Efficiency Incentive Charges (as applicable) under 16.3 or the indemnities given under* ***clauses 4.6*** *and* ***13.5****, neither party will be liable to the other party for any Consequential Loss relating to this agreement however arising (including under this agreement, in tort including negligence, or for breach of any statutory duty).*	Consequential amendments as a result of the incorporation of the Innovation Charge and Efficiency Incentive Charge.
21	**16.3**	**Permanent assignment and trades** *(a)(i) the incoming party wishes to vary the Train Paths following the assignment or novation and those variations involve lower take or pay charges than the TOP Charges, Innovation Charges and Efficiency Incentive Charges (as applicable) under this agreement, then:* *(A) ARTC will calculate the difference between the present value of TOP*	Consequential amendments as a result of the incorporation of the Innovation Charge and Efficiency Incentive Charge.

No	Clause	Proposed amendment	Reason for amendment
		Charges, Innovation Charges and Efficiency Incentive Charges (as applicable) it would have received from the Access Holder over the remaining term of the relevant Train Path Schedule but for the assignment or novation and the present value of the expected take or pay charges it will receive following assignment and novation where the TOP Charges, Innovation Charges and Efficiency Incentive Charges (as applicable) will be assumed over the relevant period to be equal to those applying, and the discount rate to be used will be the rate of return approved under the Access Undertaking, at the time of the assignment or novation.	
22	**16.4**	**Temporary trade of Path Usages** *(a)(iii) the destination of the traded Path Usage when utilised by the New Access Holder will be the same destination had the traded Path Usage been utilised by the Former Access Holder~~. To avoid doubt, a discharge point of Kooragang Coal Terminal, Carrington Coal Terminal, the Newcastle Coal Infrastructure Group Terminal at Newcastle or any other export coal terminal at Newcastle will be considered the same destination~~;*	To facilitate more efficient planning and management of coal chain capacity, ARTC will going forward require Access Holders to specify the port and terminal points at the Port of Newcastle (see row 32 above in section 1).
		(b)(i) the Former Access Holder remains liable to ARTC for the TOP Charges, Innovation Charges and Efficiency Incentive Charges (as applicable) for the traded Path Usage	Consequential amendments as a result of the incorporation of the Innovation Charge and Efficiency Incentive Charge.
23	**16.8**	**Reduction in time period for ARTC approval of trade** Deletion of clause 16.8 (Reduction in time period for ARTC approval of trades).	The review under clause 16.8 has been completed and, as such, the provision is no longer required. For completeness, consequential deletion of references to clause 16.8 in clause

No	Clause	Proposed amendment	Reason for amendment
			16.4(d)(iii).
24	**17.1**	**Suspension of obligations** *The obligations of a party (other than an obligation to pay money, including a TOP Charge, Innovation Charge and Efficiency Charge (as applicable)) are suspended during the time and to the extent that a party is prevented from or delayed in complying with its obligations for reasons of Force Majeure.*	Amendments to make clear that other non-usage based charges are not suspended during a Force Majeure Event.
25	**20.3**	**Notice** Amendments to ARTC contact details.	This change has been to update ARTC's contacted details to the Hunter Valley business unit.
26	**21.1**	**General** Subject to any variation of this agreement made in accordance with **clause 19,** t~~T~~he variation or waiver of a provision of this agreement, or a party's consent to a departure from a provision by another party, will be ineffective unless in writing, signed by the parties.	Typographical correction.
27	**Schedule 2 – System True-Up Test** **Clause 2.4**	**Entitlement to TOP rebate accrual in a Period** *AH TOP_{PU}($) is:* *(a) for a Contract Year in which a new Access Undertaking is accepted by the ACCC and takes effect during that Contract Year:* *(i) if that Period occurred during the expired Access Undertaking, the Access Holder's average Train Path TOP Charge calculated using*	To ensure a smooth transition from the 2011 HVAU to the 2016 HVAU, amendment to the definition of AH TOP_{PU}($) is made to address the first year of the 2016 HVAU being a part-year.

No	Clause	Proposed amendment	Reason for amendment
		the same method for calculating TOP PU as described in clause 5.4(d)(ii) of this agreement applicable that Period under the expired Access Undertaking; and *(ii) if that Period occurred during the new Access Undertaking, the Access Holder's average Train Path TOP Charge calculated using the same method for calculating TOP PU as described in clause 5.4(d)(ii) of this agreement applicable to that Period under the new Access Undertaking; or* *(b) for any other Contract Year, the Access Holder's average Train Path TOP Charge calculated using the same method for calculating TOP PU as described in clause 5.4(c) of this agreement;*	
28	**Schedule 2 – System True-Up Test** **Clause 2.8**	**Amounts owing and payable from annual TUT audit** *If, as a result of the:* *(a) transitional audit of ARTC's compliance with is obligations under this Schedule in relation to the performance of the system true up test conducted in accordance with section 15.2 of the 2011 Access 2016 HVAU accepted by the ACCC on 23 June 2011; or* *(b) annual audit of ARTC's compliance with its obligations under this Schedule in relation to the performance of the system true up test conducted in accordance with section 4.10(f) of the current Access 2016 HVAU,* *the ACCC determines that the TOP Rebates for the Access Holder have not been calculated correctly, then ARTC will pay any underpayment and is entitled to recover any overpayment as determined by the ACCC and in accordance with the procedures set out in section 4.10(f) of the Access 2016 HVAU.*	Amendment is made to ensure a smooth transition from the 2011 HVAU to the 2016 HVAU and to address the first year of the 2016 HVAU being a part-year.
29	**Schedule 3**	**Charges**	ARTC proposes introduce path based

No	Clause	Proposed amendment	Reason for amendment
	Clause 1 and 3	Replacement of gtkm based pricing with a path based pricing mechanism for TOP Charges including changes to the formula for calculating Train Path TOP Charges have been made.	pricing and move away from pricing based on the characteristics of an indicative services. The current TOP pricing structure has been amended from gtkm to a path based price which is made up of a fixed TOP component on a $/km basis (see section 5.2 of the Explanatory Guide).
30	**Schedule 3 – Charges** **Clause 2**	**Non-TOP Charges** *NTP_{PZ} is the Non-TOP Price for each specified ~~Operator~~ Service for each Pricing Zone (in c/GTK):* *(A) (a) for a Train Path included in a Train Path Schedule:* *(i) for the first Contract Year of this agreement - the amount set out in column [insert] of the Train Path Schedule Spreadsheet attached as Annexure B, ~~11~~ of the applicable tranches of Path Usages ~~tables~~ referred to in clause 3 of the relevant Train Path Schedule for each Pricing Zone spanned by the Train Path; and* *(ii) for each following Contract Year - determined in accordance with clause 4 of Schedule 3; or*	Consistent with the current non-TOP pricing structure, the variable component has not been amended. Amendment from “Operator” to “Service” corrects a previous error as ARTC does not differentiate pricing on the basis of the identity of an Operator. References to the Train Path Schedule Spread Sheet attached as Annexure B is consistent with all existing access holder agreements. Due to the complexity of the information required for each tranche of Path Usages the tables in clause 3 of the indicative access holder agreement under the 2011 HVAU was never utilised. Rather ARTC elected, with the consent of Access Holders to attached a detailed spreadsheet. Similar changes have been to clause 5.4(c) and throughout the Train Path Schedule.

No	Clause	Proposed amendment	Reason for amendment
31	**Schedule 3 – Charges** **Clause 4**	**Innovation Charge** Insertion of a new regime for the payment of innovation charges as determined under the Access 2016 HVAU.	Amendments required to provide a mechanism for ARTC to recover Innovation Charges from Access Holders (see section 4.5 of the Explanatory Guide).
32	**Schedule 3 – Charges** **Clause 5**	**Efficiency Incentive Charge** Insertion of a new regime for the payment of innovation charges as determined under the Access 2016 HVAU.	Amendments required to provide a mechanism for ARTC to recover Efficiency Incentive Charges from Access Holders (see section 4.5 of the Explanatory Guide).
33	**Schedule 3 – Charges** **Clause 6**	**Determination of TOP Price and Non-TOP Price** Amendments to clause 6 (Determination of TOP Price and Non-TOP Price) to replace the Indicative Services regime with a Services Envelope regime.	These amendments are made as a result of the insertion of the new Services Envelope regime under the 2016 HVAU.
		Amendment to clause 6.1(d) as follows: *(d) Before the start of each Contract Year, the Access Holder must provide forecast Train Paths, Service Assumptions for each tranche of Path Usages and coal volumes and likely distribution of volumes across its Operators in a timely manner following a request by ARTC for the purpose of assisting ARTC to determine the Non-TOP Price in each Pricing Zone~~s~~.*	Consequential changes as a result of the amendment of the TOP Charge from a gtkm basis to a $/km
34	**Train Path Schedule** **Clause 1**	**Definitions** Amendments made to the definitions of "Effective Date", "Project Completion Conditions Precedent" and "Start Date" to provide for the insertion of correct references	The table setting out the details of each train path has been removed and attached as spreadsheet at Annexure B. This is consistent with all existing Access Holder

No	Clause	Proposed amendment	Reason for amendment
	and 3.2	to the Train Path Schedule Spreadsheet. Similar changes have been made in clauses 5.4(c), 1.2 of Schedule 3 and 2.1 of Schedule 3.	Agreement, as in practice the Train Path Schedule Spreadsheets are a commercial document and for contract management purposes are easier to manage as a spreadsheet, rather than embedded into the IAHA.
35	**Train Path Schedule** **Clause 3**	**Train Path** Amendments made to clause 3 as a result of the adoption of a new pricing metrics based on kms travelled.	Consequential changes due to adoption of new path based pricing regime.
36	**Train Path Schedule** **Clause 4.4**	**Project Completion Condition Precedent** The following amendment is made: (a) ARTC's obligation to first make available the Path Usages in clause 3.3 of this Schedule and the Access Holder's entitlement to have access to those Path Usages is conditional upon: (i) Completion of the projects specified for each tranche of Path Usages in the Train Path Schedule Spreadsheet ~~following projects~~ ("listed projects"): ~~[ ];~~ ~~[ ];~~ and the ~~[ ];~~	Amendments reflect that the Train Path Schedule Spreadsheet sets out the Project Completion Condition Precedent. This is consistent with all existing Access Holders Agreements.

3 Amendments to the OSA

No	Clause	Proposed amendment	Reason for amendment
1	**Title**	Deletion of the word "Indicative" in the title of the agreement.	Consequential deletion as a result of the replacement of the Interim Services regime with a Services Envelope regime.
2	**23.3**	**Notice** Amendments to ARTC contact details.	This change has been to update ARTC's contacted details to the Hunter Valley business unit.

APPENDIX F CALCULATION OF STANDARD ACCESS CHARGES FOR 2016H2

F.1. INTRODUCTION

For the purposes of the 2016 HVAU, ARTC has calculated Standard Access Charges for the period from July to December 2016. This appendix sets out a brief description of how the prices are calculated and also key cost elements that are included in the Economic Cost of the Network for the periods July to December 2016 and calendar years 2017 and 2018 (the “forward period”).

Given the uncertainties discussed below, once the 2016 HVAU has been approved, it is ARTC’s intention to recalculate the 2017 and 2018 data based on the most up to date information available at the time in order to provide prices for the 2017 and 2018 calendar years.

F.2. METHOD FOR CALCULATING PRICES

Standard Access Charges under the 2016 HVAU have been calculated largely in the same manner as occurred under the 2011 HVAU. ARTC uses a combinatorial pricing model that calculates the costs of operating the Segments of the Network. These costs are then applied to various combinations of traffics to allow ARTC to determine what revenues to raise to cover the economic cost of the relevant combination of Segments, taking into account the ability of the various combinations of traffics to pay for the portions of Network used.

Actual prices are then set for each Pricing Zone to recover the Ceiling Limit revenue from the Constrained Group of Mines. All prices will be at the Standard Access Price for each Pricing Zone, except where the differentiation factors in 2016 HVAU section 4.16 apply. For those hauls that are not amongst the Constrained Group of Mines, prices are set taking into account the various requirements of 2016 HVAU sections 4.14 and 4.16.

F.3. OPENING ASSET VALUES

The Economic Cost of the relevant parts of the Network required by groups of traffics is a significant factor in price setting, though in some cases, other factors also apply. Key components of the determination of the Economic Cost of the Constrained Network and Network are the RAB and RAB Floor Limit. These asset values (along with the rate of return and remaining mine life) drive the depreciation and return cost elements.

For the 2016 HVAU, the opening values for the RAB and RAB Floor Limit will be the closing values as at 30 June 2016 as calculated under the 2011 HVAU. For the purposes of this submission, ARTC has calculated these values on the basis of estimates using the methods as approved by the ACCC in its assessment of ARTC’s compliance with the 2011 HVAU for the 2012 calendar year. It is noted that the ACCC has not, at the time of writing, completed its assessment with respect to the 2013 and 2014 calendar years and that ARTC has not as yet submitted documentation with respect to 2015 or the first half of 2016, those periods not yet being completed. It is also noted that the ACCC, in its October 2015 draft decision, has indicated a view that adjustments might be required to the outcomes for 2013 and subsequent years. The ACCC review is on-going and ARTC is not in a position to calculate the opening values using any other method than that which has been its practice since the commencement of the 2011 HVAU.

Notwithstanding the uncertainty arising through the above circumstances, ARTC has used forecast of costs and revenues to calculate closing values for the RAB and RAB Floor Limit as at 30 June 2016, giving the opening values under the 2016 HVAU as set out in Table F 1.

Table F 1: Opening RAB & RAB Floor Limit Values As At 1 July 2016[#1]

	RAB $m	RAB Floor Limit $m
Pricing Zone 3	715	707
Constrained Network	n/a	1,451
Network	n/a	[#2] 2,162

#1 Values are forecast only and do not take into account any adjustments that may arise through the outcomes from a change of methodology resulting from the ACCC's assessment of ARTC's 2013 compliance with the 2011 HVAU.

#2 The sum of PZ3 and the Constrained Network is less than the total Network value as Pricing Zone 1 includes Segments that are not part of the Constrained Network.

F.4. CAPITAL EXPENDITURE

ARTC's forecast capital expenditure over the forward period 2016 July to December, 2017 and 2018 is set out in Table F 2. The program is presented in three components, major projects that are generally projects aimed at increasing the capacity of the Network, interest during construction which is accrued on major projects and corridor capital which is capital spent on sustaining the Network. The value of the asset base is reduced to account for assets disposed of during the period.

Table F 2: Forecast Capital Expenditure

	2016H2 $m	2017 $m	2018 $m
Major Projects	36.0	36.3	172.6
Interest During Construction	2.8	2.3	17.4
Corridor Capital	56.2	70.0	56.7
Assets Disposals	(6.0)	(5.0)	(5.5)
Net Capital Expenditure	**89.0**	**103.6**	**241.2**

Table F 3 sets out the major projects to be commissioned during the forward period.

Table F 3: Major Capital Projects In The Forward Period

	2016H2 $m	**2017 $m**	**2018 $m**
Kooragang Arrival Roads Stage 2	36.0	0.6	-
Whittingham Down Relief Hub	-	-	38.3
ARTC Network Control Optimisation	-	-	29.4
Wingen Passing Loop - 332 km	-	17.7	0.1
South Gunnedah Loop	-	-	21.6
Togar North Crossing Loop	-	18.0	1.0
Ardglen to Kankool Duplication	-	-	82.2
Totals	**36.0**	**36.3**	**172.6**

Economic return values that are included in the Ceiling Limit are calculated on the basis of the average value of the RAB Floor Limit multiplied by the real rate of return. Table F 4 sets out the relevant values.

Table F 4: Opening, Closing & Average RAB Floor Limit Values In The Forward Period

	2016H2 $m	**2017 $m**	**2018 $m**
Opening RAB Floor Limit	2,162	2,210	2,224
Closing RAB Floor Limit	2,210	2,224	2,359
Average Asset Base	**2,186**	**2,217**	**2,291**

F.5. FORECAST COSTS

For the forward period, 2016 July to December, 2017 and 2018, the forecast cost used as the basis for pricing are set out in summary in Table F 5.

Table F 5: Forecast Network Costs Used To Determine Standard Access Prices

	2016H2	2017	2018
Maintenance Costs	53.1	109.3	106.0
Other Operating Costs	33.5	62.3	63.7
Total Operating Costs	**86.6**	**171.6**	**169.7**
Indirect Depreciation & Return	1.1	2.6	2.6
Depreciation	[#1] 69.8	149.7	166.0
Return	[#1] 73.7	149.4	154.4
Total Economic Cost	**231.1**	**473.3**	**492.6**

#1 Depreciation rates and rate of return for the 6 month period of 2016H2 have been adjusted to reflect the shortened period.

ATTACHMENT 1 2016 HVAU (CLEAN VERSION)

ATTACHMENT 2 MARK-UP 2016 HVAU COMPARISON TO 2011 HVAU

ATTACHMENT 3 2016 IAHA (CLEAN VERSION)

ATTACHMENT 4 MARK-UP 2016 IAHA COMPARISON TO 2011 IAHA

ATTACHMENT 5 2016 IOSA (CLEAN VERSION)

ATTACHMENT 6 DETERMINATION OF RATE OF RETURN

This attachment is a report prepared by Synergies Economic Consulting for ARTC discussing matters relating to the determination of a rate of return to apply to the 2016 HVAU.

ATTACHMENT 7 UPDATED WACC INPUTS

This attachment is a update prepared by Synergies Economic Consulting for ARTC detailing the rationale for the modified inputs used to calculate the WACC and hence rate of return included in the 2016 HVAU.

ATTACHMENT 8 2016 HVAU COSTING MANUAL

ATTACHMENT 9 REVIEW OF COST ALLOCATION METHODS

This attachment is a report prepared by Lacertus Verum for ARTC internal management consideration of the most appropriate means for allocating corporate costs and communicating them to stakeholders.