

Hunter Valley Coal Network Access Undertaking
2017 Compliance Assessment

Submission To

Australian Competition & Consumer Commission

23 April 2020

PUBLIC VERSION

ARTC



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1. INTRODUCTION & BACKGROUND

This submission to the Australian Competition and Consumer Commission (**ACCC**) relates to compliance by Australian Rail Track Corporation (**ARTC**) with a voluntary access undertaking, the Hunter Valley Coal Network Access Undertaking as varied on 29 June 2017 (**HVAU**), for the period 1 January 2017 to 31 December 2017.

The purpose of this submission is to demonstrate ARTC's compliance with the requirements of HVAU section 4.10 for the period 1 January 2017 to 31 December 2017 (**2017 compliance period**) and to specifically address the information requirements detailed in HVAU Schedule G clause 2.

ARTC has submitted its 2017 Compliance Assessment within 4 months of the ACCC's Final Determination for 2016 as required under HVAU section 4.10(a).

A copy of the HVAU and associated documents can be downloaded from ACCC's website at: <https://www.accc.gov.au/regulated-infrastructure/rail/artc-hunter-valley-access-undertaking>.

Terms used in this submission are as per the HVAU unless otherwise indicated by the context.

1.1 Hunter Valley Coal Network Access Undertaking Requirements

The HVAU requires that ARTC submit to the ACCC for each calendar year¹:

- documentation detailing the roll forward of the regulatory asset base (**RAB**) (with respect to Pricing Zone 3) and the RAB Floor Limit (all Pricing Zones), and comparisons between RAB and RAB Floor Limit with respect to Pricing Zone 3;
- documentation detailing calculations relevant to reconciliation of Access revenue with the applicable Ceiling Limit and any allocation of the total unders and overs amount including in Pricing Zone 3, where RAB is at or below RAB Floor Limit; and
- a copy of the Final Audit Report relating to the True Up Test.

The documentation requirements are set out in detail in HVAU Schedule G. ARTC has also continued to provide the additional documentation previously requested by the ACCC for the 2016 Compliance Assessment submission as well as additional information relevant to this 2017 submission in Attachment 5.

1.2 Form Of This Submission

In order to ensure compliance with the information requirements set out at HVAU Schedule G, ARTC has sought to prepare this submission broadly in line with the prescribed order at Schedule G clause 2. This submission for the 2017 compliance period generally follows the same format as the submission for the 2016 compliance period.

¹ *Hunter Valley Coal Network Access Undertaking as varied on 29 June 2017 section 4.10*

Table 1 sets out the sections in this submission together with the relevant information requirement under Schedule G.

ARTC has continued to apply the methodology for incremental costs established in the ACCC 2013 Final Determination² and the WIK Report³ which informed that decision, and as approved by the ACCC in its Final Determinations for subsequent Compliance Assessments.

² ACCC, Final Determination Australian Rail Track Corporation's compliance with the Hunter Valley Coal Network Access Undertaking financial model for the 2013 calendar year, 6 June 2016
<https://www.accc.gov.au/regulated-infrastructure/rail/annual-compliance-assessment-2013/final-determination>

³ WIK-Consult, Final Report Study for the Australian Competition and Consumer Commission Assessment of the Incremental Costs of Pricing Zone 3 Access Holders' Use of Pricing Zone 1 and 2 of the Australian Rail Track Corporation's Hunter Valley Rail Network, 30 September 2015
<https://www.accc.gov.au/system/files/WIK-Consult%20T%C3%9CV%20-%20Consultant%20report%20for%202013%20Annual%20Compliance%20%28PUBLIC%29.pdf>

Table 1: Submission Layout

Section	Title	Relevant requirement at HVAU Schedule G clause 2
1	Introduction & Background	
2	Operating Costs	
3	RAB Roll Forward <ul style="list-style-type: none"> ▪ Component calculation ▪ Component values ▪ Outcome and closing values ▪ Spreadsheet model (confidential) 	2(b)(i) 2(b)(ii) 2(b)(iii) 2(b)(vi)
4	RAB Floor Limit Roll Forward <ul style="list-style-type: none"> ▪ Component calculation ▪ Component values ▪ Outcome and closing values ▪ Spreadsheet model (confidential) ▪ Pricing Zone 3 RAB/RAB Floor Limit comparison 	2(b)(i) 2(b)(ii) 2(b)(iii) 2(b)(vi) HVAU section 4.10(a)
5	Capital Expenditure <ul style="list-style-type: none"> ▪ RCG endorsement 	2(b)(iv)
6	Disposals <ul style="list-style-type: none"> ▪ RCG endorsement ▪ References ▪ Determining current value 	2(b)(v) 2(b)(v) 2(b)(v)
7	Contact Details (stakeholders) <ul style="list-style-type: none"> ▪ Industry stakeholders 	2(b)(vii)
8	Ceiling Test <ul style="list-style-type: none"> ▪ Access revenue ▪ Full Economic Cost by item ▪ Total unders & overs amount ▪ 2016 comparison ▪ Assumptions & methodology ▪ Spreadsheet model (confidential) 	2(c)(i)(A) 2(c)(i)(B) 2(c)(i)(C) 2(c)(i)(D) 2(c)(ii) 2(c)(iii)
9	Unders & Overs Allocation <ul style="list-style-type: none"> ▪ Assumptions & methodology ▪ Unders & overs allocation (confidential) ▪ Spreadsheet model (confidential) ▪ Access Holder endorsement 	2(c)(ii) 2(c)(i)(C) 2(c)(iii) 2(c)(iv)
10	Pricing Zone 3 Interim Indicative Access Charge <ul style="list-style-type: none"> ▪ 2016 & 2017 Initial Indicative Access Charge 	2(d)
11	System wide true up test audit <ul style="list-style-type: none"> ▪ Final Audit Report 	2(e)
12	Contact Details (ARTC) <ul style="list-style-type: none"> ▪ ARTC authorised person 	2(f)

Note that throughout this submission and supporting attachments, some tables may not add to the totals presented due to the rounding of underlying data.

Table 2 sets out the additional supporting documentation provided to the ACCC with the 2017 submission:

Table 2: Additional Supporting Documentation

Split between MPM and RCRM; forecast MPM and RCRM; actual and forecast expenditure for the top 6 maintenance activities	Attachment 5
10 year Asset Management Plan	Attachment 5
Annual Works Program and budget	Attachment 5
Asset strategies for major maintenance activities undertaken	Attachment 5
Approved annual possession program	Attachment 5
Actual and forecast GTK and Train Km for the Hunter Valley (for Pricing Zones and non-coal) and Interstate networks	Attachment 5
Assurance that ARTC's procurement policies satisfied or procurements efficient	Section 2 and Attachment 5
Changes to ARTC's capitalisation policy	Attachment 2
Asset disposals—underlying calculations which determine the written down value	Section 6 and Attachment 5
Mapping of the original and revised Schedule I overhead allocators to operating cost activities	Section 2.2.2 and Attachment 5
Actual values for Schedule I allocators	Attachment 5

1.3 Context for 2017

ARTC has previously provided the ACCC with comprehensive information on the Network, Customer and Supply Chain context for the Hunter Valley and ARTC's lease and rail safety requirements. This contextual information remains relevant for 2017.

ARTC's approach to maintaining and operating the Hunter Valley Network remains shaped by the need to uphold the safety and reliability of the Network for all rail traffic and meet Customer capacity and availability needs. The major maintenance and sustaining capital works program continued to be delivered based on a six-network closedown strategy and aligned to achieve Coal Chain outcomes. Work delivered in this closedown strategy continues to be predominantly outsourced.

Aggregate coal tonnage volume transported over the network to the port and domestic power generators was consistent between 2016 and 2017, with the overall coal Gross Tonne Kilometres (GTK) for the Network increasing by 0.3%. The trend of a higher proportion of the volume profile originating from the extremities of the Network has sustained and the cumulative effect continues to influence the maintenance activities undertaken at a zonal level in combination with the individual operational, historical and geotechnical characteristics that are unique to each Pricing Zone.

The RCG endorsed progression of ARTC's Network Control Optimisation (ANCO) project into detailed design and subsequent implementation following completion of the feasibility project phase. ANCO will introduce a step change in operational efficiency on the Network, transform the dynamic capability in the Hunter Valley and allow for a higher utilisation and capacity from the installed track infrastructure in the single line areas of the Network after go-live commences in 2019. A project of this nature introduces new operating costs and there will be a shift in resourcing needs across different aspects of the business over time.

Thermal coal prices fluctuated through 2017 and ranged from around US\$70 per tonne to a year-end high of just over US\$100 per tonne. As coal prices recovered from the lows seen in 2016, ARTC continued its focus on costs, value for money, safety and reliability. High levels of growth were still being forecast from Pricing Zones 2 and 3 for both expansions to existing mining operations and greenfield developments. A program of work was initiated in late 2017 to look at opportunities for additional throughput and maintenance time in the near term, as well as capacity growth options additional to the in progress ANCO project in the medium and longer term. This work continued well into 2018 and beyond.

Work was already underway for ARTC to build its condition monitoring capability with the establishment of reliability and asset management improvement focused teams. Of note, in response to two bridge failures on the Ulan line that disrupted Network operations, ARTC intensified this effort from a structures perspective to rectify the immediate issues, mitigate risk and perform a detailed review of the forward structures replacement program.

ARTC has maintained the level of transparency provided to the RCG on ARTC's cost performance for both high level maintenance costs and reconciliations of corridor capital expenditure. Reporting and engagement also continued with the RCG on ARTC's safety, operational and reliability performance and initiatives.

During the first half of 2017 and as part of negotiations for the renewal of the 2017 HVAU, ARTC sought to develop an operating cost efficiency mechanism as both the ACCC and Customers indicated it was a key requirement for the next undertaking. Significant time, effort and resources were invested by ARTC and a working group of Customers to design the mechanism and establish proposed cost allowances. Whilst the operating cost efficiency mechanism was withdrawn at the request of Customers, the process itself provided both Customers and the ACCC with substantial detail on ARTC's costs and cost drivers in the Hunter Valley. The work conducted in relation to overhead costs informed the revised overhead cost allocators that were introduced into Schedule I as part of the HVAU variation to extend the term of the HVAU which was approved by the ACCC on 29 June 2017 (**2017 HVAU Variation**). The revised allocators were recommended by an independent consultant as being more reflective of the cost drivers for the applicable overhead activities and therefore the true costs of the Network. Further explanation on the basis and application of the revised cost allocators is set out in section 2.2 of this submission.

In its Final Determination for the 2016 Compliance Assessment submission,⁴ the ACCC concluded that ARTC's operating costs were fully incurred on an efficient basis and that ARTC demonstrated the prudence of its capital expenditure. As referenced in prior year submissions, ARTC's costs for 2017 should be considered as an overall suite to maintain and operate the Hunter Valley Coal Network.

ARTC provided the opportunity for Customers, Rail Operators and the ACCC to attend a briefing on the 2017 Compliance Assessment submission on 21 April 2020 ahead of lodging it with the ACCC. This meeting was well attended by these stakeholders.

ARTC welcomes further engagement from the ACCC and industry through this process.

2. OPERATING COSTS

Operating costs are either Segment Specific Costs or an allocation of Non-Segment Specific Costs.

The cost allocation principles under the HVAU for the 2017 compliance period require that where possible, Non-Segment Specific Costs should be directly attributed to a Segment, otherwise there is an allocation in line with the cost allocation methodology as prescribed under the HVAU.

2.1 Maintenance Costs and Incremental Methodology

The predominance of major periodic maintenance (**MPM**) and routine corrective and reactive maintenance (**RCRM**) costs are directly identifiable with individual Segments and recognised as Segment Specific Costs against the relevant line Segment where the work was undertaken.

Both RCRM and MPM costs are reported for each Segment and split between fixed and incremental based upon an engineering assessment of the extent to which the activity varies in

⁴ ACCC, Final Determination Australian Rail Track Corporation's compliance with the Hunter Valley Coal Network Access Undertaking financial model for the 2016 calendar year published on 23 December 2019
<https://www.accc.gov.au/system/files/HVAU%20-%202016%20Annual%20Compliance%20-%20Final%20Determination.PDF>

proportion with volume. For this 2017 compliance submission, ARTC has continued to apply the incremental cost methodology set out in the ACCC 2013 Final Determination and the WIK Report which informed that decision and as approved by the ACCC in ARTC's subsequent Compliance Assessment submissions. Where the activity had not been assessed by WIK, ARTC commissioned an independent assessment from engineering consulting firm Bull Head Services. The Bull Head Services report was provided as Attachment 4 to ARTC's 2014 compliance assessment submission and is not reproduced here.⁵

Total incremental maintenance costs for each Segment are divided by total GTKs (including non-coal and unconstrained GTKs and including a weighting to account for axle load variations) or Train Kms to derive an incremental unit cost per GTK or Train Km (as determined by the WIK or Bull Head Services reports, as applicable) for each Segment.

2.2 Allocation Approach

The HVAU requires that where possible, Non-Segment Specific Costs are to be directly attributed to a Segment, otherwise there is an allocation of the costs to Segments in line with the cost allocation methodology as prescribed under the HVAU.

For 2017, the allocation of Non-Segment Specific Costs that cannot be directly attributed to a Segment is based on the drafting of the relevant HVAU as follows:

- For the period from 1 January to 30 June 2017 (**2017 H1**): the allocation methodology is as per the drafting in the HVAU as varied 23 November 2016 and based on Gross Tonne Kilometres (**GTK**) where the Non-Segment Specific Cost is associated with track maintenance or train kilometres (**Train Km**) where the Non-Segment Specific Cost is not associated with track maintenance (together the **Original Allocators**).
- For the period from 1 July to 31 December 2017 (**2017 H2**): the allocation methodology is as per the drafting in the 2017 HVAU Variation and the approved Schedule I.

The Original Allocators for Non-Segment Specific Costs were based on a broad-brush allocation mechanism using non-causal allocators on the basis of GTKM and Train KM depending on the nature of the cost and its relationship to maintenance. This approach applied for costs that were ARTC or Hunter Valley corridor wide and within the Network.

As part of the development of the proposed renewal of the 2017 HVAU, ARTC undertook work to develop an operating cost efficiency mechanism. This work entailed engaging an independent consultant to consider the basis of establishing efficient overhead costs for the Hunter Valley Network which included a review of the appropriateness of the cost allocation methodology. An amended cost allocation methodology was subsequently included in Schedule I and approved by the ACCC as part of the 2017 HVAU Variation.

The revised cost allocation methodology in Schedule I did not alter the preceding step of directly attributing costs to Segments where possible. This means, for example, that the approach of attributing Network Control costs by control boards (including the sequence of allocation) or attributing Provisioning Centre costs according to their geographic territory as approved by the ACCC in the 2016 Compliance Assessment is unchanged for 2017.

⁵ See ARTC, 2014 Compliance Assessment Submission Attachment 4, <https://www.accc.gov.au/regulated-infrastructure/rail/annual-compliance-assessment-2014/revised-compliance-submission>

For corporate overhead activities, where costs can be directly identifiable with either the Hunter Valley, Interstate or Inland Rail, those costs continue to be directly allocated to that division.

2.2.1 Revised Overhead Cost Allocation Hierarchy

Schedule I of the 2017 HVAU Variation was introduced to set out a more detailed and cost reflective cost allocation hierarchy such that:

1. Where possible, costs directly identifiable with the Hunter Valley corridor are allocated to the Hunter Valley corridor (Schedule I Step 1a). Otherwise, costs are allocated to the Hunter Valley corridor based on the allocation methodology prescribed in Schedule I Step 1b. Under Schedule I Step 1a, corporate activities that have dedicated resources or costs related to the Hunter Valley are allocated to the Hunter Valley corridor. Most Hunter Valley Business Unit Management costs will also apply to the Hunter Valley corridor. Schedule 1 Step 1b would apply to costs that are ARTC corporate wide in nature.
2. The second step in the hierarchy is to allocate the costs for the Hunter Valley corridor into the portions that relates to the Network (coal) and the non-coal parts of the Hunter Valley corridor. The costs allocated to the Hunter Valley corridor in Step 1 are allocated to the Network on the basis of GTK where the cost is associated with indirect maintenance and indirect operational costs (Step 2a) or Direct Stay-in-Business costs (**DSIB**) where the cost is not associated with indirect maintenance and indirect operational costs (Step 2b).
3. The costs allocated to the Network in Step 2 are then allocated to Segments on the basis of GTK where the cost is associated with maintenance or Train Km where the cost is not associated with maintenance.

While the allocation levels at Steps 1 and 2 of Schedule I are different to the Original Allocators, it is important to note that the allocation methodology at Step 3 was unchanged. The treatment of unconstrained Segments in Pricing Zone 1 is also unchanged.

2.2.2 Overhead Cost Allocators under Schedule I

This section provides an overview of the application of the revised cost allocators under Schedule I. ARTC has provided the ACCC with a detailed mapping of the operating cost activities to the relevant allocator for the Original Allocators and under Schedule I on a confidential basis at Attachment 5 to assist the ACCC in its review of the application of the approved allocator under the relevant HVAU.

Allocation to the Hunter Valley corridor (Step 1)

Table 3 below provides a description for each of the cost allocators used in Schedule I and the application to the corporate activities specified in Schedule I Step 1b.

Table 3: Allocation Method – Schedule I

Cost allocator	Description	Used for	Rationale
Direct Stay-in-Business Costs (DSIB)	Costs identifiable with the function of a corridor or part of a rail network being the operating and maintenance expenses plus corridor capital, non-infrastructure capital and incidents, but excluding indirect management labour and capital for the purpose of increasing capacity and performance of a corridor or part of a rail network.	Executive, Finance, Management of enterprise services	DSIB is used as a proxy for the time and effort exerted by the functions in relation to a particular corridor.
Full Time Equivalent (FTE)	A unit to measure employed persons in a way that makes them comparable although they may work a different number of hours per week. Total FTEs includes FTEs in the Hunter Valley and Interstate Business Units but excludes FTEs in the support divisions.	People, IT infrastructure and systems, Workplace health & safety	The level of support and costs are related to the number of staff on an FTE basis.
Gross Tonne Kilometres (GTK)	A measure of track usage and is calculated as the gross tonnes multiplied by kilometres.	Engineering services, Corporate safety, Risk	The costs are related to the scope and nature of railway operations in ARTC, including the density of trains traversing each corridor, with GTK representative of this.
Train kilometres (Train Km)	A measure of track usage calculated as the number of trains multiplied by the total kilometres for the train paths.	Strategy and corporate development, Communications, Environment	Costs are influenced by train paths, being the level of use of the network, with Train KM representative of this.
Track kilometres	Kilometres of track, including multiple tracks and passing lanes but excluding passing loops.	Safety accreditation, Property	The safety accreditation levy is calculated based on track kilometres and the allocator is directly aligned with this. The property that is subject to allocation between the corridors is largely trackside and is represented by Track KM.
Premium based	Insurance costs are allocated based on the class of insurance and the basis for calculating the premium. For example, asset insurances premia are calculated based on declared asset values.	Insurance	The allocator is aligned with the basis for determining ARTC's insurance premium costs.

Allocation to the Network (Step 2)

The methodology to allocate Hunter Valley corridor costs to the Network (coal) and non-coal parts of the Hunter Valley corridor was revised such that:

- The allocation of costs that are associated with indirect maintenance and indirect operational costs are allocated to the Network on the basis of GTK under Schedule I Step 2a. Activities that fall within Step 2a include Asset Development, Logistics and operational corporate overheads such as Engineering Services; and
- The allocation of costs that are not associated with indirect maintenance and indirect maintenance costs was changed from a Train KM allocator to a DSIB allocator under Schedule I Step 2b.

The change from a Train KM allocator to DSIB allocator for the allocation of costs not associated with indirect maintenance and indirect operational costs, which are predominantly overhead or administrative costs, was made to better align the allocator with the underlying cost drivers. A large proportion of the underlying cost categories are driven by the level of activity, effort and time spent by the respective teams on the coal and non-coal parts of the corridor. The DSIB allocator is a proxy for this effort.

Allocation to Segments (Step 3)

The approach for allocating costs to Segment is unchanged from the Original Allocators.

2.2.3 Office Depreciation

Historically, depreciation for office equipment or non-infrastructure capital items has been included as part of Corporate Overheads with Train KM used as the allocator to apportion costs between corridors, to the Network and to a Segment level. With the introduction of Schedule I, ARTC has aligned the allocator for the office depreciation expense with the allocator for the functional activity where the equipment is used and presented the costs with that activity. For example, depreciation for office equipment used by the corporate finance team has been allocated between the corridors on the basis of DSIB.

2.3 Procurement Policies

There was no change made to ARTC's procurement procedure during 2017.

In the 2015 Final Determination, the ACCC referenced an audit conducted by the Australian National Audit Office in 2017.⁶ This audit was in relation to a pre-construction phase for Inland Rail and Grant Funding focused, and not specifically related to ARTC's general procurement processes. During 2017, ARTC undertook work to strengthen administration in this area following these findings and commenced the development of an ARTC wide procurement framework. A new procurement manual was implemented in early 2018 along with enhancements to ARTC's procurement and contracting processes. Transformation of ARTC's procurement processes

⁶ Refer page 37 of the ACCC 2015 Final Determination, https://www.accc.gov.au/system/files/ACCC%20final%20determination%20-%20HVAU%20Annual%20Compliance%202015_0.pdf

continues to be a key corporate focus area given the scale of activity undertaken across the business.

Consistent with the approach in the 2016 Compliance Assessment submission, ARTC has provided the ACCC with a confidential outline of the procurement processes applied to a cross section of contracts relating to 2017 costs to demonstrate the efficiency and value for money in ARTC's procurements.

2.4 Operating Cost Drivers

The Hunter Valley Network Operating Costs document (Attachment 1) provides an overview of the nature and key drivers for ARTC's operating costs for the Network for the 2017 compliance period. Maintenance costs are provided at a zonal level for the top ten maintenance activities.

ARTC has also provided the ACCC with an update to the confidential spreadsheet utilised with previous submissions that provides a split between MPM and RCRM, forecast MPM and RCRM and the actual and forecast expenditure for the top six maintenance activities.

2.5 Engagement with Access Holders

As outlined in section 1.3, Hunter Valley management have continued providing transparency to the RCG on safety, operational and reliability performance of the Network and asset management. Quarterly reporting of ARTC's maintenance cost performance and reconciliations of corridor capital expenditure has also continued. Given the cross section of RCG members (Access Holders, Rail Operators and HVCCC), the RCG remains an appropriate forum to engage with stakeholders on this information.

ARTC actively engaged with a working group of Customers as part of the development of the operating cost efficiency mechanism in the first half of 2017. Through this process ARTC shared considerable information on ARTC's costs and cost drivers with Customers on a confidential basis.

Given the in arrears nature of the compliance assessments, ARTC provides the following overview of the extent of engagement that was undertaken for 2017 activities which was in addition to the general discussion areas at the RCG:

- ARTC provided presentations to the RCG on the key drivers and budgets for FY18 corridor capital. At the time, maintenance costs were intended to be part of the consultation for the HVAU renewal incorporating the operating cost efficiency mechanism, however this did not proceed;
- ARTC engaged the RCG on the planned possession program for 2017;
- Cost reports were provided quarterly covering both the corridor capital reconciliation and high level maintenance costs; and
- ARTC engaged the RCG on its approaches to address key infrastructure issues relating to rail breaks, bridge defects and points failures and other condition monitoring initiatives.

These presentations and reports are attached to the submission on a confidential basis.

3. RAB ROLL FORWARD

3.1 2017 RAB Roll Forward Calculation

For segments forming part of Pricing Zone 3 in HVAU Schedule E, the RAB is rolled forward annually using the following methodology:

$$\text{RAB}_{t \text{ start}} = \text{RAB}_{t-1 \text{ end}} =$$

$$(1 + \text{RoR}) \times \text{RAB}_{t-1 \text{ start}} - \text{Out-turn Revenue}_{t-1} + \text{Out-turn Opex}_{t-1} + \text{Net Capex}_{t-1} \times (1 + 0.5 \times \text{RoR})$$

where:

RAB _{t start} is:	RAB at the start of the relevant calendar year (t) (which, for the first year following the Commencement Date, would be the Initial RAB).
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: <ul style="list-style-type: none"> (i) a Capital Contribution received from an Applicant or an Access Holder; or (ii) Access revenue returned to a Contributor as a result of the operation of a user funding agreement between the Contributor and ARTC. <p>Any one off adjustment to the Access revenue for Pricing Zone 3 Access Holders in respect of the backdating period 1 July 2016 to 30 June 2017 will be offset against Out-turn Revenue in the relevant calendar year for the purposes of this clause.</p>
Out-turn Opex _{t-1} is:	the total operating expenditure incurred by ARTC in the preceding calendar year (t-1), on an Efficient basis, determined in accordance with HVAU sections 4.5(a)(i), (iv) and 4.5(b).
Net Capex _{t-1} is:	the net additions to the RAB in the preceding calendar year (t-1), 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 costs 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 costs), but will not include Capital Contributions.

The value for each term in the formula is discussed in section 3.2 below.

3.2 2016 RAB Roll Forward Component Values

3.2.1 RAB Start [RAB_{t-1 start}]

The RAB start for the 2017 compliance period is equal to the closing value of the 2016 values as determined through the roll forward of asset values approved by the ACCC, with an adjustment to reflect the portion of the one off adjustment that relates to the period 1 July 2016 to 31 December 2016 provided to Pricing Zone 3 Access Holders in respect of the backdating period under the 2017 HVAU Variation.

The 2016 portion of the one off adjustment was confirmed with Pricing Zone 3 Access Holders following the ACCC's Final Determination in respect of the 2016 Compliance Assessment and refunded at the same time the overs for 2016 was refunded to the Constrained Coal Customers.

As per the HVAU, the adjustment has been recorded as an offset against Out-turn Revenue in the relevant calendar year, being 2016, as follows:

Table 4: 2017 RAB Opening Value

	\$	File & Cell Reference
2016 closing Pricing Zone 3 RAB per 2016 Final Determination	784,792,988	[851 Ceiling Test Model.xlsx]RAB 2017!\$X\$36
Offset to 2016 Out-Turn Revenue for one off adjustment	7,437,885	[851 Ceiling Test Model.xlsx]RAB 2017!\$X\$37
2016 adjusted closing Pricing Zone 3 RAB	792,230,873	[851 Ceiling Test Model.xlsx]RAB 2017!\$X\$20

The opening value for the Pricing Zone 3 RAB for 2017 is therefore \$792,230,873.

3.2.2 Return

In accordance with HVAU section 4.4(a), a nominal pre-tax rate of return (**RoR**) is applied to the RAB. Under section 4.8 of the HVAU the RoR to be applied for the 2017 compliance period is 7.91%. New assets commissioned during the 2017 compliance period have a deemed commissioning date of 1 July 2017, as contemplated under the HVAU. The RoR has been applied at 50% of 7.91%.

The components of the return value are set out in Table 5.

Table 5: 2017 RAB Return

	Formula Element	Return \$	File & Cell Reference
Existing Assets	RoR x RAB _{t-1 start}	62,665,462	[851 Ceiling Test Model.xlsx]RAB 2017!\$X\$22
Net Capex	Net Capex _{t-1} x (1+0.5 x RoR)	978,741	[851 Ceiling Test Model.xlsx]RAB 2017!\$X\$26
Total Return		63,644,203	[851 Ceiling Test Model.xlsx]RAB 2017!\$M\$16

3.2.3 Revenue [Out-turn Revenue $t-1$]

For the 2017 compliance period the Out-turn Revenue in Pricing Zone 3 is \$161,806,145.⁷ This value is derived from the total revenue generated by coal traffics using Pricing Zone 3 less the amount required to offset incremental costs in Pricing Zone 1.

3.2.4 Operating Expenditure [Out-turn Opex $t-1$]

Total operating expenditure in Pricing Zone 3 for the 2017 compliance period was \$60,482,493. This expenditure is made up of the elements shown in Table 6.

Table 6: 2017 RAB Out-turn Opex $t-1$

	\$	File & Cell Reference
Variable Track Maintenance	26,228,894	'[851 Ceiling Test Model.xlsx]RAB 2017!\$N\$16
Fixed Track Maintenance	15,305,210	'[851 Ceiling Test Model.xlsx]RAB 2017!\$O\$16
Loss On Disposals	2,730,149	'[851 Ceiling Test Model.xlsx]RAB 2017!\$Q\$16
Network Control	3,723,542	'[851 Ceiling Test Model.xlsx]RAB 2017!\$R\$16
Business Unit Management	8,075,446	'[851 Ceiling Test Model.xlsx]RAB 2017!\$S\$16
Corporate Overheads	4,419,252	'[851 Ceiling Test Model.xlsx]RAB 2017!\$T\$16
Out-turn Opex $t-1$	60,482,493	'[851 Ceiling Test Model.xlsx]RAB 2017!\$U\$16

3.2.5 Net Capital Expenditure [Net Capex $t-1$]

Net Capital Expenditure in Pricing Zone 3 for 2017 amounted to \$24,746,939.

The components of Net Capex $t-1$ are set out in Table 7. There was Nil interest during construction in Pricing Zone 3 for the 2017 compliance period. Asset value reduction due to disposals for 2017 amounted to \$2,772,413.

Table 7: 2017 RAB Net Capex $t-1$

	\$	File & Cell Reference
Major Projects	(5,000)	'[851 Ceiling Test Model.xlsx]RAB 2017!\$F\$16
Interest During Construction	-	'[851 Ceiling Test Model.xlsx]RAB 2017!\$G\$16
Corridor Capital	27,524,352	'[851 Ceiling Test Model.xlsx]RAB 2017!\$H\$16
Disposals (Asset Value Reduction)	(2,772,413)	'[851 Ceiling Test Model.xlsx]RAB 2017!\$I\$16
Net Capex $t-1$	24,746,939	'[851 Ceiling Test Model.xlsx]RAB 2017!\$J\$16

Refer to section 5 and Appendix C for details of Major Project and Corridor Capital works commissioned during the 2017 compliance period, and section 0 and Appendix D for details of asset disposals.

⁷ '[851 Ceiling Test Model.xlsx]RAB 2017!\$X\$23

3.3 Outcome & Closing Values

Applying the roll forward formula as prescribed at HVAU section 4.4(a) and the relevant values for the 2017 compliance period, the closing value for the RAB in Pricing Zone 3 (unconstrained network) can be determined as shown in Table 8.

Table 8: 2017 RAB Roll Forward (Pricing Zone 3)

	Formula Element	Value (\$)	File & Cell Reference
Opening RAB	$RAB_{t-1 \text{ start}}$	784,792,988	'[851 Ceiling Test Model.xlsx]RAB 2017!\$X\$36
Add Back one off adjustment for 2016		7,437,885	'[851 Ceiling Test Model.xlsx]RAB 2017!\$X\$37
Adjusted Opening RAB		792,230,873	'[851 Ceiling Test Model.xlsx]RAB 2017!\$X\$20
Additional segments		-	'[851 Ceiling Test Model.xlsx]RAB 2017!\$X\$21
Return on RAB Open	$RoR \times RAB_{t-1 \text{ start}}$	62,665,462	'[851 Ceiling Test Model.xlsx]RAB 2017!\$X\$22
Less Revenue	$Out\text{-}turn \text{ Revenue}_{t-1}$	(161,806,145)	'[851 Ceiling Test Model.xlsx]RAB 2017!\$X\$23
Plus Opex	$Out\text{-}turn \text{ Opex}_{t-1}$	60,482,493	'[851 Ceiling Test Model.xlsx]RAB 2017!\$X\$24
Plus Net Capex	$Net \text{ Capex}_{t-1}$	24,746,939	'[851 Ceiling Test Model.xlsx]RAB 2017!\$X\$25
Plus Return On Capex	$Net \text{ Capex}_{t-1} \times (1 + 0.5 \times RoR)$	978,741	'[851 Ceiling Test Model.xlsx]RAB 2017!\$X\$26
Closing RAB	$RAB_{t-1 \text{ end}}$	779,298,363	'[851 Ceiling Test Model.xlsx]RAB 2017!\$X\$27

Appendix B presents the opening and closing RAB values for each segment in Pricing Zone 3.

An electronic copy of the spreadsheet underpinning the calculations for the roll forward of the RAB in Pricing Zone 3 is provided to the ACCC on a confidential basis as part of this submission.

It is ARTC's view that the roll forward of the RAB has been calculated in accordance with HVAU section 4.4(a).

The portion of the one off backdating adjustment that relates to the period 1 January 2017 to 30 June 2017 will be confirmed with Pricing Zone 3 Access Holders and refunded following the ACCC's Final Determination for the 2017 Compliance Assessment. Similar to the one off adjustment for 2016 set out in section 3.2.1 of this submission, this will be reflected as an adjustment to the closing 2017 RAB value rolled forward in the 2018 Compliance Assessment submission.

4. RAB FLOOR LIMIT ROLL FORWARD

4.1 Component Calculation

In accordance with HVAU section 4.4(b)(ii), the RAB Floor Limit for a segment or group of segments will be rolled forward annually according to the following methodology:

$$\text{RAB Floor Limit}_{\text{start}} = \text{RAB Floor Limit}_{\text{t-1 end}} = (1 + \text{CPI}_{\text{t-1}}) \times \text{RAB Floor Limit}_{\text{t-1 start}} + \text{Net Capex}_{\text{t-1}} - \text{Depreciation}_{\text{t-1}}$$

where:

RAB Floor Limit _{t start} :	the RAB Floor Limit at the start of the relevant calendar year (t) (which, for the first year following the Commencement Date, would be the Initial RAB).
RAB Floor Limit _{t-1 end} :	the RAB Floor Limit at the end of the preceding calendar year (t-1).
RAB Floor Limit _{t-1 start} :	the RAB Floor Limit at the start of the preceding calendar year (t-1).
CPI _{t-1} :	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} :	the net additions to the RAB Floor Limit in the preceding calendar year (t-1) 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), but will not include Capital Contributions.
Depreciation _{t-1} :	Depreciation applicable to the RAB Floor Limit in the preceding calendar year (t-1).

4.2 Component Values

4.2.1 RAB Floor Limit Opening Value [RAB Floor Limit_{t-1 start}]

As prescribed at HVAU section 4.4(a) the RAB Floor Opening Value is equal to the closing RAB Floor Limit approved by the ACCC for the compliance period ending 31 December 2016.

The opening value for the 2017 RAB Floor Limit is summarised in Table 9 on a Pricing Zone basis.

Table 9: Opening RAB Floor Limit Value 1 January 2017

	\$	File & Cell Reference
Pricing Zone 1	1,232,379,878	'[331 DORC Depreciation.xlsx]FL 2016H2!\$W\$65
Pricing Zone 2	226,426,021	'[331 DORC Depreciation.xlsx]FL 2016H2!\$W\$66
Pricing Zone 3	713,743,395	'[331 DORC Depreciation.xlsx]FL 2016H2!\$W\$67
Total Network Opening Value	2,172,549,294	'[331 DORC Depreciation.xlsx]FL 2016H2!\$W\$68

No new segments were added to the Network during the 2017 calendar year.

4.2.2 Consumer Price Index [CPI_{t-1}]

In accordance with HVAU section 4.4(b), CPI has been calculated to be 1.9022%. The rate has been determined based on the variation in CPI from September 2016 (All Sydney) of 110.4 and September 2017 (All Sydney) of 112.5.

For the 2017 compliance period CPI has been applied to the RAB Floor Limit Opening Value increasing the RAB Floor Limit by \$41,325,666.⁸

4.2.3 Net Capital Expenditure [Net Capex_{t-1}]

Major and minor capital additions for the 2017 compliance period have added a net value (including asset value reduction due to disposals) of \$41,239,717 to the Network RAB Floor Limit. This is summarised in Table 10.

Table 10: 2017 Network Net Capex

	\$	File & Cell Reference
Incremental Assets		
Major Projects	1,199,648	'[331 DORC Depreciation.xlsx]FL 2017!\$U\$88
Interest During Construction	-	'[331 DORC Depreciation.xlsx]FL 2017!\$U\$89
Corridor Capital	12,176,613	'[331 DORC Depreciation.xlsx]FL 2017!\$U\$90
Disposal Value Reduction	(1,235,118)	'[331 DORC Depreciation.xlsx]FL 2017!\$U\$91
Net Incremental Capex_{t-1}	12,141,142	'[331 DORC Depreciation.xlsx]FL 2017!\$U\$92
Fixed Assets		
Major Projects	887,596	'[331 DORC Depreciation.xlsx]FL 2017!\$V\$88
Interest During Construction	-	'[331 DORC Depreciation.xlsx]FL 2017!\$V\$89
Corridor Capital	35,114,293	'[331 DORC Depreciation.xlsx]FL 2017!\$V\$90
Disposal Value Reduction	(6,903,314)	'[331 DORC Depreciation.xlsx]FL 2017!\$V\$91
Net Fixed Capex_{t-1}	29,098,575	'[331 DORC Depreciation.xlsx]FL 2017!\$V\$92
Total Net Capex_{t-1}	41,239,717	'[331 DORC Depreciation.xlsx]FL 2017!\$W\$92

Capital additions commissioned during the 2017 compliance period are deemed to have been commissioned at the mid-point of the calendar year (1 July 2017) for the purposes of determining depreciation and return. Interest during construction and return are also determined on this basis.

Refer to section 5 of this document for supporting data and Appendix C for a list of the Major Project and Corridor Capital additions by segment at an aggregated activity level. See confidential Attachment CAP3 to Attachment 2 for Corridor Capital additions at a detailed project level.

A listing of assets disposed of during the 2017 compliance period is provided in Appendix D. Further detail in relation to the determination of the disposals amount is provided in section 0 of this submission.

⁸ See '[331 DORC Depreciation.xlsx]FL 2017!AI61

4.2.4 Depreciation [Depreciation $t-1$]

HVAU section 4.7 provides that depreciation is calculated each year using a straight line methodology with respect to remaining useful life of the assets. As part of the 2017 HVAU Variation, the ACCC determined the useful life to be 23 years commencing 1 July 2016.

Depreciation is charged on the inflation adjusted RAB Floor Limit Opening Value and Net Capital Expenditure incurred during the 2017 compliance period.

Assets included in the Opening RAB Floor Limit value are depreciated using the straight line methodology by applying the remaining mine life applicable at time of commissioning or upon commencement of the HVAU, as appropriate. This applies to both fixed and incremental assets.

Assets commissioned during the 2017 compliance period are deemed to have been commissioned at the midpoint of the year (1 July 2017) for the purposes of determining depreciation and 50% of the applicable depreciation rate for that period has been applied. The remaining economic life for these assets as at 1 July 2017 is 22 years, yielding a depreciation rate of 4.545%.

Depreciation charged is summarised in Table 11.

Table 11: 2017 Depreciation Summary

	\$	File & Cell Reference
Incremental Assets		
Existing Assets	39,549,100	'[331 DORC Depreciation.xlsx]FL 2017!\$AA\$81
New Assets During 2017	304,006	'[331 DORC Depreciation.xlsx]FL 2017!\$AA\$82
Incremental Asset Depreciation	39,853,105	'[331 DORC Depreciation.xlsx]FL 2017!\$AA\$83
Fixed Assets		
Existing Assets	58,491,498	'[331 DORC Depreciation.xlsx]FL 2017!\$AB\$81
New Assets During 2017	818,225	'[331 DORC Depreciation.xlsx]FL 2017!\$AB\$82
Fixed Asset Depreciation	59,309,723	'[331 DORC Depreciation.xlsx]FL 2017!\$AB\$83
Depreciation $t-1$	99,162,828	'[331 DORC Depreciation.xlsx]FL 2017!\$AC\$83

4.3 Outcome & Closing Values

Applying the roll forward formula and the relevant values for the 2017 compliance period, the closing value for the RAB Floor Limit can be determined for the Network and for the Constrained Network. The results are summarised for the Network in Table 12.

Table 12: 2017 RAB Floor Limit Roll Forward - Network

	Formula Element	Value (\$)	File & Cell Reference
Opening Value	RAB Floor Limit $t-1$ start	2,172,549,294	'[331 DORC Depreciation.xlsx]FL 2017!\$AI\$80
Additional segments		-	'[331 DORC Depreciation.xlsx]FL 2017!\$AI\$81
CPI	CPI $t-1$	41,325,666	'[331 DORC Depreciation.xlsx]FL 2017!\$AI\$82
Capital Expenditure	Net Capex $t-1$	41,239,717	'[331 DORC Depreciation.xlsx]FL 2017!\$AI\$83
Depreciation	Depreciation $t-1$	(99,162,828)	'[331 DORC Depreciation.xlsx]FL 2017!\$AI\$84
Closing Value		2,155,951,849	'[331 DORC Depreciation.xlsx]FL 2017!\$AI\$85
Average Value		2,164,250,572	'[331 DORC Depreciation.xlsx]FL 2017!\$AI\$88

Appendix B presents the opening, closing and average RAB Floor Limit values for each Network segment for the 2017 compliance period, identifying which segments form the Constrained Network.

An electronic copy of the spreadsheet underpinning the calculations for the roll forward of the RAB Floor Limit is provided to the ACCC on a confidential basis as part of this submission. A summary of the RAB Floor Limit roll forward is shown in Appendix A.

It is ARTC's view that the roll forward of the RAB Floor Limit has been calculated in accordance with the HVAU section 4.4(b).

4.4 Pricing Zone 3 RAB & RAB Floor Limit Comparison

Section 3.3 Table 8 shows a closing RAB value for Pricing Zone 3 assets for the 2017 compliance period. Table 13 shows a closing RAB Floor Limit value for Pricing Zone 3 assets for the same compliance period and the difference between the two.

Table 13: 2017 Pricing Zone 3 RAB Floor Limit Compared To RAB

	Formula Element	Value (\$)	File & Cell Reference
RAB Floor Limit			
Opening Value	RAB Floor Limit $t-1$ start	713,743,395	'[331 DORC Depreciation.xlsx]FL 2017!\$AG\$80
Additional segments		-	'[331 DORC Depreciation.xlsx]FL 2017!\$AG\$81
CPI	CPI $t-1$	13,576,641	'[331 DORC Depreciation.xlsx]FL 2017!\$AG\$82
Capital Expenditure	Net Capex $t-1$	24,746,939	'[331 DORC Depreciation.xlsx]FL 2017!\$AG\$83
Depreciation	Depreciation $t-1$	(32,830,235)	'[331 DORC Depreciation.xlsx]FL 2017!\$AG\$84
Closing Value		719,236,740	'[331 DORC Depreciation.xlsx]FL 2017!\$AG\$85
Closing RAB Value	from Table 8	779,298,363	'[851 Ceiling Test Model.xlsx]RAB 2017!\$X\$27
Difference	RAB – RAB Floor Limit	60,061,623	'[851 Ceiling Test Model.xlsx]RAB 2017!\$X\$32

Table 13 demonstrates that the RAB in Pricing Zone 3 is higher than the RAB Floor Limit. This confirms that Pricing Zone 3 is an unconstrained part of the Network. In accordance with section 4.10(a)(ii) of the HVAU, ARTC is not required to detail calculations relevant to reconciliation of Access revenue with the applicable Ceiling Limit and calculations of any allocation of the total unders and overs amount. The net balance of losses capitalised into the Pricing Zone 3 RAB (i.e. the difference between the RAB and RAB Floor Limit) as at 31 December 2017 is \$60,061,623.

Table 14 shows the components that contribute to the roll-forward of the capitalised loss balance.

Table 14: 2017 Roll-Forward Of Capitalised Losses

	\$	File & Cell Reference
Capitalised Loss Opening Balance	71,049,593	'[851 Ceiling Test Model.xlsx]RAB 2017'!\$\$S\$36
Add Back One off Adjustment 2016	7,437,885	'[851 Ceiling Test Model.xlsx]RAB 2017'!\$\$S\$37
Adjusted Cap Loss Opening Balance	78,487,478	'[851 Ceiling Test Model.xlsx]RAB 2017'!\$\$S\$20
Return on Opening RAB	62,665,462	'[851 Ceiling Test Model.xlsx]RAB 2017'!\$\$S\$21
Operating Expenditure	60,482,493	'[851 Ceiling Test Model.xlsx]RAB 2017'!\$\$S\$22
Depreciation	32,830,235	'[851 Ceiling Test Model.xlsx]RAB 2017'!\$\$S\$23
Return On Cap Ex	978,741	'[851 Ceiling Test Model.xlsx]RAB 2017'!\$\$S\$24
CPI Open Floor Limit	(13,576,641)	'[851 Ceiling Test Model.xlsx]RAB 2017'!\$\$S\$25
Revenue	(161,806,145)	'[851 Ceiling Test Model.xlsx]RAB 2017'!\$\$S\$26
Capitalised Loss Closing Balance	60,061,623	'[851 Ceiling Test Model.xlsx]RAB 2017'!\$\$S\$27

5. CAPITAL EXPENDITURE

5.1 Consultation Process

HVAU sections 7 to 11 set out the process and obligations with regard to initiation of, industry consultation on, and funding of Capital Expenditure in relation to the Network. Specifically, these sections provide a framework for industry endorsement of Capital Expenditure through the RCG for inclusion in the asset base. The Capital Consultation document (Attachment 2) describes ARTC's relevant compliance activities, and industry endorsement, with regard to the 2017 compliance period.

Under HVAU section 9.2 ARTC is required to convene and conduct regular monthly meetings of the RCG. The RCG is an industry forum designed to provide Access Holders, prospective Access Holders and other industry stakeholders with relevant input to identify, prioritise and evaluate future network investments and refine the capital works programme.

HVAU section 9.1(e)(ii) provides for the minor capital works (also referred to as Corridor Capital) programme to be considered by the RCG as a group rather than as individual projects. During 2017, ARTC undertook a process with the RCG in relation to the Corridor Capital programme, where the programme was presented for endorsement, indicative works and costings within that programme were provided, the programme was endorsed, and the works delivered.

It is noted that changes at the detailed project level can occur in terms of the scope, priority and timing depending on prevailing circumstances such as identified network conditions and access to the network. During 2017, ARTC kept the RCG informed of the progress of the endorsed Corridor Capital programme. Updates regarding delivery of the Corridor Capital programme were delivered quarterly to the RCG with all variances reported. The consultation documents provided to the RCG in this regard during 2017 form confidential Attachments CAP2.1, CAP2.2, CAP2.3 and CAP2.4 to Attachment 2.

Capital Expenditure on new and existing assets to be included in the RAB and RAB Floor Limit for the 2017 compliance period is set out in Appendix C. This appendix details Major Projects and Corridor Capital expenditure during the 2017 compliance period by segment at an aggregated activity level. Corridor capital expenditure has been further reported at a detailed project level in confidential Attachment CAP3 to Attachment 2.

Evidence of Access Seeker endorsement of Capital Expenditure as required under HVAU Schedule G is provided in confidential Attachment 3.

5.2 Major Projects & Interest During Construction

There were no major projects commissioned during the 2017 calendar year. Post commissioning costs incurred during the compliance year included costs associated with site reconditioning and rehabilitation, land acquisition, noise barriers and signalling. See Appendix C for further details.

Table 15: 2017 Major Projects Commissioned & Interest During Construction

Project Code	Project Name	Project Spend \$	Interest \$	Total Cost \$
Nil		-	-	-

6. DISPOSALS

Capital works resulted in asset disposals for the 2017 compliance period amounting to \$8,138,432.

The written down value for an asset being removed from the RAB is based on the underlying regulatory value of the asset, with CPI escalation and accumulated depreciation applied in accordance with the annual roll forward methodology for the RAB Floor Limit under section 4.4 of the HVAU.

The underlying regulatory value of the asset is sourced as follows:

- for assets existing in 2001, with reference to the Booz Allen Hamilton Depreciated Optimised Replacement Cost (DORC) database determined under the New South Wales Rail Access Undertaking (NSWRAU) in 2001 and forming part of the initial RAB value at commencement of the HVAU;
- for assets acquired after 2001 and prior to July 2011, with reference to the roll-forward of assets as approved under the NSWRAU and forming part of the initial RAB at commencement of the HVAU; and

- for assets added during the term of the HVAU and specifically approved by the ACCC, with reference to the approved value and the underlying DORC database (e.g. Booz & Company (PZ3 - Dartbrook to The Gap line) and Evans & Peck (Old PZ4 – Gap to Turrawan) valuations).

The cumulative effect of the CPI escalation and accumulated depreciation from the valuation date to the relevant compliance period is treated as a 'discount factor' and applied to the underlying regulatory value to determine the written down value. The written down value is reflective of the remaining mine life for depreciation of the RAB rather than the useful life of an individual asset.

The RAB written down value is removed from the asset base in the disposal year. ARTC's net loss on disposal is calculated as the written down asset value less any net proceeds or recovery on disposal. It is important to note that as many assets in the Network tend to have a shorter actual life than the economic life of the Network (i.e. remaining mine life), the value written off when an asset is disposed is usually greater than its scrap value.

2017 also featured the disposal of a number of turnouts that were removed without a corresponding replacement addition to the RAB. In the case of redundant assets where the assets are not replaced, the cost of removal is part of the net loss on disposal.

The net loss on disposal is included as an operating cost in this submission (see section 3.2.4 Table 6 and section 8) with commentary on the factors influencing the value of the loss on disposals included at Attachment 1.

The items disposed from the RAB during 2017 were predominantly rail, turnouts, track and culverts. Disposals decreased by \$1.2m on prior year, primarily due to an overall decrease in rerailing scope as the 30TAL rerailing program neared completion in Pricing Zone 3. This contributed a \$3.8m decrease in disposals for Pricing Zone 3 overall, which was partially offset by a \$2.8m increase in Pricing Zone 1 where rerailing scope increased. There were no land disposals in 2017.

The physical scrapped item may not be collected for some time due to safety, operational and logistical reasons (for example, to avoid unnecessary equipment and personnel accessing the rail corridor during possession periods or disrupting operations).

Items such as culverts and track generate concrete or ballast rubble that is non-reusable and has no scrap value.

Disposed rail is typically at or near the end of its useful life or condemning limits, or has a defect which makes it unsuitable for re-use. There are occasions where short sections of scrapped rail might be used for emergency repairs to a broken rail or in sidings or yards in the coal network (generally for maintenance) where the traffic/tonnes are low. A cost is not applied to the rail that is re-used for emergency repairs/maintenance purposes. Materials are generally not re-used for capital projects in the coal network or added back into the RAB. There were no disposed RAB assets re-added to the RAB during the 2017 compliance period. ARTC will consider the basis for determining an appropriate 'in use' value for any scrapped items re-used within capital projects for the coal network going forward and make that clear within the submissions for endorsement to the RCG.

Re-use of scrapped rail is typically outside of the Hunter Valley coal network in non-30TAL areas. Suitability of the scrapped rail for re-use is not always known at the time of disposal.

Proceeds are generally recovered from the sale of the scrap steel (commonly as part of rerailing or turnout replacement projects) or when land is disposed. For scrapped steel, ARTC records proceeds based on the average arms' length market rate received for the scrap steel in the year the asset is scrapped. Proceeds are deemed to be received in the year of disposal from the RAB regardless of whether the item is actually sold in that period (e.g. even if left in the corridor for operational reasons or retained for use outside of the coal network).⁹

Appendix D provides further detail on disposals and net loss on disposals for the relevant assets by line section and type of asset/activity. That data is summarised by Pricing Zone in Table 16.

An electronic copy of the spreadsheets underpinning the calculations for the written down value and loss on disposal has been provided to the ACCC on a confidential basis.

Note that the nature of the data from which the disposal information is drawn does not always permit a clear attribution of the componentry disposed of between incremental and fixed assets. Where the disposal of Pricing Zone 1 assets commissioned since the introduction of incremental capital relates to assets assessed as having an incremental proportion, the disposal and loss on disposal will be treated as incremental based on the incremental proportion of the linked activity. Where this information is not available or the asset was assessed as fixed, the disposal will be related to fixed assets.

Table 16: 2017 Asset Disposals & Loss On Disposal

	WDV Assets Disposed \$	Disposal Proceeds \$	Loss On Disposal \$
Pricing Zone 1	4,636,314	383,441	4,252,873
Pricing Zone 2	729,704	107,174	622,530
Pricing Zone 3	2,772,413	42,264	2,730,149
Total	8,138,432	532,879	7,605,552

7. CONTACT DETAILS – STAKEHOLDERS

HVAU Schedule G, section 2(b)(vii) requires ARTC to provide a list of stakeholders for use by the ACCC on a confidential basis. This list is provided at Appendix F.

The list includes the name, address and contact details (including email address) of stakeholders considered by ARTC to be relevant Applicants and Access Holders and other parties consulted regarding compliance matters. This is to include a contact at CEO/Executive level for the purpose of an ACCC letter and a regular operational contact for email notification.

Where a stakeholder identified by ARTC is not a relevant Applicant or Access Holder, ARTC has indicated their relationship with ARTC and/or their interest in ARTC's compliance.

⁹ Consistent with the approved 2014 to 2016 compliance assessments, proceeds for disposals relating to upgrading rail and turnouts to 30TAL in the segments included in the Network through the Gap to Turravan HVAU variation approved on 25 June 2014 are not included as part of the loss on disposal calculations. This was a trade off for a lower DORC valuation which aligned remaining asset life to the timing of the planned replacement and disposal.

8. CEILING TEST

8.1 Introduction

The Ceiling Test Model (provided to ACCC as part of this submission on a confidential basis) is used to test access revenue for a mine or a combination of mines against the applicable Ceiling Limit to determine the Constrained Network and Constrained Group of Mines as contemplated under the HVAU.

The Ceiling Test Model calculates the amount of access revenue and the economic cost across the segments utilised by the haul or a combination of hauls (Ceiling Limit). This allows for testing different combinations of hauls, including those combinations that could potentially exceed the Ceiling (i.e. where access revenue for that haul or combination of hauls exceeds economic cost for the segments used by that haul or combination of hauls).

The combination of hauls that is closest to, or exceeds the economic cost for the relevant segments is called the Constrained Group of Mines and the segments comprise the Constrained Network. Table 17 summarises the results of the Ceiling Test model for the Constrained Group of Mines. For the 2017 compliance period the Constrained Network is formed by the segments utilised by the combination of hauls between Ulan, Muswellbrook and the Newcastle coal terminals, excluding some small segments of the Network used exclusively by traffics originating from south of Newcastle and a small segment linking the coal network to the interstate network at Maitland. The table also provides a comparison with the revenue and costs associated with the Constrained Group of Mines for the 2016 compliance period.

Table 17: 2017 Calendar Year Constrained Network Ceiling Test

	2016 Calendar Year	2017 Calendar Year	% Variance
GTK	Millions	Millions	
Export	26,983	26,652	
Domestic	1,774	1,619	
Total	28,757	28,271	(1.7%)
	\$ million	\$ million	
Total Revenue	304.56	245.11	(19.5%)
Operating Costs			
Infrastructure Costs			
Incremental Maintenance	35.29	31.99	
Fixed Maintenance	25.98	26.17	
Total Maintenance Costs	61.27	58.16	(5.1%)
Expensed Project Costs	-	-	
Net Loss on Disposal	2.52	4.66	
Total Infrastructure	63.79	62.82	(1.5%)
Network Control	9.20	10.43	13.3%
Business Unit Management	18.96	21.71	14.5%
Corporate Overheads	13.72	13.87	1.1%
Total Operating Cost	105.67	108.82	3.0%
Incremental Asset Depreciation	36.72	31.46	
Fixed Asset Depreciation	30.50	26.31	
Incremental Asset Return	50.16	36.90	
Fixed Asset Return	41.63	30.95	
Full Economic Costs	264.68	234.44	(11.4%)
Over/(Under)	39.88	10.66	
Average Incremental Asset Base	883	869	
Average Fixed Asset Base	574	575	
Average Total Asset Base	1,457	1,444	

8.2 Traffic Volumes & Access Revenue

8.2.1 Traffic Volumes

Constrained Coal volume for the 2017 compliance period was 138.3 million tonnes (mt), comprising 126.6mt of export coal and 11.7mt of domestic coal. This is consistent with the 2016 compliance period of 138.2mt overall, but with a 2.0mt decrease in export volumes shifting to domestic coal. GTKs from the Constrained Group of Mines for the 2017 compliance period decreased by 1.7% to 28.3 billion.

The number of paths utilised by Constrained Coal Customers between 2016 and 2017 can be seen in Figure 1.

Details of confidential model deleted

8.2.2 Access Revenue

HVAU section 4.3(b) requires that the Access revenue from any Access Holder or group of Access Holders must not exceed the economic cost of those segments, on a stand-alone basis, identified as forming part of Pricing Zone 1 and 2 in HVAU Schedule E required to provide access for the group. This is defined in the HVAU as the Ceiling Limit.

In relation to Pricing Zone 3, HVAU section 4.3(c) requires that access revenue from any Access Holder or group of Access Holders must not exceed the Ceiling Limit where the RAB for the relevant segments is equal to or falls below the RAB Floor Limit for those segments at the end of the calendar year ($t-1$). As shown in Table 13, for the 2017 compliance period, the RAB is above

the RAB Floor Limit for the segments comprising Pricing Zone 3. Therefore, the Ceiling Limit does not apply to Pricing Zone 3 traffic for the 2017 compliance period.

During the 2017 compliance period, access revenue in relation to coal traffic was collected from Access Holders under Access Holder Agreements. The total access revenue received from each Access Holder within the Hunter Valley Network was obtained from ARTC's billing systems. Access revenue collected for the 2017 compliance period from the Constrained Coal Customers amounted to \$245,106,746 and was used as the basis for determining allocations of the total unders and overs amount to Constrained Coal Customer Accounts.

8.2.3 Access Pricing

Ordinarily, ARTC is required to advise Access Holders of indicative access charges by the end of October in the preceding year under HVAU section 4.20(d). However with the extensions of the HVAU that were approved by the ACCC during 2016 and 2017, the pricing for the 2017 compliance period formed part of those extensions as follows:

- For 2017 H1 – indicative access charges approved as part of the six month extension of the HVAU approved by the ACCC on 23 November 2016; and
- For 2017 H2 – indicative access charges approved as part of the extension of the HVAU approved by the ACCC on 29 June 2017.

At the time of setting prices for 2017 H1, negotiation of the 2017 HVAU was not finalised. ARTC maintained the same access charges that applied during the initial extension period 1 July 2016 to 31 December 2016 which were based on an interim rate of return of 6.74% and continuation of the existing mine life of 16 years as at 1 July 2016, with the intention that the rate of return and remaining mine life approved in a new HVAU would be backdated to 1 July 2016.

The backdating of the HVAU commercial parameters in 2017 H1 resulted in a larger over-recovery of revenue from the Constrained Group of Mines than would otherwise have been the case through differences with the forecast cost and volume assumptions.

8.2.4 Full Economic Cost

The combination of hauls that is closest to or exceeds the economic cost for the relevant segments is called the Constrained Group of Mines and the segments comprise the Constrained Network. Table 17 summarises the results of the Ceiling Test model for the Constrained Group of Mines. For the 2017 compliance period the Constrained Network is formed by the segments utilised by the combination of hauls between Ulan, Muswellbrook and the Newcastle coal terminals, excluding some small segments of the Network used exclusively by traffics originating from south of Newcastle and a small segment linking the coal network to the interstate network at Maitland. The table also provides a comparison with the revenue and costs associated with the Constrained Group of Mines for the 2016 compliance period.

Table 17 above sets out the full Economic Cost with a breakdown into the standard operating cost line items, return and depreciation.

Section 2 and Attachment 1 to this submission set out further details on the operating cost categories and explanations of the drivers for movements in costs between 2016 and 2017.

The maintenance costs for the Constrained Group of Mines comprise:

- All fixed maintenance costs for each segment forming part of the Constrained Network are included in the Ceiling Limit in accordance with the HVAU; and
- The share of incremental maintenance costs for the Constrained Group of Mines (based on the incremental unit cost per GTK or Train Km multiplied by the GTK or Train KM (as applicable) for the Constrained Group of Mines).

Expenditure on infrastructure maintenance in 2017 compared to the values for 2016 for the Constrained Group of Mines is set out in Table 18.

Table 18: Constrained Group of Mines Maintenance Costs

	2016 (\$'000)	2017 (\$'000)	% Difference
Incremental	35,294	31,993	(9.4%)
Fixed	25,975	26,167	0.7%
Total	61,269	58,160	(5.1%)

Total maintenance costs for the Constrained Group of Mines decreased in 2017. The key driver for the change in cost and the relativity between incremental and fixed is the ballast cleaning program which moved out of Pricing Zones 1 and 2, with ballast cleaning assessed as 90% incremental.

Consistent with prior year and the HVAU variation approved on 29 November 2018, Network Control, Business Unit Management, Corporate Overheads, Loss on Disposals and Expensed Projects are considered fixed operating costs. The amounts attributed to the Constrained Group of Mines for each of these cost categories represents the amounts allocated to Pricing Zone 1 and Pricing Zone 2.

8.3 Unit Costs

A separate confidential analysis of unit costs has been provided to the ACCC in support of this submission.

9. UNDERS & OVERS ACCOUNTING

9.1 2017 Compliance Period Unders & Overs Balance

The unders and overs amount for the 2017 compliance period is determined by comparing the access revenue earned by ARTC from the Constrained Group of Mines to the economic cost of the Constrained Network, including the operating costs described in section 8 of this submission, depreciation and the real rate of return of 5.38% applied to the average RAB Floor Limit for the 2017 compliance period, as detailed in section 4.

As highlighted at 8.2.3 Access Pricing, there were material factors outstanding at the time prices were set for 2017 H1 (backdating of RoR and remaining mine life for a new HVAU). This resulted

in a lower Ceiling of \$234.4m compared to the forecast used for pricing and an over-recovery of revenue for the compliance period of \$10.66m.

The difference between access revenue received from the Constrained Group of Mines and the Ceiling Limit results in a total unders and overs amount of \$10,663,175 for the 2017 compliance period as contemplated at HVAU section 4.9, as shown in Table 19 below.

Table 19: Unders & Overs Account Balance

	2016 (\$m)	2017 (\$m)
Opening Value	60.95	39.88
Refund (2014 compliance period)	(19.22)	
Refund (2015 compliance period)	(41.73)	
Refund (2016 compliance period)		(39.88)
Yearly Adjustment	39.88	10.66
Closing Value	39.88	10.66

The \$39.88m opening value relating to the 2016 compliance period was returned to Access Holders in February 2020 following the ACCC's Final Determination on the 2016 compliance assessment.

It is ARTC's view that the Ceiling Test and determination of the unders and overs amount has been carried out on an Efficient cost basis, and in accordance with HVAU section 4.

9.2 Operation Of The Unders & Overs Account

As part of this submission ARTC has provided a spreadsheet to the ACCC on a confidential basis that sets out the allocation of the total unders and overs amount for the 2017 compliance period to Constrained Coal Customers in accordance with the requirements set out in HVAU section 4.9(b)(iii).

10. PRICING ZONE 3 – INDICATIVE ACCESS CHARGES

In accordance with HVAU Schedule G section 2(d), and as the RAB for Pricing Zone 3 is greater than the RAB Floor Limit for Pricing Zone 3, ARTC is required to provide Indicative Access Charges for Pricing Zone 3 applicable during the 2017 compliance period, and for the previous calendar year. ARTC has provided Initial Indicative Access Charges for Pricing Zone 3 applicable to each half year of the 2017 compliance period in Table 20, and to each half year of the 2016 compliance period in Table 21.

Table 20: 2017 H1 Pricing Zone 3 Initial Indicative Access Charges

	Non-TOP \$/kgtkm	TOP \$/kgtkm	
Initial Indicative Service 1	2.541	13.136	25 tonne maximum axle load 80 kph maximum speed (loaded) 80 kph maximum speed (empty) 82 wagon train length
			Section run times as per applicable standard working timetable

2017 H2 Pricing Zone 3 Initial Indicative Access Charges

	Non-TOP \$/kgtkm	TOP \$/kgtkm	
Initial Indicative Service 1	2.690	10.336	25 tonne maximum axle load 80 kph maximum speed (loaded) 80 kph maximum speed (empty) 82 wagon train length
			Section run times as per applicable standard working timetable

Table 21: 2016 H1 Pricing Zone 3 Initial Indicative Access Charges

	Non-TOP \$/kgtkm	TOP \$/kgtkm	
Initial Indicative Service 1	2.187	13.599	25 tonne maximum axle load 80 kph maximum speed (loaded) 80 kph maximum speed (empty) 82 wagon train length
			Section run times as per applicable standard working timetable

2016 H2 Pricing Zone 3 Initial Indicative Access Charges

	Non-TOP \$/kgtkm	TOP \$/kgtkm	
Initial Indicative Service 1	2.541	13.136	25 tonne maximum axle load 80 kph maximum speed (loaded) 80 kph maximum speed (empty) 82 wagon train length
			Section run times as per applicable standard working timetable

11. SYSTEM WIDE TRUE UP TEST AUDIT

ARTC changed the identity of the True Up Test auditor for the 2017 True Up Test Audit. In accordance with HVAU section 4.10(f), ARTC has engaged RSM Australia (RSM) as auditor for the Annual True Up Test Audit required to be conducted under that section.

RSM has prepared the Final Audit Report and their findings are noted below.

A True Up Test (TUT) was conducted for each month and quarter (as applicable) during the 2017 compliance period.

A copy of the Final Audit Report has been provided at Attachment 4 to this submission.

The Final Audit Report concludes that ARTC has complied, in all material respects, with Schedule 2 of the Access Holder Agreements under the HVAU for the year ended 31 December 2017.

The Final Audit Report includes details of non-material issues that ARTC has sought to address as noted in Table 22. ARTC is not proposing to re-publish updated results of the True Up Test to account for any issues that have been deemed non-material.

Table 22: Audit Findings & ARTC Response

2017 Audit Findings	ARTC Management Response
The monthly TUT reports for February, March, April and July 2017 and the quarterly TUT report for March 2017 were not published on ARTC's website within three weeks of the end of the TUT period.	Noted.
Forecast system losses are calculated using a percentage loss rate for other party losses multiplied by the NPC value. ARTC had utilised a percentage loss rate of 6.4%, however provided support to validate a rate of 6.2%. RSM re-calculated the 'Lesser of actual v forecast system losses other parties' values for each TUT report in each Pricing Zone using a forecast loss rate of 6.2% and confirmed the updated figures would not result in a System Availability Shortfall within each audit period.	Noted. The minor transposition error did not result in any system availability shortfall.
When reviewing the methodology used to determine the Capacity of each Pricing Zone, RSM noted that ARTC measured the number of Functional Coal Paths available at numerous locations within each Pricing Zone, rather than just one point as required by Clause 2.3, Schedule 2 of the AHAs.	Noted. This is a known item, with ARTC taking a more conservative approach and the item being disclosed in the TUT audit report and accepted by the ACCC in prior year Compliance Assessments.

12. CONTACT DETAILS (ARTC)

In relation to this compliance submission, in accordance with HVAU Schedule G, section 2(f), further information in relation to this submission can be arranged through:

Nadine Judge
Manager Commercial
Hunter Valley Division
Telephone: 02 4952 0209
Email: customercontracts@ARTC.com.au

APPENDIX A 2017 RAB FLOOR LIMIT ROLL FORWARD SUMMARY

	Total Network	Constrained Network
CPI	1.90%	1.90%
Depreciation Assets Rolled Over 1 July 2016	4.35%	4.35%
Depreciation 2016H2 New Assets	4.40%	4.40%
Depreciation 2017 New Assets (Full Year Rate)	4.55%	4.55%
Opening Total RAB Floor Limit 1/01/2017	2,172,549,294	1,455,077,719
Existing Assets As At 1 July 2016		
Opening Balance	2,159,122,568	1,449,038,295
CPI	41,070,266	27,563,228
Original Balance plus CPI	2,200,192,834	1,476,601,523
Less Disposals	(8,138,432)	(5,366,019)
Adjusted Net Balance	2,192,054,403	1,471,235,505
Depreciation:		
% of year	100.00%	100.00%
Depreciation Current Year	(95,306,713)	(63,966,761)
CPI On Prior Year Depreciation	(892,832)	(599,201)
Accumulated Depreciation	(143,136,992)	(96,066,794)
Closing Balance	2,048,917,411	1,375,168,711
New Assets 1 July 2016 To 31 December 2016		
Opening Balance	61,034,886	37,957,371
CPI	1,160,990	722,015
Original Balance plus CPI	62,195,876	38,679,386
Less Disposals	-	-
Adjusted Net Balance	62,195,876	38,679,386
Depreciation:		
% of year	100.00%	100.00%
Depreciation Current Year	(2,733,885)	(1,700,193)
CPI On Prior Year Depreciation	(12,758)	(7,934)
Accumulated Depreciation	(3,417,356)	(2,125,241)
Closing Balance	58,778,520	36,554,145

	Total Network	Constrained Network
New Assets 1 January 2017 To 31 December 2017		
Major Projects	2,087,243	2,092,243
Interest During Construction	-	-
Corridor Capital	47,290,905	19,766,553
Total New Assets 2017	49,378,149	21,858,797
Less Disposals	-	-
Adjusted Net Balance	49,378,149	21,858,797
Depreciation:		
% of year	50.00%	50.00%
Depreciation Current Year	(1,122,231)	(496,791)
Accumulated Depreciation	(1,122,231)	(496,791)
Closing Balance	48,255,918	21,362,006
Total Closing RAB Floor Limit	2,155,951,849	1,433,084,861
Average RAB Floor Limit	2,164,250,572	1,444,081,290
Current Year Depreciation (Excl. CPI On Prior Year Depreciation)	(99,162,828)	(66,163,745)
Net CPI Increase (Incl. CPI On Prior Year Depreciation)	41,325,666	27,678,109

APPENDIX B 2017 RAB FLOOR LIMIT & RAB VALUES BY SEGMENT

Table B1: 2017 RAB Floor Limit Values By Segment

Schedule E Code	Description	Const	Opening RAB FL Value (\$)	Closing RAB FL Value (\$)	Average RAB FL Value (\$)
968	Turrawan To Boggabri Jct	No	62,773,052	66,965,275	64,869,163
967	Boggabri Jct To Gunnedah Jct	No	110,235,502	114,862,787	112,549,145
988	Gunnedah Jct To Watermark	No	134,226,984	130,732,806	132,479,895
966	Watermark To Gap	No	85,904,196	84,342,091	85,123,144
965	Gap To Werris Creek	No	10,433,762	10,128,583	10,281,172
964	Werris Creek To Murulla	No	191,067,314	193,461,425	192,264,370
963	Murulla To Dartbrook Jct	No	98,024,669	98,188,150	98,106,409
962	Dartbrook Jct To Muswellbrook	No	21,077,915	20,555,624	20,816,769
974	Ulan Colliery Jct To Wilpinjong	Yes	11,910,217	11,597,358	11,753,787
973	Wilpinjong To Sandy Hollow	Yes	161,835,132	159,055,463	160,445,297
972	Sandy Hollow To Anvil Hill	Yes	35,400,089	36,545,689	35,972,889
971	Anvil Hill To Bengalla Jct	Yes	17,280,582	16,826,654	17,053,618
970	Bengalla Jct To Muswellbrook	Yes	23,386,480	22,772,161	23,079,320
961	Muswellbrook To Draytons Jct	Yes	85,720,683	83,468,962	84,594,822
958	Draytons Jct To Newdell Jct	Yes	64,528,945	63,675,322	64,102,133
959	Newdell Branch	Yes	3,702,687	3,605,424	3,654,055
957	Newdell Jct To Glennies Ck	Yes	13,381,174	13,029,676	13,205,425
956	Glennies Ck To Camberwell Jct	Yes	45,835,112	45,369,795	45,602,453
955	Camberwell Jct To Whittingham	Yes	66,878,175	65,073,545	65,975,860
952	Mount Thorley To Saxonvale Jct	Yes	1,950,827	1,965,070	1,957,948
951	Saxonvale Jct To Whittingham	Yes	5,666,396	5,517,551	5,591,974
948	Whittingham To Branxton	Yes	231,389,851	225,870,549	228,630,200
944	Telarah To Farley	No	943,038	918,266	930,652
947	Branxton To Farley	Yes	314,616,156	307,531,131	311,073,644
946	Farley To Maitland	Yes	16,700,682	16,220,783	16,460,732
937	Maitland To Thornton (Coal Line)	Yes	40,637,517	45,530,743	43,084,130
936	Thornton To Sandgate (Coal Line)	Yes	211,897,800	207,147,125	209,522,463
931	Sandgate To Kooragang East Jct	Yes	1,567,309	1,287,996	1,427,652
929	Kooragang East Jct To NCIG	Yes	1,339,040	1,303,866	1,321,453
930	NCIG To Kooragang Island	Yes	78,932,518	79,404,584	79,168,551
926	Sandgate To Hanbury Jct (Coal Line)	Yes	2,523,941	2,457,642	2,490,791
925	Hanbury Jct To Waratah (Coal Line)	Yes	3,479,835	3,409,304	3,444,569
917	Waratah To Scholey St Jct (Coal Line)	Yes	2,943,718	2,896,543	2,920,130
916	Scholey St Jct To Port Waratah	Yes	11,572,854	11,521,928	11,547,391
927	Hanbury Jct To Kooragang East Jct	No	1,394,960	1,358,317	1,376,638
915	Islington Jct To Scholey St Jct	No	1,390,182	1,353,665	1,371,923
	Total Network		2,172,549,294	2,155,951,849	2,164,250,572
	Constrained		1,455,077,719	1,433,084,861	1,444,081,290

Table B2: 2017 RAB Values By Segment

Schedule E Code	Description	Constrained	Opening RAB Value \$	Closing RAB Value \$
968	Turrawan To Boggabri Jct	No	66,051,325	69,877,320
967	Boggabri Jct To Gunnedah Jct	No	118,070,204	119,955,643
988	Gunnedah Jct To Watermark	No	143,398,531	136,770,148
966	Watermark To Gap	No	93,619,443	89,001,151
965	Gap To Werris Creek	No	11,641,141	10,859,992
964	Werris Creek To Murulla	No	218,949,823	219,687,406
963	Murulla To Dartbrook Jct	No	113,273,523	108,833,790
962	Dartbrook Jct To Muswellbrook	No	27,226,884	24,312,914
	Total		792,230,873	779,298,363

APPENDIX C 2017 CAPITAL EXPENDITURE INCLUDED IN ASSET BASE

Table C1: 2017 Major Projects

Segment	Segment Description	Constrained ?	Project Number	Project Description	Date of RCG Endorsement	Incremental % & Allocator	Included In 2017 Asset Base \$	IDC \$	Total \$
Pricing Zone 1									
947	Branxton To Farley	Yes	5255	Maitland to Minimbah Third Road	7 April 2011	100% GTK	34,697	-	34,697
948	Whittingham To Branxton	Yes	5255	Maitland to Minimbah Third Road	7 April 2011	100% GTK	15,062	-	15,062
936	Thornton To Sandgate	Yes	6387	Hexham Relief Roads Stage 1	29 May 2014	100% GTK	257,293	-	257,293
930	NCIG To Kooragang Island	Yes	8667	Kooragang Arrival Roads Stage 2	29 January 2015; 13 August 2015	50% GTK	1,785,192	-	1,785,192
Sub-Total							2,092,243	-	2,092,243
Pricing Zone 2									
	Nil						-	-	-
Sub-Total							-	-	-
Pricing Zone 3									
963	Murulla To Dartbrook Jct	No	5256	Scone Reconfiguration	3 April 2014	n/a	(5,000)	-	(5,000)
Sub-Total							(5,000)	-	(5,000)
Total							2,087,243	-	2,087,243

Table C2: 2017 Corridor Capital

Segment	Segment Description	Constrained?	Activity	Project Code	Date of RCG Endorsement	Description of Activity	Incremental % & Allocator	Included In 2017 Asset Base \$
Pricing Zone 1								
916	Scholey St Jct To Port Waratah	Yes	223	0916AG 0916AQ	RCG 6-5-16 2016-17 RCG 11-5-17 2017-2018	Resleeping	75% GTK	298,293
917	Waratah To Scholey St Jct (Coal Line)	Yes	158	0917N9	RCG 6-5-16 2016-2017	Rail Lube Overhaul / Major Maintenance	50% GTK	30,852
925	Hanbury Jct To Waratah (Coal Line)	Yes	158	0925M5	RCG 6-5-16 2016-2017	Rail Lube Overhaul / Major Maintenance	50% GTK	21,364
930	NCIG To Kooragang Island	Yes	178	0930DV	RCG 6-5-16 2016-2017	Rerailing	90% GTK	1,198,555
				0930EQ	RCG 9-2-17 2016-2017			
				0930ES	RCG 11-5-17 2017-2018			
				0930ET	RCG 11-5-17 2017-2018			
				0930EU	RCG 11-5-17 2017-2018			
931	Sandgate To Kooragang East Jct	Yes	178	0931R1	RCG 6-5-16 2016-2017	Rerailing	90% GTK	597,895
				0931R2	RCG 6-5-16 2016-2017			
936	Thornton To Sandgate (Coal Line)	Yes	229	0936N4 0936P7	RCG 5-7-12 2012-2013 RCG 6-12-12 2013-2014; RCG 25-3-15 2015-2016; RCG 6-5-16 2016-17	Track Strengthening / Upgrading	75% GTK	577,152
937	Maitland To Thornton (Coal Line)	Yes	178	0937CY	RCG 6-5-16 2016-2017	Rerailing	90% GTK	1,523,477
				0937CZ	RCG 6-5-16 2016-2017			
				0937DA	RCG 6-5-16 2016-2017			
				0937DB	RCG 6-5-16 2016-2017			
937	Maitland To Thornton (Coal Line)	Yes	186	0937AW	RCG 2-4-14 2014-2015; RCG 25-5-15 2015-2016	Turnout Renewal	75% GTK	3,403,702
				0937BT	RCG 25-3-15 2015-2016			
				0937BU	RCG 25-3-15 2015-2016			
				0937BV	RCG 25-3-15 2015-2016			
				0937DC	RCG 6-5-16 2016-2017			
				0937DD	RCG 6-5-16 2016-2017			
				0937DE	RCG 6-5-16 2016-2017			
0937W4	RCG 2-4-14 2014-2015; RCG 25-5-15 2015-2016							

Segment	Segment Description	Constrained?	Activity	Project Code	Date of RCG Endorsement	Description of Activity	Incremental % & Allocator	Included In 2017 Asset Base \$
937	Maitland To Thornton (Coal Line)	Yes	229	0937CT	RCG 25-3-15 2015-2016; RCG 6-5-16 2016-2017	Track Strengthening / Upgrading	75% GTK	2,526,765
937	Maitland To Thornton (Coal Line)	Yes	330	0937DP	Internal Variation 2015-16	Wayside Detection Systems - New Install	0%	29,163
946	Farley To Maitland	Yes	186	0946V2	RCG 6-5-16 2016-2017	Turnout Renewal	75% GTK	(42,161)
947	Branxton To Farley	Yes	178	0947EX	RCG 6-5-16 2016-2017	Rerailing	90% GTK	1,513,873
				0947EY	RCG 6-5-16 2016-2017			
				0947EZ	RCG 6-5-16 2016-2017			
				0947FA	RCG 6-5-16 2016-2017			
948	Whittingham To Branxton	Yes	178	0948CA	RCG 6-5-16 2016-2017	Rerailing	90% GTK	675,461
				0948CD	RCG 6-5-16 2016-2017			
				0948CP	RCG 11-5-17 2017-2018			
952	Mount Thorley To Saxonvale Jct	Yes	815	0952L3	RCG 6-5-16 2016-2017	Power Supply Upgrade	0%	67,010
955	Camberwell Jct To Whittingham	Yes	178	0955ER	RCG 6-5-16 2016-2017	Rerailing	90% GTK	369,980
				0955ES	RCG 6-5-16 2016-2017			
956	Glennies Ck To Camberwell Jct	Yes	178	0956X5	RCG 6-5-16 2016-2017	Rerailing	90% GTK	827,055
				0956X6	RCG 6-5-16 2016-2017			
				0956Y5	RCG 11-5-17 2017-2018			
956	Glennies Ck To Camberwell Jct	Yes	186	0956X7	RCG 6-5-16 2016-2017	Turnout Renewal	75% GTK	913,516
958	Draytons Jct To Newdell Jct	Yes	229	0958U1	RCG 6-5-16 2016-2017	Track Strengthening / Upgrading	75% GTK	475,850
958	Draytons Jct To Newdell Jct	Yes	254	0958U2	RCG 6-5-16 2016-2017	Culvert Replacement or Modification	0%	415,125
Sub-Total								15,422,928

Segment	Segment Description	Constrained?	Activity	Project Code	Date of RCG Endorsement	Description of Activity	Incremental % & Allocator	Included In 2017 Asset Base \$
Pricing Zone 2								
972	Sandy Hollow To Anvil Hill	Yes	178	0972AJ	RCG 6-5-16 2016-2017	Rerailing	90% GTK	1,698,640
				0972AK	RCG 6-5-16 2016-2017			
				0972BA	RCG 11-5-17 2017-2018			
				0972BB	RCG 11-5-17 2017-2018			
972	Sandy Hollow To Anvil Hill	Yes	229	0972BC	RCG 11-5-17 2017-2018	Track Strengthening / Upgrading	75% GTK	652,935
972	Sandy Hollow To Anvil Hill	Yes	254	0972AN	RCG 6-5-16 2016-2017	Culvert Replacement or Modification	0%	373,432
				0972Y4	RCG 6-5-16 2016-2017			
973	Wilpinjong To Sandy Hollow	Yes	178	0973PQ	RCG 6-5-16 2016-2017	Rerailing	90% GTK	215,465
				0973PR	RCG 6-5-16 2016-2017			
				0973PS	RCG 6-5-16 2016-2017			
				0973PT	RCG 6-5-16 2016-2017			
				0973PU	RCG 6-5-16 2016-2017			
				0973PV	RCG 6-5-16 2016-2017			
0973RI	RCG 11-5-17 2017-2018							
973	Wilpinjong To Sandy Hollow	Yes	186	0973MD	RCG 25-3-15 2015-2016	Turnout Renewal	75% GTK	4,886
973	Wilpinjong To Sandy Hollow	Yes	229	0973MK	RCG 25-3-15 2015-2016; RCG 6-5-16 2016-2017	Track Strengthening / Upgrading	75% GTK	872,283
973	Wilpinjong To Sandy Hollow	Yes	254	0973QD	RCG 6-5-16 2016-2017	Culvert Replacement or Modification	0%	221,997
973	Wilpinjong To Sandy Hollow	Yes	772	0973QY	RCG 6-5-16 2016-2017	Signalling System Upgrades	50% Train Km	303,989
Sub-Total								4,343,625

Segment	Segment Description	Constrained?	Activity	Project Code	Date of RCG Endorsement	Description of Activity	Incremental % & Allocator	Included In 2017 Asset Base \$
Pricing Zone 3								
962	Dartbrook Jct To Muswellbrook	No	158	0962S6	RCG 6-5-16 2016-2017	Rail Lube Overhaul / Major Maintenance	50% GTK	32,115
963	Murulla To Dartbrook Jct	No	178	0963HO	RCG 3-12-15 30TAL 5B2	Rerailing	90% GTK	2,438
				0963HP	RCG 3-12-15 30TAL 5B2			
963	Murulla To Dartbrook Jct	No	186	0963ET	RCG 4-6-14 30TAL Phase 5B; RCG 3-12-15 30TAL 5B2	Turnout Renewal	75% GTK	35,717
				0963IP	RCG 3-12-15 30TAL 5B2			
963	Murulla To Dartbrook Jct	No	229	0963HZ	RCG 3-12-15 30TAL 5B2	Track Strengthening / Upgrading	75% GTK	1,773,198
				0963IQ	RCG 3-12-15 30TAL 5B2			
				0963JV	North West Producers 31-1-17			
963	Murulla To Dartbrook Jct	No	254	0963IV	RCG 6-5-16 2016-2017	Culvert Replacement or Modification	0%	109,002
963	Murulla To Dartbrook Jct	No	262	0963KC	RCG 11-5-17 2017-2018	Level Crossing Upgrade	0%	73,630
963	Murulla To Dartbrook Jct	No	330	0963BO	RCG 2-4-14 2014-2015	Wayside Detection Systems - New Install	0%	513,635
963	Murulla To Dartbrook Jct	No	760	0963JG	RCG 6-5-16 2016-2017	Track Circuit Renewal, Installation or Upgrade	0%	437,026
964	Werris Creek To Murulla	No	158	0964PY	RCG 6-5-16 2016-2017	Rail Lube Overhaul / Major Maintenance	50% GTK	135,318
				0964PZ	RCG 6-5-16 2016-2017			
964	Werris Creek To Murulla	No	178	0964JX	RCG 4-6-14 30TAL Phase 5B	Rerailing	90% GTK	901,840
				0964QA	RCG 6-5-16 2016-2017			
				0964QB	RCG 6-5-16 2016-2017			
				0964QF	RCG 6-5-16 2016-2017			
				0964QG	RCG 6-5-16 2016-2017			
				0964RW	RCG 11-5-17 2017-2018			
				0964RX	RCG 11-5-17 2017-2018			
				0964RY	RCG 11-5-17 2017-2018			
				0987T3	RCG 4-6-14 30TAL Phase 5B			
0987X3	RCG 3-12-15 30TAL 5B2							

Segment	Segment Description	Constrained?	Activity	Project Code	Date of RCG Endorsement	Description of Activity	Incremental % & Allocator	Included In 2017 Asset Base \$
964	Werris Creek To Murulla	No	186	0964JY	RCG 4-6-14 30TAL Phase 5B + additional scope approved	Turnout Renewal	75% GTK	1,897,972
				0964JZ	RCG Approved 30TAL additional scope; RCG 3-12-15 30TAL 5B2			
				0964PO	RCG 3-12-15 30TAL 5B2			
				0964PX	RCG 3-12-15 30TAL 5B2			
964	Werris Creek To Murulla	No	229	0964PP	RCG 3-12-15 30TAL 5B2	Track Strengthening / Upgrading	75% GTK	3,679,044
				0964PR	RCG 4-6-14 30TAL Phase 5B			
				0987CQ	RCG 6-5-16 2016-17; Internal Variation 2016-17			
				0987CR	RCG 6-5-16 2016-17; Internal Variation 2016-17			
				0987DA	North West Producers 31-1-17			
0987Z2	RCG 3-12-15 30TAL 5B2							
964	Werris Creek To Murulla	No	253	0987BV	RCG 6-5-16 2016-2017	Bridge Replacement or Modification	0%	842,250
964	Werris Creek To Murulla	No	254	0964SF	RCG 11-5-17 2017-2018	Culvert Replacement or Modification	0%	635,555
				0964SG	RCG 11-5-17 2017-2018			
				0964SH	RCG 11-5-17 2017-2018			
964	Werris Creek To Murulla	No	764	0987BZ	RCG 6-5-16 2016-2017	Level Crossing Upgrade	100% GTK	147,613
964	Werris Creek To Murulla	No	772	0964RB	RCG 6-5-16 2016-2017	Signalling System Upgrades	50% Train Km	194,811
				0964RC	RCG 6-5-16 2016-2017			
				0964RD	RCG 6-5-16 2016-2017			
				0964RE	RCG 6-5-16 2016-2017			
				0987CL	RCG 6-5-16 2016-2017			
0987CN	RCG 6-5-16 2016-2017							
965	Gap To Werris Creek	No	186	0965P4	RCG 3-12-15 30TAL 5B2	Turnout Renewal	75% GTK	(688)
965	Gap To Werris Creek	No	229	0965S8	Internal Variation 2016-17	Track Strengthening / Upgrading	75% GTK	(31,140)

Segment	Segment Description	Constrained?	Activity	Project Code	Date of RCG Endorsement	Description of Activity	Incremental % & Allocator	Included In 2017 Asset Base \$
966	Watermark To Gap	No	158	0966Y3	RCG 6-5-16 2016-2017	Rail Lube Overhaul / Major Maintenance	50% GTK	19,970
966	Watermark To Gap	No	178	0966X9	RCG 3-12-15 30TAL 5B2; North West Producers 31-1-17	Rerailing	90% GTK	2,757
966	Watermark To Gap	No	229	0966V7 0966Z9	RCG 3-12-15 30TAL 5B2 North West Producers 31-1-17	Track Strengthening / Upgrading	75% GTK	718,965
967	Boggabri Jct To Gunnedah Jct	No	158	0967W6	RCG 6-5-16 2016-2017	Rail Lube Overhaul / Major Maintenance	50% GTK	34,230
967	Boggabri Jct To Gunnedah Jct	No	178	0967K9	RCG 4-6-14 30TAL Phase 5B	Rerailing	90% GTK	3,786,553
				0967L1	RCG 4-6-14 30TAL Phase 5B			
				0967L2	RCG 4-6-14 30TAL Phase 5B			
				0967L3	RCG 4-6-14 30TAL Phase 5B			
				0967V5	RCG 3-12-15 30TAL 5B2			
				0967V6	RCG 3-12-15 30TAL 5B2			
				0967V7	RCG 3-12-15 30TAL 5B2			
				0967V8	RCG 3-12-15 30TAL 5B2			
967	Boggabri Jct To Gunnedah Jct	No	229	0967W2	RCG 3-12-15 30TAL 5B2	Track Strengthening / Upgrading	75% GTK	4,879,535
				0967X5	RCG 6-5-16 2016-17; Internal Variation 2016-17			
				0967Y9	RCG 11-5-17 2017-2018			
				0967Z7	RCG 11-5-17 2017-2018; Internal Variation 2016-17			
968	Turrawan To Boggabri Jct	No	178	0968O6	RCG 3-12-15 30TAL 5B2	Rerailing	90% GTK	6,180,150
968	Turrawan To Boggabri Jct	No	254	0968Q1	RCG 6-5-16 2016-2017	Culvert Replacement or Modification	0%	234,234
				0968Q2	RCG 6-5-16 2016-2017			
968	Turrawan To Boggabri Jct	No	330	0968P2	Internal Variation 2015-16	Wayside Detection Systems - New Install	0%	256,174

Segment	Segment Description	Constrained?	Activity	Project Code	Date of RCG Endorsement	Description of Activity	Incremental % & Allocator	Included In 2017 Asset Base \$
988	Gunnedah Jct To Watermark	No	178	0988K9	RCG 4-6-14 30TAL Phase 5B	Rerailing	90% GTK	26,968
				0988W2	RCG 3-12-15 30TAL 5B2			
				0988W6	RCG 3-12-15 30TAL 5B2			
988	Gunnedah Jct To Watermark	No	186	0988L2	RCG 4-6-14 30TAL Phase 5B; RCG 3-12-15 30TAL 5B2	Turnout Renewal	75% GTK	2,631
988	Gunnedah Jct To Watermark	No	229	0988R6	RCG 3-12-15 30TAL 5B2	Track Strengthening / Upgrading	75% GTK	1,936
988	Gunnedah Jct To Watermark	No	254	0988X9	RCG 6-5-16 2016-2017	Culvert Replacement or Modification	0%	915
Sub-Total								27,524,352
Total								47,290,905

APPENDIX D 2017 DISPOSALS

Table D1: 2017 Major Project Disposals & Loss On Disposals

Segment	Project	Activity	2017 RAB Value \$	Disposal Proceeds \$	Net Loss On Disposal \$	Constrained Network
Pricing Zone 1						
		Nil	-	-	-	
Sub-Total			-	-	-	
Pricing Zone 2						
		Nil	-	-	-	
Sub-Total			-	-	-	
Pricing Zone 3						
		Nil	-	-	-	
Sub-Total			-	-	-	
Total			-	-	-	

Table D2: 2017 Corridor Capital Project Disposals & Loss On Disposals

Segment	Project	Activity	2017 RAB Value \$	Net Disposal Proceeds/(Costs) \$	Net Loss On Disposal \$	Constrained Network
Pricing Zone 1						
916	0916AQ	Resleepering (CAP)	17,459	-	17,459	Yes
916	0916AQ	Rerailing (CAP)	22,732	11,051	11,681	Yes
930	0930EC	Turnout Renewal(CAP)	54,004	(83,471)	137,475	Yes
930	0930EC	Point Machine Removal	5,174	-	5,174	Yes
930	0930EQ	Rerailing (CAP)	15,410	6,876	8,534	Yes
930	0930ES	Rerailing (CAP)	221,022	17,437	203,586	Yes
930	0930ES	Rerailing (CAP)	4,403	1,965	2,438	Yes
930	0930ES	Rerailing (CAP)	14,905	982	13,923	Yes
930	0930ES	Rerailing (CAP)	2,201	982	1,219	Yes
930	0930ET	Rerailing (CAP)	58,070	21,047	37,024	Yes
930	0930EU	Rerailing (CAP)	12,108	5,403	6,705	Yes
931	0931R1	Rerailing (CAP)	192,805	12,279	180,525	Yes
931	0931R1	Rerailing (CAP)	39,941	8,325	31,616	Yes
931	0931R1	Rerailing (CAP)	707	147	560	Yes
931	0931R1	Rerailing (CAP)	37,363	12,157	25,207	Yes
931	0931R1	Rerailing (CAP)	41,237	8,596	32,642	Yes
931	0931R1	Rerailing (CAP)	78,665	12,157	66,508	Yes
931	0931R1	Rerailing (CAP)	41,237	8,596	32,642	Yes
931	0931R1	Rerailing (CAP)	160,961	12,157	148,804	Yes
931	0931R1	Rerailing (CAP)	41,237	8,596	32,642	Yes
931	0931R1	Rerailing (CAP)	106,936	5,526	101,410	Yes
931	0931R1	Rerailing (CAP)	1,532	319	1,212	Yes
931	0931R1	Rerailing (CAP)	71,517	14,907	56,610	Yes
931	0931R2	Rerailing (CAP)	45,695	10,094	35,601	Yes
937	0937AW	Turnout Renewal(CAP)	72,440	2,022	70,418	Yes
937	0937AW	Resleepering (CAP)	3,607	-	3,607	Yes
937	0937AW	Rerailing (CAP)	5,093	1,498	3,595	Yes
937	0937AW	Track Strengthening / Upgrading(CAP)	2,505	-	2,505	Yes
937	0937BT	Turnout Renewal(CAP)	72,440	2,695	69,745	Yes
937	0937BT	Track Strengthening / Upgrading(CAP)	2,783	-	2,783	Yes

Segment	Project	Activity	2017 RAB Value \$	Net Disposal Proceeds/(Costs) \$	Net Loss On Disposal \$	Constrained Network
937	0937BT	Rerailing (CAP)	3,340	982	2,358	Yes
937	0937BT	Resleepering (CAP)	3,807	-	3,807	Yes
937	0937CY	Rerailing (CAP)	32,628	2,947	29,681	Yes
937	0937CY	Rerailing (CAP)	18,787	5,526	13,261	Yes
937	0937CY	Rerailing (CAP)	81,371	5,771	75,600	Yes
937	0937CY	Rerailing (CAP)	19,622	5,771	13,851	Yes
937	0937CY	Rerailing (CAP)	150,986	12,279	138,707	Yes
937	0937CY	Rerailing (CAP)	41,749	12,279	29,470	Yes
937	0937CY	Rerailing (CAP)	17,172	12,279	4,893	Yes
937	0937CY	Rerailing (CAP)	41,749	12,279	29,470	Yes
937	0937CZ	Rerailing (CAP)	243,275	21,170	222,105	Yes
937	0937CZ	Rerailing (CAP)	6,638	2,382	4,255	Yes
937	0937CZ	Rerailing (CAP)	63,876	18,787	45,088	Yes
937	0937DA	Rerailing (CAP)	31,268	2,824	28,444	Yes
937	0937DA	Rerailing (CAP)	29,642	8,718	20,923	Yes
937	0937DA	Rerailing (CAP)	98,777	8,596	90,182	Yes
937	0937DA	Rerailing (CAP)	29,224	8,596	20,629	Yes
937	0937DB	Rerailing (CAP)	94,102	27,678	66,424	Yes
937	0937DC	Turnout Renewal(CAP)	72,440	2,695	69,745	Yes
937	0937DC	Track Strengthening / Upgrading(CAP)	2,505	-	2,505	Yes
937	0937DC	Rerailing (CAP)	3,757	1,105	2,652	Yes
937	0937DC	Resleepering (CAP)	3,607	-	3,607	Yes
937	0937DD	Turnout Renewal(CAP)	72,440	2,695	69,745	Yes
937	0937DD	Track Strengthening / Upgrading(CAP)	2,505	-	2,505	Yes
937	0937DD	Rerailing (CAP)	3,757	1,105	2,652	Yes
937	0937DD	Resleepering (CAP)	3,607	-	3,607	Yes
937	0937DE	Turnout Renewal(CAP)	72,440	2,695	69,745	Yes
937	0937DE	Track Strengthening / Upgrading(CAP)	2,505	-	2,505	Yes
937	0937DE	Rerailing (CAP)	3,757	1,105	2,652	Yes
937	0937DE	Resleepering (CAP)	3,607	-	3,607	Yes
947	0947EX	Rerailing (CAP)	48,381	13,556	34,825	Yes
947	0947EY	Rerailing (CAP)	71,414	5,698	65,716	Yes
947	0947EY	Rerailing (CAP)	116,833	32,737	84,097	Yes
947	0947EZ	Rerailing (CAP)	38,565	10,806	27,759	Yes

Segment	Project	Activity	2017 RAB Value \$	Net Disposal Proceeds/(Costs) \$	Net Loss On Disposal \$	Constrained Network
947	0947FA	Rerailing (CAP)	70,030	19,622	50,407	Yes
947	0947FK	Culvert Replacement or Modification(CAP)	3,987	-	3,987	Yes
948	0948CA	Rerailing (CAP)	37,673	13,335	24,338	Yes
948	0948CD	Rerailing (CAP)	13,169	3,561	9,608	Yes
948	0948CP	Rerailing (CAP)	70,385	19,033	51,352	Yes
955	0955ER	Rerailing (CAP)	116,055	10,069	105,986	Yes
955	0955ES	Rerailing (CAP)	219,268	12,525	206,743	Yes
955	0955FA	Turnout Renewal(CAP)	87,552	(102,473)	190,025	Yes
955	0955FA	Point Machine Removal	5,174	-	5,174	Yes
956	0956X5	Rerailing (CAP)	507,740	16,454	491,286	Yes
956	0956X5	Rerailing (CAP)	2,215	467	1,748	Yes
956	0956X5	Rerailing (CAP)	699	147	552	Yes
956	0956X6	Rerailing (CAP)	53,967	11,371	42,596	Yes
956	0956X7	Turnout Renewal(CAP)	99,278	3,594	95,684	Yes
956	0956X7	Resleepering (CAP)	7,833	-	7,833	Yes
956	0956X7	Rerailing (CAP)	8,742	1,842	6,900	Yes
956	0956X7	Track Strengthening / Upgrading(CAP)	5,828	-	5,828	Yes
956	0956Y5	Rerailing (CAP)	252,163	14,244	237,919	Yes
956	0956Y5	Rerailing (CAP)	67,605	14,244	53,360	Yes
958	0958U1	Track Strengthening / Upgrading(CAP)	16,703	-	16,703	Yes
958	0958U2	Culvert Replacement or Modification(CAP)	13,924	-	13,924	Yes
Sub-Total			4,636,314	383,441	4,252,873	
Pricing Zone 2						
972	0972AJ	Rerailing (CAP)	79,289	13,483	65,806	Yes
972	0972AK	Rerailing (CAP)	9,249	688	8,561	Yes
972	0972AK	Rerailing (CAP)	90,987	15,472	75,515	Yes
972	0972AK	Rerailing (CAP)	1,652	688	964	Yes
972	0972AK	Rerailing (CAP)	90,987	15,472	75,515	Yes
972	0972AN	Culvert Replacement or Modification(CAP)	2,355	-	2,355	Yes
972	0972BA	Rerailing (CAP)	137,059	23,306	113,753	Yes
972	0972BB	Rerailing (CAP)	174,898	29,741	145,157	Yes
972	0972BC	Track Strengthening / Upgrading(CAP)	24,071	-	24,071	Yes

Segment	Project	Activity	2017 RAB Value \$	Net Disposal Proceeds/(Costs) \$	Net Loss On Disposal \$	Constrained Network
972	0972BC	Resleepering (CAP)	1,386	-	1,386	Yes
972	0972Y4	Culvert Replacement or Modification(CAP)	2,355	-	2,355	Yes
973	0973MK	Track Strengthening / Upgrading(CAP)	67,643	-	67,643	Yes
973	0973RI	Rerailing (CAP)	47,773	8,325	39,447	Yes
Sub-Total			729,704	107,174	622,530	
Pricing Zone 3						
963	0963IQ	Track Strengthening / Upgrading(CAP)	55,638	-	55,638	No
963	0963IQ	Resleepering (CAP)	66,975	-	66,975	No
963	0963JV	Track Strengthening / Upgrading(CAP)	17,024	-	17,024	No
963	0963JV	Resleepering (CAP)	905	-	905	No
964	0964PO	Turnout Renewal(CAP)	103,625	2,695	100,930	No
964	0964PO	Track Strengthening / Upgrading(CAP)	3,482	-	3,482	No
964	0964PP	Track Strengthening / Upgrading(CAP)	78,698	-	78,698	No
964	0964PP	Resleepering (CAP)	92,045	-	92,045	No
964	0964PP	Rerailing (CAP)	66,278	24,887	41,391	No
964	0964PX	Turnout Renewal(CAP)	103,625	2,695	100,930	No
964	0964PX	Track Strengthening / Upgrading(CAP)	3,482	-	3,482	No
964	0964RW	Rerailing (CAP)	51,029	19,161	31,868	No
964	0964RX	Rerailing (CAP)	66,083	24,814	41,269	No
964	0964RY	Rerailing (CAP)	15,380	5,775	9,605	No
964	0964SF	Culvert Replacement or Modification(CAP)	315	-	315	No
964	0964SG	Culvert Replacement or Modification(CAP)	315	-	315	No
964	0964SP	Turnout Renewal(CAP)	103,625	(37,765)	141,390	No
964	0964SP	Point Machine Removal	28,095	-	28,095	No
966	0966Z9	Track Strengthening / Upgrading(CAP)	31,781	-	31,781	No
967	0967V5	Rerailing (CAP)	102,711	-	102,711	No
967	0967V6	Rerailing (CAP)	70,345	-	70,345	No
967	0967V7	Rerailing (CAP)	321,700	-	321,700	No
967	0967Y9	Track Strengthening / Upgrading(CAP)	195,468	-	195,468	No
967	0967Z7	Track Strengthening / Upgrading(CAP)	89,589	-	89,589	No
967	0967Z7	Track Strengthening / Upgrading(CAP)	244,334	-	244,334	No
968	0968O6	Rerailing (CAP)	708,610	-	708,610	No

Segment	Project	Activity	2017 RAB Value \$	Net Disposal Proceeds/(Costs) \$	Net Loss On Disposal \$	Constrained Network
964	0987BV	Bridge Replacement or Modification(CAP)	13,586	-	13,586	No
964	0987BV	Resleepering (CAP)	3,620	-	3,620	No
964	0987BZ	Level Crossing Upgrade (Signals)(CAP)	37,016	-	37,016	No
964	0987CL	Signalling System Upgrades(CAP)	773	-	773	No
964	0987CN	Signalling System Upgrades(CAP)	773	-	773	No
964	0987DA	Track Strengthening / Upgrading(CAP)	93,633	-	93,633	No
964	0987DA	Culvert Replacement or Modification(CAP)	315	-	315	No
964	0987DA	Resleepering (CAP)	1,539	-	1,539	No
Sub-Total			2,772,413	42,264	2,730,149	
Total Corridor Capital Disposals			8,138,432	532,879	7,605,552	

Table D3: 2017 Summary Of Disposals & Loss On Disposals

	2017 RAB Value \$	Net Disposal Proceeds/(Costs) \$	Net Loss On Disposal \$
Major Projects			
Pricing Zone 1	-	-	-
Pricing Zone 2	-	-	-
Pricing Zone 3	-	-	-
Sub-Total	-	-	-
Corridor Capital			
Pricing Zone 1	4,636,314	383,441	4,252,873
Pricing Zone 2	729,704	107,174	622,530
Pricing Zone 3	2,772,413	42,264	2,730,149
Sub-Total	8,138,432	532,879	7,605,552
Total	8,138,432	532,879	7,605,552

Table D4: 2017 Major Projects Disposals & Loss On Disposals Detailed

Segment	Related Capital Project Code	Activity Details	Line Segment	Date Asset Removed	Track Metres/ Scope	Rail Metres (Rerailing only)	Unit of Measure	Unit Rate \$	Discount Factor	Rerailing Weight KG	Rail Condemning Rate	Turnout Weight (Tonnes)	Scrap Value/ Tonne (CAL17 ave.) \$	Cost of Removal of Redundant Assets \$	Asset RAB Value per DORC \$	Disposal Proceeds \$	Net Loss On Disposal \$
Pricing Zone 1		Nil													-	-	-
Sub-Total															-	-	-
Pricing Zone 2		Nil													-	-	-
Sub-Total															-	-	-
Pricing Zone 3		Nil													-	-	-
Sub-Total															-	-	-
Total															-	-	-

Table D5: 2017 Corridor Capital Project Disposals & Loss On Disposals Detailed

Segment No	Related Capital Project Code	Activity Details	Line Segment	Date Asset Removed	Track Metres/ Scope	Rail Metres (Rerailing only)	Unit of Measure	Unit Rate \$	Discount Factor	Rerailing Weight KG	Rail Condemning Rate	Turnout Weight (Tonnes)	Scrap Value/ Tonne (CAL17 ave.) \$	Cost of Removal of Redundant Assets \$	Asset RAB WDV \$	Net Disposal Proceeds / (Cost of Removal) \$	Net Loss On Disposal \$
Pricing Zone 1																	
916	0916AQ	Resleepering (CAP)	0916 - Scholey St Jct To Port Waratah	12/10/2017	720		Each	30	82.18%						17,459	-	17,459
916	0916AQ	Rerailing (CAP)	0916 - Scholey St Jct To Port Waratah	12/10/2017	450	900	Rail Metre	31	82.18%	60	82%		249.58		22,732	11,051	11,681
930	0930EC	Turnout Renewal(CAP)	0930 - Kooragang East Jct To Kooragang Island	24/02/2017	1		Each	65,714	82.18%		90%	10.0	249.58	85,717	54,004	(83,471)	137,475
930	0930EC	Point Machine Removal	0930 - Kooragang East Jct To Kooragang Island	24/02/2017	1		Each	6,296	82.18%						5,174	-	5,174
930	0930EQ	Rerailing (CAP)	0930 - Kooragang East Jct To Kooragang Island	30/04/2017	280	560	Rail Metre	33	82.18%	60	82%		249.58		15,410	6,876	8,534
930	0930ES	Rerailing (CAP)	0930 - Kooragang East Jct To Kooragang Island	13/10/2017	710	1,420	Rail Metre	190	81.86%	60	82%		249.58		221,022	17,437	203,586
930	0930ES	Rerailing (CAP)	0930 - Kooragang East Jct To Kooragang Island	13/10/2017	80	160	Rail Metre	33	82.18%	60	82%		249.58		4,403	1,965	2,438
930	0930ES	Rerailing (CAP)	0930 - Kooragang East Jct To Kooragang Island	13/10/2017	40	80	Rail Metre	228	81.86%	60	82%		249.58		14,905	982	13,923
930	0930ES	Rerailing (CAP)	0930 - Kooragang East Jct To Kooragang Island	13/10/2017	40	80	Rail Metre	33	82.18%	60	82%		249.58		2,201	982	1,219
930	0930ET	Rerailing (CAP)	0930 - Kooragang East Jct To Kooragang Island	13/10/2017	857	1,714	Rail Metre	41	82.18%	60	82%		249.58		58,070	21,047	37,024
930	0930EU	Rerailing (CAP)	0930 - Kooragang East Jct To Kooragang Island	13/10/2017	220	440	Rail Metre	33	82.18%	60	82%		249.58		12,108	5,403	6,705
931	0931R1	Rerailing (CAP)	0931 - Kooragang East Jct To Sandgate	28/02/2017	500	1,000	Rail Metre	229	84.22%	60	82%		249.58		192,805	12,279	180,525
931	0931R1	Rerailing (CAP)	0931 - Kooragang East Jct To Sandgate	28/02/2017	339	678	Rail Metre	72	82.18%	60	82%		249.58		39,941	8,325	31,616
931	0931R1	Rerailing (CAP)	0931 - Kooragang East Jct To Sandgate	28/02/2017	6	12	Rail Metre	72	82.18%	60	82%		249.58		707	147	560
931	0931R1	Rerailing (CAP)	0931 - Kooragang East Jct To Sandgate	28/02/2017	495	990	Rail Metre	47	81.06%	60	82%		249.58		37,363	12,157	25,207
931	0931R1	Rerailing (CAP)	0931 - Kooragang East Jct To Sandgate	28/02/2017	350	700	Rail Metre	72	82.18%	60	82%		249.58		41,237	8,596	32,642
931	0931R1	Rerailing (CAP)	0931 - Kooragang East Jct To Sandgate	28/02/2017	495	990	Rail Metre	98	81.06%	60	82%		249.58		78,665	12,157	66,508
931	0931R1	Rerailing (CAP)	0931 - Kooragang East Jct To Sandgate	28/02/2017	350	700	Rail Metre	72	82.18%	60	82%		249.58		41,237	8,596	32,642
931	0931R1	Rerailing (CAP)	0931 - Kooragang East Jct To Sandgate	28/02/2017	495	990	Rail Metre	201	81.06%	60	82%		249.58		160,961	12,157	148,804
931	0931R1	Rerailing (CAP)	0931 - Kooragang East Jct To Sandgate	28/02/2017	350	700	Rail Metre	72	82.18%	60	82%		249.58		41,237	8,596	32,642
931	0931R1	Rerailing (CAP)	0931 - Kooragang East Jct To Sandgate	28/02/2017	225	450	Rail Metre	286	82.95%	60	82%		249.58		106,936	5,526	101,410
931	0931R1	Rerailing (CAP)	0931 - Kooragang East Jct To Sandgate	28/02/2017	13	26	Rail Metre	72	82.18%	60	82%		249.58		1,532	319	1,212
931	0931R1	Rerailing (CAP)	0931 - Kooragang East Jct To Sandgate	28/02/2017	607	1,214	Rail Metre	72	82.18%	60	82%		249.58		71,517	14,907	56,610
931	0931R2	Rerailing (CAP)	0931 - Kooragang East Jct To Sandgate	30/04/2017	411	822	Rail Metre	68	82.18%	60	82%		249.58		45,695	10,094	35,601
937	0937AW	Turnout Renewal(CAP)	0937 - Thornton To Maitland	30/04/2017	1		Each	88,148	82.18%		90%	9.0	249.58		72,440	2,022	70,418
937	0937AW	Resleepering (CAP)	0937 - Thornton To Maitland	30/04/2017	90		Each	49	82.18%						3,607	-	3,607
937	0937AW	Rerailing (CAP)	0937 - Thornton To Maitland	30/04/2017	61	122	Rail Metre	51	82.18%	60	82%		249.58		5,093	1,498	3,595
937	0937AW	Track Strengthening / Upgrading(CAP)	0937 - Thornton To Maitland	30/04/2017	45		Track Metre	68	82.18%						2,505	-	2,505
937	0937BT	Turnout Renewal(CAP)	0937 - Thornton To Maitland	13/06/2017	1		Each	88,148	82.18%		90%	12.0	249.58		72,440	2,695	69,745
937	0937BT	Track Strengthening / Upgrading(CAP)	0937 - Thornton To Maitland	13/06/2017	50		Track Metre	68	82.18%						2,783	-	2,783
937	0937BT	Rerailing (CAP)	0937 - Thornton To Maitland	13/06/2017	40	80	Rail Metre	51	82.18%	60	82%		249.58		3,340	982	2,358

Segment No	Related Capital Project Code	Activity Details	Line Segment	Date Asset Removed	Track Metres/ Scope	Rail Metres (Rerailing only)	Unit of Measure	Unit Rate \$	Discount Factor	Rerailing Weight KG	Rail Condemning Rate	Turnout Weight (Tonnes)	Scrap Value/ Tonne (CAL17 ave.) \$	Cost of Removal of Redundant Assets \$	Asset RAB WDV \$	Net Disposal Proceeds / (Cost of Removal) \$	Net Loss On Disposal \$
937	0937BT	Resleepering (CAP)	0937 - Thornton To Maitland	14/06/2017	95		Each	49	82.18%						3,807	-	3,807
937	0937CY	Rerailing (CAP)	0937 - Thornton To Maitland	28/02/2017	120	240	Rail Metre	168	81.16%	60	82%		249.58		32,628	2,947	29,681
937	0937CY	Rerailing (CAP)	0937 - Thornton To Maitland	28/02/2017	225	450	Rail Metre	51	82.18%	60	82%		249.58		18,787	5,526	13,261
937	0937CY	Rerailing (CAP)	0937 - Thornton To Maitland	28/02/2017	235	470	Rail Metre	211	81.86%	60	82%		249.58		81,371	5,771	75,600
937	0937CY	Rerailing (CAP)	0937 - Thornton To Maitland	28/02/2017	235	470	Rail Metre	51	82.18%	60	82%		249.58		19,622	5,771	13,851
937	0937CY	Rerailing (CAP)	0937 - Thornton To Maitland	28/02/2017	500	1,000	Rail Metre	168	89.63%	60	82%		249.58		150,986	12,279	138,707
937	0937CY	Rerailing (CAP)	0937 - Thornton To Maitland	28/02/2017	500	1,000	Rail Metre	51	82.18%	60	82%		249.58		41,749	12,279	29,470
937	0937CY	Rerailing (CAP)	0937 - Thornton To Maitland	28/02/2017	500	1,000	Rail Metre	19	89.63%	60	82%		249.58		17,172	12,279	4,893
937	0937CY	Rerailing (CAP)	0937 - Thornton To Maitland	28/02/2017	500	1,000	Rail Metre	51	82.18%	60	82%		249.58		41,749	12,279	29,470
937	0937CZ	Rerailing (CAP)	0937 - Thornton To Maitland	30/04/2017	862	1,724	Rail Metre	174	81.16%	60	82%		249.58		243,275	21,170	222,105
937	0937CZ	Rerailing (CAP)	0937 - Thornton To Maitland	30/04/2017	97	194	Rail Metre	41	84.22%	60	82%		249.58		6,638	2,382	4,255
937	0937CZ	Rerailing (CAP)	0937 - Thornton To Maitland	30/04/2017	765	1,530	Rail Metre	51	82.18%	60	82%		249.58		63,876	18,787	45,088
937	0937DA	Rerailing (CAP)	0937 - Thornton To Maitland	30/04/2017	115	230	Rail Metre	168	81.16%	60	82%		249.58		31,268	2,824	28,444
937	0937DA	Rerailing (CAP)	0937 - Thornton To Maitland	30/04/2017	355	710	Rail Metre	51	82.18%	60	82%		249.58		29,642	8,718	20,923
937	0937DA	Rerailing (CAP)	0937 - Thornton To Maitland	30/04/2017	350	700	Rail Metre	174	81.16%	60	82%		249.58		98,777	8,596	90,182
937	0937DA	Rerailing (CAP)	0937 - Thornton To Maitland	30/04/2017	350	700	Rail Metre	51	82.18%	60	82%		249.58		29,224	8,596	20,629
937	0937DB	Rerailing (CAP)	0937 - Thornton To Maitland	28/02/2017	1,127	2,254	Rail Metre	51	82.18%	60	82%		249.58		94,102	27,678	66,424
937	0937DC	Turnout Renewal(CAP)	0937 - Thornton To Maitland	13/06/2017	1		Each	88,148	82.18%		90%	12.0	249.58		72,440	2,695	69,745
937	0937DC	Track Strengthening / Upgrading(CAP)	0937 - Thornton To Maitland	13/06/2017	45		Track Metre	68	82.18%						2,505	-	2,505
937	0937DC	Rerailing (CAP)	0937 - Thornton To Maitland	13/06/2017	45	90	Rail Metre	51	82.18%	60	82%		249.58		3,757	1,105	2,652
937	0937DC	Resleepering (CAP)	0937 - Thornton To Maitland	13/06/2017	90		Each	49	82.18%						3,607	-	3,607
937	0937DD	Turnout Renewal(CAP)	0937 - Thornton To Maitland	30/06/2017	1		Each	88,148	82.18%		90%	12.0	249.58		72,440	2,695	69,745
937	0937DD	Track Strengthening / Upgrading(CAP)	0937 - Thornton To Maitland	30/06/2017	45		Track Metre	68	82.18%						2,505	-	2,505
937	0937DD	Rerailing (CAP)	0937 - Thornton To Maitland	30/06/2017	45	90	Rail Metre	51	82.18%	60	82%		249.58		3,757	1,105	2,652
937	0937DD	Resleepering (CAP)	0937 - Thornton To Maitland	30/06/2017	90		Each	49	82.18%						3,607	-	3,607
937	0937DE	Turnout Renewal(CAP)	0937 - Thornton To Maitland	13/06/2017	1		Each	88,148	82.18%		90%	12.0	249.58		72,440	2,695	69,745
937	0937DE	Track Strengthening / Upgrading(CAP)	0937 - Thornton To Maitland	13/06/2017	45		Track Metre	68	82.18%						2,505	-	2,505
937	0937DE	Rerailing (CAP)	0937 - Thornton To Maitland	13/06/2017	45	90	Rail Metre	51	82.18%	60	82%		249.58		3,757	1,105	2,652
937	0937DE	Resleepering (CAP)	0937 - Thornton To Maitland	13/06/2017	90		Each	49	82.18%						3,607	-	3,607
947	0947EX	Rerailing (CAP)	0947 - Farley To Branxton	30/04/2017	552	1,104	Rail Metre	53	82.18%	60	82%		249.58		48,381	13,556	34,825
947	0947EY	Rerailing (CAP)	0947 - Farley To Branxton	13/06/2017	232	464	Rail Metre	178	86.66%	60	82%		249.58		71,414	5,698	65,716
947	0947EY	Rerailing (CAP)	0947 - Farley To Branxton	13/06/2017	1,333	2,666	Rail Metre	53	82.18%	60	82%		249.58		116,833	32,737	84,097
947	0947EZ	Rerailing (CAP)	0947 - Farley To Branxton	30/04/2017	440	880	Rail Metre	53	82.18%	60	82%		249.58		38,565	10,806	27,759

Segment No	Related Capital Project Code	Activity Details	Line Segment	Date Asset Removed	Track Metres/ Scope	Rail Metres (Rerailing only)	Unit of Measure	Unit Rate \$	Discount Factor	Rerailing Weight KG	Rail Condemning Rate	Turnout Weight (Tonnes)	Scrap Value/ Tonne (CAL17 ave.) \$	Cost of Removal of Redundant Assets \$	Asset RAB WDV \$	Net Disposal Proceeds / (Cost of Removal) \$	Net Loss On Disposal \$
947	0947FA	Rerailing (CAP)	0947 - Farley To Branxton	13/06/2017	799	1,598	Rail Metre	53	82.18%	60	82%		249.58		70,030	19,622	50,407
947	0947FK	Culvert Replacement or Modification(CAP)	0947 - Farley To Branxton	30/04/2017	1		Each	4,851	82.18%						3,987	-	3,987
948	0948CA	Rerailing (CAP)	0948 - Branxton To Whittingham	30/04/2017	543	1,086	Rail Metre	42	82.95%	60	82%		249.58		37,673	13,335	24,338
948	0948CD	Rerailing (CAP)	0948 - Branxton To Whittingham	30/04/2017	145	290	Rail Metre	55	82.18%	60	82%		249.58		13,169	3,561	9,608
948	0948CP	Rerailing (CAP)	0948 - Branxton To Whittingham	24/11/2017	775	1,550	Rail Metre	55	82.18%	60	82%		249.58		70,385	19,033	51,352
955	0955ER	Rerailing (CAP)	0955 - Whittingham To Camberwell Jct	13/06/2017	410	820	Rail Metre	174	81.16%	60	82%		249.58		116,055	10,069	105,986
955	0955ES	Rerailing (CAP)	0955 - Whittingham To Camberwell Jct	13/06/2017	510	1,020	Rail Metre	263	81.86%	60	82%		249.58		219,268	12,525	206,743
955	0955FA	Turnout Renewal(CAP)	0955 - Whittingham To Camberwell Jct	08/04/2017	1		Each	106,536	82.18%			10.0	249.58	104,719	87,552	(102,473)	190,025
955	0955FA	Point Machine Removal	0955 - Whittingham To Camberwell Jct	08/04/2017	1		Each	6,296	82.18%						5,174	-	5,174
956	0956X5	Rerailing (CAP)	0956 - Camberwell Jct To Glennies Ck	13/06/2017	670	1,340	Rail Metre	467	81.16%	60	82%		249.58		507,740	16,454	491,286
956	0956X5	Rerailing (CAP)	0956 - Camberwell Jct To Glennies Ck	13/06/2017	19	38	Rail Metre	71	82.18%	60	82%		249.58		2,215	467	1,748
956	0956X5	Rerailing (CAP)	0956 - Camberwell Jct To Glennies Ck	13/06/2017	6	12	Rail Metre	71	82.18%	60	82%		249.58		699	147	552
956	0956X6	Rerailing (CAP)	0956 - Camberwell Jct To Glennies Ck	13/06/2017	463	926	Rail Metre	71	82.18%	60	82%		249.58		53,967	11,371	42,596
956	0956X7	Turnout Renewal(CAP)	0956 - Camberwell Jct To Glennies Ck	30/04/2017	1		Each	120,805	82.18%			16.0	249.58		99,278	3,594	95,684
956	0956X7	Resleepering (CAP)	0956 - Camberwell Jct To Glennies Ck	30/04/2017	140		Each	68	82.18%						7,833	-	7,833
956	0956X7	Rerailing (CAP)	0956 - Camberwell Jct To Glennies Ck	30/04/2017	75	150	Rail Metre	71	82.18%	60	82%		249.58		8,742	1,842	6,900
956	0956X7	Track Strengthening / Upgrading(CAP)	0956 - Camberwell Jct To Glennies Ck	30/04/2017	75		Track Metre	95	82.18%						5,828	-	5,828
956	0956Y5	Rerailing (CAP)	0956 - Camberwell Jct To Glennies Ck	17/08/2017	580	1,160	Rail Metre	266	81.86%	60	82%		249.58		252,163	14,244	237,919
956	0956Y5	Rerailing (CAP)	0956 - Camberwell Jct To Glennies Ck	17/08/2017	580	1,160	Rail Metre	71	82.18%	60	82%		249.58		67,605	14,244	53,360
958	0958U1	Track Strengthening / Upgrading(CAP)	0958 - Newdell Jct To Draytons Jct	06/04/2017	200		Track Metre	102	82.18%						16,703	-	16,703
958	0958U2	Culvert Replacement or Modification(CAP)	0958 - Newdell Jct To Draytons Jct	17/02/2017	1		Each	16,943	82.18%						13,924	-	13,924
Sub-Total															4,636,314	383,441	4,252,873
Pricing Zone 2																	
972	0972AJ	Rerailing (CAP)	0972 - Anvill Hill to Sandy Hollow	28/02/2017	549	1,098	Rail Metre	88	82.18%	60	82.00%		249.58		79,289	13,483	65,806
972	0972AK	Rerailing (CAP)	0972 - Anvill Hill to Sandy Hollow	28/02/2017	28	56	Rail Metre	184	89.63%	60	82.00%		249.58		9,249	688	8,561
972	0972AK	Rerailing (CAP)	0972 - Anvill Hill to Sandy Hollow	28/02/2017	630	1,260	Rail Metre	88	82.18%	60	82.00%		249.58		90,987	15,472	75,515
972	0972AK	Rerailing (CAP)	0972 - Anvill Hill to Sandy Hollow	28/02/2017	28	56	Rail Metre	33	89.63%	60	82.00%		249.58		1,652	688	964
972	0972AK	Rerailing (CAP)	0972 - Anvill Hill to Sandy Hollow	28/02/2017	630	1,260	Rail Metre	88	82.18%	60	82.00%		249.58		90,987	15,472	75,515
972	0972AN	Culvert Replacement or Modification(CAP)	0972 - Anvill Hill to Sandy Hollow	23/02/2017	1		Each	2,866	82.18%						2,355	-	2,355
972	0972BA	Rerailing (CAP)	0972 - Anvill Hill to Sandy Hollow	23/11/2017	949	1,898	Rail Metre	88	82.18%	60	82.00%		249.58		137,059	23,306	113,753
972	0972BB	Rerailing (CAP)	0972 - Anvill Hill to Sandy Hollow	24/11/2017	1,211	2,422	Rail Metre	88	82.18%	60	82.00%		249.58		174,898	29,741	145,157
972	0972BC	Track Strengthening / Upgrading(CAP)	0972 - Anvill Hill to Sandy Hollow	18/08/2017	250		Track Metre	117	82.18%						24,071	-	24,071
972	0972BC	Resleepering (CAP)	0972 - Anvill Hill to Sandy Hollow	18/08/2017	20		Each	84	82.18%						1,386	-	1,386

Segment No	Related Capital Project Code	Activity Details	Line Segment	Date Asset Removed	Track Metres/ Scope	Rail Metres (Rerailing only)	Unit of Measure	Unit Rate \$	Discount Factor	Rerailing Weight KG	Rail Condemning Rate	Turnout Weight (Tonnes)	Scrap Value/ Tonne (CAL17 ave.) \$	Cost of Removal of Redundant Assets \$	Asset RAB WDV \$	Net Disposal Proceeds / (Cost of Removal) \$	Net Loss On Disposal \$
972	0972Y4	Culvert Replacement or Modification(CAP)	0972 - Anvill Hill to Sandy Hollow	11/05/2017	1		Each	2,866	82.18%						2,355	-	2,355
973	0973MK	Track Strengthening / Upgrading(CAP)	0973 - Sandy Hollow Jct To Wilpinjong	24/02/2017	720		Track Metre	114	82.18%						67,643	-	67,643
973	0973RI	Rerailing (CAP)	0973 - Sandy Hollow Jct To Wilpinjong	23/11/2017	339	678	Rail Metre	86	82.18%	60	82.00%		249.58		47,773	8,325	39,447
Sub-Total															729,704	107,174	622,530
Pricing Zone 3																	
963	0963IQ	Track Strengthening / Upgrading(CAP)	0963 - Dartbrook Junction To Murulla	24/02/2017	719		Track Metre	95	81.47%						55,638	-	55,638
963	0963IQ	Resleepering (CAP)	0963 - Dartbrook Junction To Murulla	24/02/2017	740		Track Metre	111	81.47%						66,975	-	66,975
963	0963JV	Track Strengthening / Upgrading(CAP)	0963 - Dartbrook Junction To Murulla	07/04/2017	220		Track Metre	95	81.47%						17,024	-	17,024
963	0963JV	Resleepering (CAP)	0963 - Dartbrook Junction To Murulla	07/04/2017	10		Track Metre	111	81.47%						905	-	905
964	0964PO	Turnout Renewal(CAP)	0964 - Murulla To Werris Ck	06/04/2017	1		Each	127,194	81.47%		90.00%	12.0	249.58		103,625	2,695	100,930
964	0964PO	Track Strengthening / Upgrading(CAP)	0964 - Murulla To Werris Ck	06/04/2017	45		Track Metre	95	81.47%						3,482	-	3,482
964	0964PP	Track Strengthening / Upgrading(CAP)	0964 - Murulla To Werris Ck	13/06/2017	1,017		Track Metre	95	81.47%						78,698	-	78,698
964	0964PP	Resleepering (CAP)	0964 - Murulla To Werris Ck	13/06/2017	1,017		Track Metre	111	81.47%						92,045	-	92,045
964	0964PP	Rerailing (CAP)	0964 - Murulla To Werris Ck	13/06/2017	1,017	2,034	Rail Metre	40	81.47%	53	92.50%		249.58		66,278	24,887	41,391
964	0964PX	Turnout Renewal(CAP)	0964 - Murulla To Werris Ck	06/04/2017	1		Each	127,194	81.47%		90.00%	12.0	249.58		103,625	2,695	100,930
964	0964PX	Track Strengthening / Upgrading(CAP)	0964 - Murulla To Werris Ck	06/04/2017	45		Track Metre	95	81.47%						3,482	-	3,482
964	0964RW	Rerailing (CAP)	0964 - Murulla To Werris Ck	12/10/2017	783	1,566	Rail Metre	40	81.47%	53	92.50%		249.58		51,029	19,161	31,868
964	0964RX	Rerailing (CAP)	0964 - Murulla To Werris Ck	17/08/2017	1,014	2,028	Rail Metre	40	81.47%	53	92.50%		249.58		66,083	24,814	41,269
964	0964RY	Rerailing (CAP)	0964 - Murulla To Werris Ck	30/08/2017	236	472	Rail Metre	40	81.47%	53	92.50%		249.58		15,380	5,775	9,605
964	0964SF	Culvert Replacement or Modification(CAP)	0964 - Murulla To Werris Ck	27/10/2017	1		Each	387	81.47%						315	-	315
964	0964SG	Culvert Replacement or Modification(CAP)	0964 - Murulla To Werris Ck	27/10/2017	1		Each	387	81.47%						315	-	315
964	0964SP	Turnout Renewal(CAP)	0964 - Murulla To Werris Ck	17/08/2017	1		Each	127,194	81.47%		90.00%	10.0	249.58	40,011	103,625	(37,765)	141,390
964	0964SP	Point Machine Removal	0964 - Murulla To Werris Ck	17/08/2017	1		Each	34,485	81.47%						28,095	-	28,095
966	0966Z9	Track Strengthening / Upgrading(CAP)	0966 - Gap to Watermark	12/06/2017	100		Track Metre	379	83.95%						31,781	-	31,781
967	0967V5	Rerailing (CAP)	0967 - Whitehaven Gunnedah Jct to Boggabri Jct	30/04/2017	1,885	3,770	Rail Metre	32	83.95%						102,711	-	102,711
967	0967V6	Rerailing (CAP)	0967 - Whitehaven Gunnedah Jct to Boggabri Jct	30/04/2017	1,291	2,582	Rail Metre	32	83.95%						70,345	-	70,345
967	0967V7	Rerailing (CAP)	0967 - Whitehaven Gunnedah Jct to Boggabri Jct	24/02/2017	5,904	11,808	Rail Metre	32	83.95%						321,700	-	321,700
967	0967Y9	Track Strengthening / Upgrading(CAP)	0967 - Whitehaven Gunnedah Jct to Boggabri Jct	30/11/2017	600		Track Metre	388	83.95%						195,468	-	195,468
967	0967Z7	Track Strengthening / Upgrading(CAP)	0967 - Whitehaven Gunnedah Jct to Boggabri Jct	12/10/2017	275		Track Metre	388	83.95%						89,589	-	89,589
967	0967Z7	Track Strengthening / Upgrading(CAP)	0967 - Whitehaven Gunnedah Jct to Boggabri Jct	24/11/2017	750		Track Metre	388	83.95%						244,334	-	244,334
968	0968O6	Rerailing (CAP)	0968 - Boggabri to Turrawan Loop	13/06/2017	13,432	26,864	Rail Metre	31	83.95%						708,610	-	708,610

Segment No	Related Capital Project Code	Activity Details	Line Segment	Date Asset Removed	Track Metres/ Scope	Rail Metres (Rerailing only)	Unit of Measure	Unit Rate \$	Discount Factor	Rerailing Weight KG	Rail Condemning Rate	Turnout Weight (Tonnes)	Scrap Value/ Tonne (CAL17 ave.) \$	Cost of Removal of Redundant Assets \$	Asset RAB WDV \$	Net Disposal Proceeds / (Cost of Removal) \$	Net Loss On Disposal \$
964	0987BV	Bridge Replacement or Modification(CAP)	0964 - Murulla To Werris Ck	24/02/2017	1		Each	16,676	81.47%						13,586	-	13,586
964	0987BV	Resleepering (CAP)	0964 - Murulla To Werris Ck	24/02/2017	40		Track Metre	111	81.47%						3,620	-	3,620
964	0987BZ	Level Crossing Upgrade (Signals)(CAP)	0964 - Murulla To Werris Ck	28/02/2017	1		Each	45,435	81.47%						37,016	-	37,016
964	0987CL	Signalling System Upgrades(CAP)	0964 - Murulla To Werris Ck	15/06/2017	35		Track Metre	27	81.47%						773	-	773
964	0987CN	Signalling System Upgrades(CAP)	0964 - Murulla To Werris Ck	15/06/2017	35		Track Metre	27	81.47%						773	-	773
964	0987DA	Track Strengthening / Upgrading(CAP)	0964 - Murulla To Werris Ck	09/05/2017	1,210		Track Metre	95	81.47%						93,633	-	93,633
964	0987DA	Culvert Replacement or Modification(CAP)	0964 - Murulla To Werris Ck	09/05/2017	1		Each	387	81.47%						315	-	315
964	0987DA	Resleepering (CAP)	0964 - Murulla To Werris Ck	09/05/2017	17		Track Metre	111	81.47%						1,539	-	1,539
Sub-Total															2,772,413	42,264	2,730,149
Total															8,138,432	532,879	7,605,552

APPENDIX E INTEREST DURING CONSTRUCTION CALCULATION

Nil for the 2017 compliance period.

APPENDIX F STAKEHOLDER LISTING (CONFIDENTIAL)

Deleted to protect Stakeholder confidentiality

**ATTACHMENT 1 HUNTER VALLEY NETWORK OPERATING
COSTS**

ATTACHMENT 2 CAPITAL CONSULTATION

**ATTACHMENT 3 EVIDENCE OF ACCESS SEEKERS
ENDORSEMENT OF CAPITAL
EXPENDITURE (NOT FOR PUBLICATION)**

Deleted to protect Access Holder confidentiality

ATTACHMENT 4 TRUE UP TEST AUDIT REPORT

ATTACHMENT 5 OTHER SUPPORTING DOCUMENTS

This attachment provides an index to the other confidential supporting documentation provided to the ACCC relating to the 2017 Compliance Assessment submission.

Doc ID	Item	Submission Reference
5.1	Split between MPM and RCRM; forecast MPM and RCRM; actual and forecast expenditure for the top 6 maintenance activities (spreadsheet)	Sections 1.2 and 2.4
5.2.1	10 year Asset Management Plan FY16-FY25 (spreadsheet)	Section 1.2
5.2.2	Annual Works Program and budget FY16-17 (spreadsheet)	
	Asset strategies for major maintenance activities undertaken:	Section 1.2
5.3.1	<ul style="list-style-type: none"> ▪ HV Ballast Cleaning Strategy 	
5.3.2	<ul style="list-style-type: none"> ▪ HV Track Reconditioning Strategy 	
5.3.3	<ul style="list-style-type: none"> ▪ HV Resurfacing Strategy 	
5.3.4	<ul style="list-style-type: none"> ▪ HV Rail Grinding Strategy 	
5.3.5	<ul style="list-style-type: none"> ▪ HV Turnout Steel Replacement Planning Methodology 	
5.3.6	<ul style="list-style-type: none"> ▪ HV Cess & Top Drain Planning Methodology 	
	These strategies are unchanged from those provided for 2016	
5.4	Approved annual possession programme	Section 1.2
5.5	Actual and forecast GTK and Train Km for the Hunter Valley (for Pricing Zones and non-coal) and Interstate networks	Section 1.2
	Assurance that ARTC's procurement policies satisfied or procurements efficient:	Sections 1.2 and 2.3
5.6.1	<ul style="list-style-type: none"> ▪ Outline of procurement process for selection of contracts 	
	Asset disposals—underlying calculations which determine the written down value (spreadsheet):	Sections 1.2 and 6
5.7.1	<ul style="list-style-type: none"> ▪ RAB written down values and loss on disposal 	
5.7.2	<ul style="list-style-type: none"> ▪ RAB Discount Rate Schedule 2017 	
5.7.3	<ul style="list-style-type: none"> ▪ DORC values PZ1 and 2 (Booz Allen) 	
5.7.4	<ul style="list-style-type: none"> ▪ DORC values PZ3 Dartbrook to Gap (Booz Allen) 	
5.7.5	<ul style="list-style-type: none"> ▪ DORC values PZ3 Gap to Turrawan (Evans & Peck) 	
	Demonstration of engagement with Access Holders / RCG	Sections 1.2 and 2.5
5.8.1	<ul style="list-style-type: none"> ▪ FY18 Corridor Capital Programme – RCG 	
5.8.2	<ul style="list-style-type: none"> ▪ 2017 Possession Plan - RCG 	
5.8.3	<ul style="list-style-type: none"> ▪ Network Reliability Update – RCG 	
5.8.4	<ul style="list-style-type: none"> ▪ Rail Break Reduction Strategy - RCG 	
5.8.5	<ul style="list-style-type: none"> ▪ Muscle Creek Bridge Update - RCG 	
5.8.6	<ul style="list-style-type: none"> ▪ Hunter River Bridge Update - RCG 	
5.8.7	<ul style="list-style-type: none"> ▪ Reliability and Condition Monitoring Programme – RCG 	
5.8.8	<ul style="list-style-type: none"> ▪ Steel Structures Review - RCG 	
5.8.9	<ul style="list-style-type: none"> ▪ RCG Monthly Report December 2017 	
5.8.10	<ul style="list-style-type: none"> ▪ HVAU - 2017 Compliance Submission Overview 	
	Application of revised allocation methodology (Schedule I)	Sections 1.2 and 2.2
5.9.1	<ul style="list-style-type: none"> ▪ Mapping of the original and revised Schedule I overhead allocators to operating cost activities 	
5.9.2	<ul style="list-style-type: none"> ▪ Actual allocator values for Schedule I allocators 	