



Final Determination

Australian Rail Track Corporation's
compliance with the Hunter Valley
Coal Access Undertaking financial
model for calendar years
2019 and 2020

December 2022

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Executive summary

The Hunter Valley Coal Network Access Undertaking (HVAU) provides for the Australian Competition and Consumer Commission (ACCC) to undertake an annual assessment of the Australian Rail Track Corporation's (ARTC) compliance with the financial model set out in the HVAU.

At its core, the financial model dictates the minimum (floor) and maximum (ceiling) amount of Access revenue ARTC can recover from Access Holders in the Constrained Network (currently Zones 1 and 2) and the unconstrained network (currently Zone 3). The HVAU outlines the calculation of the Regulatory Asset Base (RAB) Floor Limit for the Constrained Network and Zone 3.¹ It also stipulates that a separate RAB must be calculated for Zone 3 to account for loss capitalisation.

The HVAU requires that only Prudent capital expenditure is included in the RAB Floor Limit and RAB, and that only Efficient operating expenditure is recovered from Access Holders.² The ACCC must assess whether ARTC has undertaken all these calculations correctly in an annual compliance assessment. The ACCC must also assess whether ARTC's true up tests (which considers whether there was sufficient capacity on the network to meet contract requirements) for 2019 and 2020 meet the requirements of the HVAU.

The ACCC has undertaken this assessment for the 2019 and 2020 calendar years and determined that:

- ARTC has incurred Prudent capital expenditure of \$70.2 million in 2019 and \$90.2 million in 2020
- ARTC incurred Efficient operating expenditure of \$198.7 million and \$215.9 million, respectively
- ARTC under-recovered revenue of \$6.9 million and \$8.8 million, respectively, from Constrained Coal Customers
- the Zone 3 loss capitalisation balance at the end of the years were \$43.1 million and \$37.9 million, respectively
- the submitted true up test audits were undertaken in accordance with the HVAU.

¹ The RAB Floor Limit in the HVAU is the more traditional type of asset base used in building block models for other industries, where it is known just as the 'RAB'.

² The terms Prudent and Efficient have a defined meaning in section 14.1 of the HVAU.

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Summary of compliance

Table 1 shows the ACCC’s obligations under the HVAU for the annual compliance assessment, as well as the relevant chapters of this final determination for those requirements and a summary of the ACCC’s assessment for 2019 and 2020.

Table 1: Annual compliance obligations for the ACCC in the HVAU

HVAU Section	Obligation	Final Determination Chapter	ACCC assessment for 2019	ACCC assessment for 2020
4.10(d)(i)	Determine whether ARTC has undertaken the roll forward of the RAB in accordance with the HVAU (and if not undertaken in accordance with the HVAU, determine what the closing RAB should be)	Chapter 6.2 (Zone 3)	ARTC has undertaken the roll forward of the RAB in accordance with the HVAU. The closing RAB is: \$753,271,190.	ARTC has undertaken the roll forward of the RAB in accordance with the HVAU. The closing RAB is: \$747,567,582.
4.10(d)(i)	Determine whether ARTC has undertaken the roll forward of the RAB Floor Limit in accordance with the HVAU (and if not undertaken in accordance with the HVAU, determine what the closing RAB Floor Limit should be)	Chapter 5.1 (Constrained Network) Chapter 6.1 (Zone 3)	ARTC has undertaken the roll forward of the RAB Floor Limit in accordance with the HVAU, resulting in closing values of: Constrained Network: \$1,432,584,453 Zone 3: \$710,213,459.	ARTC has undertaken the roll forward of the RAB Floor Limit in accordance with the HVAU, resulting in closing values of: Constrained Network: \$1,416,609,748 Zone 3: \$709,633,705.
4.10(d)(ii)	Determine whether ARTC has undertaken calculations relevant to reconciliation of Access revenue with the applicable Ceiling Limit	Chapter 5.2	ARTC has undertaken the relevant calculations for reconciliation of Access revenue and the applicable Ceiling Limit for the Constrained Network correctly. Access revenue: \$262,683,893 Applicable Ceiling Limit: \$269,546,220.	ARTC has undertaken the relevant calculations for reconciliation of Access revenue and the applicable Ceiling Limit for the Constrained Network correctly. Access revenue: \$269,099,501 Applicable Ceiling Limit: \$277,920,487.

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HVAU Section	Obligation	Final Determination Chapter	ACCC assessment for 2019	ACCC assessment for 2020
4.10(d)(ii)	Determine whether ARTC has undertaken calculations of any allocation of the total unders and overs amount in accordance with the HVAU (and where calculations are not in accordance with the HVAU, determine what total unders and overs amount allocation would be in accordance with the HVAU)	Chapter 5.3	ARTC has undertaken calculations of the allocation of the total unders amount for the Constrained Network for 2019 in accordance with the HVAU. Under recovery from Constrained Network Access Holders: \$6,862,326.	ARTC has undertaken calculations of the allocation of the total unders amount for the Constrained Network for 2020 in accordance with the HVAU. Under recovery from Constrained Network Access Holders: \$8,820,986.
4.10(e)	Determine whether ARTC has incurred Efficient costs and Efficient operating expenditure , in accordance with section 4.5(b), and if necessary determine the change to the total unders and overs amount or allocation and the closing RAB in section 4.4(a)	Chapter 4	ARTC has incurred Efficient costs and Efficient operating expenditure in accordance with section 4.5(b) for 2018. No change is required for the total unders and over amount or allocation and the closing RAB. Efficient operating expenditure: Constrained Network: \$135 560 093 Zone 3: \$55 571 732.	ARTC has incurred Efficient costs and Efficient operating expenditure in accordance with section 4.5(b) for 2018. No change is required for the total unders and over amount or allocation and the closing RAB. Efficient operating expenditure: Constrained Network: \$141 682 226 Zone 3: \$66 818 348.
4.10(f)(xi)	Review the final audit report for the annual true up test undertaken by an independent auditor. Decide, and notify ARTC of, any amounts of underpayment of rebates that are owing to Access Holders or amounts of overpayment of rebates ARTC is entitled to recover.	Chapter 7	The annual true up test was undertaken by an independent auditor (RSM Australia). There was no underpayment or overpayment of rebates.	The annual true up test was undertaken by an independent auditor (Grant Thornton). There was no underpayment or overpayment of rebates.

Source: ACCC, based on HVAU version 7.

1. Introduction

1.1. Background

ARTC is an Australian Government-owned corporation, established in 1998 to be the single point of contact for parties seeking to run trains on the Australian Interstate rail network and the Hunter Valley rail network in New South Wales.

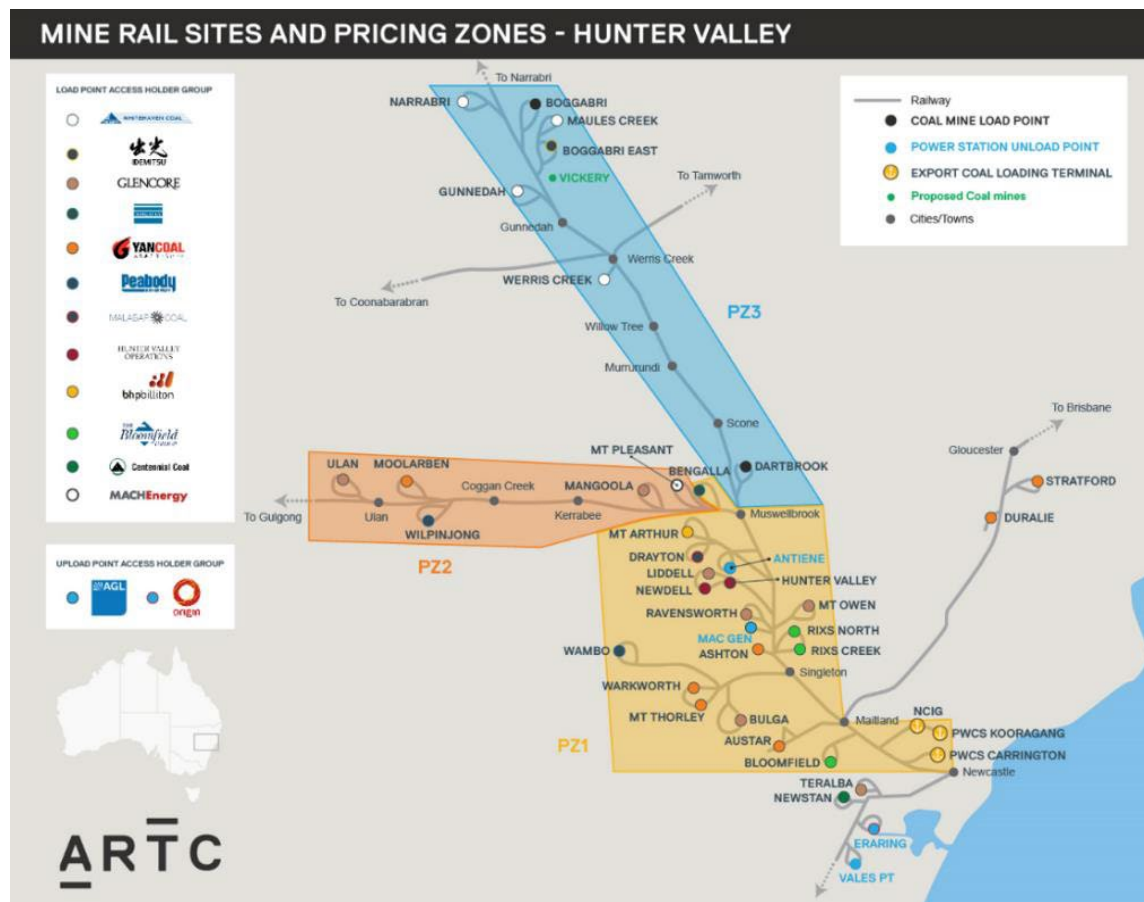
The Hunter Valley coal chain is the largest export coal supply chain in the world and is predominantly used to transport coal from mines in the Hunter Valley region to the Port of Newcastle, for export to international customers and to domestic consumers, such as power stations. It is also used by non-coal traffic, including general and bulk freight services (such as grain) and passenger services. ARTC has a natural monopoly over the below-rail infrastructure used to transport coal from the Hunter Valley to the Port of Newcastle.

As illustrated in Figure 1, the Hunter Valley network is divided into Pricing Zones (Zones), where:

- Zone 1 extends from the Port of Newcastle to Muswellbrook. It contains the oldest mines in the Hunter Valley. Traffic from the other zones must traverse Zone 1 to reach the port.³
- Zone 2 extends east from Muswellbrook to Ulan.
- Zone 3 extends from Muswellbrook north to Narrabri. It includes the newest mines.

³ As defined in schedule E of the HVAU, Zone 1 comprises 24 individual segments, Zone 2 has 4 segments, and Zone 3 has 8 segments. Zone 1 does not include Islington Junction (Newcastle) south to Vales Point, nor Telarah (Maitland) to Stratford.

Figure 1: Hunter Valley rail network – Pricing Zones



Source: ARTC.

The HVAU is a voluntary access undertaking given to the ACCC by ARTC, pursuant to Part IIIA of the *Competition and Consumer Act 2010* (Cth) (the Act). It establishes the framework for regulation of the Hunter Valley network. The ACCC accepted the original HVAU on 29 June 2011 and has accepted multiple variations and extensions since, most recently version 8 on 2 June 2021.

Version 7 of the HVAU (accepted by the ACCC on 29 November 2018) is the version that applies to the compliance assessments for 2019 and 2020. References to the HVAU in this document are references to version 7, unless otherwise stated. Version 7 introduced path-based pricing and changed the incremental cost methodology, with 'Incremental Capital Costs' allocated on the basis of contracted usage (rather than actual usage, as under version 6). Version 7 also introduced a mechanism for Rail Capacity Group (which comprises Access Holders to the rail network) and ACCC oversight of the process for allocating capital costs as either 'Fixed and/or Incremental Capital Costs' (see Chapter 2 for an explanation of these terms).

All variations and extensions to the HVAU are available on the ACCC's website at <https://www.accc.gov.au/regulated-infrastructure/rail/hunter-valley-rail-network-access-undertaking>.

The objectives of the HVAU are to:

- provide a framework to manage negotiations between ARTC and access seekers
- establish a workable, open, non-discriminatory, efficient and inclusive process for access seeker applications

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- promote transparency
- balance ARTC's legitimate business interests, the interest of the public and the interests of access seekers
- provide an efficient and effective dispute resolution process
- ensure compliance with Part IIIA of the Act
- ensure consistency with the *Competition Principles Agreement*.

Appendix A outlines the relevant annual compliance assessment provisions from the HVAU.

1.2. ARTC's 2019 and 2020 compliance submissions

There is currently a time lag between the compliance year being assessed and when the ACCC's final determination for that year is published. For example, in 2021 the ACCC assessed ARTC's compliance for the 2018 calendar year. This is due to extended assessments for 2013 and 2015.

In version 8 of the HVAU, ARTC committed to using its 'best endeavours to complete the 2019 and 2020 Compliance Assessments as a single submission', which it did on 26 November 2021.⁴

1.2.1. Consultation

On 16 February 2022 the ACCC published a consultation paper inviting comments from interested parties on ARTC's 2019 and 2020 annual compliance documentation. The ACCC received one submission, from HRATF, which we published on our website on 28 March 2022. HRATF provided a revised submission to the ACCC in November 2022, which is also published on our website.

ARTC provided a further submission to the ACCC, responding to matters raised in HRATF's submission, published on our website on 9 December 2022.

The submissions are available on the ACCC's website at:

<https://www.accc.gov.au/regulated-infrastructure/rail/artc-hunter-valley-annual-compliance/hvau-annual-compliance-assessment-2019-and-2020>.

1.2.2. Revised submissions

ARTC submitted revised versions of various aspects of its submission on 7 and 27 January 2022, and further on 24 August 2022, to address minor errors.

On 7 January 2022 ARTC provided a revised main submission document and financial model to correct errors in calculating depreciation on the disposal value for incremental assets. The revised version showed the following amendments:

- A decrease in disposals and corresponding increase in net incremental capital expenditure by \$235,318 in 2019 and \$437,041 in 2020. This caused a reduction in fixed capital expenditure by the same amounts.⁵
- An increase in depreciation on the opening RAB Floor Limit of \$314,074 in 2019 and \$831,515 in 2020.

⁴ Section 4J.10(g).

⁵ This is because the financial model calculates the portion of capital expenditure that is incremental, then allocates the remainder as fixed. As such, any adjustment to incremental capital expenditure results in an adjustment to fixed capital expenditure.

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These amendments affected the above figures only. They did not impact calculation of key outputs, such as the under recovery for the Constrained Network or the Zone 3 loss capitalisation balance.⁶

On 27 January 2022 ARTC provided a revised financial model to correct errors in calculating the Consumer Price Index (CPI) increase on the RAB Floor Limit for fixed assets. This revision showed a \$2,355 reduction in fixed assets. It did not impact any financial calculations or published figures, so a revised main submission document was unnecessary.

On 24 August 2022 ARTC provided a further revised submission and financial model in which it identified and corrected a minor error in calculating interest during construction. This error affected other figures in the financial model. Interest during construction was \$25,430 higher in 2019 in the revised model. Most notably, this revision resulted in:

- an additional \$855 and \$1,690 of under-recovered revenue in 2019 and 2020, respectively (i.e. slightly higher repayments for Constrained Coal Customers)
- an additional \$548 and \$1,655 remaining unpaid in the loss capitalisation account for 2019 and 2020, respectively (i.e. a slightly higher balance still owing by Zone 3 Access Holders).

Appendix B shows a more detailed comparison between the original, January and August 2022 submissions.

The final version of ARTC's public submission is available on the ACCC's website: <https://www.accc.gov.au/regulated-infrastructure/rail/artc-hunter-valley-annual-compliance/hvau-annual-compliance-assessment-2019-and-2020/artcs-compliance-submission>.

1.2.3. The financial model

ARTC submitted its financial model and its overhead cost allocation model to the ACCC on a confidential basis, as it has done for every previous compliance process. The financial model details the calculations of costs and revenue, and outcomes for unders and overs and loss capitalisation.

In its submission to our consultation paper, the Hunter Rail Action Task Force (HRATF), a representative body for coal producers in the Hunter Valley, raised concerns about 'a lack of transparency around the ARTC financial and tariff models'.⁷ HRATF also raised these concerns during consultation regarding the ACCC's assessment of HVAU version 8.⁸ In its draft and final decisions for this assessment, the ACCC supported 'ARTC and stakeholders engaging in discussions on the possible publication of a tariff model'.⁹

In ARTC's response to HRATF's submission, it stated the following:

*ARTC has given thorough consideration to both confidentiality obligations and the considerable complexity of the regulatory model and concluded that [a] workshop approach... is the most appropriate avenue to increase transparency and provide useful information to stakeholders at this time.*¹⁰

⁶ While the specified published numbers were affected by the revisions, segment-level figures used to calculate the actual RAB Floor Limit and unders/overs for the Constrained Network were not affected.

⁷ HRATF, [Submission to Australian Rail Track Corporation's compliance with the Hunter Valley Coal Network Access Undertaking for 2019 and 2020](#), 24 March 2022, p 1.

⁸ See HRATF, [Submission in response to draft Hunter Valley Access Undertaking Consultation](#), 24 February 2021, pp 7-8.

⁹ ACCC, [Draft Decision: ARTC's March 2021 variation to the HVAU](#), 13 April 2021, p 30 and ACCC, [Final Decision: ARTC's March 2021 variation to the HVAU](#), 2 June 2021, p 9.

¹⁰ ARTC, [Further Submission for ARTC's 2019 and 2020 Joint Compliance Assessment](#), December 2022, p 5.

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This workshop approach involves a series of sessions between ARTC and its customers. The sessions cover different aspects of the financial model that ARTC considers stakeholders have focused most on. These are:

- allocating operating expenses (maintenance and overhead expenditure)
- calculating the Regulatory Asset Base
- calculating the Ceiling Limit and undertaking the associated test.

As part of the sessions, ARTC is providing Microsoft Excel excerpts from the financial model to its customers that contain mock or anonymised data to demonstrate working calculations and scenario analysis.

ARTC's response to HRATF's submission also noted that stakeholders have referred to publishing the financial model in full, with confidential information appropriately anonymised, as regulatory best practice. ARTC considers the gas transmission market to be the most comparable regulated industry, given its similarly narrow customer base. ARTC views information in models the gas transmission industry publishes as consistent with aggregate information and data ARTC already publishes.

ARTC concluded with the following:

ARTC is confident the above approach [hosting workshops] will provide customers with adequate training, data and insight into the regulatory model whilst further increasing transparency and confidence in the calculations that underpin it. ... ARTC will seek feedback from customers following the workshops as to future steps or improvements that can be made to the information provided.

The ACCC recognises the steps ARTC is taking to improve transparency and stakeholders' understanding of the financial model. However, the ACCC has previously stated its view that there are significant advantages to having regulatory models being made public on an appropriately anonymised and confidential basis.¹¹

It is yet unclear whether stakeholders will still need access to more detailed information to adequately understand how the model works. We strongly encourage ongoing and open discussions between ARTC and its customers about whether the workshops provide sufficient transparency and understanding for customers.

1.3. Data presented in this determination

This final determination presents monetary values in nominal dollars, unless stated otherwise. Nominal data includes the impact of inflation and is used when ARTC reports its financial information in its annual reports, publishes prices and reports values within its submission for this compliance assessment, among other instances.

However, charts comparing expenditures over several years are presented here with values in real \$2020. Real data allows a better comparison of values over time, as it removes the impact of inflation

We have rounded figures presented in charts and tables in this determination for illustrative purposes. However, we have calculated all percentages shown in this determination using exact figures as submitted by ARTC. This may result in slight differences between percentages the reader can calculate and what we have calculated.

If you have queries about matters raised in this document, you can contact the Regulated Access – Rail section at: transport@acc.gov.au.

¹¹ ACCC, [Draft Decision: ARTC's March 2021 variation to the HVAU](#), 13 April 2021, p 30.

2. HVAU Financial Model

2.1. Introduction

Section 4 of the HVAU sets out key elements of ARTC's financial model for customers covered by the HVAU, including:

- calculating the asset base ARTC's allowable revenue is linked to
- determining the minimum and maximum revenue ARTC should earn, via revenue constraints
- reconciling actual revenue received against final costs to ensure ARTC does not over or under recover revenue
- determining whether Zone 3 Access Holders have paid down the 'loss capitalisation' balance.

All capitalised terms in this document are defined in the HVAU. Some definitions and explanations are included in footnotes where appropriate.

2.1.1. The Constrained Network and Pricing Zone 3

The rule that ARTC applies for recovering Access Revenue depends on whether the relevant Access Holder operates in the Constrained Network or unconstrained parts of the network.

The Constrained Network currently comprises all Segments in Zones 1 to 2 where ARTC's Access revenue is likely to reach or exceed Economic Cost for those Segments (see below for an explanation of Economic Cost).¹² The HVAU 'constrains' revenue for these Segments to no more than the maximum revenue ARTC is allowed to receive (i.e. its Economic Cost). The majority of customers in these zones are Constrained Coal Customers, meaning they hold an Access Agreement with ARTC to carry coal on the network, pay more than the minimum revenue ARTC should earn, and their coal trains start and end their journeys within the Network covered by the HVAU.¹³

Zone 3 is treated differently to the Constrained Network. Zone 3 is 'unconstrained' in that ARTC can recover revenue exceeding Zone 3's Economic Cost. This is because in the initial years of the HVAU, coal mines in Zone 3 were in their start-up phase and Zone 3 Access Holders had limited ability to pay for their use of the network, particularly capital costs.

The HVAU includes a loss capitalisation model, whereby any shortfall in revenue from Zone 3 Access Holders to cover ARTC's costs are accumulated into a loss capitalisation account. This encouraged investment in new assets when there was limited initial ability to pay access charges equal to the Economic Cost. Zone 3 Access Holders are now well-established and have been paying down the loss capitalisation balance since 2015, by paying revenue exceeding their Economic Cost.

The different ways the Constrained Network and Zone 3 are treated when calculating the applicable asset base, access charges and revenue reconciliation are discussed below.

¹² The Hunter Valley rail network is broken down into rail 'segments'. These are defined components of the network in Schedule E of the HVAU. ARTC calculates the Ceiling Limit revenue constraints (see below for explanations) for each segment and adds these to obtain totals for Train Paths that use those segments and for Zones. There are 3 segments in Zone 1 that are not 'constrained'.

¹³ There are also Zone 1 and 2 Access Holders that are not Constrained Coal Customers. They may hold Non-Coal Access Rights or run trains that start and/or end outside Zones 1 and/or 2.

2.2. Calculating the asset base

The HVAU model links ARTC’s revenue to its asset base, as is typically done under a building block model. The HVAU requires 2 asset base calculations: the RAB Floor Limit and the RAB. The RAB Floor Limit is the more traditional type of asset base used in building block models for other industries, where it is known just as the ‘RAB’. Under section 4.4(a) of the HVAU, the RAB is a separate calculation undertaken for only Zone 3 to account for loss capitalisation.

2.2.1. RAB Floor Limit

The RAB Floor Limit is the value of ARTC’s rail assets. ARTC calculates separate RAB Floor Limits for the Constrained Network and Zone 3. The RAB Floor Limit for the Constrained Network is used to calculate components of Economic Cost (return on assets and depreciation). The Zone 3 RAB Floor Limit is used to determine if Zone 3 remains subject to loss capitalisation.

Figure 2 illustrates the components of the RAB Floor Limit and how it is rolled forward.

Figure 2: RAB Floor Limit



Source: ACCC, based on HVAU version 7, section 4.4(b).

Calculation of the RAB Floor Limit involves:

- The **opening RAB Floor Limit**, which is the value of the closing RAB Floor Limit the previous year.
- The **CPI indexation**, which is used to maintain the real (underlying) value of assets by adjusting them based on the CPI for Sydney.¹⁴
- **Net Capex**, which is the sum of ARTC’s capital expenditure commissioned during the year, including interest incurred during construction of capital projects, less the written down value of disposed assets.¹⁵
- **Depreciation** (also referred to as ‘return of assets’), which represents the consumption of the asset. Section 4.7 of the HVAU sets out that depreciation will be calculated for each year on a straight-line basis; that is, annual depreciation equals the opening asset value (RAB Floor Limit) divided by the remaining number of years of its useful life. The useful life of HVAU assets is based on the remaining mine life, deemed to be 23 years commencing 1 July 2016, and therefore 20.5 and 19.5 years at the beginning of 2019 and 2020 respectively.
- The **closing RAB Floor Limit**, which is calculated by adding CPI and net capital expenditure to the opening RAB Floor Limit and deducting depreciation.

The RAB Floor Limit is the basis for calculating the capital charge components of Economic Cost (return on assets and depreciation).

¹⁴ September quarter of the previous year to the September quarter of the year under assessment.

¹⁵ See section 4.4 of the HVAU.

2.2.2. RAB

The RAB is the total asset value of Zone 3, including its RAB Floor Limit and the balance of capitalised losses incurred by ARTC. These losses occurred when revenue recovered from Zone 3 Access Holders did not cover their Economic Cost during earlier years of the HVAU.

Figure 3 illustrates the RAB components and how it is rolled forward.

Figure 3: RAB



Source: ACCC, based on HVAU version 7, section 4.4(a).

Calculation of the RAB involves:

- The **opening RAB**, which is equal to the closing value at the end of the previous year.
- The **return on opening RAB**, which is the product of the nominal pre-tax rate of return and the opening RAB. The nominal pre-tax rate of return is 7.91% for 2019 and 2020 (as per section 4.8 of the HVAU).
- **Operating expenditure (opex)**, which comprises primarily ARTC’s infrastructure maintenance, business unit management, corporate overhead and network control costs, and net loss on disposals for Zone 3 only.¹⁶
- **Net Capital expenditure (capex)**, which is the same as the net capital expenditure in the RAB Floor Limit for Zone 3.
- The **return on Net Capex**, which is the nominal rate of return applied to half of the net capital expenditure in the compliance year. A half year return assumes that the capital expenditure occurs evenly across the year.
- **Revenue**, which refers to the gross Access revenue paid by Access Holders originating in Zone 3, net of the incremental costs attributed to Zone 3 Access Holders for their use of Zone 1. It includes revenue from charges for all Segments they use – both in Zone 1 and Zone 3.¹⁷
- The **closing RAB**, which is calculated by adding the return on the RAB, operating expenditure, net capital expenditure and return on net capital expenditure to the opening RAB, and then deducting revenue.

2.3. Cost categories

At the most general level, expenditures incurred by ARTC are broadly grouped into ‘capital expenditure’ and ‘operating expenditure’. However, the HVAU provides more detailed cost categories.

Costs, whether operating or capital costs, are categorised according to whether they can be directly attributed to a particular Segment or group of Segments:

- **Segment Specific** – those that ARTC can directly attribute to a particular Segment or group of Segments, such as costs to repair a particular section of track.

¹⁶ Net loss on disposals is the written down value of the assets disposed of, less any sale proceeds (scrap value) for the asset.

¹⁷ As discussed further below, coal from Zone 3 Access Holders traverses through Zones 3 and 1 to reach the Port of Newcastle. It does not traverse Zone 2.

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- **Non-Segment Specific** – those that ARTC cannot directly attribute to a Segment or groups of Segments, such as overhead costs. Schedule I of the HVAU outlines how ARTC must allocate these costs across Segments and zones.

The segment attribution categorisation allows ARTC to determine costs separately for the Constrained Network and Zone 3.

Costs are also categorised according to the extent to which they vary with network usage:

- **Variable Maintenance Costs** are the parts of maintenance expenditure (including major periodic maintenance) that vary with usage of the rail network. This is part of operating expenditure.
- **Incremental Capital Costs** are costs in Zone 1 that are avoidable in the long term, excluding all capital costs incurred before 1 July 2008 or those specifically endorsed by the RCG as being Fixed Costs. Capital expenditure that varies due to network usage is an Incremental Capital Cost (track strengthening, for example, is considered primarily an Incremental Capital Cost).¹⁸
- **Fixed Costs** are costs other than Variable Maintenance Costs and Incremental Capital Costs. Operating expenditures required for the whole network (Network Control, Business Unit Management and Corporate Overheads), plus capital expenditure that does not vary with network usage (such as for bridges and signalling equipment) are Fixed Costs.

The network usage categorisation, in conjunction with the segment attribution categorisation, allows ARTC to calculate costs that contribute to the relevant revenue constraint.

Any given cost will be categorised according to both methods above. For example, expenditure to conduct ballast cleaning in Segments fully within Zone 3, which falls under operating expenditure (specifically, infrastructure maintenance), would be categorised as both a Segment Specific Cost and Variable Maintenance Cost.

Cost adjustments for cross-zone usage

The Hunter Valley rail network includes shared assets that all Access Holders use. As shown in Figure 1 (Chapter 1) above, Access Holders in Zones 2 and 3 are required to also use Zone 1 track to reach the Port of Newcastle, meaning Zone 1 assets are common to all Access Holders. However, Constrained Coal Customers (from Zones 1 and 2) are charged differently for their use of Zone 1 compared to Zone 3 Access Holders.

Constrained Coal Customers contribute their share of Variable Maintenance Costs, Incremental Capital Costs and Fixed Costs incurred for their use of Zone 1.

In contrast, Zone 3 Access Holders contribute only their Variable Maintenance Costs and Incremental Capital Costs associated with their use of Zone 1. This is another special arrangement, like the loss capitalisation, that was included for Zone 3 mines in the original HVAU.

Under HVAU version 8, Zone 3 Access Holders will commence paying a share of Zone 1 fixed costs when loss capitalisation no longer applies and they join the Constrained Network. From 1 January 2023, Zone 3 Access holders will pay:

- 33% of their share of Zone 1 fixed costs in 2023
- 100% of their share of Zone 1 fixed costs from 2024 onwards.

¹⁸ Costs are not necessarily categorised as 100% Variable Maintenance, Incremental Capital or Fixed Costs. For example, track strengthening is typically categorised as 75% Incremental Capital Cost (allocated in proportion to GTKs), because volumes have a greater impact on track weakening than time. The remaining 25% is a Fixed Cost.

2.4. Revenue constraints

The HVAU provides 2 revenue constraints for ARTC when calculating charges for Access Holders. These are the Ceiling Limit and the Floor Contribution. The way these constraints are calculated and the extent to which these constraints impact ARTC’s revenue vary across different customer groups.

2.4.1. Ceiling Limit

The Ceiling Limit allows ARTC to recover operating costs, depreciation and a return on assets. In effect, the Ceiling Limit allows ARTC to earn a rate of return commensurate with the regulatory and commercial risks it faces, while constraining its ability to earn monopoly profits.

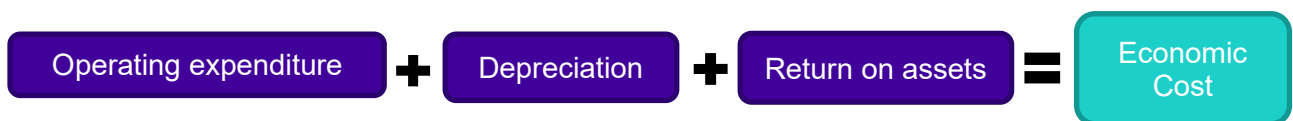
The Ceiling Limit is the maximum amount of revenue that ARTC is entitled to recover from Constrained Coal Customers in the Constrained Network. The Ceiling Limit does not constrain revenue ARTC earns from Zone 3 in practice, but is instead used to calculate the amount to add to or subtract from the Zone 3 ‘loss capitalisation’ balance.

Under section 4.3(a) of the HVAU, the Ceiling Limit is defined as the Economic Cost of providing services.

Economic Cost

The Economic Cost is calculated using a building block model and incorporates allowances for return on assets, return of assets (depreciation) and efficient operating expenditure.¹⁹ Figure 4 shows the components of Economic Cost.

Figure 4: Components of Economic Cost



Source: ACCC, based on HVAU version 7, section 4.5.

Calculation of Economic Cost involves:

- **Operating expenditure**, which comprises ARTC’s infrastructure maintenance, business unit management, corporate overhead and network control costs, and net loss on disposals.
- **Depreciation** is calculated in the same manner as set out for the RAB Floor Limit.
- The **return on assets** is calculated by multiplying the real pre-tax rate of return by the average RAB Floor Limit. The average RAB Floor Limit is the average of the opening and closing asset values for the year. The real pre-tax rate of return for 2019 and 2020 is 5.38%, as set out in section 4.8(b) of the HVAU.

ARTC calculates the Economic Cost separately for the Constrained Network and for Zone 3.

Figure 4 is a simplification of how ARTC must calculate Economic Cost. Section 4.5 of the HVAU outlines detailed steps ARTC must follow to calculate Economic Cost, using the more detailed cost categories discussed above in section 2.3. However, these detailed cost categories can be broadly grouped into the ‘operating costs’, ‘depreciation’ and ‘return on assets’ categories in Figure 4.

¹⁹ Section 4.5 of the HVAU sets out how Economic Cost is calculated.

‘Efficient’ operating expenditure

The HVAU prescribes that only ‘Efficient’ operating expenditure be included in Economic Cost calculations. The term ‘Efficient’ is defined in section 14.1 of the HVAU as:

... costs incurred by a prudent service provider managing the Network, acting efficiently, having regard to any matters particular to the environment in which management of the Network occurs including:

- a) the Hunter Valley Coal Chain where a key objective in maintenance planning is to maximise coal chain throughput and reliability;*
- b) ARTC’s obligations to maintain the Network having regard to terms of applicable Access Agreements and Access Holder Agreements existing at the time; and*
- c) ARTC’s obligations under the law, applicable legislations (including regulations) or the NSW Lease.²⁰*

2.4.2. Floor Contribution

In general, a floor is the minimum revenue amount a regulated entity should receive from its customers to ensure it covers its marginal costs.

In the HVAU, there is a ‘Floor Contribution’ that is calculated and used differently across different zones and customer groups.

- For Access Holders that are Constrained Coal Customers from Zones 1 or 2 (i.e. most of the Constrained Network customers), the Floor Contribution is equal to the Variable Maintenance Costs and Incremental Capital Costs they impose when traversing Zones 1 and 2.
- For Zone 3 Access Holders, the Floor Contribution is equal to the Variable Maintenance Costs they impose when traversing Zones 1 and 3, plus the Incremental Capital Costs they impose when traversing Zone 1.²¹
- For non-Coal and other Access Holders, the Floor Contribution is equal to the Variable Maintenance Costs they impose when traversing any of Zones 1, 2 and/or 3.

For both Constrained Coal Customers and Zone 3 Access Holders, actual prices are well above their Floor Contribution. For other Access Holders, such as non-coal customers, ARTC must set charges with the objective of meeting their Floor Contribution. However, the HVAU does not require the ACCC to review this.

2.5. Revenue recovery and reconciliation

Section 4.1 of the HVAU requires ARTC to set access charges with the objective that those charges from:

- Constrained Coal Customers in the Constrained Network meet the forecast Ceiling Limit
- Zone 3 Access Holders meet their Floor Contribution, plus a contribution to the Zone 3 Economic Cost and a proportion of the capitalised losses (if applicable)

²⁰ HVAU version 7, section 14.1.

²¹ As set out in section 4.8A of the HVAU, the incremental costs attributable to Zone 3 Access Holders for their usage of Zone 1 are effectively charged to Zone 3 Access Holders by:

- removing the amount from the Economic Cost for Constrained Coal Customers (i.e. Zone 1 and 2 Access Holders),
- deducting the incremental costs from the amount of actual revenue attributed to Zone 3 Access Holders in the calculation of the RAB.

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- all other Access Holders meet their Floor Contribution.

The Constrained Network is subject to a Ceiling Limit test that determines whether ARTC has earned its maximum allowable revenue. Any under or over recovery of revenue is reconciled after the ACCC completes its annual compliance assessment for that year.

Zone 3 is subject to a different test, being the comparison of the Zone 3 RAB Floor Limit and RAB. If the RAB exceeds the RAB Floor Limit, then ‘loss capitalisation’ continues to apply (as Zone 3 Access Holders have not yet fully repaid losses ARTC incurred). While this is the case, the loss capitalisation balance is adjusted each year by the loss or surplus revenue accrued on Zone 3 and ARTC is not required to reconcile Zone 3’s access revenue against Zone 3’s Ceiling Limit.²²

There is no reconciliation process for revenue from other Access Holders.

2.5.1. The Constrained Network ceiling test (‘unders and overs’)

The HVAU applies a ceiling test for the Constrained Network, comparing access revenue with the Economic Cost, as illustrated in Figure 5. If revenue exceeds the Economic Cost (being the Ceiling Limit) in a compliance period, there is an over recovery and ARTC must refund the amount to Access Holders. If revenue is less than Economic Cost, ARTC can recoup the under-recovered revenue from Access Holders.

Figure 5: Ceiling test



Source: ACCC, based on HVAU version 7, sections 4.8A and 4.9.

Section 4.9 of the HVAU details the method by which ARTC calculates the overs or unders amounts to be refunded or charged to individual Access Holders. The amount assigned to each Access Holder is based on the proportion of access revenue paid by that Access Holder. Only Constrained Coal Customers are entitled to a refund, or are liable to make payment, for an under or over recovery, respectively.

2.5.2. Zone 3 loss capitalisation

The HVAU requires the ACCC to determine whether Zone 3’s RAB exceeds its RAB Floor Limit, in which case loss capitalisation continues to apply for Zone 3 Access Holders.

The balance of the loss capitalisation account equals Zone 3’s RAB minus its RAB Floor Limit. The balance can be viewed broadly as the accumulated sum of ARTC’s operating losses, including return on capital invested. The loss capitalisation balance peaked at \$86.3 million in 2015. Since then, Zone 3 Access Holders have paid revenue greater than Economic Cost to ARTC. This surplus revenue has been used to pay down the loss capitalisation balance.

The loss capitalisation balance will be set to zero on 31 December 2022 (if it is not already paid in full by that date), as required under section 4.9J(g) of the HVAU version 8. Zone 3 Access Holders will need to pay any remaining loss capitalisation amount in 12 equal monthly instalments after publication of the ACCC’s 2022 annual compliance final determination. From 1 January 2023 onwards, Zone 3 will form part of the Constrained Network and there will be a single Ceiling Limit for all 3 zones.

²² No additional losses have been added to the loss capitalisation account since 2015.

3. Prudence of capital expenditure

Under section 4.10(d) of the HVAU, the ACCC must determine whether ARTC has undertaken 'Prudent' capital expenditure. If ARTC's capital expenditure is Prudent, then:

- these costs are included in the RAB Floor Limit for the Constrained Network
- these costs are included in the RAB and RAB Floor Limit for Zone 3
- the Incremental Capital Cost portion of capital expenditure is included in the Floor Contribution for each Pricing Zone.

The RCG, which comprises Access Holders to the rail network, approved all expansion capital expenditure for 2019 and 2020. Expansion capital projects, which create additional capacity on the network, accounted for \$36.2 million of the expenditure across 2019 and 2020. This was predominantly for ARTC's Network Control Optimisation project (ANCO).

ARTC has demonstrated that sustaining capital projects included in its 2019 and 2020 expenditure were part of programs endorsed by the RCG. Sustaining capital, which is for all other capital projects that are typically minor in scope or cost, accounted for \$139.8 million across the 2 years. Interest costs incurred during construction for 2019 and asset disposal losses accounted for the remainder of capital expenditure.

The ACCC has therefore accepted ARTC's capital expenditure as Prudent and appropriate to include when rolling forward the RAB Floor Limit and RAB.

Net capital expenditure is included in the RAB Floor Limit and RAB (as shown in Figure 2 and Figure 3 in Chapter 2), provided that the capital expenditure, interest during construction, and written down value of disposals are incurred on a prudent basis.

Section 4.10(d)(iii) of the HVAU provides that the ACCC will accept capital expenditure as prudent if the RCG has endorsed the capital expenditure in accordance with the consultation obligations set out in section 9 of the HVAU. Where expenditure has not been endorsed by the RCG, the ACCC will assess expenditure having regard to the relevant factors in the definition of Prudent in the HVAU.²³

The RCG is a representative group made up of a range of stakeholders, including Access Holders (with voting rights), and above-rail operators and the Hunter Valley Coal Chain Coordinator (HVCCC) (in a non-voting capacity).

The ACCC also has regard to the definition of Prudent in the HVAU when assessing prudence of interest incurred during construction and written down value of disposals.

3.1. Total net capital expenditure

Table 2 shows ARTC's total net capital expenditure for 2019 and 2020 by component.

²³ 'Prudent' is defined in section 14.1 of the HVAU.

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Table 2: Capital expenditure, 2019 and 2020 (\$million)

Category	Constrained Network		Zone 3		Total	
	2019	2020	2019	2020	2019	2020
Expansion capital expenditure	16.7	11.9	7.3	0.3	24.0	12.2
Sustaining capital expenditure	35.4	51.2	14.1	39.2	49.5	90.3
Interest during construction	1.8	-	0.8	-	2.5	-
Disposal value	(4.7)	(7.8)	(1.2)	(4.5)	(5.8)	(12.3)
Net capital expenditure	49.2	55.3	21.0	34.9	70.2	90.2

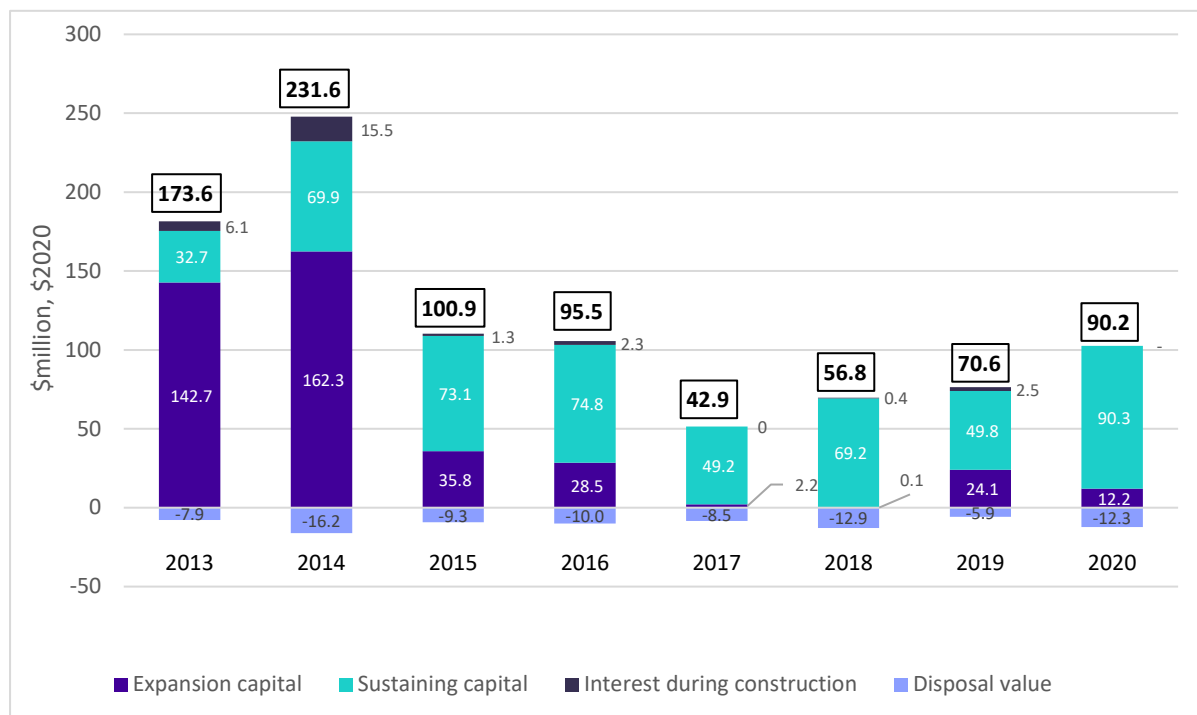
Source: ARTC, 2019 Submission, pp 13, 16, 34; and ARTC, 2020 Submission, pp 14, 17, 39.

Note: Total column is total for whole network, including capital expenditure in unconstrained segments in Zone 1. Totals may not add due to rounding.

ARTC’s total net capital expenditure was \$70.2 million in 2019, rising to \$90.2 million in 2020. Over the 2 years, the Constrained Network accounted for 65% of expenditure, while Zone 3 accounted for the remaining 35%.

Figure 6 shows a breakdown of capital expenditure components in real terms from 2013 to 2020. Combined, these components form net capital expenditure. Expansion and sustaining capital, generally called ‘major’ and ‘minor’ or ‘corridor’ capital respectively in previous years, account for the majority of net capital expenditure.

Figure 6: Net Capital Expenditure components (real \$2020), 2013 to 2020



Source: ACCC final determinations for HVAU annual compliance, 2013-2018; ARTC, 2019 Submission, pp 13, 16; ARTC, 2020 Submission, p 17; Australian Bureau of Statistics, [Consumer Price Index – Table 5 CPI: Groups, Index Numbers by Capital City, Sydney](#) 2012 to 2020 (ABS, CPI).

Note: Number in the box above each bar represents net capex for that year. Totals may not add due to rounding.

Figure 6 illustrates that net capital expenditure has increased each year since its low in 2017.

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Expansion capital jumped to \$24.1 million in 2019 after 2 years of insignificant expenditures, before almost halving in 2020. Sustaining capital fell in 2019 before increasing in 2020 to \$90.3 million, which is its highest level since the beginning of the HVAU.

As in recent years, sustaining capital continues to be the dominant component of capital expenditure. The share of sustaining capital in gross capital expenditure averaged 89% for the 4 years to 2020, compared with 47% for the 4 years to 2016. This reflects stakeholders' interest in optimising existing network infrastructure rather than expansion.

3.2. Expansion capital

Expansion capital relates to projects that create additional capacity in the network. ARTC submitted expansion capital expenditure of \$36.2 million across 2019 and 2020. This was the first significant expansion capital expenditure recorded since 2016.

Expansion capital was focused for the first time on a network control project, rather than track works. This was the ANCO project, which provides digital dynamic planning, real-time operational visibility and variation management capability to improve track utilisation and efficiency on the network. This is intended to avoid or defer the construction of additional capital funded crossing loops (the traditional method across the network).²⁴

ANCO was commissioned in stages in 2019 and 2020, accounting for virtually all expansion capital incurred – \$23.8 million in 2019 and \$11.7 million in 2020. Expenditure was spread across all segments, although the majority (62%) was in Zone 1.²⁵ Expenditure in 2019 focused on ANCO's foundational capabilities, and work in 2020 included the full commissioning of the Movement Planner technology solution network wide.

Further costs related to ANCO are included under operating expenditure in Chapter 4.

The only other expenditure on expansion capital was post-commissioning expenditure on the Maitland to Minimbah Third Road in Zone 1 (\$0.6 million over the 2 years), on which \$355.5 million had been spent in earlier years.²⁶

The RCG approved each of the expansion capital projects and expenditure (excluding interest during construction) was within the budget endorsed by the RCG.

ARTC also reported interest during construction of \$2.5 million on the ANCO project, which we consider in section 3.4.

²⁴ ARTC, [Hunter Valley Coal Network Access Undertaking 2019 and 2020 Annual Compliance Assessment \(Public\), Attachment 2: Capital consultation](#), 26 November 2021, pp 6-7.

²⁵ ARTC, *2019 and 2020 Submission – Att.2: Capital Consultation*, pp 8, 11-12.

²⁶ ARTC, *2019 and 2020 Submission – Att.2: Capital Consultation*, Appendix A, Tables A1-A4, p 11-12.

3.3. Sustaining capital

Sustaining Capital is defined in version 7 of the HVAU as Capital Expenditure that is not Expansion Capital. The provisions for consulting on and approving Sustaining Capital generally follow the parts of section 9.1 relating to projects that are minor in scope or cost. A project would typically be considered minor if it relates to ongoing annual programs for asset replacement, cost reduction or safety-related projects, rather than additional capacity.

ARTC's expenditure on sustaining capital fell from \$67.8 million in 2018 to \$49.5 million in 2019, before increasing to \$90.3 million in 2020.

ARTC reported that the extensive bushfires in November 2019 reduced the scope of work in 2019, although the deferred works were completed in 2020.²⁷ ARTC undertook additional work in 2019 to restore track formation at 3 sites in the Lower Hunter following heavy rains.²⁸

Rerailing continued at a slightly higher level in 2019 than in 2018, concentrated in Zones 1 and 2. ARTC further increased rerailing in 2020 by 49%.²⁹

Other significant renewal projects included:

- track strengthening as part of a continuing program based on deteriorating track formation
- signalling upgrades, including to Coded Track Circuits in Zone 2 and Zone 3 in 2019
- replacement of the Jacobs and Josephs Bridge and Quirindi Creek Bridge in Zone 3 in 2020.³⁰

Section 9.1(e)(ii) of the HVAU provides that ARTC will consult on a group of minor projects, rather than each minor project individually. ARTC submits a program of minor projects to the RCG for review and endorsement, generally for a range of purposes in a particular zone or a particular activity, such as re-railing.³¹

The average size of sustaining capital projects (in \$2020) fell from a high of \$647,000 in 2018 to \$315,000 in 2019 and \$436,000 in 2020.³² There were 5 projects adding more than \$2 million to the RAB in 2020, compared with an average of 3 from 2012 to 2019.³³

²⁷ ARTC, [Hunter Valley Coal Network Access Undertaking 2019 Compliance Assessment Submission to the Australian Competition and Consumer Commission](#), November 2021 (Revised August 2022), p 7.

²⁸ ARTC, *2019 and 2020 Submission – Att.2: Capital consultation*, p 8.

²⁹ ARTC, [Hunter Valley Coal Network Access Undertaking 2020 Compliance Assessment Submission to the Australian Competition and Consumer Commission](#), November 2021 (Revised August 2022), p 24.

³⁰ ARTC, *2019 and 2020 Submission – Att.2: Capital consultation*, pp 8-9.

³¹ ARTC, *2019 and 2020 Submission – Att.2: Capital consultation*, p 3.

³² The trend towards increasing size of sustaining projects up to 2018 was shown in Figure 7 in the ACCC's final determination for 2018 annual compliance.

³³ ARTC financial models from 2012 to 2020 with ACCC analysis.

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ARTC has demonstrated that sustaining projects included in its 2019 and 2020 expenditure were part of programs endorsed by the RCG in recent years.³⁴ Actual expenditure on about half the individual projects exceeded their budget, but these overspends were more than offset by underspends on other projects for all programs, except for an overspend on the general program of sustaining capital in Zone 2 for 2018-19. ARTC informed the RCG of progress in quarterly cost reports, including explanations for the overspends. Explanations for cost over-runs included revision of scope following on-site reassessment, wet weather and site difficulties, rescheduling outside the closedown period due to bushfire risk, wet weather or COVID restrictions, competitive tenders resulting in higher than budgeted costs, and the need to split projects as more urgent priorities emerged.³⁵

3.4. Interest during construction

ARTC submitted interest during construction of \$2.5 million in 2019, with none in 2020. The interest in 2019 related to the ANCO project. Expenditure on this began in 2013, increasing to an accumulated \$26.3 million by the end of 2019, including the interest accruing each year.³⁶

The total expenditure on ANCO of \$35.6 million to the end of 2020 (excluding interest during construction) was within the budget approved by the RCG. The ACCC considers the prudence of the interest during construction separately from the expenditure incurred.

ARTC calculated the interest during construction by applying a nominal rate of return of 11.83% per annum to expenditure incurred up to 31 December 2015 and 7.91% thereafter.³⁷ However, section 4.8(a) of the HVAU specifies that the relevant rate of return should be 11.83% up to 1 July 2016 and 7.91% for the Extension Period, which is defined as 1 July 2016 to 31 December 2021. This was a small error in ARTC's calculations; it applied 7.91% instead of 11.83% to expenditure of about \$1.0 million incurred on ANCO in the first half of 2016 (H1).

ARTC acknowledged the error and provided revised models which showed an increase in net capital expenditure of \$25,430 in 2019.³⁸ This flowed through to small changes in other variables including the RAB Floor Limit, RAB and under recovery.³⁹ This final determination shows ARTC's submitted amounts as those in its final revised models of August 2022.⁴⁰

The ACCC notes that the RCG endorsed the ANCO project with a finishing date in 2019, which is the year the first stage was commissioned and the only year that ARTC has claimed interest for. We are satisfied that the interest during construction was a necessary accompaniment of the approved project and was calculated in line with the provisions in the HVAU. The ACCC is therefore satisfied that the amount of interest during construction, as revised, is a Prudent part of net capital expenditure.

³⁴ RCG endorsement dates and numbers are shown in Appendix C of ARTC's submissions for 2019 and 2020, with further detail in confidential documents provided to the ACCC.

³⁵ ARTC provided the ACCC with its confidential quarterly reports to the RCG which show its progress on costs and budget variances.

³⁶ ARTC, *2019 and 2020 Submission – Att.2: Capital consultation*, Appendix A (Expansion Project Capital Added to Asset Base 2019), Tables A1-A4, p 11-12.

³⁷ ARTC, *2019 Submission*, pp 20-21 and p 55.

³⁸ ARTC, *Response to ACCC information request 'Q17 Interest During Construction ANCO 2016 H1' (confidential)*, received 21 July 2021.

³⁹ ARTC, *2019 Submission as revised August 2022*, p 5.

⁴⁰ Table 13 in Appendix B shows the difference between ARTC's submission of January and August 2022 for several key variables.

3.5. Written down value of disposals

ARTC submitted that capital works resulted in asset disposals with a total written down value of approximately \$5.8 million in 2019 and \$12.3 million in 2020, compared with \$12.7 million in 2018. Disposals increased in 2020 primarily due to track strengthening, turnout renewals and rerailing activity across the network. The scope of rerailing activities increased by 49% in 2020 after deferral in 2019 due to the impact of bushfires.⁴¹ The items disposed of during 2020 were predominantly rail, track and turnouts.⁴²

HRATF's submission raised concerns about the disposal values used by ARTC and the level of discussion and transparency of ARTC's reporting on disposals. Its comments related more to the loss on disposals reported by ARTC rather than the effect on net capital expenditure, and we consider them further in the context of operating expenditure in section 4.8.

3.6. ACCC capital expenditure determination for 2019 and 2020

The RCG approved all expansion capital expenditure submitted by ARTC. ARTC has demonstrated that sustaining capital projects included in its 2019 and 2020 expenditure were part of programs endorsed by the RCG in recent years.

ARTC has demonstrated the prudence of its capital expenditure, including interest during construction and net of disposals, in 2019 and 2020. It is therefore appropriate for ARTC to include net capital expenditure shown in Table 2 when rolling forward the:

- RAB Floor Limit for the Constrained Network
- RAB and RAB Floor Limit for Zone 3.

⁴¹ ARTC, *2019 and 2020 Further submission*, p 12.

⁴² ARTC, *2020 Submission*, p 22.

4. Efficiency of operating expenditure

Section 4.10(e) of the HVAU require the ACCC to determine whether ARTC has incurred Efficient operating expenditure. If ARTC's operating expenditure is Efficient, then, as per section 4.5(b) of the HVAU:

- these costs are included in the Ceiling Limit for the Constrained Network
- these costs are included in the RAB for Zone 3
- the Variable Maintenance Cost portion of operating expenditure is included in the Floor Contribution for each Pricing Zone.

ARTC's submitted operating expenditure with an increase of 10.1% between 2018 and 2020. HRATF raised concerns about the increasing trend in operating expenditure over the past few years and the significant increase between 2018 and 2020.

The ACCC accepts that its increased operating expenditure from 2018 to 2020 was partly due to numerous challenges caused by external events, including the December 2019 bushfires, the 2020 floods, the impact of the COVID-19 pandemic in 2020 and tight contract labour market conditions in 2019 and 2020 (which increased staffing costs for infrastructure works). ARTC also submitted that the increase in costs in 2019 and 2020 can be attributed to implementing key projects, such as the Asset Management Improvement Program (AMIP), the Procurement Transformation Project (PTP) and the ANCO. ARTC has provided evidence of realised or expected benefits from these projects. The ACCC encourages ARTC to continually document and communicate such benefits to stakeholders, as this will provide them with greater confidence that these projects are in their best interest.

The increasing trend in operating expenditure is by itself not enough to determine that ARTC has not incurred Efficient operating expenditure. This is because the ACCC must consider the environment in which ARTC operates the network as part of its operating expenditure assessment (alongside other considerations, such as maximising coal chain throughput and the terms of Access Holder agreements). We will continue to closely examine any increase in operating expenditure in future annual compliance assessments to ensure that these costs are Efficient.

Operating expenditure is one component of Economic Cost (see section 2.4.1) and the HVAU prescribes that only 'Efficient' operating expenditure be included.

4.1. Overview of 2019 and 2020 total operating expenditure

Table 3 shows ARTC's submitted operating expenditure for the Constrained Network and Zone 3 in 2019 and 2020 by category from its revised submission.

ARTC submitted operating expenditure for the Constrained Network of \$135.6 million and \$141.7 million for 2019 and 2020 respectively. This reflects an increase of 11.4% from 2018 to 2020.

ARTC submitted operating expenditure for Zone 3 of \$55.6 million and \$66.8 million for 2019 and 2020 respectively. This is an increase of 9.1% from 2018 to 2020.

Table 3: Overview of total operating expenditure, 2019 and 2020 (\$ million)

Category	Constrained Network		Zone 3		Total coal	
	2019	2020	2019	2020	2019	2020
Maintenance costs	72.4	73.1	36.9	43.2	116.5	123.3
Business unit management	27.1	27.7	7.8	8.4	34.9	36.1
Corporate overheads	18.2	19.6	4.5	5.2	22.7	24.8
Network control	14.2	14.7	5.2	5.5	19.4	20.2
Net loss on disposals	3.6	6.6	1.2	4.4	5.1	11.5
Expensed project costs	-	-	-	-	-	-
Operating Expenditure	135.6	141.7	55.6	66.8	198.7	215.9

Source: ARTC, *2019 Submission*, pp 13, 24; ARTC, *2020 Submission*, pp 14, 28; and ARTC, *2019 and 2020 Submission – Att. 1: Operating costs*, p 5.

Notes: The Constrained Network columns show expenditure charged to the Ceiling Limit for the PZ1/2 Constrained Network. It therefore excludes incremental costs incurred by Zone 3 producers in Zone 1, and small unconstrained segments in Zone 1.

The Total coal columns show expenditure for the coal network excluding the allocation for non-coal use. It exceeds the sum of Constrained and Zone 3 columns as those columns exclude incremental costs incurred by Zone 3 producers in Zone 1 and small unconstrained segments in Zone 1.

This is not directly comparable with the total shown in the equivalent table for previous years where the Total column was just the sum of Constrained and Zone 3.

Expensed projects reflect the development cost of projects approved by the RCG but since determined to be no longer required. There were no projects expensed during 2019 and 2020.

Totals may not add due to rounding.

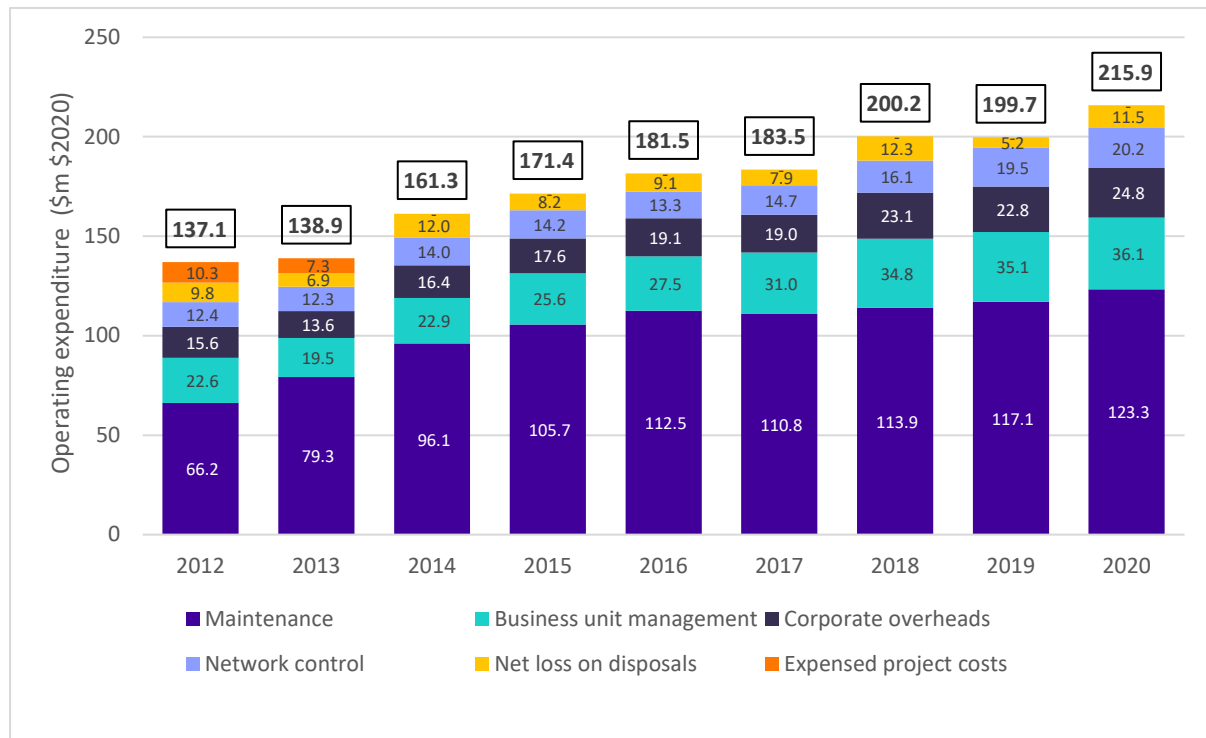
The majority of ARTC’s operating expenditure related to infrastructure maintenance (58.6% in 2019 and 57.1% in 2020), followed by business unit management (17.6% in 2019 and 16.7% in 2020) and corporate overheads (11.4% in 2019 and 11.5% in 2020). Individual categories are discussed below.

The ACCC’s assessment of ARTC’s operating expenditure takes account of changes in operating expenditure in real terms over time, changes in volume and other drivers, such as environmental factors.

4.2. Total operating expenditure

Figure 7 shows ARTC’s total operating expenditure for the coal network from 2012 to 2020 in real terms (that is, adjusted for inflation).

Figure 7: Total operating expenditure by cost category (real \$2020), 2012 to 2020



Source: ARTC, 2019 and 2020 Submission – Att.1: Operating costs, p 5; ARTC, Confidential financial model 2020; ABS, CPI.

Note: Chart shows operating expenditure for the Hunter Valley coal network, after deducting an allocation for non-coal users. Number in bold above each bar represents total opex for that year.

Earlier years may not be comparable with later years as, for example, a new segment from The Gap to Turravan entered the HVAU in 2014, and Loss on disposals was only included from 2014.

Except for 2019, ARTC’s real operating expenditure has steadily increased since 2012. The increase in real operating expenditure over the two years to 2020 was mainly due to:

- an 8.3% increase in infrastructure maintenance expenditure
- a 7.7% increase in corporate overheads
- a 25.4% increase in network control expenditure.

In its submission to the ACCC’s consultation paper, HRATF expressed concern about the increasing trend in real operating costs.⁴³ HRATF also stated it was unclear regarding the reasons for, and the benefits flowing from, this additional expenditure.

In response to HRATF’s concerns about the overall trend, ARTC noted:

- the significant increases in contracted coal Gross Tonne Kilometres (GTKs) since 2013, notably 30% in Zone 1, 76% in Zone 2 and 189% in Zone 3, which have increased the services required
- increased focus on factors such as safety, customer engagement, reporting and staff development.⁴⁴

Issues raised by HRATF on particular areas of expenditure are discussed later in this chapter.

⁴³ HRATF, 2019 and 2020 Submission, p 2.

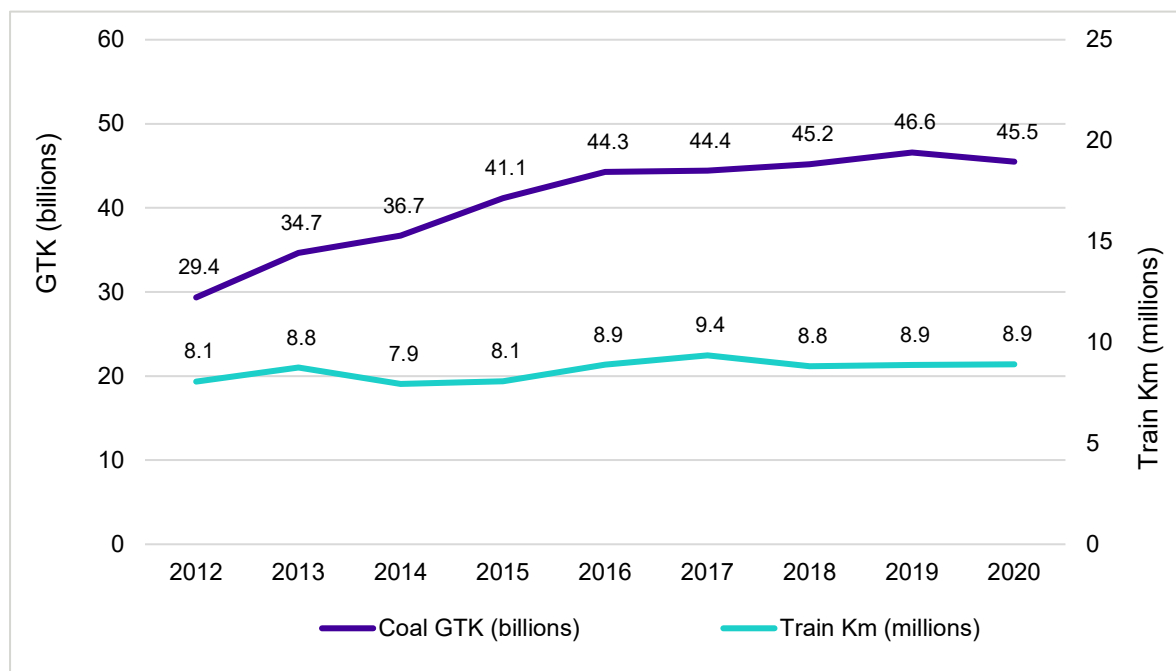
⁴⁴ ARTC, 2019 and 2020 Further submission, p 6.

4.2.1. Total operating expenditure per unit

The ACCC has analysed ARTC’s operating expenditure on a per unit basis to account for changes in volume. The following is based on cost per GTK and per Train Kilometre (Train Km). GTK measures gross tonnes of coal carried multiplied by the number of kilometres travelled, while Train Km refers to the kilometres a Train Path covers on the network.⁴⁵

Figure 8 shows operating volumes for the Hunter Valley on a GTK and Train Km basis from 2012 to 2020.

Figure 8: Operating volumes – GTK and Train Km, 2012 to 2020



Source: ARTC, Confidential financial model 2020.

Note: Chart shows volumes for the Hunter Valley coal network, after deducting an allocation for non-coal users. Train Km include all trains, as coal and non-coal data are not separated.

Figure 8 shows that volumes, as measured on both a coal GTK and Train Km basis, increased steadily between 2012 and 2017 (51.3% and 16.1% respectively). From 2017 to 2020, coal GTKs increased by 2.4%, while Train Km declined.⁴⁶

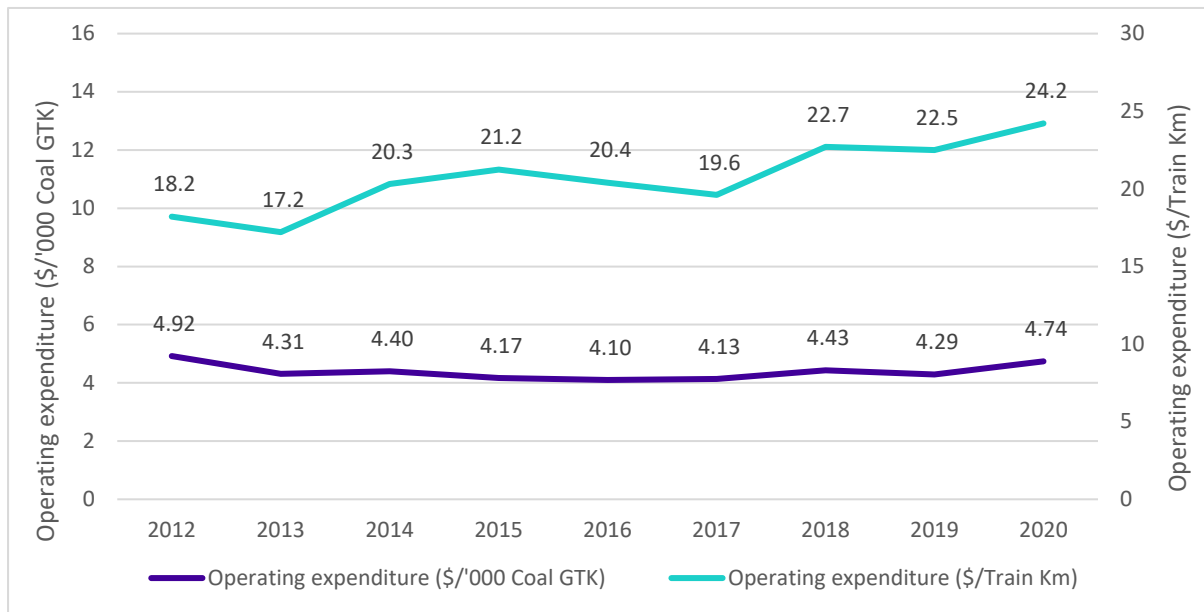
Both GTKs and Train Kms reflect the number of kilometres travelled by trains on the network, but GTKs additionally reflects the tonnage carried. The greater increase in GTKs over the period of the HVAU is due to the heavier coal loads carried per train. Heavier loads typically mean more maintenance is required for the tracks.

Figure 9 shows total operating expenditure on a per GTK and Train Km basis from 2012 to 2020.

⁴⁵ 'Train Path' is defined in section 14.1 of the HVAU.

⁴⁶ Further, total GTKs including non-coal decreased by 1.1% between 2017 and 2020.

Figure 9: Total Operating Expenditure per unit (real \$2020), 2012 to 2020



Source: ARTC, *Confidential financial model 2020*; ABS, CPI.

Note: Operating expenditure and GTKs are for the Hunter Valley coal network, excluding non-coal allocation.

Figure 9 shows that real operating costs per Train Km have fluctuated year to year since 2012, but trended upwards over time. ARTC’s real operating costs per Train Km reached a peak of \$24.20 in 2020.

Real operating costs per GTK remained relatively stable between 2013 and 2019. However, ARTC incurred operating costs of \$4.74 per 1,000 GTKs in 2020, which is the highest amount since 2012 in real terms.

The faster increase in expenditure per Train Km than in expenditure per GTK over the period reflects the slower increase in Train Kms than in GTKs shown in Figure 8. That is, the number of trains running has increased at slower rate than the increase to coal volumes each train carries. A similar observation applies to the other charts in this chapter showing expenditures per unit, as the different paths of expenditure per GTK and per Train Km reflect the different path of GTKs relative to Train Kms.

In its response to the ACCC’s consultation paper, HRATF expressed concern about the increase in real cost per GTK.⁴⁷

In relation to the increase in real operating costs per GTK in 2020, ARTC pointed to a combination of the following factors:

- The 2019 bushfires resulted in maintenance works being deferred from 2019 to 2020.
- The COVID-19 pandemic resulted in supply issues, which caused the cost of labour and materials to increase. The pandemic coupled with extreme wet weather impacted the timing and cost of the scheduled maintenance closedowns.
- In response to coal prices rebounding in late 2020, ARTC had to, at short notice, undertake expenditure to improve track performance and reduce delays.
- GTKs fell by 2.3% due to several factors – extreme weather, COVID-19, coal supply constraints and weaker customer demand.⁴⁸

⁴⁷ HRATF, *2019 and 2020 Submission*, p 2.

⁴⁸ ARTC, *Further Submission*, p 7.

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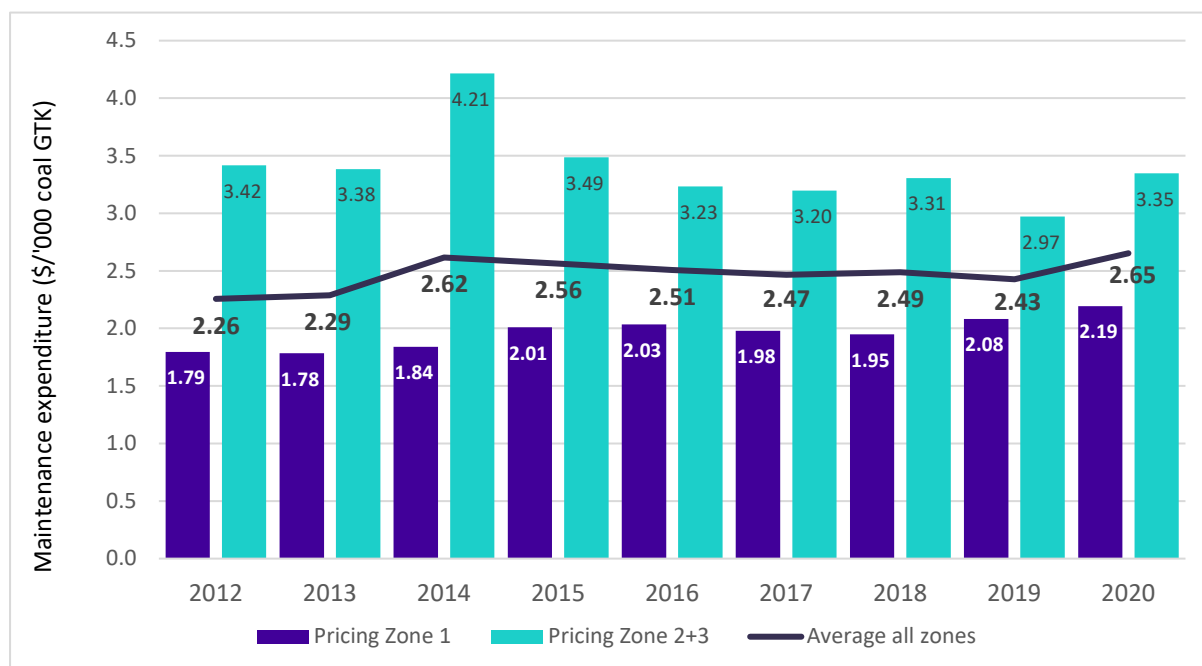
We discuss each component of operating expenditure, which have contributed to the overall increase in costs per GTK, below.

4.3. Infrastructure maintenance

ARTC's submitted infrastructure maintenance expenditure was \$116.5 million and \$123.3 million in 2019 and 2020, respectively. This represents an increase of 4.4% in 2019 and 5.9% in 2020.

Figure 10 shows infrastructure maintenance expenditure by Zone (in real terms) from 2012 to 2020.⁴⁹

Figure 10: Infrastructure maintenance expenditure per 1000 coal GTK (real \$2020), 2012 to 2020



Source: ARTC, *Confidential financial model 2020*; ABS, CPI.

Note: Chart shows expenditure for the Hunter Valley coal network, excluding non-coal, per coal GTK. Real expenditure per GTK has been combined for Zones 2 and 3 to maintain confidentiality.

Real maintenance expenditure for Zone 1 rose in both 2019 and 2020, reaching a long-term peak in 2020. Real infrastructure maintenance expenditure for Zones 2 and 3 decreased slightly in 2019, but rose in 2020. Real maintenance expenditure per GTK across all zones has remained relatively stable since 2014, but peaked at \$2.65 per 1,000 GTKs in 2020.

In its compliance submission, ARTC stated that the rise in maintenance expenditure in 2019 and 2020 was heavily influenced by the 'heating contract labour market'.

Specifically, ARTC submitted that:

Increased demand for specialist resources especially in the civil and signalling disciplines brought about by the large volume of major rail and road infrastructure projects across the East Coast of Australia resulted in both decreased tender responses and increased tender pricing across the network...

⁴⁹ Zones 2 and 3 have been combined to retain confidentiality of Zone 3 volumes.

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The impact of the higher contract labour rates is most reflected in the increase in RCRM [Routine Corrective and Reactive Maintenance] costs where there is a requirement for a shortened response time to rectify defects and minimise network disruption. ARTC engaged frequently with stakeholders through the RCG process on the status of the contract labour market and its impact on costs throughout the year.⁵⁰

Furthermore, ARTC cited the rectification of heat-induced rail buckles through rail defect removal, rail stress adjustment and design alignment corrections as key reasons for the rise in maintenance expenditure.

In its response to the ACCC's consultation paper, HRATF queried the 'limited explanation' provided for the 'significant increase' in maintenance expenditure in both 2019 and 2020:

ARTC has provided little by way of justification for this increase, other than a tight contract labour market caused by increased demand for specialist civil engineering and signalling contractors. The HRATF would like to re-emphasise that the ACCC should carefully review the prudence of maintenance expenditure, to ensure that it is not inefficiently incurring and passing on cost increases to the HRATF members. Based on the information that has been made publicly available by ARTC, the HRATF is unable to determine whether the cost increases are justified.⁵¹

ARTC's original submission highlighted that multiple external factors influenced ARTC's reported costs for 2019 and 2020.⁵² ARTC's response to HRATF's submission reiterated that the following contributed to infrastructure maintenance expenditure increases:

- deferral of planned works in November 2019 due to severe bushfires but still incurring associated fixed costs included in existing contracts
- additional costs associated with social distancing staff, implementing rotating shifts and segregated working teams to adhere to government COVID-19 restrictions in 2020
- increased costs for equipment and materials sourced from overseas due to ongoing global supply chain issues, and
- unplanned and adjusted maintenance activities resulting from heavy rain and flooding in 2020.

The ACCC sought Arup's advice on the impact of these external factors on ARTC's maintenance expenditure. Arup agreed that delays caused by external factors partly explained some of the maintenance cost increases in 2020 when ARTC was catching up on maintenance activities. Arup also noted that unplanned external events have caused significant challenges to planned maintenance.

The impact from these factors on specific maintenance activities and costs are detailed throughout this determination.

Regarding HRATF's calls for the ACCC to carefully review the prudence of maintenance expenditure, the ACCC has thoroughly reviewed all submission documents, and responses to requests for further information, provided by ARTC in its maintenance expenditure assessment, as we do for every compliance process.

⁵⁰ ARTC, [Hunter Valley Coal Network Access Undertaking – 2019 and 2020 Compliance Assessment, Attachment 1: Hunter Valley Network Operating Costs](#), 26 November 2021, p 7.

⁵¹ HRATF, *2019 and 2020 Submission*, p 4.

⁵² ARTC, *2019 and 2020 Submission – Att. 1: Operating costs*, pp 3-4.

4.3.1. Major Periodic Maintenance and Routine Corrective and Reactive Maintenance

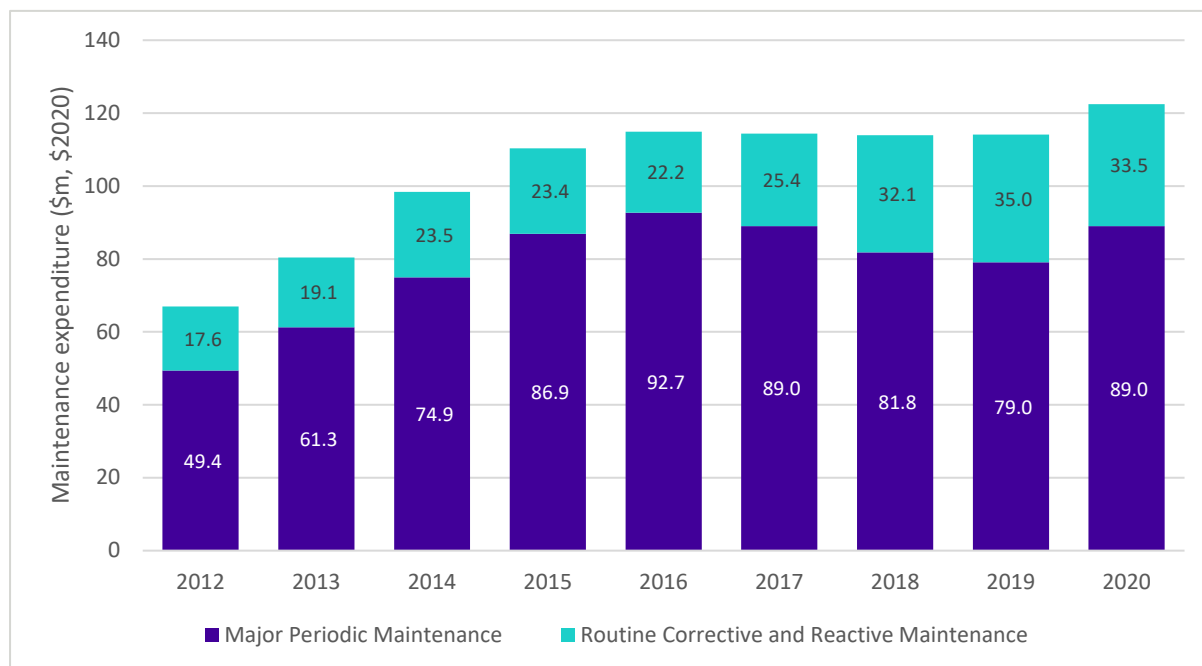
Infrastructure maintenance comprises Major Periodic Maintenance (MPM) and Routine Corrective and Reactive Maintenance (RCRM) work programs.

MPM is typically major cyclical or planned activities that maintain the operating performance and asset life of operational infrastructure. MPM activities aim to reduce the level of defects and corrective maintenance. These activities are largely delivered within the network closedowns and are predominantly outsourced.⁵³

RCRM is typically minor scheduled activities used to inspect or service asset condition on a routine basis. This work program extends to include reactive and corrective activities required due to inspections or defect identification that, because of their nature, ARTC must deal with on the spot or as soon as is practical thereafter.⁵⁴

Figure 11 shows MPM and RCRM expenditure, in real terms, from 2012 to 2020.

Figure 11: Major Periodic Maintenance and Routine Corrective and Reactive Maintenance expenditure (real \$2020), 2012 to 2020



Source: ARTC, 2019 and 2020 Submission – Att.1: Operating costs, p 7; ARTC, 2019 and 2020 Submission – Att.5.1: Opex Data – MPM RCRM Summary (confidential spreadsheet); ABS, CPI.

Note: Chart shows expenditure for the Hunter Valley coal network. MPM and RCRM here exclude Incidents and Indirect costs, but include non-coal allocation.

Figure 11 illustrates that MPM accounts for the majority of ARTC’s maintenance expenditure each year. It also illustrates that from 2017 onwards, RCRM comprised a larger proportion of maintenance expenditure. RCRM increased from 19.4% of maintenance expenditure in 2016 to 27.3% in 2020. This suggests that ARTC has become more reliant on RCRM for maintaining the network over this period.

The ACCC sought assistance from Arup when considering the rising share of RCRM costs. Information provided by ARTC suggests that the following factors contributed to the rising share of RCRM in maintenance expenditure:

⁵³ ARTC, 2019 and 2020 Submission – Att.1: Operating costs, p 6.

⁵⁴ ARTC, 2019 and 2020 Submission – Att.1: Operating costs, p 6.

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- Climatic events, such as drought, bushfires and heavy rainfall have limited key MPM activities, such as rail grinding and ballast cleaning. This in turn has resulted in increased wear to the network and greater reliance on RCRM activities, such as signalling, points inspections and rail defect removals.
- Thermal coal export prices significantly influence the volumes transported on the network. Accordingly, the fluctuation in thermal coal export prices over 2019 and 2020 introduced uncertainty into ARTC’s maintenance planning, thereby increasing its reliance on RCRM.

Additionally, ARTC noted in its submission that the high contract labour rates significantly impacted its RCRM costs, as the shortened response time for many RCRM works means ARTC has limited ability to mitigate higher labour costs.⁵⁵

Arup noted that with sound maintenance planning, it would expect that ARTC’s RCRM as a proportion of total maintenance expenditure should fall in the future. The ACCC will continue to monitor ARTC’s RCRM costs in future compliance processes, as greater reliance on RCRM costs in the medium to long term could cause ARTC’s costs to increase more rapidly.

4.3.2. Top infrastructure maintenance expenditures

In 2019 and 2020 ARTC’s top 10 infrastructure maintenance activities accounted for around 56.3% and 58.9% of total infrastructure maintenance expenditure across the Hunter Valley network, respectively. Table 4 shows the top 10 infrastructure maintenance expenditures for 2019 and 2020.

Table 4: Top 10 Hunter Valley infrastructure maintenance expenditures, 2018 to 2020

Expenditure category	Work program	Expenditure 2018 (\$ million)	Expenditure 2019 (\$ million)	Expenditure 2020 (\$ million)	%Change 2018 to 2020
Ballast Cleaning	MPM	[confidential]	[confidential]	[confidential]	-7.9%
Rail Grinding	MPM	[confidential]	[confidential]	[confidential]	4.7%
Turnout Steel Component Replacement	MPM	5.9	6.8	9.0	53.1%
Maintenance Resurfacing	MPM	7.5	8.1	8.6	14.8%
Full Track Reconditioning	MPM	7.1	5.8	7.8	10.1%
Rail Defect Removal	RCRM	4.8	4.6	6.5	35.8%
Ballast Undercutting	MPM	3.2	3.8	4.5	39.9%
Turnout Resurfacing	MPM	3.3	4.7	4.3	29.0%
Inspection and Minor Repairs of Points	RCRM	2.7	3.5	4.1	50.6%
Turnout Grinding	MPM	3.1	3.2	4.0	31.7%
Total top 10		63.7	66.8	74.3	16.6%

Source: ARTC, 2019 and 2020 Submission – Att.1: Operating costs, p 8.

Note: The top 10 activities have been arranged from highest to lowest expenditures in 2020.

Table 4 illustrates that costs for most of ARTC’s key maintenance activities have increased significantly from 2018 to 2020.

Several of ARTC’s key maintenance activities listed in Table 4, including some that have shown the largest cost increases across 2018 to 2020, are discussed below.

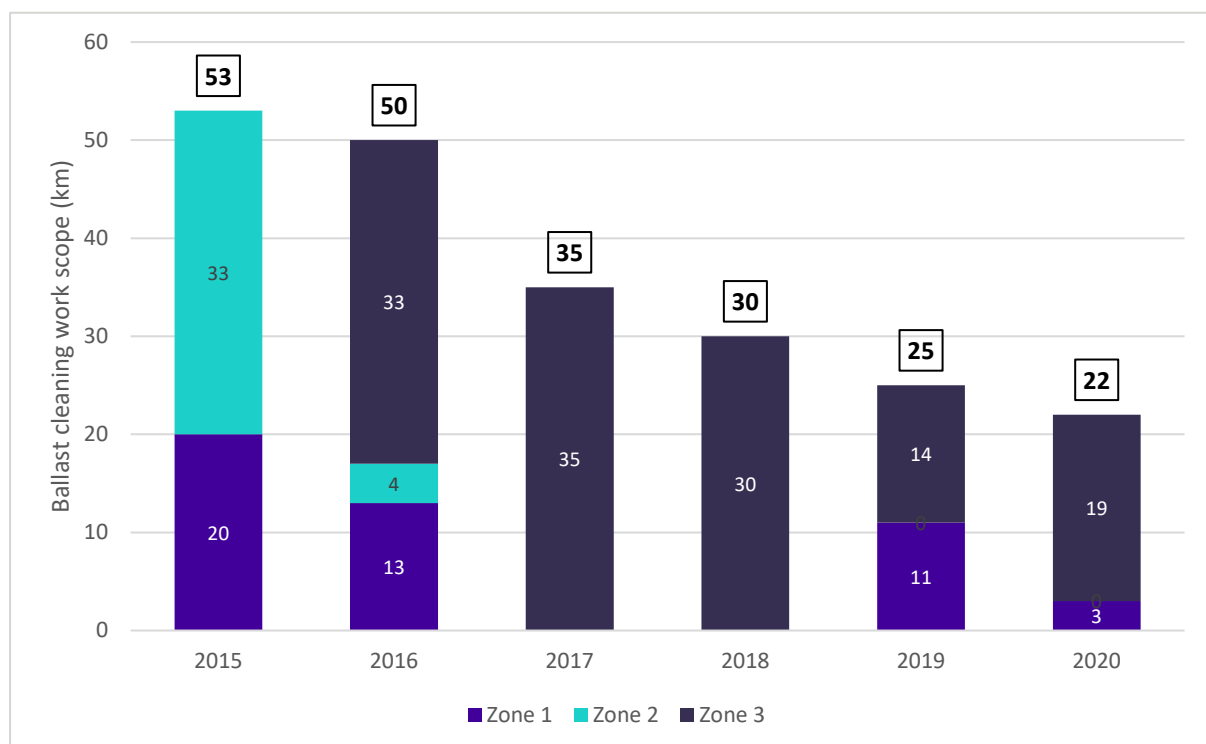
⁵⁵ ARTC, 2019 and 2020 Submission – Att.1: Operating costs, p 7.

Ballast cleaning

Ballast cleaning is a MPM work program and involves replacing ‘dirty’, worn ballast with fresh ballast. It is critical for maintaining track geometry and ensuring effective drainage. The rate of ballast breakdown is linked to coal volumes transported along the network, the local environment and weather conditions. Ballast cleaning is undertaken in cycles, moving through Zones across numerous years. ARTC outsources ballast cleaning activities. Unit rates fluctuate year-on-year depending on contract rates, ballast reclamation levels, ballast age and maintenance possession scheduling.

Figure 12 shows ballast cleaning scope by Zone from 2015 to 2020.⁵⁶

Figure 12: Ballast cleaning work by Zone, 2015 to 2020



Source: ARTC, 2019 and 2020 Submission – Att.1: Operating costs, p 13; ARTC, 2018 Submission – Att.1: Operating costs p 11; ARTC, 2016 Submission – Att.1: Operating costs, p 8.

Note: Number in bold above each bar represents total ballast cleaning scope for that year.

From 2016 to 2020, ARTC undertook ballast cleaning primarily in Zone 3, with ballast cleaning scope for the whole network falling to its lowest level in 2020 over this period. ARTC’s expenditure on ballast cleaning fell by 7.9% from 2018 to 2020, due to a reduction in scope.

⁵⁶ ‘Scope’ refers to the kilometres of track for which the relevant maintenance activity was undertaken.

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ARTC adjusted its ballast cleaning strategy in mid-2017, with a new aim of achieving around 30km of scope each year across 6 shutdown periods. This accounted for some of the scope reductions in 2019 and 2020 relative to previous years. The reduction in scope in 2019 below the 30km target was primarily due to:

- lower productivity due to poor ballast returns and increased spoil management activities in Zone 1
- heavy rain in mid-2019, which resulted in lower cleaning productivity.⁵⁷

In 2020, ARTC's achieved scope for Zone 1 was 5 km below its planned scope. This was primarily due to COVID-19 restrictions impacting the April 2020 planned works, which ARTC noted in its response to HRATF's submission.⁵⁸ Moreover, high levels of ballast fouling and delays in relation to a tamper machine derailment also limited ARTC's 2020 achieved work scope.⁵⁹

Arup assisted the ACCC with examining ARTC's ballast cleaning costs. Arup noted that ARTC's approach generally follows recognised best practice. Arup also concluded that weather fluctuations (drought and rain) have created challenges, but overall ballast cleaning costs appear under control with the contracted supplier.

Rail grinding

Rail grinding is an MPM work program. It is the periodic grinding of rail to manage its profile and stress-related defect growth. Grinding improves wheel and rail interface to reduce rail and wheel wear and propagation of rail defects. Rail grinding frequency depends on rail and traffic type, tonnages and track curvature, and is a cyclical activity.⁶⁰

Figure 13 shows rail grinding scope by Zone from 2015 to 2020.

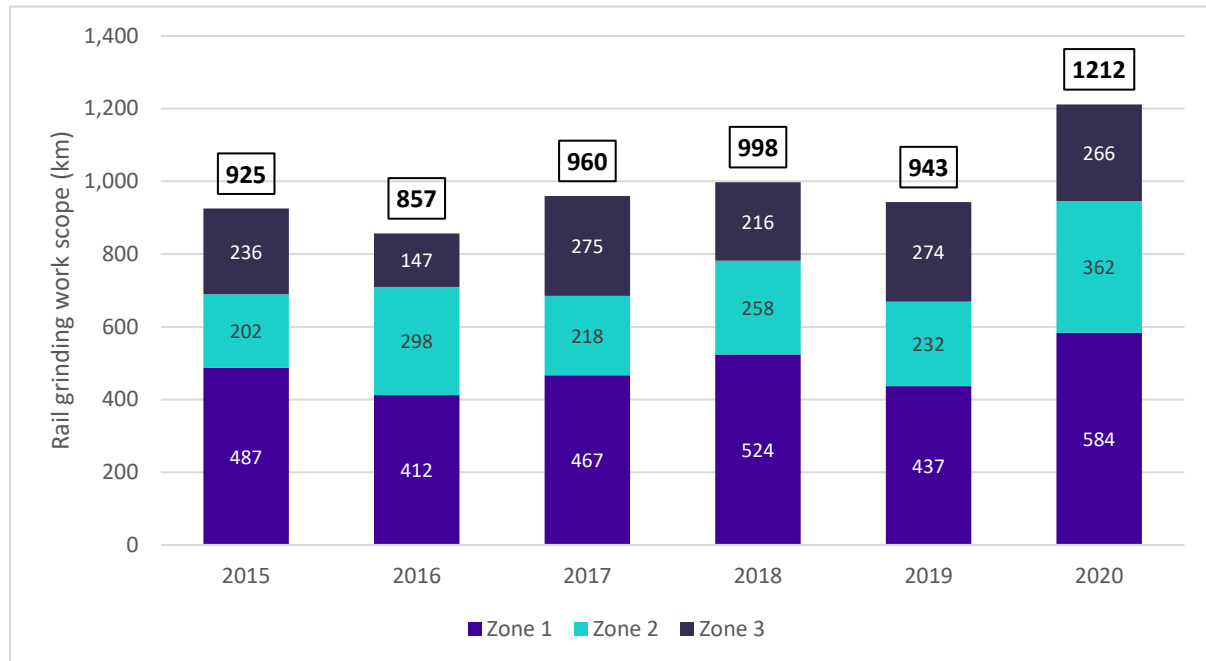
⁵⁷ ARTC, *2019 and 2020 Submission – Att. 1: Operating costs*, p 13. Poor ballast returns means that much of the old ballast was degraded so had to be disposed of and replaced with new ballast, rather than cleaned and put back in place.

⁵⁸ ARTC, *2019 and 2020 Further submission*, p 11.

⁵⁹ ARTC, *2019 and 2020 Submission – Att. 1: Operating costs*, p 13.

⁶⁰ ARTC, *2019 and 2020 Submission – Att. 1: Operating costs*, p 15.

Figure 13: Rail grinding work by Zone, 2015 to 2020



Source: ARTC, 2019 and 2020 Submission – Att.1: Operating costs (confidential version), p 16; ARTC, ARTC, 2018 Submission – Att.1: Operating costs, p12.

Note: Number in bold above each bar represents total rail grinding scope for that year.

In 2019 ARTC’s expenditure on rail grinding rose by 2.9% but scope fell by 5.5%. ARTC submitted that the reduction in scope (which occurred only in Zones 1 and 2) was due to the deferral of works in response to total fire bans, drought conditions and the 2019 summer bushfires. There was a significant increase in the unit cost per kilometre in Zone 3. This was due to rail defects on long tangent sections of the track connecting Emerald Hill and Boggabri, which required a custom rail profile and additional passes to correct.⁶¹

In 2020 ARTC’s expenditure on rail grinding rose by 1.8% and scope rose by 28.5%. The significant increase in scope was largely due to the deployment of a new rail grinder that was able to deliver higher production rates.⁶² This allowed additional grinding to meet the planned scope and catch up on work delayed due to the bushfires.

ARTC submitted that the new rail grinder has resulted in ‘increased scope at a lower unit rate.’⁶³ The ACCC calculates that expenditure per km fell by 15.5% between 2018 and 2020. Arup advised that it would expect increased rail grinding scope to contribute to extended rail life and reduced rail breaks and need for replacement over time.

Turnout steel component replacement

Turnout steel component replacement is a MPM work program. This expenditure involves replacing worn and defective turnout rail components, which reduces the risk of turnout rail component failure and therefore potential derailment. The scope of this activity varies from year to year and correlates to asset wear and tear rates and the complexity of the location. ARTC submitted that unit costs of turnout components ‘vary considerably, creating unit rate anomalies in the delivery of this activity’. Unit costs for turnout components depend on:

- the type and size of the turnout

⁶¹ ARTC, 2019 and 2020 Submission – Att.1: Operating costs, p 15.

⁶² ARTC, 2019 and 2020 Submission – Att.1: Operating costs, p 15.

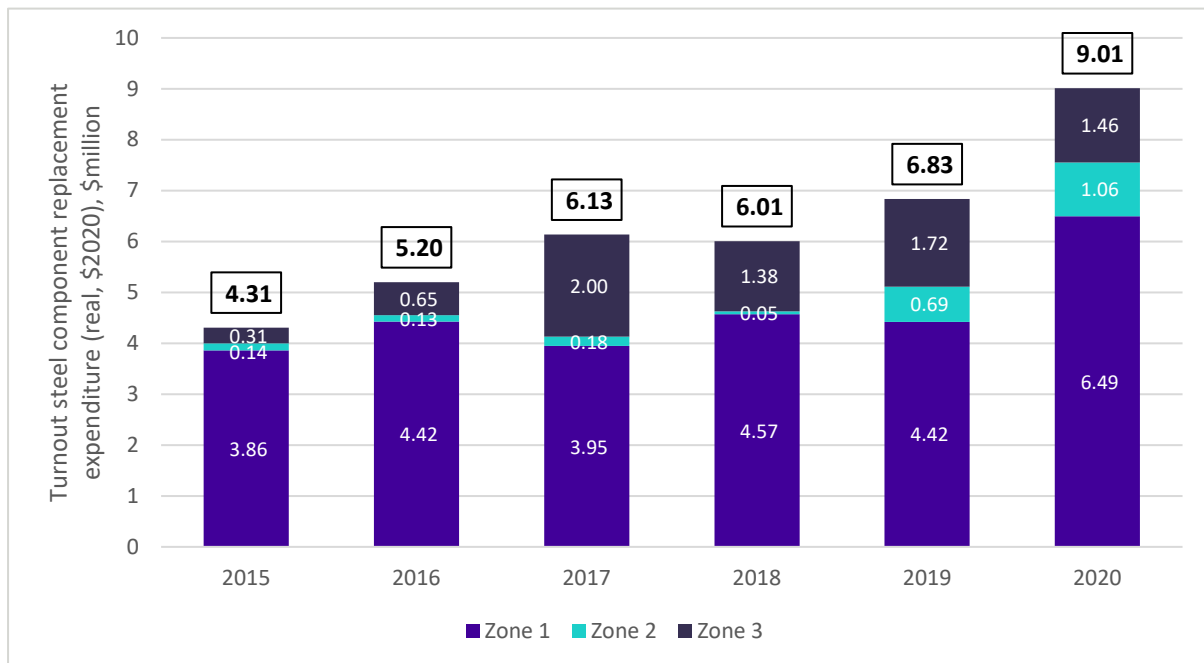
⁶³ ARTC, 2019 and 2020 Submission – Att.1: Operating costs, p 16.

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- the location of the works and associated delivery costs
- whether the works are delivered through internal or external resources
- whether there are other works required as part of the scope, such as additional closure rails.⁶⁴

Figure 14 shows ARTC’s expenditure by pricing zone, in real terms, on turnout steel component replacement from 2015 to 2020.

Figure 14: Turnout steel component replacement expenditure (real, \$2020), 2015 to 2020



Source: ARTC, *2019 and 2020 Submission – Att.1: Operating costs*, Tables 3A to 3D, pp 8-11; ARTC, *ARTC, 2018 Submission – Att.1: Operating costs*, Tables 3A to 3D, pp 7-10; ARTC, *ARTC, 2016 Submission – Att.1: Operating costs*, Tables 3A to 3D, pp 4-7; ABS, CPI.

Note: Number in bold above each bar represents total turnout steel component replacement expenditure for that year.

Figure 14 shows that ARTC’s turnout steel component replacement expenditure rose significantly in both 2019 and 2020, with real expenditure increasing by 13.8% and 31.9% respectively.

In 2019 the increase in expenditure occurred primarily in Zone 2, with expenditure increasing by around \$0.6 million. ARTC submitted that while the quantity of high value component change outs for Zone 2 in 2019 was comparable to 2018, the higher costs were driven by higher unit rates for these components.⁶⁵

In 2020 the increase in expenditure occurred primarily in Zone 1, with expenditure increasing by around \$2.1 million. ARTC submitted that this was driven by the need to urgently address a number of internal defects within monoblock and swing nose crossings by replacing those crossings. ARTC noted that the global supply chain crisis caused by the COVID-19 pandemic contributed to higher turnout component costs in 2020, as critical stock needed to be imported using air freight, which is more expensive than sea shipping.⁶⁶

⁶⁴ ARTC, *2019 and 2020 Submission – Att.1: Operating costs*, p 18.

⁶⁵ ARTC, *2019 and 2020 Submission – Att.1: Operating costs*, p 19.

⁶⁶ ARTC, *2019 and 2020 Submission – Att.1: Operating costs*, pp 19 – 20.

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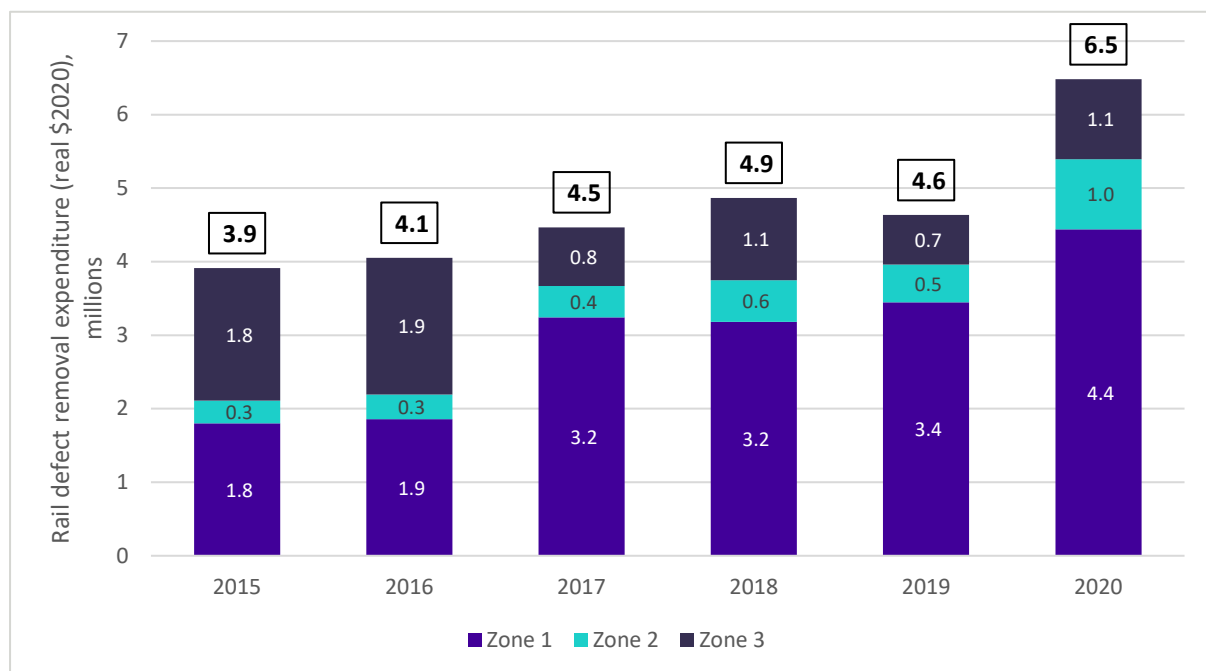
Arup noted that unit rates for turnout components can vary considerably year to year. Arup also highlighted that ARTC’s expenditure on turnout replacements as a proportion of total maintenance costs is reasonable in comparison to other rail networks.

Rail defect removal

Rail defect removal, a RCRM work program, is the removal of surface and internal defects through replacement with new rail, generally 6-8 metres in length. Removing rail defects reduces the likelihood of rail breaks occurring, which pose a substantial derailment risk.

Figure 15 shows ARTC’s expenditure on rail defect removals by pricing zone, in real terms, from 2015 to 2020.

Figure 15: Rail defect removal expenditure (real \$2020), 2015 to 2020



Source: ARTC, *2019 and 2020 Submission – Att.5.1: Opex Data – MPM RCRM Summary (confidential spreadsheet)*; ABS, CPI.

Note: Number in bold above each bar represents total rail defect removal expenditure for that year.

ARTC’s expenditure on rail defect removal, in real terms, fell by 4.8% in 2019 but rose by 39.8% in 2020. This represents an increase of 33.1% from 2018 to 2020. This increase continues a trend the ACCC noted in its 2018 HVAU Compliance Final Determination.⁶⁷

In its submission to the consultation paper, HRATF expressed concern about ‘whether increased rail defect removal is delivering tangible net benefits to users.’⁶⁸

The increase in rail defect removal expenditure in 2020 occurred because ARTC removed more rail defects in 2020 than 2018 and 2019 combined.⁶⁹ ARTC noted in its submission that this reflects a strategy to minimise RCG reportable infrastructure losses associated with rail breaks. This was because rail breaks were the leading cause of RCG reportable infrastructure losses in 2018 and 2019.

⁶⁷ ACCC, *Final Determination: Australian Rail Track Corporation’s compliance with the Hunter Valley Coal Access Undertaking financial model for calendar year 2018*, 10 August 2021, p 30.

⁶⁸ HRATF, *2019 and 2020 Submission*, p 3.

⁶⁹ ARTC, *2019 and 2020 Submission – Att.1: Operating costs*, p 25.

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In its response to HRATF's submission, ARTC highlighted that the removal of rail breaks is not the major driver of increased maintenance expenditure. Rather it is due to the implementation of a strategy associated with proactively identifying defects in the network that lead to rail breaks.

ARTC stated that there were 3 main factors that have contributed to an increase in rail defect removals. These are:

- ARTC's 2017 rail break reduction strategy, which identified improving the proactive management of rail defects as a key tactic to reduce rail breaks
- ongoing improvements in ARTC's diagnostic tools through expanding the use of the Speno, Instrumented Coal Wagons, and rail stress testing practices
- improved asset management processes implemented through the Asset Management Improvement Plan (AMIP) and Decision Support Platform (DSP), resulting in enhanced systems for documenting, prioritising and planning for the removal of rail defects.

ARTC highlighted in its original submission that the large number of rail defects removed in 2020 has resulted in RCG reportable infrastructure losses attributable to rail defects and breaks decreased from 0.7% in 2019 to 0.3% in 2020.⁷⁰ ARTC's response to HRATF's submission showed the following decrease in rail breaks between 2014 and 2020, which contributed to this decline in infrastructure losses.

Table 5: Number of Rail Breaks Reported, 2014 to 2020

Rail Breaks	2014	2015	2016	2017	2018	2019	2020
Number	128	87	80	91	75	61	38

Source: ARTC, *2019 and 2020 Further Submission*, October 2022, p 8.

ARTC also emphasised that its proactive program derives from the importance of safety and ensuring track availability which is considered key to maximising throughput and customer revenue.

The ACCC accepts ARTC's explanations regarding rail defects, noting its 2017 rail break strategy discussed with the RCG. The ACCC also notes that the expenditure per defect removed decreased by 46% between 2018 and 2020.⁷¹

Other maintenance initiatives

In relation to HRATF's concerns about the benefits of other ARTC initiatives,⁷² ARTC stated:

*In the 2019 and 2020 joint submission, ARTC notes that the new tamping approach, ballast undercutting program and new rail grinding machine have been assessed and selected at a higher cost to produce a superior result, less subsequent intervention and to ensure longer maintenance time frames between activities. Assessment of the full impact of these methodologies and trade-offs will extend over future periods. Increased expenditure in the current submission year which aims to improve the long-term quality of maintenance results and reduce the frequency of intervention is unable to be accurately assessed at this time.*⁷³

⁷⁰ ARTC, *2019 and 2020 Submission – Att.1: Operating costs*, p 25.

⁷¹ ARTC, *2019 and 2020 Submission – Att.1: Operating costs*, p 26; ACCC analysis.

⁷² HRATF, *2019 and 2020 Submission*, p 3.

⁷³ ARTC, *2019 and 2020 Further Submission*, p 9.

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It is reasonable for an infrastructure manager to incur significant upfront expenditure to implement maintenance practices that will reduce costs in the long term. The ACCC supports the periodic evaluation of such initiatives to ensure they continue to deliver value for ARTC and its stakeholders. We encourage quantitative and economic evaluation and reporting to the RCG to the extent it is feasible and of value to stakeholders.

Reporting on unit costs

In its submission to the consultation paper, HRATF commented that in future annual compliance processes ARTC should report on detailed data regarding unit costs for maintenance activities:

The HRATF believes that improvements to reporting should include detailed data on historical and forecasts of unit costs. Such reporting should go beyond aggregate cost per GTK, and be based on the key drivers of cost categories such as ballast cleaning, rail grinding, and rail defect removal. This information would enable HRATF members [to] understand and evaluate the prudence and efficiency of future operating expenditure, and ARTC's performance on its ability to achieve efficient operating expenditure.⁷⁴

In response to HRATF, ARTC stated it had reported costs per unit or per km or commentary on unit rates for several maintenance activities in its original submission.⁷⁵ ARTC noted that reporting on unit rates is not useful for activities such as turnout steel component replacement, rail defect removal, full track reconditioning and ballast undercutting.⁷⁶ For example, turnout components can be small and simple or large and complex. Accordingly, the cost per unit can range from a few thousand dollars to half a million dollars. ARTC also stated that, in relation to its compliance submission, it provided additional context where linear unit rate comparisons were not appropriate.⁷⁷

ARTC noted that it has also provided more detailed data on maintenance and unit rates to RCG since the 2022 March quarter. The ACCC welcomes feedback on ARTC's improved reporting from stakeholders in future submissions.

4.4. Business unit management

ARTC submits that 'business unit management costs comprise Hunter Valley direct costs and encompasses 4 functions:

- Hunter Valley Customer Service and Operations
- Hunter Valley Asset Delivery, including the Provisioning Centres
- Hunter Valley Asset Development
- Hunter Valley Management and Support.⁷⁸

ARTC's business unit management costs were \$34.9 million and \$36.1 million in 2019 and 2020, respectively. This represents an increase of 2.3% and 3.3% in 2019 and 2020 respectively, noting these increases were substantially less than those recorded in 2017 (15.3%) and 2018 (14.7%).

ARTC stated the main drivers for the cost changes between 2018 and 2019 included:

⁷⁴ HRATF, *2019 and 2020 Submission*, p 4.

⁷⁵ ARTC, *2019 and 2020 Further submission*, p 12; ARTC, *2019 and 2020 submission, Att. 1: Operating costs*, pp 12. Data on unit rates for ballast cleaning and rail grinding were redacted due to commercial confidentiality.

⁷⁶ ARTC, *2019 and 2020 Further submission*, p 7.

⁷⁷ ARTC, *2019 and 2020 Further submission*, p 7.

⁷⁸ ARTC, *2019 and 2020 Submission – Att. 1: Operating costs*, p 36.

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- *\$0.8m increase due to the restructure and formation of the Hunter Valley Network Integration team which resulted in the reclassification of costs from Network Control... to Business Unit Management.*
- *\$0.4m increase due to labour costs in relation to additional safety personnel required to implement the Pathway to Zero and associated Safe Work Improvement Program.*
- *\$0.2m increase due to the necessary engagement of contractors to fulfil ARTC's increased Environmental Protection Licence requirements relating to community notification and noise.*
- *\$0.5m increase due to a transfer of costs from Corporate Overheads. In 2019, the Human Resources (HR) function was decentralised and integrated into the respective Business Units to enable [better] staff accessibility and HR alignment with needs and goals of the respective business functions. In addition, technician costs relating to services for the Hunter Valley weighbridges commissioned in 2018 were transferred to Business Unit Management to align allocation to resource deployment.⁷⁹*

ARTC stated the main drivers for the cost changes between 2019 and 2020 included:

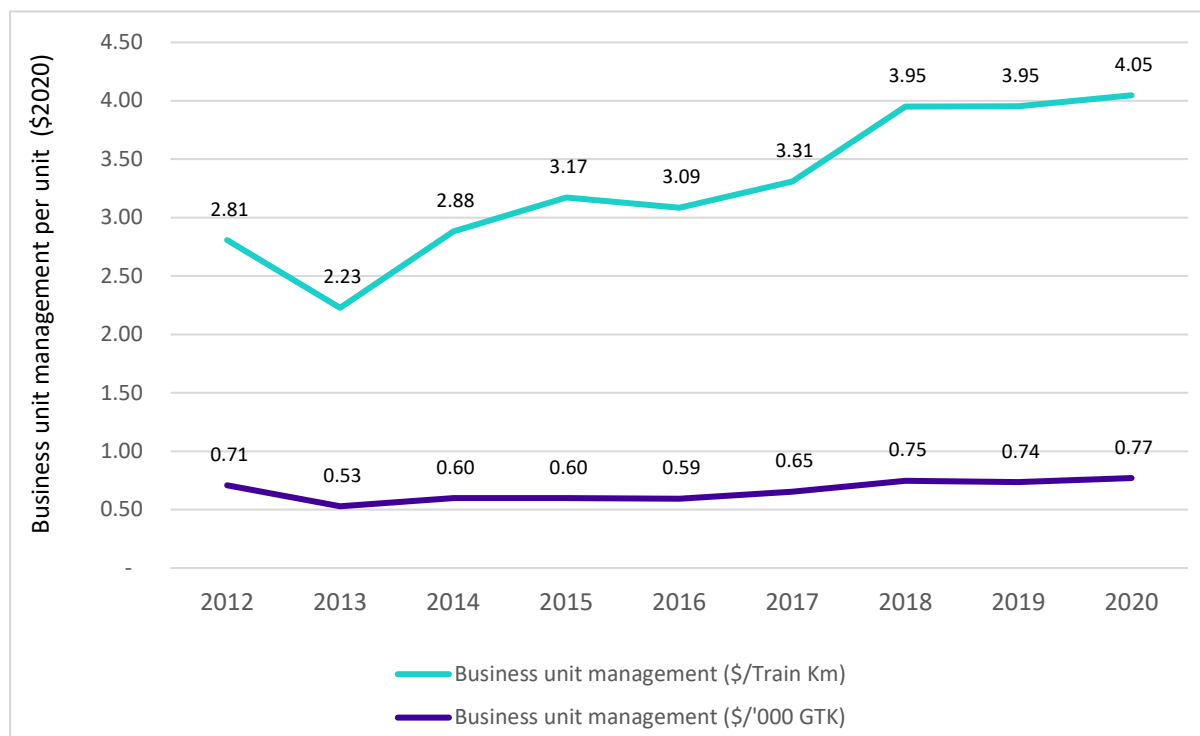
- *\$0.6m increase in professional fees relating to the renewal of the Hunter Valley Coal Network Access Undertaking (HVAU) V8 and resourcing to assist with the accelerated lodgement of historical compliance submissions.*
- *\$0.2m increase in Hunter Valley HR and Weighbridge Technician costs reflecting the full year resource cost of staff transferred from Corporate Overheads in 2019.*
- *\$0.3m increase relating to professional fees to develop customer reporting tools.*
- *\$0.2m increase relates to the engagement of a consultant with the requisite skills to redesign the existing Signalling Statement of Competency (SOC) to assist with the shortage of signalling and other critical resources needed to maintain network infrastructure.⁸⁰*

Figure 16 shows business unit management expenditure on a GTK and Train Km basis, in real terms, from 2012 to 2020.

⁷⁹ ARTC, 2019 and 2020 Submission – Att.1: Operating costs, pp 36-37.

⁸⁰ ARTC, 2019 and 2020 Submission – Att.1: Operating costs, p 37.

Figure 16: Business unit management expenditure per unit (real \$2020), 2012 to 2020



Source: ARTC, *Confidential financial model 2020*; ABS, CPI.

Note: Chart shows the allocation to Hunter Valley coal customers of ARTC's business management expenditure.

Figure 16 illustrates that real business unit management expenditure on a GTK basis has remained relatively stable but has trended upwards since 2016, reaching a peak of \$0.77 per 1,000 GTKs in 2020. On a Train Km basis, real business unit management expenditure has trended upwards since 2013, reaching a peak of \$4.05 per Train Km in 2020.

Capacity Fasttrack Initiative

The Capacity Fasttrack Initiative forms part of ARTC's Hunter Valley business unit management costs and comprises 'several operational and capital projects that aim to facilitate increased throughput.'⁸¹ In response to a request from the ACCC, ARTC stated that the programs that fall under this initiative are numerous and varied, and include:

- timetable reviews for specific segments to reduce train runtimes
- a review of the Hunter Valley Coal Chain Coordinator's (HVCCC) planning approach to maximise path availability on the network.

The ACCC noted in its 2018 HVAU Compliance Final Determination that it would continue to seek evidence of benefits of this project to stakeholders in future annual compliance submissions.

In response to an information request from the ACCC, ARTC outlined multiple positive outcomes from this initiative, including:

- a reduction in up and down path runtimes on the Ulan and Gunnedah lines

⁸¹ ARTC, *Response to ACCC information request, Q5 regarding Capacity Fasttrack Initiative' (confidential)*, received 2 March 2022, p 1.

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- a 4-minute reduction in headway in the Bylong Tunnel.⁸²

Based on the information provided and the fact that the RCG has endorsed a large number of the Capacity Fasttrack projects, the ACCC is satisfied that the Capacity Fasttrack Initiative has delivered benefits for stakeholders.

Asset Management Improvement Program

The ACCC also noted in its 2018 HVAU Compliance Final Determination that it would continue to seek evidence of benefits of the AMIP in future annual compliance submissions. The AMIP also forms part of ARTC's Hunter Valley business unit management costs.

ARTC stated that the AMIP involves upgrading existing software used to manage assets and related systems and processes. The software is used to continually track and monitor the condition of ARTC's assets on a real-time basis and assist ARTC in asset-related decision making. The AMIP forms one of the first parts of ARTC's overall 3-year asset strategy. The AMIP was completed in 2022.

In response to an ACCC request for further information, ARTC highlighted some benefits and improvements resulting from the AMIP's completion, which include:

- a reconfiguration of the equipment register, which has improved its accuracy
- ARTC staff being able to instantly access up to date asset information on mobile devices
- the consolidation of all data and models relating to asset condition in a single analysis system (the DSP).⁸³

Based on the information provided, the ACCC is satisfied that the AMIP has improved ARTC's asset management processes. Given ARTC has periodically reported to the RCG on the AMIP, we are also satisfied that ARTC has sufficiently engaged with its stakeholders on this project.

Consultancy expenditure

The ACCC noted in its 2018 HVAU Compliance Final Determination that we would continue to monitor and engage with ARTC in relation to projects involving substantial consultant expenditure.

ARTC reported a \$1.3 million decrease in consultancy expenditure in 2019, citing less reliance on specialist support relating to 'HVAU related regulatory activities' as the reason for this reduction. However, ARTC's consultancy expenditure increased by \$1.1 million in 2020. The majority of this (\$0.6 million) related to the renewal of the HVAU and accelerated lodgement of historical annual compliance submissions. Remaining consultancy expenditure related to developing customer reporting tools (\$0.3 million) and redesigning the existing Signalling Statement of Competency (\$0.2 million).

The ACCC notes that the consultancy expenditure related to the renewal of the HVAU was a 'one off' expense, and that the accelerated lodgement of compliance assessments will only be required for a relatively short period beyond this compliance assessment, if at all.

⁸² ARTC, *Response to ACCC information request, Question 5 regarding Capacity Fasttrack Initiative' (confidential)*, received 2 March 2022, p 3.

⁸³ ARTC, *Response to ACCC information request, Question 6 regarding Asset Management Improvement Program (confidential)*, received 2 March 2022, p 5.

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We did not find any concerns with the remainder of consultancy expenditure, and note that even with the jump in expenditure in 2020, ARTC’s consultancy expenditure is trending downwards relative to 2018. The ACCC will continue to monitor these costs in future compliance assessments.

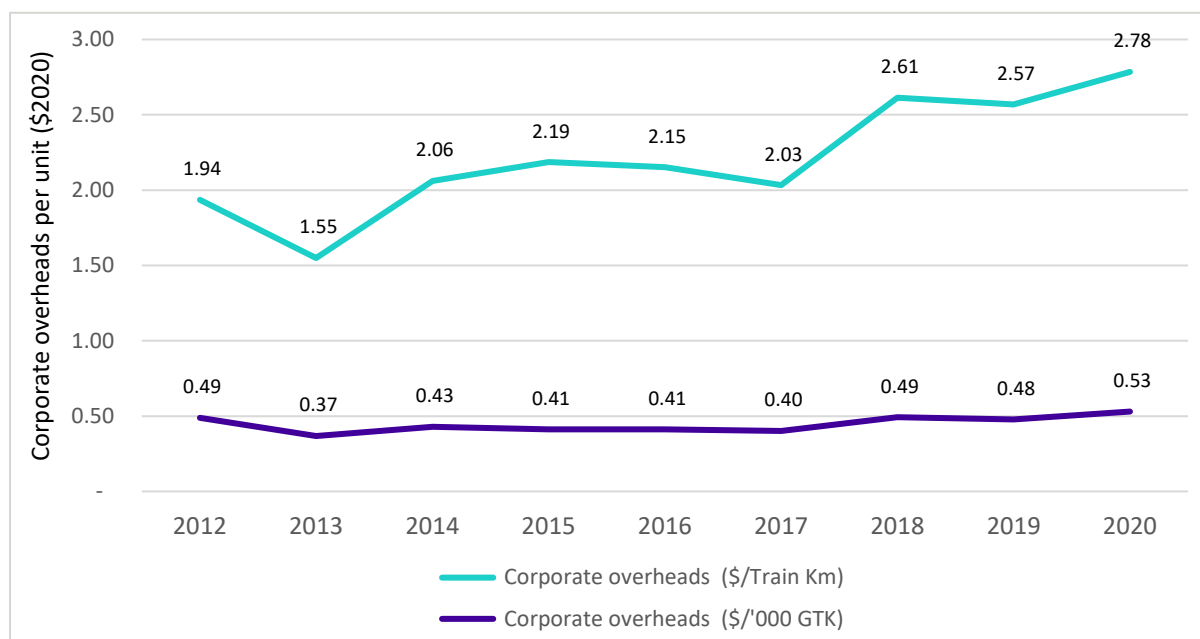
4.5. Corporate overheads

Corporate overheads are indirect costs shared across the organisation and include the following types of expenditure: executive, finance, people, corporate services and safety, and strategy. The ACCC notes that certain other costs, such as Hunter Valley customer services costs, are typically considered overhead costs but have been classified as business unit management costs.

ARTC submitted that its corporate overhead expenditure for 2019 and 2020 was \$22.7 million and \$24.8 million respectively. This represents an increase of 0.5% and 9.4% in 2019 and 2020 respectively, and continues an overall increasing trend in corporate overhead expenditure since 2013.

Figure 17 shows corporate overhead expenditure on a GTK and Train Km basis, in real terms, from 2012 to 2020.

Figure 17: Corporate overhead expenditure per unit (real \$2020), 2012 to 2020



Source: ARTC, *Confidential financial model 2020*; ABS, CPI.

Note: Chart shows the amount of ARTC’s corporate overheads allocated to coal traffic in the Hunter Valley network. ARTC changed its overhead cost allocation methodology in version 6 of the HVAU.

Figure 17 illustrates that ARTC’s corporate overhead expenditure on a GTK basis reached a peak of \$0.53 per 1,000 GTKs in 2020. Corporate overhead expenditure on a Train Km basis has been quite unstable since 2012, reaching a peak of \$2.78 per Train Km in 2020.

In its submission, HRATF expressed concern about the increasing trend in corporate overheads:

The HRATF wishes to reiterate its previously expressed concern around ongoing increases in the amount of overhead costs allocated to the Hunter Valley Network. There was another 9% increase in corporate overheads allocated to the Hunter Valley Network

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*in 2020. As the ACCC notes in the Consultation Paper, this continues a trend of increases in corporate overheads since 2013.*⁸⁴

In its compliance submission, ARTC highlighted the following drivers of corporate overhead costs in 2019 and 2020 compared to 2018:

- \$1.0 million increase in costs relating to procurement, with the engagement of a consultant to assess ARTC's procurement processes
- \$1.7 million increase in information technology costs associated with upgrading ARTC's network communication systems and the direct implementation costs of the cyber security strategy
- \$0.6 million increase in insurance costs, primarily due to higher insurance premiums brought about by the extreme weather events of 2019 and 2020
- \$0.2 million increase in human resources spending, which reflects costs associated with implementation of ARTC's People Strategy
- \$0.2 million increase in plant charges due to a timing difference between financial year and calendar year plant recoveries.⁸⁵

Procurement and marketing expenditure

The ACCC noted in its *2018 HVAU Compliance Final Determination* that it would continue to monitor and engage with ARTC in relation to procurement and marketing expenditure. ARTC did not report any marketing expenditure for 2019 and 2020, but reported a \$1 million increase in procurement-related expenditure.

ARTC reported an increase in procurement expenditure of \$0.9 million and \$0.1 million for 2019 and 2020 respectively, all of which related to the PTP. ARTC provided the following comments about this increased expenditure:

*Building on the foundation provided by the development of the Procurement Framework in 2018, ARTC appointed an external professional services partner (PTP Consultant) for the next phase of the Procurement Transformation Project (PTP), the multiyear large-scale functional transformation covering end to end supply chain management across the organisation. Drawing on proven expertise, the PTP Consultant was engaged to assess all elements of ARTC's procurement operating model including functional structure and governance, people and culture, process, data, performance management, budgets, planning, life cycle costs, systems and delegations.*⁸⁶

HRATF commented in its submission that it is unclear on the benefits of various operating expenditure initiatives, including the PTP.⁸⁷

In its compliance submission, ARTC summarised the objectives of the PTP as follows:

*The key focus of the PTP has continued to be to improve current systems, documentation and compliance monitoring to, where possible, centralise procurement activities to capitalise on economies of scale, embed robust governance controls to mitigate risk, and to create value for money outcomes for stakeholders.*⁸⁸

⁸⁴ HRATF, *2019 and 2020 Submission*, pp 5 - 6.

⁸⁵ ARTC, *2019 and 2020 Submission – Att.1: Operating costs*, pp 39 - 43.

⁸⁶ ARTC, *2019 and 2020 Submission – Att.1: Operating costs*, p 39.

⁸⁷ HRATF, *2019 and 2020 Submission*, p 3

⁸⁸ ARTC, *2019 and 2020 Submission – Att.1: Operating costs*, pp 39 – 40.

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In response to an ACCC request for further information on the PTP, ARTC submitted that the PTP consultant was appointed in November 2018 to assess its procurement operating model. Part of the consultant's role was to devise a detailed roadmap outlining a strategy for improving ARTC's procurement function and how to implement this strategy.⁸⁹ ARTC stated that the implementation of this roadmap occurred in 2019 and 2020, with the PTP being fully implemented in November 2020.

In its compliance submission, ARTC highlighted the benefits of the PTP, including:

- unit rate cost savings through the use of multi-year tender packages for the following maintenance activities: re-railing, track formation conditioning, turnout supply, turnout installation and rail grinding services
- the refinement of ARTC's inventory management processes, which includes the Supplier Data Validation (SDV) project. The SDV project has resulted in more accurate and expeditious inventory identification
- continual improvement in the consolidation of procurement and supplier data into the one system, in preparation for the implementation of the Procure to Pay system in the future.⁹⁰

From the information provided by ARTC, it appears that expenditure on the PTP has led to an improvement in ARTC's procurement processes. Furthermore, ARTC has conducted the vast majority of its procurements through open tenders, which aligns with best practice. Based on the information provided, the ACCC is satisfied that ARTC's procurement expenditure and practices are reasonable. In future compliance processes, the ACCC would expect the PTP to deliver benefits in the form of streamlined procurement processes, competitive contract prices, and cost savings for access seekers. We will continue to monitor ARTC's procurement-related expenditure.

Overhead cost allocation

In its submission, HRATF noted that there was a lack of transparency regarding ARTC's allocation of overhead costs:

Again, a key concern for the HRATF is a lack of transparency around ARTC's allocated overheads. ARTC has provided some information on the key cost categories that are contributing to the increase in allocated overheads. However, the HRATF is unable to test whether these costs have been properly allocated to the Hunter Valley Network.⁹¹

ARTC provided a presentation to stakeholders in July 2022, outlining how its overhead cost allocation model works. The ACCC was invited to this presentation as an observer. ARTC responded to stakeholder queries throughout the presentation and invited further questions afterwards to help stakeholders' understanding.

In response to an ACCC request, ARTC also provided its overhead cost allocation model for each year and supporting information to the ACCC on a confidential basis.⁹²

The overhead model shows the allocation of the Non-Segment Specific costs including the categories of an overhead nature in operating expenditures – Corporate Overheads, Business Unit Management and Network Control. The model shows total overhead costs for the whole company for different functions, and the allocation of cost for each function to different parts of the business by various drivers.

⁸⁹ ARTC, *2019 and 2020 Submission – Att. 1: Operating costs*, pp 39 – 40.

⁹⁰ ARTC, *2019 and 2020 Submission – Att. 1: Operating costs*, pp 39 – 40.

⁹¹ ARTC, *2019 and 2020 Submission – Att. 1: Operating costs*, p 2.

⁹² ARTC, *Response to ACCC request for information, Question 7 regarding overhead cost allocation (confidential)*, received 2 March 2022.

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It includes the size of the drivers and the allocation formulae, with the following steps that follow those set out in Schedule I of the HVAU:

1. Allocation to a corridor by:
 - (a) direct attribution of costs to a corridor where possible
 - i. for example, most Hunter Valley business unit management costs can be directly attributed to the Hunter Valley corridor
 - (b) for the remaining overheads, allocation between Hunter Valley and Interstate corridors according to allocation methods appropriate to each cost category:
 - i. for example, People costs according to Full Time Equivalent staff numbers, Communications according to Train kilometres.
2. Allocation of Hunter Valley costs between the coal network and non-coal:
 - (a) if the costs are associated with indirect maintenance or operational costs – according to GTKs
 - (b) otherwise – according to Direct Stay in Business costs.
3. Allocation of the coal network costs between zones and segments:
 - (a) if maintenance-based – according to GTKs (as the volume carried on tracks typically determines maintenance requirements)
 - (b) otherwise – according to Train Kms.

HRATF noted that allocation values appear to move around significantly from year to year, and considered it was unclear what is driving these changes in allocated values.⁹³ The ACCC is satisfied that ARTC's model is using allocators as set out in the HVAU, and therefore allocated dollars should change in line with changes in the allocators. For example, an increase in wheat tonnage relative to coal will reduce the share of Hunter Valley costs borne by coal customers.

HRATF also submitted there was a lack of transparency around ARTC's shifting of costs between business unit management and corporate overheads. One example of this is the human resources function, which was shifted out of 'Overheads' and into the 'Business Unit Management' line in 2019.⁹⁴

The ACCC agrees that the shifting of costs between categories makes the trends less transparent. However, we note that it does not affect the total of these indirect costs.

After reviewing the information on these issues, the ACCC is satisfied that ARTC has allocated its overhead costs for 2019 and 2020 in accordance with Schedule I of the HVAU.

4.6. Network control

Network control expenditure includes 'labour and materials associated with the delivery of the following functions:

- train control and signalling both on the main line and within the coal terminals
- train planning and programming
- operations and operational customer interface
- incident management

⁹³ HRATF, *2019 and 2020 Submission*, p 5.

⁹⁴ HRATF, *2019 and 2020 Submission*, pp 2, 6.

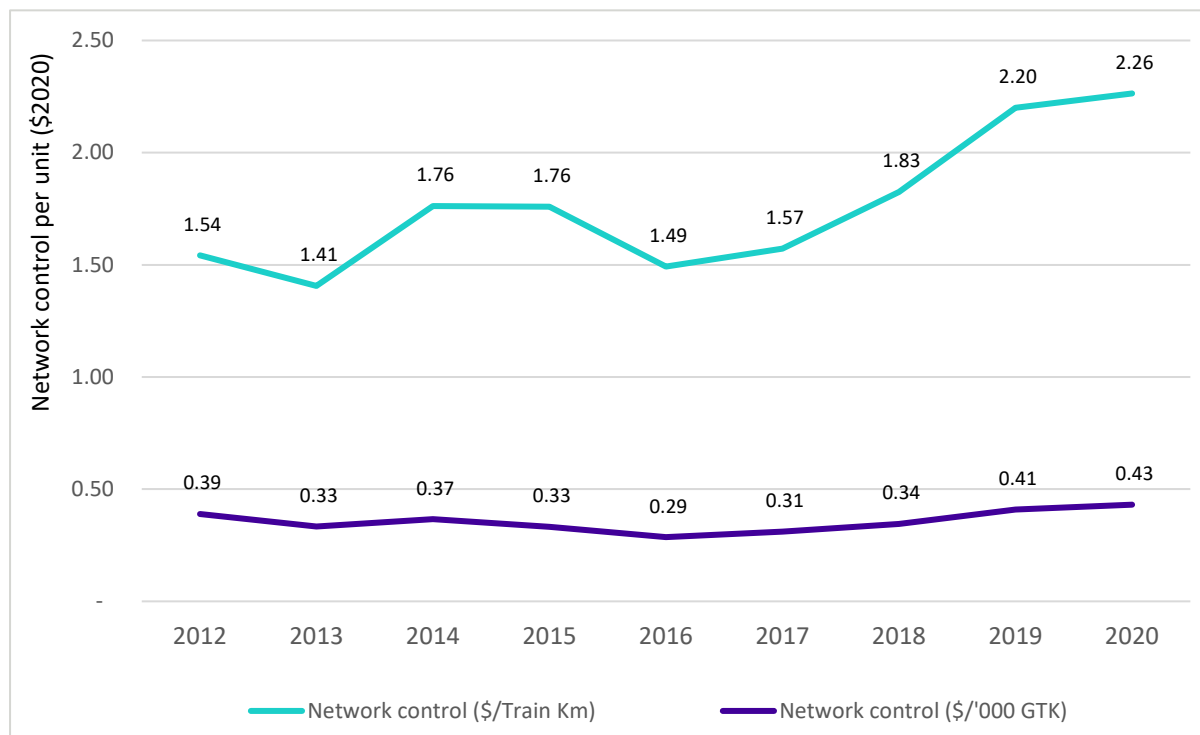
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- communication costs.⁹⁵

ARTC submitted that its network control expenditure was \$19.4 million and \$20.2 million in 2019 and 2020 respectively. This reflects a 27.9% increase between 2018 and 2020.

Figure 18 shows network control expenditure on a per GTK and Train Km basis, in real terms, from 2012 to 2020.

Figure 18: Network Control expenditure per unit (real \$2020), 2012 to 2020



Source: ARTC, *Confidential financial model 2020*; ABS, CPI.

Note: Chart shows the amount of ARTC's network control costs allocated to coal traffic in the Hunter Valley network.

Figure 18 illustrates that ARTC's network control expenditure on a GTK basis has increased steadily since 2016, reaching a peak of \$0.43 per 1,000 GTKs in 2020. Network control expenditure on a Train Km basis has similarly increased steadily since 2016, reaching a peak of \$2.26 per Train Km in 2020.

ARTC highlighted the following drivers of network control expenditure in 2019 and 2020 compared to 2018:

- *\$3.9m in new operating costs associated with the commencement of live operational use of ANCO.*

⁹⁵ ARTC, *2019 and 2020 Submission – Att.1: Operating costs*, p 34.

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- *\$1.8m increase in labour costs. As noted in 2018 Compliance Submission, following feedback from the Office of the National Rail Safety Regulator (ONRSR), in January 2019 ARTC implemented a revised staff roster to address key safety and fatigue concerns which resulted in increased resourcing requirements. Further to this, in April 2019 operations of the North Coast Network Control Board were transferred to the Network Control Centre in South Junee. Due to additional resourcing requirements generated by the need to achieve operational readiness for the implementation of the ANCO go-Live and the impact of the new NSW Safeworking rules which came into effect in 2019, existing Hunter Valley staff were redeployed to support these changes.*⁹⁶

ANCO project

The ACCC noted in its 2018 HVAU Compliance Final Determination that the ANCO project is expected to deliver tangible benefits through future cost savings and network optimisation. It also noted it 'will continue to monitor the ANCO project... to ensure these financial benefits materialise for access holders'.⁹⁷

ARTC established the ANCO project through capital expenditure of \$38.1 million, which was considered in Chapter 3.⁹⁸ ANCO requires annual operating costs that support the new system but was also expected to save on annual costs required for the previous control systems. Expenditure associated with making ANCO operational was the main reason for the increase in network control expenditure between 2018 and 2020.⁹⁹

In its submission to the consultation paper, HRATF called for improved reporting on the benefits of the ANCO project:

*The HRATF understood one of the benefits that justified the commercial case for the ANCO program was a reduction in network control operating expenditure through automation of some manual work tasks. However, from 2018 to 2020, network control costs have actually risen by 28% in nominal terms, the majority driven by ANCO related costs. More detailed information would help HRATF members understand the underlying cause of the rise in costs, and whether and how the purported benefits of major expenditure programs are being realised. As part of any review of ANCO-related costs, it should also be considered whether any implementation costs treated by ARTC as operating expenditure should properly be treated as capital expenditure.*¹⁰⁰

In its response to HRATF's submission, ARTC stated ANCO has achieved the following outcomes and benefits:

- a 5% increase in practical track utilisation in the single lines (from 65% to 70%), with the resulting increase in capacity having been made available to customers in Zones 2 and 3 from 1 January 2020
- deferred construction of additional rail loops in Zones 1 and 3, with net present value of deferred capital benefit of \$45.2 million
- a reduction in train dwell, cycle times, unproductive trains hours and availability losses since November 2019.¹⁰¹

⁹⁶ ARTC, 2019 and 2020 Submission – Att.1: Operating costs, pp 34 – 35.

⁹⁷ ACCC, 2018 HVAU Compliance Final Determination, p 36.

⁹⁸ This is total capital expenditure on ANCO across 2019 and 2020, including interest during construction.

⁹⁹ ARTC, 2019 and 2020 Submission – Att.1: Operating costs, pp 4, 34 – 35.

¹⁰⁰ HRATF, 2019 and 2020 Submission, p 4.

¹⁰¹ ARTC, 2019 and 2020 Further submission, p 9.

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ARTC's response to HRATF's submission also noted that details of these improvements would be included in the Phase 1 ANCO close out report provided to the RCG in coming months.

In response to an ACCC request for further information on ANCO, ARTC noted that the project would allow updating of processes to improve efficiency and achieve business-as-usual cost reductions, due to automation of manual tasks, data capture and a decrease of work effort and associated operational overheads.

However, ARTC stated in its response to HRATF's submission that business as usual cost reductions are yet to be realised. ARTC's reported costs in the 2019 and 2020 submission:

... relate to temporary Network Control resources remaining in place to support the transition and intensive training regimens of the business-as-usual operations... [and the] efficiencies that have been achieved to date have been offset by the need to increase staffing levels to address concerns relating to manning levels and fatigue identified in the 2017 ONSR [Office of the National Rail Safety Regulator] recommendations.¹⁰²

As mentioned above, ARTC has separated expenditure for ANCO into capital and operating expenditures. The capital component of ANCO expenditure is considered expansion capital, and is discussed above in section 3.2 of this Final Determination.

The ACCC understands that ANCO was being progressively installed across 2019 and 2020, and change management activities associated with its introduction were still required over this period. We expect that such transitional costs will diminish in future and that the forecast savings will materialise.

We accept that ARTC's expenditure on the ANCO project is beginning to deliver benefits to ARTC and its stakeholders through network efficiencies and capital savings. The ACCC notes that all capital expenditure for 2019 and 2020 in respect of ANCO has been endorsed by the RCG. ARTC submitted that it has provided regular ANCO progress reports to the RCG and the ANCO Oversight Committee (comprised of ARTC, its customers and the HVCCC). The ACCC will continue to monitor ARTC's network control expenditure in future compliance processes to see whether ANCO delivers cost savings.

4.7. Arup's benchmarking analysis of ARTC's overhead costs

In its 2018 compliance assessment the ACCC commented that it would closely monitor and engage with ARTC regarding its corporate overhead expenditure.¹⁰³ As part of its review of ARTC's overheads for the 2019 and 2020 compliance assessment, the ACCC engaged Arup to assist with benchmarking ARTC's overhead costs with similar firms. Arup's study covers ARTC's 3 cost categories of an overhead nature – Corporate Overheads, Business Unit Management, and Network Control. It seeks to compare them with equivalent costs in comparator companies although they may be categorised differently.

ARTC welcomed Arup undertaking an analysis and noted that benchmarking should account for the different operating context of firms, including:

- the type and intensity of network traffic
- services offering and supply chain context
- cost structure and categorisation.¹⁰⁴

¹⁰² ARTC, 2019 and 2020 Further submission, p 9.

¹⁰³ ACCC, 2018 HVAU Compliance Final Determination, p 34.

¹⁰⁴ ARTC, 2019 and 2020 Further submission, p 18.

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The ACCC's original intention was to incorporate Arup's benchmarking analysis in this compliance assessment. However, Arup provided its initial report to the ACCC in May 2022, and the ACCC requested that Arup do additional analysis, which delayed its completion until late September. We did not want to delay the publication of this final determination or limit stakeholders' opportunity to comment on Arup's findings, so have decided not to include Arup's analysis in the 2019 and 2020 compliance assessment. We have instead formed our view on the efficiency of ARTC's operating expenditure using its main submission documents, responses to information requests and its further compliance submission, as we have done in previous years.

We will publish Arup's final report and seek stakeholder feedback following publication of this final determination. We will then use stakeholder comments and Arup's analysis as a foundation for the benchmarking exercise as a complementary project alongside the annual compliance assessments. Findings from this benchmarking project may be used to inform future annual compliance processes. However, these findings would form only part of the information the ACCC considers in undertaking its compliance assessments.

4.8. Loss on disposals

The net loss on asset disposals is calculated as the written down value of the disposed assets, minus sales proceeds (scrap value) from the assets. ARTC's reported net loss on disposals fell from \$12 million in 2018 to \$5.1 million for 2019, before increasing to \$11.5 million in 2020.

- For 2019, the net loss resulted from disposals of assets with a written down value of \$5.8 million, and proceeds from sale of \$0.7 million.¹⁰⁵
- For 2020 the net loss resulted from disposals of assets with a written down value of \$12.3 million, and proceeds from sale of \$0.8 million.¹⁰⁶

The disposals resulted mainly from capital projects involving rerailing, track strengthening/upgrading and turnout renewal. Disposals were lower in 2019 due to the significant one-off disposals in 2018 of bridges and weighbridges and, to a lesser extent, the reduced scope of rerailing due to bushfires in 2019. Disposals then increased in 2020 due to an increase in scope of the main activities, partly due to completion of rerailing works delayed by the fires in 2019, as well as additional work bought forward based on condition assessment.¹⁰⁷

The recovery rate (defined as sales proceeds as a percentage of written down value) increased from 5.1% in 2018 to 12.0% in 2019 before falling to 6.6% in 2020. Re-railing was the only activity with significant proceeds from disposal, generally from scrap steel rather than re-use in tracks.¹⁰⁸ Many of the disposals related to track strengthening, signalling and culvert replacement for which there were no sales proceeds. The higher recovery rate in 2019 was largely due to the relatively greater scope of rerailing activities in 2019. The overall recovery rate then fell in 2020 due to the mix of activities making up the loss on disposal asset base coupled with a significant reduction in the recovery price of steel, with the scrap value per tonne declining from \$271 in 2019 to \$204 in 2020.¹⁰⁹

HRATF's submission noted that the loss on disposals had increased by 121% in real terms in 2020 over 2019, and raised concerns about ARTC's approach to valuation of disposals:

¹⁰⁵ ARTC, *2019 Submission*, p 23.

¹⁰⁶ ARTC, *2020 Submission*, p 26.

¹⁰⁷ ARTC, *2019 and 2020 Submission – Att.1: Operating costs*, p 31.

¹⁰⁸ ARTC, *2019 Submission*, pp 22.

¹⁰⁹ ARTC, *2019 and 2020 Submission – Att.1: Operating costs*, p 32.

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ARTC's approach to disposals is that, where it replaces an asset that's not fully depreciated in the RAB, the remaining value of the disposed asset can be immediately expensed. This means the recovery of cost occurs immediately, rather than over the remaining life of the asset. The issue is that ARTC estimates disposal value based on 'deemed value', not actual disposal price. The HRATF's concern is that if ARTC receives more than the deemed value, ARTC will receive a windfall gain.¹¹⁰

There are several issues to consider here, including:

- ARTC's general approach to accounting for disposals
- the valuation of the asset in the RAB Floor Limit
- the "deemed value" for disposal.

ARTC's approach has two elements:

- The written down value in the RAB and the RAB Floor Limit at the time it is removed from both, thereby reducing the future stream of capital charges (that is, the returns on and of assets).
- The same written-down value, net of any sale proceeds for reuse or scrap, is treated as an operating expense in the year of disposal.

The written down value is the underlying value in the RAB Floor Limit, which is the initial value, escalated for inflation and reduced by depreciation.¹¹¹ The ACCC considers it appropriate that the RAB Floor Limit is reduced by the value that was attached to an asset if that asset is disposed of and no longer contributes to services.

Broadly, the net loss on disposal becomes an immediate expense charged to users, whereas users would have otherwise paid capital charges over the life of the asset if there had been no early disposal. Under the building block model (on which the HVAU model is based), these two elements broadly offset each other – that is, if there are no proceeds from sale, the present value of the reduction in future capital charges should be the same as the increase in operating cost due to the loss on disposal. ARTC therefore recovers the full value of the asset (from either the capital charges or operating loss), regardless of what portion of its original value had been written off.

However, the size of ARTC's net losses is higher than expected in some cases as:

- the written down value is large relative to the original cost
- sales proceeds are small or zero.

The reasons are discussed below.

Written down values

Where a disposed asset is near the end of its standard life, its written down value and accompanying loss will be small. However, if the asset is disposed of prematurely, the disposal loss will be larger and the disposal loss and replacement capital expenditure will be brought forward in time. This will increase costs, through the return on and of capital of the new replacement asset in addition to the expensed disposal loss. This could result in inefficient costs being imposed on users.

¹¹⁰ HRATF, 2019 and 2020 Submission, p 5.

¹¹¹ The initial values are from either:

- for existing assets when first regulated in the HVAU - valuations based on Depreciated Optimised Replacement Cost (DORC)
- for other new assets since 2011 - capital expenditure approved as Prudent.

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The age of assets disposed of is not provided by ARTC. However, the written down values of ARTC's disposed assets are typically in the range of 75% to 92% of their value when introduced to the asset base.¹¹² Since that time, their written down value has been annually adjusted downwards for depreciation and upwards for indexation in line with the CPI. The ACCC notes that about 46% of ARTC's disposals in 2020 came from assets installed since 2011, which still have a written down value of about 85% of their original cost. This implies they are disposed of when less than 10 years old, after being depreciated at a rate based on the remaining mine life (20.5 years at the beginning of 2019).¹¹³

ARTC noted that many assets in the Network tend to have a shorter actual life than the economic life of the Network (i.e. remaining mine life), so that their written down value when disposed is usually greater than scrap value.¹¹⁴ Higher written down values result where rerailling is occurring more frequently, for example due to heavy utilisation and/or steep tight curve geometry. ARTC further submitted that many of the pre-HVAU assets have been replaced so that increasingly disposals will be of assets installed in later years with higher values. It concluded that, all other things remaining equal, loss on disposal rates will rise.¹¹⁵

Sales proceeds

The financial proceeds reported for those assets that ARTC has disposed of have been relatively small. The recovery rate for rail averaged 13% over 2019 and 2020, but was only 2% for turnout renewals. The other disposals related to activities including track strengthening, signalling and culvert replacement for which there was no salvage or sales proceeds.

ARTC explained its use of deemed values as follows:

*All scrapped rail is treated as a disposal from the RAB Floor Limit regardless if scrap is reused. ARTC then records or "deems" a value based on actual market price of scrapped steel for proceeds on disposal regardless if scrap is reused or disposed. The market rate for scrap rail is calculated with reference to the average scrap sales value per tonne as received by ARTC over the period of the Compliance submission. Customers therefore benefit from the reduction in the value of the loss on disposal in all instances regardless of the actual sale or utilisation of scrap rail. ARTC does not receive a windfall gain through this process.*¹¹⁶

The ACCC understands that ARTC takes this approach of deeming proceeds partly because the actual destination of assets may not be clear for some time after disposal.

Approach

The ACCC considers that ARTC's approach to disposals is appropriate under the terms of the HVAU. However, we note that it places the risk of premature disposal on users of the service, so it is important for ARTC to ensure that assets are replaced at an appropriate time and that it achieves reasonable recovery rates from disposed assets.

For 2019 and 2020, we understand that ARTC's disposals have been a necessary consequence of sustaining capital projects approved by the RCG and which the ACCC accepts as prudent. The ACCC is satisfied that ARTC's treatment of disposals is consistent

¹¹² ARTC, 2019 submission, Appendix D - Table D5: 2020 Sustaining Capital Project Disposals and Loss On Disposals Detailed.

¹¹³ Both these lives are considerably less than standard accounting lives for rail assets which are up to 110 years. (ARTC, [Annual report 2021-22](#), p 95).

¹¹⁴ ARTC, 2019 Submission, p 21.

¹¹⁵ ARTC, 2019 and 2020 Further submission, p 13.

¹¹⁶ ARTC, 2019 and 2020 Further submission, p 14.

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with the HVAU and based on the available evidence we accept that the net losses incurred in 2019 and 2020 were reasonable.

HRATF also submitted that ARTC should be required to implement greater discussion of disposals reporting, in line with discussions it had in the RCG.

The ACCC notes that ARTC provides detailed information in its public submission on disposals – by project, including the number of units disposed, unit cost, ‘discount factor’ (i.e. the percentage the current written down value bears to the original value when introduced into the asset base), written down value, scrap value and net loss on disposal. However, we consider that it would help to resolve stakeholder queries about deemed values if ARTC provides further information on the eventual actual sale or reuse of disposed assets.

4.9. ACCC determination on operating expenditure for 2019 and 2020

ARTC has incurred Efficient operating expenditure in accordance with section 4.10(e) of the HVAU, for 2019 and 2020. It is therefore appropriate to include this expenditure in the Economic Cost calculations, as per section 4.5(b) of the HVAU.

ARTC has demonstrated to the ACCC that its increased operating expenditure from 2018 to 2020 was partly due to numerous challenges caused by external events, including the December 2019 bushfires, the 2020 floods, the impact of the COVID-19 pandemic in 2020 and tight contract labour market conditions in 2019 and 2020 (which increased staffing costs for infrastructure works). Furthermore, ARTC has submitted that the increase in costs in 2019 and 2020 can be partly attributed to implementing key projects, such as the AMIP, the PTP and ANCO. ARTC has provided evidence of realised or expected benefits from these projects, as documented throughout this determination. The ACCC encourages ARTC to continually document and communicate such benefits to stakeholders, as this will provide them with greater confidence that these projects are in their best interest.

The ACCC acknowledges HRATF’s concerns about the increasing trend in operating expenditure over the past few years and the significant increase over 2019 to 2020. However, the increasing trend in operating expenditure is by itself not enough to conclude that ARTC has not incurred Efficient operating expenditure. This is because the ACCC must consider the environment in which ARTC operates the network as part of its operating expenditure assessment (alongside other considerations, such as maximising coal chain throughput and the terms of Access Holder agreements). Nonetheless, the ACCC will continue to closely examine any increases in operating expenditure in future annual compliance assessments to ensure that these costs are Efficient.

5. The Constrained Network

Section 4.10(d)(ii) of the HVAU requires the ACCC to determine whether ARTC has reconciled Access revenue with the applicable Ceiling Limit. The Ceiling Limit is the maximum amount of revenue that ARTC is entitled to recover in respect of Segments comprising the Constrained Network. Currently, the Constrained Network comprises Zones 1 and 2.

The ACCC has determined that ARTC has correctly undertaken the:

- roll forward of the RAB Floor Limit for the Constrained Network in accordance with the HVAU
- calculations for the reconciliation of Access revenue and the applicable Ceiling Limits for 2019 and 2020
- calculations of the allocation of the total under recovery amounts for 2019 and 2020 in accordance with the HVAU.

The Ceiling Limit is defined as the Economic Cost, which includes both operating costs and capital charges. Capital charges comprise depreciation and return on assets, which in turn require calculation of the RAB Floor Limit.

5.1. RAB Floor Limit roll forward

Table 6 shows ARTC's reported RAB Floor Limit roll forward for the Constrained Network in 2019 and 2020.

Table 6: RAB Floor Limit roll forward for Constrained Network (\$), 2019 and 2020

	2019	2020
Opening RAB Floor Limit	1,433,058,990	1,432,584,453
<i>add CPI</i>	22,489,156	3,686,704
<i>add Net Capital Expenditure</i>	49,202,864	55,297,140
<i>less Depreciation</i>	(72,166,557)	(74,958,549)
Closing RAB Floor Limit	1,432,584,453	1,416,609,748

Source: ARTC, *Confidential financial models for 2019 and 2020*.

The RAB Floor Limit for the Constrained Network did not change substantially across 2019, with the depreciation deduction offsetting increases from CPI indexation and new capital expenditure. The closing RAB Floor Limit decreased by 1.1% across 2020, largely due to a significantly lower CPI indexation.

Further information on the methodology of the RAB Floor Limit roll forward is available in Chapter 2. The CPI and depreciation values are outlined below.

CPI

ARTC applied a CPI indexation factor of 1.57% in 2019 and 0.26% in 2020. This was calculated as the percentage increase in CPI (All Groups, Sydney) from 114.7 for the September quarter 2018 to 116.5 in the September quarter 2019, and then to 116.8 in the September quarter 2020. ARTC has applied the appropriate indexation in accordance with section 4.4(b) of the HVAU.

Depreciation

Depreciation is charged on the inflation-adjusted opening balance of the RAB Floor Limit and for a half-year on Capital Expenditure incurred during the compliance year.¹¹⁷ It is calculated by dividing the value of assets by their remaining useful life. As discussed in Chapter 2, the depreciation rate is calculated using the remaining mine life, which was 20.5 years at the beginning of 2019.

5.1.1. ACCC for the Constrained Network RAB Floor Limit roll forward determination for 2019 and 2020

ARTC has undertaken the roll forward of the RAB Floor Limit for the Constrained Network in accordance with the HVAU in its revised submission for both years, resulting in the closing RAB Floor Limit values as shown in Table 6.

5.2. Ceiling test

Table 7 shows ARTC’s Economic Cost calculation for the Constrained Network for 2019 and 2020, as per the methodology shown in Figure 4 (Chapter 2).

Table 7: Economic Cost (Ceiling Limit) for Constrained Network (\$), 2019 and 2020

	2019	2020
Operating Expenditure	135,560,093	141,682,226
Depreciation	64,785,286	67,358,317
Return on assets	69,200,841	68,879,945
Economic Cost (Ceiling Limit)	269,546,220	277,920,487

Source: ARTC, 2020 Submission, p 28.

Note: The return on assets was based on a real pre-tax rate return of 5.38% for 2019 and 2020, as outlined in section 2.4.1 of this final determination.

Table 8 shows calculations for the ceiling test for the Constrained Network for 2019 and 2020, as per the methodology shown in Figure 5 above.

Table 8: Ceiling test for Constrained Network (\$), 2019 and 2020

	2019	2020
Access Revenue	262,683,893	269,099,501
Ceiling Limit	269,546,220	277,920,487
Difference (under recovery)	(6,862,326)	(8,820,986)

Source: ARTC, 2020 Submission, p 28.

ARTC’s calculations in its revised submission showed an under recovery in the Constrained Network of \$6.9 million in 2019 and \$8.8 million in 2020.

5.2.1. ACCC Ceiling test determination for 2019 and 2020

ARTC has undertaken the relevant calculations for the reconciliation of Access revenue with the applicable Ceiling Limits for 2019 and 2020 correctly, as shown in Table 7 and Table 8, resulting in an under recovery of revenue in both years.

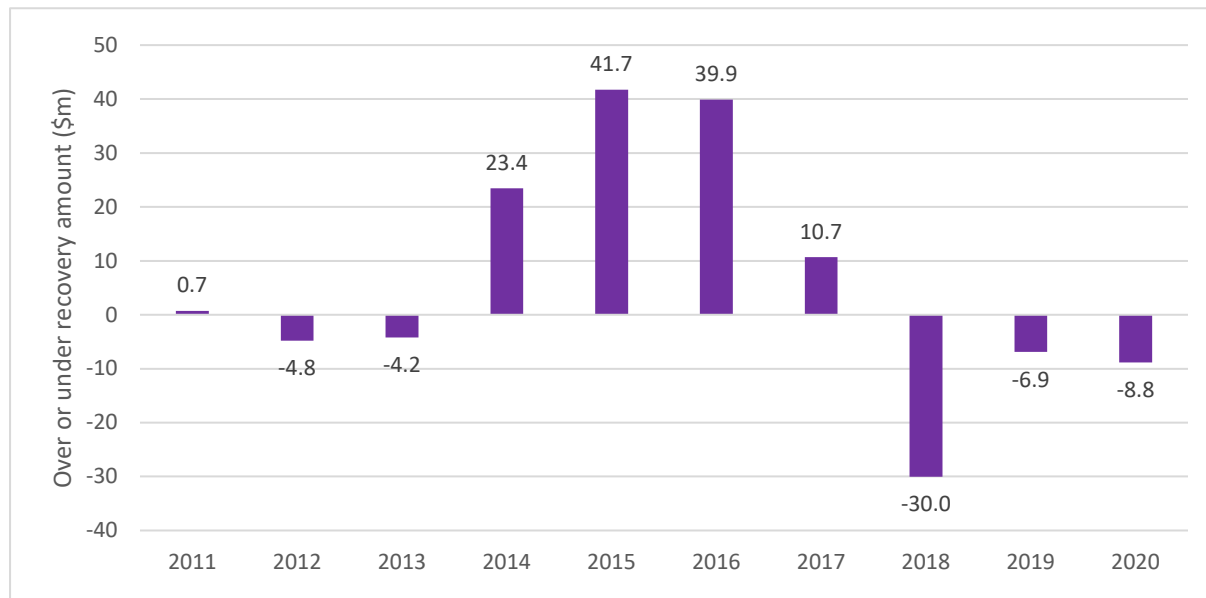
¹¹⁷ Separate calculations are required for 2019 and 2020.

5.3. Unders and overs

The result of the Ceiling Limit test is referred to as the ‘unders and overs amount’. It is the amount by which ARTC has under or over recovered revenue from the Constrained Network in a given year.

Figure 19 displays the unders and overs amounts for the Constrained Network since 2011.

Figure 19: Unders and overs amounts for the Constrained Network, 2011 to 2018



Source: ACCC, *HVAU Compliance Final Determination 2011 to 2018*; ARTC, *2020 Submission*, p 28.

Figure 19 highlights that although 2019 and 2020 both had sizeable under recoveries of revenue, they were significantly smaller than the \$30.0 million under recovery in 2018.

The under recovery of revenue in 2019 was primarily due to higher operating costs than forecast, particularly maintenance costs and losses on disposals.¹¹⁸

Around half of the 2020 under recovery is attributable to an error ARTC made in the overhead model cost allocation. This involved a \$4.4 million understatement of costs allocated to Pricing Zones 1 and 2. Higher than anticipated losses on disposals and infrastructure maintenance costs, much of these arising from the November 2019 bushfires and COVID-19 restrictions, contributed to the majority of the remaining under recovery.¹¹⁹

To comply with section 4.9(b) of the HVAU, ARTC calculated the allocation of the total ‘unders and overs’ amount between individual Constrained Coal Customers for 2019 and 2020, and provided the information to the ACCC in a confidential spreadsheet. The proportion of the under recovery allocated to each Constrained Coal Customer is based on the proportion of Access revenue paid by each customer.

5.3.1. ACCC unders and overs determination for 2019 and 2020

ARTC has undertaken the calculations of the allocation of the total under recovery amounts for 2019 and 2020 shown in Table 8 and in the confidential spreadsheets submitted to the ACCC in accordance with the HVAU.

¹¹⁸ ARTC, *2019 Submission*, p 26.

¹¹⁹ ARTC, *2019 Submission*, pp 30-31.

6. Pricing Zone 3

Zone 3 does not form part of the Constrained Network and is treated differently under the HVAU. During development of the HVAU, mines in Zone 3 were not yet fully established so these Access Holders could not pay their full Economic Cost and ARTC incurred losses on these customers. ARTC's losses (and a return on capital invested) accumulated in a 'loss capitalisation account'. In practice, this account equals the difference between the Zone 3 RAB Floor Limit and RAB. The loss capitalisation balance peaked at \$86.3 million in 2015. Zone 3 Access Holders have been paying this balance down since then.

The ACCC has determined that

- ARTC has correctly undertaken the roll forward of the RAB Floor Limit and RAB for Zone 3 in accordance with the HVAU
- loss capitalisation still applies for Zone 3.

The loss capitalisation balance will be set to zero on 31 December 2022, as required under section 4J.9(g) of the HVAU version 8. This means Zone 3 will form part of the Constrained Network from 1 January 2023 and will be subject to the same Ceiling Limit test and revenue reconciliation via the unders and overs process.

As discussed in Chapter 2, Zone 3 does not form part of the Constrained Network and Access revenue recovered from this zone has not yet fully paid for its accumulated operating and capital costs. Instead, the annual losses incurred in earlier years were aggregated into a loss capitalisation balance, which Zone 3 Access Holders have been paying down since 2015. Loss capitalisation continues to apply to Zone 3 if its RAB exceeds its RAB Floor Limit.

The roll forward of the Zone 3 RAB Floor Limit is shown below, followed by the roll forward of the RAB.

6.1. RAB Floor Limit roll forward for Zone 3

Table 9 shows ARTC's reported RAB Floor Limit roll forward for Zone 3.

Table 9: RAB Floor Limit roll forward for Zone 3, 2019 and 2020

	2019	2020
Opening RAB Floor Limit	713,877,261	710,213,459
<i>add CPI</i>	<i>11,202,956</i>	<i>1,828,876</i>
<i>add Net Capital Expenditure</i>	<i>21,008,809</i>	<i>34,921,574</i>
<i>less Depreciation</i>	<i>(35,875,568)</i>	<i>(37,330,204)</i>
Closing RAB Floor Limit	710,213,459	709,633,705

Source: ARTC, 2019 Submission, p 18; ARTC, 2020 Submission, p 20.

Note: Totals may not add due to rounding.

Table 9 shows that the RAB Floor Limit for Zone 3 at the end of 2020 was \$709.6 million, a decrease of 0.6% since the end of 2018. The negative effect of depreciation outweighed additions due to CPI indexation and net capital expenditure.

6.1.1. Zone 3 RAB Floor Limit roll forward for 2019 and 2020

The ACCC has determined that ARTC has undertaken the roll forward of the RAB Floor Limit for Zone 3 in accordance with the HVAU, resulting in the closing RAB Floor Limit value shown in Table 9.

6.2. RAB roll forward for Zone 3

Table 10 shows ARTC’s reported RAB roll forward for Zone 3.

Table 10: RAB roll forward for Zone 3 (\$), 2019 and 2020

	2019	2020
Opening RAB	775,228,292	753,271,190
<i>add Return on Opening RAB</i>	<i>61,320,558</i>	<i>59,583,751</i>
<i>add Operating Expenditure</i>	<i>55,571,732</i>	<i>66,818,348</i>
<i>add Net Capital Expenditure</i>	<i>21,008,809</i>	<i>34,921,574</i>
<i>add Return on Net Capital Expenditure</i>	<i>830,898</i>	<i>1,381,148</i>
<i>less Access Revenue</i>	<i>(160,689,099)</i>	<i>(168,408,428)</i>
Closing RAB	753,271,190	747,567,582

Source: ARTC, 2019 Submission, p 14; ARTC, 2020 Submission, p 15.

Notes: Totals may not add due to rounding.

Net Revenue is the total Access revenue paid by Zone 3 producers for their use of both Zone 1 and Zone 3 (\$182,511,632 in 2019, \$190,252,389 in 2020) less the Incremental Cost of Zone 3 Access Holders’ use of Zone 1 (\$21,822,533 in 2019, \$21,843,961 in 2020). Source – ARTC confidential financial models.

Table 10 demonstrates that the Zone 3 RAB decreased by around \$27.6 million between the start of 2019 and the end of 2020. The return on the opening RAB and on net capital expenditure was based on a nominal pre-tax rate of return of 7.91% per annum, as outlined above in section 2.2.2.

6.2.1. Zone 3 RAB roll forward determination for 2019 and 2020

The ACCC has determined that ARTC has undertaken the roll forward of the RAB for Zone 3 in accordance with the HVAU, resulting in the closing RAB values shown in Table 10.

6.3. Loss capitalisation balance for Zone 3

The loss capitalisation balance is the difference between the RAB and the RAB Floor Limit for Zone 3. This balance can be viewed as the accumulated sum of ARTC’s operating losses and return on capital invested.

Table 11 shows that the RAB was \$37.9 million higher than the RAB Floor Limit at the end of 2020.

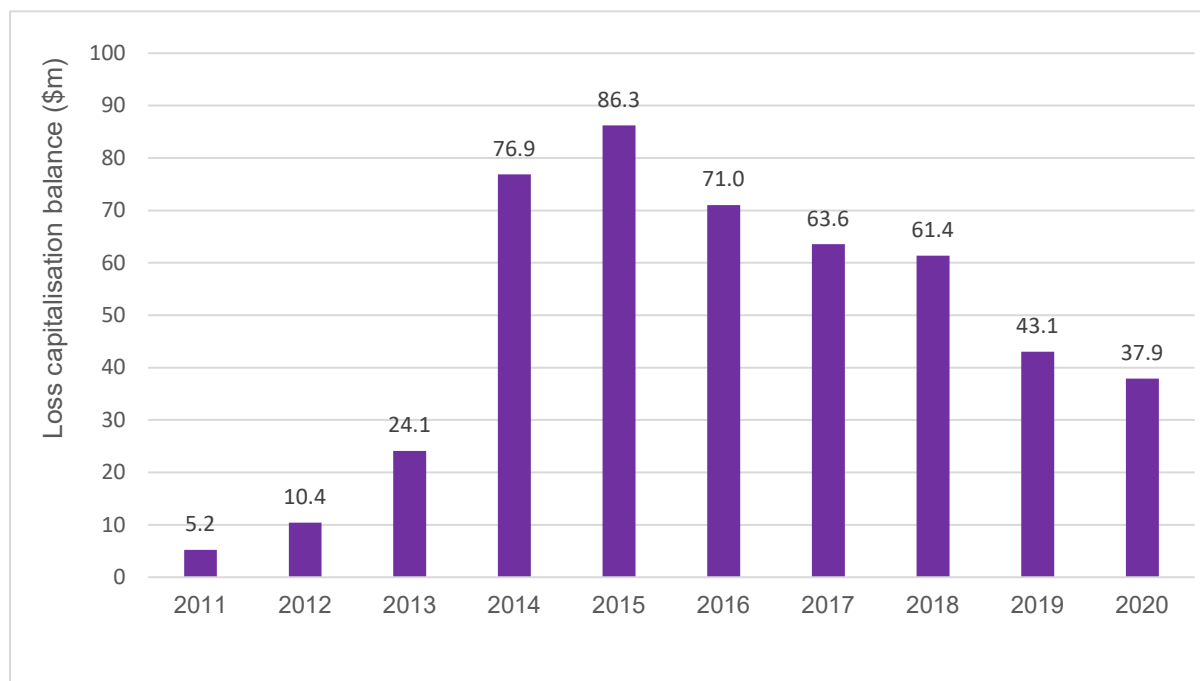
Table 11: Comparison of RAB and RAB Floor Limit for Zone 3 (\$), 2019 and 2020

	2019	2020
Closing RAB	753,271,190	747,567,582
Closing RAB Floor Limit	710,213,459	709,633,705
Difference (RAB minus RAB FL)	43,057,731	37,933,877

Source: ARTC, 2019 Submission, p 18; ARTC, 2020 Submission, p 20.

Figure 20 shows the closing loss capitalisation balance for Zone 3 from 2011 to 2020.

Figure 20: Closing loss capitalisation balance for Zone 3, 2011 to 2020



Source: ACCC, *HVAU Compliance Final Determination 2011 to 2018*; ARTC, *2019 Submission*, p 19; ARTC, *2020 Submission*, p 21.

Figure 20 shows that the loss capitalisation balance increased from the beginning in 2011 up to a peak in 2015 and then decreased each year up to 2020. This means that ARTC incurred losses on Zone 3 each year from 2011 to 2015, but has since earned surplus revenue each year from Zone 3. The surplus recovered between 2016 to 2020 has been 'paying down' the earlier losses incurred by ARTC, resulting in the declining loss capitalisation balance. This reflects that Zone 3 is unconstrained- that is, its revenue is allowed to exceed costs until the loss capitalisation balance has been reduced to zero.

The loss capitalisation amount will be set to zero on 31 December 2022, as required under section 4.9J(g) of version 8 of the HVAU. Zone 3 Access Holders will need to pay any remaining loss capitalisation amount in 12 equal monthly instalments after publication of ACCC's 2022 annual compliance final determination. Zone 3 will then be part of the Constrained Network from 1 January 2023 onwards.

6.3.1. ACCC loss capitalisation determination for 2019 and 2020

The RAB exceeds the RAB Floor Limit for Zone 3 at the end of 2020 by \$37.9 million. Therefore loss capitalisation still applies, meaning Zone 3 Access Holders need to continue repaying ARTC for earlier incurred losses and ARTC's revenue from these Access Holders is not bound by a ceiling limit.

7. True up test audit

The HVAU incorporates liability arrangements in the Indicative Access Holder Agreement that provide for the payment of rebates to users where ARTC fails to deliver contracted path capacity. The payment of these rebates occurs following the completion of an annual reconciliation process, which is informed by a true up test.

The ACCC's Final Determination is that ARTC's true up tests for 2019 and 2020 were independently audited and satisfy the requirements of section 4.10(f)(xi) of the HVAU.

As such, no underpayment of rebates is owing to Access Holders and there are no overpayments of rebates that ARTC is entitled to recover.

The obligations are set out in Schedule 2 (System True Up Test) of the Indicative Access Holder Agreement, annexed to the HVAU.

The true up test determines whether there was sufficient capacity available on ARTC's rail network to meet all contracted entitlements. This involves a comparison of:

- Total Path Usages Required, which includes base (contracted) and ad-hoc train paths, maintenance requirements, non-coal trains, system losses and a tolerance allowance.
- Network Path Capability, which is the number of Functional Coal Paths being made available in a period after accounting for Availability Exceptions (i.e. things beyond ARTC's control, such as emergencies, passenger priorities, material safety considerations, etc).¹²⁰

The calculation is conducted on a Pricing Zone basis. If Total Path Usages Required exceeds Network Path Capability within a Pricing Zone, a System Availability Shortfall has occurred and ARTC has failed the true up test for that month or quarter in that zone. If a System Availability Shortfall has occurred and an Access Holder has experienced an Individual Shortfall, whereby the number of train paths actually used by the Access Holder during the period was less than the number of train paths contracted during that period, then that Access Holder will accrue a rebate for charges on unavailable paths in that Pricing Zone during that period. These are known as 'accrued system rebates under Schedule 2' in the HVAU.

ARTC is required to publish the results of its monthly and quarterly true up tests on its website within 3 weeks of the end of the given period.¹²¹ It must also notify Access Holders of any rebates accrued during the period.

Section 5.4 of the IAHA outlines how Take Or Pay Rebates for contracted paths are calculated in the annual reconciliation process. If the number of train paths actually used during a year is less than the number of train paths contracted, then an 'annual deficiency in contracted Path Usages' has occurred. If this occurs and a rebate has been accrued as described above, the Access Holder is entitled to a rebate on the Take Or Pay charges it paid for those unused paths.

¹²⁰ A Functional Coal Path is one capable of being used by a coal train which adheres to certain Relevant System Assumptions, including section running times, maximum train length, maximum train axle load and maximum train speed as defined in section 1.1. of the IAHA.

¹²¹ Test results available at: <https://www.artc.com.au/customers/access/access-hunter-valley/compliance-with-agreements/system-true-up-test-results/>. Note that some reports, such as those for Zone 3, are not published to protect customer confidentiality. ARTC provides these results directly and individually to relevant Access Holders.

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The rebate is the lesser of:

- the average Take Or Pay charge for a train path multiplied by the annual deficiency in contracted Path Usages; or
- the sum of accrued system rebates under Schedule 2.

This 'lesser of' requirement means that a rebate is only owed where an Access Holder cannot access contracted paths in a particular zone due to ARTC failing the true up test. If the Access Holder opts not to use its contracted train paths, then no rebate is owed.

Section 4.10(f) of the HVAU requires an independent audit of ARTC's compliance with the true up test, to ensure the integrity of the test and avoid potential conflicts of interest.

7.1. True up test for 2019

RSM Australia audited ARTC's true up test obligations for 2019.

RSM Australia identified several low-risk issues with respect to the true up test. These include:

- Not publishing reports within prescribed timeframes:
 - ARTC did not publish the monthly reports for February, March, September and December 2019 on its website within 3 weeks of the end of the true up test period, as required.
- Errors in the true up test report published and a lack of quality assurance review over the true up test data received:
 - errors in the forecast system losses arising from other parties other than ARTC
 - incorrect reporting of non-coal train utilisation by ARTC due to an error in the administrative formula calculation
- Lack of supporting documentation over the true up test data used for the cause of domestic cancellations:
 - two instances where ARTC reported cancellations as Other Party Losses, despite a lack of supporting documentation. (RSM Australia found there was no material impact or change in outcome regardless of who ARTC attributed losses to, but noted the lack of documentation reflected that ARTC could improve its processes).¹²²

RSM Australia also followed up on its recommendations for 2018. It found that some matters were still outstanding, such as publication of true up test reports on time and errors in published reports. ARTC responded that it had developed new processes to produce the information more accurately and timely, although RSM Australia's report shows the timeframe for this is mid-2020 (meaning improvements may not be fully realised until 2021).

RSM Australia deemed that the compliance issues were low-risk and not material, concluding:

*In our opinion, the Australian Rail Track Corporation Limited has complied, in all material respects, with the Hunter Valley Access Undertaking in relation to its obligations under Schedule 2 of the Access Holder Agreements for the 2019 True Up Tests.*¹²³

No stakeholders commented on the outcome of the 2019 true up test.

¹²² RSM Australia, [Australian Rail Track Corporation Limited Hunter Valley Access Undertaking – System Wide True Up Test](#), April 2020, p 8.

¹²³ RSM Australia, *System-wide true up test*, 2020, p 6.

7.2. True up test for 2020

Grant Thornton audited ARTC's true up test obligations for 2020. It made the following detailed findings relating to ARTC's compliance with the true up test requirements:

- ARTC calculates Network Path Capability using multiple Network points rather than the single points set out in the IAHA.¹²⁴ However, ARTC's approach provides a more accurate representation of Network Path Capability and is effectively communicated to users at the start of each year through the Network Path Capability notification document.
- ARTC did not publish the monthly true up test report for January 2020 on its website within 3 weeks of the end of the true up test period.

Grant Thornton also followed up on the auditor's recommendations for 2019. It found that some matters had been corrected while some minor matters were still outstanding. In response ARTC commented:

During the 2020 calendar year, ARTC completed a number of system improvements to enhance the more timely and reliable generation of monthly true up test reports. The benefits of this work can be seen in the minimal issues identified during the audit process this year.¹²⁵

Grant Thornton concluded:

In our opinion, ARTC has complied, in all material respects, with the requirements as measured by their obligations defined in schedule 2 of the AHA for the period 1/1/20 to 31/12/20.

No stakeholders commented on the outcome of the 2020 true up test.

7.3. ACCC true up test audit determination for 2019 and 2020

ARTC's true up tests for 2019 and 2020 were independently audited, within the meaning of section 4.10(f)(ii) of the HVAU, and satisfy the requirements of section 4.10(f)(xi). There is no evidence of underpayment of rebates owing to Access Holders, nor of overpayments of rebates that ARTC is entitled to recover.

¹²⁴ Network Path Capability is the capability of the Network, specified as the number of Functional Coal Paths capable of being made available in a Period.

¹²⁵ ARTC comments in Grant Thornton, [Independent Reasonable Assurance Engagement Report Hunter Valley Access Undertaking – System Wide True Up Test Audit](#), March 2021, p 7.

Appendix A: Annual compliance assessment provisions in the HVAU

Version 7

Section 4.10 of the HVAU provides for the ACCC to conduct an annual compliance assessment to determine whether ARTC has complied with access pricing principles under the HVAU. These provisions are set out below (capitalised terms are defined under section 14 of the HVAU).

- a) ARTC will submit to the ACCC, by the later of 30 April each year and 4 months from the ACCC's final determination of the previous year's Compliance Assessment, in respect of the previous calendar year:
 - i) documentation detailing roll forward of the RAB and the RAB Floor Limit, and comparisons between RAB and RAB Floor Limit;
 - ii) where documentation in (i) above demonstrates that RAB is at or below RAB Floor Limit, documentation detailing calculations relevant to reconciliation of Access revenue with the applicable Ceiling Limit and calculation of any allocation of the total unders and overs amount; and
 - iii) where documentation in (i) above demonstrates that RAB is above RAB Floor Limit in Pricing Zone 3, documentation demonstrating that Standard Access Charges satisfy the requirements in section 4.3(b).
- b) The documentation submitted by ARTC to the ACCC will, unless otherwise agreed with the ACCC and having regard to the relevant circumstances applicable at the time, meet the information provision guidelines and the timeframes set out in Schedule G.
- c) If the ACCC reasonably considers that it requires additional information, other than that provided by ARTC in accordance with Schedule G, in order to carry out its assessment under section 4.10(d), it may request this information from ARTC in accordance with section 3 of Schedule G and upon receipt of such a request ARTC will use reasonable endeavours to provide the information to the ACCC as soon as reasonably practicable.
- d) The ACCC will determine whether ARTC has undertaken:
 - i) roll forward of the RAB and RAB Floor Limit in accordance with the Undertaking and, where the roll forward is not in accordance with the Undertaking, determine what closing RAB or RAB Floor Limit would be in accordance with the Undertaking;
 - ii) when required, the calculations relevant to reconciliation of Access revenue with the applicable Ceiling Limit and calculation of any allocation of the total unders and overs amount in accordance with the Undertaking, and where the calculations are not in accordance with the Undertaking, determine what total unders and overs amount or allocation would be in accordance with the Undertaking having regard to the operation of its unders and overs account;
 - iii) in determining whether ARTC has complied with the provisions of section 4.4 in rolling forward the RAB or the RAB Floor Limit, the ACCC may have regard to the submissions of relevant industry participants but if capital expenditure or Capital

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Allocations have been endorsed by the RCG in accordance with section 9, the ACCC will not consider whether that capital expenditure is prudent or review the Capital Allocation;

- iv) the ACCC will publish its findings on its website and/or circulate to Access Holders in relation to the matters for its determination; and
 - v) ARTC will revise the closing RAB and manage Constrained Coal Customer Accounts in accordance with any determination by the ACCC.
- e) The ACCC will determine whether ARTC has incurred Efficient costs and Efficient operating expenditure in accordance with section 4.5(b), and determine the change (if any) to:
- i) the total unders and overs amount or allocation; and
 - ii) closing RAB and RAB Floor Limit in section 4.4,

that results from Economic Cost under section 4.5(a) only including Efficient costs and Efficient operating expenditure determined in accordance with section 4.5(b).

Section 4.10(f)(x) of the HVAU also provides that ARTC will provide the final written report of the True Up Test, as prepared by the independent auditor, to the ACCC to review as part of the annual compliance assessment process.

Section 4.10(f)(xi) requires the ACCC to review the Final Audit Report and decide, and notify ARTC of, any amounts of underpayment of rebates that are owing to Access Holders or amounts of overpayment of rebates ARTC is entitled to recover.

Appendix B: Comparisons of ARTC’s submissions

The tables below show the figures affected by ARTC’s revised submissions for the 2019 and 2020 annual compliance assessment.

Table 12: Comparison of ARTC’s original and revised submissions of January 2022

	Original submission (November 2021)		Revised submission (January 2022)		Change
	Value	Page no.	Value	Page no.	Value
Total Network					
2019					
Disposal value reduction – incremental	-\$2,298,837	15	-\$2,063,519	15	\$235,318
Net incremental capex $t-1$	\$19,647,980	15	\$19,883,298	15	\$235,318
Disposal value reduction – fixed	-\$3,545,937	15	-\$3,781,255	15	-\$235,318
Net fixed capex $t-1$	\$50,540,113	15	\$50,304,795	15	-\$235,318
2020					
Disposal value reduction – incremental	-\$3,453,445	16	-\$3,016,404	16	\$437,041
Net incremental capex $t-1$	\$27,706,456	16	\$28,143,496	16	\$437,040
Disposal value reduction – fixed	-\$8,823,605	16	-\$9,260,645	16	-\$437,040
Net fixed capex $t-1$	\$62,512,258	16	\$62,075,217	16	-\$437,041
Constrained Network					
2019					
Depreciation current year – on opening total RAB Floor Limit as at 1 July 2016	-\$65,214,866	32	-\$65,528,940	32	-\$314,074
Current year depreciation (excl. CPI on prior year depreciation)	-\$71,852,037	33	-\$72,166,112	33	-\$314,075
2020					
Depreciation current year – on opening total RAB Floor Limit as at 1 July 2016	-\$64,504,397	36	-\$65,335,912	36	-\$831,515
Current year depreciation (excl. CPI on prior year depreciation)	-\$74,126,140	38	-\$74,957,656	38	-\$831,516

Source: ACCC, based on
Original submissions – ARTC, *Hunter Valley Coal Network Access Undertaking 2019 Compliance Assessment*, 26 November 2021, pp 15, 32-33; and ARTC, *Hunter Valley Coal Network Access Undertaking 2020 Compliance Assessment*, 26 November 2021, pp 16, 36, 38
Revised submissions – ARTC, *Hunter Valley Coal Network Access Undertaking 2019 Compliance Assessment*, 7 January 2022, pp 15, 32-33; and ARTC, *Hunter Valley Coal Network Access Undertaking 2020 Compliance Assessment*, 7 January 2022, pp 16, 36, 38

Table 13: Comparison of ARTC’s original and revised submissions of August 2022

	Original submission (January 2022)	Revised submission (August 2022)	Change
	Value (\$)	Value (\$)	Value (\$)
Total Network			
2019			
Total network – Interest during construction	2,495,949	2,521,379	25,430
Total network – RAB Floor Limit	2,146,184,539	2,146,209,333	24,793
Constrained Network – Under recovery	6,861,471	6,862,326	855
Zone 3 – Loss capitalisation balance at end year	43,057,183	43,057,731	548
2020			
Total network – Interest during construction	0	0	0
Total network – RAB Floor Limit	2,129,464,680	2,129,488,264	23,584
Constrained Network – Under recovery	8,819,296	8,820,986	1,690
Zone 3 – Loss capitalisation balance at end year	37,932,223	37,933,878	1,655

Source: ACCC, based on ARTC revised models of 7 January 2022 and 26 August 2022. ARTC did not revise all affected numbers in its submission as the changes were not material, but advised the size of changes in key variables on page 5 of the revised submission documents.