Transport Asset Holding Entity

Access Pricing Compliance Submission to IPART

Financial Year

2022-2023

NSW GOVERNMENT

ACKNOWLEDGEMENT OF COUNTRY

Transport Asset Holding Entity of New South Wales acknowledges the traditional custodians and their ancestors of the lands and waters where we work, live and learn. We celebrate the First Peoples' unique cultural and spiritual relationship to Country and acknowledge the significance of Aboriginal cultures in Australia. We pay our respect to Elders, past and present and acknowledge their continuing connection to land, water and community.

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Executive Summary

Key Points

- Transport Asset Holding Entity (**TAHE**) has exceeded the ceiling for the TAHE Hunter Valley Coal Network (**HVCN**) when considering access revenues from combined coal and non-coal freight access seekers. TAHE has over recovered access revenue by $1.2 million, or 14.8% above the estimate full economic cost for the TAHE HVCN.
- The TAHE HVCN unders and overs account closing balance at 30 June 2023 is $7.1 million.
- The TAHE HVCN 2022-23 over-recovery was driven by higher than anticipated increases in coal volumes to meet the NSW Government directions to maintain coal stockpiles at NSW's coal fired power stations and prioritise delivery of coal to those power stations. TAHE has lodged a TAHE HVCN Unders and Overs Account Policy with the Independent Pricing and Regulatory Tribunal of NSW (**IPART**) that would see the 30 June 2023 unders and overs account balance of $7.1 million being passed back to customers via future price changes.
- TAHE has complied with all remaining compliance requirements of the Undertaking in 2022-23.
- For the Metropolitan Passenger Rail Network (**MPN**), access revenues for all access seekers represent approximately 38.6 per cent of the full economic costs for the network in 2022-23. This is based on a Depreciated Optimised Replacement Cost (**DORC**) valuation of the regulatory asset base and on access revenue which includes in kind access contributions.
- For the Country Regional Network, Northern Sydney Rail Corridor, and the Metropolitan Freight Network, access revenues are currently insufficient to recover the operational and maintenance costs involved in providing access and so by implication comply with the ceiling test.
- The regulatory asset base roll forward principles have been applied in estimating the full economic cost of providing access to the MPN and the TAHE HVCN, consistent with the requirements in the Undertaking.

Background

Access to TAHE's rail networks is regulated by the NSW Rail Access Undertaking 1999 (**Undertaking**), which requires TAHE to:

- demonstrate the compliance of its access prices with pricing principles, including a ceiling and floor test, to ensure that TAHE does not charge above its full economic costs of providing regulated network services;
- provide information on its unders and overs account, for those networks where access revenue might exceed its estimated full economic costs; and
- estimate its regulatory asset base in line with a specified roll forward methodology.

TAHE's compliance with the Undertaking is evaluated by the Independent Pricing and Regulatory Tribunal of NSW (**IPART**). This submission provides relevant information to IPART to undertake its evaluation.

TAHE Regulated Rail Networks

TAHE provides access across several rail networks, namely:

- Metropolitan Passenger Rail Network (**MPN**) – accessed by Sydney Trains and NSW Trains to provide passenger rail services;
- Country Regional Network (**CRN**) – accessed by NSW Trains and rail freight operators to provide both passenger rail and freight rail services;
- Hunter Valley Coal Network (**TAHE HVCN**) – a small segment of the entire Hunter Valley coal network which is otherwise principally provided by the Australian Rail Track Corporation and accessed by rail freight operators to provide coal haulage services to electricity generators, for export via the Port of Newcastle and for other general freight movements;
- Northern Sydney Rail Corridor – Freight Services (**NSRC**) – a subset of the metropolitan rail network that connects Sydney to Newcastle and is used by freight operators to provide rail freight services; and
- Metropolitan Rail Network – Freight Services (**MRN-FS**) – while the metropolitan rail network (excluding the TAHE HVCN and NSRC) is accessed by both passenger and freight services, the MRN-FS is treated as a theoretical stand-alone freight only for compliance purposes.

Compliance Outcomes

This submission details TAHE's compliance with the Undertaking in relation to:

- access revenue from coal and general freight access seekers on the TAHE component of the Hunter Valley Coal Network (TAHE HVCN). In 2022-23 this revenue was above the full economic cost of the provision of access to this part of the network which resulted in the over recovery balance of the unders and overs account for the HVCN being increased by $1.168 million during 2022-23.
- access revenue on the Metropolitan Passenger Rail Network.

In 2022-23 TAHE has not charged above the full economic cost of providing access to either Sydney Trains or NSW Trains to the Metropolitan Passenger Rail Network. Figure 1 and Table 1 set out our access revenue compliance results for the MPN.

Figure 1: Compliance of access revenue, Metropolitan Passenger Rail Network 2022-23, $ million

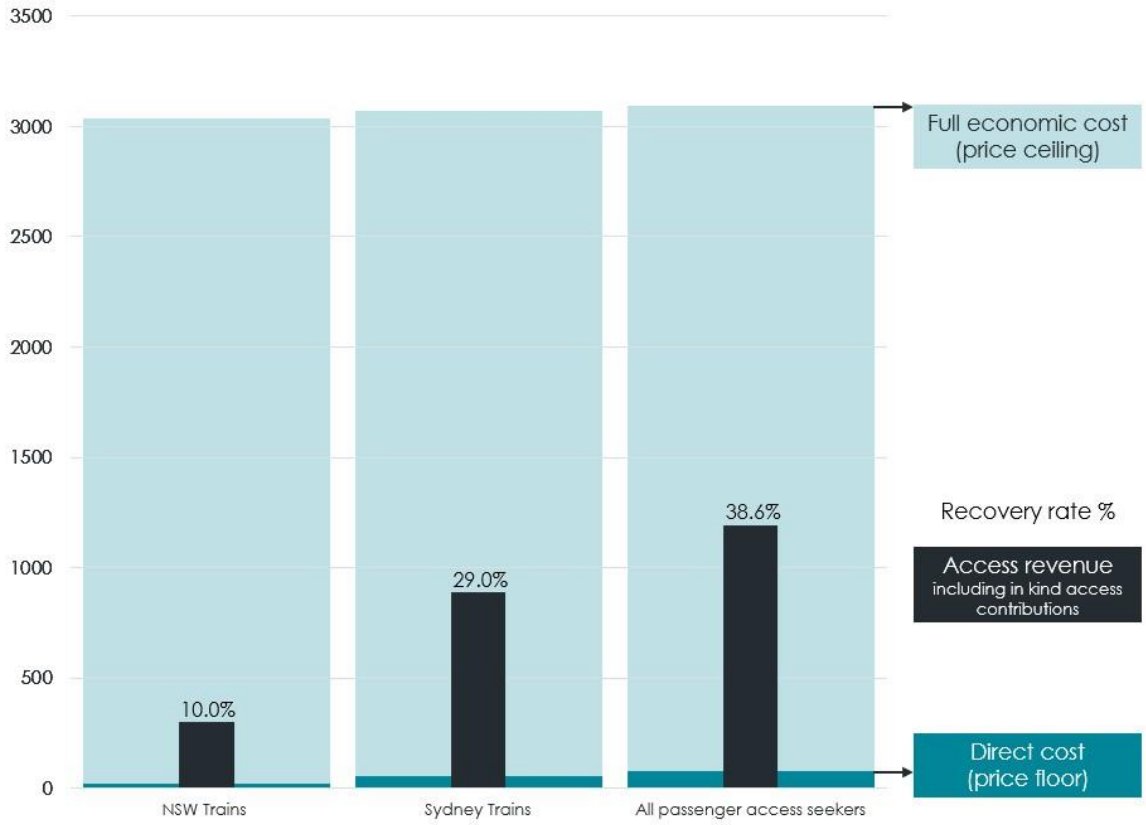


Table 1: Access revenue and full economic cost, Metropolitan Passenger Rail Network 2022-23, $ million

	Sydney Trains ($ million)	NSW Trainlink ($ million)	Combined [1] ($ million)
Full economic cost (ceiling)	3,073.8	3,036.6	3,095.8
Total Access Revenue (including in kind contributions)	890.3	304.6	1,195.0
Access Revenue less FEC	-2,183.5	-2,732.0	-1,900.8
Recovery Rate %	29.0%	10.0%	38.6%

In 2022-23 the TAHE HVCN revenue was above the full economic cost of the provision of access to this network, which resulted in the over recovery balance of the unders and overs account for the HVCN being increased by $1.2 million during 2022-23. Figure 2 and Table 2 set out the compliance results for the TAHE HVCN.

Figure 2: Compliance of access revenue, Hunter Valley Coal Network 2022-23, $ million

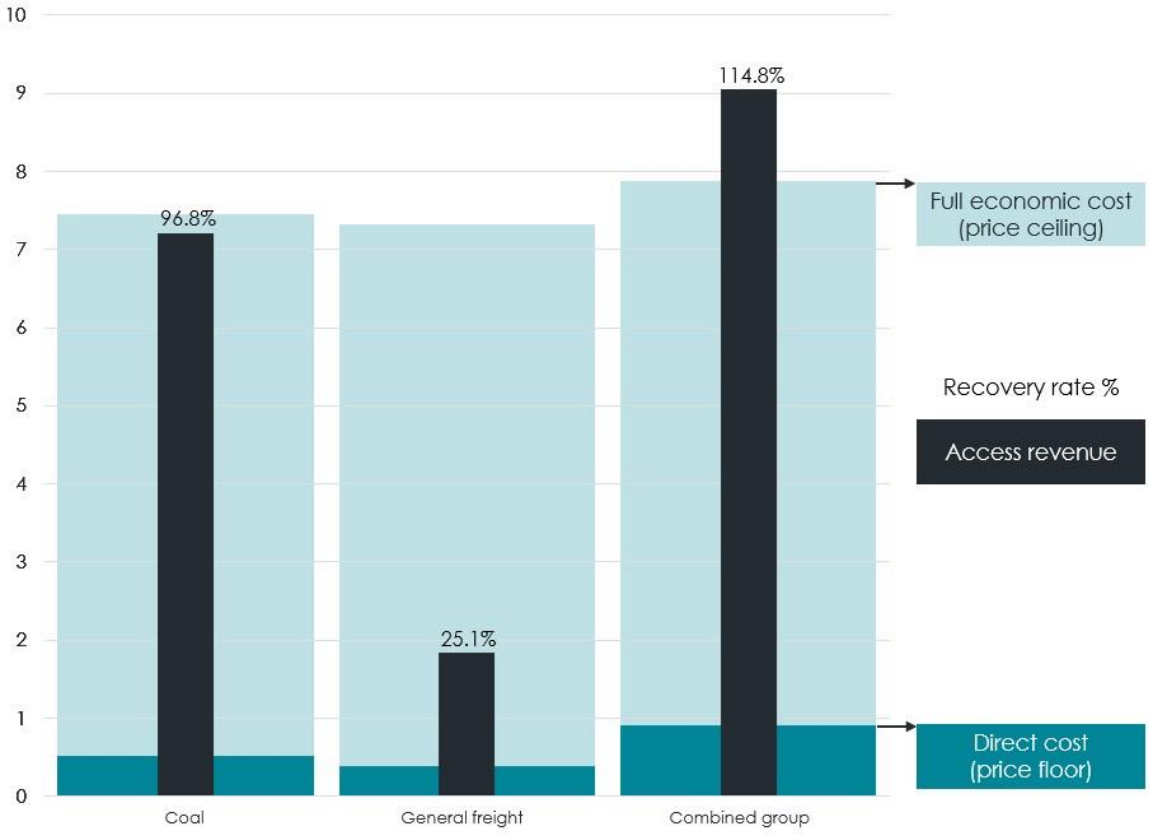


Table 2: Access revenue and full economic cost, Hunter Valley Coal Network 2022-23, $

	Coal ($)	General Freight ($)	Combined ($)
Full economic cost (ceiling)	7,450,960	7,321,944	7,883,341
Total Access Revenue	7,213,916	1,837,524	9,051,440
Access Revenue less FEC	-237,044	-5,484,420	1,168,099
Recovery Rate %	96.8%	25.1%	114.8%

In addition, this submission demonstrates that TAHE has not charged above the full economic cost of providing access to the remaining segments of its heavy rail that are subject to the NSW Rail Access Undertaking being, the Country Regional Network, Northern Sydney Rail Corridor (Freight Services) and the Metropolitan Rail Network (Freight Services).

Across these rail networks, access revenue is insufficient to recover the operational and maintenance (**O&M**) costs incurred to provide access. Consistent with previous years, we have not estimated the full economic costs of providing access to these networks. Given that access

revenue is below the operational and maintenance costs, it follows that the associated access revenues also would not exceed an associated full economic cost test. This is shown in Table 3.

Table 3: Compliance of access revenue, other rail networks, 2021-22, $ million

	CRN ($ million)	NSRC ($ million)	MRN FS ($million
Total O&M	114.1	26.6	29.1
Total Access Revenue	15.9	23.4	26.3
Access Revenue less O&M	-98.2	-3.2	-10.4
Recovery Rate %	13.9%	87.9%	71.6%

HVCN Unders and Over Account

The Undertaking requires TAHE to establish an unders and overs account to manage average deviations around the maximum rate of return.[1] The only rail network for which TAHE maintains an unders and overs account is for the TAHE HVCN. As a consequence of the 2022-23 over recovery of revenue, this account increased by $1.2 million in 2022-23. This is shown in Table 4.

TAHE has developed a policy[2] to address the unders and overs account balance, which is currently being reviewed by IPART.

Table 4 Unders and Over Account HVCN 2020-21 to 2022-23

	All Access seekers
Balance at 30 June 2021	$8,081,213
Tax adjustment	-1,341,998
2021-22 Revenue minus Costs	-$1,484,127
Balance at 30 June 2022	$5,975,088
2022-23 Revenue minus Costs	$1,168,099
Balance at 30 June 2023	$7,143,187

[1] *NSW Rail Access Undertaking*, 1999, Schedule 3, para 4(a).
[2] *NSW Rail Access Undertaking*, 1999, Schedule 3, para 4(f).

Who we are and what we do

Overview of the Transport Asset Holding Entity of NSW

The Transport Asset Holding Entity of NSW (**TAHE**) was established as a statutory State-Owned Corporation (**SOC**) on 1 July 2020, to own and hold railway network assets used by the NSW transport cluster. These railway network assets include rail embankments, cuttings and tunnels, track, signals, power systems, rolling stock, stations, and significant land holdings around stations within metropolitan and regional NSW.

TAHE was formed from its predecessor RailCorp, which owned railway network assets. RailCorp's rail operations and maintenance functions were transferred to Sydney Trains and NSW TrainLink[3] in 2013 and these bodies continue to be responsible for rail operations and maintenance functions across the NSW rail network.

Our regulated rail infrastructure assets

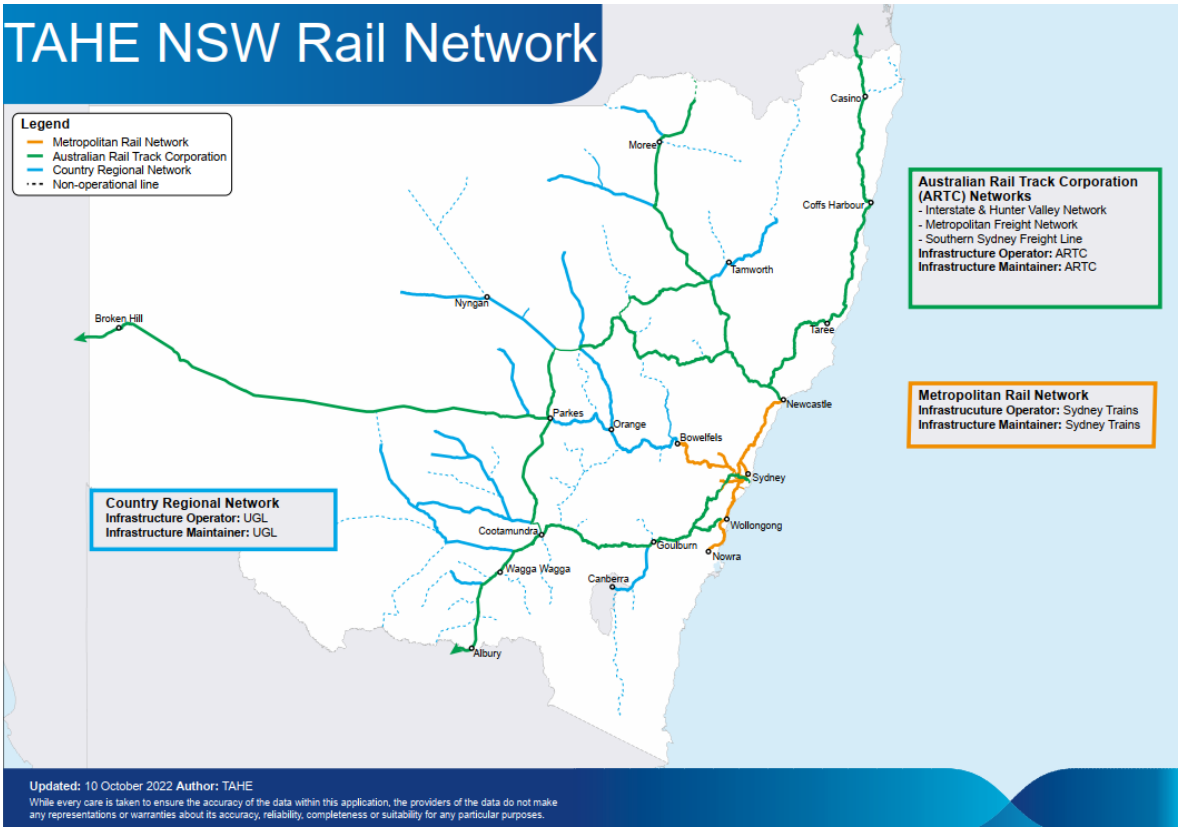
TAHE's railway network assets provide rail access services. These assets are split into several networks, which support both passenger and freight services, specifically:

- Metropolitan Passenger Rail Network (**MPN**) – accessed by Sydney Trains and NSW Trains to provide passenger rail services.
- Country Regional Network (**CRN**) – accessed by NSW Trains and rail freight operators to provide both passenger rail and freight rail services.
- Hunter Valley Coal Rail Network (**TAHE HVCN**) – a small segment of the entire Hunter Valley coal network which is otherwise principally provided by the Australian Rail Track Corporation and accessed by rail freight operators to provide coal haulage services to electricity generators and for export via the Port of Newcastle. The TAHE HVCN is also an integral part of the MPN and so the rail sectors are shared between coal freight and passenger services.
- Northern Sydney Rail Corridor – Freight Services (**NSRC**) – a subset of the metropolitan rail network that connects Sydney to Newcastle and is used by freight operators to provide rail freight services; and
- freight network within the metropolitan rail network (excluding the TAHE HVCN and NSRC) – the Metropolitan Rail Network - Freight Services (**MRN-FS**) – a subset of the metropolitan rail network that is used by freight operators to provide rail freight services.

Our railway networks and the roles and responsibilities across each network are summarised in Figure 3 below.

[3] NSW Train Link was previously known as NSW Trains.

Figure 3: Roles and responsibilities across each of the TAHE owned rail networks



The MPN covers access to the Metropolitan Rail Network by passenger services. Figure 4 below presents a more detailed map of the Metropolitan Rail Network. Figure 4 also provides an indicative overview of the coverage of the TAHE HVCN, the NSRC and the MRN-FS, which are all subsets of the Metropolitan Rail Network accessed by freight services.

Figure 4 – Metropolitan Rail Network and indicative coverage of metropolitan freight service networks

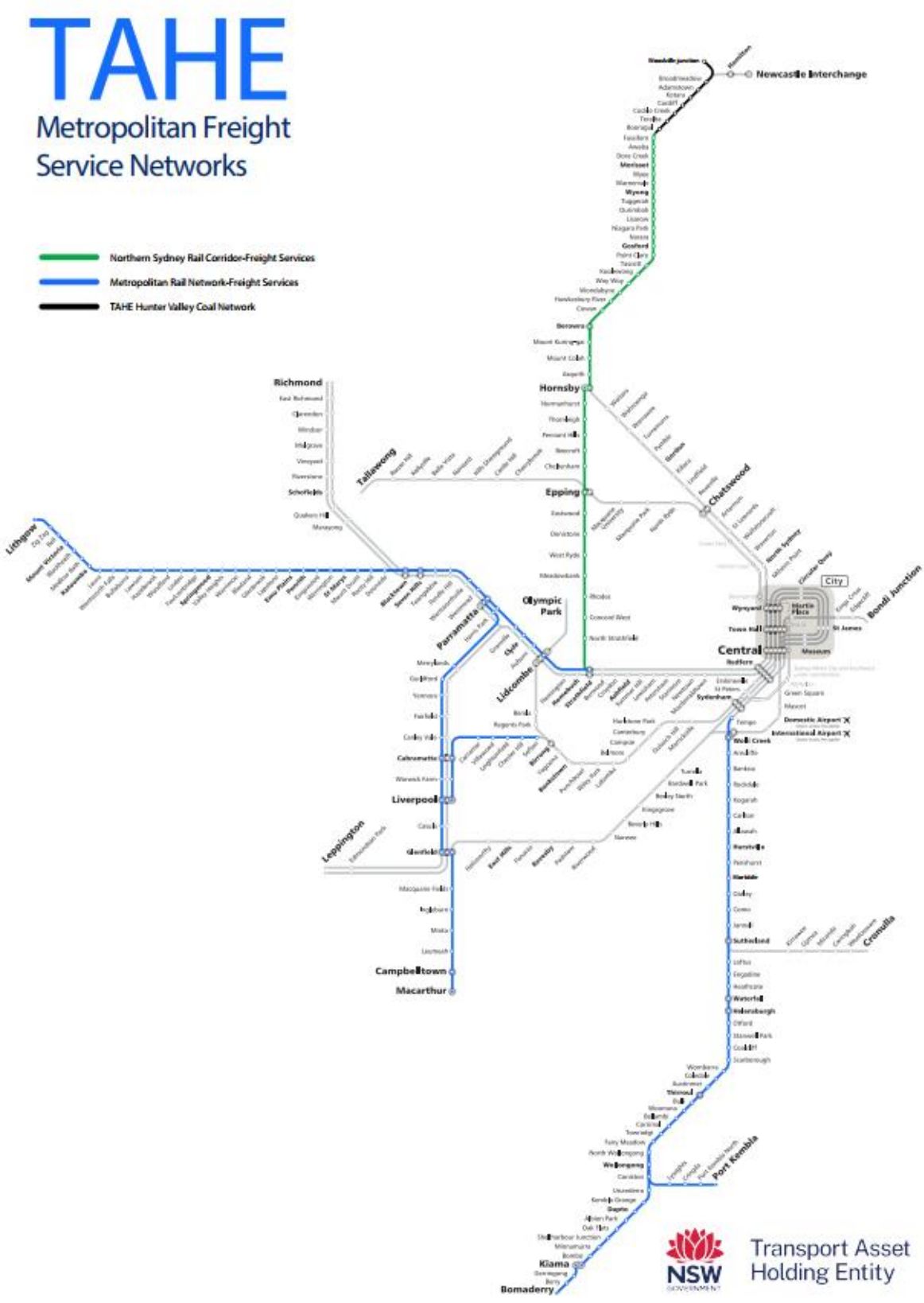
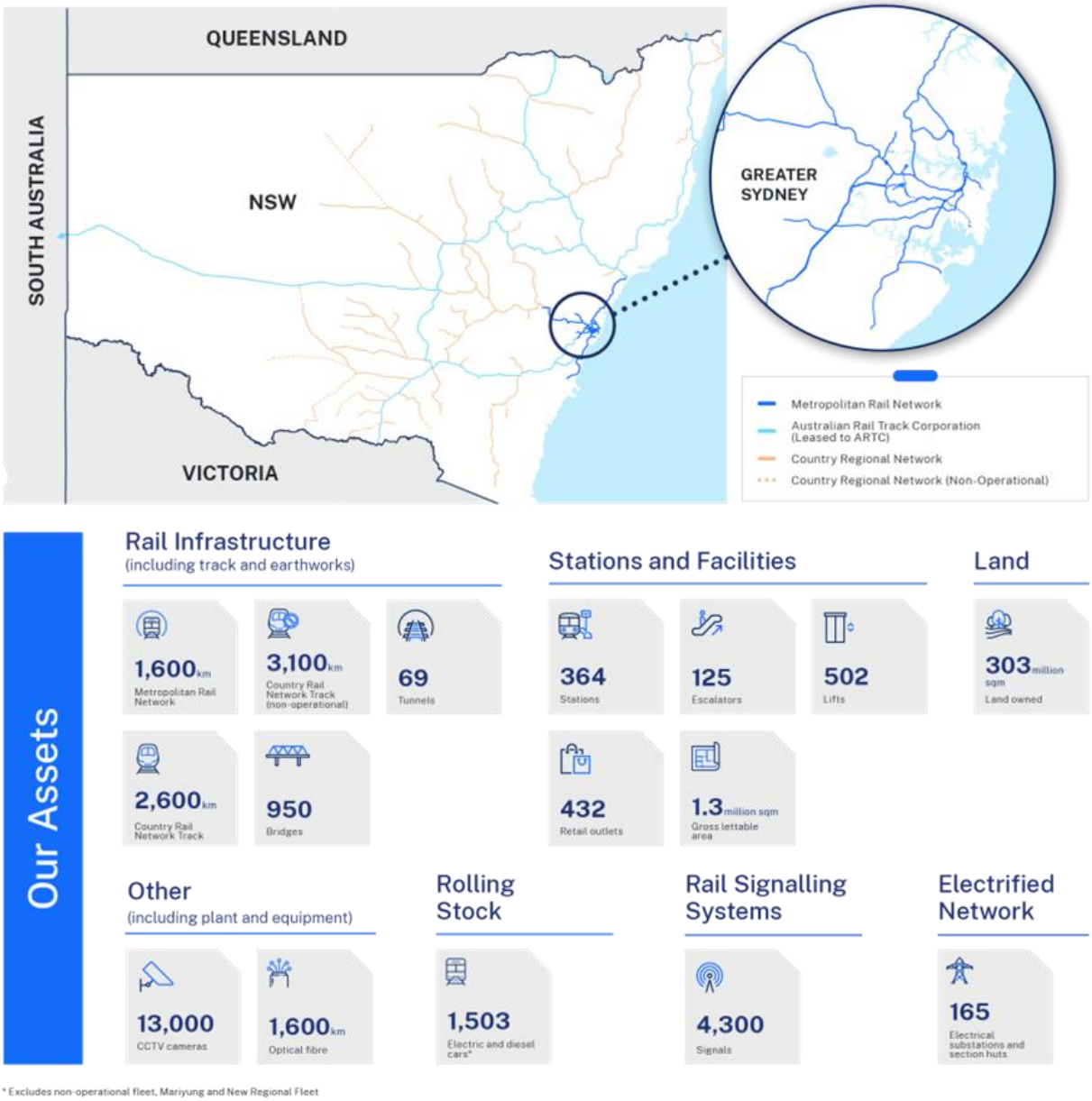


Figure 5 below summarises the assets owned and managed by TAHE across its rail networks.

Figure 5: TAHE's railway assets



The services that we provide related to rail infrastructure assets

TAHE holds assets in two broad classes that are used by rail operators, namely:

» regulated assets, which are assets within the operational rail network. These assets are commonly referred to in the rail industry as 'below rail' assets and comprise trackwork and

associated infrastructure, signalling systems and the land supporting rail infrastructure including electricity assets;[4] and

- unregulated assets, which comprise significant property holdings around stations and the stations themselves, and stabling yards as well as rolling stock. These rolling stock assets are commonly referred to as 'above rail' assets.

For regulated rail assets, TAHE charges access fees to rail operators for the use of the rail network. We refer to the provision of access by TAHE to regulated rail assets as regulated services throughout the remainder of this submission.

For unregulated assets, TAHE charges licence fees to operators for the use of the assets, and charges commercial rents to tenants using its extensive property portfolio. Unregulated licence fees and returns from commercial property are not subject to regulation under the NSW Rail Access Undertaking.

We refer to the provision of access by TAHE to unregulated rail assets as 'unregulated services.'

Administrative arrangements supporting rail access

The NSW Rail Access Undertaking 1999 (**the Undertaking**) was established in accordance with Schedule 6AA of the Transport Administration Act 1988 (NSW) and sets out the administrative arrangements that enable third party access to TAHE's rail assets. The Undertaking requires TAHE to:[5]

- provide a right of access to TAHE's rail networks;[6]
- limit access to TAHE's rail networks for the purposes of rail operations; and
- use all facilities owned by, vested in, or otherwise exclusively controlled and operated by it, in a manner that facilitates access to the NSW Rail Network for the purpose of rail operations.

In enabling access to TAHE's rail networks, the Undertaking supports negotiations between TAHE and access seekers by setting out requirements and time-frames for these negotiations.

An agreement, if reached between TAHE and an access seeker, is required to contain terms of agreement as detailed in schedule 2 of the Undertaking. The terms of the agreement include operational specifications of access, conduct on the rail network, compliance with relevant laws, and arbitration of disputes by IPART.[7] The Undertaking also ensures that access rights can only be used by access seekers where operational specifications are complied with.

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[4] The Transport Administration Act defines the NSW Rail Network as "the railway lines vested in or owned by or managed or controlled by a rail infrastructure owner (including passing loops and turnouts from those lines and loops and associated rail infrastructure facilities that are so vested or owned or managed or controlled), but does not include any part of a metro." It further defines rail infrastructure facilities as "(a) includes railway track, associated track structures, over track structures, cuttings, drainage works, track support earthworks and fences, tunnels, bridges, level crossings, service roads, signalling systems, train control systems, communications systems, overhead power supply systems, power and communication cables, and associated works, buildings, plant machinery and equipment."

[5] NSW Rail Access Undertaking, 1999, para 2.1.

[6] Excludes access seekers seeking access for the purposes of trading in access rights (para 2.2).

[7] Terms of the agreement must detail a) the operational specifications, b) the facilities and services to be provided by each party, c) the period for which rights exist and arrangements for renewals, d) train control procedures and time-tabling, e) compliance with operational standards, f) distribution of liability for risks, g) any confidentiality requirements or restrictions on the use or dissemination of information, h) any mechanism which can be used by each party to revoke or

TAHE has various agreements with its partners in the NSW transport cluster including a Sydney Trains Access Agreement, a NSW Trains Access Agreement, the Licence Agency and Maintenance Deed, and a Corporate Services Deed. TAHE's partners in the NSW transport cluster perform a board range of functions under these agreements including network maintenance, network control, network management, capacity allocation, network planning and maintaining network standards.

Some of these agreements set out the access fees charged by TAHE for access to TAHE owned rail assets used to provide regulated services, and the associated terms and condition of access.

The Licence Agency and Maintenance Deed identifies that Sydney Trains is to maintain the MPN and provides Sydney Trains with the right to access the rail network for the purpose of undertaking maintenance activity. The Deed also specifies that maintenance activity is to be self-funded.

Consistent with its role as the asset owner, TAHE currently develops access fees considering what would provide a return on and of the value of its regulated assets, plus an amount to recover its operational costs. This is discussed in further detail in the submission.

Operational Context and Performance

Figure 6 provides a diagrammatical representation of the various roles and responsibilities across the transport cluster.

Figure 6: Roles and responsibilities across the NSW transport cluster

	Country Regional Rail Network	Metropolitan Rail Network
Network Owner	Transport Asset Holding Entity	
Network Operator	UGL Regional Linx	Sydney Trains
Network Maintainer	UGL Regional Linx	Sydney Trains
Access Seekers	NSW Trains Heritage Operators Freight Operators (e.g., Pacific National, Qube)	Sydney Trains NSW Trains Heritage Operators Freight Operators (e.g., Pacific National, Qube)

TAHE's regulated assets supports the ongoing provision of passenger train services, freight, heritage, private passenger and other third-party rail operations across the metropolitan rail network, and the country rail network.

Table 5 provides information on passenger trips since 2020-21.

modify the agreement, i) where the Agreement is reached after the conclusion of Arbitration processes set out in the Access Undertaking, a mechanism by which each party can revoke or modify the Agreement if there has been a material change in circumstances, j) prices and charges, k) any mechanism relating to an Access Seeker's investment in the NSW rail network.

Table 5: Metropolitan Passenger Trips 2020-21 to 2022-23[8]

	2020-21	2021-22	2022-23
Passenger Trips (000s)	206,475	148,495	253,353
Share of passenger Trips (Sydney Trains)	90.2%	91.3%	90.6%

[8] Sourced from Transport for NSW website -. https://public.tableau.com/app/profile/business.analytics.tfnsw/viz/PublicTransportTrips/Allmodes-TotalTrips Note that there has been a change in the website data series since 2021-22 but this change is immaterial.

The regulatory framework TAHE operates within

TAHE is required to provide information to IPART on its compliance with the requirements of the Undertaking. This section provides a summary of the requirements in the Undertaking.[9]

Pricing principles

The current form of regulation for rail access in the Undertaking is negotiate / arbitrate. Access seekers are required to negotiate with TAHE on the price and non-price terms of access, and TAHE is required to ensure that in setting its terms and conditions of access it satisfies the requirements of the Undertaking.

Schedule 3 of the Undertaking sets out the pricing principles that are to be applied to negotiated prices for access to rail infrastructure.

Specifically, clause 1 states:

1. Pricing Principles

   Prices will be negotiated so that the following requirements are satisfied:

   a. *Access revenue from every Access Seeker must at least meet the Direct Cost imposed by that Access Seeker. In addition, for any Sector or group of Sectors, revenue from Access Seekers together with Line Sector CSOs (if applicable) should, as an objective, meet the Full Incremental Costs of those Sectors ("floor test").*

   b. *For any Access Seeker, or group of Access Seekers, Access revenue must not exceed the Full Economic Costs of the Sectors which are required on a stand alone basis for the Access Seeker or group of Access Seekers ("ceiling test").*

   c. *The Rail Infrastructure Owner's total Access revenues together with Line Sector CSOs (if applicable) must not exceed the stand alone Full Economic Costs of that part of the NSW Rail Network for which it is the Rail Infrastructure Owner.*

There are several economic concepts that are further defined in the schedule, namely.[10]

- Direct cost, means efficient, forward-looking costs which vary with the usage of a single operator within a 12-month period, plus a levelised charge for variable major periodic maintenance costs, but excluding depreciation.
- Full incremental cost, means all costs which could be avoided if a Sector were removed from the system; and

[9] IPART finalised a review of the Undertaking in May 2023 published in August 2023. Changes to the undertaking may arise following the NSW Government's response to the review findings. https://www.ipart.nsw.gov.au/sites/default/files/cm9_documents/Final-report-Review-of-the-NSW-Rail-Access-Undertaking-May-2023.PDF

[10] *NSW Rail Access Undertaking*, 1999, Schedule 3, p 2.

» Full economic costs are Sector specific costs including a permitted rate of return and depreciation, and an allocation of non-Sector specific costs such as train control and overheads including a rate of return and depreciation on non-Sector specific assets. All included items are to be assessed on a stand-alone basis.

The pricing principles set out in the Undertaking are known by economists as the efficient pricing bounds, as it ensures efficient use and access to monopoly infrastructure.

Within these bounds, TAHE and access seekers negotiate the price for access, with IPART providing arbitration should the negotiating parties fail to establish an agreement.

The regulatory asset base and roll forward principles

To calculate the return on assets as a component of full economic costs, a regulatory asset base (**RAB**) must be determined. The Rail Access Undertaking requires the initial value of the RAB to be calculated using the depreciated optimised replacement cost (**DORC**) methodology.[11]

To roll forward the RAB, the Rail Access Undertaking requires the application of asset valuation roll forward principles, which describes how the opening RAB as at 1 July is adjusted to arrive at the closing RAB as at 30 June of any year.[12] This approach is as follows;[13]

$$RAB_t = RAB_{t+1} + (RAB_{t+1} \times CPI_t) + Add_t + Capex_t - Dep_t - Disp_t$$

Where:

RAB_t	is the RAB in any given year t and represents the closing value of the RAB for that year
RAB_{t+1}	is the RAB in the year prior to year t and represents the closing value of the RAB for that year and is the Opening RAB in year t
CPI_t	is the percentage change in the CPI from the year t-2 to the year t-1, calculated by using the average of the ABS Sydney All Groups Consumer Price Index for the four quarters to June in the year t-1 when compared to the average for the four quarters to June in the year t-2.
Add_t	is addition of an existing Sector or an existing group of Sectors due to changes in demand in a common end market, valued at depreciated optimised replacement cost.
$Capex_t$	is the actual capital expenditure for assets commissioned in relation to the RAB for the year t, where that capital expenditure is incurred in accordance with the provisions of clause 3.3, less that portion of any capital contribution which is to recover capital expenditure.
Dep_t	is the depreciation allowance for year t.
$Disp_t$	is the value of asset disposals in the year t as determined by the written down value attributed to them in the RAB.

[11] *NSW Rail Access Undertaking*, 1999, Schedule 3, para 2.1. For the HVCN, the opening value of the RAB was determined by the Minister for Transport in accordance with Schedule 3, para 3.2(a).
[12] *NSW Rail Access Undertaking*, 1999, Schedule 3, para 2.1 and 3.
[13] NSW Rail Access Undertaking, 1999, schedule 3, para 3.1.1.

The relevant capital expenditure for the TAHE HVCN is that which relates to coal traffic use of the rail network, is required to meet minimum demand within a five-year horizon and has been agreed for inclusion by access seekers.[14]

Finally, depreciation within the RAB roll forward, is calculated on a straight-line basis over the useful life of regulated assets.[15]In determining the useful life of the assets for the TAHE HVCN, regard is to be given to the remaining mine life of Hunter Valley coal mines using the TAHE HVCN, as determined by IPART every five years.[16]

The results from applying the asset valuation roll forward principles to the MPN and TAHE HVCN networks is set out in the submission below.

Economic concepts underpinning the floor and ceiling tests

The floor and ceiling tests are based on the economic concept of an efficient pricing bound for determining access fees for shared infrastructure. The tests are based on the concept that the amount recovered from users of shared assets should be:

- no more than what it would cost to provide that service alone (i.e., the stand alone cost) – if those users are charged more than the stand alone cost, then it would be hypothetically possible for the users to pay an alternative provider to simply replace the assets and provide the service at a lower cost, which would result in inefficient bypass of the existing infrastructure; and
- no less than the additional costs directly incurred to provide the service (i.e., the full incremental costs or avoidable cost) – if those users are charged less than such additional costs then the business would not be recovering the costs incurred to supply services to the user, and the shortfall in revenue would need to be recovered from taxpayers or other customers.

A cross-subsidy only arises when the costs recovered from users of a service fall outside the bounds established by the stand alone cost (**the ceiling bound**) and avoidable cost (**the floor bound**) of that service.

Measuring the full economic costs of providing access to TAHE's rail network

Consistent with the Undertaking, access fees for each access seeker should lie between bounds set by:

- the direct costs for each access seeker[17] – first limb of the floor test; and
- the full economic costs – the ceiling test.

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[14] *NSW Rail Access Undertaking*, 1999, Schedule 3, para 3.2(b)(i), (ii) and (iv)B.
[15] *NSW Rail Access Undertaking*, 1999, Schedule 3, para 2.1.
[16] *SW Rail Access Undertaking*, 1999, Schedule 3, para 3.2(c)(ii).
[17]The direct costs include all those TAHE incurred costs that vary according to usage of the assets by each of Sydney Trains and NSW Trains. We explain the economic concepts underpinning the floor test in greater detail in Appendix A.

In addition, the sum of all access fees should aim to exceed the full incremental costs[18] – the second limb of the floor test.

Appendix A explains in greater detail the economic concepts underpinning the floor and ceiling tests, as well as how they apply to the cost categories set out in the Undertaking.

To determine the compliance of TAHE's access fees for the MPN, we have included the cost of non-TAHE incurred operating and maintenance costs in both the ceiling test, as well as in-kind contributions of access seekers. This recognises the in-kind costs borne by Sydney Trains in maintaining the assets it is using.

For completeness we have included a section titled "Roll forward and compliance based on an economic regulatory asset base valuation and TAHE-only costs" below where we have modified the compliance estimates of the floor and ceiling bounds to reflect only those costs that are directly borne by TAHE. Under this alternative approach, access fees negotiated by TAHE are being compared on a like-for-like basis with the costs for which those fees are seeking to recover. The other cost categories included in the Undertaking's definition of full economic costs are not incurred by TAHE, and so do not form part of TAHE's cost base for determining access fees. This approach is also consistent with Sydney Trains having responsibility to maintain and operate the regulated assets in the MPN.

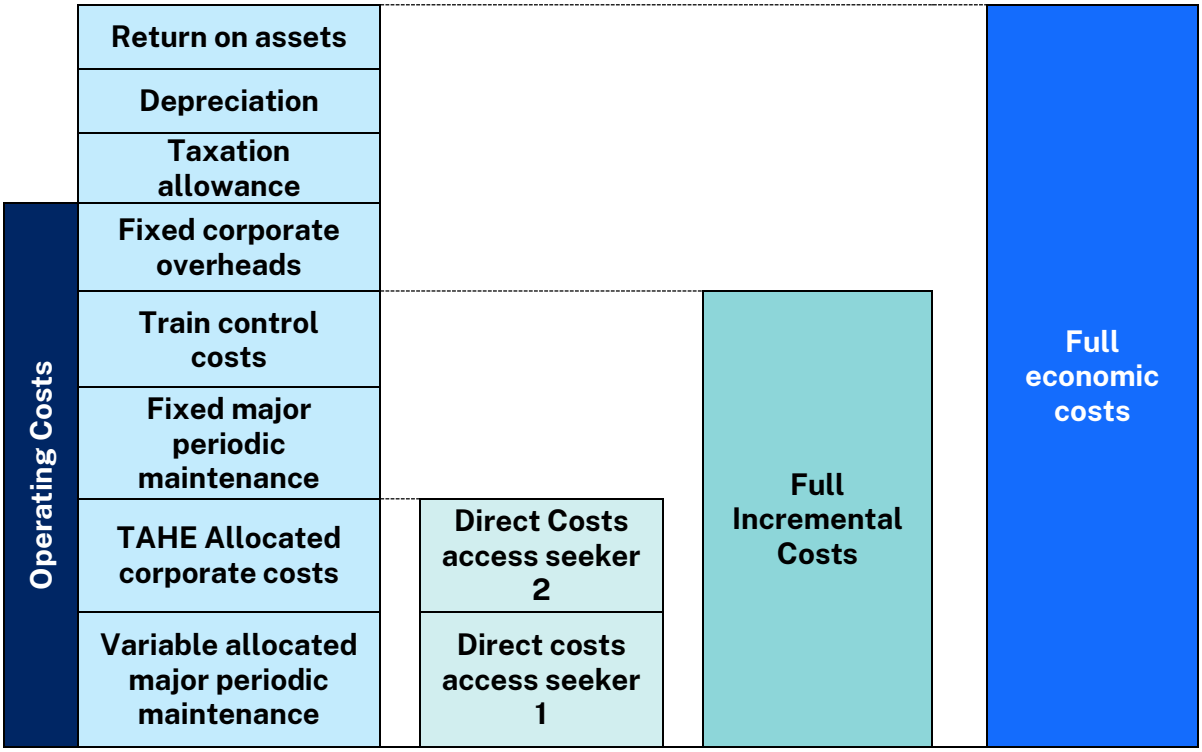
We believe it would be appropriate to assess the compliance estimates of the floor and ceiling bounds for the CRN using a similar alternative approach. That said, given that current access fees are significantly below an estimate of the pricing ceiling we have not undertaken a detailed analysis of the ceiling bound for the CRN.

In relation to freight service access to the MPN, including the TAHE component of the HVCN, freight access seekers are not responsible for train control and regulated infrastructure maintenance and so it is appropriate to include these costs within the full economic costs used as the access pricing ceiling. It follows that for the TAHE HVCN we have included benchmark estimates of the maintenance and train operating costs for that network within the ceiling.

The relevant full economic cost categories for passenger service access to the MPN are summarised in Figure 7 below. We have previously developed a separate model that calculates each of the economic parameters for the purpose of determining whether access fees comply with the pricing principles in the Undertaking. We demonstrate in this submission whether access fees comply with the pricing principles in the Undertaking.

[18] The full incremental costs are all costs that could be avoided if a sector of the MPN was removed from the system. The TAHE incurred full incremental costs is equal to the sum of the TAHE incurred direct costs for each of Sydney Trains and NSW Trains.

Figure 7: Cost categories within each of the floor and ceiling tests for transport cluster costs



Management of under and over revenue recovery

The Access Undertaking requires TAHE to establish an unders and overs account to manage any deviations around the maximum rate of return, and more specifically in circumstances where an access seeker, and/or group of access seekers could potentially breach the ceiling test. An annual reconciliation of each account is required for applicable access seekers with unders and overs balances, and TAHE is to endeavour to return the balance to zero each year. In general, unders and overs should not exceed ±5 per cent of forecast access revenue.[19]

Across TAHE's rail infrastructure network, it is only the TAHE HVCN where access seekers could potentially breach the ceiling test. TAHE has developed a policy for the operation of an unders and overs account for the TAHE HVCN, which was initially submitted to IPART for approval in May 2023.[20] This policy is currently being reviewed by IPART.

Should circumstances change across other parts of TAHE's network such that there is the potential to breach the ceiling test, then we would consult with access seekers to put in place an appropriate unders and overs account policy. The starting point for such policy would be the IPART approved policy used for the TAHE HVCN.

Compliance requirements

TAHE is required to submit to IPART by 31 October each year in respect of the financial year ended on 30 June of that year:

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[19] *NSW Rail Access Undertaking*, 1999, Schedule 3, clause 4.
[20] *NSW Rail Access Undertaking*, 1999, Schedule 3, clause 4(f); and IPART, TAHE's compliance for its Hunter Valley Coal Network – 2020-21, 16 May 2022, p 10.

- documentation demonstrating its compliance with the Asset Valuation Roll Forward Principles; and
- details as to the compliance with the ceiling test, including the operation of its unders and overs account.

Guidance for this TAHE submission is provided in the IPART Rail access Annual Compliance Reviews Guideline.[21] TAHE has sought to be consistent with these guidelines in making this submission.

Compliance information must be provided to IPART to determine whether TAHE has been consistent with the asset valuation roll forward principles, and whether TAHE has complied with the ceiling test having regard to the operation of the unders and overs account.

IPART has historically adopted two approaches when assessing compliance with the Undertaking for TAHE's rail networks, excluding the Hunter Valley Coal Network:

- if access revenue is below the 80 per cent threshold, IPART assesses the price-related requirements in detail once every five years. Each year, TAHE provides a compliance statement to IPART confirming that:
  - access revenue is less than 80 per cent of the full economic cost of providing access.
  - there have been no significant changes to revenue or costs, so that access revenues remain below the 80 per cent threshold; or
- if access revenue is approaching the 80 per cent threshold, supporting cost and revenue information is required to be provided every year via a compliance submission.

Historically, access revenues for the following networks have not approached the 80 per cent threshold, and so for previous compliance processes a compliance statement has been provided to IPART for the:

- Country Regional Network (**CRN**)
- Northern Sydney Rail Corridor – Freight Services (**NSRC**)
- Metropolitan Rail Network – Freight Services (**MRN-FS**)
- A compliance submission has been prepared for the Hunter Valley Coal Network between Newstan Junction and Woodville Junction (**TAHE HVCN**) regardless of whether access revenues have approached the 80 per cent threshold.

Given it is only the second year that Sydney Trains and NSW TrainLink have been charged access fees, TAHE has also prepared a compliance submission for the MPN in 2022-23 even though 2021-22 demonstrated these revenues to be below the 80 per cent threshold.

[21] IPART 2017 "Rail Access Annual compliance Reviews Guideline: NSW Rail access Undertaking" The guideline is available at https://www.ipart.nsw.gov.au/sites/default/files/documents/nsw-rail-access-undertaking-final-guideline-march-2017_0.pdf

Access revenue compliance for the Metropolitan Passenger Rail Network

Key Points

- Our analysis demonstrates that TAHE complies with all the compliance requirements of the Undertaking in 2022-23 for the MPN.
- Total access revenues for the MPN were $1,195 million, comprised of $449.7 million paid by access seekers to TAHE and $745.3 million of in-kind access contributions primarily associated with the provision of maintenance and train control services by Sydney Trains. $1,195 million represents approximately 38.6 per cent of the full economic costs of the transport cluster for the MPN in 2022-23.
- There was no need for an unders and overs account because the highest level of recovery for access revenue was for Sydney Trains which only represented 29.0 per cent of the ceiling test and so there was no likelihood that revenues would exceed the ceiling test.
- The regulatory asset base roll forward principles have been applied in the MPN consistent with the requirements of the Undertaking.

This section presents TAHE's compliance submission for the MPN. Specifically, it sets out the results of our estimation of the floor and ceiling test revenue bounds. It also provides information to support TAHE's compliance with the unders and overs account requirements, and the asset roll forward principles.

All analysis is presented on a transport cluster cost basis using a DORC asset valuation.

Access fees and in-kind contributions

As part of TAHE's establishment in 2020-21, access agreement negotiations were undertaken with Sydney Trains and NSW Trains.

The access negotiations concluded with agreements that set out access fees for the period 2021-22 to 2030-31 based on a return of assets and a return of assets, reflecting the assets employed by TAHE to provide those access services.

Access fees were first charged to Sydney Trains and NSW Trains under the access agreements in 2021-22. These fees are reconsidered and revised where agreed each year. The fees for 2022-23 are shown in Table 6 below.

Table 6: Access fees paid to TAHE, MPN 2022-23 $ million

Access fees paid to TAHE	2022-23
Sydney Trains	324.7
NSW Trains	124.8
Other passenger access seekers[22]	0.2
Total Access fees paid to TAHE	449.7

In addition to access fees paid to TAHE, Sydney Trains provided in-kind contributions to access through the incurrence of maintenance and train control expenditure. NSW Trains also paid a fee to Sydney Trains for the provision of these services. In-kind contributions have been valued at the cost of maintenance and train control costs, as provided by Sydney Trains, and non-TAHE incurred operational expenditure (e.g., timetabling). This amounted to total in-kind contributions of $745.3 million in 2022-23.

Operating Expenditure

TAHE incurred operational expenditure related to the provision of access on the MPN of an estimated $91.3 million in 2022-23 as shown in Table 7.

The methodology used to allocate TAHE incurred operating expenditure to the provision of access on the MPN is set out in greater detail in Appendix B. Consistent with the TAHE submission in 2021-22, the proportion of TAHE incurred costs that are assumed to vary with network usage is 10 per cent.

Table 7: TAHE operational expenditure, Metropolitan Passenger Rail Network, 2021-22 to 2022-23, $ million

	2021-22	2022-23
Employee related costs	1.9	4.0
Other payroll related costs	1.1	1.5
Management and property services	21.6	26.0
Contractors	36.7	34.7
Auditors' remuneration	0.3	0.2
Consultants	2.1	1.7
Other expenditure	14.6	23.2
Total	78.4	91.3

Non-TAHE incurred operating costs are low for regulated overheads and operational activities are shown in Table 8.

[22] Other access seekers include heritage passenger operators who use the MPN.

Table 8: Non-TAHE operational expenditure, Metropolitan Passenger Rail Network, 2021-22 to 2022-23, $ million

	2021-22	2022-23
Overheads	1.9	1.9
Operational activities (e.g., timetabling)	6.3	6.2
Total	8.2	8.1

Maintenance and train control costs

Sydney Trains is responsible for undertaking maintenance and train control activities for the MPN. In this section we focus on maintenance activities and expenditure that do not affect the asset life of the respective asset. It follows that this is treated as an operating expenditure for the purposes of the ceiling test.

There are several drivers of maintenance costs for the MPN, namely.

- the density of the network – the MPN has approximately 2,500 turnouts, which increases the number of signal points and inspections needed for routine and regular maintenance. Turnouts also impact on the general costs of ballast cleaning and major periodic maintenance.
- electrification of the network – the MPN is an electrified network, which increases overall maintenance costs and the costs of replacements across the network.
- the frequency of services – as a passenger network the priority is to ensure that all services operate, and so a high proportion of major periodic maintenance needs to be undertaken outside of service hours or on weekends, to minimise service disruption. This increases the labour related component of those maintenance activities, compared to conducting a system shutdown to undertake major periodic maintenance.
- extreme weather events, and in particular excessive rainfall and bushfires, which increases the need for maintenance activities; and
- increases in the costs of materials.

Maintenance costs are further impacted by the need to maximise freight services that operate outside of passenger service hours, which further limits the periods of time within which major periodic maintenance can be undertaken across the MPN.

Across these drivers, the frequency of services, extreme weather events and increases in the cost of materials along with efforts to improve cost efficiency, are expected to be the key drivers of changes in maintenance costs each year into the future.

Table 9 sets out Sydney Trains' maintenance costs for the MPN from 2020-21 to 2022-23.

Table 9: Non-TAHE operational expenditure, Metropolitan Passenger Rail Network, 2021-22 to 2022-23, $ million[23]

Maintenance Costs	2020-21	2021-22	2022-23
Variable maintenance costs[24]	72.3	59.0	76.8
Fixed maintenance costs	544.9	490.1	549.1
Total maintenance costs	617.2	549.2	625.9
Train control costs	112.2	111.2	122.3
Total maintenance and train control costs	729.4	660.3	748.2

While these costs have increased between 2021-22 and 2022-23, it should be recognised that total maintenance and train control cost have increased only 2.6% from the 2020-21 period, and that 2021-22 figures were impacted by:

- reduced maintenance activity in 2021-22 due to changes in operational procedures during the COVID-19 pandemic.
- labour disruptions during the period[25]

The reduced maintenance activity in 2021-22 due to COVID-19 operational restrictions has resulted in a maintenance backlog that is now being addressed.[26]

Capital expenditure

Capital expenditure for 2022-23 for the MPN was $623.8 million as shown in Table 10 below.

In addition to capital expenditure directly incurred by TAHE, Sydney Trains also capitalises some major periodic maintenance when this extends the life of the assets. This is equivalent to an asset replacement. For the purposes of access pricing compliance, this capitalised major periodic maintenance has been included in the RAB through the asset roll forward methodology. Capitalised major periodic maintenance represented approximately 35 per cent of total capital expenditure in 2022-23.

[23] Excludes maintenance capital expenditure, which is included in the roll forward of the asset base as described in greater detail later in this section.
[24] We note that the Undertaking requires levelised variable major periodic maintenance to be included in the direct costs of providing access, a variable maintenance cost of $65.9 million is included in Table 12.
[25] This was identified in last years submission TAHE (December 2022) 2022 Access Pricing Compliance Submission to IPART page 27
[26] This was identified in last years submission TAHE (December 2022) 2022 Access Pricing Compliance Submission to IPART page 27

Table 10: Capital expenditure, Metropolitan Passenger Rail Network,2022-23, $ million

Capital	2022-23
Rail Infrastructure	248.9
Electrified network	31.2
Signals	87.6
Land	14.2
Other	22.3
Capitalised major periodic maintenance	219.6
Total	623.8

Depreciation and the return on the regulatory asset base

Consistent with the requirements of the Undertaking, the allowance for depreciation in the estimate of the full economic costs for the MPN has been calculated based on the DORC RAB at the beginning of the financial year, on a straight-line basis applying the remaining useful life of the assets set out in Appendix B.

The return on the RAB has been calculated applying the IPART determined weighted average cost of capital of 5.3 per cent real, post-tax.[27]

Roll forward of the regulatory asset base

The Undertaking requires that the initial value of the regulatory asset base (**RAB**) be calculated using the depreciated optimised replacement cost (**DORC**) methodology.[28] This approach to asset valuation is consistent with a ceiling pricing bound that ensures TAHE does not charge access fees that would reflect the inappropriate exercise of market power.

The results of the RAB roll forward for 2022-23 based on a DORC valuation are set out in Table 11 below.

Table 11: Roll forward of the regulatory asset base, Metropolitan Passenger Rail Network, 2022-23, $ million

Roll forward component	2022-23
Opening value 30 June 2022	21,674.4
Indexation	848.3
Capital expenditure	623.8
Additions	0.0

[27] Independent Pricing and Regulatory Tribunal, *Rate of return and remaining mine life, 2019-2024, Final Report, July 2019.*
[28] NSW Rail Access Undertaking, 1999, Schedule 3, clause 2.

Depreciation	762.0
Disposals	21.7
Closing value 30 June 2023	22,362.7
Average RAB	22,018.6

Compliance with the floor and ceiling test

In this section, we demonstrate compliance of access revenue with the floor and ceiling tests for the MPN.

Figure 8 demonstrates compliance of TAHE's access revenue for Sydney Trains, NSW Trains and all passenger access seekers with the floor and ceiling test for regulated assets, using a DORC RAB.

Figure 8: Compliance of access revenue, Metropolitan Passenger Rail Network, 2022-23, $ million

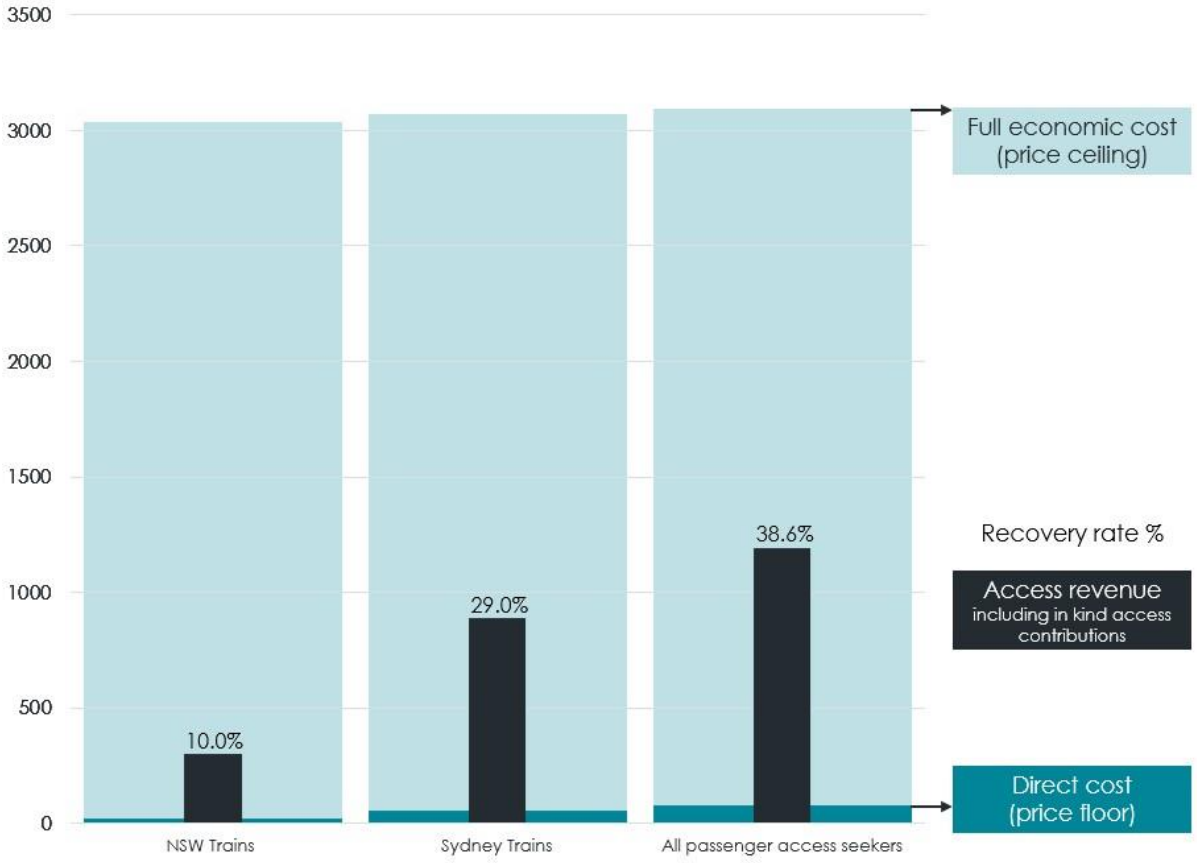

Table 12 presents detailed results for TAHE's access fees and demonstrates compliance with both the floor and ceiling test.

Table 12: Detailed breakdown of compliance with floor and ceiling tests, Metropolitan Passenger Rail Network, transport cluster, 2022-23, $ million

	Sydney Trains	NSW Trains	All passenger access seekers
Variable operating costs	10.9	4.5	15.4
Variable maintenance expenditure	48.3	17.6	65.9
Direct Costs	59.2	22.1	81.3
Train control costs	122.3	122.3	122.3
Fixed maintenance expenditure	549.1	549.1	549.1
Fixed operating costs	84.0	84.0	84.0
Depreciation	762.0	762.0	762.0
Return on RAB	1,167.0	1,167.0	1,167.0
Tax allowance	330.3	330.3	330.3
Full Economic Cost (**FEC**)	3,073.8	3,036.6	3,095.8
Full incremental cost	na	na	671.3
Access Revenue paid to TAHE	324.7	124.8	449.7
In kind contributions	565.6	179.8	745.3
Total access revenue and in-kind contributions	890.3	304.6	1,195.0
Access revenue and in-kind contributions less FEC	-2,183.5	-2,732.0	-1,900.8
Recovery rate	29.0%	10.0%	38.6%

The results show that TAHE's access fees were within the floor and ceiling test bounds for both Sydney Trains and NSW Trains in 2022-23. Access fee revenue covered 29.0 per cent of the full economic costs for Sydney Trains, while this value was lower for NSW Trains at 10.0 per cent.

Importantly, access revenue exceeds the direct costs estimated for each access seeker in the MPN.

Summary statement on compliance

In summary, TAHE has complied with the requirements of the Undertaking for the MPN, specifically:

- access revenue for both Sydney Trains and NSW Trains in 2022-23 is within the ceiling and floor bounds.
- there was no need for an unders and overs account because the highest level of recovery for access revenue was for Sydney Trains which only represented 29.0 per cent of the ceiling test and so there was no likelihood that revenues would exceed the ceiling test; and
- the roll forward of the RAB is consistent with the requirements of the Undertaking.

Access revenue compliance for the TAHE component of the Hunter Valley Coal Network

Key Points

- Total access revenues for the TAHE HVCN were $9.1 million for all access seekers which represents approximately 114.8 per cent of the full economic costs for the network in 2022-23.
- The unders and overs account for the TAHE HVCN has increased by $1.2 million to a closing balance of $7.1 million at 30 June 2023.
- The increase in the access revenue and unders and overs account is due to increased coal freight traffic to power stations on the HVCN. This increased coal traffic is partially driven by NSW Government 2022 directions to power stations and coal suppliers.
- In 2023 TAHE submitted an Unders and Overs Policy to IPART. The policy would seek to return the unders and overs closing balance to zero over two years via price changes. The policy is currently being reviewed by IPART.
- The regulatory asset base roll forward principles have been applied in the TAHE component of the HVCN consistent with the requirements of the Undertaking.

This section presents TAHE's compliance submission for the TAHE component of the HVCN. It provides information on compliance with the ceiling and floor tests, the RAB roll forward principles, and the unders and overs account. We consider coal freight and general freight revenue against the ceiling both individually and combined.

Access fees

Access fees in the TAHE component of the HVCN are set based on distance travelled (train kilometre) for each train path. The access fee rates can differ based on the commodity transported, train length, wagon numbers, wagon weight and the origin-destination combination. Relevantly, all access charges are based on usage of the network which means that actual access revenue each year can vary depending on actual network usage over the corresponding period.

TAHE implemented a 20 per cent fee reduction for coal access seekers in 2020-21 to reduce the over-recovery balance on the TAHE HVCN. This fee reduction was maintained in 2021-22 and 2022-23, where access fees were escalated by CPI.

TAHE's proposed Unders and Overs Policy would address this over recovery within two years of implementation.

Table 13 sets out TAHE's access revenue for its component of the HVCN from 2020-21 to 2022-23. The increased revenue has been driven by increased coal traffic which has occurred in

response to the NSW Government directions to maintain coal stockpiles at NSW's coal fired power stations and prioritise delivery of coal to those power stations.[29]

Table 13: Access revenue, TAHE Hunter Valley Coal Network, 2018/19 to 2021-22, $ million

Access fees	2020-21	2021-22	2022-23
Coal access seekers	3.2	4.1	7.2
General freight access seekers	1.5	1.7	1.8
Total access fees	4.7	5.8	9.1

Operating and maintenance expenditure

The main operational and maintenance expenditure in the TAHE HVCN is incurred by Sydney Trains, as it is within the metropolitan rail network.

The calculation of the Full Economic Cost for the TAHE component of the HVCN and, the appropriate level of operating and maintenance expenditure has previously been the subject of debate between IPART and the network owner[30]. The remainder of this section explains the approach that has been used.

Maintenance costs

Maintenance costs have been estimated in a manner consistent with previous IPART determinations for the TAHE component of the HVCN.

Specifically, fixed maintenance costs have been estimated using a benchmark rate per track kilometre, while variable maintenance costs have been estimated using a benchmark rate per thousand gross tonne kilometres (**GTK**).[31] The benchmarks were set with reference to work done by SNC Lavalin to support RailCorp's 2015-16 to 2017-18 compliance assessments.

Consistent with the maintenance task for the TAHE HVCN, this approach results in fixed maintenance costs being the same for each set of access seekers while the variable costs differ in line with the GTK of coal and general freight serviced.

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[29] Office of Energy and Climate Change Overview of NSW Government's approach to the coal market price emergency is set out here: https://www.energy.nsw.gov.au/sites/default/files/2023-03/NSW_fact_sheet_coal_market_price_emergency_2023.pdf

[30] TAHE has agreed that operating and maintenance expenditure is treated, from a regulatory perspective, as a hypothetical standalone freight network (including rationalisation of assets for the purpose of calculating efficient cost). However, TAHE's position is that it is more appropriate that the calculated maintenance and operating expenditure for the hypothetical network be reflective of the actual cost of operating a shared rail network against the rationalised network rather than the benchmark rates determined by IPART. In line with TAHE using IPART's position on maintenance and operating expenditure, the 2022-23 submission for the TAHE component of the HVCN has been developed based on the IPART assumptions and rates, appropriately escalated, that were contained in its decision on the 2019-20 compliance submission.

[31] The benchmark rates have been escalated by the percentage change in the average Sydney CPI over four quarters between 2021-22 and 2022-23. We note that this may be a conservative estimate of the change in costs of the maintenance activity. .

Train control costs

Train control costs do not vary with GTK. The labour and expenses associated with train control are required for provision of access regardless of the number of access seekers or the volume of freight. Therefore, the same set of costs is considered applicable to each set of access seekers.

In the 2022-23 financial year, train control costs are estimated at $645,463 based on the previous year estimate accepted in IPART's final decision, escalated by the rate of change in the consumer price index.[32]

Corporate and system overheads

Corporate and system overheads have been estimated using the same benchmarking approach applied in previous IPART decisions.

Specifically, overheads are estimated as 9.2 per cent of the sum of maintenance and network control costs. This results in estimated overheads of $533,493in 2022-23 when considering the combined group of access seekers on the TAHE component of the HVCN. $497,065 for coal access seekers and $486,195 for general freight access seekers.

The slight difference in corporate and system overheads between coal and general freight access seekers reflects the difference in direct (variable maintenance) costs relating to each group of access seekers.

Depreciation and the return on the regulatory asset base

Consistent with the requirements of the Undertaking, the allowance for depreciation in the estimate of the full economic costs for the TAHE HVCN has been calculated based on the DORC RAB at the beginning of the financial year, on a straight-line basis and applying the unexpired portion of IPART's remaining mine life (terminal date of 2040).[33]

The return on the RAB has been calculated applying the IPART determined weighted average cost of capital of 5.3 per cent real, post-tax.[34]

Roll forward of the regulatory asset base

Consistent with the requirements of the Undertaking, the RAB set in previous years has been rolled forward to reflect indexation, additions, capital expenditure, depreciation, and disposals.

Table 14 sets out the roll forward of the regulatory asset base for TAHE's component of the HVCN from 2020-21 to 2022-23.

[32] The CPI used is the percentage change in the average Sydney CPI over four quarters between 2021-22 and 2022-23.
[33] Independent Pricing and Regulatory Tribunal, *Rate of return and remaining mine life, 2019-2024, Final Report, July 2019.*
[34] Independent Pricing and Regulatory Tribunal, *Rate of return and remaining mine life, 2019-2024, Final Report, July 2019.*

Table 14: Roll forward of the regulatory asset base, TAHE Hunter Valley Coal Network, 2020-21 to 2022-23, $

Access fees	2020-21	2021-22	2022-23
Opening value 30 June 2022	13,642,901	13,102,839	12,610,166
Indexation	142,083	196,951	493,522
Capital expenditure	0	0	0
Additions	0	0	0
Depreciation	-682,145	-689,623	-700,565
Disposals	0	0	0
Closing value 30 June 2023	13,102,839	12,610,166	12,403,124
Average RAB	13,372,870	12,856,502	12,506,645

Compliance with the floor and ceiling tests

In this section, we report compliance of access revenue with the floor and ceiling tests for the TAHE component of the HVCN. Compliance has been considered across three groupings of access seekers, namely:

- coal access seekers
- general freight access seekers; and
- combined group of access seekers (coal and general freight).

Figure 9 demonstrates compliance of TAHE's access revenue for each of the groups of access seekers, as compared with the full economic costs for the TAHE HVCN.

Figure 9: Compliance of access revenue, TAHE Hunter Valley Coal Network, 2022-23, $ million

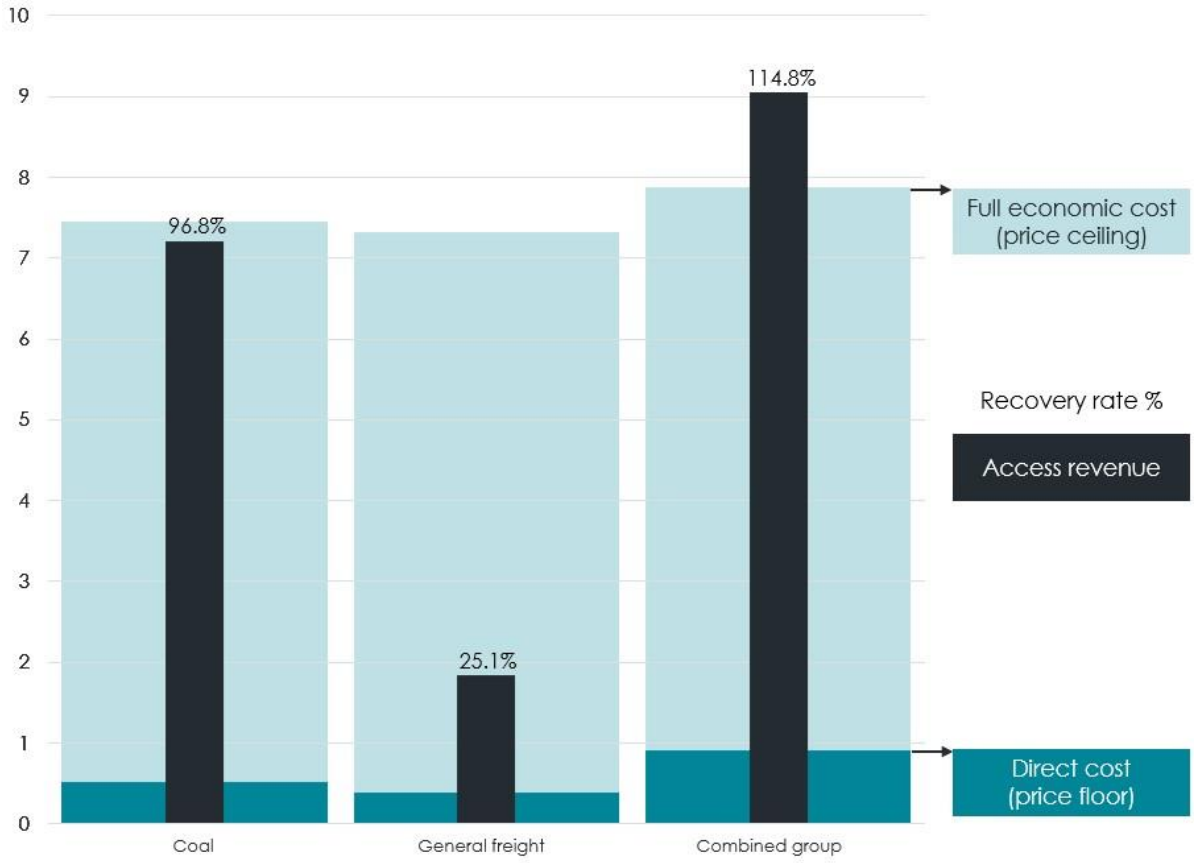


Table 15 demonstrates compliance of TAHE's access revenue with the floor and ceiling test for each of the access seeker groupings for the TAHE HVCN.

Table 15: Detailed breakdown of compliance with floor and ceiling tests, TAHE Hunter Valley Coal Network, 2020-21 to 2022-23, $

	2020-21	2021-22	2022-23
Coal Access Seekers			
Variable Maintenance Costs (direct cost estimates)	260,343	335,920	514,099
Fixed Maintenance Costs	3,811,889	3,961,074	4,243,317
Train Control Costs	579,837	602,530	645,463
Corporate and System Overheads	427,990	450,756	497,065
Total O&M	5,080,059	5,350,280	5,899,944
Depreciation	682,145	689,623	700,565
Return on RAB	708,762	681,395	662,852
Tax Allowance	200,593	192,848	187,600

	2020-21	2021-22	2022-23
Full Economic Cost (FEC)	6,671,559	6,914,146	7.450,960
Access Revenue	3,219,801	4,122,691	7,213,916
Access Revenue less FEC	-3,451,758	-2,791,455	-237,044
Recovery Rate	**48.3%**	**59.6%**	**96.8%**
General Freight Access Seekers			
Variable Maintenance Costs (direct cost estimates)	362,752	375,096	395,953
Fixed Maintenance Costs	3,811,889	3,961,074	4,243,317
Train Control Costs	579,837	602,530	645,463
Corporate and System Overheads	437,412	454,360	486,195
Total O&M	5,191,890	5,393,061	5,770,928
Depreciation	682,145	689,623	700,565
Return on RAB	708,762	681,395	662,852
Tax Allowance	200,593	192,848	187,600
Full Economic Cost (FEC)	6,783,390	6,956,926	7,321.944
Access Revenue	1,521,490	1,716,933	1,837,524
Access Revenue less FEC	-5,261,900	-5,239,993	-5,484,420
Recovery Rate	**22.4%**	**24.7%**	**25.1%**
Combined Access Seeker Group			
Variable Maintenance Costs (direct cost estimates)	623,095	711,017	910,052
Fixed Maintenance Costs	3,811,889	3,961,074	4,243,317
Train Control Costs	579,837	602,530	645,463
Corporate and System Overheads	461,363	485,265	533,493
Total O&M	5,476,184	5,759,886	6,332,324
Depreciation	682,145	689,623	700,565

	2020-21	2021-22	2022-23
Return on RAB[35]	708,762	681,395	662,852
Tax Allowance	200,593	192,848	187,600
Full Economic Cost (FEC)	7,067,684	7,323,751	7,883,341
Access Revenue	4,741,291	5,839,624	9,051,440
Access Revenue less FEC	-2,326,393	-1,484,127	1,168,099
Recovery Rate	**67.1%**	**79.7%**	**114.8%**

The results show that TAHE's access fees in the year 2022-23:

- were within the floor and ceiling test bounds for the individual access seeker groups of coal freight and general freight when observed independently; and
- were not within the floor and ceiling test bounds for the combined group of access seekers.

This revenue over-recovery for combined access seekers was predominantly driven by the NSW Government 2022 directions to power stations and coal suppliers. These increased coal deliveries above forecast levels and drove increased 2022-23 coal revenue.

This over recovery will be addressed by the TAHE HVCN Unders and Overs Policy, which is currently being reviewed by IPART. The proposed policy would adjust future prices as the means to return the over-recovery.

Unders and overs account and policy

Table 16 shows the unders and overs account for the HVCN for 2020-21 to 2022-23[36]

This over recovery will be addressed by the TAHE HVCN Unders and Overs Policy, which is currently being reviewed by IPART. The proposed policy would adjust future prices as the means to return the over-recovery.

[35] The return on RAB component of the ceiling was calculated by multiplying the average of the opening and closing RAB for each year by the regulated rate of return.

[36] In developing the 2021-2022 compliance submission, TAHE realised that a tax allowance has not been included in the estimate of full economic costs since 2014-15. The unders and overs account balance reflects the inclusion of a tax allowance in the estimate of full economic costs commencing 2015-16 onwards.

Table 16: Unders and overs account – TAHE Hunter Valley Coal Network, 2020-21 to 2022-23

	All Access seekers
Balance at 30 June 2021	$8,081,213
Tax adjustment	-1,341,998
2021-22 Revenue minus Costs	-$1,484,127
Balance at 30 June 2022	$5,975,088
2022-23 Revenue minus Costs	$1,168,099
Balance at 30 June 2023	$7,143,187

Summary statement on compliance

In summary, TAHE has complied with the following requirements of the Undertaking for the TAHE components of the HVCN, specifically:

- access revenue for coal freight and general freight access seekers individually in 2022-23 is within the ceiling and floor bounds;
- in May 2023, TAHE submitted it TAHE HVCN unders and overs account policy to address historical, current and any future over-recoveries. The policy is currently with IPART for consideration;; and
- the roll forward of the RAB is consistent with the requirements of the Undertaking.

TAHE has breached the ceiling for combined coal and freight access seekers primarily due to an unforeseen increase in coal volumes. TAHE's proposed unders and overs account policy would return this to access seekers through future price changes.

Compliance of access fees for TAHE's remaining rail sectors

Key points

- Our analysis demonstrates that TAHE complies with all the compliance requirements of the Undertaking in 2022-23 for the CRN, NSRC and the MRN-FS.
- The recovery rates in 2022-23, measured as a percentage of operations and maintenance expenditure were:
  - 13.9 per cent for the Country Regional Network.
  - 87.9 per cent for the Northern Sydney Rail Corridor – Freight Services; and
  - 71.6 per cent for the Metropolitan Rail Network – Freight Services.

Country Regional Network

The Country Regional Network (**CRN**) is owned by TAHE and is operated and maintained by UGL Regional Linx as our rail infrastructure manager.[37]

The CRN links broad areas of regional NSW to interstate and metropolitan rail systems and, in addition to this passenger task, it also supports customers transporting coal, grain, cotton, minerals and containerised freight to domestic and export markets.

The network covers 2,386 route kilometres of operational passenger and freight rail lines and 3,139 route kilometres of non-operational lines. It comprises 27,000 hectares of land and infrastructure including:

- 1,312 level crossings (300 active)
- 1,200 property assets (including 356 heritage)
- 600 rail under-bridges and 384 road over-bridges

About 996 km of branch line track used predominantly for haulage of grain, with lower mass and speed limits than other parts of the network.

The CRN's key market segments can be broadly split into passenger, grain, and freight (including general freight), minerals and coal. Its major customers are above rail freight and passenger operators, and their customers include farmers, miners, and passengers.

Table 17 sets out the ceiling test for the CRN from 2020-21 to 2022-23. This compliance statement has been developed using actual maintenance and operating costs together with revenue from all rail operators. TAHE notes that 2022-23 was the first full year with UGL as the

[37] Transport for NSW acts as the TAHE agent for management of the UGL Regional Linx contract.

new service provider.[38] Mobilisation costs associated with the transition to UGL Regional Linx have been included in the full economic cost as set out in Table 17 below.

Table 17 demonstrates that TAHE's access fees for the CRN are below the full economic cost of providing access, being 13.9 per cent of the operating and maintenance costs.

Consistent with previous statements, estimates of depreciation and return on RAB have not been developed because TAHE has taken a proportional approach to demonstrating compliance for networks that are exempt from the full compliance reporting process under the Undertaking.[39] If these were estimated and included, this would serve to increase the ceiling and reduce the recovery rate even further.

Table 17: Compliance statement, Country Regional Network, 2020-21 to 2022-23, $

	2020-21	2021-22	2022-23
Maintenance Costs	57,893,172	61,120,876	97,138,490
Network Control Costs	8,886,617	7,617,814	5,921,266
Corporate Systems and Overheads	13,246,279	10,702,798	6,163,297
Mobilisation payment (annualised)		4,861,65240	4,861,652
Total Operations and Maintenance (**O&M**)	80,026,068	84,303,140	114,084,707
Access Revenue	12,065,410	14,344,889	15,853,564
Access revenue less O&M	-67,960,658	-69,958,251	-98,231,143
Recovery rate for O&M	**15.1%**	**17.0%**	**13.9%**

Northern Sydney Rail Corridor Freight Services

The Northern Sydney Rail Corridor (**NSRC**) is a rail corridor linking Sydney and Newcastle that is owned by TAHE. The assets used on this corridor are part of the Metropolitan Rail Network. While both passenger and freight services access the NSRC, for compliance purposes it is considered as a theoretical stand-alone freight-only network. Therefore, freight access seekers are the group of access seekers being assessed in the NSRC compliance statement. Access by passenger services to this part of the network is covered as part of the compliance submission for the MPN.

Table 18 sets out the ceiling test for the NSRC from 2020-2021 to 2022-23. This compliance statement has been developed utilising both the amounts and methodologies for maintenance, network control and corporate and system overheads which relate to the provision of access for freight operations accepted in previous IPART decisions, together with revenue from freight operations on the NSRC. In particular:

[38] The responsibility for operations and maintenance was transferred from John Holland Rail to UGL in 2021-22.
[39] See *NSW Rail Access Undertaking*, 1999, Schedule 3, Clause 5(f).
[40] The mobilisation payment in 2021-22 is an annualised amount over a ten-year period, based on a total mobilisation expenditure of $36,999,427 incurred in 2021-22.

- maintenance costs have been estimated using a benchmark rate of $8 per thousand GTK implicit in IPART's decision on the 2017-18 compliance statement from RailCorp and TfNSW41, escalated by CPI.
- network control costs have been estimated using the cost submitted by RailCorp and accepted by IPART in 2017-18 escalated by CPI; and
- corporate and system overheads have been estimated using a benchmark of 9.2 per cent of maintenance and network control costs, consistent with previous IPART decisions.

Table 18 indicates that TAHE's access fees for the NSRC are approximately 87.9 per cent of the operating and maintenance costs.

Consistent with previous statements, estimates of depreciation and return on RAB have not been developed because TAHE has taken a proportional approach to demonstrating compliance for networks that are exempt from the full compliance reporting process under the Undertaking.[42] If these were estimated and included, this would serve to increase the ceiling and reduce the recovery rate. Therefore, TAHE is confident that its access fees for the NSRC are below 80 per cent of the full economic cost of providing access.

Table 18: Compliance statement, Northern Sydney Rail Corridor – freight Services, 2020-21 to 2022-23, $

	2020-21	2021-22	2022-23
Maintenance Costs	17,542,297	20,525,917	20,446,807
Network Control Costs	3,521,078	3,658,882	3,919,592
Corporate Systems and Overheads	1,937,831	2,225,001	2,241,709
Total Operations and Maintenance (O&M)	23,001,206	26,409,800	26,608,107
Access Revenue	17,549,134	22,204,663	23,394,296
Access revenue less O&M	-5,452,072	-4,205,137	-3,213,811
Recovery rate for O&M	**76.3%**	**84.1%**	**87.9%**

Metropolitan Rail Network – Freight Services

Multiple segments of the Metropolitan Rail Network (**MRN**) owned by TAHE are accessed by both passenger and freight operators. This compliance statement relates to the provision of access to freight operators on the MRN excluding the NSRC and the HVCN. This includes Illawarra, South, Inner City, North Shore, and Western segments. Access by passenger services to this part of the network is covered as part of the compliance submission for the MPN.

Table 19 sets out the ceiling test Metropolitan Rail Network – Freight Services (**MRN-FS**) from 2020-21 to 2022-23. This compliance statement has been developed utilising both the amounts and methodologies for maintenance, network control and corporate and system overheads which

[41] IPART Rail Access: Compliance Statement RailCorp HVCN 2015-16 to 2017-18 pp. 4-7.
[42] See *NSW Rail Access Undertaking*, 1999, Schedule 3, Clause 5(f).

relate to the provision of access for freight operations accepted in previous IPART decisions, together with revenue from freight operations on the MPN. In particular:

- maintenance costs have been estimated using a benchmark rate of $8 per thousand GTK based on IPART's decision on the 2017-18 compliance statement from RailCorp and TfNSW, escalated by CPI.
- network control costs have been estimated using the cost submitted by RailCorp and accepted by IPART in 2017-18 escalated by CPI; and
- corporate and system overheads have been estimated using a benchmark of 9.2 per cent of maintenance and network control costs, consistent with previous IPART decisions.

Table 19 indicates that TAHE's access fees for the MRN-FS are approximately 71.6 per cent of the operational and maintenance costs incurred to provide access.

Consistent with previous statements, estimates of depreciation and return on RAB have not been developed because TAHE has taken a proportional approach to demonstrating compliance for networks that are exempt from the full compliance reporting process under the Undertaking.[43] If these were estimated and included, this would serve to increase the ceiling and reduce the recovery rate. Therefore, TAHE is confident that its access fees for the remaining freight sectors of the MRN are below 80 per cent of the full economic cost of providing access.

Table 19: Compliance statement, Metropolitan Rail Network Freight Services, 2020-21 to 2022-23, $

	2020-21	2021-22	2022-23
Maintenance Costs	23,790,619	28,689,912	29,107,287
Network Control Costs	4,100,897	4,261,393	4,565,035
Corporate Systems and Overheads	2,566,019	3,031,520	3,097,854
Total Operations and Maintenance (O&M)	30,457,535	35,982,825	36,770,176
Access Revenue	23,860,920	28,612,365	26,340,776
Access revenue less O&M	-6,596,615	-7,370,460	-10,429,401
Recovery rate for O&M	**78.3%**	**79.5%**	**71.6%**

[43] See *NSW Rail Access Undertaking*, 1999, Schedule 3, Clause 5(f).

Appendix A – methodology for estimating the floor and ceiling tests for TAHE

This appendix describes the methodology that has been used to estimate the floor and ceiling tests for access fees across TAHE's rail networks in greater detail.

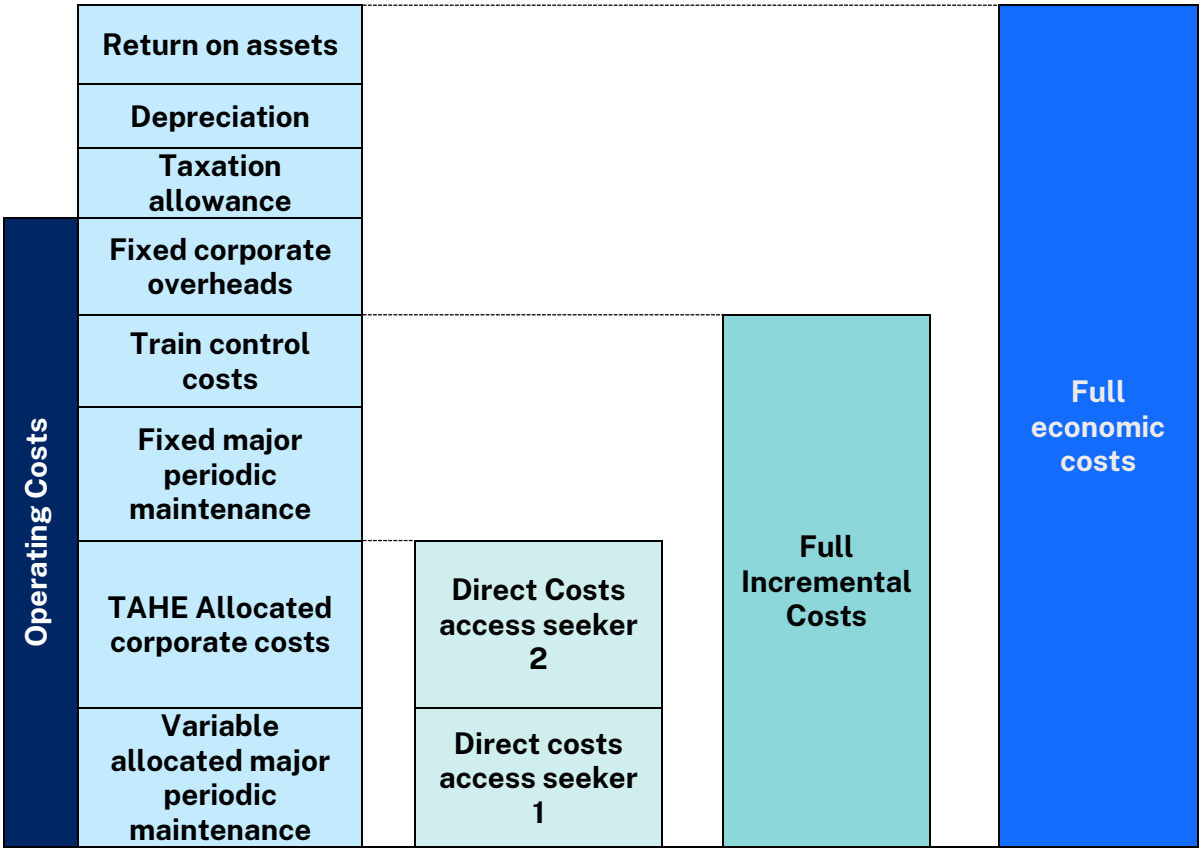
The floor and ceiling test for the rail transport cluster

Figure10 illustrates the cost categories included within the floor and ceiling tests as defined in the Undertaking. The cost categories included in this definition include:

- direct costs, namely:
  - variable allocated major periodic maintenance; and
  - TAHE allocated corporate costs incurred as a direct consequence of providing access to the access seeker.
- full incremental costs, namely:
  - the sum of direct costs for each access seeker; plus
  - fixed major periodic maintenance; and
  - train control costs.
- full economic costs, namely:
  - full incremental costs plus.
  - TAHE fixed corporate overheads.
  - taxation allowance.
  - depreciation; and
  - return on assets.

The remainder of this appendix describes each of the economic cost concepts set out in the Undertaking and our approach to estimating these costs in greater detail.

Figure 10: Cost categories within each of the floor and ceiling tests for cluster costs



Estimating direct costs

The starting point for the floor test is to estimate the direct costs imposed by each access seeker from using the relevant rail network regulated assets.

In practical terms, the direct costs include all those costs that vary according to usage of the network by each access seeker. The relevant cost categories for direct costs as set out in the Undertaking include:

- TAHE corporate costs that are incurred to support the provision of access to each access seeker, and so could be avoided if access were not provided; and
- major periodic maintenance that is incurred as a direct consequence of usage of the relevant assets, including for example rail replacement and resurfacing.

The Undertaking requires that the relevant major periodic maintenance cost to be included in direct costs in a year is calculated on a levelised cost basis. This reflects an expectation that these costs may significantly vary year-on-year.

Importantly, we would expect that the direct costs will vary between access seekers across each rail network. This reflects that the nature of use of the infrastructure can be different between access seekers, which will affect the allocation of avoidable corporate costs and avoidable major periodic maintenance.

Finally, variable allocated major periodic maintenance is based on actual expenditure incurred by Sydney Trains and UGL as the entities responsible for maintenance of the MPN and CRN, respectively. Variable allocated major periodic maintenance has been estimated using benchmarks for the HVCN, the Northern Sydney Rail Corridor and the Metropolitan Rail Network – Freight Services.

Estimating full incremental costs

The full incremental costs as defined in the Undertaking are all costs that could be avoided if a sector[44] of the relevant rail network was removed from the system. It follows that it is all costs that could be avoided if a sector were no longer provided to all access seekers.

The full incremental costs are therefore:

- the sum of direct costs for each access seeker; plus
- any fixed major periodic maintenance for the relevant rail network; plus
- train control costs.

The inclusion of all fixed major periodic maintenance and train control costs in the concept of full incremental costs stems from the definition in the Undertaking that the rail network is assumed to be removed from the system for the purpose of estimating full incremental costs. In this circumstance all maintenance expenditure would no longer be incurred, i.e., both fixed and variable maintenance and there would also be no need to incur train control costs. As such, all these costs would be avoided. It follows that these costs can be considered as incremental to the provision of access to the relevant rail network.

Estimating full economic costs

The full economic costs are all costs incurred to operate, maintain, and provide the infrastructure used by an access seeker.

The starting point is to define the infrastructure that is used by the access seeker. This requires consideration of those sectors of the relevant rail network that each access seeker (e.g., Sydney Trains or NSW Trains) makes use of in the provision of train services.

The cost categories included in full economic costs for each access seeker include:

- direct costs incurred by TAHE which vary according to the usage of the infrastructure by each access seeker.
- any fixed major periodic maintenance for the relevant rail network.
- train control costs.
- remaining corporate overheads and system costs that have not been allocated to direct costs or full incremental costs.

[44] Sector means a continuous length of track with end points, usually delineated by major junctions or traffic origins and including all facilities associated with the track on that sector.' See: The NSW Rail Undertaking, Schedule 7, p 3.

- return of assets employed to provide access to the access seeker, i.e., depreciation of the RAB.
- return on assets employed to provide access to the access seeker; and
- an allowance for expected tax payments.

Capitalised major periodic maintenance incurred by Sydney Trains is added to TAHE incurred capital expenditure and rolled into the RAB. It follows that it is included in full economic costs as part of the return on the RAB and depreciation allowances.

`The first three cost categories are described earlier. The remainder of this section describes our approach to estimating the remaining cost categories.

Corporate overheads and system costs

TAHE incurs corporate and system costs in the conduct of its business. Some of these costs are allocated to direct costs incurred by an access seeker, as they are related to the use of the network by the access seeker and so could be avoided if the access seeker no longer used the rail network. Any remaining TAHE corporate costs, associated with the operation of the business such as head office rent and other corporate overheads that are not related to use of the network are properly included in full economic costs.

Similarly, some operating expenditure for the provision of access services is incurred on behalf of TAHE by access seekers or Transport for NSW. This non-TAHE incurred operating expenditure also has a component that varies with the use of the network by an access seeker and a component that does not. The component of non-TAHE incurred operating expenditure that does not vary with the use of the network, i.e., the overheads, is also included in the full economic costs of providing access services.

Depreciation

Depreciation is calculated with reference to the value of the RAB on a straight-line basis over the remaining useful life of the assets.

Return on assets

The return on assets is calculated each year as the sum of the return on the existing capital base and the return on new capital investment made during that year. The return on the existing capital base is calculated by multiplying the opening RAB in each year by the IPART determined real post-tax weighted average cost of capital (**WACC**). The return on new capital expenditure is calculated by converting the annual WACC estimate to a half-yearly value and then multiplying this half-yearly value by the value of new capital investment made during the year. This approach assumes that capital expenditure is incurred evenly throughout the year.

The latest value of the WACC for the Undertaking was determined by IPART in July 2019 and was 5.3 per cent, real, post-tax.[45]

[45] IPART, *Rate of return and remaining mine life 2019-2024 | Final Report*, July 2019, p 7.

Appendix B – additional inputs and assumptions

This appendix sets out several additional inputs and assumptions used in the development of the floor and ceiling tests.

The assets employed to provide access services

The starting point for applying the floor and ceiling tests is to determine the infrastructure upon which access fees relate. The Transport Administration Act 1988 provides the following definition of the NSW rail network.[46]

> *NSW Rail Network means the railway lines vested in or owned by or managed or controlled by a rail infrastructure owner (including passing loops and turnouts from those lines and loops and associated rail infrastructure facilities that are so vested or owned or managed or controlled) but does not include any part of a metro.*

This definition hinges on the term 'rail infrastructure facilities' which is also defined in the Transport Administration Act 1988 by reference to specific types of assets. By definition, rail infrastructure facilities.[47]

a. *Includes railway track, associated track structures, over track structures, cuttings, drainage works, track support earthworks and fences, tunnels, bridges, level crossings, service roads, signalling systems, train control systems, communication systems, overhead power supply systems, power and communication cables, and associated works, buildings, plant, machinery and equipment, but*

b. *Does not include any stations, platforms, rolling stock, rolling stock maintenance facilities, office buildings or housing, freight centres or depots, private sidings or spur lines connected to premises not vested in or owned by or managed or controlled by a rail infrastructure owner.*

Items in the former of these two groups, i.e., item (a), are classified as regulatory assets, where regulatory assets are defined in the Undertaking as follows.[48]

> *Regulatory Assets means the facilities and associated assets used in the provision of Access to the NSW Rail Network and where the term is used in relation to a Sector or group of Sectors shall include the facilities and associated assets used in the provision of Access to that Sector or those Sectors and includes non-Sector Specific Assets.*

TAHE has determined that its regulatory assets include the asset categories listed in Table 18.

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[46] *Transport Administration Act 1988 No 109*, Part 1: Preliminary, Section 3: Definitions,
[47] *Transport Administration Act 1988 No 109*, Part 1: Preliminary, Section 3: Definitions,
[48] *NSW Rail Access Undertaking*, 1999, Schedule 3, p 2.

Table 18: Asset categories within TAHE's regulatory asset base and associated economic life

Category	Economic asset Life
Rail Infrastructure	45
Land	-
Electrified Network	35
Signals	33
Network Control	9
Earthworks	200
Capitalised Major periodic maintenance	33

We note that land is not a depreciable asset and so is not allocated an economic life.

Sections of the metropolitan rail network which are used by Sydney Trains and NSW Trains

Sydney Trains is responsible for operating and maintaining the MPN – a map of which is presented in Figure 11. We note that the network represented in Figure 11 can be segmented into three distinct components:

- parts of the MPN that are managed and serviced by Sydney Trains – represented by the orange lines.
- parts of the MPN that are managed by Sydney Trains but serviced by NSW Trains – represented by the dark grey lines; and
- the metro network, which is not part of the MPN – represented by the teal lines.

According to Sydney Trains.[49]

> *Our maintenance responsibility extends beyond the area we provide service to and includes the area bounded by Bomaderry, Lithgow and the Newcastle Interchange. We partner with and maintain a large portion of the infrastructure and fleet used by NSW TrainLink – the intercity and regional train fleets.*

Sydney Trains operates suburban services entirely within the section of the MPN that it is responsible for managing. NSW Trains operates intercity and regional services that use the MPN but that may have an origin or destination outside of the MPN. The parts of the MPN serviced by NSW Trains and not Sydney Trains includes a number of extensions to the suburban network. The extensions that are serviced by NSW Trains only include:

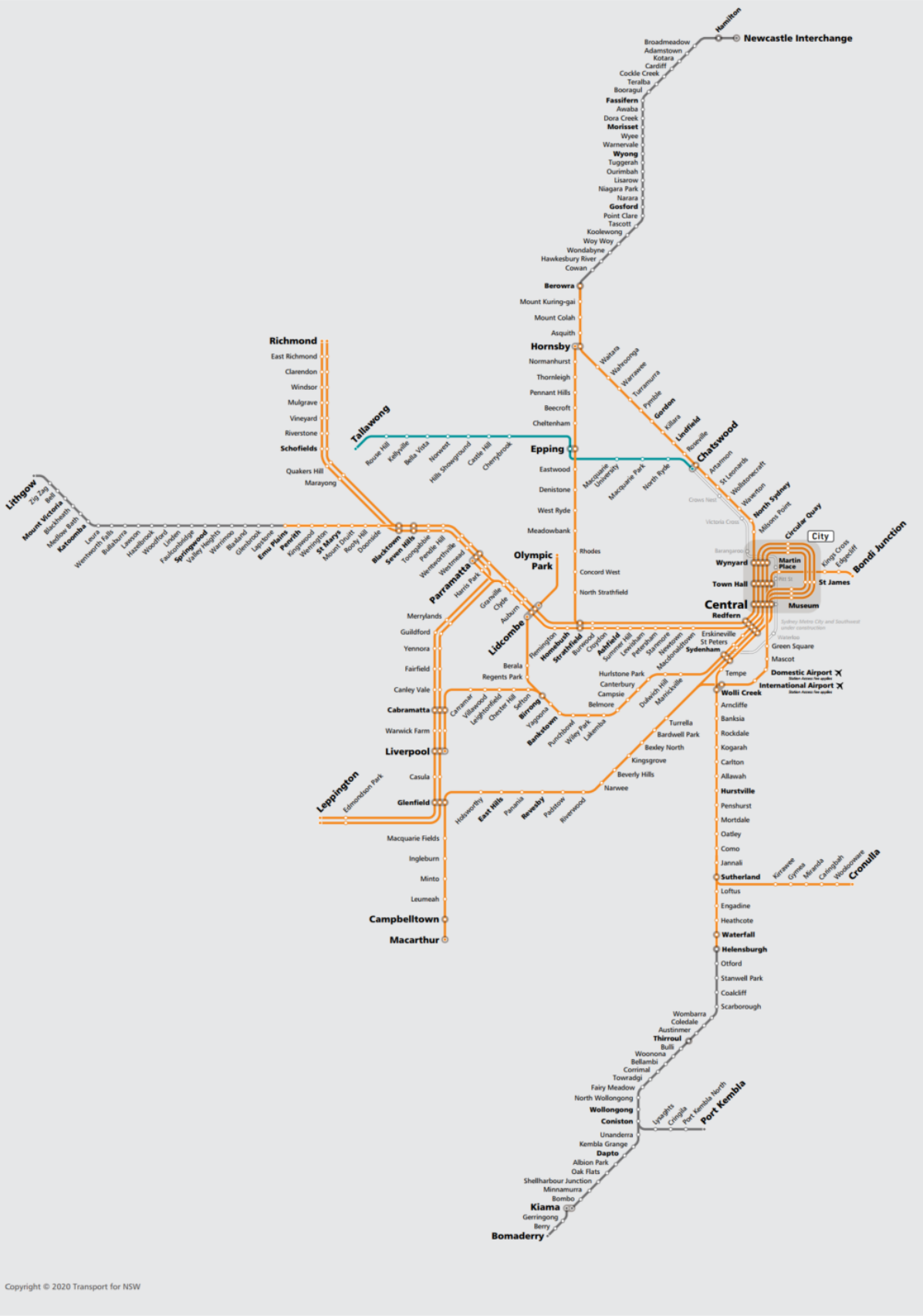
- the South Coast line – which extends south past Waterfall to Port Kembla and Bomaderry.
- the Blue Mountains line – which extends west past Emu Plains to Lithgow and Bathurst.

[49] Sydney Trains, *Annual Report 2020-21 | Volume 1*, November 2021, p 10.

- the Central Coast and Newcastle lines – which extends north past Berowra to Newcastle; and
- the Southern Highlands line – which extends south-west past Macarthur and Campbelltown to Goulburn.

It follows that neither Sydney Trains nor NSW Trains uses the entirety of the MPN although significant portions of the network are used by both operators.

Figure 11: Sydney Trains' asset management boundaries



Cost allocation methodology

A central component of the economic principles underpinning the floor and ceiling tests is the appropriate allocation of different types of costs between access seekers.

The approach to allocating TAHE operating expenditure for the purpose of determining the direct costs, full incremental costs, and TAHE incurred full economic costs involved three steps, namely:

- Step 1: Determine the proportion of TAHE's operating costs related to each of the relevant networks.
- Step 2: Allocate TAHE's operating costs between those related to regulated assets, and those related to unregulated assets; and
- Step 3: Determine what proportion of TAHE's operating costs for regulated assets vary with network use, and allocate those costs based on a cost driver.

There are several cost drivers that could be used to allocate variable operating expenditure as direct costs for regulated and unregulated assets. These include:

- trip length – as measured by the aggregate length of trips by each access seeker.
- carriage weighted trip length – as measured by the aggregate length of trips by each access seeker weighted by the length of train or number of carriages used.
- gross tonne kilometres – as measured by the aggregate length of trips by each access seeker weighted by the volume or weight of each trip; or
- service count – as measured by the total number of trips by each access seeker.

Variable TAHE operating expenditure for the MPN was allocated based on trip length. This reflects an opinion that the relative effort of TAHE in managing access between Sydney Trains and NSW Trains can be approximated by trip length, which resulted in an allocation of 69 per cent of these costs to Sydney Trains, with the remaining 31 per cent to NSW Trains.

Variable major periodic maintenance expenditure for the MPN was allocated based on gross tonne kilometres. This reflects an opinion that variable major periodic maintenance is related to the number of weight of trips. This resulted in 73 per cent of these costs being allocated to Sydney Trains, with the remaining 27 per cent being allocated to NSW Trains.

All non-TAHE operating expenditure was allocated to regulated assets as it was related directly to those activities.

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