

Unders and Overs Account Policy for the TAHE Hunter Valley Coal Network

Effective Date	1 July 2023
Review Date	1 July 2027

1. Who is this document for?

The policy is relevant for:

- » Rail Operators hauling coal and freight across Transport Asset Holding Entity of NSW's (TAHE) Hunter Valley Coal Network (HVCN), and any potential access seekers for the same; and
- » The Independent Pricing and Regulatory Tribunal (IPART) as the approver of this policy.

2. Background

The NSW Rail Network is owned by TAHE and Transport for NSW (TfNSW). The Australian Rail Track Corporation (ARTC) currently has long term leases over and operates significant parts of the NSW Rail Network.

TAHE is owner of the following networks:

- » Metropolitan Rail Network (MRN) –operated & managed by Sydney Trains/TfNSW;
- » Country Regional Network –operated & managed by UGL Regional Linx/TfNSW;
- » Metropolitan Freight Network –leased by and managed/operated by ARTC; and
- » Southern Sydney Freight Line –leased by and managed/operated by ARTC.

TfNSW is the owner of the following networks:

- » Defined Interstate Rail Network -leased by and managed/operated by ARTC; and
- » HVCN -leased by and managed/operated by ARTC.

Access to the MRN is provided to a combination of commuter, freight, long distance passenger, heritage, and track machinery operators in accordance with the NSW Rail Access Undertaking (**Undertaking**).

A small section of the HVCN (42 track kms or 21 route kms as shown within Figure 1) was not leased to the ARTC. This section of the HVCN is owned by TAHE and forms an integral part of the MRN being the northern interface with both ARTC's Hunter Valley and Interstate networks. Through its agents Sydney Trains and TfNSW, TAHE provides access to rail operators to conduct rail operations on the MRN including the TAHE component of the HVCN (**TAHE HVCN**).

The TAHE HVCN covers five (5) sectors consistent with the description of HVCN sectors in the Undertaking:

- » 405 (Newstan Junction to Cockle Creek),
- » 406 (Cockle Creek to Sulphide Junction),
- » 407 (Adamstown to Broadmeadow (via Main)),
- » 490 (Sulphide Junction to Adamstown), and
- » 497 (Broadmeadow to Woodville Junction).

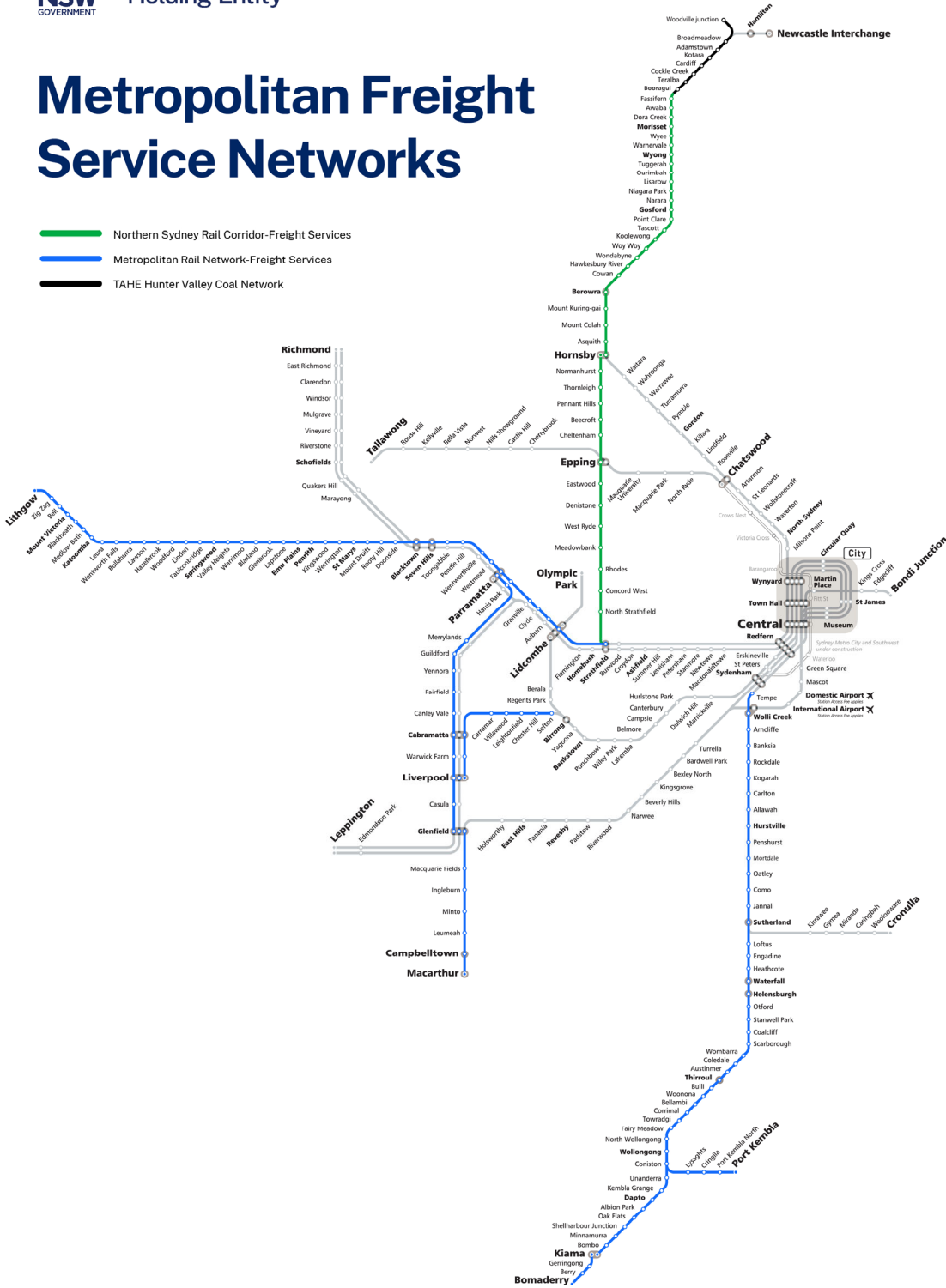


Figure 1 – Metropolitan Rail Network and indicative coverage of metropolitan freight service networks



Metropolitan Freight Service Networks

- Northern Sydney Rail Corridor-Freight Services
- Metropolitan Rail Network-Freight Services
- TAHE Hunter Valley Coal Network



3. Purpose of this policy

The Undertaking sets out the requirements for negotiating and pricing access to rail infrastructure owned by the TAHE. The Undertaking requires that access revenue for any access seeker, or group of access seekers, cannot exceed the full economic costs on a stand-alone basis – the ceiling test.¹ Where access revenue could potentially breach the ceiling test, TAHE must keep an unders and overs account (the **Account**).

To give this requirement (when triggered) practical effect, a rail infrastructure owner must account for the revenue it collects from access fees, and refund any amount collected in excess of its full economic costs or collect additional revenue if it is below the full economic costs.

Schedule 3, clause 4 of the Undertaking requires:

- » the establishment of an unders and overs account to manage average deviations around the maximum rate of return – clause 4(a);
- » the account to be kept only in circumstances where an access seeker or group of access seekers could potentially breach the ceiling test – clause 4(b);
- » the rail infrastructure owner to provide an annual reconciliation of each account to affected access seekers – clause 4(c);
- » TAHE attempts to return the account balance to zero each year – clause 4(d);
- » that the balance of the account should not exceed +/- 5 per cent of forecast access revenue – clause 4(e); and
- » TAHE to develop and publish a policy to operate the account, in consultation with access seekers, and as approved by IPART – clause 4(f).

This policy document solely relates to the TAHE HVCN, and no other part of the rail networks owned by TAHE. In consultation with customers TAHE has developed its methodology for clearing the account balance arising for the TAHE HVCN. It articulates the policy for the management of the current over recovery balance and how future account balances will be managed. The balance of the Account as of 30 June 2022 was \$5,975,088², which will be cleared over the first two years of operation of this policy.

4. Clearing the Account balance

TAHE will clear the Account balance on an annual basis using:

- » A formulaic annual adjustment to coal access prices for account balances (before being cleared) up to and including 20 per cent of forecast full economic cost.
- » A formulaically derived clearance pathway for any remaining balance that exceeds 20 per cent of forecast full economic cost.

¹ Schedule 3, clause 1(b), *NSW Rail Access Undertaking*.

² Independent Pricing and Regulatory Tribunal, *TAHE's compliance with the NSW Rail Access Undertaking - 2021-22*, Draft report, January 2023, p 15.

The approach takes the following steps when calculating prices for the next financial year (year t):

- » **Step 1:** Determine the estimated full economic cost for year t as set out in section 4.1 (A)
- » **Step 2:** Determine the opening account balance for year t as set out in section 4.2 (B)
- » **Step 3:** Determine approach to proceed:³
 - When $|B| / A \leq 0.2$, complete Step 4 only.
 - If $|B| / A > 0.2$, complete Step 5.
- » **Step 4:** Apply annual coal access price adjustment consistent with the formulaic approach in sections 4.3 and 4.4.
- » **Step 5:** Apply annual coal access price adjustment consistent with the formulaic approach in sections 4.3 and 4.4 up to the value of 20 percent of full economic cost. That is, $[A * 0.2]$. For the residual value of the opening balance above $A * 0.2$, determine and apply a clearance pathway consistent with the mechanism described in section 4.5.

An outcome of the operation of this price adjustment approach is that the amount collected from, or returned to, individual coal access seekers will differ from that individual access seekers historical contribution to the unders or overs account balance in circumstances where future usage diverges from historical usage. This consequence of a price adjustment approach was preferred by access seekers to an invoice/rebate approach.

4.1 Full economic costs

A key input for determining the unders and overs account balance is TAHE's estimate and IPART's determination of the full economic costs. Outturn access revenue is compared against the full economic costs determined by IPART to determine whether the account balance is upwardly impacted (ie, revenue exceeds costs) or negatively impacted (ie, revenue is less than costs) each year.⁴

Actual access revenue and full economic cost becomes available in the second year following price determination on the TAHE HVCN and is the reason that the unders and overs account method in section 4.4 includes a true-up over two (2) historical years on an ongoing rolling basis.

³ For the avoidance of doubt, the absolute value of (B) is used. This means that if the opening balance is within +/-10 per cent then the formulaic approach is used.

⁴ IPART's determination of full economic costs for the TAHE HVCN are those to support coal freight and general freight combined. For establishing the account balance the corresponding revenue from both coal freight and general freight on the TAHE HVCN is used.

Estimating full economic cost (for year t and year t-1)

Full economic cost for year t and year t-1 will be estimated by TAHE. TAHE forecast/estimate will consider the t-2 full economic cost as determined by IPART, CPI, and other relevant historical values.

Final full economic cost (available in year t-2)

The full economic cost (which is ultimately trued up to) is that determined by IPART in its determination on TAHE's annual compliance for that year. For draft prices, this will be the value determined by IPART in their draft decision (if available).⁵ This will be replaced with the value determined by IPART in their final decision, once available.⁶

Full economic costs for the purpose of determining the account balance is based on the outturn corporate expenditure and the roll forward of the regulated asset base, given actual capital expenditure over the previous year.

4.2 Opening account balance for year t

The opening account balance in year t is calculated as:

- » the difference between forecast and actual access revenue and forecast and actual full economic costs two years prior (ie, year t-2), escalated by CPI_{t-2} for a half year and CPI_{t-1} ; plus
- » the difference between initial forecasts and updated estimates of access revenue and full economic costs in the current year (ie, year t-1), escalated by CPI_{t-1} for a half year.

In determining these values:

- » Actual t-2 access revenue is sourced from TAHE's accounts.
- » Actual t-2 full economic cost is as described in section 4.1.
- » Estimated t-1 access revenue is the most recently available access revenue for the part year available when undertaking the calculation (in May each year) projected forward by TAHE for the full year.
- » Estimated t-1 full economic cost will be estimated by TAHE as described in section 4.1.
- » CPI_{t-1} is the annual percentage change in the ABS Sydney All Groups consumer price index⁷ from the March quarter in year t-3 to the March quarter in year t-2, calculated using the following method:

The ABS CPI Sydney All Groups for the March quarter in financial year t-2
divided by

⁵ If no draft decision is available in time for final prices, then TAHE will use either the figure for full economic cost in TAHE's compliance report for that year.

⁶ If no final decision is available in time for final prices, then TAHE maintains the discretion to use either the figure for full economic cost in IPART's draft decision (if available) or TAHE's compliance report for that year.

⁷ If the ABS does not or ceases to publish the index, then CPI will mean an index which TAHE considers is the best available alternative index.

The ABS CPI Sydney All Groups, for the March quarter in financial year t-3
minus one.

- » CPI_{t-2} is the annual percentage change in the ABS Sydney All Groups consumer price index⁸ from the March in year t-4 to the March quarter in year t-3, calculated using the following method:

The ABS CPI Sydney All Groups, for the March quarter in financial year t-3
divided by

The ABS CPI Sydney All Groups, for the March quarter in financial year t-4
minus one.

4.3 Annual price adjustment

The annual price adjustment approach sets limits on the prices that TAHE can set each year through the forecast revenue these prices would generate. The forecast revenue enables the recovery of a forecast full economic cost that is adjusted to give effect to true-ups necessary to correct for historical forecast error that resulted in an outturn revenue different to the full economic cost. True-ups are adjusted to reflect the time value of money.

This approach is given effect through the following formula and definitions.

Prices for year t, must satisfy the two following price control equations:

$$AR_t \geq \sum_{i=1}^n p_t^i q_t^i$$

$$AR_t = eFEC_t + A_t + H_t$$

Where:

- » AR_t is the Allowed Revenue for the TAHE HVCN in year t
- » q_t^i is the forecast quantity associated with charge 'i' in year t (representing quantities only within sectors of the TAHE HVCN)⁹
- » p_t^i is the price level for the charge 'i' in year t (representing quantities only within sectors of the TAHE HVCN)
- » t is the financial year
- » eFEC is the estimated full economic cost of the TAHE HVCN in year t

⁸ If the ABS does not or ceases to publish the index, then CPI will mean an index which TAHE considers is the best available alternative index.

⁹ We use 'charge' here to mean a unique price and quantity combination, where that price is set out in an access seekers access agreement. The formula does not describe the units (for example kilometres or gross tonne kilometres) to ensure the formula is robust for all current price structures and any future changes to these.

- » A_t is an adjustment to set the forecast unders and overs account in year t to zero.¹⁰ This true-up will be calculated based upon the unders and overs account in accordance with the method shown in section 4.4.

It includes:

$$\text{Unders and Overs True-up}_t = -(\text{Opening Balance}) * (1 + \text{CPI}_t)^{0.5}$$

Where:

$\text{Unders and Overs True-up}_t$ is the true-up for the balance of the unders and overs account in year t

Opening Balance is the opening balance of the unders and overs account in year t as calculated by the method shown in section 4.4.

CPI_t is the annual percentage change in the ABS Sydney All Groups consumer price index¹¹ from the March quarter in year $t-2$ to the March quarter in year $t-1$, calculated using the following method:

The ABS CPI Sydney All Groups, for the March quarter in financial year $t-1$
divided by
The ABS CPI Sydney All Groups, for the March quarter in financial year $t-2$
minus one.

- » H_t is an additional adjustment, which is used to clear the 30 June 2022 balance or deliver any clearance pathway established under section 4.5.

Annexure A describes TAHE's approach to adjusting individual price levels consistent with holding the above equations true.

4.4 The account true up description and method

The following entries will be included in unders and overs account true up for the most recently completed financial year ($t-2$), the current financial year ($t-1$) and the next financial year (t):

1. An opening balance for year $t-2$, year $t-1$ and year t . The 2022-23 opening balance is zero.¹²
2. An interest charge for one year on the opening balance for each financial year ($t-2$, $t-1$ and t). These adjustments are to be calculated using the CPI for each intervening year between financial year $t-2$ and year t .
3. The amount of revenue recovered from prices for the TAHE HVCN in respect of that year, less the full economic cost and additional adjustment for the year in question.

¹⁰ It does this via provide a true-up of unders and overs from the previous 2 years

¹¹ If the ABS does not or ceases to publish the index, then CPI will mean an index which TAHE considers is the best available alternative index.

¹² This establishes an account balance due to under- or over-recovery balances from 2022-23. The 30 June 2023 account balance of \$5,975,088 is cleared through the H-factor within the 2024-25 and 2025-26 price calculations.

4. An adjustment to the net amount in item 3 by six months of interest. These adjustments are to be calculated using CPI.
5. The total sum of items 1–4 to derive the closing balance for each year.

The approach will follow the same structure as provided in Table 1.

Table 1. Example calculation of unders and overs account (\$)

Step	Year t-2 (actual)	Year t-1 (estimate)	Year t (forecast)
CPI	7.28%	5.50%	
Opening Balance (i)	0	1,193,453	1,405,693
Interest on opening balance (ii)	0	86,832	77,329
Under/over recovery of revenue for financial year (iii) =	1,168,099	121,081	-1,444,079 (A _t)
+ Revenue from access charges	9,051,440 (actual p ⁱ _{t-2} * actual q ⁱ _{t-2})	8,223,690 (actual p ⁱ _{t-1} * estimated q ⁱ _{t-1})	4,578,429 (AR _t)
- Additional adjustment (H)	0	0	-2,987,544
- Full Economic Cost (FEC)	7,883,341 (revealed, IPART reviewed)	8,102,609 (estimated)	9,010,052 (forecast)
Interest on under/over recovery for financial year ¹³ (iv)	25,354	4,327	-39,189
Closing balance ((i) + (ii) + (iii) +(iv))	1,193,453	1,405,693	-246 Target is zero, or below (and as close to zero as possible)

Table notes:

1. The figures used in this table do not reflect any set of final numbers to be used to set prices in any year.
2. The year t closing balance must be equal to or below zero when setting prices each year and be as close to zero practicable.
3. Opening balance is the previous year's closing balance.
4. In this example, the opening account balance for year t (\$1,405,693) is 15.6 percent of the estimated year t FEC (\$9,010,544). In this instance, the clearance pathway is under 20 percent and would not be triggered.

4.5 Clearance pathway

In instances where the year t opening account balance to be cleared is more than 20 per cent of the year t full economic cost, further consideration needs to be given to the impact of the resulting price

¹³ Charged on a half year basis.

movement. Price volatility and prices that diverge significantly from cost can have negative impacts on efficient outcomes.

In these instances, the remaining balance that is in excess of 20 per cent would be dealt with as described below.

The clearance pathway includes the following features:

- » The 'residual balance' is the year t opening balance minus 20 percent of the full economic cost¹⁴
- » The clearance pathway only applies to the residual balance.
- » The residual balance is moved into the nearest future years so that a maximum of 10 percent of the full economic cost is moved into any single year until the residual balance is exhausted.
- » The residual balance is included in future H factors for clearance through the formulas described in sections 4.3 and 4.4.
- » The residual balance cleared in future years will be escalated by CPI (year ending March).

The operation of the clearance pathway is shown by way of example in Tables 2a and 2b.

Table 2a. Example establishment of residual balance

	\$(Year t)	Source	Notation
Full economic cost (year t)	9,000,000	As per section 4.1	a
10% of full economic cost	900,000	Calculated	$b = a * 0.1$
20% of full economic cost	1,800,000	Calculated	$c = a * 0.2$
Opening balance (year t)	4,000,000	Example for demonstration	d
Returned in year t	1,800,000	Calculated	c
Residual balance (for clearance)	2,200,000	Calculated	$e = d - c$

Table 2b. Example clearance pathway from residual balance within Table 2a

	Residual being cleared \$(Year t)	Notation	Residual balance \$(Year t)	Escalation of clearance amounts	Mechanism for clearance
Year t+1	900,000	$f = \min(b, e)$	1,300,000	$900,000 * (1 + CPI_t)$	Added to H_{t+1}
Year t+2	900,000	$g = \min(b, e-f)$	400,000	$900,000 * (1 + CPI_t) * (1 + CPI_{t+1})$	Added to H_{t+2}

¹⁴ The 20 percent of the full economic cost is returned in year t.

	Residual being cleared \$(Year t)	Notation	Residual balance \$(Year t)	Escalation of clearance amounts	Mechanism for clearance
Year t+3	400,000	$h = \min(b, e-f-g)$	0	$400,000 * (1 + CPI_t) * (1 + CPI_{t+1}) * (1 + CPI_{t+2})$	Added to H_{t+3}

4.6 30 June 2022 balance

As set out in section 3, TAHE has an outstanding balance as at 30 June 2022 that is also to be cleared via this policy. This will be given effect over two years through the H factor in section 4.3.

Half of the 30 June 2022 balance will be cleared in 2024-25 prices through the 2024-25 H factor with the second half cleared in 2025-26 prices through the 2025-26 H factor.

True-ups to correct for forecast volume error occur over the following two years via A_t (as demonstrated by the mechanism in Table 1).

4.7 Forecast and estimated quantities

Forecast quantities for year t will be developed by TAHE taking into account historical information and any available information from rail operators.

Estimated quantities for year t-1 will be estimated by TAHE. TAHE will use the most recently available actual data and project these forward to obtain an annual estimate.

For the avoidance of doubt, t-2 quantities will be the actual quantities available in, or derived from, TAHE's systems.

5. Implementing the policy

This policy will take effect immediately following IPART approval, subject to updated Access Agreements being agreed with relevant rail operators to enable the policy to be given effect in annual price changes.

The first year to implement the policy will be for 1 July 2024 to 30 June 2025 prices, which would be year t for the purposes of those years prices.

For 1 July 2024 to 30 June 2025 prices:

- » Year t-1 is 1 July 2023 to 30 June 2024; and
- » Year t-2 is 1 July 2022 to 30 June 2023.

This enables continuity from the clearance of the 30 June 2022 account balance.

6. Ongoing process timeframes

The key process timeline to provide prices for year t which deliver a zero (or near zero) unders and overs account balance or the agreed clearance pathway is outlined in Table 3.

Table 3. Timeframes

Step	Event	Timing
1	IPART draft decision published, which contains draft t-2 TAHE HVCN full economic cost.	January (expected)
2	March CPI available.	Late April
3	IPART final decision (contains final t-2 TAHE HVCN full economic cost).	May (expected)
4	TAHE provide prices to access seekers using CPI in year t and IPART final compliance decision of t-2 full economic cost. ¹⁵ TAHE to make available the unders and overs account table used to establish the revenue to set prices and any clearance pathway that results from this policy.	By 15 June

7. Related/supporting documents

The implementation and operation of this policy requires complementary Access Agreements with Access Seekers that allow for annual price adjustments as described within this policy.¹⁶

Changes to the Undertaking may require subsequential changes to this policy.

8. Cessation of this policy

The operation of this policy should be limited to the circumstances intended by the Undertaking.

The Undertaking requires an unders and overs policy be developed and published when TAHE establishes any relevant unders and overs account. The Undertaking requires TAHE keep an unders and overs account only where an access seeker or group of access seekers could potentially breach the ceiling test.

Consistent with the Undertaking's intent, TAHE will therefore propose to IPART that the need for this unders and overs policy would cease if the circumstances in section 8.1 arise.

8.1 Circumstances when TAHE will seek cessation of this policy

TAHE will propose to IPART for cessation of this policy if:

¹⁵ If IPART has not made a draft decision on TAHE's t-2 compliance, then TAHE will use the TAHE HVCN full economic cost within its compliance report.

¹⁶ This may include changes to price structures to isolate the TAHE HVCN prices and quantities from the remainder of the MRN.

- » price adjustments to address over-recovered account balances have worked through the unders and overs account adjustment (A_t) to true-up with actual volumes as demonstrated in the in Table 1 example;
- » the resulting revenue of unadjusted prices for the year is below eighty (80) percent of the full economic cost; and
- » there is no reason to consider the fall below eighty (80) percent of the full economic cost to be temporary.¹⁷

The price adjustments include:

- » the price adjustments in 2024-25 and 2025-26 to hand back the 30 June 2022 current account balance as described in section 4.6;
- » any price adjustments established under section 4.5 to return over-recovered account balances over more than one year. i.e. H_{t-2} and H_{t-1} and any future agreed values for H are greater than or equal to zero.

It is necessary to allow the price adjustments to work through the unders and overs account adjustment (A_t) to true-up with actual volumes as shown in the Table 1 example to ensure any Account over-recoveries are fully returned to access seekers.

9. Document control

TAHE's Head of Regulatory and Pricing is responsible for developing, updating and implementing this procedure.

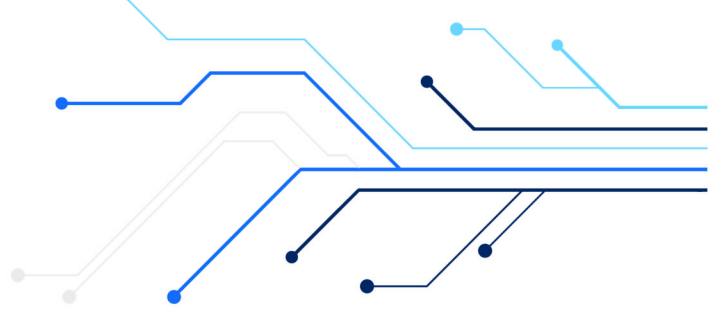
TAHE will conduct a post implementation review by 31 October 2026. This may trigger the need for a policy update. Following this, the policy will be reviewed at least every three (3) years. Policy updates are to be approved internally by TAHE consistent with its delegation's policy at the time of review and the revenue implications (if any) of the proposed updates. Policy updates will be submitted to IPART for approval prior to implementation.

Table 3. Document Control

Version	Summary of change	Date of version	Date of TAHE approval	Date of IPART approval
0.1	Initial issue for TAHE Board approval	9 May 2023	18 May 2023	N/A
0.2	For IPART approval	31 May 2023	N/A	

¹⁷ For example, a reasonable observer might expect an industrial dispute or maintenance issue at a power station that leads to lower coal volumes and TAHE HVCN revenue to be temporary.

Version	Summary of change	Date of version	Date of TAHE approval	Date of IPART approval
0.3	<p>For consultation prior to resubmission covering additional clarity on:</p> <ul style="list-style-type: none"> » the allocation of the unders and overs to individual users (addition of Annexure A), » how an invoice/rebate model would work should this be used under guided discretion clearance pathway (addition of Annexure B); and » the circumstances and process to determine when the policy would cease to apply (addition of new section 8). 	21 July 2023		
0.4	Clarity that the historical account balance will be cleared over two years and how to determine a majority of rail operator approval for a guided discretion clearance pathway	11 August 2023	9 August 2023	
0.5	Update approach to setting individual prices to recognise access seeker contribution to excess returns (as opposed to revenue). Adjust the threshold from 10% to 20%. Additional clarity on the cessation of the policy and further limiting discretion. Specify the first review date.	14 November 2023	21 November 2023	



Annexure A – Approach to setting individual prices

TAHE will set coal access prices for the TAHE HVCN each year consistent with the approach described within this Annexure.

Approach to individual coal access pricing

TAHE's approach to setting prices seeks to reflect the groups of access seekers contribution to revenue above the ceiling (full economic cost) in each year. For the TAHE HVCN, TAHE separates access seekers into two groups:

- » Coal freight rail operators; and
- » General freight rail operators.

TAHE's approach to individual pricing on the TAHE HVCN is:

- » The price change for each general freight price component is to be the same percentage change as for the equivalent general freight price component applied to the remainder of the Metropolitan Rail Network in that year.
- » Given the general freight price change from above, coal freight prices are to change to satisfy the two Allowed Revenue equations in section 4.3.
- » Individual coal prices will change by the same percentage (noting slight variances for rounding prices to two decimal places).