Queensland Competition Authority

Decision

Aurizon Network's reset Schedule F preliminary values

May 2023

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RESET SCHEDULE F PRELIMINARY VALUES—DECISION

Aurizon Network's proposal

On 29 July 2022, Aurizon Network submitted its proposed reset Schedule F preliminary values, in accordance with Part 6A of Aurizon Network's 2017 Access Undertaking (UT5). The reset Schedule F preliminary values include preliminary revisions to:

- Aurizon Network's allowable revenues
- Aurizon Network's reference tariff inputs
- gross tonne kilometre (gtk) forecasts.

Following its initial submission, Aurizon Network updated its reset Schedule F preliminary values on two occasions to account for recent regulatory decisions and updated forecasts.[1]

Our decision

Our decision is to approve Aurizon Network's updated reset Schedule F preliminary values.

We have conducted our assessment of Aurizon Network's proposed reset schedule F preliminary values in accordance with the framework outlined in UT5. Our reasons for approving Aurizon Network's updated reset Schedule F preliminary values are outlined throughout this decision and its appendices.

In assessing Aurizon Network's proposal, we consider that Aurizon Network's proposed approach for calculating the reset Schedule F preliminary values is appropriate, with the exception of the methodology proposed for calculating elements of the preliminary reset WACC.

Specifically, we do not consider that elements of the methodology to calculate the preliminary reset debt risk premium are appropriate for estimating the preliminary reset WACC. However, for the purpose of developing the reset schedule F preliminary values, we have applied Aurizon Network's proposed preliminary debt risk premium, noting that this is to be updated, in any event, when Aurizon Network submits its reset Schedule F values in July 2023.[2]

We consider Aurizon Network's proposed updates to the reset schedule F preliminary values are appropriate. These updates account for recent regulatory decisions and updated forecasts, which we consider provide for an improved estimate of the reset Schedule F preliminary values. UT5 would otherwise provide for Aurizon Network's allowable revenues and reference tariff inputs to be revised to reflect such regulatory decisions and updated forecasts, under separate regulatory processes.

Next steps

Within 30 days of making this decision, Aurizon Network is to submit to us an update of Schedule K of UT5 to include forecast maximum allowable revenue for the period of 1 July 2023 to 30 June 2027, applying the

[1] Aurizon Network, subs. 5 and 8.

[2] The debt risk premium is one of the input values that is to be revised when Aurizon Network subsequently submits its reset Schedule F values by 31 July 2023. In accordance with cl. 6A.7(b)(i)(B), we will assess Aurizon Network's proposed reset WACC as part of this process, based on the methodology that we have determined appropriate, as set out in this decision (see section 5.1).

amounts approved in this decision.[3] Schedule F of UT5 is to be amended to include Aurizon Network's updated reset Schedule F preliminary values by 1 July 2023.[4]

Aurizon Network must also submit, for our assessment, revisions to the reset Schedule F preliminary values to reflect its calculation of the reset WACC and the reset inflation rate, prior to 31 July 2023.[5] UT5 provides for any differences in allowable revenues when moving from the assessment of preliminary values to the final reset values to be dealt with under the yearly revenue adjustment process.[6]

[3] UT5, Schedule F, cl. 4.1(h).
[4] UT5, cl. 6A.1.
[5] UT5, cl. 6A.5.
[6] UT5, schedule F, cl. 4.3(ca).

1 INTRODUCTION

1.1 Background

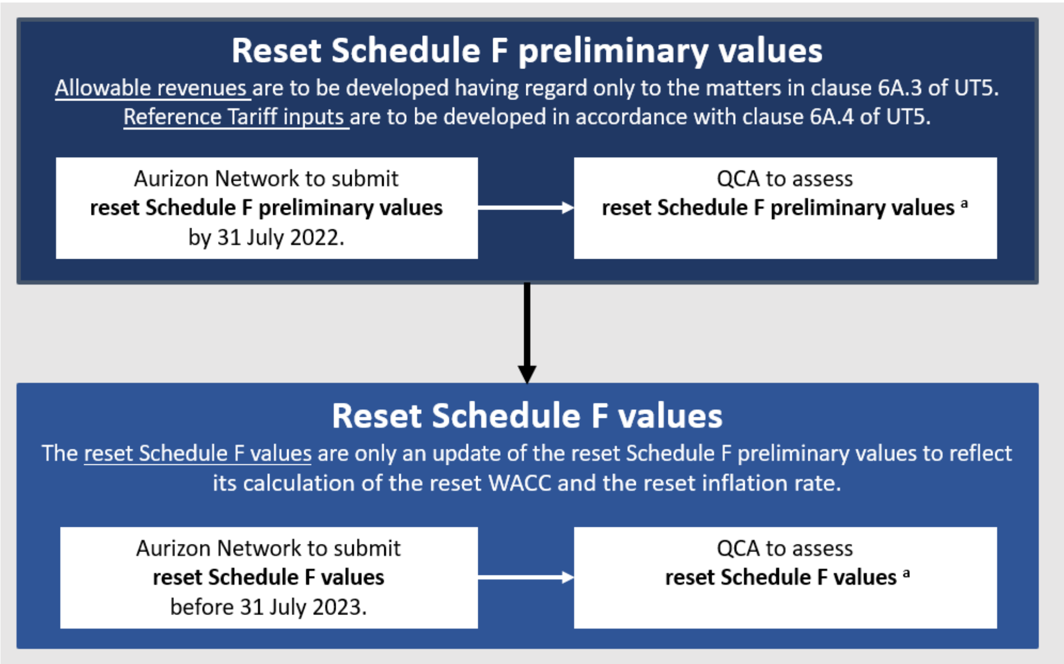
On 21 February 2019, we approved Aurizon Network's 2017 access undertaking (UT5), which had a terminating date of 30 June 2021.

We subsequently approved a draft amending access undertaking (DAAU), which introduced a package of amendments to the approved UT5 arrangements.[7] Amongst other things, the term of UT5 was extended until 30 June 2027 and included processes to update Schedule F to include allowable revenues and reference tariffs for 2023–24 to 2026–27 (the reset period).[8] In approving the DAAU, we had regard to the fact that the amendments were developed in consultation with a broad number of coal users, who supported the amendments.

Process to update Schedule F of UT5

The process for updating Schedule F values is outlined in Part 6A of UT5 (see Figure 1).

Figure 1 UT5 process for updating Schedule F values



a If we refuse to approve any of the values, we must give Aurizon Network a notice which sets out our decision (including a statement of reasons and the way in which we consider the values should be amended) and a direction to Aurizon Network to resubmit the values. Aurizon Network must, in the absence of a manifest error, resubmit the values as directed in our notice.

Source: UT5, cl. 6A.7(e).

The initial step involves our assessment of Aurizon Network's proposed reset Schedule F preliminary values. These are:

- Aurizon Network's allowable revenues (preliminary allowable revenues)

[7] See QCA, *Decision: Aurizon Network's Revised UT5 draft amending access undertaking*, December 2019.
[8] UT5, cl. 6A.1(a).

- Aurizon Network's reference tariff inputs (preliminary reference tariff inputs)
- gtk forecasts (preliminary volume forecasts).

UT5 requires that the preliminary allowable revenues be developed using only specified inputs.[9] In some cases, UT5 also specifies how particular inputs must be calculated. These include the reset WACC, the reset inflation rate, the forecast indirect maintenance cost allowance, and the non-electric operating expenditure allowance (referred to as the preliminary limited update inputs).[10]

In the second step, Aurizon Network will submit proposed reset Schedule F values for assessment—based on the approved preliminary values but with revisions to reflect updates to the reset WACC and the reset inflation rate.[11] The recalculated reset WACC will also affect Aurizon Network's indirect maintenance cost[12], working capital and tax allowances for the reset period.

1.2 Our regulatory task—reset schedule F preliminary values

In assessing Aurizon Network's proposed reset schedule F preliminary values, we:

- must approve Aurizon Network's use of the preliminary limited update inputs to the extent we are satisfied they have been calculated correctly and used in accordance with UT5[13]
- may approve all other matters, calculations, inputs and methodologies used in the calculation of the reset Schedule F preliminary values if we are satisfied they are appropriate.[14]

In assessing the appropriateness of matters relevant to the development of the reset Schedule F preliminary values, we are to have regard to, but are not bound by, the approaches taken to the development of the corresponding values for the years prior to the reset period.[15]

Approach to our assessment

We have conducted our assessment of Aurizon Network's proposed reset schedule F preliminary values in accordance with the framework outlined in UT5. This includes publishing Aurizon Network's proposal, including updates, and requesting and considering submissions from stakeholders.

Where UT5 specifies that a particular method or approach is to be used to develop the reset Schedule F preliminary values, we consider it appropriate to apply that approach where possible. The UT5 arrangements were approved, with agreement from a broad number of coal users, as part of the UT5 DAAU.

In this regard, Aurizon Network considered that the process for determining the reset Schedule F preliminary values is generally mechanistic in nature, with most inputs calculated using a methodology that is clearly defined within UT5.[16] The QRC also submitted that the intention of

[9] UT5, cl. 6A.3.
[10] UT5, cl. 6A.2(b).
[11] UT5, cl. 6A.5.
[12] The indirect maintenance cost allowance provides for Aurizon Network to obtain a return on fixed assets and inventory required to undertake maintenance activities.
[13] UT5, cl. 6A.7(b)(i).
[14] UT5, cl. 6A.7(b)(ii).
[15] UT5, cl. 6A.7(c).
[16] Aurizon Network, sub. 1, p. 4.

Part 6A of UT5 was to provide clear processes by which the reset Schedule F preliminary values would be calculated.[17]

Where a method or approach has not been defined in UT5, or judgement is required in considering its application, we have assessed the appropriateness of Aurizon Network's proposed approach to calculating that aspect of the reset Schedule F preliminary values. In doing so, we have had regard to the approach used to develop the corresponding values in UT5 for the years prior to the reset period.[18]

Noting that our assessment is undertaken within the framework specified by Part 6A of UT5, this decision should not be interpreted as precedent for what we consider appropriate if these matters were considered afresh as part of an investigation undertaken under the QCA Act.[19] For instance, our recent position papers on inflation forecasting[20] and the rate of return[21] set out a different approach that we consider preferable for calculating these parameters.

In considering whether to approve the reset Schedule F preliminary values, we have considered all supporting information Aurizon Network provided and all submissions we received.

Aurizon Network has provided financial models in support of its proposed preliminary allowable revenues and preliminary reference tariff inputs. We acknowledge that Aurizon Network's calculations rely on modelling and information that is not publicly available. In making this decision, we have reviewed Aurizon Network's modelling approach, including assumptions and underlying data, used to develop the reset Schedule F preliminary values.

1.3 Aurizon Network's proposal

On 29 July 2022, Aurizon Network submitted its proposed reset Schedule F preliminary values, in accordance with Part 6A of UT5. Aurizon Network then updated a number of the inputs used to develop the preliminary allowable revenues prior to us making a final decision on the reset Schedule F preliminary values.

Aurizon Network's preliminary values are set out in the relevant sections throughout this decision:

- Part A assesses Aurizon Network's proposed preliminary allowable revenues (chapters 2–5).
- Part B assesses Aurizon Network's proposed preliminary reference tariff inputs (chapter 6).
- Part C assesses Aurizon Network's proposed preliminary volume forecasts (chapter 7).

1.4 Our draft decision

On 17 November 2022, we published a draft decision that assessed whether Aurizon Network had applied an appropriate methodology for developing the reset Schedule F preliminary values.[22]

We considered that Aurizon Network had proposed appropriate methodologies for calculating the majority of inputs used to develop its proposed reset Schedule F preliminary values. However,

[17] QRC, sub. 2, p. 1.
[18] UT5, cl. 6A.7(c).
[19] The legislative framework in the QCA Act sets out the statutory requirements for assessing an access proposal.
[20] QCA, *Inflation forecasting*, final position paper, October 2021.
[21] QCA, *Rate of return review*, final report, November 2021.
[22] QCA, *Draft decision: Aurizon Network's reset Schedule F preliminary values*, November 2022.

we did not consider Aurizon Network's proposed methodology for calculating the reset WACC, and in particular the debt risk premium, was appropriate—and set out the methodology we considered appropriate.

We also considered it appropriate for Aurizon Network to update the preliminary allowable revenues, reference tariffs and volume forecasts where better information becomes available.[23]

Stakeholder submissions

In response to our draft decision, we received submissions from the QRC and Aurizon Network:

- Aurizon Network sought further clarification on certain matters, but did not disagree with the methodology that the QCA considered appropriate for estimating the debt risk premium. Aurizon Network outlined its proposed next steps for updating the various revenue and pricing inputs for the UT5 reset period.[24]
- The QRC supported the draft decision and supported updating reset Schedule F preliminary values to reflect recent regulatory decisions and updated forecasts.[25]

Following on from this, Aurizon Network submitted two updates to its reset Schedule F preliminary values to account for recent regulatory decisions and updated forecasts.[26]

We received submissions from the QRC and Bravus responding to Aurizon Network's proposed updates. The QRC reiterated its support for updating the reset Schedule F preliminary values to reflect recent regulatory decisions and updated forecasts. However, both parties raised concerns regarding Aurizon Network's proposed updates to the volume forecasts.[27]

Our consideration of stakeholder submissions received is outlined in the relevant sections below.

[23] This included outcomes of regulatory decisions and other processes (such as the maintenance and renewal strategies and budgets process and engagement with customers to develop updated, customer-informed system forecasts) and updated pricing advice from third parties (including the independent expert and transmission network service providers).
[24] Aurizon Network, sub. 4.
[25] QRC, sub. 3, p. 1.
[26] Aurizon Network, subs. 5 and 8.
[27] QRC, sub. 7; Bravus, sub. 6.

2 PART A: PRELIMINARY ALLOWABLE REVENUES

Aurizon Network's proposal

As part of the reset Schedule F preliminary values, Aurizon Network is to submit the allowable revenues for each year of the reset period. Aurizon Network's updated preliminary allowable revenues are presented in Table 1.

Table 1 Aurizon Network's updated preliminary allowable revenues ($m)

Building block component	2023/24	2024/25	2025/26	2026/27
Return on capital[a]	493.7	498.9	504.7	508.1
Depreciation (less inflation)	249.5	265.8	297.6	310.9
Direct maintenance costs	164.1	174.9	175.8	179.5
Indirect maintenance costs	17.5	17.3	16.7	16.4
Non-electric operating expenditure	135.1	135.1	135.1	135.1
Electric operating expenditure	72.0	72.0	72.0	72.0
Tax allowance	49.2	50.5	54.9	55.6
Adjustments[b]	62.6	31.6	32.3	33.1
Total	**1,243.8**	**1,246.0**	**1,289.1**	**1,310.7**

a Working capital is added to return on capital. b Adjustments reflect the approved allowable revenue adjustments, as outlined in this decision.

Source: Values are based on Aurizon Network's pricing model, submitted 27 April 2023. A breakdown of Aurizon Network's preliminary allowable revenues allocated to the AT1-5 tariff components for each system is provided in Aurizon Network, sub. 5, pp. 5–6; sub. 8, pp. 4–5.

QCA analysis

UT5 requires that the preliminary allowable revenues are to be developed using only those inputs listed in clause 6A.3 of UT5.[28] Consistent with this, we have assessed Aurizon Network's proposed approach for calculating these inputs (see Figure 2).

We consider Aurizon Network's updated preliminary allowable revenues are appropriate for the purpose of establishing the reset Schedule F preliminary values.

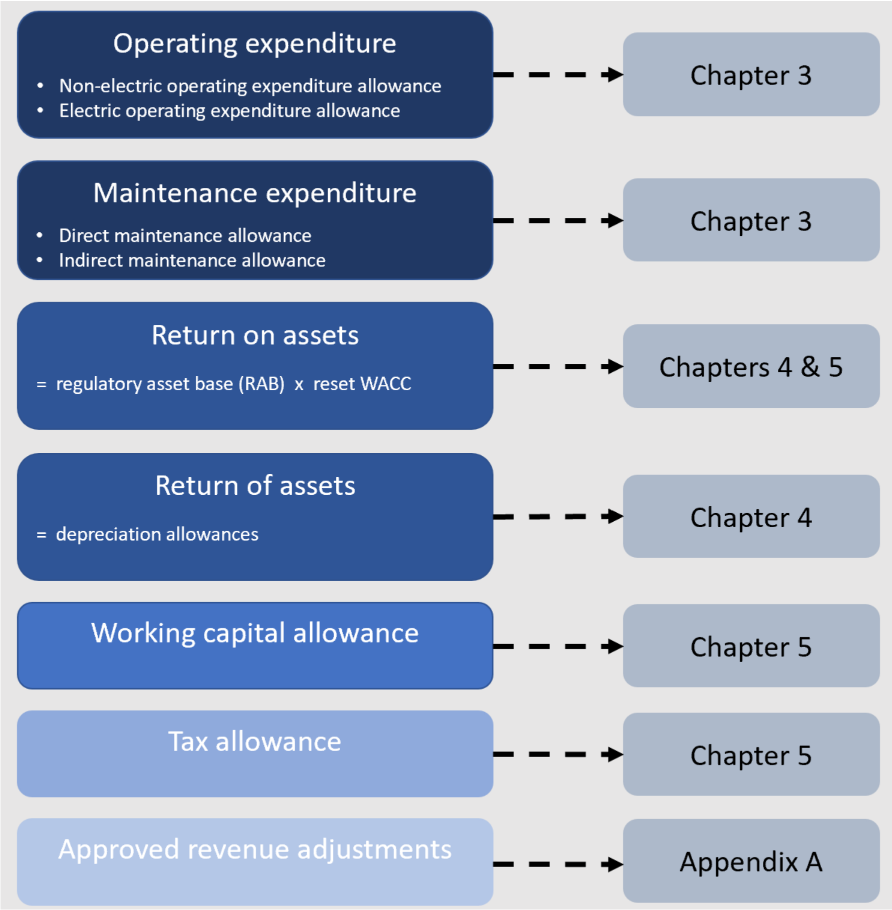
We consider that Aurizon Network's proposed approach for calculating the inputs used to develop its proposed preliminary allowable revenues is appropriate, with the exception of the proposed methodology for calculating elements of the reset WACC. Specifically, we do not consider that elements of the methodology to calculate the preliminary reset debt risk premium are appropriate for estimating the preliminary reset WACC.

We have nevertheless applied Aurizon Network's proposed preliminary debt risk premium (and therefore preliminary reset WACC) for the purpose of developing the reset schedule F preliminary values. The debt risk premium is one of the input values that is to be revised when Aurizon Network subsequently submits its reset Schedule F values by 31 July 2023.[29] We will assess

[28] UT5, cl. 6A.3.
[29] UT5, cl. 6A.5.

Aurizon Network's proposed reset WACC as part of this process, based on the methodology that we have determined appropriate, as set out in this decision (see section 5.1).[30]

Figure 2 Inputs used to establish the preliminary allowable revenues



Over the course of our assessment, Aurizon Network updated a number of the inputs used to develop the preliminary allowable revenues to account for recent regulatory decisions and updated forecasts.

We consider it appropriate to calculate the revenue inputs with reference to recent regulatory decisions and updated forecasts where appropriate, as this provides for an improved estimate of the preliminary allowable revenues for the reset period. Furthermore, UT5 would otherwise provide for Aurizon Network's allowable revenues inputs to be revised to reflect such regulatory decisions and updated forecasts, under separate regulatory processes.

The QRC supported updating the reset Schedule F preliminary values to reflect recent regulatory decisions and updated forecasts, and considered Aurizon Network’s updates to the preliminary allowable revenues sought to do this.[31]

Approved allowable revenue adjustments

In accordance with UT5, we consider it appropriate to account for approved adjustments to Aurizon Network's allowable revenue in developing the preliminary allowable revenues.[32]

[30] UT5, cl. 6A.7(b)(i)(B).
[31] QRC, sub. 7, p. 1.
[32] UT5, cl. 6A.3(l).

Aurizon Network proposed the following allowable revenue adjustments, which have been approved as part of previous regulatory processes:

- the UT4 capital carryover adjustment to reconcile the revenue differences between the forecast and actual capital expenditure for the UT4 regulatory term[33]
- an adjustment to reconcile differences between 2017–18 and 2018–19 transitional tariffs and our approval of UT5[34]
- an adjustment to recover allowable revenues associated with the Advanced Planning and Scheduling (APS) system over an extended period, until 2026–27[35]
- an adjustment to recover the difference between Aurizon Network's allowable revenue for 2021-22 and the total actual revenue collected in that year from the approved AT2–AT5 reference tariffs[36]
- an adjustment to reconcile the difference in allowable revenue between the capital indicator and approved capital expenditure for 2021-22.[37]

Appendix A of this decision outlines the approved allowable revenue adjustment amounts for developing the preliminary allowable revenues.

[33] This adjustment was approved as part of UT5 and extends until the end of the regulatory period: Aurizon Network, sub. 1, p. 11.

[34] Aurizon Network received approval of transitional allowable revenues and reference tariffs, which were used to determine access charges during our 2017 DAU investigation: Aurizon Network, sub. 1, pp. 42-43.

[35] As part of the annual review of reference tariffs for 2022–23, we approved the recovery of allowable revenues associated with APS on a forward-looking basis from 2022–23 to 2026–27, rather than full recovery in 2022–23. This reduced the impact on 2022–23 revenues.

[36] On 23 March 2023, we approved Aurizon Network's 2021–22 revenue adjustment amount of $35.8 million under cl. 4.3(u) of schedule F of UT5. Aurizon Network, sub. 5, pp. 23-24.

[37] On 23 March 2023, we approved Aurizon Network's amended 2021–22 capital expenditure claim of $253.6 million for inclusion into its regulatory asset base. Aurizon Network, sub. 5, pp. 24-25; sub. 8, pp. 2-3.

3 OPERATING AND MAINTENANCE EXPENDITURE ALLOWANCE

3.1 Non-electric operating expenditure allowance

Aurizon Network's proposal

Aurizon Network's proposed non-electric operating expenditure allowance for the reset period[38] is outlined in Table 2.

Table 2 Aurizon Network's proposed non-electric operating expenditure allowance ($m)

System	*2023/24*	*2024/25*	*2025/26*	*2026/27*
Blackwater	53.9	53.9	53.9	53.9
Goonyella	58.8	58.8	58.8	58.8
Moura	5.8	5.8	5.8	5.8
Newlands	3.6	3.6	3.6	3.6
GAPE	12.9	12.9	12.9	12.9
Total	**135.1**	**135.1**	**135.1**	**135.1**

Source: Aurizon Network, sub. 1, p. 33.

QCA analysis

We consider Aurizon Network's proposed non-electric operating expenditure allowance is appropriate for developing the preliminary allowable revenues.

Aurizon Network has used the non-electric operating expenditure costs used to calculate reference tariffs for the year ending 30 June 2022, which were approved as part of the 2022–23 annual review of reference tariffs.[39] We consider that using this estimate for the non-electric operating expenditure costs is consistent with UT5.[40]

3.2 Electric operating expenditure allowance

Aurizon Network's proposal

Aurizon Network proposed an electric operating expenditure allowance for the reset period[41] based on its:

- forecast cost of transporting electricity from generators to overhead power infrastructure via connections with the Powerlink and Ergon Energy networks (transmission network service provider (TNSP) costs)

[38] UT5, cl. 6A.3(e).
[39] QCA, *Decision notice: Annual review of reference tariffs 2022–23*, May 2022.
[40] UT5, Part 12. UT5 specifies that the non-electric operating expenditure allowance used in the development of reset Schedule F preliminary values is the non-electric operating expenditure costs used in calculating reference tariffs and allowable revenues for the year ending 30 June 2022.
[41] UT5, cl. 6A.3(c).

- forecast insurance costs for feeder stations.[42]

An electric operating expenditure allowance is not applicable for the Moura system, the Newlands system or GAPE.

TNSP costs

Aurizon Network initially used the TNSP cost forecast that was approved as part of the 2022–23 annual review of reference tariffs to develop its preliminary allowable revenues.[43] However, Aurizon Network updated its TNSP cost forecast to reflect a notification of prescribed transmission prices for 2023-24, received on 20 March 2023.[44]

Aurizon Network's updated TNSP cost forecast is outlined in Table 3.

Table 3 Aurizon Network's TNSP cost forecasts ($m)

System	*2023/24*	*2024/25*	*2025/26*	*2026/27*
Blackwater	38.7	38.7	38.7	38.7
Goonyella	32.8	32.8	32.8	32.8
Total	**71.5**	**71.5**	**71.5**	**71.5**

Source: Aurizon Network, sub. 8, p. 3.

QCA analysis

Electric transmission and connection charges are determined according to the regulatory framework and oversight by the Australian Energy Regulator.

We consider Aurizon Network's updated TNSP cost forecast is appropriate for developing the preliminary allowable revenues. The notification of prescribed transmission prices for 2023-24 represents the most recent and accurate information available for Aurizon Network to estimate its TNSP costs. We have verified that Aurizon Network's TNSP cost forecast reflects the notification of prescribed transmission prices for 2023-24.

Insurance costs for feeder stations

Aurizon Network used the insurance costs for feeder stations that were approved as part of the 2022–23 annual review of reference tariffs to develop its preliminary allowable revenues.[45]

Aurizon Network's forecast insurance costs for electric feeder stations are outlined in Table 4.

Table 4 Aurizon Network's forecast insurance costs for electric feeder stations ($m)

System	*2023/24*	*2024/25*	*2025/26*	*2026/27*
Blackwater	0.18	0.18	0.18	0.18
Goonyella	0.28	0.28	0.28	0.28
Total	**0.47**	**0.47**	**0.47**	**0.47**

Source: Aurizon Network, sub.1, p. 41.

[42] Aurizon Network, sub. 1, p. 40. The electric operating expenditure allowance does not include the costs of purchasing electric energy supplied to electric traction trains.
[43] QCA, *Decision notice: Annual review of reference tariffs 2022–23*, May 2022.
[44] Aurizon Network, sub. 1, p. 40; sub. 8, p. 1, 3.
[45] QCA, *Decision notice: Annual review of reference tariffs 2022–23*, May 2022.

QCA analysis

We consider Aurizon Network's forecast insurance costs for electric feeder stations are appropriate for developing the preliminary allowable revenues. Aurizon Network's forecast reflects past regulatory decisions and the best information available at the time of Aurizon Network's submission.

3.3 Forecast direct maintenance cost allowance

Aurizon Network's proposal

Aurizon Network proposed to forecast a direct maintenance cost allowance for the reset period[46] based on the four-year direct maintenance cost forecasts outlined for each of the coal systems in the maintenance and renewal strategies and budget (MRSB) for 2023–24.[47]

At the time Aurizon Network submitted its proposed reset Schedule F preliminary values, the 2023–24 MRSB and associated maintenance indicator had not yet been approved.[48] Aurizon Network updated its forecast of direct maintenance costs in February 2023, following the approval process for the 2023–24 MRSB.

The four-year direct maintenance cost forecast for each of the coal systems in the MRSB for 2023–24 is outlined in Table 5.

Table 5 Four-year direct maintenance cost forecast outlined in the 2023-24 MRSB ($m)

System	*2023/24*	*2024/25*	*2025/26*	*2026/27*
Non-electric				
Blackwater	62.9	68.1	68.3	69.6
Goonyella	59.9	63.0	64.0	64.7
Moura	13.2	13.1	13.6	13.6
Newlands	5.1	5.7	5.5	5.9
GAPE	8.7	9.7	9.3	10.1
Total (non-electric)	**149.7**	**159.5**	**160.7**	**164.0**
Electric				
Blackwater	7.0	7.2	7.4	7.5
Goonyella	7.4	8.1	7.7	7.9
Total (electric)	**14.4**	**15.4**	**15.1**	**15.5**

Note: Aurizon Network confirmed that these values are consistent with the model used for the FY24 MRSB.

Source: Aurizon Network, Central Queensland Coal Network FY24 Final Draft Proposal Maintenance and Renewals Strategies and Budgets, 21 January 2023. Aurizon Network, response to information requested, 18 April 2023.

[46] UT5, cl. 6A.3(g).
[47] Aurizon Network, sub. 1 p. 11; sub. 5, p. 20.
[48] The maintenance indicator was developed following the approval process for the MRSB for 2023–24.

QCA analysis

For the reset period, a maintenance indicator is to be applied as a proxy for Aurizon Network's direct maintenance cost allowance.[49]

We consider it appropriate to use the four-year direct maintenance cost forecasts in the 2023-24 MRSB, which includes the 2023–24 maintenance indicator, to forecast the direct maintenance cost allowance for developing the preliminary allowable revenues. We consider that this approach is consistent with UT5, and the forecast costs reflect the best information available.[50]

3.4 Forecast indirect maintenance cost allowance

Aurizon Network's proposal

Aurizon Network's proposed indirect maintenance cost allowance for the reset period[51] is based on its:

- forecast cost base of the relevant plant and inventory at the start of each financial year for the reset period
- preliminary reset WACC.

Aurizon Network allocated the return on plant and inventory between the coal systems in proportion to direct maintenance spend in each year of the reset period.[52]

Aurizon Network's proposed indirect maintenance cost allowance is outlined in Table 6.

Table 6 Aurizon Network's proposed indirect maintenance cost allowance ($m)

System	*2023/24*	*2024/25*	*2025/26*	*2026/27*
Non-electric				
Blackwater	7.6	7.5	7.2	7.1
Goonyella	7.7	7.6	7.3	7.1
Moura	1.0	1.0	1.0	1.0
Newlands	0.5	0.5	0.4	0.4
GAPE	0.8	0.8	0.7	0.7
Total	**17.5**	**17.3**	**16.7**	**16.4**

Source: Aurizon Network, sub. 1, p. 33.

Aurizon Network will update the indirect maintenance cost allowance prior to 31 July 2023 to reflect its proposed reset WACC.[53]

[49] Aurizon Network's maintenance indicator is developed on an annual basis, through a process that establishes MRSBs with customer involvement. We then have to determine (ex post) the extent to which annual maintenance cost claims are consistent with an approved MRSB for that year, with adjustments to reference tariffs to reflect approved maintenance expenditure.
[50] UT5 specifies that in forecasting maximum allowable revenue for the reset period, Aurizon Network is to apply the principle that the maintenance indicator is the amount applicable in 2023–24, as determined under cl. 7A.11 of UT5 (UT5, sch. F, cl. 4.1(h)(i)).
[51] UT5, cl. 6A.3(f).
[52] Aurizon Network, sub. 1, pp. 34–35.
[53] Aurizon Network, sub. 5, pp. 9–10.

QCA analysis

The indirect maintenance cost allowance provides for Aurizon Network to obtain a return on fixed assets and inventory required to undertake maintenance activities.

We consider Aurizon Network's proposed indirect maintenance cost allowance is appropriate for developing the preliminary allowable revenues.

We consider that Aurizon Network's proposed approach for estimating its indirect maintenance cost allowance is consistent with UT5.[54]

We have assessed Aurizon Network's forecast cost base of the relevant plant and inventory for the reset period (see below). We consider this provides for a good estimate of Aurizon Network's fixed maintenance assets required during the reset period, from which to calculate its forecast indirect maintenance cost allowance.

Forecast cost base of relevant plant

We consider that Aurizon Network's forecast cost base of the relevant plant is reasonable for the purpose of calculating the indirect maintenance cost allowance for the reset period.

In determining the asset base of the relevant plant for each year in the reset period, Aurizon Network has:

- used the written down value of existing assets for the relevant plant and equipment from its fixed asset register
- forecast expenditure on new assets for 2022–23 to 2026–27
- depreciated the asset base for each year until the end of the reset period, accounting for the remaining useful lives of those assets.

This is consistent with the approach used to forecast the cost base of the relevant plant in UT5 for the years prior to the reset period.

Aurizon Network's proposed opening asset value for the relevant plant and equipment for the reset period is outlined in Table 7. This asset base has increased from that forecast for the first four years of UT5[55], accounting for new acquisitions in 2021–22 and 2022–23 and forecast additional spend incurred during the reset period.

Table 7 Aurizon Network's proposed opening asset value for the relevant plant ($m)[56]

	2023/24	*2024/25*	*2025/26*	*2026/27*
Opening asset value	182.8	178.6	170.6	166.1

Source: Aurizon Network, sub. 1, p. 34.

Aurizon Network has undertaken additional purchases in 2021–22 and 2022–23 relating to the replacement of assets, where assets had reached end of life or where Aurizon Network is giving effect to a purchasing/disposal policy. This included the replacement of road rail vehicles, light vehicles, motor vehicle trucks, earthmoving equipment (including excavators and loaders) and

[54] UT5, Part 12.

[55] As part of our 2017 DAU investigation, we approved Aurizon Network's indirect maintenance cost allowance based on its forecast asset base up to 2020–21.

[56] We have reviewed the asset base register compiled by Aurizon Network of all plant used to deliver maintenance activity during the reset period.

minor capital (tools and equipment) across disciplines. These additional purchases were not previously included in the asset base register for UT5.

Aurizon Network's forecast additional spend incurred during the reset period reflects Aurizon Network's relevant purchasing policies or completed business cases supporting the overhaul of existing plant. Forecast additional spend largely relates to:

- the acquisition of truck and vehicle replacements
- overhaul costs of ballast wagons and track-laying machine
- the progressive replacement of sleeper wagons
- forecast minor capital expenses across disciplines, which are informed by historical spend.[57]

Forecast cost base of relevant inventory

We consider that Aurizon Network's forecast cost base of relevant inventory is reasonable for the purpose of calculating the indirect maintenance allowance for the reset period.

Aurizon Network has applied the following methodology to forecast the level of stock on hand that is expected to be required for maintenance purposes:

- Forecast total below rail inventory holdings for each year of the reset period (Aurizon Network's forecast inventory holdings are outlined in Table 8).
- Identify inventory associated with central Queensland coal network (CQCN) maintenance tasks based on actual monthly inventory consumption (Aurizon Network identified a maintenance inventory consumption rate of 43.3%).
- Apply the maintenance inventory consumption rate to the forecast total below rail inventory holdings to calculate the level of stock on hand that is expected to be required for maintenance purposes.[58]

Table 8 Aurizon Network's forecast inventory holdings ($m)

	2023/24	*2024/25*	*2025/26*	*2026/27*
Opening asset value	74.7	76.1	78.1	79.8

Source: Aurizon Network, sub. 1, p. 35.

This is consistent with the approach used to forecast the cost base of the relevant inventory in UT5 for the years prior to the reset period.

However, the required level of inventory holdings has increased from that forecast for 2020–21 as part of our approval of UT5. Aurizon Network said that this is due, in part, to the forecast level of inventory holdings approved for UT5 being based on data and assumptions from approximately 2016 and not accounting for changes in those levels during 2021–22 and 2022–23. In this regard, Aurizon Network said that it had increased its overall inventory level (to mitigate potential impacts from supply chain delays and disruptions) and had observed increases in the cost of key inputs (Box 1).

We consider Aurizon Network's forecast of inventory holdings for the reset period to be reasonable, noting:

[57] Aurizon Network, *response to information requested*, 14 October 2022.
[58] Aurizon Network, sub. 1, p. 35.

- the actual inventory consumption rate for maintenance activities in 2021–22 and 2022–23 and input costs reflect more recent information and experiences
- forecast inventory holdings from 2023–24 have relied on the activity forecasts as per the 2022–23 MRSB and an assumed cost escalation of 2.5%.

Box 1: Aurizon Network's increase in inventory holdings for 2021–22 and 2022–23

Aurizon Network said that for 2021–22 and 2022–23, it has seen an increase in overall inventory holdings relating to:

- signalling and telecommunications—the progressive rollout of modernised signalling and equipment has increased the amount and variety of critical spares that must be held to mitigate the risk that service continuity cannot be maintained
- sleepers—the level of safety stock was reviewed and ultimately increased following a derailment at Duaringa, which required the replacement of approximately 14,500 sleepers
- machine spares—Aurizon Network is currently holding critical spares for ballast undercutting machines to ensure that production can be maximised during planned possessions, given ballast undercutting is an access-intensive activity.

Additionally, Aurizon Network has increased its inventory levels and machine spares in an effort to mitigate the potential downstream impacts on CQCN operations resulting from supply chain delays and disruption. Aurizon Network has experienced an increase in inventory delivery delays, which have required additional inventory purchases to mitigate the risk of operational disruption resulting from stock availability.

The cost of recent rail shipments has also increased due to higher steel prices. For 2022–23, Aurizon Network's cost escalation of inventory categories was based on market observations and data.

Source: Aurizon Network, sub. 1, p. 35; Aurizon Network, response to information requested, 2 September 2022.

4 REGULATORY ASSET BASE AND DEPRECIATION ALLOWANCE

4.1 Approach for estimating the regulatory asset base

Aurizon Network proposal

Aurizon Network proposed to estimate the regulatory asset base (RAB) values for the reset period[59] by rolling forward the previously approved RAB values to reflect capital expenditure, inflation and depreciation of the asset base. Aurizon Network's proposed approach to estimate the roll-forward of the RAB values is outlined in Table 9.

Table 9 Aurizon Network's proposed approach to estimate the RAB values

	FY2022 and FY2023	***The reset period***
Depreciation of the RAB	Depreciation rates of new assets are based on endorsed asset lives consistent with UT5[60] and a continuation of the rolling 20-year asset life, which reset at the beginning of UT5.	Depreciation rates of new assets are based on endorsed asset lives consistent with UT5, and a rolling 20-year asset life, which has been reset from 2023–24.
Forecast capital expenditure	Based on the capital expenditure forecasts outlined in the 2021–22 maintenance and renewals strategy and budget (MRSB) and 2022–23 MRSB respectively.	Forecast capital expenditure for the reset period (see section 4.2).
Indexation of the RAB	The RBA's inflation forecast as outlined in the RBA Statement of Monetary Policy, May 2022.[61]	Forecast inflation for the reset period (see section 4.3).

Source: Aurizon Network, sub. 1, pp. 10, 32.

Aurizon Network also updated its forecast RAB values to have regard to recently approved regulatory decisions and updated information, including:

- Aurizon Network's Minerva DAAU[62]
- our final decision on Aurizon Network's 2021-22 capital expenditure claim[63]
- updated inflation forecasts from the RBA[64]
- the capital expenditure forecasts for the reset period outlined in the 2023-24 MRSB.[65]

Aurizon Network's updated forecast RAB values are outlined in Table 10.

[59] UT5, cl. 6A.3(d).
[60] See Appendix E of QCA, *Decision: Aurizon Network's 2017 draft access undertaking*, December 2018.
[61] RBA, *Statement on Monetary Policy*, May 2022.
[62] See QCA, *Decision notice: Aurizon Network's Minerva DAAU—final decision*, 16 February 2023.
[63] See QCA, *Decision notice: Aurizon Network's 2021-22 capital expenditure claim*, 23 March 2023.
[64] Aurizon Network applied an inflation rate of 7.3% for 2021-22 to reflect actual CPI outcomes for the year and an inflation rate forecast of 6.75% for 2022-23 to reflect the RBA's inflation forecast in the February 2023 Statement on Monetary Policy.
[65] Aurizon Network, sub. 5, pp. 16-19; sub. 8, p. 2.

Table 10 Aurizon Network's updated forecast RAB values ($ '000, nominal)

	2021/22	***2022/23***	***2023/24***	***2024/25***	***2025/26***	***2026/27***
Non-electric assets						
Opening asset value	5,176.4	5,347.9	5,538.5	5,598.4	5,674.7	5,737.0
Capital expenditure	236.3	261.6	274.3	303.6	317.9	310.9
Inflationary gain	393.0	377.8	187.6	191.2	194.9	197.6
Depreciation	445.1	448.7	402.1	418.4	450.6	461.6
Closing asset value	5,360.6	5,538.5	5,598.4	5,674.7	5,737.0	5,783.8
Electric assets						
Opening asset value	606.6	615.0	623.3	609.5	597.3	592.9
Capital expenditure	10.1	16.3	15.7	20.1	31.1	41.8
Inflationary gain	45.0	42.6	19.5	19.2	19.2	19.4
Depreciation	46.7	50.7	49.0	51.5	54.6	58.2
Closing asset value	615.0	623.3	609.5	597.3	592.9	595.8
Total opening values	**5,783.0**	**5,962.9**	**6,161.8**	**6,207.9**	**6,272.0**	**6,329.9**

Note: Consistent with the approach approved, and used, to calculate allowable revenues throughout the UT5 regulatory period, Aurizon Network's proposal has applied start-of-year commissioning date for capital expenditure and the purposes of calculation of depreciation.

Source: Values are based on Aurizon Network's RAB master file, submitted 27 April 2023. A breakdown of Aurizon Network's RAB values for each system is provided in Aurizon Network, sub. 8, pp. 2–3.

Aurizon Network did not include any new amounts for equity raising costs within the forecast RAB values for the reset period. This reflected the fact that approved capital expenditure for the UT5 period to date is primarily attributable to asset replacement and renewal expenditure.[66]

QCA analysis

We consider Aurizon Network's proposed method to roll forward the RAB is appropriate, as it reflects the approved procedure outlined in UT5 and conforms with general regulatory approaches to deriving an opening asset value.

We consider Aurizon Network's forecast RAB values for 2021–22 and 2022–23 are appropriate for developing the preliminary allowable revenues. Aurizon Network's forecast is consistent with past regulatory decisions and reflects the best information available. In this regard, Aurizon Network's forecast reflects:

- the RAB values approved for each coal system as part of the 2021–22 RAB roll-forward[67]
- the methodology outlined in UT5 to annually roll forward the asset base—to reflect forecast capital expenditure, forecast inflation[68] and the depreciation of the asset base.

[66] However, Aurizon Network submitted that the requirement for equity raising costs during the reset period may be subject to change and/or reassessed as part of Aurizon Network's submission for the next regulatory period: Aurizon Network, sub. 1, p. 33.
[67] See QCA, *Decision RAB roll-forward 2021-22*, April 2023.
[68] Aurizon Network indexes the RAB to ensure that the value of the RAB is maintained, in real terms, over time.

In relation to the approach for estimating the RAB values throughout the reset period:

- we consider Aurizon Network's method for calculating the depreciation of the RAB is appropriate as it aligns with past regulatory decisions[69] and is consistent with UT5[70]
- our consideration of Aurizon Network's proposed methodology for calculating forecast capital expenditure and forecast inflation is outlined in sections 4.2 and 4.3 respectively.

In relation to the RAB roll-forward, the QRC noted that the inflation adjustments for Newlands and GAPE are a higher percentage than forecast inflation.[71] Aurizon Network has capitalised the under-recovery associated with previously deferred expenditure associated with the Newlands system infrastructure enhancements at the proposed preliminary reset WACC. In reviewing Aurizon Network's RAB, we confirmed that these deferred assets are excluded for pricing purposes and that the RAB used for pricing purposes has been indexed at the forecast inflation rate.

4.2 Forecast capital expenditure

Aurizon Network's proposal

Aurizon Network proposed to forecast capital expenditure for the reset period[72] based on the four-year renewals cost forecasts outlined for each of the coal systems in the MRSB for 2023–24.[73]

At the time Aurizon Network submitted its proposed reset Schedule F preliminary values, the 2023–24 MRSB and associated capital indicator had not yet been approved. Aurizon Network updated its forecast capital expenditure in February 2023, following the approval process for the 2023–24 MRSB.

The four-year renewals cost forecast outlined for each of the coal systems in the MRSB for 2023–24 is outlined in Table 11.

[69] Aurizon Network has applied the asset lives approved for UT5 (see Appendix E of QCA, *Decision: Aurizon Network's 2017 draft access undertaking*, December 2018). The method for calculating depreciation depends on the year in which the assets were approved for inclusion into the RAB. For assets included as at the approval of the 2006 undertaking, straight-line depreciation is applied using asset lives, truncated to a maximum life of 50 years; since the approval of the 2010 undertaking, an accelerated depreciation profile is applied using a rolling 20-year life.

[70] UT5 (cl. 6A.3) specifies that depreciation is to apply the method approved for UT5 for the years prior to the reset period but with the rolling 20-year asset life to be reset at the commencement of the reset period.

[71] The QRC submitted that it understood the difference is due to certain assets in these systems being deferred and therefore escalated at the WACC rather than at the inflation rate: QRC, sub. 2, p. 4.

[72] UT5, cl. 6A.3(h).

[73] Aurizon Network, sub. 1, p. 11; sub. 5, p. 18.

Table 11 Four-year renewals cost forecast outlined in the 2023-24 MRSB (mid-year, $m)

System	*2023/24*	*2024/25*	*2025/26*	*2026/27*
Non-electric				
Blackwater	139.9	145.9	153.6	148.8
Goonyella	102.9	118.1	125.9	125.4
Moura	18.8	21.1	21.3	18.3
Newlands	23.1	30.6	29.8	30.9
GAPE	0.6	0.0	0.0	0.0
Total (non-electric)	**285.3**	**315.7**	**330.7**	**323.3**
Electric				
Blackwater	5.5	7.3	10.4	20.8
Goonyella	10.8	13.6	21.9	22.7
Total (electric)	**16.4**	**20.9**	**32.3**	**43.5**

Note: Aurizon Network confirmed that these values are consistent with the model used for the FY24 MRSB. These estimates are brought to start-of-year values to determine the annual capital expenditure forecast for inclusion in the RAB.

Source: Aurizon Network, Central Queensland Coal Network FY24 Final Draft Proposal Maintenance and Renewals Strategies and Budgets, 21 January 2023. Aurizon Network, response to information requested, 18 April 2023.

QCA analysis

For the reset period, a capital indicator is to be applied as a proxy for Aurizon Network's forecast capital expenditure.[74]

We consider it appropriate to use the four-year renewals cost forecast in the 2023-24 MRSB, which includes the 2023–24 capital indicator, to forecast capital expenditure for developing the preliminary allowable revenues. We consider that this approach is consistent with UT5, and the forecast costs reflect the best information available.[75]

The QRC submitted it supported an update to the forecasts based primarily on the 2023–24 MRSB.[76]

Allocation of renewal expenditure between Newlands and GAPE services

Aurizon Network submitted that the disaggregation of forecast capital expenditure in the Newlands coal system between the GAPE and Newlands RABs was unavailable at the time of preparing its reset Schedule F preliminary values. Aurizon Network has initially assigned the forecast asset renewal and replacement expenditure in the Newlands coal system to the

[74] Aurizon Network's capital indicator is to be developed on an annual basis, through a process that establishes MRSBs with customer involvement. We are to approve (ex post) any capital expenditure incurred by Aurizon Network for that year, with adjustments to reference tariffs to reflect approved capital expenditure.

[75] UT5 (sch. F, 4.1(h)(i)) specifies that in forecasting maximum allowable revenue for the reset period, Aurizon Network is to apply the principle that the capital indicator is the amount applicable in 2023–24, as determined under clause 7A.11 of UT5.

[76] QRC, sub. 2, p. 2. The QRC also considered that this should include consideration of the appropriateness of including transitional arrangements within the forecast, to the extent that these are settled ahead of 2023–24.

Newlands RAB.[77] However, these forecasts are to be updated in subsequent regulatory processes, including the annual review of reference tariffs where asset identification information becomes available.[78]

We will consider the appropriate methodology for allocating capital expenditure between Newlands and GAPE as part of separate regulatory processes, prior to the approval of capital expenditure for inclusion into the RAB.

4.3 Forecast inflation

Aurizon Network proposal

Aurizon Network proposed a preliminary reset inflation rate of 3.05%[79] to forecast inflation for the reset period.[80]

QCA analysis

We consider Aurizon Network's proposed preliminary reset inflation rate is appropriate for developing the preliminary allowable revenues.

UT5 specifies that the preliminary allowable revenues are to reflect a forecast inflation rate for the reset period, calculated as the arithmetic average of:

- the midpoint of short-term Reserve Bank of Australia (RBA) inflation rate forecasts for the period from 1 July 2022 to the period that the RBA reports short-term inflation forecasts
- the midpoint of the RBA target band for inflation for the years to the terminating date (if any) that short-term RBA inflation rate forecasts are not available.[81]

Aurizon Network has calculated the preliminary reset inflation rate consistent with the approach described in UT5. Aurizon Network's proposal is based on the most recent RBA inflation forecasts available at the time of its submission (released in May 2022). The relevant RBA inflation data used to calculate the reset inflation is provided in Table 12.

While we consider that this approach is appropriate for developing the reset Schedule F preliminary values as it is consistent with the methodology prescribed in UT5, we note that it is different to the approach set out in our position paper on forecasting inflation.[82] The approach in our position paper is to:

- derive annual CPI forecasts using short-term RBA forecasts for the first two years of the regulatory period and using a linear glide path to a rules-based anchor-point forecast in the fifth year ahead
- calculate expected inflation as the geometric mean of the annual forecasts produced over the applicable regulatory period.[83]

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[77] Aurizon Network considered that due to the age profile of GAPE infrastructure enhancements relative to the Newlands RAB assets, the forecast capital expenditure is expected to be strongly weighted toward assets in the Newlands RAB. Aurizon Network, sub. 5, p. 19.

[78] Aurizon Network, sub. 5, p. 19.

[79] Aurizon Network, sub. 1, p. 30.

[80] UT5, cl. 6A.3(b).

[81] UT5, cl. 6A.2(b)(ii) and Part 12.

[82] QCA, *Inflation forecasting*, final position paper, October 2021.

[83] The approach in our position paper produces a rate of 3.09% for the reset period using data from the RBA's May 2022 Statement on Monetary Policy.

Aurizon Network has used the data presented in the appendix of the RBA's Statement on Monetary Policy.[84] The QRC submitted that it is comfortable with this approach provided it is consistent with that applied for the initial UT5 approval.[85] We note the structure of the RBA's Statement has changed over time and did not include an appendix at the time of our initial UT5 approval. We consider the data presented in the appendix of the RBA's Statement on Monetary Policy will more accurately reflect the RBA's short-term inflation forecasts.

The reset inflation rate is to be updated prior to 31 July 2023 based on this approach, when Aurizon Network submits the reset Schedule F values.[86]

Table 12 RBA inflation data

Forecast end date	Inflation forecast/target band	Source
June 2023	4.30%	RBA short-term forecasts
June 2024	2.90%	RBA short-term forecasts
June 2025	2.50%	Midpoint of RBA target band
June 2026	2.50%	Midpoint of RBA target band
Arithmetic average	**3.05%**	

Source: RBA, Statement on Monetary Policy, May 2022; RBA, Statement on the Conduct of Monetary Policy, September 2016.

4.4 Depreciation allowance

Aurizon Network's proposal

Aurizon Network's proposed a depreciation allowance for the reset period[87] to recover the depreciation of the RAB for the year, minus the inflationary gain from indexation of the asset base.[88]

Aurizon Network updated its proposed depreciation allowance to reflect the updates to capital expenditure and inflation outcomes.[89] Aurizon Network's updated depreciation allowance for the reset period is outlined in Table 13.

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[84] Section 5.1 of the RBA's 2022 *Statement on Monetary Policy* rounds to the nearest quarter of a per cent, while the appendix to the report rounds to one decimal place.
[85] QRC, sub. 2, p. 4.
[86] Aurizon Network, sub. 1, p. 10.
[87] UT5, cl. 6A.3(i).
[88] Aurizon Network, sub. 1, p. 36.
[89] Aurizon Network, sub. 5, p. 19.

Table 13 Aurizon Network's updated depreciation allowance (mid-year, $m)

System	*2023/24*	*2024/25*	*2025/26*	*2026/27*
Non-electric				
Blackwater	88.2	89.3	101.5	115.1
Goonyella	62.5	70.4	79.7	87.2
Moura	12.0	13.6	15.4	16.3
Newlands	8.2	7.4	9.0	10.8
GAPE	50.4	54.0	58.0	44.3
Total (non-electric)	**221.3**	**234.8**	**263.6**	**273.7**
Electric				
Blackwater	17.2	18.7	20.4	22.3
Goonyella	11.1	12.3	13.6	14.9
Total (electric)	**28.3**	**31.0**	**34.0**	**37.3**

Note: When determining the depreciation allowance, depreciation amounts are brought to mid-year values to approximate the even receipt of revenue throughout the year.

Source: Aurizon Network, sub. 5, pp. 19-20.

QCA analysis

We consider Aurizon Network's updated depreciation allowance is appropriate for developing the preliminary allowable revenues.

Aurizon Network's approach for calculating its depreciation allowance is consistent with the approach approved, and used, to calculate Aurizon Network's depreciation allowance throughout the UT5 regulatory period. Aurizon Network's updated proposal reflects recent regulatory decisions and the best information available.

5 RATE OF RETURN, WORKING CAPITAL AND TAX ALLOWANCE

5.1 Rate of return

Aurizon Network proposal

Aurizon Network proposed a preliminary reset WACC of 8.18% for the reset period[90] based on the preliminary reset WACC parameters outlined in Table 14.

Table 14 Aurizon Network's proposed preliminary reset WACC

Preliminary reset WACC parameters		***Preliminary reset WACC calculation***	
WACC base rate	6.30%	Approved WACC	6.30%
Reset risk-free rate	3.474%	+ Reset risk-free rate – 1.90%	+1.57%
Reset debt risk premium	2.60%	+ (Reset debt risk premium – 2.04%) x 0.55	+0.31%
		= Reset WACC	**8.18%**

Source: Aurizon Network, sub. 1, p. 10, 15.

QCA analysis

We are applying Aurizon Network's proposed preliminary reset WACC for the purpose of developing the reset schedule F preliminary values. However, we determine that a different methodology is appropriate for Aurizon Network to adopt to calculate the reset debt risk premium, when it submits its reset Schedule F values by 31 July 2023.[91]

UT5 requires the preliminary allowable revenues to reflect the 'reset WACC' that would apply as at 30 June 2022 (the preliminary reset WACC).[92] This requires estimates of the WACC base rate, the preliminary reset risk-free rate and the preliminary reset debt risk premium.

Our consideration of Aurizon Network's proposed approach for calculating each of these parameters is outlined below.

While we consider it appropriate to apply the method prescribed by UT5 for calculating the risk-free rate and debt risk premium for the reset period, we note the approach for calculating these parameters differs to that outlined in our rate of return review.[93] The approach outlined in our rate of return review includes:

- using 10-year Australian Government nominal bond yields to calculate the risk-free rate
- adopting a 10-year trailing average approach to determine the entire cost of debt, which is based on 10-year corporate bond yields reported by the RBA.

As such, the method applied to calculate WACC parameters in this decision for the reset period should not be interpreted as precedent for the method we would consider appropriate in estimating the rate of return for an investigation undertaken under the QCA Act.

[90] UT5, cl. 6A.3(a).
[91] The debt risk premium is one of the input values that is to be revised when Aurizon Network subsequently submits its reset Schedule F values by 31 July 2023.
[92] UT5, cl. 6A.2(b)(i).
[93] QCA, *Rate of return review*, final report, November 2021.

WACC base rate

We consider that it is appropriate to calculate the preliminary reset WACC with reference to a 6.30% base rate.

UT5 outlines that if Aurizon Network notifies the Rail Industry Group of the proposed options for addressing any existing capacity deficits identified in the independent expert's initial capacity assessment report (ICAR) before 1 July 2023, the reset WACC is to be calculated with reference to a 6.30% base rate.

Aurizon Network has prepared its preliminary and detailed response to the independent expert's ICAR.

The QRC also considered that a WACC base rate of 6.3% is appropriate for calculating allowable revenues submitted as part of Aurizon Network's reset Schedule F preliminary values.[94]

Risk-free rate

We consider that the method Aurizon Network applied to calculate the preliminary reset risk-free rate is appropriate.

Aurizon Network's proposed approach for calculating the preliminary reset risk-free rate aligns with the approach defined in UT5.[95] In this regard, Aurizon Network has applied:

- the average rate for Commonwealth of Australia Government nominal bonds using the RBA indicative mid-rate with a term of four years
- an averaging period of the 20 business days up to (and including) 30 June 2022.[96]

Furthermore, the approach is consistent with that applied in our decision on Aurizon Network's 2017 DAU.[97] Aurizon Network's approach linearly interpolates the 4-year yield to maturity, using the highest maturity bond (TB142) shorter than the maturity date and the lowest maturity bond (TB164) longer than the maturity date. As the bonds are semi-annual coupon paying, Aurizon Network annualised the 4-year yield to maturity using the approach outlined in our *Rate of return review*.[98,99]

Debt risk premium

We have applied Aurizon Network's proposed preliminary debt risk premium for the purpose of developing the reset schedule F preliminary values.

While we do not consider that the method Aurizon Network applied to calculate the preliminary reset debt risk premium is appropriate, Aurizon Network is to update the reset debt risk premium when it submits its reset Schedule F values in July 2023. Relevantly, Aurizon Network's reset debt risk premium is to be assessed with reference to a different averaging period (up to 30 June 2023).

[94] QRC, sub. 2, p. 2.
[95] UT5 (cl. 6A.2(b) and Part 12) requires that the reset risk-free rate for Aurizon Network's reset Schedule F preliminary values be calculated as the average of the risk-free rate for the 20 business days up to 30 June 2022. The risk-free rate is to be estimated using the RBA indicative mid-rate for Commonwealth Government nominal bonds with a term of 4 years and methodologies consistent with those applied in our decision on Aurizon Network's 2017 DAU.
[96] Aurizon Network, sub, 1, p. 16.
[97] In considering Aurizon Network's proposal, the QRC submitted that it relies on us to consider whether the proposed methodology for determining the preliminary reset risk-free rate is consistent with that applied in our 2017 DAU investigation: QRC, sub. 2, p. 3.
[98] See QCA, *Rate of return review*, final report, November 2021, Appendix F: Risk Free Estimation, p. 108.
[99] Aurizon Network, sub. 1, p. 16.

We consider it appropriate for Aurizon Network to calculate the reset debt risk premium based on the methodology outlined below.

To calculate the preliminary reset debt risk premium, we consider it appropriate to apply, where possible, the methodology used to estimate Aurizon Network's debt risk premium as part of our 2017 DAU investigation.[100] This is consistent with the approach prescribed in UT5 for calculating this input.[101]

The methodology applied in our 2017 DAU investigation did not establish a mechanistic calculation for estimating the debt risk premium.[102] However, it did establish a clear approach, based around three steps:

(1) Establishing an appropriate core sample of corporate bonds using the bond selection criteria applied in our 2017 DAU investigation.

(2) Calculating a debt risk premium by applying the regression method used as part of our 2017 DAU investigation to the core sample of corporate bonds.

(3) Considering estimates obtained from other relevant sources as a further reference point to inform an assessment of the reasonableness of Aurizon Network's debt risk premium.

We have outlined the specific methodology that we consider is appropriate for estimating the preliminary reset debt risk premium, using the approach outlined in our 2017 DAU investigation (each of the three steps are outlined below).

We do not consider that Aurizon Network has calculated the preliminary reset debt risk premium in a way that is consistent with this approach. In particular, we consider that Aurizon Network has not:

- consistently applied the bond selection criteria applied in our 2017 DAU investigation to compile its sample of corporate bonds
- obtained estimates from other relevant sources in a manner consistent with our 2017 DAU investigation to inform its preliminary reset debt risk premium proposal.

The QRC considered there is a risk of 'cherry-picking' should Aurizon Network be able to exercise judgement calls, which at times represent a departure from the methodology applied in our 2017 DAU investigation. The QRC submitted it is not appropriate, in the current regulatory process, to depart from the approach required by UT5 based on arguments such as changes in circumstances or markets.[103]

We do not consider it appropriate to depart from the methodology outlined below, unless there is a reason why such an approach cannot be applied for the relevant averaging period. The

[100] Our decision on Aurizon Network's 2017 DAU considered that 2.04% is an appropriate debt risk premium for Aurizon Network for the relevant averaging period.

[101] UT5 (cl. 6A.2(b) and Part 12) requires that the forecast debt risk premium for the reset period be calculated by applying the methodology referred to in our decision on Aurizon Network's 2017 DAU for BBB+ rated corporate bonds. UT5 specifies that the debt risk premium is to be calculated in a manner consistent with the way in which it was calculated in our decision, including using the criteria adopted in that decision.

[102] Aurizon Network considered that the reference documents applied as part of our 2017 DAU investigation refer to the methodology or criteria that is relevant to the available data prevailing over the averaging period: Aurizon Network, sub. 1, p. 17.

[103] QRC, sub. 2, pp. 3–4.

preliminary reset debt risk premium estimate is calculated using an averaging period up to 30 June 2022.[104]

Step 1. Bond selection process

In establishing an appropriate sample of corporate bonds to estimate the preliminary reset debt risk premium, we consider it appropriate to derive a core sample based on the bond selection criteria applied as part of our 2017 DAU investigation (Box 2).

Box 2: Bond selection criteria applied as part of our 2017 DAU investigation

Bloomberg's bond search facility was used to identify bonds with the following characteristics:

- issuance denominated in AUD by an entity with Australian country risk
- investment grade credit rating by at least one of Standard and Poor's, Moody's or Fitch
- the issuing entity is not a financial entity
- the corporate bond is senior (i.e. not subordinated)
- standard corporate bonds without special features such as call / put options attached
- a term to maturity greater than one year
- yields reported by Bloomberg.[105]

The core sample of bonds were further filtered to exclude bonds with a remaining term to maturity greater than 20 years.[106]

A credit rating band was allocated to each of the bonds in the sample using the following methodology:

- adopting the single credit rating if only one was available
- adopting the predominant credit rating if there were three credit ratings
- adopting the lower credit rating if there were two divergent ratings one notch apart
- averaging the credit ratings if the divergence in the credit ratings was more than one notch.[107]

Note: The specific details of the search process that we followed in Bloomberg to derive a core sample of corporate bonds that apply these criteria are outlined in Appendix B.

For the averaging period up to 30 June 2022, we obtained a sample of 23 corporate bonds. The frequency of each credit rating band for our sample is outlined in Table 15. The full list of our sample of bonds is provided in Appendix B.

Table 15 Frequency of credit rating in our corporate bond sample

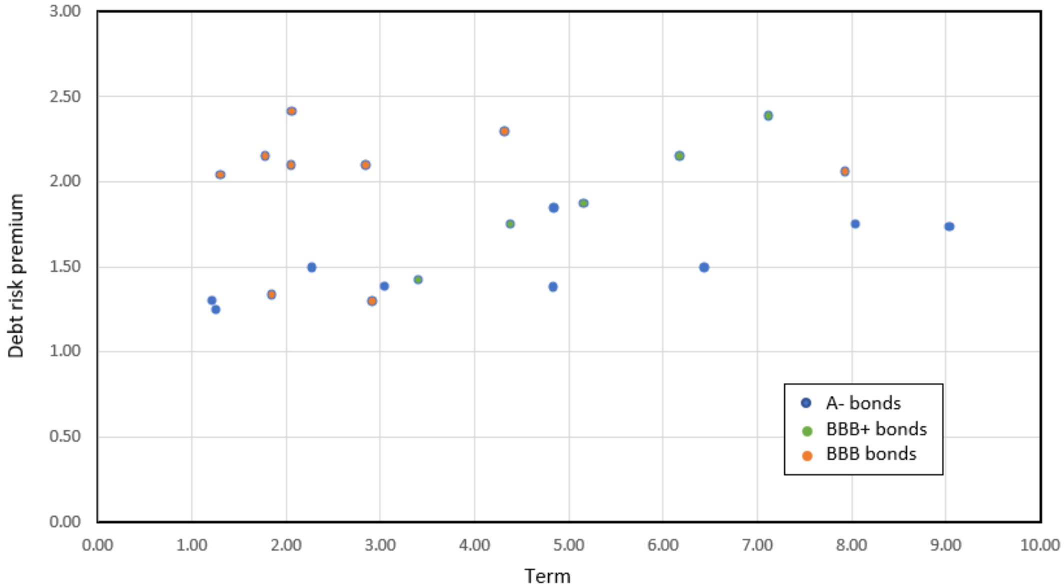
Rating	A–	BBB+	BBB
Frequency	9	5	9

Consistent with the methodology applied as part of our 2017 DAU investigation, we also consider it appropriate to assess whether it is appropriate to remove any 'outlier' bonds[108] from the sample to improve the estimate of the debt risk premium for a benchmark bond.[109] Such an assessment needs to be made on a case-by case basis, depending on the characteristics of the bonds in that particular sample.

[104] UT5, cl. 6A.2(b), Part 12.
[105] Incenta, *Aurizon Network's WACC for the 2017 DAU*, December 2017, p. 99.
[106] Incenta, *Aurizon Network's WACC for the 2017 DAU*, December 2017, p. 130.
[107] Incenta, *Aurizon Network's WACC for the 2017 DAU*, December 2017, p. 100.
[108] In some cases, a bond may be so different from its ostensible peers that its yield is an outlier for the credit rating band.
[109] Incenta, *Addressing responses to Incenta's debt risk premium estimate for the 2017 draft access undertaking*, June 2018, p. 3.

Upon reviewing the sample of bonds identified for the averaging period up to 30 June 2022, we decided to retain all 23 bonds in our sample (Figure 3).

Figure 3 DRP distribution for our sample of bonds (20 business days to 30 June 2022)



Aurizon Network obtained a sample of 73 bonds to estimate the preliminary reset debt risk premium. We are of the view that the approach applied by Aurizon Network in establishing its sample of bonds differs from that applied as part of our 2017 DAU investigation in a number of key areas (see Table 16). For these reasons, we do not consider that Aurizon Network has consistently applied the bond selection criteria applied in our 2017 DAU investigation to compile its sample of corporate bonds.

Table 16 Consideration of Aurizon Network's bond selection approach

Aurizon Network proposal	***QCA analysis***
Aurizon Network's sample excludes bonds from entities that are classified by Bloomberg as financial institutions. Bloomberg classifies entities from the real estate industry as financial institutions.	Our sample includes bonds that are issued by entities in the real estate industry. We consider that this approach is consistent with the methodology applied as part of our 2017 DAU investigation. Real estate businesses were retained in the sample as they typically receive rental streams or take on development risk, and therefore differ from 'financial institutions' such as banks, credit cooperatives and insurance companies.[110] Aurizon Network acknowledged it should have included real estate bonds in the sample of bonds to align with the 2017 DAU methodology. [111] We consider it appropriate for the sample to exclude bonds from entities from other industries that are classified by Bloomberg as financial institutions.
Aurizon Network excluded bonds from its sample that are subject to ownership by a foreign state. This excluded those bonds issued by:	Our sample retains relevant bonds from entities that are subject to ownership by a foreign state. We consider that this approach is consistent with the methodology applied as part of our 2017 DAU investigation.

[110] Incenta, *Aurizon Network's WACC for the 2017 DAU*, December 2017, p. 100.
[111] Aurizon Network, sub. 4, p. 5.

Aurizon Network proposal	*QCA analysis*
• Optus Finance Pty—parent is Republic of Singapore • SGSP Australia Assets Pty Ltd—parent is People's Republic of China.[112] In excluding these bonds, Aurizon Network considered that the debt risk premium for a bond can be depressed where the corporate entity is subject to parental support from foreign sovereign entities. Aurizon Network noted that this matter was considered previously by PwC.[113]	The sample of bonds used to derive the debt risk premium as part of our 2017 DAU investigation included SGSP Australia Assets bonds.[114] While this issue was previously discussed by PwC[115], the consultant engaged to provide advice for our 2017 DAU investigation (Incenta) did not make reference to these bonds or exclude them from its sample. Aurizon Network acknowledged it is not necessary to exclude all bonds subject to ownership by a foreign state, but considered with respect to a specific bond in conducting sensitivity analysis of the regression results as per the methodology applied as part of our 2017 DAU investigation.[116]
Aurizon Network included bonds with a maturity designation 'Call'.[117] Aurizon Network noted that the methodology used to estimate Aurizon Network's debt risk premium as part of our 2017 DAU investigation excluded callable bonds. However, it noted that excluding callable bonds substantially reduces the sample size. Aurizon Network obtained a sample of 15 bonds when callable bonds were excluded. Aurizon Network considered that this sample size is not sufficiently large or unbiased to obtain any statistically reliable estimates, so Aurizon Network included callable bonds.[118]	Our core sample does not include callable bonds. We consider this is consistent with the approach applied as part of our 2017 DAU investigation. However, we consider it appropriate to have consideration to whether the core sample of bonds is sufficient to provide for a reliable and robust empirical estimate of the debt risk premium. Such an assessment needs to be made on a case-by case basis, depending on the sample of the bonds obtained for the relevant averaging period.[119] In any case, we consider it appropriate to consider the regression results obtained from an 'expanded sample' that includes foreign denominated bonds and bonds with options to provide a cross-check to the debt risk premium obtained using the core sample of bonds (see step 3).
Aurizon Network's sample did not include the AN1290252 bond issue by Telstra.	Our sample includes the AN1290252 Telstra bond. This bond was obtained in our sample from the search criteria outlined above.[120]

Step 2. Regression methodology

In estimating the preliminary reset debt risk premium from the relevant sample of bonds, we consider it appropriate to apply the same regression method that applied as part of our 2017 DAU investigation (Box 3).

112 Aurizon Network, sub. 1, p. 21.
113 Aurizon Network, sub. 1, p. 21.
114 See Incenta, *Aurizon Network's WACC for the 2017 DAU*, December 2017, pp. 131–134.
115 PwC, *A cost of debt Estimation methodology for businesses regulated by the Queensland Competition Authority*, June 2013, pp. 8–10.
116 Aurizon Network, sub. 4, p. 5.
117 Aurizon Network, sub. 1, p. 18.
118 Aurizon Network, sub. 1, pp. 21–22.
119 As part of our 2017 DAU investigation, Incenta considered that a sample of six BBB+ AUD denominated bonds is too small a sample size to deliver a reliable and robust empirical estimate of the BBB+ debt risk premium. Incenta also referred to a previous decision where it applied the same methodology to estimating the debt risk premium and considered a sample of 25 bond observations to be sufficient: Incenta, *Aurizon Network's WACC for the 2017 DAU*, December 2017, p. 88.
120 Our 2017 DAU investigation included bonds that had been rated by one or more of Standard and Poor's, Moody's or Fitch (and that satisfy the other criteria). The bond is rated A– by S&P and A2 by Moodys. The bond is allocated a credit rating band of A– using the methodology applied in our 2017 DAU investigation.

Specifically, we consider the dummy variable regression method should be used to estimate the preliminary reset debt risk premium, unless there is a reason that applying such an approach is inappropriate for the relevant sample of bonds.[121]

Box 3: Regression methodology applied as part of our 2017 DAU investigation

As part of our 2017 DAU investigation, we assessed the merits of three regression methods for estimating Aurizon Network's debt risk premium for the proposed averaging period. Our analysis examined the results obtained from:

- a single credit rating (BBB+) regression
- a pooled BBB+ regression
- a dummy variable regression.

From this analysis, we considered that the dummy variables regression provided the most appropriate estimate of Aurizon Network's debt risk premium for the proposed averaging period. The dummy variables regression method overcame deficiencies identified in applying:

- the single credit rating (BBB+) regression—it was considered unreliable due to it being based on only seven bond observations
- the pooled BBB+ regression—there was material bias in the bond sample[122] and material asymmetry in the debt risk premiums of credit rating bands[123].

We acknowledge that our 2017 DAU investigation considered the dummy variables regression method appropriate, as, amongst other things, it overcame deficiencies identified in the sample of bonds being considered (see Box 3). The deficiencies observed for that sample may not be present for another sample of bonds obtained using a different averaging period.[124,125] However, we consider it appropriate to apply the dummy variable regression method where possible, noting:

- the dummy variable regression approach directly reflects the methodology applied in our 2017 DAU investigation to estimate Aurizon Network's debt risk premium
- as part of our assessment of the UT5 DAAU, Aurizon Network submitted that the reset debt risk premium will be estimated using the dummy variable method with a linear functional form.[126]

Applying the dummy variable regression method to our sample of 23 bonds provides a preliminary reset debt risk premium of 2.20%.[127]

Step 3. Reasonableness of the debt risk premium estimate

Consistent with the approach applied in our 2017 DAU investigation, we consider it appropriate to also consider estimates obtained from other relevant sources to inform an assessment of the

[121] Aurizon Network proposed using the dummy variable regression method to calculate the preliminary reset debt risk premium: Aurizon Network, sub. 1, p. 29.
[122] The sample contained a potentially substantial degree of bias towards the A– credit rating category.
[123] An overwhelming majority of the BBB+ debt risk premium observations were above the regression line.
[124] For completeness, we note that two deficiencies remain for the sample of bonds obtained for the averaging period up to 30 June 2022. More specifically, the sample only contains five BBB+ rated bond observations; and the average debt risk premium differential between the bonds in the target band and the bonds in the band on either side of the target credit rating band are not approximately equal.
[125] Aurizon Network noted that it will be necessary to evaluate whether numerous bonds and the regression approach is appropriate for the June 2023 averaging period (Aurizon Network, sub. 4, p.7).
[126] QCA, *Decision: Aurizon Network's 2019 DAAU*, November 2019, Appendix 2, p. 39.
[127] Aurizon Network proposed using the dummy variable regression method to calculate the preliminary reset debt risk premium: Aurizon Network, sub. 1, p. 29-30.

preliminary reset debt risk premium. This provides an indication of the reasonableness of the point estimate obtained.

To assess the reasonableness of the point estimate, we have considered:

- estimates published by third party data providers, including the Bloomberg BVAL and the RBA's estimates
- estimates obtained using an expanded sample, which may include bonds with optionality and foreign bonds.

Aurizon Network considered that exercising judgement to obtain a point estimate from all relevant information is consistent with our 2017 DAU investigation.[128]

Third-party estimates

We have obtained third-party estimates for our consideration of Aurizon Network's preliminary reset debt risk premium (Table 17). Upon review, the approach used by Aurizon Network to obtain these estimates differs from that applied in our 2017 DAU investigation:

- For the RBA estimate, Aurizon Network has used a different approach for interpolating the RBA BBB+ yield than that applied in our 2017 DAU investigation (see Box 4). Movements in the risk-free rate over the averaging period may give rise to differences between the two approaches for interpolating the RBA BBB+ yield.
- For the Bloomberg BVAL BBB+ estimate, Aurizon Network did not annualise the yield estimates. To derive the Bloomberg BVAL BBB+ debt risk premium estimate, our 2017 DAU investigation also used an annualised value of the GACGB10 index as a proxy for the risk-free rate.

Table 17 Third-party estimates, averaging period up to 30 June 2022

Third-party debt risk premium estimate	***Aurizon Network's proposal***	***Approach used in our 2017 DAU investigation***
RBA (interpolated BBB+)	3.085%	2.757%
Bloomberg BVAL (interpolated BBB+)	2.224%	2.309%

Source: Aurizon Network, sub. 1, pp. 29–30; QCA analysis.

Aurizon Network submitted that Bloomberg advises the GACGB10 is a legacy index which has been superseded by the GTAUD10Y index. Aurizon Network requested we confirm the appropriate index to derive the debt risk premium value.[129] We consider it is appropriate to use GACGB10 index as a proxy for the risk-free rate to derive the Bloomberg BVAL BBB+ debt risk premium estimate. The GACGB10 index is still provided by Bloomberg and is consistent with the approach applied in our 2017 DAU for obtaining the Bloomberg BVAL third-party debt risk premium estimate. In comparing the GACGB10 and GTAUD10Y indexes, we did not identify any observable differences between the two indexes for the purpose of this exercise.

[128] Aurizon Network, sub. 4, p. 3.
[129] Aurizon Network, sub. 4, p. 7.

Box 4: Approach applied to obtain the third-party estimates as part of our 2017 DAU investigation

In considering the third-party estimates produced by the RBA and Bloomberg, our 2017 DAU investigation interpolated the broad BBB and broad A fair value curves to obtain a BBB+ yield for each of these sources (as these providers do not publish a BBB+ yield curve). Given that there are two credit rating notches between the BBB and A credit rating bands, an interpolated BBB+ debt risk premium was obtained by applying a weighting of 0.67:0.33 to the observed BBB and A debt risk premium estimates respectively.[130]

While Aurizon Network's third-party estimates are obtained using this approach, the specific methodology for interpolating the RBA BBB+ yield is different to that used in our 2017 DAU investigation.

Aurizon Network obtained the RBA indicative BBB+ yield by using the AER's method as set out in its 2018 rate of return instrument.[131] This approach calculates effective debt risk premium values at 31 May 2022 and 30 June 2022 and linearly interpolated between these two values to construct a set of daily debt risk premium estimates.[132] Aurizon Network then calculated the 20-day average (to 30 June 2022) of the daily debt risk premium values.

The approach applied in our 2017 DAU investigation to obtain the RBA indicative BBB+ yield calculated bond yield values at 31 May 2022 and 30 June 2022 and linearly interpolated between these two values to construct a set of daily bond yields. To calculate the debt risk premium, the average risk-free rate for the 20-day averaging period was subtracted from the average bond yield for the 20-day averaging period.

Aurizon Network submitted that this approach necessarily requires an assumption that bond yields are relatively static and the debt risk premium varies with changes in the risk-free rate. Aurizon Network considered this is contrary to the observed BVAL series. Aurizon Network considered that these computational issues may be relevant to how that judgement is exercised, in the event judgement is necessary to establish a reasonable debt risk premium estimate.[133]

Expanded sample of bonds

We consider it appropriate to derive the expanded sample based on the bond selection criteria applied as part of our 2017 DAU investigation. The expanded sample comprises bonds with optionality and foreign currency bonds.

The specific details of the search process that we consider appropriate to derive an expanded sample of corporate bonds is outlined in Appendix B.

Aurizon Network's proposed preliminary reset debt risk premium was informed by an expanded sample that included certain callable bonds. Aurizon Network's analysis did not consider foreign currency bonds.[134]

For the averaging period up to 30 June 2022, we obtained an expanded sample of 192 corporate bonds (Table 18). The results obtained from applying the single credit rating (BBB+) and the dummy variable regression approaches[135] to our expanded sample are outlined in Table 19.

Table 18 Frequency of credit rating in our expanded sample of bonds

Rating	A–	BBB+	BBB
Frequency	70	75	47

Note: The full list of our expanded sample of bonds is provided in Appendix B.

[130] QCA, *Decision: Aurizon Network's 2017 draft access undertaking — Appendices*, December 2018, pp. 159–160.
[131] Aurizon Network, sub. 1, p. 27.
[132] This is consistent with the approach we have applied in recent regulatory reviews (e.g. QCA, *Rate of return review*, final report, November 2021).
[133] Aurizon Network, sub. 4, pp. 7–8.
[134] Aurizon Network considered that the Bloomberg BVAL and the RBA corporate bond yield data provided suitable cross-checks for its proposed preliminary reset debt risk premium estimate: Aurizon Network, sub. 1, p. 18.
[135] We considered the single credit rating (BBB+), as there were sufficient BBB+ bonds in the expanded sample. We did not consider the pooled BBB+ regression, as there was material bias in the bond sample (see Table 18).

Table 19 Expanded sample debt risk premium estimates, averaging period up to 30 June 2022

Regression method	***DRP estimate***
Single credit rating (BBB+) regression	2.38
Dummy variable regression	2.43

In addition to the expanded sample, Aurizon Network considered that expanding the domestic bond sample to include AUD denominated bonds with options attached (where the OAS adjustment is negligible or zero) as a further cross-check is consistent with the 2017 DAU investigation methodology.[136] We do not consider that conducting this additional cross-check is appropriate. We do not consider it is consistent with the approach outlined in our 2017 DAU investigation, as it did not specifically consider this additional sample as a cross-check. In any case, the expanded sample that is to be used as a cross-check for the reset debt risk premium includes bonds with optionality.

Reasonableness assessment

We have considered the reasonableness of the preliminary reset debt risk premium point estimate (2.20%), with reference to estimates obtained from the other relevant sources outlined above.

From the information available, we consider it may be appropriate to apply judgement to increase the preliminary reset debt risk premium beyond the point estimate obtained for the averaging period up to 30 June 2022. The case for increasing the preliminary reset debt risk premium is supported by:

- the small size of the core sample of bonds obtained for this averaging period
- the estimates obtained from other relevant sources are all higher than our derived 2.20% point estimate.

Aurizon Network considered that the data and conditions prevailing over the averaging period up to 30 June 2022 does not support the domestic sample as a reasonable basis for establishing the value for the preliminary reset debt risk premium.[137]

For the purpose of this decision, we have adopted Aurizon Network's proposed preliminary reset debt risk premium, noting the reset debt risk premium is to be updated for the averaging period up to 30 June 2023.[138]

5.2 Working capital allowance

Aurizon Network proposal

Aurizon Network proposed a working capital allowance for the reset period[139] based on a computation of its post-tax revenue model.

[136] Aurizon Network, sub. 4, p. 6.
[137] Aurizon Network, sub. 4, pp. 2–3.
[138] Consideration of the reasonableness of the reset debt risk premium point estimate will need to be assessed with reference to the estimates obtained for the relevant averaging period. Noting that the information prevailing over the averaging period up to 30 June 2023 will differ substantially from that prevailing for this averaging period, Aurizon Network considered it prudent not to determine a point estimate for the preliminary reset debt risk premium (Aurizon Network, sub. 4, p. 4).
[139] UT5, cl. 6A.3(k).

Aurizon Network updated its proposed working capital allowance to reflect updates to other allowable revenue inputs.[140] Aurizon Network's updated working capital allowance for the reset period is outlined in Table 20.

Table 20 Aurizon Network's updated working capital allowance ($m)

System	*2023/24*	*2024/25*	*2025/26*	*2026/27*
		Non-electric		
Blackwater	1.2	1.2	1.3	1.3
Goonyella	1.0	1.0	1.1	1.1
Moura	0.2	0.2	0.2	0.2
Newlands	0.1	0.1	0.1	0.1
GAPE	0.4	0.4	0.4	0.3
Total (non-electric)	**2.9**	**3.0**	**3.1**	**3.1**
		Electric		
Blackwater	0.3	0.3	0.3	0.3
Goonyella	0.2	0.2	0.2	0.2
Total (electric)	**0.5**	**0.5**	**0.5**	**0.5**

Source: Aurizon Network, sub. 5, p. 22.

QCA analysis

We consider Aurizon Network's updated working capital allowance is appropriate for developing the preliminary allowable revenues.

Aurizon Network has applied the modelling approach approved, and used, to calculate Aurizon Network's working capital allowance throughout the UT5 regulatory period.

The working capital allowance enables Aurizon Network to earn a return on this capital in a manner similar to investments.

5.3 Tax allowance

Aurizon Network proposal

Aurizon Network proposed a tax allowance for the reset period[141] based on a computation of its post-tax revenue model.[142]

Aurizon Network updated its proposed tax allowance to reflect updates to other allowable revenue inputs.[143] Aurizon Network's updated tax allowance for the reset period is outlined in Table 21.

[140] Aurizon Network, sub. 5, p. 11.
[141] UT5, cl. 6A.3(j).
[142] Aurizon Network, sub. 1, p. 11.
[143] Aurizon Network, sub. 5, p. 11.

Table 21 Aurizon Network's updated forecast tax allowance ($m)

System	*2023/24*	*2024/25*	*2025/26*	*2026/27*
Non-electric				
Blackwater	16.8	16.3	18.0	19.9
Goonyella	11.8	12.7	13.8	14.5
Moura	3.1	3.3	3.5	3.6
Newlands	1.7	1.5	1.7	1.9
GAPE	11.1	11.6	12.1	9.3
Total (non-electric)	**44.4**	**45.3**	**49.1**	**49.3**
Electric				
Blackwater	2.7	3.0	3.3	3.7
Goonyella	2.1	2.3	2.5	2.6
Total (electric)	**4.8**	**5.2**	**5.8**	**6.4**

Source: Aurizon Network, sub. 5, pp. 21–22.

QCA analysis

We consider Aurizon Network's updated tax allowance is appropriate for developing the preliminary allowable revenues.

Aurizon Network's proposal has used the modelling approach approved, and used, to calculate Aurizon Network's tax allowance throughout the UT5 regulatory period.

Aurizon Network's approach calculates the tax allowance as the estimated cost of corporate tax payable on annual revenue less annual tax expense (less the value of imputation credits). Aurizon Network’s annual tax expense includes:

- allowances for operating and maintenance costs
- interest tax expense, calculated using the benchmark gearing ratio and cost of debt
- tax depreciation relating to the regulatory asset base.

6 PART B: PRELIMINARY REFERENCE TARIFF INPUTS

As part of the reset Schedule F preliminary values, Aurizon Network is to submit the reference tariff inputs for the reset period.[144] Aurizon Network's updated preliminary reference tariff inputs are presented in Table 22.

Table 22 Aurizon Network's updated preliminary reference tariff inputs ($)

Year	*AT1*	*AT2*	*AT3*	*AT4*	*AT5*	*EC*	*QCA levy*	*IE fee*
Blackwater								
2023/24	1.04	2,563.21	10.51	3.40	4.25	2.82	0.0063	0.0164
2024/25	1.07	2,641.39	10.36	3.35	4.39	2.82	0.0063	0.0164
2025/26	1.10	2,721.95	10.81	3.50	4.46	2.82	0.0063	0.0164
2026/27	1.13	2,804.97	11.30	3.66	4.56	2.82	0.0063	0.0164
Goonyella								
2023/24	0.72	1,623.94	6.41	1.33	2.61	2.82	0.0063	0.0164
2024/25	0.74	1,673.47	6.92	1.43	2.31	2.82	0.0063	0.0164
2025/26	0.76	1,724.51	7.23	1.50	2.37	2.82	0.0063	0.0164
2026/27	0.79	1,777.11	7.45	1.54	2.44	2.82	0.0063	0.0164
Moura								
2023/24	1.93	759.15	15.96	2.60	--	--	0.0063	0.0164
2024/25	1.99	782.30	15.35	2.51	--	--	0.0063	0.0164
2025/26	2.05	806.16	16.06	2.62	--	--	0.0063	0.0164
2026/27	2.11	830.75	16.30	2.66	--	--	0.0063	0.0164
Newlands[a]								
2023/24	2.01	343.28	8.87	1.21	--	--	0.0063	0.0164
2024/25	2.07	353.75	9.15	1.25	--	--	0.0063	0.0164
2025/26	2.13	364.54	9.82	1.34	--	--	0.0063	0.0164
2026/27	2.20	375.66	10.70	1.46	--	--	0.0063	0.0164
GAPE								
2023/24	1.62	15,464.32	1.55	3.22	--	--	0.0063	0.0164
2024/25	1.67	15,464.32	1.41	2.58	--	--	0.0063	0.0164
2025/26	1.72	15,464.32	1.35	2.55	--	--	0.0063	0.0164
2026/27	1.77	15,464.32	1.38	1.32	--	--	0.0063	0.0164

Note: Aurizon Network updated the Newlands AT3 and AT4 tariff inputs to correct for a modelling error relating to the depreciation rates applied to calculate the private incremental cost discount for the Carmichael rail loop.

[144] UT5, cl. 6A.2(a)(i).

Source: Aurizon Network, sub. 8, pp. 5–6; Aurizon Network, response to information requested, 27 April 2023.

QCA analysis

We consider that Aurizon Network's updated preliminary reference tariff inputs are appropriate for the purpose of establishing the reset Schedule F preliminary values.

We consider that Aurizon Network's approach for developing the updated preliminary reference tariff inputs is consistent with UT5[145] and reflects the approach approved to calculate the reference tariffs for the initial years of the UT5 regulatory period. In this regard, Aurizon Network has used:

- the inputs used to develop its updated preliminary allowable revenues (as outlined in chapters 2–5)
- the updated preliminary volume forecasts (as outlined in chapter 7)
- the system premiums, system discounts and expansion tariffs that have been approved, and used, to calculate Aurizon Network's reference tariff inputs throughout the UT5 regulatory period
- the allocation of costs between coal systems that has been approved, and used, to calculate Aurizon Network's reference tariff inputs throughout the UT5 regulatory period.

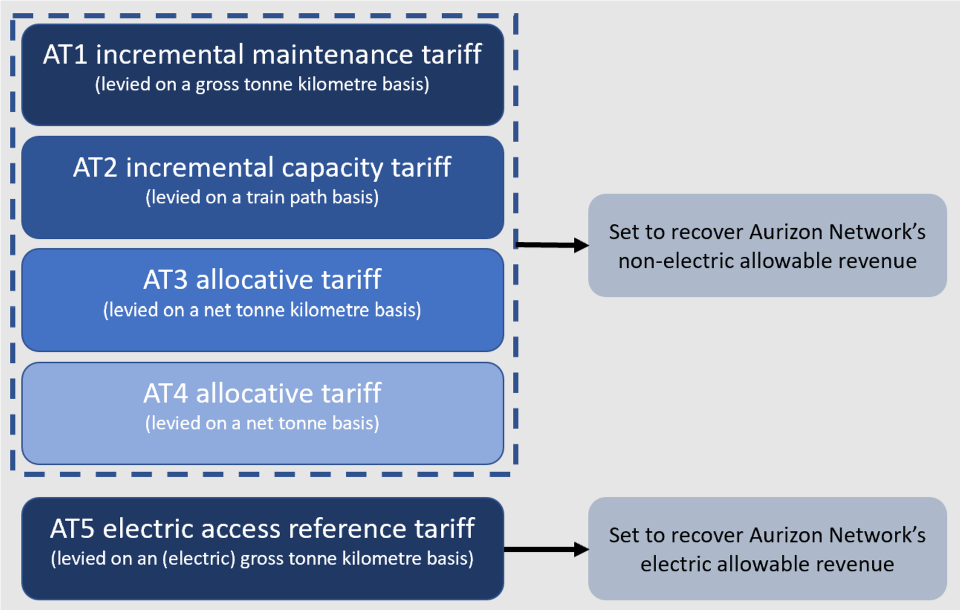
AT1 to AT5 reference tariff inputs

Based on Aurizon Network's volume forecasts, the AT1 to AT5 reference tariff inputs are calculated to recover Aurizon Network's allowable revenues (see Figure 4). In this regard:

- AT1 and AT2 are incremental tariffs, which are calculated by escalating (by CPI) the respective tariff rates throughout the regulatory period
- AT3 and AT4 are allocative tariffs, which are set to recover the remaining non-electric allowable revenue (based on volume forecasts) after accounting for forecast revenue obtained from the incremental tariffs
- AT5 is the electric access tariff, which is set to recover electric allowable revenue (based on volume forecasts).

[145] UT5, cl. 6A.4.

Figure 4 The AT1 to AT5 reference tariff inputs



Our decision on Aurizon Network's proposed preliminary AT1 to AT5 reference tariff inputs reflect its updated preliminary allowable revenues and the relevant volume metrics derived from its updated preliminary volume forecasts.[146]

The AT2 preliminary reference tariff input for GAPE reflects the corresponding reference tariff input that was approved as part of the 2022–23 annual review of reference tariffs.[147] Aurizon Network said it did not escalate the GAPE AT2 reference tariff input, because doing so would result in a negative GAPE AT4 reference tariff input.[148] Aurizon Network considered this to be prudent, as non-negative reference tariffs will better allow operational differences between access holders to be accounted for when calculating the access charge.[149]

We consider Aurizon Network's proposed AT2 reference tariff input for GAPE to be reasonable, noting that it has no impact to the preliminary allowable revenues allocated to GAPE customers. We did not receive any submissions on this matter.

Other reference tariff components

In addition to the AT1 to AT5 reference tariff inputs, UT5 requires reference tariffs to include:

- the independent expert fee — to recover the costs associated with the independent expert performing its role. Aurizon Network is to calculate the independent expert fee component on a dollar per net tonne basis.
- the EC tariff — to recover the forecast costs relating to the consumption of electric energy. Aurizon Network is to calculate the EC tariff component on a dollar per electric gross tonne kilometre basis.

[146] Aurizon Network, sub. 1, p. 48.
[147] QCA, *Decision notice: Annual review of reference tariffs 2022–23*, May 2022.
[148] Aurizon Network submitted that this occurs because the GAPE AT2 reference tariff is significantly higher than in other coal systems. As a result, the expected revenue recovery via the AT1 and AT2 reference tariff components would exceed the GAPE allowable revenue for the year where escalation is applied. Aurizon Network, sub. 1, p. 45.
[149] Aurizon Network, sub. 1, p. 45.

- The QCA levy — to recover the fees imposed by us on the beneficiaries of our regulatory services. Aurizon Network is to calculate the QCA levy component on a dollar per net tonne basis.[150]

Aurizon Network updated the cost information used to estimate the independent expert fee, QCA levy and EC tariff components to reflect the most recent regulatory decisions or notified cost estimate available (Table 23). We consider it appropriate to calculate these tariff components with reference to recent regulatory decisions and updated cost information as this provides for an improved estimate of the preliminary reference tariffs for the reset period.

Table 23 Underlying cost information used to estimate tariff components

Reference tariff component	***Underlying cost information***
Independent expert (IE) fee	Aurizon Network's proposal is consistent with the independent expert's notification of its forecast pass-through costs, which were provided in February 2023.[151]
EC tariff	Aurizon Network's proposal is consistent with the 2022–23 EC tariff approved as part of Aurizon Network's electric energy charge DAAU.[152]
QCA levy	Aurizon Network's proposal is consistent with our forecast of regulatory fees for 2022–23, as notified to Aurizon Network on 27 June 2022, and accounts for the estimated under recovery of the 2022-23 QCA levy.[153]

Source: Aurizon Network, sub. 5, p. 25-26. Aurizon Network, response to information requested, 17 April 2023.

Private incremental costs associated with the Carmichael rail loop

Where applicable, the access charge for a train service is the relevant reference tariff applied to that train service, less the annual maximum allowable revenue derived from approved private incremental costs.[154]

On 15 December 2022, we approved a prudent and efficient amount of $44 million for private incremental costs associated with the Carmichael rail loop and connecting infrastructure.[155] We consider it appropriate to account for the approved private incremental costs associated with the Carmichael rail loop in calculating the preliminary reference tariff inputs. This provides for the preliminary reference tariff inputs to be consistent with past regulatory decisions and based on the best information available.

Aurizon Network updated its preliminary reference tariff inputs to account for these private incremental costs.[156] Aurizon Network proposed to calculate the private incremental cost discount for the Carmichael rail loop based on:

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[150] UT5, cl. 7A.3.4; Part 12; Schedule F.
[151] Aurizon Network, response to information requested, 17 April 2023.
[152] QCA, *Decision notice: Aurizon Network's electric energy charge DAAU*, Final decision, 16 November 2022.
[153] UT5 provides for any over or under recovery of relevant regulatory fees to be taken into account as part of a review of the QCA levy. In accordance with UT5, if required we will review the QCA levy as an endorsed variation event (see cl. 5.2 (c) of Schedule F, UT5) following our announcement of fees for the provision of regulatory services for 2023-24.
[154] UT5, cl. 6.3.1(c).
[155] QCA, Decision notice: *Private incremental cost - Carmichael rail loop and connecting infrastructure*, 15 December 2022.
[156] Aurizon Network, sub. 5, p. 25.

- an escalated asset value of $45.5 million to account for the difference between the 'approval' date and the 'effective' date[157]
- maintaining the relevant assets in the same way as Aurizon Network's regulatory asset base in accordance with Schedule E of UT5.[158]

We consider this approach for taking into consideration the approved private incremental costs is appropriate as it is consistent with UT5 and our recent approval of private incremental costs.[159]

[157] The private incremental costs associated with the Carmichael rail loop were approved on 15 December 2022, with the access charge for the relevant train service to be effective from 1 July 2023. Aurizon Network, sub. 5, p. 25.

[158] UT5, cl. 6.3.2(f). On 7 March 2023, Aurizon Network received detailed information outlining the individual asset classes associated with the PIC. Aurizon Network has applied the endorsed regulatory asset lives to each of these asset classes. Aurizon Network, sub. 8, p. 4; Aurizon Network, *response to information requested*, 27 April 2023.

[159] Aurizon Network later identified that it had modelled the private incremental cost discount for the Carmichael rail loop based on an escalated asset value of $45.4 million. We consider that an escalated value of $45.5 million is appropriate as it is consistent with our decision to approve the private incremental costs associated with the Carmichael rail loop and connecting infrastructure. Correcting for this does not change Aurizon Network's updated preliminary reference tariffs. We will assess that Aurizon Network has used the correct asset value in developing its reset Schedule F values. Aurizon Network, *response to information requested*, 18 and 27 April 2023.

7 PART C: PRELIMINARY VOLUME FORECASTS

Aurizon Network's proposal

As part of the reset Schedule F preliminary values, Aurizon Network is to submit the gtk forecasts for each year of the reset period.[160] Aurizon Network's updated preliminary volume forecasts for each coal system are presented in Table 24.

Table 24 Aurizon Network's updated preliminary volume forecasts for the reset period

System	*Net tonnes (million)*	*gtk'000*
Blackwater	54.3	31,564,059
Goonyella	108.0	34,710,988
Moura	11.8	3,100,730
Newlands	16.4	3,563,898
GAPE	17.2	8,991,152
Total	**207.8**	**81,930,826**

Note: Net tonne forecasts for each coal system are converted to gtk and electric gtk using the reference train payload for each coal system, and the forecast split between diesel and electric consists for the Blackwater and Goonyella systems.

Source: Aurizon Network, sub. 5, pp. 3–4.

QCA analysis

We consider that Aurizon Network's updated preliminary volume forecasts are appropriate for the purpose of establishing the reset Schedule F preliminary values.

Aurizon Network initially used the volume forecasts approved as part of the 2022–23 annual review of reference tariffs to develop its reset Schedule F preliminary values, with a view to developing and submitting updated, customer-informed, preliminary system forecasts.[161] In February 2023, Aurizon Network updated its preliminary system forecasts following consultation with end users.[162]

We consider that Aurizon Network's approach for developing the updated preliminary volume forecasts is appropriate. Aurizon Network's updated preliminary volume forecasts are informed by customers' expected railings for individual origin-destination pairings, the relevant contract volumes and an alternative forecast based on actual 2022–23 railings (see Box 5). We consider that the updated preliminary volume forecasts are likely to better reflect current market conditions than applying the volume forecasts approved as part of the 2022–23 annual review of reference tariffs.

The QRC submitted that it had no concerns with Aurizon Network's general methodology but considered that resulting forecasts need to be tested against known information or expected changes. In this regard, the QRC noted that the updated Newlands and Moura system forecasts

[160] UT5, cl. 6A.2(a)(ii)(A).
[161] Aurizon Network, sub. 1, p. 13.
[162] Aurizon Network, sub. 5, p. 3. Note: end users were asked provide feedback to inform the development of the 2023-24 system forecasts.

are below annualised 2022-23 performance. The QRC submitted that it is preferred that volume forecasts for each system reflect the most likely outcome so that revenue cap adjustments in future years are minimised.[163]

Bravus submitted that Aurizon Network has not provided any explanation for why it has not tempered the derived forecasts against current actual system performance. In particular, Bravus considered the updated preliminary volume forecast for the Newlands system (16.4Mtpa) should be rejected given it is significantly less than the actual annualised 2022-23 performance (20Mtpa) and the Aurizon Network's 2022-23 forecast (17.1Mtpa). Bravus submitted that it had provided Aurizon Network with volume forecasts and context to support the continuation of at least the annualised 2022-23 performance rates.[164]

We have reviewed Aurizon Network's updated preliminary volume forecasts and overall consider them to be reasonable. Aurizon Network's forecast is broadly consistent with actual volumes railed in recent years (2020-21 and 2021-22) and is above the annualised forecast for 2022-23 based on actual volumes for July 2022 to January 2023.[165]

The updated preliminary volume forecasts have been established with the benefit of stakeholder feedback on proposed railings for each of their respective origin–destination pairings. We consider that the application of this approach over time will provide for volume forecasts to better reflect actual railings so that revenue cap adjustments in future years are minimised.

We acknowledge that where a customer's expected railings increase above its contracted tonnage and annualised rate of actual railings, this may result in a system forecast that is lower than expected railings. However, we consider that the ongoing application of Aurizon Network's approach to forecasting volumes will correct for this over time. As outlined by Aurizon Network, the forecasts for the remaining years in the reset period can be reviewed and updated each year as part of the annual review of reference tariff process.[166]

Box 5: Aurizon Network's approach for developing the updated preliminary volume forecasts

Aurizon Network asked end users to provide feedback to inform the development of the 2023-24 system forecasts. Where end users provided a volume forecast for their individual origin/destination pairings, Aurizon Network assessed those forecasts against the relevant contract volumes and an annualised volume forecast based on actual railings between July 2022 to January 2023:

- Where the volume forecast provided by an end user exceeded both the contract volume and the annualised forecast, Aurizon Network applied the maximum of contract volume or the annualised forecast to update its preliminary system forecasts.
- Where the volume forecast provided by an end user was below the contract volume or the annualised forecast, Aurizon Network applied the end user's volume forecast.

If an end user did not provide a forecast, the annualised forecast was generally applied but capped at the contract volume and adjusted for known events (e.g. mine closure or ad-hoc train services), if required.

Source: Aurizon Network, sub. 5, p. 13.

[163] QRC, sub. 7, pp. 1-2.
[164] Bravus, sub. 6, p. 1.
[165] Aurizon Network, sub. 5, pp. 14-15.
[166] Aurizon Network, sub. 5, p. 13.

APPENDIX A: APPROVED ADJUSTMENTS TO ALLOWABLE REVENUES

Table 25 Aurizon Network's proposed capital carryover ($m)

System	*2023/24*	*2024/25*	*2025/26*	*2026/27*
Non-electric				
Blackwater	1.9	2.0	2.0	2.1
Goonyella	2.5	2.5	2.6	2.7
Moura	0.4	0.4	0.4	0.4
Newlands	0.9	0.9	0.9	0.9
GAPE	(0.8)	(0.8)	(0.8)	(0.9)
Total (non-electric)	**4.9**	**5.0**	**5.1**	**5.2**
Electric				
Blackwater	(0.0)	(0.0)	(0.0)	(0.0)
Goonyella	1.8	1.8	1.9	1.9
Total (electric)	**1.7**	**1.8**	**1.8**	**1.9**

Source: Aurizon Network, sub. 1, p. 42.

Table 26 Aurizon Network's proposed reconciliation of transitional arrangements ($m)

System	*2023/24*	*2024/25*	*2025/26*	*2026/27*
Non-electric				
Blackwater	4.6	4.7	4.9	5.0
Goonyella	3.2	3.3	3.3	3.4
Moura	(0.1)	(0.1)	(0.1)	(0.1)
Newlands	0.7	0.7	0.7	0.7
GAPE	0.4	0.4	0.4	0.4
Total (non-electric)	**8.8**	**9.0**	**9.2**	**9.4**
Electric				
Blackwater	0.1	0.1	0.1	0.1
Goonyella	(0.7)	(0.7)	(0.7)	(0.7)
Total (electric)	**(0.6)**	**(0.6)**	**(0.6)**	**(0.7)**

Source: Aurizon Network, sub. 1, p. 43.

Table 27 Aurizon Network's proposed (extended) recovery of APS capital expenditure ($m)

System	*2023/24*	*2024/25*	*2025/26*	*2026/27*
Blackwater	7.1	7.3	7.5	7.6
Goonyella	7.6	7.8	8.0	8.2
Moura	0.8	0.9	0.9	0.9
Newlands	0.5	0.5	0.5	0.5
GAPE	0.0	0.0	0.0	0.0
Total	**16.1**	**16.4**	**16.8**	**17.2**

Source: Aurizon Network, sub. 1, p. 43.

Table 28 Aurizon Network's proposed revenue adjustment amounts 2021-22 ($m)

System	*2023/24*	*2024/25*	*2025/26*	*2026/27*
Blackwater	15.1	-	-	-
Goonyella	10.3	-	-	-
Moura	2.8	-	-	-
Newlands	1.1	-	-	-
GAPE	11.9	-	-	-
Total	**41.1**	**-**	**-**	**-**

Source: Aurizon Network, sub. 5, pp. 23-24.

Table 29 Aurizon Network's proposed capital expenditure allowable revenue adjustment 2021-22 ($m)

System	*2023/24*	*2024/25*	*2025/26*	*2026/27*
Blackwater	(3.8)	-	-	-
Goonyella	(6.4)	-	-	-
Moura	1.7	-	-	-
Newlands / GAPE	(0.8)	-	-	-
Total	**(9.4)**	**-**	**-**	**-**

Source: Aurizon Network, sub. 5, pp. 24-25.

APPENDIX B: DEBT RISK PREMIUM—BOND SELECTION PROCESS

Core sample of bonds

To obtain bond sample data for the averaging period, we conducted a search using Bloomberg's bond search facility applying the search criteria outlined in Table 30. The sample of bonds was then filtered to eliminate bonds with a remaining term to maturity greater than 20 years (measured from 30 June 2022). Using these criteria, we obtained a sample of 23 corporate bonds (Table 31).

Table 30 Search criteria for the core sample of bonds

Bloomberg criteria	Criteria applied
Security status	Include active bonds
Country of risk	Include Australia
Currency	Include AUD
Credit rating	Between A1 and BBB (or equivalent)
Maturity	Greater than or equal 30 June 2023 (greater than 1 year)
Maturity type	Exclude perpetual, callable and convertible
Market issue	Domestic
Security type	Exclude inflation linked note
BIS classification	Exclude: Financial Include: Real estate

Table 31 Core sample of bonds, averaging period up to 30 June 2022

Issuer name	Bloomberg ID	Allocated credit rating
AusNet Services Holdings Pty Ltd	AM4028255	BBB+
AusNet Services Holdings Pty Ltd	AR2268118	BBB+
AusNet Services Holdings Pty Ltd	AZ5939345	BBB+
Australia Pacific Airports Melbourne Pty Ltd	QJ5397360	BBB+
Australia Pacific Airports Melbourne Pty Ltd	QZ9328522	BBB+
Brisbane Airport Corp Pty Ltd	AS2396453	BBB
CNH Industrial Capital Australia Pty Ltd	BQ1190652	BBB
ICPF Finance Pty Ltd	AN1618205	A-
Mirvac Group Finance Ltd	QZ3305039	A-
New Terminal Financing Co Pty Ltd	AO1975298	BBB
Optus Finance Pty Ltd	AU2682667	A-
Optus Finance Pty Ltd	BK1405293	A-
Optus Finance Pty Ltd	BK1405319	A-
Perth Airport Pty Ltd	JK8897114	BBB

Issuer name	Bloomberg ID	Allocated credit rating
Qantas Airways Ltd	QZ5121780	BBB
Qantas Airways Ltd	QZ7279925	BBB
SGSP Australia Assets Pty Ltd	AP1982200	A-
SGSP Australia Assets Pty Ltd	BS4740871	A-
Telstra Corp Ltd	AN1290252	A-
Victoria Power Networks Finance Pty Ltd	BQ2697309	A-
Woolworths Group Ltd	AX9166072	BBB
Woolworths Group Ltd	BJ3246383	BBB
Woolworths Group Ltd	BJ4427768	BBB

Expanded sample of bonds

To obtain bond sample data for the averaging period, we conducted a search using Bloomberg's bond search facility applying the search criteria outlined in Table 32.

Table 32 Expanded bond sample search criteria for cross-checks

Bloomberg criteria	Criteria applied
Security status	Include active bonds
Country of risk	Include Australia
Currency	Include AUD or USD or GBP or EUR
Credit rating	Between A1 and BBB (or equivalent)
Maturity	Greater than or equal 30 June 2023 (greater than 1 year)
Maturity type	Exclude perpetual and convertible
Security type	Exclude inflation linked note
BIS classification	Exclude: Financial Include: Real estate

The sample of bonds was then filtered to:

- eliminate bonds with a remaining term to maturity greater than 20 years (measured from 30 June 2022)
- eliminate bonds issued into the European market by Coca-Cola Amatil denominated in AUD
- eliminate bonds that are allocated a credit rating (see Box 2) outside of the relevant credit rating range.

Using these criteria, we obtained an additional 192 corporate bonds for inclusion into the expanded sample (Table 33).

To obtain the yields of these additional bonds, we adopted ERA's method for adjusting yields of bonds with options and foreign bonds to Australian dollar equivalents, which incorporates Bloomberg's OAS facility.

We consider that this is consistent with the approach applied in our 2017 DAU investigation.[167] The exact approach adopted in our 2017 DAU investigation is described in ERA's *Draft Decision on Proposed Revisions to the Access Arrangement for the Dampier to Bunbury Natural Gas Pipeline 2016-2020*.[168]

Due to accessibility issues with obtaining the relevant information (due to changes in product packages provided by Bloomberg), ERA has amended its process for adjusting yields of bonds with options and foreign bonds to AUD equivalents since our 2017 DAU investigation. We consider it appropriate to adopt ERA's updated process for this decision (noting that we encountered accessibility issues in applying the process outlined in ERA's *Draft Decision on Proposed Revisions to the Access Arrangement for the Dampier to Bunbury Natural Gas Pipeline 2016-2020*). While ERA's updated process was adopted for accessibility reasons, it reflects the methodology previously applied by ERA.

The process that was applied in this decision to adjust the yields of bonds with options and foreign bonds to AUD equivalents is detailed in pages 9–16 of Appendix 6 (version 3)[169] to ERA's *Explanatory Statement for the Rate of Return Guidelines 2018*.[170]

Table 33 Additional bonds in the expanded sample, averaging period up to 30 June 2022

Issuer name	Bloomberg ID	Allocated credit rating
Newcrest Finance Pty Ltd	EI8704930	BBB
AusNet Services Holdings Pty Ltd	BK6867612	BBB+
DEXUS Finance Pty Ltd	AT9003944	A-
APA Infrastructure Ltd	BO4852691	BBB
Shopping Centres Australasia Property Retail Trust	ZO2833291	BBB+
AusNet Services Holdings Pty Ltd	BK6864247	BBB+
AusNet Services Holdings Pty Ltd	BK6864320	BBB+
APA Infrastructure Ltd	EK8078397	BBB
SGSP Australia Assets Pty Ltd	BG1166019	A-
Transurban Finance Co Pty Ltd	AZ3470822	BBB+
Wesfarmers Ltd	BR8973561	A-
WMC Finance USA Ltd	ED1042677	A-
BHP Billiton Finance Ltd	EJ6510642	A-
APA Infrastructure Ltd	BO4852683	BBB
South32 Treasury Ltd	BV7128408	BBB+
DEXUS Finance Pty Ltd	ZP6250341	A-
Aurizon Network Pty Ltd	BP9727010	BBB+
Australia Pacific Airports Melbourne Pty Ltd	BS4971112	BBB+

[167] Incenta, *Aurizon Network's WACC for the 2017 DAU*, December 2017, pp. 109–110.
[168] See ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Dampier to Bunbury Natural Gas Pipeline 2016-2020*: Appendix 4, December 2015, pp. 272–278.
[169] Available at: https://www.erawa.com.au/cproot/21476/2/DRP-using-Excel-version-3-.pdf
[170] ERA, *Final: Gas Rate of Return Guidelines Explanatory Statement*, December 2018.

Issuer name	Bloomberg ID	Allocated credit rating
Woolworths Group Ltd	BR6425457	BBB
APPF Commercial Finance Pty Ltd	BS1858510	A-
GPT Wholesale Office Fund No1	BS0983913	A-
Ausgrid Finance Pty Ltd	BR5559264	BBB
Victoria Power Networks Finance Pty Ltd	BQ9591307	A-
Transurban Queensland Finance Pty Ltd	BP1516619	BBB
APA Infrastructure Ltd	AX6137340	BBB
AGL Energy Ltd	JK0123196	BBB
AGI Finance Pty Ltd	BQ0082603	BBB+
Wesfarmers Ltd	BP9603625	A-
Australian Gas Networks Ltd	BP1516635	A-
CHC Finance Pty Ltd	BO9418894	BBB+
WestConnex Finance Co Pty Ltd	BO7332519	BBB+
Transurban Finance Co Pty Ltd	ZO4083085	BBB+
Charter Hall LWR Pty Ltd	BO0356150	BBB+
QPH Finance Co Pty Ltd	BK5343896	BBB
Brisbane Airport Corp Pty Ltd	BK1823644	BBB
Victoria Power Networks Finance Pty Ltd	BM3638566	A-
CPIF Finance Pty Ltd	BM0086983	BBB+
ICPF Finance Pty Ltd	BR6425713	A-
Charter Hall Exchange Finance Pty Ltd	ZO5090725	A-
NSW Electricity Networks Finance Pty Ltd	ZO3118536	BBB+
Shopping Centres Australasia Property Retail Trust	ZO2832020	BBB
Qantas Airways Ltd	ZO1338375	BBB+
Aurizon Network Pty Ltd	ZO0728444	BBB+
Coles Group Treasury Pty Ltd	ZO0571901	BBB+
AusNet Services Holdings Pty Ltd	BG0705684	BBB+
AusNet Services Holdings Pty Ltd	BK6864346	BBB+
APA Infrastructure Ltd	BJ0850237	BBB
Llitst Finance Pty Ltd	BQ1000422	BBB+
WSO Finance Pty Ltd	BK1995244	A-
Newcrest Finance Pty Ltd	BJ3681126	BBB
Victoria Power Networks Finance Pty Ltd	AS1776945	A-
Telstra Corp Ltd	BH8858053	A-

Issuer name	Bloomberg ID	Allocated credit rating
Transurban Finance Co Pty Ltd	BH4962032	BBB+
APA Infrastructure Ltd	EK8055262	BBB
Aurizon Network Pty Ltd	ZR5210060	BBB+
AusNet Services Holdings Pty Ltd	AR4081881	BBB+
AusNet Services Holdings Pty Ltd	AR4080248	BBB+
Charter Hall LWR Pty Ltd	BP9603708	BBB+
SGSP Australia Assets Pty Ltd	BS8419837	A-
Qantas Airways Ltd	ZQ4898867	BBB
Coles Group Treasury Pty Ltd	ZQ3484321	BBB+
DEXUS Finance Pty Ltd	ZQ0116348	A-
Network Finance Co Pty Ltd	ZQ7069433	BBB+
United Energy Distribution Pty Ltd	ZR7230280	A-
Shopping Centres Australasia Property Retail Trust	BR4613567	BBB+
Mirvac Group Finance Ltd	BO5288416	A-
Origin Energy Finance Ltd	ZR4789783	BBB
SGSP Australia Assets Pty Ltd	AZ6778510	A-
Optus Finance Pty Ltd	AZ1511791	A-
Transurban Finance Co Pty Ltd	ZS5621603	BBB+
NSW Electricity Networks Finance Pty Ltd	BP0469729	BBB
Telstra Corp Ltd	AX7292508	A-
APA Infrastructure Ltd	BO4852667	BBB
Woodside Finance Ltd	AX3939243	BBB+
ElectraNet Pty Ltd	BR2242732	BBB
GAIF Bond Issuer Pty Ltd	BM8779324	A-
Optus Finance Pty Ltd	BS4226277	A-
AGI Finance Pty Ltd	BM5726674	BBB+
Woolworths Group Ltd	BR3180923	BBB
Network Finance Co Pty Ltd	BP1516445	BBB+
Qantas Airways Ltd	BR4616982	BBB
VER Finco Pty Ltd	BR2600251	BBB+
SGSP Australia Assets Pty Ltd	ZO2831667	A-
Ausgrid Finance Pty Ltd	AS3444450	BBB
Wesfarmers Ltd	BP9602205	A-
Boral Finance Pty Ltd	AP7256195	BBB

Issuer name	Bloomberg ID	Allocated credit rating
Australian Gas Networks Ltd	BP1516627	A-
Sydney Airport Finance Co Pty Ltd	AS2413480	BBB+
Victoria Power Networks Finance Pty Ltd	BP0467079	A-
Transurban Queensland Finance Pty Ltd	AS1974714	BBB
AusNet Services Holdings Pty Ltd	BV5085824	BBB+
Transurban Finance Co Pty Ltd	AO9539849	BBB+
Victoria Power Networks Finance Pty Ltd	AR8685802	A-
Stockland Trust	BO5788852	A-
BWP Trust	BO6285858	A-
Woodside Finance Ltd	AP0445258	BBB+
Aurizon Finance Pty Ltd	BO1497904	BBB+
Charter Hall LWR Pty Ltd	BO0356143	BBB+
GPT Wholesale Shopping Centre Fund No 1	AR4452983	BBB+
ETSA Utilities Finance Pty Ltd	BG2071580	A-
CIP Funding Pty Ltd	BS9219202	BBB
GAIF Bond Issuer Pty Ltd	BS3257463	A-
Woolworths Group Ltd	BR6425424	BBB
Telstra Corp Ltd	AP8115770	A-
Origin Energy Finance Ltd	ZQ1497739	BBB
Lonsdale Finance Pty Ltd	ZO7224041	BBB
WSO Finance Pty Ltd	AM6441365	A-
GTA Finance Co Pty Ltd	ZO0730739	BBB
Victoria Power Networks Finance Pty Ltd	AO6744343	A-
QPH Finance Co Pty Ltd	BK5343441	BBB
APA Infrastructure Ltd	AM7968663	BBB
SGSP Australia Assets Pty Ltd	AO1476404	A-
AGI Finance Pty Ltd	BQ0082512	BBB+
DEXUS Finance Pty Ltd	AN3181293	A-
WSO Finance Pty Ltd	AN0014679	A-
Transurban Finance Co Pty Ltd	QZ4183500	BBB+
APA Infrastructure Ltd	EK8055387	BBB
Mirvac Group Finance Ltd	AP1984487	A-
AusNet Services Holdings Pty Ltd	EK7552160	BBB+
GPT Wholesale Office Fund No1	AM4186863	A-

Issuer name	Bloomberg ID	Allocated credit rating
Ausgrid Finance Pty Ltd	BK6471795	BBB
WMC Finance USA Ltd	DD1091428	A-
Lonsdale Finance Pty Ltd	ZQ5768911	BBB
Network Finance Co Pty Ltd	ZQ4106501	BBB+
Coles Group Treasury Pty Ltd	ZQ3483828	BBB+
United Energy Distribution Pty Ltd	ZR6539137	A-
GAIF Bond Issuer Pty Ltd	QZ5613174	A-
Woodside Finance Ltd	QZ3723793	BBB+
SGSP Australia Assets Pty Ltd	LW9385011	A-
WSO Finance Pty Ltd	LW7941799	A-
Brisbane Airport Corp Pty Ltd	BK1823131	BBB
Aurizon Network Pty Ltd	LW0777554	BBB+
Downer Group Finance Pty Ltd	AX9159978	BBB
Sydney Airport Finance Co Pty Ltd	JK8763837	BBB+
Stockland Trust	AR8329708	A-
Victoria Power Networks Finance Pty Ltd	BP0467020	A-
Victoria Power Networks Finance Pty Ltd	BP0862717	A-
Telstra Corp Ltd	JK7301761	A-
BWP Trust	AX8473974	A-
ConnectEast Finance Pty Ltd	AX4305576	BBB
Incitec Pivot Ltd	AX3500896	BBB
Transurban Finance Co Pty Ltd	QJ4132016	BBB+
GPT Wholesale Office Fund No1	AZ5259124	A-
AGI Finance Pty Ltd	BM4138475	BBB+
DEXUS Finance Pty Ltd	QJ4034261	A-
Lonsdale Finance Pty Ltd	AU8116520	BBB
Goodman Australia Finance Pty Ltd	AP2375164	BBB+
Transurban Finance Co Pty Ltd	EK9118226	BBB+
Coles Group Treasury Pty Ltd	ZO0568642	BBB+
QIC Finance Shopping Center Fund Pty Ltd	AZ7848924	A-
QIC Finance Shopping Center Fund Pty Ltd	ZR0093453	A-
Ausgrid Finance Pty Ltd	AS0720563	BBB
DBNGP Finance Co Pty Ltd	AS5336035	BBB+
Sydney Airport Finance Co Pty Ltd	EK8787450	BBB+

Issuer name	Bloomberg ID	Allocated credit rating
Ampol Ltd	AS1796497	BBB+
Telstra Corp Ltd	EK8353493	A-
APA Infrastructure Ltd	EK8078215	BBB
Woodside Finance Ltd	EK7758478	BBB+
Transurban Queensland Finance Pty Ltd	EK6424791	BBB
Energy Partnership Gas Pty Ltd	AQ2525352	BBB+
Network Finance Co Pty Ltd	AP8371027	BBB+
Network Finance Co Pty Ltd	AQ2180349	BBB+
APA Infrastructure Ltd	EJ4508010	BBB
Ausgrid Finance Pty Ltd	AP3049594	BBB+
Ausgrid Finance Pty Ltd	AP6703965	BBB+
United Energy Distribution Pty Ltd	AP4899310	A-
Australia Pacific Airports Melbourne Pty Ltd	EK5369849	BBB+
Aurizon Network Pty Ltd	EK4685294	BBB+
Transurban Finance Co Pty Ltd	EK4655081	BBB+
GPT Wholesale Shopping Centre Fund No 1	AO9337061	BBB+
ETSA Utilities Finance Pty Ltd	AO5004962	A-
Victoria Power Networks Finance Pty Ltd	BR0346410	A-
AusNet Services Holdings Pty Ltd	EK3489227	BBB+
Aurizon Network Pty Ltd	AN7512055	BBB+
Brambles Finance Ltd	EK3156859	BBB+
Shopping Centres Australasia Property Retail Trust	AN6454895	BBB+
United Energy Distribution Pty Ltd	BR2606969	A-
Sydney Airport Finance Co Pty Ltd	EK1561159	BBB+
Stockland Trust	AX4304298	A-
AusNet Services Holdings Pty Ltd	EK0554445	BBB+
Ausgrid Finance Pty Ltd	BK6864585	BBB
Telstra Corp Ltd	EI9023967	A-
Telstra Corp Ltd	EI9022241	A-
ETSA Utilities Finance Pty Ltd	AQ3070770	A-
QIC Finance Shopping Center Fund Pty Ltd	AS8270157	A-
APA Infrastructure Ltd	QZ8701372	BBB
Transurban Queensland Finance Pty Ltd	QZ7667723	BBB
DBNGP Finance Co Pty Ltd	UV3027009	BBB+

Issuer name	Bloomberg ID	Allocated credit rating
Australia Pacific Airports Melbourne Pty Ltd	EJ8457800	BBB+
Telstra Corp Ltd	EJ5831940	A-
United Energy Distribution Pty Ltd	QZ4475534	A-
WSO Finance Pty Ltd	LW3418610	A-

APPENDIX C: LIST OF SUBMISSIONS

We have received the following submissions during our investigation of Aurizon Network's reset Schedule F preliminary values. The submission numbers below are used in this decision for referencing purposes. The submissions are available on the QCA website.

Stakeholder	***Sub. no.***	***Submission***	***Date***
Aurizon Network	1	Aurizon Network 2017 AU: Reset Schedule F Preliminary Values	29 July 2022
Queensland Resources Council (QRC) on behalf of the QRC's Rail Working Group	2	Aurizon Network: Reset Schedule F Preliminary Values	4 October 2022
QRC on behalf of the QRC's Rail Working Group	3	QCA Draft Decision on Aurizon Network Reset Schedule F Preliminary Values	23 December 2022
Aurizon Network	4	Reset Schedule F Preliminary Values - Response to the QCA's draft Decision	20 January 2023
Aurizon Network	5	Aurizon Network 2017 AU: Updates to Reset Schedule F Preliminary Values	27 February 2023
Bravus Mining and Resources (Bravus)	6	Reset Schedule F Preliminary Values: Newlands System Forecast Volumes	17 March 2023
QRC on behalf of the QRC's Rail Working Group	7	Aurizon Network Reset Schedule F Preliminary Values: Aurizon Network update	20 March 2023
Aurizon Network	8	Further updates to UT5 Reset Schedule F Preliminary Values	3 April 2023

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QCA, *Decision notice: Annual review of reference tariffs 2022–23*, May 2022.

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