Queensland
Competition
Authority

Decision

Aurizon Network's reset Schedule F values

October 2023

Contents

RESET SCHEDULE F VALUES—DECISION

On 31 July 2023, Aurizon Network submitted its proposed reset Schedule F values for our assessment, in accordance with Part 6A of UT5. The reset Schedule F values include Aurizon Network's:

- reset allowable revenues

- reset reference tariff inputs

- gross tonne kilometre (gtk) forecasts.

We have conducted our assessment of Aurizon Network's proposed reset schedule F values in accordance with the framework outlined in UT5.

Our decision is that Aurizon Network's proposed reset Schedule F values are appropriate to approve.

We consider that Aurizon Network's approach for developing its reset Schedule F values is consistent with UT5. In calculating the reset values, Aurizon Network has adopted the previously approved reset Schedule F preliminary values[1] with appropriate revisions to reflect updates to the reset inflation rate and reset WACC[2] as well as new information and recent regulatory decisions.[3]

This decision outlines our reasons for approving Aurizon Network's proposed reset Schedule F values.

Next steps

In accordance with UT5[4], the adjusted allowable revenue for 2023–24 will take into account the extent to which the reset Schedule F values are different to the reset Schedule F preliminary values.

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[1] QCA, *Aurizon Network's reset Schedule F preliminary values, decision*, May 2023.

[2] In accordance with cl. 6A.5(a).

[3] Aurizon Network has also updated the regulatory asset base to reflect actual CPI outcomes for 2022–23; and the EC tariff to reflect the 2023–24 EC tariff approved on 21 June 2023.

[4] UT5, sch. 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.[5] 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).[6]

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
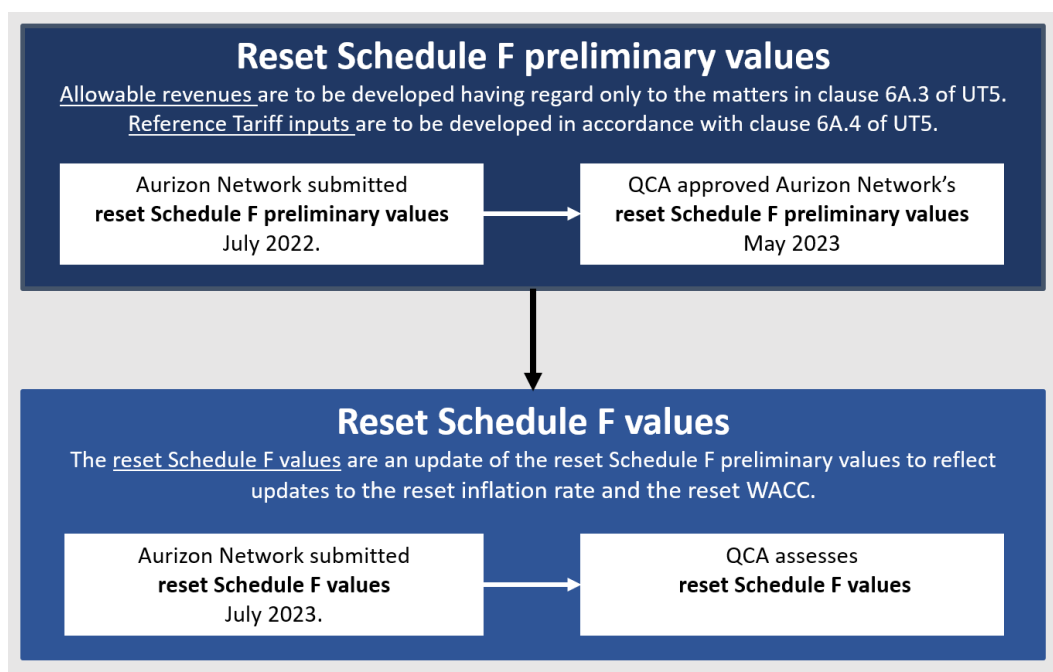
Source: UT5, cl. 6A.

As part of this process, we undertook an assessment and published a decision to approve Aurizon Network's reset Schedule F preliminary values.[7] The approved reset Schedule F preliminary values included Aurizon Network's:

- allowable revenue (preliminary allowable revenues)[8]

- reference tariff inputs (preliminary reference tariff inputs)

- gtk forecasts (preliminary volume forecasts).

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[5] See QCA, *Aurizon Network's Revised UT5 draft amending access undertaking*, decision, December 2019.

[6] UT5, cl. 6A.1(a).

[7] QCA, *Aurizon Network's reset Schedule F preliminary values*, decision, May 2023.

[8] UT5 requires that the preliminary allowable revenues be developed using only specified inputs. 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). UT5, cls. 6A.2(b) and 6A.3.

The next step of this process involves our assessment of Aurizon Network's proposed reset Schedule F values—which are based on the approved preliminary values but have been revised to reflect updates to the reset inflation rate and the reset WACC.[9]

On 31 July 2023, Aurizon Network submitted its proposed reset Schedule F values, in accordance with Part 6A of UT5.

The reset values submitted by Aurizon Network for our assessment are presented in Chapter 2 of this decision. These include Aurizon Network's:

- allowable revenue (reset allowable revenues)—section 2.1

- reference tariff inputs (reset reference tariff inputs)—section 2.2

- gtk forecasts (reset volume forecasts)—section 2.3.

1.2   Our regulatory task—reset schedule F values

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

- must approve Aurizon Network's use of the reset inflation rate and reset WACC to the extent we are satisfied they have been calculated correctly and have been used in accordance with UT5[10]

- may approve all other matters, calculations, inputs and methodologies used in the calculation of the reset Schedule F values if we are satisfied they are appropriate.[11]

Approach to our assessment

We have conducted our assessment of Aurizon Network's proposed reset schedule F values in accordance with the framework outlined in UT5. This includes publishing Aurizon Network's proposal and requesting submissions from stakeholders.[12]

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

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 proposal.

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.[13] For instance, our recent position papers on inflation forecasting[14] and the rate of return[15] set out a different approach, which we consider preferable for calculating these parameters.

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

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[9] UT5, cl. 6A.5(a).
[10] UT5, cl. 6A.7(b)(i)(B).
[11] UT5, cl. 6A.7(b)(ii).
[12] We have received one submission, from Aurizon Network.
[13] The legislative framework in the QCA Act sets out the statutory requirements for assessing an access proposal.
[14] QCA, *Inflation forecasting*, final position paper, October 2021.
[15] QCA, *Rate of return review*, final report, version 2, July 2023.

Aurizon Network has provided financial models in support of its proposed reset allowable revenues and reset 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 values.

2 AURIZON NETWORK'S RESET SCHEDULE F VALUES

2.1 Reset allowable revenues

Aurizon Network's proposal

Aurizon Network's reset Schedule F values include the proposed allowable revenues for the reset period (Table 1).

Table 1 Aurizon Network's proposed reset allowable revenues ($m)

Building block component	2023–24	2024–25	2025–26	2026–27
Return on capital [a]	510.9	515.5	520.9	523.9
Depreciation (less inflation)	256.5	272.4	303.7	316.6
Direct maintenance costs	164.1	174.9	175.8	179.5
Indirect maintenance costs	18.2	18.0	17.4	17.1
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	52.2	53.4	57.7	58.3
Adjustments [b]	62.7	31.6	32.3	33.1
Total	**1,271.8**	**1,272.9**	**1,314.9**	**1,335.5**

a Working capital is added to return on capital. b Adjustments include the UT4 capital carryover; reconciliation of transitional arrangements; and recovery of approved Advanced Planning and Scheduling capital expenditure.

Source: Aurizon Network, sub. 1, p. 4. A breakdown of Aurizon Network's reset allowable revenues allocated to the AT1-5 tariff components for each system is provided in Aurizon Network, sub. 1, pp. 5–6.

QCA analysis

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

We consider that Aurizon Network's approach for developing the reset allowable revenues is consistent with UT5.[16] In this regard, Aurizon Network has proposed reset allowable revenues based on the approved preliminary allowable revenues[17], and has made appropriate revisions to reflect updates to the forecast inflation and WACC to apply for the reset period.[18]

The reset inflation rate and reset WACC influence the reset allowable revenues directly and indirectly, through the calculation of other reset allowable revenue inputs including:

- the regulatory asset base (and the associated depreciation allowance), which is rolled forward annually to reflect the reset inflation rate[19]

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[16] UT5, cl. 6A.5.

[17] See QCA, *Aurizon Network's reset Schedule F preliminary values*, decision, May 2023.

[18] Our assessment of Aurizon Network's proposed reset inflation rate and reset WACC is outlined in chapter 3.

[19] Aurizon Network calculated the regulatory asset base values applying an inflation rate of 6.33% for 2022-23 to reflect actual CPI outcomes for the year. The regulatory asset base values will be updated for actual CPI as part of the annual regulatory asset base roll-forward process.

- the indirect maintenance cost allowance, which provides Aurizon Network with a return on plant and a return on inventory that reflects the reset WACC

- the working capital allowance and tax allowance, which are a computation of Aurizon Network's post-tax revenue model.

While these inputs have changed to reflect the updated reset inflation rate and reset WACC, Aurizon Network's methodology, assumptions and modelling approach used to calculate these inputs remain unchanged from those used to develop its preliminary allowable revenues. Thus, we consider that Aurizon Network's proposed approach for calculating these inputs is appropriate.

Aurizon Network has also updated the regulatory asset base to reflect actual CPI outcomes for 2022–23. We consider it appropriate to calculate the revenue inputs with reference to updated information where appropriate, as this provides for an improved estimate of the preliminary allowable revenues for the reset period. Furthermore, in accordance with UT5, the regulatory asset base values will be updated for actual CPI as part of the annual regulatory asset base roll-forward process.

2.2   Reset reference tariff inputs

Aurizon Network's proposal

Aurizon Network's reset Schedule F values include the proposed reference tariff inputs for the reset period (Table 2).

Table 2 Aurizon Network's reset 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	1.66	0.0063	0.0164
2024/25	1.07	2,633.10	10.66	3.45	4.46	1.66	0.0063	0.0164
2025/26	1.10	2,710.08	11.10	3.59	4.52	1.66	0.0063	0.0164
2026/27	1.13	2,788.67	11.59	3.75	4.62	1.66	0.0063	0.0164
Goonyella								
2023/24	0.72	1,623.94	6.41	1.33	2.61	1.66	0.0063	0.0164
2024/25	0.74	1,668.60	7.11	1.47	2.34	1.66	0.0063	0.0164
2025/26	0.76	1,716.99	7.41	1.53	2.40	1.66	0.0063	0.0164
2026/27	0.78	1,766.79	7.62	1.58	2.47	1.66	0.0063	0.0164
Moura								
2023/24	1.93	759.15	15.96	2.60	–	–	0.0063	0.0164
2024/25	1.98	780.03	15.78	2.58	–	–	0.0063	0.0164
2025/26	2.04	802.65	16.48	2.69	–	–	0.0063	0.0164
2026/27	2.10	825.93	16.71	2.73	–	–	0.0063	0.0164
Newlands								
2023/24	2.01	343.28	8.87	1.21	–	–	0.0063	0.0164

Year	AT1	AT2	AT3	AT4	AT5	EC	QCA levy	IE fee
2024/25	2.06	352.72	9.50	1.29	–	–	0.0063	0.0164
2025/26	2.12	362.95	10.18	1.39	–	–	0.0063	0.0164
2026/27	2.18	373.48	11.06	1.51	–	–	0.0063	0.0164
GAPE								
2023/24	1.62	15,464.32	1.55	3.22	–	–	0.0063	0.0164
2024/25	1.66	15,464.32	1.44	2.73	–	–	0.0063	0.0164
2025/26	1.71	15,464.32	1.39	2.67	–	–	0.0063	0.0164
2026/27	1.76	15,464.32	1.41	1.43	–	–	0.0063	0.0164

Note: The 2023–24 reference tariffs reflect the approved reset Schedule F preliminary values.

Source: Aurizon Network, sub. 1, pp. 6–7.

QCA analysis

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

We consider that Aurizon Network's approach for developing the reset reference tariff inputs is consistent with UT5.[20] In this regard, Aurizon Network has adopted the approach it used to determine the approved preliminary reference tariff inputs[21] where:

- the AT1 to AT5 reference tariff inputs are calculated to recover the reset allowable revenues—which are now calculated on the basis of the updated reset inflation rate and reset WACC[22]

- the independent expert fee, QCA levy and EC tariff components reflect the most recent regulatory decisions or updated cost information[23]—which now includes the 2023–24 EC tariff we approved on 21 June 2023.[24]

2.3   Reset volume forecasts

Aurizon Network's proposal

Aurizon Network's reset Schedule F values include the proposed gtk forecasts for each year of the reset period (Table 3).

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[20] UT5, cl. 6A.5(a).

[21] See QCA, *Aurizon Network's reset Schedule F preliminary values*, decision, May 2023.

[22] Aurizon Network's proposed AT1 to AT5 reference tariff inputs reflect the reset allowable revenues and the relevant volume metrics derived from the reset volume forecasts. The AT1 and AT2 reference tariff inputs are escalated for each year by the reset inflation rate.

[23] We consider it appropriate to calculate these tariff components in this way, as it provides for an improved estimate of the preliminary reference tariffs for the reset period.

[24] Aurizon Network's EC tariff was approved in accordance with Schedule F, clause 2.2(a) of UT5. See QCA, Electric energy charge (EC) 2023–24, correspondence to Aurizon Network, 22 June 2023.

Table 3 Aurizon Network's 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, pp. 3–4.

QCA analysis

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

We consider that Aurizon Network's approach for developing the reset reference tariff inputs is consistent with UT5.[25] In this regard, Aurizon Network's proposed reset volume forecasts are the same as its approved preliminary volume forecasts.[26]

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[25] UT5, cl. 6A.5(a).

[26] See QCA, *Aurizon Network's reset Schedule F preliminary values*, decision, May 2023. We reviewed Aurizon Network's preliminary volume forecasts and, overall, considered them to be reasonable.

3   UPDATED ALLOWABLE REVENUE INPUTS

3.1   Reset inflation rate

Aurizon Network's proposal

Aurizon Network proposed a reset inflation rate of 2.90% for the reset period.[27]

QCA analysis

We are satisfied Aurizon Network's proposed reset inflation rate has been calculated correctly and has been used in accordance with UT5 to develop the reset allowable revenues.

UT5 specifies that the reset 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 2023 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.[28]

Aurizon Network has calculated the reset inflation rate consistent with the approach described in UT5. In doing so, Aurizon Network's estimate is based on the most recent RBA inflation forecasts available at the time of its submission (released in May 2023).[29] The relevant RBA inflation data used to calculate the reset inflation is provided in Table 4.

Table 4 RBA inflation data

Forecast end date	Inflation forecast/target band	Source
June 2024	3.60%	RBA short-term forecasts
June 2025	3.00%	RBA short-term forecasts
June 2026	2.50%	Midpoint of RBA target band
June 2027	2.50%	Midpoint of RBA target band
Arithmetic average	**2.90%**	

Source: RBA, Statement on Monetary Policy, May 2023; RBA, Statement on the Conduct of Monetary Policy, September 2016.

While we consider that this approach is appropriate for developing the reset Schedule F 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.[30] The approach in our position paper is to:

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[27] Aurizon Network, sub. 1, p. 36.

[28] UT5, Part 12.

[29] Aurizon Network has used the data presented in the appendix of the RBA's *Statement on Monetary Policy*, May 2023.

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

- 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.

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

3.2   Reset WACC

Aurizon Network's proposal

Aurizon Network proposed a reset WACC of 8.51% for the reset period based on the reset WACC parameters outlined in Table 5.

Table 5 Aurizon Network's proposed reset WACC

Reset WACC parameters		Reset WACC calculation	
WACC base rate	6.30%	Approved WACC	6.30%
Reset risk-free rate	3.87%	+ Reset risk-free rate - 1.90%	+ 1.97%
Reset debt risk premium	2.48%	+ (Reset debt risk premium - 2.04%) x 0.55	+ 0.24%
		= Reset WACC	**= 8.51%**

Source: Aurizon Network, sub. 1, p. 12.

QCA analysis

We are satisfied Aurizon Network's proposed reset WACC has been calculated correctly and has been used in accordance with UT5 to develop the reset allowable revenues.

UT5 requires the reset allowable revenues to reflect the reset WACC that would apply as at 30 June 2023, using the method prescribed by UT5.[31] This is calculated using the approved WACC base rate (set at 6.3%)[32] and updated estimates of the reset risk-free rate and the reset debt risk premium.

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, the approach for calculating these parameters differs from that outlined in our rate of return review.[33] The approach in our rate of return review includes:

- using 10-year Australian Government nominal bond yields to calculate the risk-free rate[34]

- 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.

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[31] UT5, cl. 6A.5 (b).

[32] See QCA, *Aurizon Network's reset Schedule F preliminary values,* decision, May 2023, p. 23.

[33] QCA, *Rate of return review*, final report, version 2, July 2023.

[34] The RBA publishes an interpolated data series, which can be directly used to obtain yields for 10-year Australian Government nominal bond yields.

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.

Risk-free rate

We consider that it is appropriate to use Aurizon Network's proposed reset risk-free rate (3.87%) to calculate the reset WACC.

UT5 requires that 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—linearly interpolating the 4-year yield to maturity using the highest maturity bond shorter than the maturity date and the lowest maturity bond longer than the maturity date

- an averaging period of the 20 business days up to (and including) 30 June 2023.[35]

While Aurizon Network's proposal has applied this approach, Aurizon Network has used a different data source (Bloomberg) to obtain the relevant Commonwealth Government nominal bond yields.

We consider that this is appropriate in these circumstances.

The RBA has recently ceased publication of the indicative mid-rates for Australian Government Securities (AGS), making it necessary to estimate the reset risk-free rate with reference to a replacement data source. Relevantly, UT5 provides for Aurizon Network and end users to propose an alternative index to the QCA if the index required by UT5 is no longer published.[36]

We note that all parties were aware that a replacement data source would be required to calculate the reset risk-free rate. Aurizon Network nominated (and we considered it appropriate) to use Bloomberg data in advance of the averaging period, providing for a transparent and balanced regulatory process.[37] Furthermore, there does not appear to be any material, directional bias in the variation between the daily yields obtained from historical Bloomberg market data and those published by the RBA.

Debt risk premium

We consider that it is appropriate to use Aurizon Network's proposed reset debt risk premium (2.48%) to calculate the reset WACC.

UT5 requires Aurizon Network to estimate the reset debt risk premium using the methodology applied in our 2017 DAU investigation.[38] The methodology establishes 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.

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[35] UT5, Part 12.

[36] UT5, cl. 6A.6(b).

[37] On 19 May 2023, Aurizon Network proposed to use Bloomberg as a replacement data source for the relevant AGS data. We subsequently notified Aurizon Network that we consider Aurizon Network's proposed approach is appropriate in these circumstances. See QCA, *Aurizon Network reset Schedule F values—Proposed alternate index for the calculation of the risk-free rate*, letter to Aurizon Network, 22 June 2023.

[38] UT5 (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.

(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 undertaken these three steps in assessing Aurizon Network's debt risk premium proposal.

Step 1: Bond selection process

We have used the bond selection criteria applied as part of our 2017 DAU investigation to establish a core sample of corporate bonds to estimate the reset debt risk premium.

For the averaging period up to 30 June 2023, we obtained a sample of 19 corporate bonds. The frequency of each credit rating band for our sample is outlined in Table 6. The full list of our sample of bonds and the bond selection criteria applied is provided in Appendix A.

Table 6 Frequency of credit rating in our corporate bond sample

Rating	A-	BBB+	BBB
Frequency	8	5	6

Aurizon Network obtained a sample of 18 bonds to estimate the preliminary reset debt risk premium.[39] Aurizon Network's sample of bonds was the same as our sample, except that it did not include the AN1290252 bond issue by Telstra. This was due to Aurizon Network allocating a different credit rating band to this particular bond and, as a result, excluding it from the sample.[40]

Step 2: Regression methodology

We have applied the same regression method that applied as part of our 2017 DAU investigation to estimate the reset debt risk premium from the relevant sample of bonds.

Our 2017 DAU investigation considered the dummy variables regression method appropriate— amongst other things, it overcame deficiencies identified in the sample of bonds being considered (see Box 1). Two deficiencies remain for the sample of bonds obtained for the averaging period up to 30 June 2023, which are that:

- the sample only contains 5 BBB+ rated bond observations

- 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.

Applying the dummy variable regression method to our sample of 19 bonds provides a reset debt risk premium of 2.31%.[41]

However, we consider that the small size of the core sample of bonds is not sufficient to provide a reliable estimate of Aurizon Network's debt risk premium (regardless of the regression

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[39] Aurizon Network, sub. 1, pp. 18–19.

[40] Aurizon Network, sub. 2, pp. 1–2. As an alphanumeric scale, Aurizon Network applied the lower credit risk rating to mean an A rated bond has a lower credit risk rating than an A- rated bond. This was not the approach used to allocate credit rating bands to the sample of bonds in our 2017 DAU investigation or our assessment of Aurizon Network's reset Schedule F preliminary values.

[41] Aurizon Network calculated a reset debt risk premium of 2.27% using the dummy variable regression method for its core sample of bonds (Aurizon Network, sub. 1, p. 19).

methodology applied).[42] In this regard, Aurizon Network considered there is an extremely low level of confidence in the BBB+ debt risk premium dummy intercept estimate for the domestic bonds sample. Aurizon Network submitted that the domestic bonds sample is not of sufficient size or quality to be given any weight in the application of judgement to the determination of the BBB+ debt risk premium.[43]

Box 1: 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[44] and material asymmetry in the debt risk premiums of credit rating bands.[45]

Step 3: Reasonableness of the debt risk premium estimate

We have considered estimates obtained from other relevant sources to inform an assessment of Aurizon Network's proposed reset debt risk premium, consistent with the approach applied in our 2017 DAU investigation.

To assess the reasonableness of Aurizon Network's proposal, 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 includes bonds with optionality and foreign bonds.

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[42] We have therefore not undertaken any further assessment as to whether it is appropriate to remove any 'outlier' bonds from the sample. In contrast, we considered the core sample of bonds obtained as part of our 2017 DAU investigation provided a reliable estimate of the debt risk premium, with a sample containing 55 bond observations.

[43] Aurizon Network, sub. 1, pp. 16–21, 28.

[44] The sample contained a potentially substantial degree of bias towards the A– credit rating category.

[45] An overwhelming majority of the BBB+ debt risk premium observations were above the regression line.

We have obtained third-party estimates to inform our assessment (Table 7) by interpolating the broad BBB and broad A fair value curves using Bloomberg's BVAL indices and RBA's corporate bond yield data (as these providers do not publish a BBB+ yield curve).[46]

In doing so, the RBA's corporate bond yield data can be interpolated[47] using the approach applied:

- in our 2017 DAU investigation—which constructs a set of daily bond yields[48] (based on the RBA indicative BBB+ yield values at 31 May 2023 and 30 June 2023) to determine the average bond yield and then subtracts the average risk-free rate to calculate the debt risk premium

- by the AER[49]—which calculates effective debt risk premium values at 31 May 2023 and 30 June 2023 and then linearly interpolates between these two values to construct a set of daily debt risk premium estimates. This is consistent with the approach we have applied in recent regulatory reviews[50].[51]

Table 7 Third-party estimates, averaging period up to 30 June 2023

Approach	Estimate
Bloomberg BVAL (interpolated BBB+)	2.25%
RBA (interpolated BBB+)—2017 DAU approach	2.47%
RBA (interpolated BBB+)—AER approach	2.56%

Source: Aurizon Network, sub. 1, pp. 30–31; QCA analysis.

Aurizon Network submitted that where the risk-free rate is volatile over the averaging period, the approach applied in our 2017 DAU investigation to interpolate the RBA's bond yield data is likely to produce a less reliable estimate of the debt risk premium compared to the AER approach.[52] It also considered that limited weight should be given to the Bloomberg BVAL estimate due to its composition.[53]

We have had regard to all of the third-party estimates in considering whether Aurizon Network's proposed reset debt risk premium point estimate is appropriate to approve.

We have derived an 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

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[46] 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.

[47] Given the RBA only publishes end of month corporate bond yield data, it is necessary to interpolate between the two end-of-month observations.

[48] Aurizon Network interpolated the RBA indicative BBB+ yields using trading and non-trading days during between 31 May 2023 and 30 June 2023.

[49] This approach is consistent with the method set out by the AER in its 2018 rate of return instrument. Aurizon Network, sub. 1, p. 30.

[50] See QCA, *Rate of return review*, final report, version 2, July 2023.

[51] Aurizon Network, sub. 1, pp. 30–31.

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

[53] In relation to the composition of the Bloomberg BVAL data, Aurizon Network submitted that financial firms make up a significant proportion of the corporate bonds contained in Bloomberg's sample; and almost half of the bonds in the Bloomberg sample used to construct the broad A fair value curve have a current Standard & Poor credit rating of AA- (Aurizon Network, sub. 1, p. 31).

currency bonds. For the averaging period up to 30 June 2023, we obtained a sample of 207 corporate bonds.[54] The frequency of each credit rating band for our sample is outlined in Table 8.

Table 8 Frequency of credit rating in our expanded sample

Rating	A-	BBB+	BBB
Frequency	73	79	55

Note: The search process that we consider appropriate to derive an expanded sample of corporate bonds and the full list of our sample of bonds is provided in Appendix A.

We have applied the single credit rating (BBB+) and the dummy variable regression approaches to our expanded sample. We did not consider the pooled BBB+ regression approach, as there was material bias in the bond sample (see Table 8).

Consistent with the methodology applied as part of our 2017 DAU investigation, we have assessed whether it is appropriate to remove any 'outlier' bonds[55] from the sample to improve the estimate of the debt risk premium for a benchmark bond.[56] Specifically, there should be no aberrant or influential bonds whose debt risk premiums are:

- materially out of line with the debt risk premium/term relationship for that credit rating

- influential relative to their numbers among the bonds in the sample.[57]

Our 2017 DAU investigation did not outline a specific methodology or approach for removing influential points from the sample.[58] Without such guidance, we have not sought to apply a specific analytical approach, for which there are many, to determine which observations should be excluded from the sample in calculating a single point estimate for the expanded sample. Rather, we have more broadly assessed whether there are likely to be observations that are influential data points to inform our assessment of Aurizon Network's reset debt risk premium (see Box 2).

Our analysis indicates that there are likely to be observations in the unmodified expanded samples that are influential data points—and that removing these observations will result in regression that produces a higher debt risk premium estimate (Table 9).

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[54] Aurizon Network obtained 196 bonds in its expanded sample, which is due to: Aurizon Network allocating a different credit rating band to certain bonds (see Aurizon Network, sub. 2, pp. 1-2); Aurizon Network did not obtain an AUD equivalent yield from Bloomberg using the process that we consider appropriate to derive an expanded sample of corporate bonds (Aurizon Network, *Response to request for information*, dated 22 August 2023).

[55] In some cases, a bond may be so different from its ostensible peers that its yield is an outlier for the credit rating band.

[56] Incenta, *Addressing responses to Incenta's debt risk premium estimate for the 2017 draft access undertaking*, June 2018, p. 3.

[57] See QCA, *Aurizon Network's 2017 draft access undertaking*, final decision, Appendices, December 2018, p. 148.

[58] An influential data point is a data point that can significantly impact regression results.

Box 2: Considering the potential effects of excluding influential points

We have examined the implications of excluding high leverage observations and outliers from the sample.[59] In doing so, we have analysed our expanded sample applying Aurizon Network's proposed approach for obtaining regression estimates that excludes high leverage bonds and outlier bonds.[60] This involves the following two-stage approach[61] to removing bonds from the sample:

- first calculating the leverage of the bond observations and removing high leverage bonds from the sample that materially influence the regression results. To identify bonds with high leverage, two alternative thresholds were tested, identifying those observations that have a value that are over 2 and 3 times the average leverage value.[62]

- second, following the removal of the high leverage bonds, identified the regression model recalculate the standard residuals, separately removing values with a standardised residual above 2 and 3.[63]

Separately, we have also undertaken additional statistical analysis to directly examine the influence that observations exert on the regression. While high leverage points and outliers may contribute to an observation being considered an influential data point, assessing these attributes as separate and sequential steps does not evaluate whether an observation in itself exerts significant influence on the regression.[64] To consider the implications of only removing those bond observations that are considered influential data points, we have also calculated the debt risk premium after removing observations that are assessed as being influential by the Cook's Distance and DFFITS tests.[65]

Table 9 Regression estimates that exclude potential influential observations from sample

Observations excluded from sample	Dummy variable regression		BBB+ regression	
	Estimate	Observations	Estimate	Observations
None (unmodified sample)	2.21%	207	2.19%	79
Bonds with leverage cut-off >3[a]; standardised residual >3	2.37%	199	2.47%	76
Bonds with leverage cut-off >2[b]; standardised residual >3	2.42%	194	2.62%	73
Bonds with leverage cut-off >3[a]; standardised residual >2	2.42%	196	2.46%	73
Bonds with leverage cut-off >2[b]; standardised residual >2	2.45%	193	2.67%	69
Cook's distance [c]	2.34%	197	2.4%	74
DFFITS [d]	2.36%	198	2.4%	74

Note: A leverage value for each observation is obtained from its value in the diagonal of the hat matrix. a The leverage cut-off >3 excludes bond observations from the sample whose leverage value is three times the average leverage for the sample. b The leverage cut-off >2 excludes bond observations from the sample whose leverage value is two times the average leverage for the sample. c In applying the Cook's distance test, a value of 4/n was used as a threshold for excluding observations (where n refers to the number of observations) as this is a common guideline threshold. d In applying the DFFITS test, a value of $((p-1/n-p-1)^{.5})*2$ was used as a threshold for excluding observations (where n refers to the number of observations and p refers to the number of parameters that are being estimated in the regression) as this is a common guideline threshold.

Source: QCA analysis.

Reasonableness assessment

Unlike our 2017 DAU investigation, the information available does not support adopting the reset debt risk premium point estimate (2.31%) obtained applying the dummy variable regression to the core sample of bonds. In particular:

- the small size of the core sample of bonds does not provide for a reliable estimate of the reset debt risk premium, including where the dummy variable regression is applied

- the estimates obtained from other relevant sources, including the third-party and expanded sample estimates, indicate a reset debt risk premium above 2.31% is likely to be appropriate for the averaging period (with a broad range of estimates obtained from the data).[66]

However, we consider the relevant information, in this instance, supports the use of Aurizon Network's proposed debt risk premium (2.48%) to calculate the reset WACC. In this regard, our analysis of potential influential data points in the expanded sample supports exercising judgement to increase the reset debt risk premium beyond 2.31%. We note Aurizon Network's debt risk premium sits slightly above a number of the estimates obtained from our analysis of the expanded sample.[67] Nevertheless, the RBA's third-party estimate supports that an estimate of 2.48% is a reasonable BBB+ debt risk premium estimate for the relevant averaging period.

While Aurizon Network also obtained a number of alternative debt risk premium estimates from the expanded sample of bonds to support its proposal,[68] the methodology applied in our 2017 DAU investigation did not have regard to these alternative approaches. We do not consider it appropriate to depart from the methodology used to estimate Aurizon Network's debt risk premium as part of our 2017 DAU investigation, unless there is a reason why such an approach cannot be applied for the relevant averaging period. As a result, we have not relied on these alternative estimates to inform our position.

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[59] High leverage observations and outliers may be used as an indicator to identify whether influential points are present in the sample.

[60] Aurizon Network, sub. 1, pp. 26, 28.

[61] Aurizon Network did not consider an assessment that evaluated these two attributes simultaneously to be appropriate in this instance. It submitted that evaluating for outliers, either before or simultaneously testing from leverage would result in a biased sample where the leveraged observations materially change the intercept and slope coefficients in the model (Aurizon Network, sub. 1, p. 24).

[62] Aurizon Network submitted that leverage of each observation is typically represented in the diagonal of the hat matrix and it is generally considered reasonable to closely scrutinise values which are two times the average hat value (see Aurizon Network, sub. 1, p. 23–24).

[63] In order to remove bonds that are materially out of line with the debt risk premium / term relationship for its credit rating (Aurizon Network, sub. 1, p. 24).

[64] We consider that sequentially excluding high leverage bonds and then bonds with high residuals may result in certain observations that are not influential data points being excluded from the sample.

[65] The Cook's Distance and DFFITS tests assess the impact of not including each individual observation on the regression estimates.

[66] In contrast, in our 2017 DAU investigation, the third-party estimates and the expanded sample regression results set out a narrow range of estimates (1.99%-2.06%), which supported the point estimate as being appropriate to approve. Furthermore, these estimates also supported that Aurizon Network's proposed debt risk premium (2.47%) was not appropriate to approve.

[67] Our analysis of influential data points does not seek to settle on a specific analytical approach and produces a broad range of estimates.

[68] Aurizon Network considered a subset of only domestically issued Australian dollar denominated bonds; excluding bonds with a term of less than two years from the expanded sample to avoid the influence of monetary policy on the resulting estimates; a sample of bonds comprising issuers of similar infrastructure assets; and the impact of issuers with single bonds to the contribution of noise to the expanded sample (Aurizon Network, sub. 1, pp. 28–30, 32–34).

APPENDIX A: 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 10. The sample of bonds was then filtered to:

- eliminate bonds with a remaining term to maturity greater than 20 years (measured from 30 June 2023)

- eliminate bonds that are allocated a credit rating (see Box 3) outside of the relevant credit rating range.

Using these criteria, we obtained a sample of 19 corporate bonds (Table 11).

Table 10 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 to 30 June 2024 (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

Box 3: Methodology for allocating bonds a credit rating

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.

Table 11 Core sample of bonds, averaging period up to 30 June 2023

Issuer name	Bloomberg ID	Allocated credit rating
CNH Industrial Capital Australia Pty Ltd	BQ1190652	BBB
New Terminal Financing Co Pty Ltd	AO1975298	BBB

Issuer name	Bloomberg ID	Allocated credit rating
SGSP Australia Assets Pty Ltd	AP1982200	A-
Brisbane Airport Corp Pty Ltd	AS2396453	BBB
Woolworths Group Ltd	BJ3246383	BBB
Optus Finance Pty Ltd	BK1405293	A-
Australia Pacific Airports Melbourne Pty Ltd	QJ5397360	BBB+
Qantas Airways Ltd	QZ7279925	BBB
Australia Pacific Airports Melbourne Pty Ltd	QZ9328522	BBB+
Telstra Corp Ltd	AN1290252	A-
ICPF Finance Pty Ltd	AN1618205	A-
AusNet Services Holdings Pty Ltd	AM4028255	BBB+
AusNet Services Holdings Pty Ltd	AR2268118	BBB+
SGSP Australia Assets Pty Ltd	BS4740871	A-
AusNet Services Holdings Pty Ltd	AZ5939345	BBB+
SGSP Australia Assets Pty Ltd	ZN7348420	A-
Woolworths Group Ltd	BJ4427768	BBB
Optus Finance Pty Ltd	BK1405319	A-
Victoria Power Networks Finance Pty Ltd	BQ2697309	A-

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 12.

Table 12 Search criteria for the expanded sample of bonds

Bloomberg criteria	Criteria applied
Security status	Include active bonds
Country of risk	Include Australia
Currency	Include AUD or USD or GBP or EU
Credit rating	Between A1 and BBB (or equivalent)
Maturity	Greater than or equal to 30 June 2024 (greater than 1 year)
Maturity type	Exclude perpetual, callable 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 2023)

- eliminate bonds issued into the European market by Coca-Cola Amatil denominated in AUD

- eliminate bonds that are allocated a credit rating (see Box 3) outside of the relevant credit rating range.

Using these criteria, we obtained 207 corporate bonds for inclusion into the expanded sample (Table 13).

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.[69]

We consider that this reflects the approach applied in our 2017 DAU investigation[70] and is consistent with the approach we applied as part of our assessment of Aurizon Network's preliminary reset debt risk premium.[71]

Table 13 Bonds in the expanded sample, averaging period up to 30 June 2023

Issuer name	Bloomberg ID	Allocated credit rating
AusNet Services Holdings Pty Ltd	EK3489227	BBB+
CNH Industrial Capital Australia Pty Ltd	BQ1190652	BBB
New Terminal Financing Co Pty Ltd	AO1975298	BBB
Victoria Power Networks Finance Pty Ltd	BR0346410	A-
ETSA Utilities Finance Pty Ltd	AO5004962	A-
GPT Wholesale Shopping Centre Fund No 1	AO9337061	BBB+
Transurban Finance Co Pty Ltd	EK4655081	BBB+
Aurizon Network Pty Ltd	EK4685294	BBB+
SGSP Australia Assets Pty Ltd	AP1982200	A-
Australia Pacific Airports Melbourne Pty Ltd	EK5369849	BBB+
United Energy Distribution Pty Ltd	AP4899310	A-
Ausgrid Finance Pty Ltd	AP3049594	BBB+
Ausgrid Finance Pty Ltd	AP6703965	BBB+
APA Infrastructure Ltd	EJ4508010	BBB
Network Finance Co Pty Ltd	AP8371027	BBB+
Network Finance Co Pty Ltd	AQ2180349	BBB+
Energy Partnership Gas Pty Ltd	AQ2525352	BBB+
Transurban Queensland Finance Pty Ltd	EK6424791	BBB
Woodside Finance Ltd	EK7758478	BBB+
APA Infrastructure Ltd	EK8078215	BBB
Telstra Corp Ltd	EK8353493	A-
Ampol Ltd	AS1796497	BBB+

[69] 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 Economic Regulation Authority (ERA) Western Australia, *Explanatory Statement for the Rate of Return Guidelines 2018,* Appendix 6, version 3, pp. 9–16.
[70] Incenta, *Aurizon Network's WACC for the 2017 DAU,* December 2017, pp. 109–110.
[71] QCA, *Aurizon Network's reset Schedule F preliminary values,* decision, May 2023, pp. 44–45.

Issuer name	Bloomberg ID	Allocated credit rating
Brisbane Airport Corp Pty Ltd	AS2396453	BBB
Sydney Airport Finance Co Pty Ltd	EK8787450	BBB+
Woolworths Group Ltd	BJ3246383	BBB
DBNGP Finance Co Pty Ltd	AS5336035	BBB+
Optus Finance Pty Ltd	BK1405293	A-
Ausgrid Finance Pty Ltd	AS0720563	BBB
QIC Finance Town Centre Fund Pty Ltd	AZ7848924	A-
QIC Finance Town Centre Fund Pty Ltd	ZR0093453	A-
Coles Group Treasury Pty Ltd	ZO0568642	BBB+
Transurban Finance Co Pty Ltd	EK9118226	BBB+
AGL Energy Ltd	JK0123196	BBB
Goodman Australia Finance Pty Ltd	AP2375164	BBB+
Lonsdale Finance Pty Ltd	AU8116520	BBB
DEXUS Finance Pty Ltd	QJ4034261	A-
Australia Pacific Airports Melbourne Pty Ltd	QJ5397360	BBB+
AGI Finance Pty Ltd	BM4138475	BBB+
GPT Wholesale Office Fund No1	AZ5259124	A-
Transurban Finance Co Pty Ltd	QJ4132016	BBB+
Incitec Pivot Ltd	AX3500896	BBB
ConnectEast Finance Pty Ltd	AX4305576	BBB
BWP Trust	AX8473974	A-
Telstra Corp Ltd	JK7301761	A-
Victoria Power Networks Finance Pty Ltd	BP0862717	A-
Victoria Power Networks Finance Pty Ltd	BP0467020	A-
Stockland Trust	AR8329708	A-
Sydney Airport Finance Co Pty Ltd	JK8763837	BBB+
Downer Group Finance Pty Ltd	AX9159978	BBB
Aurizon Network Pty Ltd	LW0777554	BBB+
Brisbane Airport Corp Pty Ltd	BK1823131	BBB
WSO Finance Pty Ltd	LW7941799	A-
SGSP Australia Assets Pty Ltd	LW9385011	A-
Woodside Finance Ltd	QZ3723793	BBB+
GAIF Bond Issuer Pty Ltd	QZ5613174	A-
Qantas Airways Ltd	QZ7279925	BBB

Issuer name	Bloomberg ID	Allocated credit rating
United Energy Distribution Pty Ltd	ZR6539137	A-
Australia Pacific Airports Melbourne Pty Ltd	QZ9328522	BBB+
Coles Group Treasury Pty Ltd	ZQ3483828	BBB+
Network Finance Co Pty Ltd	ZQ4106501	BBB+
Lonsdale Finance Pty Ltd	ZQ5768911	BBB
Ausgrid Finance Pty Ltd	BK6471795	BBB
GPT Wholesale Office Fund No1	AM4186863	A-
AusNet Services Holdings Pty Ltd	EK7552160	BBB+
Mirvac Group Finance Ltd	AP1984487	A-
APA Infrastructure Ltd	EK8055387	BBB
Transurban Finance Co Pty Ltd	QZ4183500	BBB+
WSO Finance Pty Ltd	AN0014679	A-
Telstra Corp Ltd	AN1290252	A-
ICPF Finance Pty Ltd	AN1618205	A-
DEXUS Finance Pty Ltd	AN3181293	A-
AGI Finance Pty Ltd	BQ0082512	BBB+
SGSP Australia Assets Pty Ltd	AO1476404	A-
APA Infrastructure Ltd	AM7968663	BBB
QPH Finance Co Pty Ltd	BK5343441	BBB
AusNet Services Holdings Pty Ltd	AM4028255	BBB+
Victoria Power Networks Finance Pty Ltd	AO6744343	A-
GTA Finance Co Pty Ltd	ZO0730739	BBB
Newcastle Coal Infrastructure Group Pty Ltd	AP0945521	BBB
WSO Finance Pty Ltd	AM6441365	A-
Lonsdale Finance Pty Ltd	ZO7224041	BBB
Origin Energy Finance Ltd	ZQ1497739	BBB
Telstra Corp Ltd	AP8115770	A-
Woolworths Group Ltd	BR6425424	BBB
GAIF Bond Issuer Pty Ltd	BS3257463	A-
CIP Funding Pty Ltd	BS9219202	BBB
ETSA Utilities Finance Pty Ltd	BG2071580	A-
GPT Wholesale Shopping Centre Fund No 1	AR4452983	BBB+
Charter Hall LWR Pty Ltd	BO0356143	BBB+
Telstra Group Ltd	ZL3428253	A-

Issuer name	Bloomberg ID	Allocated credit rating
Aurizon Finance Pty Ltd	BO1497904	BBB+
Woodside Finance Ltd	AP0445258	BBB+
Stockland Trust	BO5788852	A-
BWP Trust	BO6285858	A-
Transurban Finance Co Pty Ltd	AO9539849	BBB+
Victoria Power Networks Finance Pty Ltd	AR8685802	A-
AusNet Services Holdings Pty Ltd	BV5085824	BBB+
Optus Finance Pty Ltd	ZK0407195	A-
Transurban Queensland Finance Pty Ltd	AS1974714	BBB
Victoria Power Networks Finance Pty Ltd	BP0467079	A-
Sydney Airport Finance Co Pty Ltd	AS2413480	BBB+
Australian Gas Networks Ltd	BP1516627	A-
Boral Finance Pty Ltd	AP7256195	BBB
Wesfarmers Ltd	BP9602205	A-
Ausgrid Finance Pty Ltd	AS3444450	BBB
AusNet Services Holdings Pty Ltd	AR2268118	BBB+
SGSP Australia Assets Pty Ltd	ZO2831667	A-
VER Finco Pty Ltd	BR2600251	BBB+
Qantas Airways Ltd	BR4616982	BBB
Network Finance Co Pty Ltd	BP1516445	BBB+
Worley Financial Services Pty Ltd	ZL9148681	BBB
Woolworths Group Ltd	BR3180923	BBB
AGI Finance Pty Ltd	BM5726674	BBB+
Optus Finance Pty Ltd	BS4226277	A-
SGSP Australia Assets Pty Ltd	BS4740871	A-
GAIF Bond Issuer Pty Ltd	BM8779324	A-
ElectraNet Pty Ltd	BR2242732	BBB
Woodside Finance Ltd	AX3939243	BBB+
APA Infrastructure Ltd	BO4852667	BBB
Telstra Corp Ltd	AX7292508	A-
NSW Electricity Networks Finance Pty Ltd	BP0469729	BBB
Transurban Finance Co Pty Ltd	ZS5621603	BBB+
QIC Finance Town Centre Fund Pty Ltd	ZK7611708	A-
Optus Finance Pty Ltd	AZ1511791	A-

Issuer name	Bloomberg ID	Allocated credit rating
SGSP Australia Assets Pty Ltd	AZ6778510	A-
AusNet Services Holdings Pty Ltd	AZ5939345	BBB+
Origin Energy Finance Ltd	ZR4789783	BBB
Mirvac Group Finance Ltd	BO5288416	A-
Shopping Centres Australasia Property Retail Trust	BR4613567	BBB+
United Energy Distribution Pty Ltd	ZR7230280	A-
Network Finance Co Pty Ltd	ZQ7069433	BBB+
DEXUS Finance Pty Ltd	ZQ0116348	A-
Coles Group Treasury Pty Ltd	ZQ3484321	BBB+
Qantas Airways Ltd	ZQ4898867	BBB
Charter Hall LWR Pty Ltd	BP9603708	BBB+
SGSP Australia Assets Pty Ltd	BS8419837	A-
SGSP Australia Assets Pty Ltd	ZN7348420	A-
AusNet Services Holdings Pty Ltd	AR4080248	BBB+
AusNet Services Holdings Pty Ltd	AR4081881	BBB+
APA Infrastructure Ltd	EK8055262	BBB
Aurizon Network Pty Ltd	ZR5210060	BBB+
Transurban Finance Co Pty Ltd	BH4962032	BBB+
Telstra Corp Ltd	BH8858053	A-
Victoria Power Networks Finance Pty Ltd	AS1776945	A-
Stockland Trust	ZK2395182	A-
Newcrest Finance Pty Ltd	BJ3681126	BBB
Woolworths Group Ltd	BJ4427768	BBB
NSW Electricity Networks Finance Pty Ltd	ZK5969587	BBB
Llitst Finance Pty Ltd	BQ1000422	BBB+
WSO Finance Pty Ltd	BK1995244	A-
Optus Finance Pty Ltd	BK1405319	A-
APA Infrastructure Ltd	BJ0850237	BBB
AusNet Services Holdings Pty Ltd	BK6864346	BBB+
AusNet Services Holdings Pty Ltd	BG0705684	BBB+
Coles Group Treasury Pty Ltd	ZO0571901	BBB+
Aurizon Network Pty Ltd	ZO0728444	BBB+
Qantas Airways Ltd	ZO1338375	BBB
Shopping Centres Australasia Property Retail Trust	ZO2832020	BBB+

Issuer name	Bloomberg ID	Allocated credit rating
NSW Electricity Networks Finance Pty Ltd	ZO3118536	BBB
Charter Hall Exchange Finance Pty Ltd	ZO5090725	A-
ICPF Finance Pty Ltd	BR6425713	A-
CPIF Finance Pty Ltd	BM0086983	BBB+
Victoria Power Networks Finance Pty Ltd	BM3638566	A-
Brisbane Airport Corp Pty Ltd	BK1823644	BBB
QPH Finance Co Pty Ltd	BK5343896	BBB
Charter Hall LWR Pty Ltd	BO0356150	BBB+
Transurban Finance Co Pty Ltd	ZO4083085	BBB+
WestConnex Finance Co Pty Ltd	BO7332519	BBB+
CHC Finance Pty Ltd	BO9418894	BBB+
Australian Gas Networks Ltd	BP1516635	A-
Telstra Group Ltd	ZK1436987	A-
Newcastle Coal Infrastructure Group Pty Ltd	BP3758052	BBB
Wesfarmers Ltd	BP9603625	A-
AGI Finance Pty Ltd	BQ0082603	BBB+
Victoria Power Networks Finance Pty Ltd	BQ2697309	A-
APA Infrastructure Ltd	AX6137340	BBB
Transurban Queensland Finance Pty Ltd	BP1516619	BBB
Victoria Power Networks Finance Pty Ltd	BQ9591307	A-
Ausgrid Finance Pty Ltd	BR5559264	BBB
GPT Wholesale Office Fund No1	BS0983913	A-
APPF Commercial Finance Pty Ltd	BS1858510	A-
Woolworths Group Ltd	BR6425457	BBB
Australia Pacific Airports Melbourne Pty Ltd	BS4971112	BBB+
Aurizon Network Pty Ltd	BP9727010	BBB+
DEXUS Finance Pty Ltd	ZP6250341	A-
South32 Treasury Ltd	BV7128408	BBB+
SGSP Australia Assets Pty Ltd	ZN6797668	A-
Aurizon Network Pty Ltd	ZN9178833	BBB+
APA Infrastructure Ltd	BO4852683	BBB
Transurban Finance Co Pty Ltd	ZK1691094	BBB+
Sydney Airport Finance Co Pty Ltd	ZK1417490	BBB+
Australia Pacific Airports Melbourne Pty Ltd	ZK4759401	BBB+

Issuer name	Bloomberg ID	Allocated credit rating
AusNet Services Holdings Pty Ltd	ZK5998826	BBB+
Wesfarmers Ltd	BR8973561	A-
Transurban Finance Co Pty Ltd	AZ3470822	BBB+
Aurizon Network Pty Ltd	ZN9178874	BBB+
SGSP Australia Assets Pty Ltd	BG1166019	A-
APA Infrastructure Ltd	EK8078397	BBB
AusNet Services Holdings Pty Ltd	BK6864247	BBB+
AusNet Services Holdings Pty Ltd	BK6864320	BBB+
Shopping Centres Australasia Property Retail Trust	ZO2833291	BBB+
APA Infrastructure Ltd	BO4852691	BBB
ETSA Utilities Finance Pty Ltd	ZK1811866	A-
DEXUS Finance Pty Ltd	AT9003944	A-
AusNet Services Holdings Pty Ltd	BK6867612	BBB+
Newcrest Finance Pty Ltd	EI8704930	BBB
AusNet Services Holdings Pty Ltd	AS6646259	BBB+

APPENDIX B: LIST OF SUBMISSIONS

We have received the following submissions during our investigation of Aurizon Network's reset Schedule F 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	2017 Access Undertaking: Reset Schedule F Values	31 July 2023
Aurizon Network	2	Aurizon Network Proposed Schedule F Reset Values	14 September 2023

REFERENCES

Incenta, *Aurizon Network's WACC for the 2017 DAU*, December 2017.

—— *Addressing responses to Incenta's debt risk premium estimate for the 2017 draft access undertaking*, June 2018.

Queensland Competition Authority (QCA), *Aurizon Network's 2017 draft access undertaking*, decision, Appendices, December 2018.

—— *Aurizon Network reset Schedule F values—Proposed alternate index for the calculation of the risk-free rate*, letter to Aurizon Network, 22 June 2023.

—— *Aurizon Network's Revised UT5 draft amending access undertaking*, decision, December 2019.

—— *Inflation forecasting*, final position paper, October 2021.

—— *Aurizon Network's reset Schedule F preliminary values*, decision, May 2023.

—— *Electric energy charge (EC) 2023–24*, letter to Aurizon Network, 22 June 2023.

—— *Rate of return review*, final report, July 2023.

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