

# **Cost of capital determination for Chorus' price quality path for PQP2**

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## Associated documents

Publication date	Reference	Title
27 June 2024	ISBN 978-1-869457-90-7	Guidelines for WACC determinations under the cost of capital Input Methodologies – Regulation under Part 4 of the Commerce Act 1986 and Part 6 of the Telecommunications Act 2001 (post-IM review version)
28 May 2024	ISSN 1178-2560	Fibre Input Methodologies (tax-adjusted market risk premium) Amendment Determination 2024 [2024] NZCC 11
1 May 2024	ISSN 1178-2560	Cost of capital determination for disclosure year 2025 for information disclosure regulation, For Tuatahi First Fibre Limited and Northpower Fibre Limited [2024] NZCC 8
7 February 2024	ISSN 1178-2560	Cost of capital determination for disclosure year 2024 for information disclosure regulation, For Chorus Limited [2024] NZCC 1
1 August 2023	ISSN 1178-2560	Cost of capital determination for disclosure year 2024 for information disclosure regulation, For Enable Networks Limited [2023] NZCC 19
1 May 2023	ISSN 1178-2560	Cost of capital determination for disclosure year 2024 for information disclosure regulation, For Tuatahi First Fibre Limited and Northpower Fibre Limited [2023] NZCC 9
1 February 2023	ISSN 1178-2560	Cost of capital determination disclosure year 2023 for information disclosure regulation, For Chorus Limited [2023] NZCC 1
2 August 2022	ISSN 1178-2560	Cost of capital determination disclosure year 2023 for information disclosure regulation, For Enable Networks Limited
3 May 2022	ISSN 1178-2560	Cost of capital determination for Tuatahi First Fibre Limited and Northpower Fibre Limited ID [2022] NZCC 13
1 February 2022	ISSN 1178-2560	Cost of capital determination for Chorus, Enable, Tuatahi, and Northpower Fibre ID [2022] NZCC 1
30 November 2021	ISSN 1178-2560	Fibre Information Disclosure Determination 2021
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## WACC estimates for Chorus' price-quality path for PQP1

1. This cost of capital determination has been made under clause 3.5.1 of the Fibre Input Methodologies Determination 2020 (as amended) (IMs).<sup>1</sup>
2. This determination specifies the weighted average cost of capital (WACC) estimates that will apply to Chorus Limited's (Chorus) price-quality path (PQ path) for the second regulatory period (PQP2) consistent with the IMs.<sup>2</sup> This determination does not specify the WACC estimates that apply for Information Disclosure purposes.<sup>3</sup>
3. The vanilla and post-tax WACC estimates for PQP2 for Chorus are summarised in Table 1 below.

**Table 1: Vanilla and post-tax WACC estimates**

	Mid-point
Vanilla WACC	7.68%
Post-tax WACC	7.17%
Standard error	0.0131

4. We are required to determine an estimate of the WACC as of the first business day of the month seven months prior to the start of each regulatory period.<sup>4</sup> As PQP2 commences on 1 January 2025, we have estimated a WACC as at 1 June 2024.
5. This determination applies the IMs, including all applicable amendments.<sup>5</sup> The IMs set out the methodology for determining an estimate of WACC, including:
  - 5.1 the formulas used;
  - 5.2 the values for WACC parameters which are fixed under the IMs; and
  - 5.3 our methodology for determining the risk-free rate and average debt premium.

<sup>1</sup> Commerce Commission, Fibre Input Methodologies Determination 2020 [2020] NZCC 21 (as amended). An unofficial consolidated version incorporating amendments to the determination, as of 6 March 2024, is [available on the Commission's website](#).

<sup>2</sup> PQP2 runs from 1 January 2025 to 31 December 2028.

<sup>3</sup> In contrast to the PQ path WACC estimates, which are determined for each regulatory period, the ID WACCs are determined annually for each disclosure year in a separate WACC determination.

<sup>4</sup> Commerce Commission, Fibre Input Methodologies Determination 2020 [2020] NZCC 21 (as amended), clause 3.5.1.

<sup>5</sup> See Commerce Commission, Fibre Input Methodologies Determination 2020 [2020] NZCC 21 (as amended) and Commerce Commission, Guidelines for WACC determinations under the cost of capital Input Methodologies (post Fibre TAMRP IM amendment version) (27 June 2024).

## Further details regarding the WACC estimates

### WACC parameter values for Chorus

6. The parameter values used to generate the mid-point WACC estimates for Chorus' PQ path for PQP2 are summarised in Table 2 below.<sup>6</sup>

**Table 2: Values used to calculate WACC estimates\***

<b>Parameter</b>	<b>Estimate</b>
Risk-free rate	4.63%
Average debt premium	1.45%
Leverage	29%
Asset beta	0.50
Equity beta	0.70
Tax-adjusted market risk premium	7.0%
Average corporate tax rate	28%
Average investor tax rate	28%
Debt issuance costs	0.25%
Cost of debt	6.33%
Cost of equity	8.23%
Standard error of mid-point WACC estimate	0.0131
<b>Mid-point vanilla WACC</b>	<b>7.68%</b>
<b>Mid-point post-tax WACC</b>	<b>7.17%</b>

\*The numbers are rounded to two decimal points, except for the tax-adjusted market risk premium and standard error of the mid-point WACC estimate.

<sup>6</sup> All parameter values except the asset beta, estimate of the risk-free rate and the average debt premium are specified in the Fibre IMs. It should be noted, however, that the equity beta is calculated using the values of the asset beta and leverage, so this value of the asset beta is implicitly defined in the Fibre IMs. See Commerce Commission, [Fibre input methodologies: Main final decisions – reasons paper](#) (13 October 2020), para 6.411.

### Risk-free rate

7. The risk-free rate reflects the estimated bid yield to maturity on New Zealand government bonds with a term to maturity equal to the length of the regulatory period (four years).<sup>7</sup>
8. Our estimate of the four-year risk-free rate is based on data reported by Bloomberg for the three-month period ending 31 May 2024 in respect of the April 2027, May 2028, and April 2029 maturity bonds.
9. The daily data reported by Bloomberg is linearly interpolated, annualised (to reflect the six-monthly payment of interest) and averaged to produce the estimate of 4.63% interest rate on New Zealand government bonds with a four-year term to maturity, as estimated at 1 June 2024.<sup>8</sup>

### Average debt premium

10. The average debt premium of 1.45% is the average of the debt premium values for the current debt premium reference year (**DPRY**) and the four previous DPRYs, as shown in Table 3 below. DPRY 2024 is the current debt premium reference year.

**Table 3: Average debt premium for Chorus (%)**

	DPRY 2020	DPRY 2021	DPRY 2022	DPRY 2023	DPRY 2024	Average
Debt premium	1.70	1.70	1.30	1.15	1.40	1.45

11. The DPRYs for all regulated fibre service providers start on 1 September and end on 31 August.<sup>9</sup> DPRY 2024 (the DPRY ending 31 August 2024), is the current DPRY for Chorus as it contains the start of the current regulatory year (1 January 2024). The Fibre IMs state that the calculation of the debt premium for a DPRY is estimated for each business day in the 12 months preceding the start of the DPRY. This means that for all the DPRYs we have used bond data starting on 1 September and ending on 31 August.

<sup>7</sup> We interpolate between the two closest bonds surrounding a four-year remaining term. This requires taking the yields of the bonds with a remaining term immediately before and after a four-year term to maturity on that day. The target term to maturity is constant but the bonds' remaining terms to maturity decrease over time, so the bonds immediately before and after the target term may change over time.

<sup>8</sup> Note that the target term to maturity for the risk-free rate and debt premium are different for the first regulatory period (the risk-free rate has a term equal to the length of the regulatory period, i.e., four years for the second regulatory period, and the debt premium has a five-year term). See Commerce Commission, Fibre input methodologies: Main final decisions – Reasons paper (13 October 2020), paras 6.81 to 6.264.

<sup>9</sup> Commerce Commission, Fibre Input Methodologies Determination 2020 [2020] NZCC 21 (as amended), clause 1.1.4.

12. The debt premium values are taken from the following sources:
- 12.1 The debt premium values for DPRYs 2020 and 2021 were estimated in the WACC determination for Chorus Limited's first PQ path in July 2021.<sup>10</sup>
  - 12.2 The debt premium value for DPRY 2022 was estimated in the ID WACC determination published on 1 February 2022 applying to Chorus, Enable, Tuatahi and Northpower Fibre.<sup>11</sup>
  - 12.3 The debt premium value for DPRY 2023 was estimated in the ID WACC determination published on 1 February 2023 applying to Chorus.<sup>12</sup>
  - 12.4 The debt premium value for DPRY 2024 was estimated in the ID WACC determination published on 7 February 2024 applying to Chorus.<sup>13</sup>
13. When determining the WACC estimates for Chorus' first price-quality path, we estimated the historical debt premium estimates to calculate the five-year historical average. A summary of the data used and how we have applied our judgement in determining the debt premiums for DPRYs 2020 and DPRY 2021 are described in the Cost of capital determination for Chorus' first price-quality path.<sup>14</sup>

#### **Changes in the risk-free rates and debt premium over time**

14. The risk-free rate and the debt premium on bonds change over time. Changes in the risk-free rate and debt premium estimates are illustrated below. Figure 1 shows, as at 1 June 2024, changes over time in the:
- 14.1 five-year risk-free rate from our historical determinations in other regulated sectors;
  - 14.2 four-year risk-free rate; and
  - 14.3 debt premiums and five-year average debt premiums on bonds rated BBB with a term of five years from our historical debt premium determinations.

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<sup>10</sup> Commerce Commission, [Cost of capital determination for Chorus' price quality path for PQP1](#), NZCC 8 [2021], 1 July 2021.

<sup>11</sup> Commerce Commission, [Cost of capital determination for Chorus, Enable, Tuatahi, and Northpower Fibre ID](#) [2022] NZCC 1, 1 February 2022.

<sup>12</sup> Commerce Commission, [Cost of capital determination disclosure year 2023 for information disclosure regulation, For Chorus Limited](#) [2023] NZCC 1, 1 February 2023.

<sup>13</sup> Commerce Commission, [Cost of capital determination for disclosure year 2024 for information disclosure regulation, For Chorus Limited](#) [2024] NZCC 1, 7 February 2024.

<sup>14</sup> Commerce Commission, Cost of capital determination for Chorus' price quality path for PQP1, NZCC 8 [2021], 1 July 2021, paragraphs 17-18.

**Figure 1: Changes in Fibre debt premiums, four-year and five-year risk-free rates over time**

