Public version

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

These guidelines are published in relation to the Input Methodologies as they apply after the IM review decisions of 13 December 2023 and Fibre tax-adjusted market risk premium IM amendment of 28 May 2024

Date of publication: 27 June 2024

Contents

Glossary

Commerce Act	Commerce Act 1986
Telecommunications Act	Telecommunications Act 2001
Part 4	Part 4 of the Commerce Act 1986
Part 6	Part 6 of the Telecommunications Act 2001
CPP	Customised price-quality path
DPP	Default price-quality path
DPRY	Debt premium reference year
EDBs	Electricity distribution businesses
GDBs	Gas distribution businesses
GPBs	Gas pipeline businesses
GTBs	Gas transmission businesses
ID	Information disclosure
IMs	Input methodologies
IPP	Individual price-quality path
NSS	Nelson-Siegel-Svensson
PQ	Price-quality
TCSD	Term credit spread differential
WACC	Weighted average cost of capital
FFLAS	Fibre fixed line access service

Introduction

Purpose of these guidelines

1. These guidelines set out how we apply the cost of capital input methodologies (IMs) when determining weighted average cost of capital (WACC) estimates for businesses regulated under Part 4 of the Commerce Act 1986 (Part 4) and under Part 6 of the Telecommunications Act 2001 (Part 6).[1]

2. In particular, the guidelines explain how we currently estimate the risk-free rate and average debt premium, which are the only two WACC parameters which are required to be updated over time under the IMs.

3. The guidelines do not explain the reasons for adopting the approach specified in the cost of capital IMs.[2] Those reasons are explained separately in our IMs reasons papers.[3]

4. These guidelines do not cover the calculation of the WACC estimates for the purposes of determining the financial losses under the Telecommunications Act.

5. These guidelines are not intended to replace or modify the IMs or WACC estimates determined by the Commission. If there is an inconsistency between this guidance and any of our official determinations, the determination will prevail. We encourage parties to seek independent professional advice, where necessary.

Input Methodologies applied in these guidelines

6. In 2023, we concluded our review of the IMs applicable under Part 4.[4]

7. Furthermore, in May 2024, we published an IM amendment determination, updating the tax-adjusted market risk premium that is specified under the Fibre IMs.[5]

8. The dates at which various amendments apply differ across the sectors that we regulate. Some of these amendments already apply.

9. Due to the differing application dates for the new IMs, we have published two versions of these guidelines:

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[1] The cost of capital IMs form part of the package of IMs the Commission was required to set under Part 4 of the Commerce Act and under Part 6 of the Telecommunications Act.

[2] See paragraphs 13 to 16 below for a brief introduction to the cost of capital sections of the IM determinations, including clause references for the relevant sections.

[3] See paragraphs 23 to 26 below for further details on our cost of capital IMs reasons papers.

[4] Commerce Commission, Context and summary of Final decisions, Part 4 Input Methodologies Review 2023 (13 December 2023).

[5] Commerce Commission, Fibre Input Methodologies (tax-adjusted market risk premium) Amendment Determination 2024 [2024] NZCC 11 (28 May 2024).

9.1   This set of guidelines, which reflect the IMs after the 2023 IM review and Fibre IM amendment determination; and

9.2   A "pre-IM review" set of guidelines, which reflect the IMs prior to the 2023 IM review and Fibre IM amendment determination.

10. The application dates of the amendments to the IMs are outlined in Table 1 below.[6] Prior to these application dates, the "pre-IM review" set of guidelines reflect the IMs that currently apply to the relevant sector. After these application dates, this "post-IM review" set of guidelines reflect the IMs that currently apply to the relevant sector.

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[6] Refer to Chapter 1, section "Effective dates for IM amendments" of our Report on the IM review 2023.

Table 1: IM Amendment application dates

Sector	Relevant IM determination	ID regulation	Price-quality path regulation
Airports	Airport Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 34	13 December 2023	N/A
Electricity distribution	Electricity Distribution Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 35	1 April 2025	1 September 2024
Gas distribution	Gas Distribution Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 37	1 October 2025 for First Gas' gas distribution business and Powerco's gas distribution business 1 July 2025 for GasNet and Vector's gas distribution business	1 March 2026
Gas transmission	Gas Transmission Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 36	1 October 2025	1 March 2026
Electricity transmission (Transpower)	Transpower Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 38	1 July 2025	1 September 2024
Fibre	Fibre Input Methodologies (tax-adjusted market risk premium) Amendment Determination 2024 [2024] NZCC 11	3 March 2025	28 May 2024

Structure of this document

11. The rest of this document is structured as follows:

11.1 the **Background** section explains that we are required to make regular cost of capital determinations under the IMs, provides the relevant clause references to the IMs, and sets out where further information on our reasons for adopting the methodologies specified in the cost of capital IMs can be found;

11.2 the **Formulas and fixed parameter values for calculating WACC estimates** section sets out the formulas used to generate our WACC estimates (including different WACC percentiles), and the values for WACC parameters which are fixed under the IMs;

11.3 the **Methodology for estimating the risk-free rate** section explains how we determine our estimates of the risk-free rate; and

11.4 the **Methodology for estimating the average debt premium** section explains how we determine our estimates of the average debt premium.

Background

12. This section explains that:

   12.1   we are required to make regular WACC determinations under the IMs and provides references to the cost of capital sections of our IM determinations;

   12.2   the timing of our WACC determinations differs based on the regulatory instrument and disclosure years of the regulated companies;[7] and

   12.3   our reasons for adopting the methodologies specified in the cost of capital IMs can be found in our IMs reasons papers.

We are required to make regular WACC determinations under the IMs

13. The IMs require us to complete regular WACC determinations for both price-quality path (PQ) regulation and information disclosure (ID) regulation, for the businesses we regulate under Part 4. These include electricity distribution businesses (EDBs), Transpower, gas distribution businesses (GDBs), gas transmission businesses (GTBs) and airports.[8] GDBs and GTBs are referred to together as gas pipelines businesses (GPBs).

14. We are also required to complete WACC determinations for both PQ and ID regulation for the businesses we regulate under Part 6 of the Telecommunications Act 2001. This includes the regulated fibre service providers who supply fibre fixed line access services (FFLAS).

15. The methodology to be applied when making our regular WACC determinations is specified in the relevant IM determinations. The IMs:

   15.1   set out the formulas to be used to calculate WACC estimates;

   15.2   explain the method for estimating the risk-free rate and average debt premium; and

   15.3   specify the values for other parameters required to estimate WACC (such as leverage and equity beta).

16. Table 2 below sets out the relevant clause references of the IM determinations for each sector that we regulate. They reflect the IMs that apply after the IM amendment application dates.

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[7] The disclosure years are specified are specified in the ID determinations that apply to the different regulated suppliers.

[8] Auckland, Wellington and Christchurch airports are subject only to ID regulation under Part 4 of the Act.

Table 2: Clause references for WACC sections of IM determinations

Sector	Relevant IM determination	ID regulation	Price-quality path regulation
Airports	Airport Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 34	Clauses 5.1-5.7	N/A[9]
Electricity distribution	Electricity Distribution Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 35	Clauses 2.4.1-2.4.6	Clauses 4.4.1-4.4.7
Gas distribution	Gas Distribution Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 37	Clauses 2.4.1-2.4.6	Clauses 4.4.1-4.4.6
Gas transmission	Gas Transmission Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 36	Clauses 2.4.1-2.4.6	Clauses 4.4.1-4.4.6
Electricity transmission (Transpower)	Transpower Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 38	Clauses 2.4.1-2.4.6	Clauses 3.5.1-3.5.6
Fibre	Fibre Input Methodologies Determination 2020 [2020] NZCC 21 (consolidated 6 March 2024) and Fibre Input Methodologies (tax-adjusted market risk premium) Amendment Determination 2023 [2024] NZCC 11	Clauses 2.4.1-2.4.6	Clauses 3.5.1-3.5.5

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[9] There are no cost of capital IMs for price-quality path regulation of airports, because they are subject to ID regulation only.

Term credit spread differential allowance

17. The cost of capital IMs also include a second component (in addition to WACC), referred to as the term credit spread differential (TCSD).[10] The TCSD is a cashflow allowance that compensates suppliers for the additional debt premium that can be incurred from issuing debt with an original tenor longer than five years. The TCSD applies to qualifying suppliers as part of ID and PQ regulation.[11] It is calculated when setting a price path, and forms part of Schedule 2 of Information Disclosures.

18. The TCSD does not form part of the regular WACC determinations we make under the IMs. Therefore, it is not discussed further in these guidelines.

Timing of WACC determinations

19. Separate WACC estimates are determined for different sectors regulated under Part 4 and Part 6. The timing of our WACC determinations varies based on:

   19.1   **Regulatory instrument** – WACC estimates for PQ and ID regulation are published at different times. For default PQ path (DPP), individual PQ path (IPP) regulation and Fibre PQ path, we are required to determine WACC estimates as at the first business day of the month seven months prior to the start of each regulatory period.[12] For ID regulation, WACC estimates are determined as at the first day of the disclosure year in question.

   19.2   **Disclosure years of the relevant companies** – The timing of our WACC determinations for ID regulation also differs depending on the disclosure years of the regulated companies. For example, we determine ID WACC estimates for Wellington Airport as at 1 April each year, and WACC estimates for Auckland and Christchurch Airports as at 1 July each year.

20. Table 3 and Table 4 below summarise the current timetable for ID and PQ WACC determinations under the IMs.

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[10] See Electricity Distribution Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 35, clauses 2.4.7-2.4.9 and 4.4.7; Gas Distribution Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 37, clauses 2.4.7-2.4.9 and 4.4.6-4.4.9; Gas Transmission Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 36, clauses 4.4.6-4.4.9; Transpower Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 38, clauses 2.4.7-2.4.9 and 3.5.8; and Fibre Input Methodologies Determination 2020 [2020] NZCC 21 (consolidated 6 March 2024) clauses 2.4.6 – 2.4.8 and 3.5.7 – 3.5.10

[11] Qualifying supplier means a regulated supplier whose debt portfolio, as at the date of that supplier's most recently published audited financial statements, has a weighted average original tenor greater than 5 years.

[12] Transpower is the only regulated supplier subject to an IPP under Part 4, while Chorus is subject to a price-quality path under Part 6. The WACC determined for DPP regulation also applies to any suppliers subject to customised price-quality path (CPP) regulation.

Table 3: Annual ID WACC determinations

Type of regulated business	WACC estimated as at[13]
Fibre – Chorus ID	1 January each year
Electricity distribution – EDB ID Airports – Wellington Airport ID	1 April each year
Fibre – Tuatahi and Northpower Fibre ID	1 April each year
Electricity transmission – Transpower ID Gas distribution – GasNet and Vector ID Airports – Auckland Airport and Christchurch Airport ID	1 July each year
Fibre – Enable ID	1 July each year
Gas distribution – Powerco and First Gas ID Gas transmission – First Gas ID	1 October each year

Table 4: Price-quality path WACC determinations

Type of regulated business	Next WACC determination estimated as at
Electricity distribution – EDB DPP Electricity transmission – Transpower IPP	1 September 2024
Gas distribution and transmission – GPB DPP	1 March 2026
Fibre – Chorus price-quality path	1 June 2024

21. Airports can propose that we determine additional WACC estimates commencing at the start of any quarter in a disclosure year, to coincide with a price setting event.[14]

22. We are required to publish all WACC determinations and estimates that we make under the IMs on our website, no later than one month after having made them.[15]

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[13] These dates indicate when we can start calculating the WACC. For example, the WACC estimated as at 1 April will be calculated using the fixed parameters in the IMs, the risk-free rate based on the three months prior to the start of April (i.e., 1 January to 31 March), and the average debt premium based on the five most recent debt premium determinations (using the debt premium reference year for the sector)

[14] See Airport Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 34, clause 5.5.

[15] See Airport Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 34, clauses 5.7; Electricity Distribution Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 35, clauses 2.4.6 and 4.4.6; Gas Distribution Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 37, clauses 2.4.6 and 4.4.5; Gas

Our reasons for determining the cost of capital IMs are explained elsewhere

23. Our reasons for adopting the methodologies specified in the cost of capital IMs are not explained in this document – they are set out in our IMs reasons papers.

24. The IMs under Part 4 were originally determined in December 2010. References to the relevant sections of our 2010 IM reasons papers are included in Table 5 below.

Table 5: References to cost of capital sections of December 2010 IM reasons papers

Sector	Relevant IM reasons paper	Cost of capital section references
Airports	Input methodologies (airport services): Reasons paper[16]	Pages 104-141 and Appendix E
Electricity distribution, gas distribution and gas transmission	Input methodologies (electricity distribution and gas pipeline services): Reasons paper[17]	Pages 132-174 and Appendix H
Electricity Transmission (Transpower)	Input methodologies (Transpower): Reasons paper[18]	Pages 72-75

25. There have also been three main reviews of the IMs under Part 4 since they were first determined in 2010.

   25.1   In 2014 we amended the WACC percentile estimates applying to energy businesses. Separate reasons papers were published for price-quality path and information disclosure regulation respectively.[19]

Transmission Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 36, clauses 2.4.6 and 4.4.5; Transpower Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 38, clauses 2.4.6 and 3.5.6; and Fibre Input Methodologies Determination 2020 [2020] NZCC 21 (consolidated 6 March 2024), clauses 2.4.1 and 3.5.6.

[16] Commerce Commission "Input methodologies (airport services): Reasons paper" (December 2010).

[17] Commerce Commission "Input methodologies (electricity distribution and gas pipeline services): Reasons paper" (December 2010).

[18] Commerce Commission "Input methodologies (Transpower): Reasons paper" (December 2010).

[19] Commerce Commission "Amendment to the WACC percentile for price-quality regulation for electricity lines services and gas pipeline services: Reasons paper" (30 October 2014); and Commerce Commission Amendments to the WACC percentile range for information disclosure regulation for electricity lines services and gas pipeline services: Reasons Paper" (12 December 2014).

25.2   In 2016 we made several amendments to the IMs, as part of a wider review of all of our IM determinations. The reasons for the amendments we made to the cost of capital IMs are explained in Topic paper 4: Cost of capital issues and Topic paper 6: WACC percentile for airports.[20]

25.3   In 2023 we made several amendments to the IMs, as part of a wider review of all of our Part 4 IM determinations. The reasons for the amendments we made to the cost of capital IMs are explained in our Cost of capital topic paper.[21]

26. In 2020 we published the first set of Fibre IMs. References to the relevant sections of our 2020 Fibre IM reasons papers are included in below in Table 6 below.

Table 6: References to cost of capital sections of November 2020 Fibre IM reasons papers

Sector	Relevant IM reasons paper	Cost of capital section references
Fibre	Fibre input methodologies: Main final[22]	Chapter 6

27. Since then, we have made various amendments to the IMs, which have been published in a consolidated determination. From time to time, we may amend the IMs. Amendments and any consolidated versions are published on our website.

Formulas and fixed parameter values for calculating WACC estimates

28. This section sets out:

28.1   the formulas we use for generating vanilla and post-tax WACC estimates under the IMs;

28.2   how we determine different WACC percentile estimates; and

28.3   the WACC parameter values which are fixed under the IMs.

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[20] Commerce Commission "Input methodologies review decisions – Topic paper 4: Cost of capital issues" (20 December 2016); and Commerce Commission "Input methodologies review decisions – Topic paper 6: WACC percentile for airports" (20 December 2016).

[21] Commerce Commission "Cost of capital topic paper – Part 4 Input Methodologies Review 2023 – Final decision" (13 December 2023)

[22] Commerce Commission "Fibre input methodologies: Main final decisions – reasons paper" (November 2020).

We estimate both vanilla and post-tax WACC estimates under the IMs

29. Under the IMs, we calculate both vanilla and post-tax mid-point WACC estimates for ID and PQ regulation. A vanilla WACC is a weighted average of the pre-corporate tax cost of debt and the post-tax cost of equity. A post-tax WACC is the weighted average of the post-corporate tax cost of debt and the post-tax cost of equity.

30. The formulas for calculating mid-point vanilla and post-tax WACC estimates are shown in Table 7 below.[23]

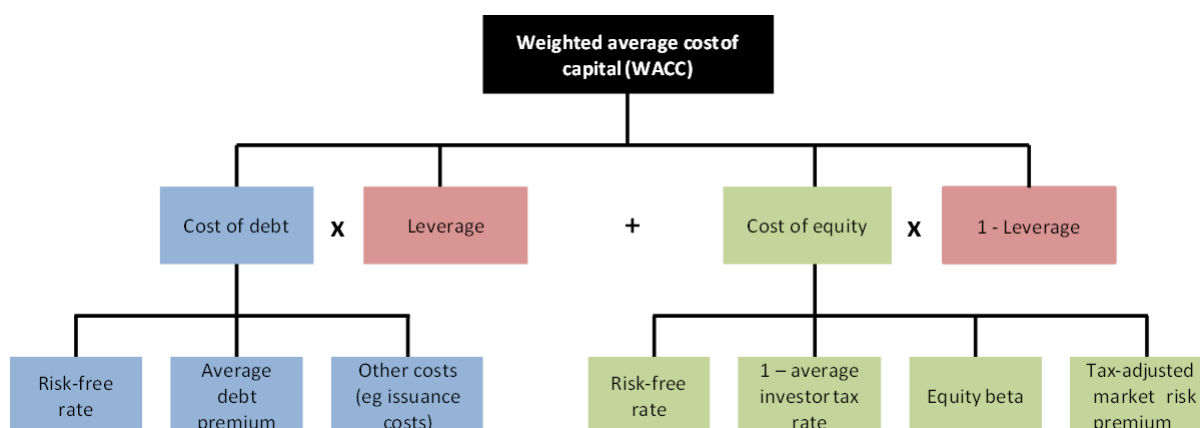**Table 7: Formulas for mid-point vanilla WACC and post-tax WACC**

Form of WACC	Formula
Mid-point vanilla WACC	$r_d L + r_e(1 - L)$
Mid-point post-tax WACC	$r_d(1 - T_c)L + r_e(1 - L)$

Where:
- L is leverage
- r_d is the cost of debt and is estimated in accordance with the formula: $r_f + p + d$
- r_e is the cost of equity and is estimated in accordance with the formula: $r_f(1 - T_i) + \beta_e TAMRP$
- T_c is the average corporate tax rate
- r_f is the risk-free rate
- p is the average debt premium
- d is the debt issuance costs
- T_i is the average investor tax rate
- β_e is the equity beta
- $TAMRP$ is the tax-adjusted market risk premium.

31. The key parameters for estimating a vanilla WACC are summarised in Figure 1 below. The parameters for estimating a post-tax WACC are the same as for the vanilla WACC, except that the cost of debt is also multiplied by *1 minus the average corporate tax rate*.

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[23] See Airport Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 34, clauses 5.1(1)-5.1(3); Electricity Distribution Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 35, clauses 2.4.1(1)-2.4.1(3) and 4.4.1(1)-4.4.1(3); Gas Transmission Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 36, clauses 2.4.1(1)-2.4.1(3) and 4.4.1(1)-4.4.1(3); Gas Distribution Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 37, clauses 2.4.1(1)-2.4.1(3) and 4.4.1(1)-4.4.1(3); and Transpower Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 38, clauses 2.4.1(1)-2.4.1(3) and 3.5.1(1)-3.5.1(3).

Figure 1:   Components of vanilla WACC

32. We are only required to update the risk-free rate and average debt premium when we make our WACC determinations. All other parameter values for estimating the WACC are specified in the IMs.

We also determine WACC at the 25th, 65th, and 75th percentile estimates for some sectors

33. For EDBs, Transpower and GPBs we are required to determine different WACC percentile estimates, in addition to our mid-point estimate.[24] Specifically, we are required to determine:

    33.1   65th percentile WACC estimates for price-quality path regulation applying to EDBs and Transpower; and

    33.2   a WACC estimate at the 25th, 65th, and the 75th percentile WACC, for ID regulation applying to EDBs and Transpower; and

    33.3   a WACC estimate at the 25th and 75th percentile for ID regulation applying to GPBs.

34. For airports, we are only required to determine a mid-point estimate. However, the IMs specify a standard error of the mid-point estimate of WACC of 0.0169.[25]   This enables different 'WACC percentile equivalents' to be estimated.

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[24] See Gas Distribution Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 37, clause 2.4.5; Gas Transmission Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 36, clause 2.4.5; Electricity Distribution Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 35, clause 2.4.5 and 4.4.5; and Transpower Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 38, clauses 2.4.5 and 3.5.5.

[25] See Airport Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 34, clause 5.6.

35. For regulated fibre service providers subject to PQ regulation, as well as providers regulated under ID, we determine the midpoint WACC (i.e., 50th percentile). We publish the midpoint WACC and standard error to allow interested parties to estimate 'WACC percentile equivalents' in examining the profitability of regulated suppliers or sensitivity testing the midpoint WACC.

36. Formulas for calculating the WACC percentile estimates are shown in Table 8 below.[26]

Table 8: Formulas for calculating WACC percentile estimates for EDBs, GPBs and Transpower

Percentile estimate	Formula
25th percentile	mid-point estimate of WACC - 0.674 × standard error
65th percentile	mid-point estimate of WACC + 0.385 × standard error
75th percentile	mid-point estimate of WACC + 0.674 × standard error

Where:

- The mid-point estimate of WACC is treated as the 50th percentile. This is the only estimate we are required to produce for Fibre and Airports.
- The standard error of the mid-point estimate of WACC for EDBs and Transpower is 0.0108.
- The standard error of the mid-point estimate of WACC for GPBs is 0.0112.
- The standard error of the mid-point estimate of WACC for FFLAS suppliers is 0.0131.
- The standard error of the mid-point estimate of WACC for Airports is 0.0169.

Many WACC parameter values are fixed under the input methodologies

37. Many of the WACC parameter values are specified directly in the IM determinations. Specifically, values for leverage, equity beta, tax-adjusted market risk premium (TAMRP) and debt issuance costs are specified in the relevant IMs for each sector.

38. The fixed WACC parameter values for each sector are listed in Table 9 below.[27]

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[26] See Electricity Distribution Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 35, clauses 2.4.5 and 4.4.5; Gas Distribution Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 37, clause 2.4.5; Gas Transmission Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 36, clause 2.4.5; and Transpower Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 38, clauses 2.4.5 and 3.5.5.

[27] See Airport Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 34, clause 5.2; Electricity Distribution Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 35, clauses 2.4.2 and 4.4.2; Gas Distribution Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 37, clauses 2.4.2 and 4.4.2; Gas Transmission Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 36, clauses 2.4.2 and 4.4.2; and Transpower Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 38, clauses 2.4.2 and 3.5.2.

Table 9: Fixed WACC parameter values under the IMs

Parameter	EDBs/Transpower	GPBs	Airports	Fibre
Leverage	41%	41%	23%	29%
Equity beta[28]	0.61	0.69	0.87	0.70
Debt issuance costs	0.2% (5-year period) 0.25% (4-year period)	0.2% (5-year period) 0.25% (4-year period)	0.2% (5-year period)	0.2% (5-year period) 0.25% (4-year period) 0.33% (3-year period)
TAMRP[29]	7.0%	7.0%	7.0%	7.0%

39. The values for the 'average investor tax rate' and 'average corporate tax rate' are not fixed under the IMs, but they will only be updated if the relevant statutory tax rates change.[30] The current value for both the average investor tax rate and average corporate tax rate is 28%.

Methodology for estimating the risk-free rate

40. This section explains our methodology for estimating the risk-free rate, which is the rate of interest expected when there is no risk of default. Debt issued by the New Zealand Government and denominated in New Zealand dollars is considered to be free of default risk.

41. We estimate the risk-free rate using bid yields on New Zealand government bonds.

42. For PQ determinations, we target a bond with a time to maturity equal to the length of the regulatory period that the determination applies to.

43. For ID regulation, we target a bond with a time to maturity equal to the length of the regulatory period that the disclosure year falls within (and five years for Airports ID).[31]

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[28] These equity betas are calculated by re-levering our asset beta estimates of 0.36 for EDBs/Transpower, 0.41 for GPBs, 0.67 for airports and 0.50 for Fibre. The leverage values in Table 9 are used to re-lever the asset betas.

[29] The TAMRP is set for a five-year period commencing the first day of the regulatory period.

[30] Under the IMs, the:
   - average corporate tax rate' is the average of the corporate tax rates that, as at the date that the estimation is made, will apply during the five-year period commencing on the first day of the disclosure year/price-quality regulatory period in question; and
   - the 'average investor tax rate' is the average of the investor tax rates that, as at the date that the estimation is made, will apply to each of the disclosure years in the five year period commencing on the first day of the disclosure year/price-quality regulatory period in question.

[31] This means that the relevant sector PQ regulatory period terms also apply where businesses are only subject to ID regulation.

44. Specifically, the IMs require us to estimate the risk-free rate, as at the date of the WACC estimate, using the approach in Box 1 below.[32]

Box 1: Methodology for estimating the risk-free rate

(a) obtaining, for notional benchmark New Zealand government New Zealand dollar denominated nominal bonds, the wholesale market linearly interpolated bid yield to maturity for a residual period to maturity equal to the length of the PQ regulatory period on each business day in the three months preceding the date of the WACC estimate;

(b) calculating the annualised interpolated bid yield to maturity for each business day; and

(c) calculating the unweighted arithmetic average of the daily annualised interpolated bid yields to maturity.

45. In practice, our methodology for estimating the risk-free rate involves:

45.1 identifying New Zealand government New Zealand dollar denominated nominal bonds;

45.2 obtaining wholesale bid yield data for each of these bonds, for each business day in the three months preceding the date of the WACC estimate;[33]

45.3 setting the target date for linear interpolation for each business day in the three-month period, which aligns with the length of the relevant regulatory period (such as five years into the future for a five-year regulatory period. For example, the target for a bid yield dated 1 January 2025 would be 1 January 2030);

45.4 identifying the two New Zealand government bonds with the closest maturity dates which straddle the target date;

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[32] Table 10 contains the relevant clause references for this approach. References to the 'date of the WACC estimate' in paragraph (a) of Box 1 differs from the exact wording in some of the IMs. To simplify the discussion, we have used generic wording that is applicable to risk-free rate estimates for both ID and price-quality path regulation.

[33] As explained in footnote 31 above, we have used the generic wording 'date of the WACC estimate' for simplicity. This term means:
- the first day of each disclosure year, for ID regulation; and
- the first day of the month seven months prior to the start of each regulatory period, for price-quality regulation.

45.5   estimating, by linear interpolation between those two bonds, the bid yield for a residual period to maturity of our target length (such as five years, for a five-year regulatory period);

45.6   annualising each linearly interpolated bid yield to reflect the six-monthly payment of interest;[34] and

45.7   calculating the mean of the daily annualised interpolated rates.

46. The methodology for estimating the risk-free rate is specified in the relevant clauses of each IM determination, as set out in Table 10 below.

Table 10:   IM clause references for risk-free rate methodology

Relevant IM determination	ID regulation	Price-quality path regulation
Airports IM determination	Clause 5.3	N/A
Electricity distribution IM determination	Clause 2.4.3	Clause 4.4.3
Gas distribution IM determination	Clause 2.4.3	Clause 4.4.3
Gas transmission IM determination	Clause 2.4.3	Clause 4.4.3
Transpower IM determination	Clause 2.4.3	Clause 3.5.3
Fibre IM determination	Clause 2.4.3	Clause 3.5.3

Methodology for estimating the average debt premium

47. This section explains how we estimate the debt premium, which is the additional interest rate, over and above the risk-free rate, required by suppliers of debt capital to compensate them for being exposed to the risk of default in lending to a firm.[35]

48. This section explains that:

48.1   the average debt premium is calculated based on the debt premium values for the five most recent debt premium reference years (DPRYs); and

48.2   the methodology for estimating the debt premium values is outlined in the IMs.

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[34] The 'coupon frequency' for all relevant New Zealand government bonds is currently semi-annual (S/A) – i.e., six-monthly payment of interest.

[35] This includes an allowance for the inferior liquidity of corporate bonds relative to government bonds.

49. As regulated fibre service providers were only subject to PQ and/or ID regulation from 1 January 2022 onwards, and we required a five-year historical average debt premium, we retrospectively estimated the debt premium for DPRY 2017 to DPRY 2021 in setting the first Fibre PQ path.

The average debt premium is the mean of the five most recent debt premium reference years

50. Under the IMs we are required to estimate an average debt premium for each disclosure year for ID regulation, and each regulatory period for PQ regulation.

51. We estimate the debt premium as a five-year historical average, which is referred to as the *average debt premium*. Specifically, the average debt premium is calculated as the simple arithmetic average (i.e., the mean) of the debt premium values for the:

    51.1   current DPRY; and

    51.2   four previous DPRYs.

52. The methodology for estimating the average debt premium is specified in the relevant clauses of each IM determination, as set out in Table 11 below.

Table 11:   IM clause references for average debt premium methodology

Relevant IM determination	ID regulation	Price-quality path regulation
Airports IM determination	Clause 5.4	N/A
Electricity distribution IM determination	Clause 2.4.4	Clause 4.4.4
Gas distribution IM determination	Clause 2.4.4	Clause 4.4.4
Gas transmission IM determination	Clause 2.4.4	Clause 4.4.4
Transpower IM determination	Clause 2.4.4	Clause 3.5.4
Fibre IM determination	Clause 2.4.4	Clause 3.5.4

53. The DPRYs are specific to each sector, as shown in Table 12 below.[36] For example, 'debt premium reference year 2026' for EDBs means the 12-month period ending 31 August 2026.

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[36] See the definitions of 'debt premium reference year' in: Airport Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 34, clause 1.4(2); Electricity Distribution Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 35, clause 1.1.4(2); Gas Distribution Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 37, clause 1.1.4(2); Gas Transmission Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 36, clause 1.1.4(2); and Transpower Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 38, clause1.1.4(2).

Table 12:   Debt premium reference years

Sector	Debt premium reference year
Electricity distribution and transmission	1 September to 31 August
Gas distribution and transmission	1 March to 28 February
Airports	1 July to 30 June
Fibre	1 September to 31 August

54. The 'current debt premium reference year' refers to the debt premium reference year that contains the start of the relevant disclosure year or regulatory year in which the debt premium estimate is made. For example:

    54.1   EDB disclosure year 2026 starts on 1 April 2025. In this case, the current debt premium reference year is DPRY 2025 (1 September 2024 to 31 August 2025) and the relevant bond data for the debt premium estimation will be from 1 September 2023 to 31 August 2024, in line with the IMs; and

    54.2   Chorus' PQP2 starts on 1 January 2025, so the WACC is estimated at 1 June 2024. In this case, the current debt premium reference year is DPRY 2024 (1 September 2023 to 31 August 2024), and the relevant bond data will be from 1 September 2022 to 31 August 2023, in line with the IMs.

Debt premium values for post-2017 DPRYs are calculated using the approach in the IMs

55. Debt premium values for DPRYs after 2017 are calculated using the methodology specified in the IMs for each Part 4 sector.[37]

56. Our estimate of the sector-wide debt premium for a given DPRY is informed by observed debt premiums on relevant New Zealand corporate bonds. The debt premium for each relevant bond is calculated as the difference between:

    56.1   **the observed interest rate on the corporate bond** – bid yields to maturity on publicly traded New Zealand corporate bonds are used; and

    56.2   **a contemporaneous estimate of the risk-free rate for each bond** – we estimate a contemporaneous interpolated bid yield to maturity of notional benchmark New Zealand government New Zealand dollar denominated nominal bonds.

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[37] As noted above, we retrospectively estimated the debt premium for DPRY 2017 to DPRY 2021 in setting the first Fibre PQ path. Refer to Cost of capital determination for Chorus' price quality path for PQP1 [2021] NZCC 8 (1 July 2021), paragraphs 12 to 18 for further details.

Relevant corporate bonds we consider when estimating the debt premium

57. Under the IMs, relevant New Zealand corporate bonds that we consider when estimating the debt premium must be:[38]

    57.1 **publicly traded vanilla NZ$ denominated bonds** – which means senior unsecured nominal debt obligations denominated in New Zealand dollars without callable, puttable, conversion, profit participation, credit enhancement or collateral features;

    57.2 **issued by a qualifying issuer** – which means a New Zealand resident limited liability company that:

        57.2.1 undertakes, or is part of a corporate group that undertakes, the majority of its business activities in Australia or New Zealand;

        57.2.2 does not operate, or is part of a corporate group that does not operate, predominantly in the banking or finance industries; and

    57.3 **investment grade rated** – which means the bond is endorsed with a credit rating by an established credit rating agency (such as Standard and Poor's) of "investment grade" on that agency's credit rating scale applicable to long-term investments.

58. As we noted in our Fibre final IM reasons paper,[39] our methodology generally only considers corporate bonds with a simple interest rate to maturity to allow a consistent bid-yield to maturity to be calculated across the debt premium bond sample. If we were to include other types of bonds (e.g. bonds with variable maturity or embedded options) it would require making changes to the observed secondary market yield that would be relatively complicated.

59. Having identified relevant New Zealand corporate bonds which meet the criteria in paragraph 58 above, we undertake the steps in Box 2 below to generate daily debt premium estimates for each bond.

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[38] See the definitions of 'vanilla NZ$ denominated bonds', 'qualifying issuer' and 'investment grade rated' in: Airport Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 34, clause 1.4(2); Electricity Distribution Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 35, clause 1.1.4(2); Gas Distribution Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 37, clause 1.1.4(2); Gas Transmission Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 36, clause 1.1.4(2); and Transpower Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 38, clause1.1.4(2).

[39] Commerce Commission "Fibre input methodologies: Main final decisions – reasons paper" (13 October 2020), paras 6.263–6.264.

Box 2: Methodology for estimating debt premium on New Zealand corporate bonds

> (a)   obtain its wholesale market annualised bid yield to maturity;
>
> (b)   calculate by linear interpolation with respect to maturity, the contemporaneous wholesale market annualised bid yield to maturity for a notional benchmark New Zealand government New Zealand dollar denominated nominal bond with the same remaining term to maturity; and
>
> (c)   calculate its contemporaneous interpolated bid to bid spread over notional benchmark New Zealand government New Zealand dollar denominated nominal bonds with the same remaining term to maturity, by deducting the yield calculated in accordance with subparagraph (b) from the yield obtained in accordance with subparagraph (a),
>
> for each business day in the 12 months preceding the start of the debt premium reference year.

60. We then calculate the average of the daily spreads calculated under Box 2 for each bond. This process results in a list of debt premiums for relevant issuers of New Zealand corporate bonds.

Hierarchy of bonds when estimating the debt premium

61. When forming our view regarding the debt premium value for the DPRY in question, the weight we place on the observed debt premiums for issuers of corporate bonds differs by sector. In particular, the 'benchmark' corporate bond we target when estimating the debt premium differs, as shown in Table 13 below.[40]

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[40] See Airport Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 34, clause 5.4(5)(d); Electricity Distribution Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 35, clause 2.4.4(5)(d); Gas Distribution Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 37, clause 2.4.4(5)(d); Gas Transmission Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 36, clause 2.4.4(5)(d); and Transpower Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 38, clause 2.4.4(5)(d).

Table 13:   Criteria for benchmark / target corporate bond

Criteria	EDBs, Transpower and GPBs	Airports	Fibre
Issued by	EDB or GPB that is neither 100% owned by the Crown nor a local authority	Airport that is neither 100% owned by the Crown nor a local authority	FFLAS supplier that is neither 100% owned by the Crown nor a local authority
Qualifying rating[41]	BBB+	A-	BBB
Remaining term to maturity	5 years	5 years	5 years
Other requirements	Publicly traded	Publicly traded	Publicly traded

62. When estimating a debt premium based on the benchmarks specified in Table 13 above, we place greater weight on bonds that have characteristics closer to our target.

63. We categorise each of the debt premiums calculated under the method in paragraphs 59 to 62 based on the criteria in Table 14 below. The IMs require us to have progressively less regard to the spreads observed on bonds in the order they are specified in this table.[42]

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[41] 'Qualifying rating' means

    (a)   a Standard and Poor's long-term credit rating of the specified grade; or

    (b)   an equivalent long-term credit rating of another internationally recognised rating agency.

[42] See Airport Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 34, clause 5.4(6)-(7)(a); Electricity Distribution Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 35, clause 2.4.4(6)-(7)(a); Gas Distribution Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 37, clause 2.4.4(6)-(7)(a); Gas Transmission Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 36, clause 2.4.4(6)-(7)(a); and Transpower Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 38, clause 2.4.4(6)-(7)(a). [INSERT FIBRE IMS], clause 2.4.4(6)-(7)(a)

Table 14: **Bond criteria hierarchy for considering bonds for estimating the debt premium**

Category	EDBs, Transpower and GPBs IM determination	Airports IM determination	Bond criteria for Fibre IM determination
(a)	- Qualifying rating of grade BBB+ - Issued by an EDB or a GPB that is neither 100% owned by the Crown nor a local authority	- Qualifying rating of grade A- - Issued by an airport that is neither 100% owned by the Crown nor a local authority	- Qualifying rating of grade BBB - Issued by a regulated FFLAS supplier that is neither 100% owned by the Crown nor a local authority
(b)	- Qualifying rating of grade BBB+ - Issued by an entity other than an EDB or a GPB that is neither 100% owned by the Crown nor a local authority	- Qualifying rating of grade A- - Issued by an entity other than an airport that is neither 100% owned by the Crown nor a local authority	- Qualifying rating of grade BBB - Issued by a telecommunications supplier that is neither 100% owned by the Crown nor a local authority
(c)	- Qualifying rating of a grade different to BBB+ - Issued by an EDB or a GPB that is neither 100% owned by the Crown nor a local authority	- Qualifying rating of a grade different to A- - Issued by an airport that is neither 100% owned by the Crown nor a local authority	- Qualifying rating of grade BBB - Issued by an entity other than a regulated FFLAS or telecommunications supplier or that is neither 100% owned by the Crown nor a local authority
(d)	- Qualifying rating of a grade different to BBB+ - Issued by an entity other than an EDB or a GPB that is neither 100% owned by the Crown nor a local authority	- Qualifying rating of a grade different to A- - Issued by an entity other than an airport that is neither 100% owned by the Crown nor a local authority	- Qualifying rating of a grade different to BBB - Issued by a regulated FFLAS supplier that is neither 100% owned by the Crown nor a local authority

(e)	• Investment grade credit rated • Issued by an entity that is 100% owned by the Crown or a local authority	• Investment grade credit rated • Issued by an entity that is 100% owned by the Crown or a local authority	• Qualifying rating of a grade different to BBB • Issued by an entity other than a regulated FFLAS supplier that is neither 100% owned by the Crown nor a local authority
(f)			• Investment grade credit rated • Issued by an entity that is 100% owned by the Crown or a local authority

64. In addition, when considering the observed debt premiums on New Zealand corporate bonds described in Table 14:

    64.1   the spread on any bond that has a remaining term to maturity of less than five years will ordinarily be considered to be the minimum spread that would reasonably be expected to apply on an equivalently credit-rated bond issued by the same entity with a remaining term to maturity of five years;[43] and

    64.2   we adjust spreads observed on bonds described under category (b) to (e) to approximate the spread that is likely to have been observed had the bonds in question been of the type described in category (a).[44]

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[43] See Airport Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 34, clause 5.4(7)(b); Electricity Distribution Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 35, clause 2.4.4(7)(b); Gas Distribution Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 37, clause 2.4.4(7)(b); Gas Transmission Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 36, clause 2.4.4(7)(b); and Transpower Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 38, clause 2.4.4(7)(b).

[44] See Airport Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 34, clause 5.4(7)(c); Electricity Distribution Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 35, clause 2.4.4(7)(c); Gas Distribution Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 37, clause 2.4.4(7)(c); Gas Transmission Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 36, clause 2.4.4(7)(c); and Transpower Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 38, clause 2.4.4(7)(c).

We also have regard to the debt premium estimated under the Nelson-Siegel-Svensson (NSS) approach

65. When reaching our final estimate of the debt premium for the relevant DPRY, we also have regard to the debt premium estimated from applying the Nelson-Siegel-Svensson (NSS) approach.[45]

66. The NSS approach is a method for modelling yield curves and term structures of interest rates which establishes a relationship between terms to maturity and the debt premium. A curve is generated by changing the parameters of a yield curve's functional form to minimise the squared deviation between estimated and observed values.[46]

67. We use the NSS approach to generate a yield curve based on the available bond data. This yield curve is then used to estimate a debt premium for a five-year term to maturity, for the relevant DPRY.

This methodology results in a set of data used to inform our estimate of the debt premium

68. The methodology described in paragraphs 57 to 67 above results in a table of data which we base our debt premium estimate for the relevant DPRY on. We use this data to estimate the debt premium that would reasonably be expected to apply to a vanilla NZ$ denominated bond that meets the benchmark requirements for the relevant sector specified in Table 13 above.

69. As an example, Table 15 below summarises the relevant debt premium data used to inform our estimate of the debt premium for DPRY 2024 for EDBs – which was 1.40%.[47]

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[45] See Airport Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 34, clause 5.4(5)(d); Electricity Distribution Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 35, clause 2.4.4(5)(d); Gas Distribution Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 37, clause 2.4.4(5)(d); Gas Transmission Services Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 36, clause 2.4.4(5)(d); and Transpower Input Methodologies (IM Review 2023) Amendment Determination 2023 [2023] NZCC 38, clause 2.4.4(5)(d).

[46] For further details on the NSS approach to modelling yield curves, see Commerce Commission "Input methodologies review decisions – Topic paper 4: Cost of capital issues" (20 December 2016), Attachment D.

[47] For further details see Cost of capital determination for disclosure year 2025 for information disclosure regulation, For electricity distribution businesses and Wellington International Airport [2024] NZCC 7 (1 May 2024)

Table 15: **Five-year debt premium on an EDB-issued bond rated BBB+ (as at 1 April 2024)**

Bond category	Issuer	Sector	100% Govt owned	Bond credit rating	Remaining term to maturity (years)	Debt premium (%)	Comments
a	Vector Limited	EDB/GPB	No	BBB+	4.7	1.39	5-year debt premium would be higher.
b	Genesis Energy Limited	Other	No	BBB+	5.0	1.40	Credit rating and term are an exact match.
b	Mercury NZ Limited	Other	No	BBB+	5.0	1.37	Credit rating and term are an exact match.
b	Meridian Energy Limited	Other	No	BBB+	2.3	1.13	5-year debt premium would be higher.
d	Auckland International Airport Limited	Airport	No	A-	5.1	1.13	BBB+ debt premium would be higher; 5-year debt premium would be lower.
d	Chorus Limited	Fibre	No	BBB	4.7	1.35	BBB+ debt premium would be lower; 5-year debt premium would be higher.
d	Contact Energy Limited	Other	No	BBB	5.1	1.37	BBB+ debt premium would be lower; 5-year debt premium would be lower.
d	Fonterra Co-operative Group Limited	Other	No	A-	2.7	1.08	BBB+ debt premium would be higher; 5-year debt premium would be higher.
d	Spark Finance Limited	Telco	No	A-	5.0	1.09	BBB+ debt premium would be higher.
d	Wellington International Airport Limited	Airport	No	BBB	3.4	1.61	BBB+ debt premium would be lower; 5-year debt premium would be higher.
e	Christchurch International Airport Limited	Airport	Yes	A-	5.2	1.32	BBB+ debt premium would be higher; 5-year debt premium would be lower.
e	Transpower New Zealand Limited	Other	Yes	AA-	5.0	0.78	BBB+ debt premium would be higher.

Notes on bonds analysed	
1	VCTNZ 3.69 11/26/27
2	GENEPO 4.17 03/14/28; GENEPO 5 04/03/25; GENEPO 3.65 12/20/28
3	MCYNZ 1.56 09/14/27; MCYNZ 2.16 09/29/26; MCYNZ 1.917 10/09/30
4	MERINZ 4.21 06/27/25
5	AIANZ 5.67 05/09/28
6	CNUNZ 1.98 12/02/27
7	CENNZ 5.82 04/11/28
8	FCGNZ 4.15 11/14/25
9	SPKNZ 3.94 09/07/26; SPKNZ 4.37 09/29/28
10	WIANZ 2 1/2 08/14/26
11	CHRINT 5.18 05/19/28
12	TPNZ 5.893 03/15/28

70. In this case:

    70.1   greatest regard was had to the estimated debt premium on the Vector bond (1.39%), given it is in category (a) under Table 15;

    70.2   we noted that the Genesis (1.40%), Mercury (1.37%), and Meridian (1.13%) bonds, which are all category (b), supported a debt premium of 1.40% (the NSS estimate of 1.40% also supported a debt premium of 1.40%);

    70.3   starting with the debt premium on the Vector bond, but also taking into account the Genesis, Mercury and Meridian bonds, suggested a debt premium of approximately 1.40% was appropriate;

70.4   the estimated debt premiums on other issuers in categories (c) to (e) were generally consistent with a debt premium of 1.40%, when consideration was given to different credit ratings and terms to maturity; and

70.5   accordingly, we determined a debt premium of 1.40% for DPRY 2024.[48]

71. In this example, the debt premium values for DPRY 2020 to DPRY 2024 were then averaged, to determine an average debt premium of 1.39%.[49]

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[48] *Cost of capital determination for disclosure year 2025 for information disclosure regulation, For electricity distribution businesses and Wellington International Airport [2024] NZCC 7 (1 May 2024),* paragraph 15.

[49] *Cost of capital determination for disclosure year 2025 for information disclosure regulation, For electricity distribution businesses and Wellington International Airport [2024] NZCC 7 (1 May 2024)*, paragraphs 13-14.