

Cost of capital determination for disclosure year 2023 for information disclosure regulation

**For Transpower, gas pipeline businesses and suppliers of specified airport services (with a
June year-end)**

[2022] NZCC 28

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Associated documents

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1 April 2022	ISSN 1178-2560	Cost of capital determination for gas pipeline businesses' 2022-2026/2022-2027 default price-quality path [2022] NZCC 10
25 March 2022	ISSN 1178-2560	Gas Distribution Services Input Methodologies Amendment Determination (No. 1) 2022 [2022] NZCC 5
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31 July 2020	ISSN 1178-2560	Cost of capital determination for disclosure year 2021 – For Transpower, gas pipeline businesses and suppliers of specified airport services (with a June year-end) [2020] NZCC 15
13 May 2020	ISSN 1178-2560	Cost of capital determination for disclosure year 2021 – Electricity distribution businesses and Wellington International Airport [2020] NZCC 11
25 September 2019	ISSN 1178-2560	Cost of capital determination for electricity distribution businesses' 2020-2025 default price-quality paths and Transpower New Zealand Limited's 2020-2025 individual price-quality path [2019] NZCC 12

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31 July 2018	ISSN 1178-2560	Cost of capital determination for disclosure year 2019 for Transpower, gas pipeline businesses and suppliers of specified airport services (with a June year-end) [2018] NZCC 11
30 April 2018	ISSN 1178-2560	Cost of capital determination for disclosure year 2019. Electricity distribution businesses and Wellington International Airport [2018] NZCC 7
27 May 2021	ISBN 978-1-869458-98-0	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
3 April 2018	ISSN 1178-2560	Gas Distribution Services Input Methodologies Determination 2012 (Consolidated April 2018)
28 February 2017	ISSN 1178-2560	Transpower Input Methodologies Determination 2010 (Consolidated January 2020)
20 December 2016	ISBN 978-1-869455-48-4	Input methodologies review decisions (Topic paper 4: Cost of capital issues)
20 December 2016	ISSN 1178-2560	Airport Services Input Methodologies Determination 2010 (Consolidated December 2016)

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WACC estimates for disclosure year 2023 for Transpower, GPBs (GasNet and Vector) and airports (AIAL and CIAL)¹

1. This determination specifies the weighted average cost of capital (WACC) estimates that will apply for ID regulation for disclosure year 2023 for Transpower, gas pipeline businesses (GPBs) (GasNet and Vector)², and airports (AIAL and CIAL).
2. The timing of our WACC determinations for ID regulation differs depending on the disclosure year of the regulated companies. Transpower, Auckland Airports and Christchurch Airport have disclosure years of 1 July to 30 June with disclosure year 2023 being the year ending 30 June 2023. We determine an ID WACC for Wellington Airport in April and for the other GPBs in October due to their different disclosure years.
3. The cost of capital ID determination reflects a WACC based on the length of the regulatory period applying for a given sector. In October 2022, GPBs are transitioning from a 5-year price-path to a 4-year price-path. This means that for the GPBs disclosure year 2023, part of the disclosure year will reflect a five-year period (three months) and the rest will reflect a four-year period (nine months). Consistent with our Gas IM amendments reasons paper, when estimating the risk-free rate and the debt issuance costs for disclosure year 2023 we have applied a blended rate based on the proportion of the disclosure year where a five-year WACC applies and where a four-year WACC applies.³
4. Vanilla and post-tax WACC estimates for disclosure year 2023 for Transpower, GPBs and airports are summarised in Table 1, Table 2 and Table 3 below, respectively.

Table 1: Summary of vanilla and post-tax WACC estimates for Transpower

	Vanilla WACC	Post-tax WACC
Mid-point	6.17%	5.55%
25 th percentile	5.49%	4.87%
67 th percentile	6.62%	5.99%
75 th percentile	6.85%	6.23%

¹ Unless appears otherwise from the context all references to GPBs in this determination mean GasNet Limited and Vector Limited, and all references to airports mean Auckland International Airport Limited and Christchurch International Airport Limited.

² As GasNet and Vector are both suppliers of gas distribution services this determination refers to the relevant clauses of the [Gas Distribution Services Input Methodologies Determination 2012 as amended by the Gas Distribution Services Input Methodologies Amendment Determination \(No.1\) 2022. \(Consolidated April 2018 version\)](#). The consolidated version does not include the amendments made by the Gas Distribution Services Input Methodologies Amendment Determination (No.1) 2022 dated 25 March 2022.

³ [Commerce Commission, Amendments to input methodologies for gas pipeline businesses related to the 2022 default price-quality paths – weighted average cost of capital Reasons paper, 25 March 2022 at paragraphs 3.36 and 3.37.](#)

Table 2: Summary of vanilla and post-tax WACC estimates for GasNet and Vector

	Vanilla WACC	Post-tax WACC
Mid-point	6.70%	6.09%
25 th percentile	6.00%	5.38%
67 th percentile	7.17%	6.55%
75 th percentile	7.41%	6.79%

Table 3: Summary of vanilla and post-tax WACC estimates for AIAL and CIAL

	Vanilla WACC	Post-tax WACC
Mid-point	7.24%	6.98%
Standard error	0.0146	0.0146

5. The WACC estimates have been calculated as at 1 July 2022, which is the first day of disclosure year 2023.
6. This determination should be read together with our guidelines for WACC determinations under the cost of capital input methodologies.⁴ These guidelines form part of this determination. The guidelines explain our methodology for calculating WACC estimates, including:
 - 6.1 the formulas used (including for different WACC percentiles);
 - 6.2 the values for WACC parameters which are fixed under the input methodologies; and
 - 6.3 our methodology for estimating the risk-free rate and average debt premium.

⁴ [Commerce Commission, 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, 27 May 2021.](#)

Further details regarding the WACC estimates

WACC parameter values for Transpower, GPBs and Airports

7. The parameter values used to generate the mid-point WACC estimates for disclosure year 2023 (as at 1 July 2022) for Transpower, relevant GPBs and airports are summarised in Table 4 below.⁵

Table 4: Values used to calculate WACC estimates for Transpower, GPBs and Airports

Parameter	Transpower	GasNet and Vector	AIAL and CIAL
Risk-free rate	3.60%	3.58%	3.60%
Average debt premium	1.51%	1.43%	1.17%
Leverage	42%	42%	19%
Asset beta	0.35	0.40	0.60
Equity beta	0.60	0.69	0.74
Tax adjusted market risk premium	7.0%	7.5%	7.0%
Average corporate tax rate	28%	28%	28%
Average investor tax rate	28%	28%	28%
Debt issuance costs	0.20%	0.24%	0.20%
Cost of debt	5.31%	5.25%	4.97%
Cost of equity	6.79%	7.76%	7.77%
Standard error of midpoint WACC estimate	0.0101	0.0105	0.0146
Mid-point vanilla WACC	6.17%	6.70%	7.24%
Mid-point post-tax WACC	5.55%	6.09%	6.98%

*The numbers are rounded to two decimal points.

Risk-free rate for Transpower, GPBs and airports

8. 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 and five years for airports.⁶

⁵ All parameter values except the estimate of the risk-free rate and the average debt premium are set in the input methodologies.

⁶ If we were estimating a five-year risk-free rate, for example, we interpolate between the two closest bonds surrounding a 5-year remaining term. This requires taking the yields of the bonds with a remaining term immediately before and after 5 years term to maturity on that day. The 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.

9. Our estimate of the five-year risk-free rate is based on data reported by Bloomberg for each business day in the three-month period ending June 2022 in respect of the May 2026, April 2027, and May 2028 maturity bonds. The risk-free rate is the same for Transpower and airports.
10. 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 a 3.60% interest rate on New Zealand government bonds with a five-year term to maturity, as estimated at 1 July 2022.
11. Our estimate of the blended risk-free rate (applying for GPBs) is based on data reported by Bloomberg for each business day in the three-month period ending June 2022 in respect of the April 2025, May 2026, April 2027, and May 2028 maturity bonds.⁷
12. 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 a 3.58% interest rate on New Zealand government bonds with a four-year term to maturity, as estimated at 1 July 2022.

Average debt premium for Transpower

13. The average debt premium for Transpower of 1.51% 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 5 below.
14. The DPRY for Transpower starts on 1 September and ends 31 August. DPRY 2022 is the current DPRY for Transpower as it contains the start of disclosure year 2023 (1 July 2022). The 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.⁸

Table 5: Average debt premium for Transpower (%)

	DPRY 2018	DPRY 2019	DPRY 2020	DPRY 2021	DPRY 2022	Average
Debt premium	1.63	1.60	1.60	1.55	1.15	1.51

⁷ We have estimated a risk-free rate consistent with a five-year period for the proportion of the disclosure year where this regulatory period length applies [three months], and a four-year regulatory period length for the proportion where this applies [nine months].

⁸ The current DPRY applying for the debt premium estimation is DPRY 2022 (1 September 2021 to 31 August 2022) and we used bond data from the 12 months prior to the start of the current DPRY (that is, 1 September 2020 to 31 August 2021) to estimate the debt premium for DPRY 2022.

15. The debt premium values are taken from the following sources:
- 15.1 The debt premium value for the 2018 DPRY was estimated in the *Cost of capital determination for disclosure year 2019 for Electricity distribution businesses and Wellington International Airport [2018]* NZCC 7 (30 April 2018).
 - 15.2 The debt premium value for the 2019 DPRY was estimated in the *Cost of capital determination for disclosure year 2020 for information disclosure regulation for Electricity distribution businesses and Wellington International Airport [2019]* NZCC 7 (30 April 2019).
 - 15.3 The debt premium value for the 2020 DPRY was estimated in the *Cost of capital determination for disclosure year 2021 for information disclosure regulation for Electricity distribution businesses and Wellington International Airport [2020]* NZCC 11 (13 May 2020).
 - 15.4 The debt premium value for the 2021 DPRY was estimated in the *Cost of capital determination for disclosure year 2022 for information disclosure regulation for Electricity distribution businesses and Wellington International Airport [2021]* NZCC 4 (30 April 2021).
 - 15.5 The debt premium value for the 2022 DPRY was estimated in the *Cost of capital determination for disclosure year 2023 for information disclosure regulation for Electricity distribution businesses and Wellington International Airport [2022]* NZCC 12 (3 May 2022).

WACC range and 67th percentile estimate for Transpower

16. In addition to the mid-point estimate, we are also required to determine a WACC range and 67th percentile estimate for Transpower.
17. The WACC range means the values falling between the 25th percentile and 75th percentile, inclusive of the mid-point estimate of WACC. The methodology for estimating different WACC percentiles is set out in clause 2.4.5 of the Transpower IM.⁹

Average debt premium for GasNet and Vector

18. The average debt premium for GPBs of 1.43% is the average of the debt premium values for the current DPRY and the four previous DPRYs, as shown in Table 6 below. DPRY 2023 is the current reference year for GPBs.¹⁰

⁹ The same methodology applies to both vanilla and post-tax WACC estimates. The mid-point estimate of WACC is treated as the 50th percentile. The required estimates are set out in Table 1.

¹⁰ The 'current debt premium reference year' refers to the DPRY that contains the start of the relevant disclosure year. The GPBs' disclosure year 2023 starts on 1 July 2022. In this case, the current DPRY is DPRY 2023 (1 March 2022 to 28 February 2023). The data we use is from 1 March 2021 to 28 February 2022.

19. The debt premium values are taken from the following sources:
- 19.1 The debt premium value for DPRY 2019 was estimated in *the Cost of capital determination for disclosure year 2019 for Transpower, gas pipeline businesses and suppliers of specified airport services [2018]* NZCC 11 (31 July 2018).
- 19.2 The debt premium value for DPRY 2020 was estimated in the *Cost of capital determination for disclosure year 2020 for Transpower, gas pipeline businesses and suppliers of specified airport services [2019]* NZCC 8 (31 July 2019).
- 19.3 The debt premium value for DPRY 2021 was estimated in the *Cost of capital determination for disclosure year 2021 for Transpower, gas pipeline businesses and suppliers of specified airport services [2020]* NZCC 15 (31 July 2020).
- 19.4 The debt premium value for DPRY 2022 was estimated in the *Cost of capital determination for disclosure year 2022 for Transpower, gas pipeline businesses and suppliers of specified airport services [2021]* NZCC 10 (2 August 2021).

Table 6: Average debt premium for GasNet and Vector (%)

	DPRY 2019	DPRY 2020	DPRY 2021	DPRY 2022	DPRY 2023	Average
Debt premium	1.60	1.65	1.45	1.35	1.10	1.43

20. We estimated a debt premium of 1.10% for DPRY 2023, in the Cost of capital determination for gas pipeline businesses' 2022-2026/2022-2027 default price-quality path.¹¹ We note that the DPRY23 estimation period used data from 1 March 2021 to 28 February 2022 which coincided with the Covid-19 pandemic and which had a significant impact on debt and equity markets, in particular airports and travel-related securities.¹²

¹¹ Cost of capital determination for gas pipeline businesses' 2022-2026/2022-2027 default price-quality path [2022] NZCC 10. In this determination we had two sets of WACC estimates – one reflecting a five-year period and the other reflecting a four-year period. We did this because we had not yet produced our final decision on the term of the regulatory period for the GPB default price path (DPP).

¹² Note that bond observations that have a remaining term to maturity exactly equal to the target (i.e., five years), and include multiple bonds analysed, have been interpolated between multiple bonds from the issuer to give an exact match to the target term to maturity.

WACC range and 67th percentile estimate for GasNet and Vector

21. In addition to the mid-point estimate, we are also required to determine a WACC range and 67th percentile estimate for each GPB.
22. The WACC range means the values falling between the 25th percentile and 75th percentile, inclusive of the mid-point estimate. The methodology for estimating different WACC percentile estimates is set out in clause 2.4.5 of the Gas Distribution Services IM Determination.¹³

Average debt premium for AIAL and CIAL

- 22.1 The average debt premium for Airports of 1.17% is the average of the debt premium values for the current DPRY and the four previous DPRYs, as shown in
 23. Table 7 below. DPRY 2023 is the current DPRY year for AIAL and CIAL.¹⁴
 24. The debt premium values are taken from the following sources:
 - 24.1 The debt premium value for the DPRY 2019 was estimated in the *Cost of capital determination for disclosure year 2019 for Transpower, gas pipeline businesses and suppliers of specified airport services [2018]* NZCC 11 (31 July 2018).
 - 24.2 The debt premium value for the DPRY 2020 was estimated in the *Cost of capital determination for disclosure year 2020 for Transpower, gas pipeline businesses and suppliers of specified airport services [2019]* NZCC 8 (31 July 2019).
 - 24.3 The debt premium value for the DPRY 2021 was estimated in the *Cost of capital determination for disclosure year 2021 for Transpower, gas pipeline businesses and suppliers of specified airport services [2020]* NZCC 15 (31 July 2020).
 - 24.4 The debt premium value for the DPRY 2022 was estimated in the *Cost of capital determination for disclosure year 2021 for Transpower, gas pipeline businesses and suppliers of specified airport services [2021]* NZCC 10 (2 August 2021).

¹³ The same methodology applies to both vanilla and post-tax WACC estimates. The mid-point estimate of WACC is treated as the 50th percentile.

¹⁴ The Airports' disclosure year 2023 starts on 1 July 2022. In this case, the current debt premium reference year is DPRY 2023 (1 July 2022 to 30 June 2023). The data we use to calculate the debt premium is from 1 July 2021 to 30 June 2022.

Table 7: Average debt premium for Airports (%)

	DPRY 2019	DPRY 2020	DPRY 2021	DPRY 2022	DPRY 2023	Average
Debt premium	1.15	1.30	1.30	1.10	1.00	1.17

25. We have estimated a debt premium of 1.00%, for DPRY 2023 based on the data in Table 8 below.¹⁵
26. We have had greatest regard to the category (a) Auckland International Airport bond, which supports a debt premium of 1.00%. The only category (a) bond matches the target credit rating (A-) and has a 2.8 year term to maturity so we would expect a higher debt premium than 0.91 if the term to maturity was 5 years.
27. The category (b) bonds match the target credit rating (A-) but the remaining term to maturity is under 5 years so we would expect the debt premium to be slightly higher, supporting the debt premium of 1.00%.
28. The estimated debt premiums for other issuers in bond categories (c) to (e) may suggest a higher debt premium when consideration is given to the different credit ratings and terms to maturity. These bonds are less relevant, none of them have both the same credit rating and term to maturity, but they do support a slight uplift to the category (a) bond estimate.
29. The NSS estimate of the debt premium of 0.98% also lends support to our estimate of 1.00%.

¹⁵ Note that bond observations that have a remaining term to maturity exactly equal to the target (i.e., five years), and include multiple bonds analysed, have been interpolated between multiple bonds from the issuer to give an exact match to the target term to maturity.

Table 8: Debt premium estimate for AIAL and CIAL DPRY 2023

		Industry	Rating	Remaining term to maturity	Debt premium		
Determined debt premium		Airport	A-	5.0	1.00		
Category	Issuer	Note ref.	Industry	Rating	Remaining term to maturity	Debt premium	Comment
a	AUCKLAND INTL AIRPORT	1	Airport	A-	4.7	0.97	5 year debt premium would be higher
b	FONTERRA COOPERATIVE G	2	Other	A-	3.9	0.98	5 year debt premium would be higher
b	SPARK FINANCE LTD	3	Telco	A-	4.7	0.81	5 year debt premium would be higher
c	WELLINGTON INTL AIRPOR	4	Airport	BBB	3.5	1.28	A- debt premium would be lower; 5 year debt premium would be higher
d	CHORUS LTD	5	Fibre	BBB	5.9	1.02	A- debt premium would be lower; 5 year debt premium would be lower
d	CONTACT ENERGY LTD	6	Other	BBB	2.6	0.86	A- debt premium would be lower; 5 year debt premium would be higher
d	GENESIS ENERGY LTD	7	Other	BBB+	3.3	1.19	A- debt premium would be lower; 5 year debt premium would be higher
d	MERCURY NZ LTD	8	Other	BBB+	5.0	0.98	A- debt premium would be lower; 5 year debt premium would be higher
d	MERIDIAN ENERGY LIMITE	9	Other	BBB+	3.5	0.95	A- debt premium would be lower; 5 year debt premium would be higher
d	VECTOR LTD	10	EDB/GPB	BBB	4.8	1.26	A- debt premium would be lower; 5 year debt premium would be higher
e	CHRISTCHURCH INTL AIRP	11	Airport	BBB+	5.3	1.42	A- debt premium would be lower; 5 year debt premium would be lower
e	TRANSPower NEW ZEALAN	12	Other	AA	5.0	0.71	A- debt premium would be higher
Nelson-Siegel Svensson estimate					5.0	0.98	

Notes on bonds analysed

- 1 AIANZ 3.29 11/17/26
- 2 FCGNZ 4.15 11/14/25
- 3 SPKNZ 3.94 09/07/26
- 4 WIANZ 5.06/16/25
- 5 CNUNZ 1.98 12/02/27
- 6 CENNZ 3.55 08/15/24
- 7 GENEPO 5.04/03/25
- 8 MCYNZ 2.16 09/29/26; MCYNZ 5.793 03/06/23; MCYNZ 1.56 09/14/27
- 9 MERINZ 4.21 06/27/25
- 10 VCTNZ 1.575 10/06/26
- 11 CHRINT 5.53 04/05/27
- 12 TPNZ 2.047 09/08/26; TPNZ 1.52 04/08/26; TPNZ 5.893 03/15/28

Changes in the risk-free rate and debt premium over time

30. The risk-free rate and the debt premium on bonds change over time. Figure 1 shows, as at 1 July 2022, changes over time in:
- 30.1 the five-year risk-free rate;
 - 30.2 the debt premium on bonds rated BBB+ with a remaining term to maturity of five years; and
 - 30.3 the debt premium on bonds rated A- with a remaining term to maturity of five years.

Figure 1: Changes in the risk-free rate and debt premium over time

