

ISSN 1178-2560  
Decision Series  
Project no. 14.18/13100

Public version

# **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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**Date of determination:** 25 September 2019

## Associated documents

| Publication date | Reference              | Title   |
|------------------|------------------------|---|
| 20 December 2016 | ISBN 978-1-869455-48-4 | Input methodologies review decisions (Topic paper 4: Cost of capital issues)  |
| 31 July 2017     | ISSN 1178-2560         | Cost of capital determination for disclosure year 2018 for Transpower, gas pipeline businesses and suppliers of specified airport services (with a June year-end) [2017] NZCC 19  |
| 30 April 2018    | ISSN 1178-2560         | Guidelines for WACC determinations under the cost of capital input methodologies – Regulation under Part 4 of the Commerce Act 1986   |
| 30 April 2018    | ISSN 1178-2560         | Cost of capital determination for disclosure year 2019 - Electricity distribution businesses and Wellington International Airport [2018] NZCC 7                                   |
| 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 8 |
| 31 January 2019  | ISSN 1178-2560         | Electricity Distribution Services Input Methodologies 2012 (Consolidated January 2019) <sup>1</sup>   |
| 30 April 2019    | ISSN 1178-2560         | Cost of capital determination for disclosure year 2020 - Electricity distribution businesses and Wellington International Airport [2019] NZCC 7                                   |
| 31 July 2019     | ISSN 1178-2560         | Cost of capital determination for disclosure year 2020 for Transpower, gas pipeline businesses and suppliers of specified airport services (with a June year-end) [2019] NZCC 8   |

<sup>1</sup> The input methodologies applicable for electricity distribution businesses are the *Electricity Distribution Services Input Methodologies Determination 2012*, as amended up to 8 November 2018. The applicable provisions for this WACC determination for electricity distribution businesses can be found in *Electricity Distribution Services Input Methodologies 2012 (consolidating all amendments as of 31 January 2019)*, Part 4 Subpart 4 (available at [https://comcom.govt.nz/\\_data/assets/pdf\\_file/0017/60542/Electricity-distribution-services-input-methodologies-determination-2012-consolidated-January-2019-31-January-2019.pdf](https://comcom.govt.nz/_data/assets/pdf_file/0017/60542/Electricity-distribution-services-input-methodologies-determination-2012-consolidated-January-2019-31-January-2019.pdf)).

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<sup>2</sup> The input methodologies applicable for Transpower New Zealand Limited are the *Transpower Input Methodologies Determination 2010*, as amended up to 28 August 2019. The applicable provisions for this WACC determination for Transpower New Zealand Limited can be found in *Transpower Input Methodologies Amendments Determination 2019 [2019 NZCC 10]*, Part 4 Subpart 4 of Attachment B (available at [https://comcom.govt.nz/\\_data/assets/pdf\\_file/0024/170295/2019-NZCC-10-Transpower-Input-Methodologies-Amendments-Determination-2019-28-August-2019.pdf](https://comcom.govt.nz/_data/assets/pdf_file/0024/170295/2019-NZCC-10-Transpower-Input-Methodologies-Amendments-Determination-2019-28-August-2019.pdf)).

## WACC estimates for 2020 EDB DPP and Transpower IPP

1. This determination specifies weighted average cost of capital (WACC) estimates that will apply to:
  - 1.1 the default price-quality path (DPP) for electricity distribution businesses (EDBs) that are not exempt from default/customised price-quality regulation under s 54G of the Commerce Act 1986 for the regulatory period commencing from 1 April 2020; and
  - 1.2 Transpower New Zealand Limited's (Transpower) individual price-quality path (IPP) for the regulatory period commencing from 1 April 2020.
2. Vanilla and post-tax WACC estimates for the EDB DPP and Transpower IPP regulatory periods commencing in April 2020 are summarised in Table 1 below.

**Table 1: Summary of vanilla and post-tax WACC estimates for EDBs and Transpower (%)**

|                             | Vanilla WACC | Post-tax WACC |
|-----------------------------|--------------|---------------|
| Mid-point                   | 4.13%        | 3.78%         |
| 67 <sup>th</sup> percentile | 4.57%        | 4.23%         |

3. This determination should be read in conjunction with our guidelines for WACC determinations under the cost of capital input methodologies.<sup>3</sup> These guidelines form part of this determination. The guidelines explain our methodology for calculating WACC estimates, including:
  - 3.1 the formulas used (including for different WACC percentiles);
  - 3.2 the values for WACC parameters which are fixed under the input methodologies; and
  - 3.3 our methodology for determining the risk-free rate and average debt premium.

<sup>3</sup> Commerce Commission "Guidelines for WACC determinations under the cost of capital input methodologies – Regulation under Part 4 of the Commerce Act 1986" (30 April 2018) available at [https://comcom.govt.nz/\\_data/assets/pdf\\_file/0021/91191/Guidelines-for-WACC-determinations-under-the-cost-of-capital-input-methodologies-30-April-2018.PDF](https://comcom.govt.nz/_data/assets/pdf_file/0021/91191/Guidelines-for-WACC-determinations-under-the-cost-of-capital-input-methodologies-30-April-2018.PDF)

## Further details regarding the WACC estimates

### WACC parameter values for EDB DPP from 2020-2025 and Transpower IPP from 2020-2025

- The parameter values used to generate the mid-point WACC estimates for the EDB DPP and Transpower IPP regulatory periods commencing in April 2020 are summarised in Table 2 below.

**Table 2: Values used to calculate WACC estimates for EDB DPP and Transpower IPP**

| <b>Parameter</b>                 | <b>EDB and Transpower</b> |
|----------------------------------|---------------------------|
| Risk-free rate                   | 1.12%                     |
| Average debt premium             | 1.60%                     |
| Leverage                         | 42%                       |
| Asset beta                       | 0.35                      |
| Equity beta                      | 0.60                      |
| Tax adjusted market risk premium | 7.0%                      |
| Average corporate tax rate       | 28%                       |
| Average investor tax rate        | 28%                       |
| Debt issuance costs              | 0.20%                     |
| Cost of debt                     | 2.92%                     |
| Cost of equity                   | 5.00%                     |
| Standard error of WACC           | 0.0101                    |
| <b>Mid-point vanilla WACC</b>    | <b>4.13%</b>              |
| <b>Mid-point post-tax WACC</b>   | <b>3.78%</b>              |

\*The numbers are rounded to two decimal points.

### Risk-free rate for EDBs and Transpower

- The risk-free rate reflects the linearly-interpolated, annualised, bid yield to maturity on New Zealand government bonds with a term to maturity of five years. Our estimate of the risk-free rate is based on data reported by Bloomberg for the three month period ending 31 August 2019 in respect of the April 2023 and April 2025 maturity bonds.
- 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 1.12% interest rate on New Zealand government bonds with a five year term maturity, as estimated at 1 September 2019.

## Average debt premium for EDBs and Transpower

7. The average debt premium for EDBs and Transpower of 1.60% 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 2020 is the current reference year for EDBs and Transpower.<sup>4</sup>

**Table 3: Average debt premium for EDBs and Transpower (%)**

|                 | DPRY<br>2016 | DPRY<br>2017 | DPRY<br>2018 | DPRY<br>2019 | DPRY<br>2020 | Average |
|-----------------|--------------|--------------|--------------|--------------|--------------|---------|
| Debt<br>premium | 1.59         | 1.59         | 1.63         | 1.60         | 1.60         | 1.60    |

8. The debt premium values for the 2016 and 2017 DPRYs are set out in clause 4.4.4(3) of the EDB IM Determination and clause 3.5.4(3) of the Transpower IM Determination.<sup>5</sup> The debt premium of 1.60% for DPRY 2018 was determined in April 2018.<sup>6</sup> The debt premium of 1.60% for DPRY 2019 was determined in April 2019.<sup>7</sup>
9. We have estimated a debt premium of 1.60% for DPRY 2020 based on the data in Table 4 below.
- 9.1 We have had greatest regard to the category (b) bonds<sup>8</sup>, which support a debt premium of approximately 1.48% to 1.70%, as there are no applicable category (a) bonds.<sup>9</sup> The Genesis Energy Limited (1.70%), Meridian Energy Limited (1.48%) and Wellington International Airport Limited (1.56%) bonds both match the target credit rating (BBB+) and remaining term to maturity (5 years). The Mercury Energy Limited (1.57%) bond matches the target credit rating, but has a remaining term to maturity of 4 years (suggesting a 5 year debt premium on this bond would be higher than 1.57%).

<sup>4</sup> Debt premium reference year 2020 for EDBs and Transpower starts on 1 September 2019.

<sup>5</sup> *Electricity Distribution Services Input Methodologies 2012 (consolidating all amendments as of 31 January 2019)*, *Transpower Input Methodologies Amendments Determination 2019*, [2019 NZCC 10].

<sup>6</sup> Cost of capital determination for disclosure year 2019 for information disclosure regulation - Electricity distribution businesses and Wellington International Airport [2018] NZCC 7 (30 April 2018).

<sup>7</sup> Cost of capital determination for disclosure year 2020 for information disclosure regulation - Electricity distribution businesses and Wellington International Airport [2019] NZCC 7 (30 April 2019).

<sup>8</sup> *Electricity Distribution Services Input Methodologies 2012 (consolidating all amendments as of 31 January 2019)*, clause 2.4.4(7)(b); and *Transpower Input Methodologies Amendments Determination 2019*, [2019 NZCC 10], clause 2.4.4(7)(b).

<sup>9</sup> *Electricity Distribution Services Input Methodologies 2012 (consolidating all amendments as of 31 January 2019)*, clause 2.4.4(7)(a); and *Transpower Input Methodologies Amendments Determination 2019*, [2019 NZCC 10], clause 2.4.4(7)(a).

9.2 The estimated debt premiums for other issuers in bond categories (c) to (e)<sup>10</sup> are generally consistent with a debt premium in the range from 1.48% to 1.70%, when consideration is given to different credit ratings and terms to maturity. The Nelson-Siegel-Svensson estimate of the debt premium of 1.52% also supports a debt premium in this range.

9.3 We have determined a debt premium of 1.60% for DPRY 2020, which is within the range from 1.48% to 1.70% and is also supported by the Nelson-Siegel-Svensson estimate of the debt premium.

**Table 4: Debt premium estimate for EDBs and Transpower DPRY 2020**

|              | Sector | 100% Govt owned | Bond credit rating | Remaining term to maturity (years) | Debt premium |
|--------------|--------|-----------------|--------------------|------------------------------------|--------------|
| Debt premium | EDB    | No              | BBB+               | 5.0                                | 1.60         |

  

| Bond category                   | Issuer                    | Sector  | 100% Govt owned | Bond credit rating | Remaining term to maturity (years) | Debt premium | Comment  |
|---------------------------------|---------------------------|---------|-----------------|--------------------|------------------------------------|--------------|--|
| b                               | GENESIS ENERGY LTD        | Other   | No              | BBB+               | 5.0                                | 1.70         | Credit rating and term are an exact match                                |
| b                               | MERCURY NZ LTD            | Other   | No              | BBB+               | 4.0                                | 1.57         | 5 year debt premium would be higher                                      |
| b                               | MERIDIAN ENERGY LIMITE    | Other   | No              | BBB+               | 5.0                                | 1.48         | Credit rating and term are an exact match                                |
| b                               | WELLINGTON INTL AIRPORT   | Airport | No              | BBB+               | 5.0                                | 1.56         | Credit rating and term are an exact match                                |
| c                               | VECTOR LTD                | EDB/GPB | No              | BBB                | 5.0                                | 1.90         | BBB+ debt premium would be lower   |
| d                               | AUCKLAND INTL AIRPORT     | Airport | No              | A-                 | 5.0                                | 1.16         | BBB+ debt premium would be higher  |
| d                               | CHORUS LTD                | Other   | No              | BBB                | 2.2                                | 1.62         | 5 year debt premium would be higher<br>BBB+ debt premium would be lower; |
| d                               | CONTACT ENERGY LTD        | Other   | No              | BBB                | 5.2                                | 1.60         | 5 year debt premium would be lower                                       |
| d                               | FONTERRA COOPERATIVE G    | Other   | No              | A-                 | 5.0                                | 1.51         | BBB+ debt premium would be higher  |
| d                               | SPARK FINANCE LTD         | Other   | No              | A-                 | 5.0                                | 1.27         | BBB+ debt premium would be higher  |
| e                               | CHRISTCHURCH INTL AIRPORT | Airport | Yes             | A-                 | 5.0                                | 1.34         | BBB+ debt premium would be higher  |
| e                               | TRANSPOWER NEW ZEALAND    | Other   | Yes             | AA-                | 5.0                                | 1.04         | BBB+ debt premium would be higher  |
| Nelson-Siegel Svensson estimate |                           |         |                 |                    | 5.0                                | 1.52         |  |

**Security name(s)**

- 1 GENEPO 5.81 03/08/23; GENEPO 5 04/03/25
- 2 MCYNZ 5.793 03/06/23
- 3 MERINZ 4.88 03/20/24; MERINZ 4.53 03/14/23; MERINZ 4.21 06/27/25
- 4 WIANZ 5.27 06/11/20; WIANZ 5 06/16/25
- 5 VCTNZ 4.996 03/14/24
- 6 AIANZ 3.97 11/02/23; AIANZ 3.64 04/17/23; AIANZ 3.51 10/10/24
- 7 CNUNZ 4.12 05/06/21
- 8 CENNZ 3.55 08/15/24
- 9 FCGNZ 4.42 03/07/23; FCGNZ 5.08 06/19/25
- 10 SPKNZ 3.37 03/07/24; SPKNZ 4.51 03/10/23; SPKNZ 3.94 09/07/26
- 11 CHRINT 4.13 05/24/24; CHRINT 6 1/4 10/04/21; CHRINT 5.53 04/05/27
- 12 TPNZ 5.448 03/15/23; TPNZ 3.823 03/06/25

<sup>10</sup> *Electricity Distribution Services Input Methodologies 2012 (consolidating all amendments as of 31 January 2019), clause 2.4.4(7)(c)-(e); and Transpower Input Methodologies Amendments Determination 2019, [2019 NZCC 10], clause 2.4.4(7)(c)-(e).*

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

10. The cost of capital input methodologies for regulated services reflect that both the risk-free rate and the debt premium on bonds change over time.
11. Figure 1 shows, as at 1 September 2019, changes over time in the:
  - 11.1 five year risk-free rate;
  - 11.2 debt premium on bonds rated BBB+ with a term of five years;

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

