ISSN 1178-2560
Project no. 14.18/13100

Public version

# Cost of capital determination for information disclosure year 2015 for Powerco Limited in respect of gas distribution services [2014] NZCC 29

**The Commission:** S Begg

P Duignan

Dr S Gale

Dr M Berry

**Date of determination:** 31 October 2014

## Executive summary

1. This determination specifies weighted average cost of capital (WACC) estimates to apply for information disclosure year 2015 for gas distribution services supplied by Powerco Limited (Powerco's GDB).

2. Vanilla and post-tax WACCs have been estimated for the five year period commencing on the first day of disclosure year 2015 (ie 1 October 2014).[1] Mid-point, 25th percentile and 75th percentile WACC estimates have been determined.

3. The WACC estimates are summarised in Table 1 below. These WACC estimates are determined as at 1 October 2014.

**Table 1: Summary of WACC estimates for Powerco's GDB 2015 ID year (%)**

| | Mid-point | 25th percentile | 75th percentile |
|---|---|---|---|
| Vanilla WACC | 7.41 | 6.60 | 8.22 |
| Post-tax WACC | 6.66 | 5.85 | 7.47 |

[1] The vanilla WACC is a weighted average of the pre-corporate tax cost of debt and the cost of equity. The post-tax WACC is a weighted average of the post-corporate tax cost of debt and the cost of equity.

## Introduction

4. This determination specifies WACC estimates to apply for information disclosure year 2015 (that is, the 12 months to 30 September 2015) for gas distribution services supplied by Powerco's GDB. Powerco has a disclosure year ending September, while other regulated gas distribution businesses have June year ends for information disclosure.[2] Estimated WACCs for the 2015 information disclosure year for those other businesses were set in July 2014.[3]

5. The WACC estimates are set pursuant to clauses 2.4.1 to 2.4.7 of the Gas Distribution Services Input Methodologies Determination 2012 (the GDS IM Determination).[4]

6. We have estimated both vanilla and post-tax WACCs. The vanilla WACC is a weighted average of the pre-corporate tax cost of debt and the cost of equity. The post-tax WACC is a weighted average of the post-corporate tax cost of debt and the cost of equity.

7. The parameter values, estimates and information sources used to estimate WACC are set out in this determination.

8. Additional commentary on the estimation of the risk-free rate and the debt premium is also provided. For example, this determination identifies the issuers and bonds that were analysed (including the credit rating and remaining term to maturity) when estimating the debt premium. The commentary also explains which debt premium estimates were given greater weight than other estimates.

## Background

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

9. The cost of capital input methodologies for the regulated services reflect that both the risk-free rate and the debt premium on bonds change over time.[5]

10. Changes in the risk-free rate and debt premium on bonds are illustrated below. Figure 1 shows, as at 1 October 2014, changes over time in the:

    10.1 five year risk-free rate; and

    10.2 debt premium on bonds rated BBB+ with a term of five years.

---

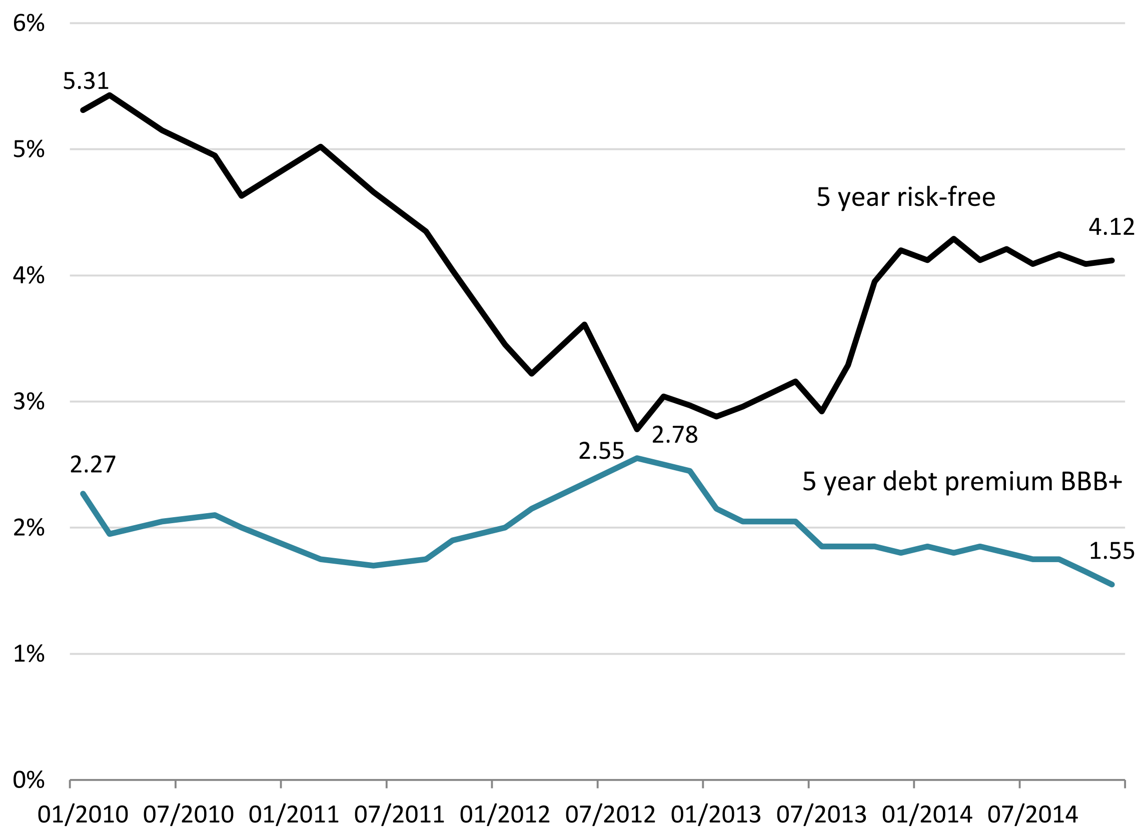
2 Commerce Commission, *Gas Distribution Information Disclosure Determination* [2012], NZCC 23. See the definition of disclosure year, page 11.

3 Commerce Commission, *Cost of capital determination for information disclosure year 2015 for Transpower, gas pipeline businesses and specified airport services* [2014] NZCC 19.

4 Commerce Commission, *Gas Distribution Services Input Methodologies Determination* [2012] NZCC 27.

5 The risk-free rate is estimated based on an interpolation of bid yields on New Zealand Government stock to a term to maturity of five years. The debt premium is estimated on publicly traded corporate bonds according to the methodology specified in the GDS IM Determination.

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




**Reasons for differences in WACC under the various cost of capital input methodologies determinations**

11. Differences in the WACCs estimated under the various cost of capital input methodologies reflect differences in the:

    11.1 date of estimation for the WACCs, which results in different estimates of the risk-free rate and debt premium;

    11.2 periods in which the WACCs will apply;

    11.3 context in which the WACCs will be used (67th percentile WACC estimates are used for the purposes of default and individual price-quality paths, while a mid-point and range is determined for information disclosure);

    11.4 assessed risk of the various regulated services (electricity distribution businesses (EDBs) and Transpower have an asset beta of 0.34, gas pipeline businesses (GPBs) have an asset beta of 0.44 and airports have an asset beta of 0.60); and

    11.5 value of leverage for airports (17%) and for EDBs, GPBs, and Transpower (44%).

## WACC for information disclosure year 2015 for Powerco's GDB

12. Under clause 2.4.1 of the GDS IM Determination, we have determined the following vanilla and post-tax WACCs for Powerco's GDB information disclosure year 2015.

    12.1 A mid-point estimate of vanilla WACC of 7.41% for the five year period commencing on the first day of disclosure year 2015 (ie 1 October 2014). Under clause 2.4.7, we have also determined a vanilla WACC range from 6.60% to 8.22%, where the endpoints are the $25^{th}$ and $75^{th}$ percentile estimates respectively.

    12.2 A mid-point estimate of post-tax WACC of 6.66% for the five year period commencing on the first day of disclosure year 2015 (ie 1 October 2014). Under clause 2.4.7, we have also determined a post-tax range from 5.85% to 7.47%, where the endpoints are the $25^{th}$ and $75^{th}$ percentile estimates respectively.

### Parameters used to estimate the WACC

13. These vanilla and post-tax WACC estimates reflect the parameters specified in the GDS IM Determination. The risk-free rate and debt premium are also estimated in accordance with the GDS IM Determination.

*Summary of parameters*

14. The parameters used to estimate the vanilla and post-tax WACCs are summarised in Table 2 below.

**Table 2: Parameters used to calculate WACC for Powerco's GDB 2015 ID year**

| Parameter | Estimate |
|---|---|
| **Risk-free rate** | 4.12% |
| **Debt premium** | 1.55% |
| **Leverage** | 44% |
| **Equity beta** | 0.79 |
| **Tax adjusted market risk premium** | 7.0% |
| **Average corporate tax rate** | 28% |
| **Average investor tax rate** | 28% |
| **Debt issuance costs** | 0.35% |
| **Cost of debt** | 6.02% |
| **Cost of equity** | 8.50% |
| **Standard error of debt premium** | 0.0015 |
| **Standard error of WACC** | 0.012 |
| **Mid-point vanilla WACC** | 7.41% |
| **Mid-point post-tax WACC** | 6.66% |

**Note**: The cost of debt is calculated as the risk-free rate + debt premium + debt issuance costs. The cost of equity is calculated as the risk-free rate × (1- investor tax rate) + the equity beta × the tax adjustment market risk premium. The mid-point vanilla WACC is calculated as the cost of equity × (1 - leverage) + the cost of debt × leverage.

*Risk-free rate*

15. 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. The estimates use data reported by Bloomberg for the month of September 2014 in respect of 15 March 2019 and 15 April 2020 maturity bonds. The March 2019 and April 2020 bonds have simple average annualised bid yields to maturity of 4.07% and 4.16% respectively.

16. The daily data reported by Bloomberg is annualised (to reflect the six monthly payment of interest), averaged to give a monthly average, and linearly interpolated to produce the estimate of a 4.12% interest rate on a NZ government bond with a five year term to maturity as at 1 October 2014.

*Tax rates*

17. The average corporate tax rate is the corporate tax rate of 28% for all years. The average investor tax rate is the investor tax rate of 28% for all years.

*Standard error of the WACC*

18. The standard error of the WACC is determined in accordance with the formula in the GDS IM Determination, and is shown to three decimal places only in Table 1 above.

*Debt premium*

19. The methodology for determining the debt premium is set out in clause 2.4.4 of the GDS IM Determination.

20. Clause 2.4.4(3)(d) requires the Commission to estimate the debt premium that would reasonably be expected to apply to a vanilla NZ$ denominated bond that:

    20.1 is issued by a GPB or an EDB that is neither majority owned by the Crown nor a local authority;

    20.2 is publicly traded;

    20.3 has a qualifying rating of grade BBB+; and

    20.4 has a remaining term to maturity of five years.

21. In estimating the debt premium, clause 2.4.4(4) of the GDS IM Determination provides that the Commission will have regard to:

    21.1 bonds issued by a GPB or an EDB (that is neither majority owned by the Crown nor a local authority) with a rating of BBB+;

    21.2 bonds issued by another entity (that is neither majority owned by the Crown nor a local authority) with a rating of BBB+;

    21.3 bonds issued by a GPB or an EDB (that is neither majority owned by the Crown nor a local authority) with a rating other than BBB+;

    21.4 bonds issued by another entity (that is neither majority owned by the Crown nor a local authority) with a rating other than BBB+; and

    21.5 bonds issued by entities that are majority owned by the Crown or a local authority.

22. Clause 2.4.4(5)(a) provides that progressively lesser regard will ordinarily be given to the debt premium estimates in the order that the bonds are identified in clauses 2.4.4(4)(a) to (e).

23. Table 3 below shows the debt premium we have determined as at 1 October 2014. This table include a summary of information on the investment grade rated bonds we considered in determining the debt premium.

24. A spreadsheet showing the calculations for the debt premium and the risk-free rate is published on our website.[6]

[6] See www.comcom.govt.nz/cost-of-capital

## Table 3: Debt premium on a GPB/EDB-issued bond rated BBB+ with a remaining term of 5 years, as at 1 October 2014[7]

| | Industry | Rating | Remaining Term to Maturity | Debt premium | Comment |
|---|---|---|---|---|---|
| **Determined Debt Premium** | EDB/GPB | BBB+ | 5.0 | 1.55 | Regard to results 4(b), 4(c) and 4(d)<br>Not inconsistent with 4(e) |

| Subclause | Issuer | Note ref. | Industry | Rating | Remaining Term to Maturity | Debt premium | Comment |
|---|---|---|---|---|---|---|---|
| 4(a) | - | | - | - | - | - | No data on applicable bonds |
| 4(b) | WIAL | 1 | Other | BBB+ | 5.7 | 1.66 | 5 year debt premium would be lower |
| 4(c) | Powerco | 2 | EDB/GPB | BBB | 4.2 | 1.74 | 5 year debt premium would be higher<br>BBB+ debt premium would be lower |
| 4(d) | Spark | 3 | Other | A- | 5.0 | 1.34 | BBB+ debt premium would be higher |
| | AIAL | 4 | Other | A- | 5.0 | 1.09 | BBB+ debt premium would be higher |
| | Telstra | 5 | Other | A | 2.8 | 1.09 | BBB+ and 5 year debt premium would be higher |
| | Contact | 6 | Other | BBB | 5.0 | 1.59 | BBB+ debt premium would be lower |
| | Fonterra | 7 | Other | A+ | 5.0 | 1.02 | BBB+ debt premium would be higher |
| 4(e) | Meridian | 8 | Other | BBB+ | 2.5 | 1.27 | |
| | Genesis Energy | 9 | Other | BBB+ | 5.0 | 1.65 | |
| | MRP | 10 | Other | BBB+ | 5.0 | 1.65 | |
| | CIAL | 11 | Other | BBB+ | 5.2 | 1.42 | |
| | Transpower | 12 | Other | AA- | 5.0 | 0.99 | |

**Notes on bonds analysed:**

**1** WIAL 5.27% bond maturing 11/06/2020.
**2** Powerco 6.31% bond maturing 20/12/2018.
**3** Spark 7.04% bond maturing 22/03/2016; 5.25% bond maturing 25/10/2019.
**4** AIAL 5.47% bond maturing 17/10/2017; 4.73% bond maturing 13/12/2019.
**5** Telstra 7.515% bond maturing 11/07/2017.
**6** Contact Energy 5.8% bond maturing 15/5/2019; 5.277% bond maturing 27/5/2020.
**7** Fonterra 6.83% bond maturing 4/03/2016; 5.52% bond maturing 25/02/2020.
**8** Meridian 7.55% bond maturing 16/03/2017.
**9** Genesis Energy 7.185% bond maturing 15/09/2016; 5.205% bond maturing 1/11/2019.
**10** MRP 5.029% bond maturing 6/03/2019; 8.21% bond maturing 11/02/2020.
**11** CIAL 5.15% bond maturing 6/12/2019.
**12** Transpower 6.595% bond maturing 15/02/2017; 7.19% bond maturing 12/11/2019.

[7] The five-year debt premiums on the Spark, Auckland International Airport Limited (AIAL), Contact Energy, Fonterra, Genesis Energy, Mighty River Power (MRP) and Transpower bonds are calculated by linear interpolation with respect to maturity.

25. Consistent with clauses 2.4.4(4) and 2.4.4(5)(a) of the GDS IM Determination, greatest regard has been given to the estimated debt premium on Wellington International Airport Limited's (WIAL's) June 2020 bond. This bond is issued by an entity other than an EDB/GPB, is publicly traded and has a rating of BBB+. However, the June 2020 bond has a term to maturity of 5.7 years, which is more than the five years specified in clause 2.4.4(3)(d).

26. As at 1 October 2014, the debt premium on the WIAL bond was estimated at 1.66%. Consistent with clause 2.4.4(5)(b) of the GDS IM Determination, this is treated as the maximum debt premium for a bond rated BBB+ with a term of five years.

27. The debt premium on Powerco's December 2018 bond is 1.74%. This bond has a term to maturity of 4.2 years, which is less than the five years specified in clause 2.4.4(3)(d) of the GDS IM Determination. Powerco's bond is also rated BBB, which is less than the BBB+ specified in clause 2.4.4(3)(d).

28. We have also had regard to the estimated debt premium on bonds from a range of other issuers including Spark (1.34%, 5 years, rated A-), Auckland international Airport Limited (AIAL) (1.09%, 5 years, rated A-), Telstra (1.09%, 2.8 years, rated A), Contact Energy (1.59%, 5 years, rated BBB) and Fonterra (1.02%, 5 years, rated A+). Consistent with clause 2.4.4(5)(a) these were given less weight as the issuers are not EDBs or GPBs, and the debt issues had different credit ratings than the BBB+ rating specified in clause 2.4.4(3)(d).

29. The estimated debt premium on the Meridian bond (1.27%, 2.5 years, rated BBB+), the Genesis Energy bonds (1.65%, 5 years, rated BBB+), the Mighty River Power (MRP) bonds (1.65%, 5 years, rated BBB+), the Christchurch International Airport Limited (CIAL) bond (1.42%, 5.2 years, rated BBB+), and Transpower bonds (0.99%, 5 years, rated AA-) were also considered, but given less weight as these issuers are either majority owned by the Crown or a local authority.

30. Starting with the estimated debt premium on the WIAL bond, but having regard to the debt premium on a range of other bonds, we have determined the debt premium on a publicly traded, EDB/GPB-issued bond, rated BBB+ with a remaining term of five years to be 1.55% as at 1 October 2014.