

Cost of capital determination for customised price-quality path proposals made by Powerco Limited for gas distribution services [2014] NZCC 7

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Executive summary

1. This determination sets vanilla weighted average cost of capital (WACC) estimates that will apply to customised price-quality path (CPP) proposals for gas distribution services made by Powerco Limited (Powerco).
2. The WACC estimates in this determination apply to any CPP proposals made by Powerco before the next CPP WACC determination for Powerco is made in March 2015.
3. Vanilla WACC estimates for CPP proposals made by Powerco are summarised in Table 1 below. The vanilla WACC is a weighted average of the pre-corporate tax cost of debt and the cost of equity.

Table 1: Vanilla WACC estimates for Powerco proposals (%)

	Mid-point	75th percentile
Vanilla WACC (3 years)	7.23	8.04
Vanilla WACC (4 years)	7.40	8.21
Vanilla WACC (5 years)	7.54	8.35

4. 75th percentile estimates of vanilla WACC are used for CPPs. The WACCs are estimated as at 1 March 2014.

Introduction

5. This determination sets vanilla weighted average cost of capital (WACC) estimates that will apply to customised price-quality path (CPP) proposals for gas distribution services made by Powerco Limited (Powerco).¹
6. The WACC estimates in this determination apply to any CPP proposals made by Powerco before the next CPP WACC determination for Powerco is made in March 2015.²
7. Vanilla WACCs for CPP proposals made by Powerco are set under clauses 5.3.22 to 5.3.29 of the Gas Distribution Services Input Methodologies Determination 2012 (the GDS IM Determination).³
8. The parameter values, estimates and information sources used to estimate WACC are set out in this determination. Additional commentary on the estimation of the risk-free rate and the debt premium is also provided.
9. 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

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.⁴
11. Changes in the risk-free rate and debt premium on bonds are illustrated below. Figure 1 shows changes over time in the:
 - 11.1 five year risk-free rate; and
 - 11.2 debt premium on bonds rated BBB+ with a term of five years.

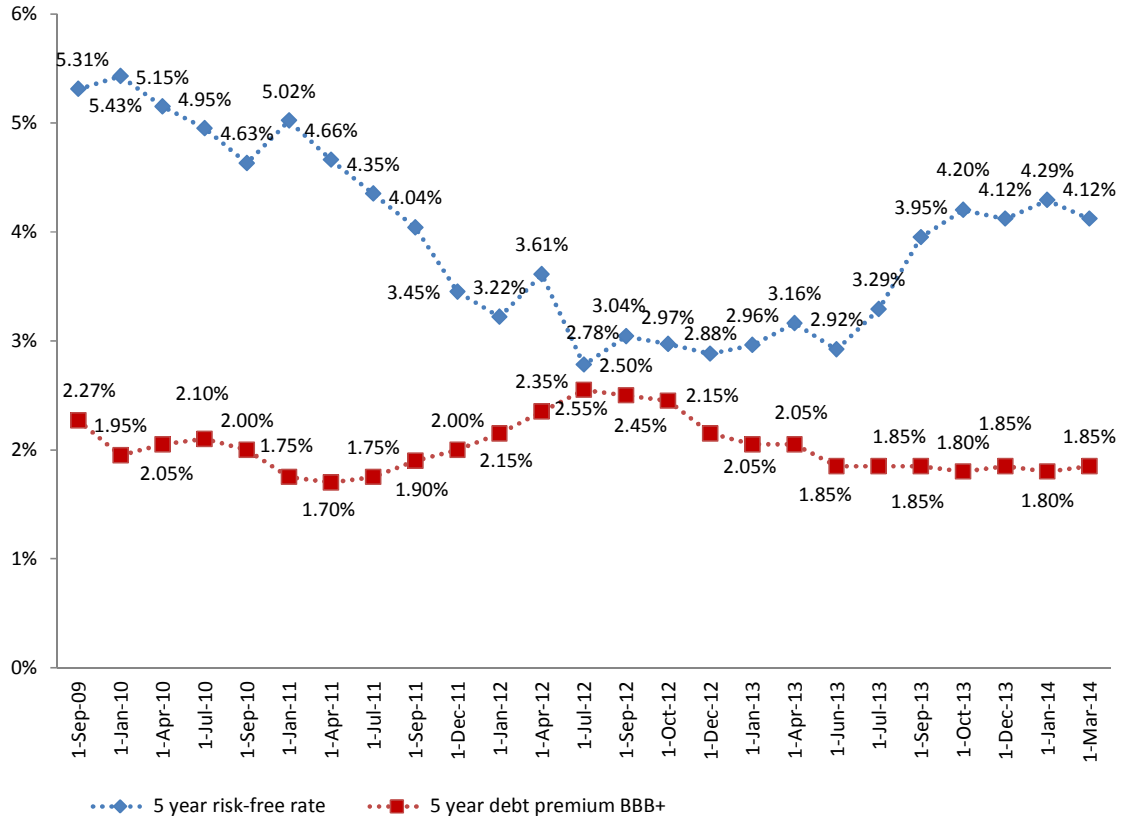
¹ The vanilla WACC is a weighted average of the pre-corporate tax cost of debt and the cost of equity.

² The WACCs in this determination reflect Powerco's new 30 September balance date. Powerco previously had a 30 June balance date.

³ Commerce Commission, *Gas Distribution Services Input Methodologies Determination 2012*, 3 December 2013.

⁴ 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

12. Differences in the WACCs estimated under the various cost of capital input methodologies reflect differences in the:
 - 12.1 date of estimation for the WACCs, which results in different estimates of the risk-free rate and debt premium;
 - 12.2 periods in which the WACCs will apply;
 - 12.3 context in which the WACCs will be used (75th percentile estimates of the WACC are used when considering default and customised price-quality paths, while a mid-point and range is determined for information disclosure);
 - 12.4 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
 - 12.5 value of leverage for airports (17%) and for EDBs, GPBs, and Transpower (44%).

WACC for CPP proposals made by Powerco

13. Under clause 5.3.28 of the GDS IM Determination, we have determined 75th percentile estimates of vanilla WACC for inclusion in CPP proposals for gas distribution services made by Powerco. The WACC estimates in this determination apply to any CPP proposals made by Powerco before the next CPP WACC determination for Powerco is made in March 2015.
14. The 75th percentile estimate of vanilla WACC for a CPP period of three years is 8.04%, four years is 8.21% and five years is 8.35%. The corresponding mid-point vanilla WACCs are 7.23%, 7.40% and 7.54% for periods of three, four and five years, respectively. These WACCs are estimated as at 1 March 2014.

Parameters used to estimate the WACC

15. The above estimates of vanilla WACC 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

16. The parameters used to estimate the vanilla WACCs are summarised in Table 2 below.

Table 2: Parameters used to calculate vanilla WACC

Risk-free rate (3 years)	3.74%	Debt premium (3 years)	1.65%
Risk-free rate (4 years)	3.96%	Debt premium (4 years)	1.75%
Risk-free rate (5 years)	4.12%	Debt premium (5 years)	1.85%
Equity beta	0.79	TAMRP	7.0%
Average corporate tax rate	28%	Average investor tax rate	28%
Debt issuance costs (3 years)	0.58%	Debt issuance costs (4 years)	0.44%
Debt issuance costs (5 years)	0.35%	Leverage	44%
Standard error of debt premium	0.0015	Standard error of WACC	0.012
Cost of debt (3 years; pre-corporate tax)	5.97%	Cost of equity (3 years)	8.22%
Cost of debt (4 years; pre-corporate tax)	6.15%	Cost of equity (4 years)	8.38%
Cost of debt (5 years; pre-corporate tax)	6.32%	Cost of equity (5 years)	8.50%
Vanilla WACC (3 years, mid-point)	$5.97\% \times 0.44 + 8.22\% \times (1-0.44) = 7.23\%$		
Vanilla WACC (4 years, mid-point)	$6.15\% \times 0.44 + 8.38\% \times (1-0.44) = 7.40\%$		
Vanilla WACC (5 years, mid-point)	$6.32\% \times 0.44 + 8.50\% \times (1-0.44) = 7.54\%$		

Risk-free rate

17. 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 February 2014 in respect of the April 2015, December 2017, and March 2019 maturity bonds. The April 2015, December 2017 and March 2019 bonds have simple average annualised bid yields to maturity of 3.28%, 3.93%, and 4.13% respectively.
18. 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 March 2014. For terms to maturity of four years and three years, the risk-free rates are 3.96% and 3.74%, respectively.

Tax rates

19. 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

20. The standard error of the WACC is determined in accordance with the formula in the GDS IM Determinations, and is shown to three decimal places only in Table 2 above.

Debt premium

21. The methodology for determining the debt premium is set out in clause 5.3.25 of the GDS IM Determination.
22. Clause 5.3.25(3)(d) of the GDS IM Determination requires the Commission to estimate the debt premium that would reasonably be expected to apply to a vanilla NZ\$ denominated bond that:
 - 22.1 is issued by a GPB or an EDB that is neither majority owned by the Crown or a local authority;⁵
 - 22.2 is publicly traded;
 - 22.3 has a qualifying rating of grade BBB+; and
 - 22.4 has a remaining term to maturity of five years (or four or three years as applicable under clause 5.3.25(6) of the GDS IM Determination).
23. In estimating the debt premium, clause 5.3.25(4) of the GDS IM Determination provides that the Commission will have regard to:

⁵ Clause 5.3.25(3)(d)(i) of the GDS IM Determination refers to a bond issued by a “GDB” rather than a “GPB or an EDB”. However, clauses 5.3.25(4)(a)-(e), which describe the bonds the Commission will have regard to for the purpose of sub clause (3)(d), refer to bonds issued by “a GPB or an EDB”.

- 23.1 bonds issued by a GPB or an EDB (that is not government-owned) with a rating of BBB+;
 - 23.2 bonds issued by another entity (that is not government-owned) with a rating of BBB+;
 - 23.3 bonds issued by a GPB or an EDB (that is not government-owned) with a rating other than BBB+;
 - 23.4 bonds issued by another entity (that is not government-owned) with a rating other than BBB+; and
 - 23.5 bonds issued by government-owned entities.
- 24. Clause 5.3.25(5)(a) of the GDS IM Determination provides that progressively lesser regard will ordinarily be given to the debt premium estimates in the order that the bonds are identified in clauses 5.3.25(4)(a) to (e) respectively.
 - 25. Table 3, Table 4 and Table 5 below show the debt premiums for terms of three, four and five years respectively, determined as at 1 March 2014. These tables include a summary of information on the investment grade rated bonds we considered in determining the debt premium, for remaining terms of five years, four years, and three years.
 - 26. 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/

Five year debt premium

27. Table 3 below shows the five year debt premium on a GPB/EDB issued bond rated BBB+, as at 1 March 2014.

Table 3: Five year debt premium on a GPB/EDB issued bond rated BBB+⁷

Determined debt premium on an EDB/GPB-issued bond rated BBB+ with a remaining term of 5 years as at 1 March 2014						
		Industry	Rating	Remaining Term to Maturity	Debt premium	Comment
Determined Debt Premium		EDB/GPB	BBB+	5.0	1.85	Regard to results 4(b), 4(c) and 4(d) Generally consistent with 4(e)
Subclause	Issuer	Industry	Rating	Remaining Term to Maturity	Debt premium	Comment
4(a)	-	-	-	-	-	No data on applicable bonds.
4(b)	WIAL ¹	Other	BBB+	6.3	1.98	A 5 year debt premium would be lower than this.
4(c)	Powerco ²	EDB/GPB	BBB	4.8	1.99	BBB+ debt premium would be lower than this and a 5 year debt premium would be higher than this.
4(d)	Contact ³	Other	BBB	5.0	1.98	BBB+ debt premium would be lower than this.
	Telecom ⁴	Other	A-	5.0	1.67	BBB+ debt premium would be higher than this.
	AIAL ⁵	Other	A-	5.0	1.38	BBB+ debt premium would be higher than this.
	Telstra ⁶	Other	A	3.4	1.46	A 5 year debt premium and BBB+ debt premium would be higher than this.
	Fonterra ⁷	Other	A+	2.0	0.88	A 5 year debt premium and BBB+ debt premium would be higher than this.
4(e)	Genesis Energy ⁸	Other	BBB+	5.0	2.04	
	MRP ⁹	Other	BBB+	5.0	1.85	
	Meridian ¹⁰	Other	BBB+	3.0	1.50	
	CIAL ¹¹	Other	BBB+	5.8	1.71	
	Transpower ¹²	Other	AA-	5.0	1.31	

Notes on bonds analysed:

- 1 WIAL 5.27% bond maturing 11/06/2020.
- 2 Powerco 6.31% bond maturing 20/12/2018.
- 3 Contact Energy 4.8% bond maturing 24/05/2018; 5.277% bond maturing 27/05/2020.
- 4 Telecom 7.04% bond maturing 22/03/2016; 5.25% bond maturing 25/10/2019.
- 5 AIAL 5.47% bond maturing 17/10/2017; 4.73% bond maturing 13/12/2019.
- 6 Telstra 7.515% bond maturing 11/07/2017.
- 7 Fonterra 6.83% bond maturing 4/03/2016.
- 8 Genesis Energy 7.185% bond maturing 15/09/2016; 5.205% bond maturing 1/11/2019.
- 9 MRP 7.55% bond maturing 12/10/2016; 5.029% bond maturing 6/03/2019.
- 10 Meridian 7.55% bond maturing 16/03/2017.
- 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.

28. Consistent with clause 5.3.25(4)-(5)(a) of the GDS IM Determination, greatest regard has been given to the estimated debt premium on Wellington International Airport

⁷ The five-year debt premiums on the Contact Energy, Telecom, AIAL, Genesis Energy, MRP and Transpower bonds are calculated by linear interpolation with respect to maturity.

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+. The June 2020 bond has a term to maturity of 6.3 years, which is more than the five years specified in clause 5.3.25(3)(d) of the GDS IM Determination.

29. As at 1 March 2014, the debt premium on the WIAL bond was estimated at 1.98%. This is indicative of the upper bound of the debt premium for a bond rated BBB+ with a term of five years.
30. The debt premium estimated for Powerco's December 2018 bond is 1.99%. This bond has a term to maturity of 4.8 years, which is less the five years specified in clause 5.3.25(3)(d) of the GDS IM Determination. Powerco's bond is also rated BBB, which is lower than the BBB+ specified in sub clause (3)(d).
31. We also had regard to the estimated debt premium on bonds from a range of other issuers including Contact Energy (1.98%, 5 years, rated BBB), Telecom (1.67%, 5 years, rated A-), Auckland international Airport Limited (AIAL) (1.38%, 5 years, rated A-), Telstra (1.46%, 3.4 years, rated A) and Fonterra (0.88%, 2.0 years, rated A+). Consistent with clauses 5.3.25(5)(a) of the GDS IM Determination these debt premiums were given less weight as the issuers are not GPBs or EDBs, and the debt issues had different credit ratings than the BBB+ rating specified in sub clause (3)(d).
32. The estimated debt premium on the Genesis Energy bonds (2.04%, 5 years, rated BBB+), the Mighty River Power (MRP) bonds (1.85%, 5 years, rated BBB+), the Meridian bond (1.50%, 3 years, rated BBB+), the Christchurch International Airport Limited (CIAL) bond (1.71%, 5.8 years, rated BBB+), and Transpower bonds (1.31%, 5 years, rated AA-) were given less weight as these issuers are either majority owned by the Crown or a local authority.
33. 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 1.85% as at 1 March 2014.

Four-year debt premium

34. Table 4 below shows the four year debt premium on a GPB/EDB issued bond rated BBB+, as at 1 March 2014.

Table 4: Four year debt premium on a GPB/EDB issued bond rated BBB+⁸

Determined debt premium on an EDB/GPB-issued bond rated BBB+ with a remaining term of 4 years as at 1 March 2014						
		Industry	Rating	Remaining Term to Maturity	Debt premium	Comment
Determined Debt Premium		EDB/GPB	BBB+	4.0	1.75	Regard to results 4(b), 4(c) and 4(d) Generally consistent with 4(e)
Subclause	Issuer	Industry	Rating	Remaining Term to Maturity	Debt premium	Comment
4(a)	-	-	-	-	-	No data on applicable bonds.
4(b)	WIAL ¹	Other	BBB+	6.3	1.98	A 4 year debt premium would be lower than this.
4(c)	Powerco ²	EDB/GPB	BBB	4.0	1.84	BBB+ debt premium would be lower than this.
4(d)	Contact ³	Other	BBB	4.0	1.92	BBB+ debt premium would be lower than this.
	Telecom ⁴	Other	A-	4.0	1.53	BBB+ debt premium would be higher than this.
	AIAL ⁵	Other	A-	4.0	1.27	BBB+ debt premium would be higher than this.
	Telstra ⁶	Other	A	3.4	1.46	4 year debt premium and BBB+ debt premium would be higher than this.
	Fonterra ⁷	Other	A+	2.0	0.88	4 year debt premium and BBB+ debt premium would be higher than this.
4(e)	Genesis Energy ⁸	Other	BBB+	4.0	1.84	
	MRP ⁹	Other	BBB+	4.0	1.73	
	Meridian ¹⁰	Other	BBB+	3.0	1.50	
	CIAL ¹¹	Other	BBB+	5.8	1.71	
	Transpower ¹²	Other	AA-	4.0	1.21	

Notes on bonds analysed:

- 1 WIAL 5.27% bond maturing 11/06/2020
- 2 Powerco 6.74% bond maturing 28/09/2017; 6.31% bond maturing 20/12/2018.
- 3 Contact Energy 7.855% bond maturing 13/04/2017; 4.8% bond maturing 24/05/2018.
- 4 Telecom 7.04% bond maturing 22/03/2016; 5.25% bond maturing 25/10/2019.
- 5 AIAL 5.47% bond maturing 17/10/2017; 4.73% bond maturing 13/12/2019.
- 6 Telstra 7.515% bond maturing 11/07/2017.
- 7 Fonterra 6.83% bond maturing 4/03/2016.
- 8 Genesis Energy 7.185% bond maturing 15/09/2016; 5.205% bond maturing 1/11/2019.
- 9 MRP 7.55% bond maturing 12/10/2016; 5.029% bond maturing 6/03/2019.
- 10 Meridian 7.55% bond maturing 16/03/2017.
- 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.

35. Consistent with clause 5.3.25(4)-(5)(a) of the GDS IM Determination, greatest regard has been given to the estimated debt premium on 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

⁸ The four-year debt premiums on the Powerco, Contact Energy, Telecom, AIAL, Genesis Energy, MRP and Transpower bonds are calculated by linear interpolation with respect to maturity.

BBB+. The June 2020 bond has a term to maturity of 6.3 years, which is more than the four years specified in the IMs determinations.

36. As at 1 March 2014, the debt premium on the WIAL bond was estimated at 1.98%. This is indicative of the upper bound of the debt premium for a bond rated BBB+ with a term of four years.
37. The interpolated four year debt premium on Powerco's bonds is 1.84%. Powerco's bonds are rated BBB, implying that the four year debt premium on bonds rated BBB+ would be less than 1.84%.
38. We also had regard to the estimated debt premium on bonds from a range of other issuers including Contact Energy (1.92%, 4 years, rated BBB), Telecom (1.53%, 4 years, rated A-), AIAL (1.27%, 4 years, rated A-), Telstra (1.46%, 3.4 years, rated A) and Fonterra (0.88%, 2 years, rated A+). Consistent with clauses 5.3.25(5)(a) of the GDS IM Determination these debt premiums were given less weight as the issuers are not GPBs or EDBs, and the debt issues had different credit ratings than the BBB+ rating specified in sub clause (3)(d).
39. The estimated debt premium on the Genesis Energy bonds (1.84%, 4 years, rated BBB+), the MRP bonds (1.73%, 4 years, rated BBB+), the Meridian bond (1.50%, 3 years, rated BBB+), the CIAL bond (1.71%, 5.8 years, rated BBB+), and Transpower bonds (1.21%, 4 years, rated AA-) were given less weight as these issuers are either majority owned by the Crown or a local authority.
40. 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 four years to be 1.75% as at 1 March 2014.

Three year debt premium

41. Table 5 below shows the three year debt premium on a GPB/EDB issued bond rated BBB+, as at 1 March 2014.

Table 5: Three year debt premium on a GPB/EDB issued bond rated BBB+⁹

Determined debt premium on an EDB/GPB-issued bond rated BBB+ with a remaining term of 3 years as at 1 March 2014						
		Industry	Rating	Remaining Term to	Debt premium	Comment
Determined Debt Premium		EDB/GPB	BBB+	3.0	1.65	Regard to results 4(b), 4(c) and 4(d) Generally consistent with 4(e)
Subclause	Issuer	Industry	Rating	Remaining Term to Maturity	Debt premium	Comment
4(a)	-	-	-	-	-	No data on applicable bonds.
4(b)	WIAL ¹	Other	BBB+	6.3	1.98	A 3 year debt premium would be lower than this.
4(c)	Powerco ²	EDB/GPB	BBB	3.0	1.69	BBB+ debt premium would be lower than this.
4(d)	Contact ³	Other	BBB	3.1	1.84	3 year debt premium and BBB+ debt premium would be lower than this.
	Telecom ⁴	Other	A-	3.0	1.39	BBB+ debt premium would be higher than this.
	AIAL ⁵	Other	A-	3.0	1.27	BBB+ debt premium would be higher than this.
	Telstra ⁶	Other	A	3.4	1.46	3 year debt premium would be lower than this and BBB+ debt premium would be higher than this.
	Fonterra ⁷	Other	A+	2.0	0.88	3 year debt premium and BBB+ debt premium would be higher than this.
4(e)	Genesis Energy ⁸	Other	BBB+	3.0	1.65	
	MRP ⁹	Other	BBB+	3.0	1.61	
	Meridian ¹⁰	Other	BBB+	3.0	1.50	
	CIAL ¹¹	Other	BBB+	5.8	1.71	
	Transpower ¹²	Other	AA-	3.0	1.10	

Notes on bonds analysed:

- 1 WIAL 5.27% bond maturing 11/06/2020
- 2 Powerco 6.53% bond maturing 29/06/2015; 6.74% bond maturing 28/09/2017
- 3 Contact Energy 7.855% bond maturing 13/04/2017
- 4 Telecom 7.04% bond maturing 22/03/2016; 5.25% bond maturing 25/10/2019.
- 5 AIAL 8% bond maturing 15/11/2016; 5.47% bond maturing 17/10/2017
- 6 Telstra 7.515% bond maturing 11/07/2017.
- 7 Fonterra 6.83% bond maturing 4/03/2016.
- 8 Genesis Energy bond 7.185% maturing 15/09/2016; 5.205% bond maturing 1/11/2019.
- 9 MRP 7.55% bond maturing 12/10/2016; 5.029% bond maturing 6/03/2019.
- 10 Meridian 7.55% bond maturing 16/03/2017.
- 11 CIAL 5.15% bond maturing 6/12/2019.
- 12 Transpower bond 6.595% maturing 15/02/2017.

42. Consistent with clause 5.3.25(4)-(5)(a) of the GDS IM, greatest regard has been given to the estimated debt premium on 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+. The June

⁹ The three-year debt premiums on the Powerco, Telecom, AIAL, Genesis Energy, and MRP bonds are calculated by linear interpolation with respect to maturity.

2020 bond has a term to maturity of 6.3 years, which is more than the three years specified in the IMs determinations.

43. As at 1 March 2014, the debt premium on the WIAL bond was estimated at 1.98%. This is indicative of the upper bound of the debt premium for a bond rated BBB+ with a term of three years.
44. The interpolated three year debt premium on Powerco's bonds is 1.69%. Powerco's bonds are rated BBB, implying that the three year debt premium on bonds rated BBB+ would be less than 1.69%.
45. We also had regard to the estimated debt premium on bonds from a range of other issuers including Contact Energy (1.84%, 3.1 years, rated BBB), Telecom (1.39%, 3 years, rated A-), AIAL (1.27%, 3 years, rated A-), Telstra (1.46%, 3.4 years, rated A) and Fonterra (0.88%, 2 years, rated A+). Consistent with clauses 5.3.25(5)(a) of the GDS IM Determination these debt premiums were given less weight as the issuers are not GPBs or EDBs, and the debt issues had different credit ratings than the BBB+ rating specified in sub clause (3)(d).
46. The estimated debt premium on the Genesis Energy bonds (1.65%, 3 years, rated BBB+), the MRP bonds (1.61%, 3 years, rated BBB+), the Meridian bond (1.50%, 3 years, rated BBB+), the CIAL bond (1.71%, 5.8 years, rated BBB+), and Transpower bond (1.10%, 3 years, rated AA-) were given less weight as these issuers are either majority owned by the Crown or a local authority.
47. 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 three years to be 1.65% as at 1 March 2014.