

Cost of capital determination for customised price-quality path proposals made by Maui Development Limited [2014] NZCC 16

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Executive summary

1. This determination sets vanilla weighted average cost of capital (WACC) estimates that will apply to any customised price-quality path (CPP) proposal made by Maui Development Limited (Maui), for the supply of gas transmission services, before the next CPP WACC determination for Maui is made in June 2015.¹
2. Vanilla WACC estimates for a CPP proposal made by Maui 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 Maui CPP proposal (%)

	Mid-point	75th percentile
Vanilla WACC (3 years)	7.28	8.09
Vanilla WACC (4 years)	7.38	8.19
Vanilla WACC (5 years)	7.47	8.28

3. 75th percentile estimates of vanilla WACC are used for CPPs. The WACCs are estimated as at 1 June 2014.

¹ The vanilla WACC estimates in this determination do not apply to CPP proposals for Powerco Limited, Vector Limited or GasNet Limited, as their disclosure years do not end on 31 December. Powerco Limited's disclosure year ends on 30 September. Vector Limited and GasNet Limited's disclosure years end on 30 June.

Introduction

4. This determination sets vanilla WACC estimates that will apply to any CPP proposal made by Maui (for the supply of gas transmission services), before the next CPP WACC determination for Maui is made in June 2015.²
5. Vanilla WACCs for a CPP proposal made by Maui are set under clauses 5.3.18 to 5.3.25 of the Gas Transmission Services Input Methodologies Determination 2012 (GTS IM Determination).³
6. 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.
7. 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

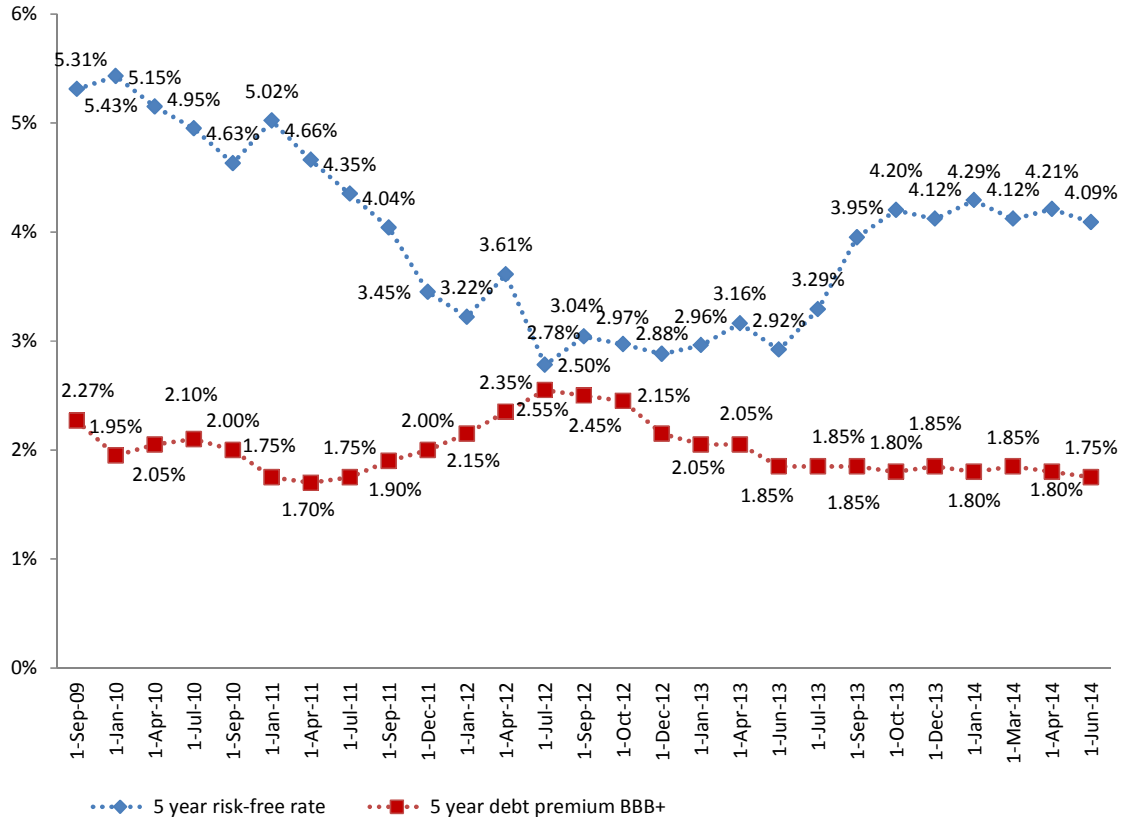
8. The cost of capital input methodologies for regulated services reflect that both the risk-free rate and the debt premium on bonds change over time.⁴
9. Changes in the risk-free rate and debt premium on bonds are illustrated below. Figure 1 shows changes over time in the:
 - 9.1 five year risk-free rate; and
 - 9.2 debt premium on bonds rated BBB+ with a term of five years.

² The vanilla WACC is a weighted average of the pre-corporate tax cost of debt and the cost of equity. The vanilla WACC estimates in this determination do not apply to CPP proposals for Powerco Limited, Vector Limited or GasNet Limited, as their disclosure years do not end on 31 December. Powerco Limited's disclosure year ends on 30 September. Vector Limited and GasNet Limited's disclosure years end on 30 June.

³ Commerce Commission "Gas Transmission Services Input Methodologies Determination 2012" (15 November 2012).

⁴ The risk-free rate for CPP WACC determinations is estimated based on an interpolation of bid yields on New Zealand government stock for terms to maturity of three, four and five years. The debt premium is estimated on publicly traded corporate bonds according to the methodology specified in the GTS 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

10. Differences in the WACCs estimated under the various cost of capital input methodologies reflect differences in the:
 - 10.1 date of estimation for the WACCs, which results in different estimates of the risk-free rate and debt premium;
 - 10.2 periods in which the WACCs will apply;
 - 10.3 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);
 - 10.4 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
 - 10.5 value of leverage for airports (17%) and for EDBs, GPBs, and Transpower (44%).

WACC for CPP proposals made by Maui

11. Under clause 5.3.24 of the GTS IM Determination, we have determined 75th percentile estimates of vanilla WACC for inclusion in any CPP proposal made by Maui, before the next CPP WACC determination for Maui is made in June 2015.
12. The 75th percentile estimate of vanilla WACC for a CPP period of three years is 8.09%, four years is 8.19% and five years is 8.28%. The corresponding mid-point vanilla WACCs are 7.28%, 7.38% and 7.47% for periods of three, four and five years, respectively. These WACCs are estimated as at 1 June 2014.

Parameters used to estimate the WACC

13. The above estimates of vanilla WACC reflect the parameters specified in the GTS IM Determination. The risk-free rate and debt premium are also estimated in accordance with the GTS IM Determination.

Summary of parameters

14. 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)	3.85%	Debt premium (3 years)	1.55%
Risk-free rate (4 years)	3.99%	Debt premium (4 years)	1.65%
Risk-free rate (5 years)	4.09%	Debt premium (5 years)	1.75%
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)	5.98%	Cost of equity (3 years)	8.30%
Cost of debt (4 years; pre-corporate tax)	6.08%	Cost of equity (4 years)	8.40%
Cost of debt (5 years; pre-corporate tax)	6.19%	Cost of equity (5 years)	8.47%
Vanilla WACC (3 years, midpoint)	$5.98\% \times 0.44 + 8.30\% \times (1-0.44) = 7.28\%$		
Vanilla WACC (4 years, midpoint)	$6.08\% \times 0.44 + 8.40\% \times (1-0.44) = 7.38\%$		
Vanilla WACC (5 years, midpoint)	$6.19\% \times 0.44 + 8.47\% \times (1-0.44) = 7.47\%$		

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 May 2014 in respect of the April 2015, December 2017, March 2019 and April 2020 maturity bonds. The April 2015, December 2017, March 2019 and April 2020 maturity bonds have simple average annualised bid yields to maturity of 3.46%, 3.95%, 4.07%, and 4.19% respectively.
16. The daily data reported by Bloomberg is annualised (to reflect the 6 monthly payment of interest), averaged to give a monthly average, and linearly interpolated to produce the estimate of a 4.09% interest rate on a NZ government bond with a five year term to maturity as at 1 June 2014. For terms to maturity of four years and three years, the risk-free rates are 3.99% and 3.85%, respectively.

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 GTS IM Determination, and is shown to three decimal places only in Table 2 above.

Debt premium

19. The methodology for determining the debt premium is set out in clause 5.3.21 of the GTS IM Determination.
20. Clause 5.3.21(3)(d) of the GTS IM Determination 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 or 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 (or four or three years as applicable under 5.3.21(6) of the GTS IM Determination).
21. In estimating the debt premium, clause 5.3.21(4) of the GTS IM Determination provides that the Commission will have regard to:
 - 21.1 bonds issued by a GPB or an EDB (that is not government-owned) with a rating of BBB+;

- 21.2 bonds issued by another entity (that is not government-owned) with a rating of BBB+;
 - 21.3 bonds issued by a GPB or an EDB (that is not government-owned) with a rating other than BBB+;
 - 21.4 bonds issued by another entity (that is not government-owned) with a rating other than BBB+; and
 - 21.5 bonds issued by government-owned entities.
- 22. Clause 5.3.21(5)(a) of the GTS 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 5.3.21(4)(a) to (e), respectively.
 - 23. 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 June 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.
 - 24. A spreadsheet showing the calculations for the debt premium (and the risk-free rate) is published on our website.⁵

⁵ See www.comcom.govt.nz/cost-of-capital/

Five year debt premium

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

Table 3: Five-year debt premium on a GPB/EDB-issued bond rated BBB+⁶

Determined debt premium on an EDB/GPB-issued bond rated BBB+ with a remaining term of 5 years as at 1 June 2014						
		Industry	Rating	Remaining Term to Maturity	Debt premium	Comment
Determined Debt Premium		EDB/GPB	BBB+	5.0	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+	6.0	1.85	5 year debt premium would be lower
4(c)	Powerco ²	EDB/GPB	BBB	4.6	1.84	BBB+ debt premium would be lower and a 5 year debt premium would be higher
4(d)	Contact ³	Other	BBB	5.0	1.79	BBB+ debt premium would be lower
	Telecom ⁴	Other	A-	5.0	1.56	BBB+ debt premium would be higher
	AIAL ⁵	Other	A-	5.0	1.21	BBB+ debt premium would be higher
	Telstra ⁶	Other	A	3.1	1.34	5 year debt premium and BBB+ debt premium would be higher
	Fonterra ⁷	Other	A+	5.0	1.14	BBB+ debt premium would be higher
4(e)	Genesis Energy ⁸	Other	BBB+	5.0	1.87	
	MRP ⁹	Other	BBB+	5.0	1.76	
	Meridian ¹⁰	Other	BBB+	2.8	1.42	
	CIAL ¹¹	Other	BBB+	5.5	1.55	
	Transpower ¹²	Other	AA-	5.0	1.20	

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; 5.52% bond maturing 25/02/2020.
- 8 Genesis Energy 7.185% bond maturing 15/09/2016; 5.205% bond maturing 1/11/2019.
- 9 MRP 5.029% bond maturing 6/03/2019; 8.21% bond maturing 11/2/2020
- 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.

26. Consistent with clause 5.3.21(4)-(5)(a) of the GTS 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

⁶ The five-year debt premiums on the Contact Energy, Telecom, AIAL, Fonterra, 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 6.0 years, which is more than the five years specified in clause 5.3.21(3)(d).

27. As at 1 June 2014, the debt premium on the WIAL bond was estimated at 1.85%. This is indicative of the upper bound of the debt premium for a bond rated BBB+ with a term of five years.
28. The debt premium on Powerco's bond is estimated at 1.84%. This bond has a term to maturity of 4.6 years, which is less than the five years specified in clause 5.3.21(3)(d) of the EDS IM Determination. Powerco's bond is also rated BBB, which is less than the BBB+ specified in clause 5.3.21(3)(d).
29. We have also had regard to the estimated debt premium on bonds from a range of other issuers including Contact Energy (1.79%, 5 years, rated BBB), Telecom (1.56%, 5 years, rated A-), Auckland International Airport Limited (AIAL) (1.21%, 5 years, rated A-), Telstra (1.34%, 3.1 years, rated A) and Fonterra (1.14%, 5 years, rated A+). Consistent with clause 5.3.21(5)(a) of the GTS 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 subclause (3)(d).
30. The estimated debt premium on the Genesis Energy bonds (1.87%, 5 years, rated BBB+), the Mighty River Power (MRP) bonds (1.76%, 5 years, rated BBB+), the Meridian bond (1.42%, 2.8 years, rated BBB+), the Christchurch International Airport Limited (CIAL) bond (1.55%, 5.5 years, rated BBB+), and Transpower bonds (1.20%, 5 years, rated AA-) were also considered.
31. 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 1.75% as at 1 June 2014.

Four year debt premium

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

Table 4: Four-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 4 years as at 1 June 2014						
	Industry	Rating	Remaining Term to Maturity	Debt premium	Comment	
Determined Debt Premium	EDB/GPB	BBB+	4.0	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+	6.0	1.85	4 year debt premium would be lower
4(c)	Powerco ²	EDB/GPB	BBB	4.0	1.77	BBB+ debt premium would be lower
4(d)	Contact ³	Other	BBB	4.0	1.80	BBB+ debt premium would be lower
	Telecom ⁴	Other	A-	4.0	1.42	BBB+ debt premium would be higher
	AIAL ⁵	Other	A-	4.0	1.09	BBB+ debt premium would be higher
	Telstra ⁶	Other	A	3.1	1.34	4 year debt premium and BBB+ debt premium would be higher
	Fonterra ⁷	Other	A+	4.0	1.03	BBB+ debt premium would be higher
4(e)	Genesis Energy ⁸	Other	BBB+	4.0	1.70	
	MRP ⁹	Other	BBB+	4.0	1.64	
	Meridian ¹⁰	Other	BBB+	2.8	1.42	
	CIAL ¹¹	Other	BBB+	5.5	1.55	
	Transpower ¹²	Other	AA-	4.0	1.08	

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 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; 5.52% bond maturing 25/02/2020.
- 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.

33. Consistent with clause 5.3.21(4)-(5)(a) of the GTS 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 BBB+. The June 2020 bond has a term to maturity of 6.0 years, which is more than

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

the four years specified in clause 5.3.21(3)(d). As at 1 June 2014, the debt premium on the WIAL bond was estimated at 1.85%.

34. The four year interpolated debt premium on the Powerco bonds was estimated at 1.77%. Powerco's bond is rated BBB, which is less than the BBB+ specified in clause 5.3.21(3)(d). This is indicative of the upper bound of the debt premium for a bond rated BBB+ with a term of four years.
35. We have also had regard to the estimated debt premium on bonds from a range of other issuers including Contact Energy (1.80%, 4 years, rated BBB), Telecom (1.42%, 4 years, rated A-), Auckland International Airport Limited (AIAL) (1.09%, 4 years, rated A-), Telstra (1.34%, 3.1 years, rated A) and Fonterra (1.03%, 4 years, rated A+). Consistent with clause 5.3.21(5)(a) of the GTS 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 subclause (3)(d).
36. The estimated debt premium on the Genesis Energy bonds (1.70%, 4 years, rated BBB+), the Mighty River Power (MRP) bonds (1.64%, 4 years, rated BBB+), the Meridian bond (1.42%, 2.8 years, rated BBB+), the Christchurch International Airport Limited (CIAL) bond (1.55%, 5.5 years, rated BBB+), and Transpower bonds (1.08%, 4 years, rated AA-) were also considered.
37. 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 1.65% as at 1 June 2014.

Three year debt premium

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

Table 5: Three-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 3 years as at 1 June 2014						
		Industry	Rating	Remaining Term to	Debt premium	Comment
Determined Debt Premium		EDB/GPB	BBB+	3.0	1.55	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+	6.0	1.85	A 3 year debt premium would be lower
4(c)	Powerco ²	EDB/GPB	BBB	3.0	1.62	BBB+ debt premium would be lower
4(d)	Contact ³	Other	BBB	3.0	1.73	BBB+ debt premium would be lower
	Telecom ⁴	Other	A-	3.0	1.29	BBB+ debt premium would be higher
	AIAL ⁵	Other	A-	3.0	1.02	BBB+ debt premium would be higher
	Telstra ⁶	Other	A	3.1	1.34	3 year debt premium would be lower and BBB+ debt premium would be higher
	Fonterra ⁷	Other	A+	3.0	0.93	BBB+ debt premium would be higher
4(e)	Genesis Energy ⁸	Other	BBB+	3.0	1.52	
	MRP ⁹	Other	BBB+	3.0	1.53	
	Meridian ¹⁰	Other	BBB+	2.8	1.42	
	CIAL ¹¹	Other	BBB+	5.5	1.55	
	Transpower ¹²	Other	AA-	3.0	0.97	

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; Contact Energy 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 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; 5.52% bond maturing 25/02/2020.
- 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 6.595% bond maturing 15/02/2017; 7.19% bond maturing 12/11/2019.

39. Consistent with clause 5.3.21(4)-(5)(a) of the GTS 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 BBB+. The June 2020 bond has a term to maturity of 6.0 years, which is more than

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

the four years specified in clause 5.3.21(3)(d). As at 1 June 2014, the debt premium on the WIAL bond was estimated at 1.85%.

40. The three year interpolated debt premium on the Powerco bonds was estimated at 1.62%. Powerco's bond is rated BBB, which is less than the BBB+ specified in clause 5.3.21(3)(d). This is indicative of the upper bound of the debt premium for a bond rated BBB+ with a term of three years.
41. We have also had regard to the estimated debt premium on bonds from a range of other issuers including Contact Energy (1.73%, 3 years, rated BBB), Telecom (1.29%, 3 years, rated A-), Auckland International Airport Limited (AIAL) (1.02%, 3 years, rated A-), Telstra (1.34%, 3.1 years, rated A) and Fonterra (0.93%, 3 years, rated A+). Consistent with clause 5.3.21(5)(a) of the GTS 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 subclause (3)(d).
42. The estimated debt premium on the Genesis Energy bonds (1.52%, 3 years, rated BBB+), the Mighty River Power (MRP) bonds (1.53%, 3 years, rated BBB+), the Meridian bond (1.42%, 2.8 years, rated BBB+), the Christchurch International Airport Limited (CIAL) bond (1.55%, 5.5 years, rated BBB+), and Transpower bonds (0.97%, 3 years, rated AA-) were also considered.
43. 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 June 2014.