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Determination of the cost of capital for suppliers of gas distribution and gas transmission services under Part 4 of the Commerce Act 1986

Decision number 745

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Executive summary

1. This determination sets vanilla Weighted Average Cost of Capital (WACC) estimates that will apply to:

   - default price-quality paths (DPPs) proposed to commence in July 2012 for suppliers of Gas Distribution Services (GDBs) and Gas Transmission Services (GTBs), where the Commerce Commission (the Commission) takes into account the cost of capital in making a DPP determination

   - any customised price-quality path (CPP) proposal by a GDB or GTB commencing from July 2012.

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 for both GDBs and GTBs are summarised in Table 1 below.

Table 1: Vanilla WACC estimates for GDBs and GTBs

Estimate and application	**Mid point**		**75th percentile estimate**
Default price-quality path (WACC estimated as at 1 December 2011).			
Vanilla WACC (5 years)	7.04%	-	7.85%
Customised price-quality path (for any CPP applications. WACC estimated as at 1 December 2011).			
Vanilla WACC (3 years)	6.66%	-	7.47%
Vanilla WACC (4 years)	6.83%	-	7.64%
Vanilla WACC (5 years)	7.04%	-	7.85%

3. 75th percentile estimates of vanilla WACC are used for DPPs and CPPs. The WACCs are estimated as at 1 December 2011.

Introduction

4. This determination sets vanilla WACC estimates that will apply to:

- DPPs proposed to commence in July 2012 for GDBs and GTBs, where the Commission takes into account the cost of capital in making a DPP determination[1]
- any CPP proposal by a GDB or GTB commencing in July 2012.

5. Vanilla WACCs for CPPs are set under clause 5.3.28 of the *Commerce Act (Gas Distribution Services Input Methodologies) Determination 2010* (the GDS IM Determination) and clause 5.3.24 of the *Commerce Act (Gas Transmission Services Input Methodologies) Determination 2010* (GTS IM Determination).

6. For DPPs, the vanilla WACC is set under clause 4.1.7 of the GDS IM Determination and the GTS IM Determination.

7. The parameter values, estimates, and information sources used for each estimate of the WACC are set out in this determination. The determination also provides additional commentary on the estimation of the risk-free rate and the debt premium. For example, it identifies the issuers and bonds that were analysed (including the credit rating and remaining term to maturity) to estimate the debt premium. The commentary also explains:

- which debt premium estimates were given greater weight than other estimates
- that some estimates of the debt premium were given little or no weight because the debt premium estimates were out of line with the debt premium estimated for other issuers (recognising differences such as credit ratings and term to maturity). These differences appear to reflect company specific factors which affect the debt premium for bonds from individual issuers (for example, Telecom and Telstra).

Background

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

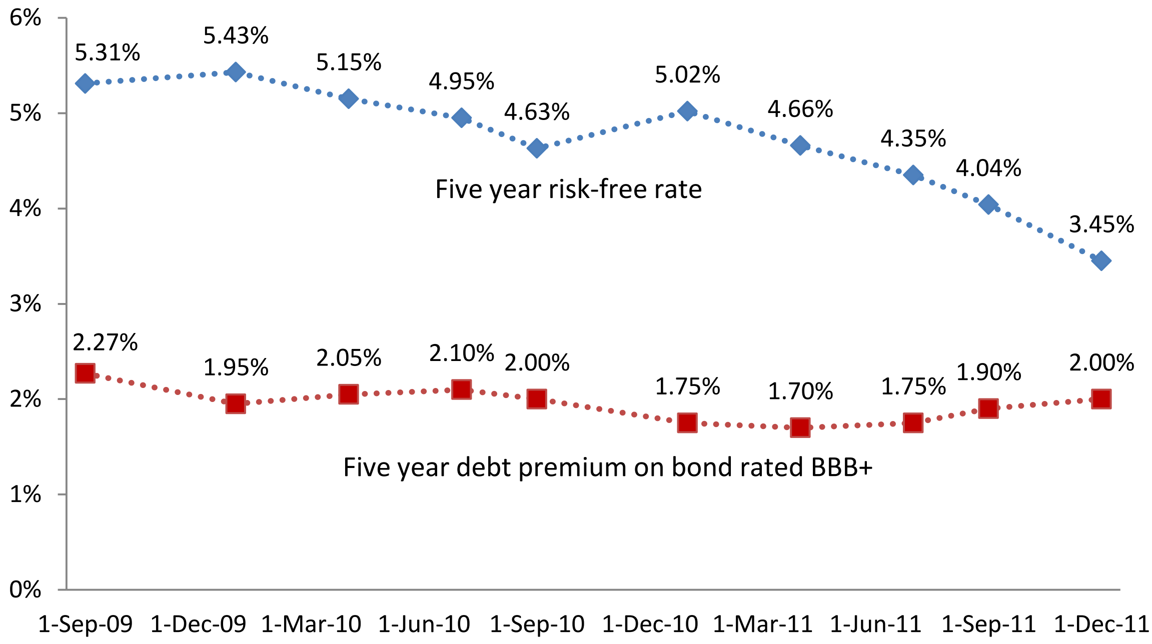
8. The input methodologies for the regulated services reflect that both the risk-free rate (estimated based on an interpolation of bid yields on New Zealand government stock to a term to maturity of five years) and the debt premium on bonds (estimated on publicly traded corporate bonds according to the methodology specified in the input methodology determinations) change over time.

9. Changes in the risk-free rate and debt premium on bonds over time are illustrated below. Figure 1 shows the five year risk-free rate and the debt premium on bonds

[1] *Commerce Act (Gas Transmission Services Input Methodologies) Determination 2010*, clause 4.1.9(1); *Commerce Act (Gas Distribution Services Input Methodologies) Determination 2010*, clause 4.1.9(1).

rated BBB+ with a five year term as at the dates when we have estimated the cost of capital using the input methodologies.

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



Reasons for differences in WACC under input methodologies determinations

10. Differences in the WACC estimates estimated under input methodologies reflect differences in:

- the date of estimation for these WACCs (which results in different estimates of the risk-free rate and debt premium)
- differences in the periods to which they will apply
- differences in the context in which the WACCs will be used (75th percentile estimates of the WACC are used when considering default and customised price-quality paths)
- differences in the assessed riskiness of the various regulated services (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)
- differences in the level of leverage for airports (17%) and for EDBs, GPBs, and Transpower (44%).

WACC for price-quality paths for GDBs and GTBs

11. Under clause 5.3.28 of the GDS IM Determination and clause 5.3.24 of the GTS IM Determination, the Commission has determined 75th percentile estimates of vanilla WACC for inclusion in any CPP application made by a GDB or GTB.

12. The 75th percentile estimate of vanilla WACC for CPP periods of three years is 7.47%, of four years is 7.64% and of five years is 7.85%. The corresponding midpoint vanilla WACCs are 6.66%, 6.83% and 7.04% for periods of three, four and five years, respectively. These WACCs are estimated as at 1 December 2011.

Parameters used to estimate the vanilla WACC

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

Summary of parameters

14. The parameters use to estimate the vanilla WACCs are summarised in Table 2 below.

Table 2: Parameters used to calculate vanilla WACC

Risk-free rate (3 yrs)	2.98%	Debt premium (3 yrs)	1.81%
Risk-free rate (4 yrs)	3.21%	Debt premium (4 yrs)	1.90%
Risk-free rate (5 yrs)	3.45%	Debt premium (5 yrs)	2.00%
Equity beta	0.79	TAMRP	7.0%
Average corporate tax rate	28%	Average investor tax rate	28%
Debt issuance costs (3 yrs)	0.58%	Debt issuance costs (4 yrs)	0.44%
Debt issuance costs (5 yrs)	0.35%	Leverage	44%
Standard error of debt premium	0.0015	Standard error of WACC	0.012
Cost of debt (3 yrs; pre-corporate tax)	5.37%	Cost of equity (3 yrs)	7.68%
Cost of debt (4 yrs; pre-corporate tax)	5.55%	Cost of equity (4 yrs)	7.84%
Cost of debt (5 yrs; pre-corporate tax)	5.80%	Cost of equity (5 yrs)	8.01%
Vanilla WACC (3 yrs, midpoint)	5.37% x 0.44 + 7.68% x (1-0.44) = 6.66%		
Vanilla WACC (4 yrs, midpoint)	5.55% x 0.44 + 7.84% x (1-0.44) = 6.83%		
Vanilla WACC (5 yrs, midpoint)	5.80% x 0.44 + 8.01% x (1-0.44) = 7.04%		

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, four and three years. The estimates use data reported by Bloomberg for the month of November 2011 in respect of the April 2013, April 2015 and December 2017 maturity bonds.

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 3.45% interest rate on a NZ government bond with a five year term to maturity as at 1 December 2011. For terms to maturity of four years and three years, the risk-free rates are 3.21% and 2.98%, 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 GDS and GTS IM Determinations, and is shown to three decimal places only in the table above.

Debt premium

19. The methodology for determining the debt premium is set out in clause 5.3.25 of the GDS IM Determination and clause 5.3.21 of the GTS IM Determination.

20. Clause 5.3.25(3)(d) of the GDS IM Determination and clause 5.3.21(3)(d) of the GTS IM Determination require 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 GDB (or a GPB or EDB in the case of the GTS IM Determination) 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+

    20.4 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 or clause 5.3.21(6) of the GTS IM Determination).

21. In estimating the debt premium, clause 5.3.25(4) of the GDS IM Determination and clause 5.3.21(4) of the GTS IM Determination provide that the Commission will have regard to:

    21.1 bonds issued by a GPB or 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 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+

21.5 bonds issued by government-owned entities.

22. Clause 5.3.25(5)(a) of the GDS IM Determination and clause 5.3.21(5)(a) of the GTS IM Determination provide 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) and clauses 5.3.21(4)(a) to (e), respectively.

23. Table 3, Table 4 and Table 5 below show the debt premium determined by the Commission as at 1 December 2011. These tables include a summary of information on the investment grade rated bonds the Commission 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.[2]

25. No weight has been placed on the estimated debt premium for Telecom (2.19%, 4.3 years, rated A) or Telstra (1.91%, 5.6 years, rated A) due to significant corporate actions currently affecting those companies.

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

Table 3: Five-year debt premium

Determined debt premium on an EDB/GPB -issued bond rated BBB+ with a remaining term of 5 years as at 1 December 2011

	Industry	Rating	Remaining Term to Maturity	Debt premium	Comment
Determined Debt Premium	*EDB / GPB*	*BBB+*	*5.0*	*2.00*	*Vector premium provides floor. Regard to results of 4(c) & 4(d). Not inconsistent with 4(e).*

Subclause	Issuer	Industry	Rating	Remaining Term to Maturity	Debt premium	Comment
4(a)	Vector[1]	EDB/GPB	BBB+	2.9	1.81	Minimum per subclause 5(b).
4(b)						No data on an applicable bond.
4(c)	Powerco[2]	EDB/GPB	BBB	5.0	2.25	BBB+ would be less than this.
4(d)	Contact[3]	Other	BBB	5.0	2.33	BBB+ would be less than this.
	AIAL[4]	Other	A-	5.0	1.87	BBB+ would be more than this.
	Telecom[5]	Other	A	-	-	Anomalous, due to significant corporate action.
	Telstra[6]	Other	A	-	-	Anomalous, due to significant corporate action.
4(e)	Genesis[7]	Other	BBB+	5.0	1.75	
	MRP[8]	Other	BBB+	5.0	1.81	
	Transpower[9]	Other	AA-	8.0	1.59	

Notes on bonds analysed:

1 Vector 7.8% bond maturing 15/10/2014.
2 Powerco 6.53% bond maturing 29/06/2015; 6.74% bond maturing 28/09/2017.
3 Contact Energy 8% bond maturing 15/05/2014; 7.855% bond maturing 13/04/2017.
4 AIAL 8% bond maturing 15/11/2016.
5 Telecom 7.04% maturing 22/03/2016.
6 Telstra 7.515% maturing 11/07/2017.
7 Genesis 7.185% bond maturing 15/09/2016; 8.3% bond maturing 23/06/2020.
8 Mighty River Power 7.55% bond maturing 12/10/2016; 8.21% bond maturing 11/02/2020.
9 Transpower 7.19% bond maturing 12/11/2019.

26. Consistent with clause 5.3.25(4)-(5)(a) of the GDS IM Determination and clause 5.3.21(4)-(5)(a) of the GTS IM Determination, greatest regard has been given to the estimated debt premium on Vector's October 2014 bond. This bond is issued by an EDB/GPB, is publicly traded, has a rating of BBB+, and a term to maturity of 2.9 years.

27. As at 1 December 2011, the debt premium on the Vector bond was estimated at 1.81%. Consistent with clause (5)(b), this estimated debt premium is treated as the minimum debt premium for a bond rated BBB+ with a term of five years.

28. The interpolated five year debt premium on Powerco's bonds is 2.25%. Powerco's bonds are rated BBB, implying the five year debt premium on bonds rated BBB+ would be less than 2.25%.

29. The Commission has also had regard to the estimated debt premium on bonds from a range of other issuers including AIAL (1.87%, 5 years, rated A-) and Contact Energy (2.33%, 5 years, rated BBB). Consistent with clause (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 (3)(d).

30. The estimated debt premium on the Genesis and Mighty River Power bonds (rated BBB+, and for a five year term to maturity) were 1.75% and 1.81% respectively.

31. Starting with the estimated debt premium on the Vector bond, but having regard to the debt premium on a range of other bonds, the Commission has determined the debt premium on a publicly traded, EDB/GPB-issued bond, rated BBB+ with a remaining term of five years to be 2.00% as at 1 December 2011.

Table 4: Four-year debt premium

Determined debt premium on an EDB/GPB -issued bond rated BBB+ with a remaining term of 4 years as at 1 December 2011

	Industry	Rating	Remaining Term to Maturity	Debt premium	Comment
Determined Debt Premium	*EDB / GPB*	*BBB+*	*4.0*	*1.90*	*Vector premium provides floor.* *Regard to results of 4(c) & 4(d).* *Not inconsistent with 4(e).*

Subclause	Issuer	Industry	Rating	Remaining Term to Maturity	Debt premium	Comment
4(a)	Vector[1]	EDB/GPB	BBB+	2.9	1.81	Minimum per subclause 5(b).
4(b)						No data on an applicable bond.
4(c)	Powerco[2]	EDB/GPB	BBB	4.0	2.18	BBB+ would be less than this.
4(d)	Contact[3]	Other	BBB	4.0	2.20	BBB+ would be less than this.
	AIAL[4]	Other	A-	4.0	1.79	BBB+ debt premium would be more than this.
	Telecom[5]	Other	A	-	-	Anomalous, due to significant corporate action.
	Telstra[6]	Other	A	-	-	Anomalous, due to significant corporate action.
4(e)	Genesis[7]	Other	BBB+	4.0	1.75	
	MRP[8]	Other	BBB+	4.9	1.81	
	Transpower[9]	Other	AA-	8.0	1.59	

Notes on bonds analysed:

1 Vector 7.8% bond maturing 15/10/2014.
2 Powerco 6.53% bond maturing 29/06/2015; 6.74% bond maturing 28/09/2017.
3 Contact Energy 8% bond maturing 15/05/2014; 7.855% bond maturing 13/04/2017.
4 AIAL 7.25% bond maturing 7/11/2015; 8% bond maturing 15/11/2016.
5 Telecom 6.92% maturing 22/03/2013; 7.04% maturing 22/03/2016.
6 Telstra 7.515% maturing 11/07/2017.
7 Genesis 7.25% bond maturing 15/03/2014; 7.65% bond maturing 15/03/2016.
8 Mighty River Power 7.55% bond maturing 12/10/2016.
9 Transpower 7.19% bond maturing 12/11/2019.

32. Consistent with clause 5.3.25(4)-(5)(a) of the GDS IM Determination and clause 5.3.21(4)-(5)(a) of the GTS IM Determination, greatest regard has been given to the

estimated debt premium on Vector's October 2014 bond. This bond is issued by an EDB/GPB, is publicly traded, has a rating of BBB+, and a term to maturity of 2.9 years. As at 1 December 2011, the debt premium on the Vector bond was estimated at 1.81%. Consistent with clause (5)(b) this estimated debt premium is treated as the minimum debt premium for a bond rated BBB+ with a term of four years.

33. The interpolated four year debt premium on Powerco's bonds is 2.18%. Powerco's bonds are rated BBB, implying the 4 year debt premium on bonds rated BBB+ would be less than 2.18%.

34. The Commission has also had regard to the estimated debt premium on bonds from a range of other issuers including AIAL (1.79%, 4 years, rated A-) and Contact Energy (2.20%, 4 years, rated BBB). Consistent with clause (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 (3)(d).

35. The estimated debt premium on the Genesis bonds (1.75%, 4 years, rated BBB+) and Mighty River Power bonds (1.81%, 4.9 years, rated BBB+) were also considered.

36. Starting with the estimated debt premium on the Vector bond, but having regard to the debt premium on a range of other bonds, the Commission has determined the debt premium on a publicly traded, EDB/GPB-issued bond, rated BBB+ with a remaining term of four years to be 1.90% as at 1 December 2011.

Table 5: Three-year debt premium

Determined debt premium on an EDB/GPB -issued bond rated BBB+ with a remaining term of 3 years as at 1 December 2011

		Industry	Rating	Remaining Term to Maturity	Debt premium	Comment
Determined Debt Premium		*EDB / GPB*	*BBB+*	*3.0*	*1.81*	Vector almost exact match (2.9yrs). Broadly consistent with 4(c)-4(e).

Subclause	Issuer	Industry	Rating	Remaining Term to Maturity	Debt premium	Comment
4(a)	Vector[1]	EDB/GPB	BBB+	2.9	1.81	Almost exact match.
4(b)						No data on an applicable bond.
4(c)	Powerco[2]	EDB/GPB	BBB	3.0	2.09	BBB+ would be less than this.
4(d)	Contact[3]	Other	BBB	3.0	2.08	BBB+ would be less than this.
	AIAL[4]	Other	A-	3.9	1.79	3yr debt premium would be lower, and a BBB+ debt premium would be more than this.
	Telecom[5]	Other	A	-	-	Anomalous, due to significant corporate action.
	Telstra[6]	Other	A	-	-	Anomalous, due to significant corporate action.
4(e)	Genesis[7]	Other	BBB+	3.0	1.58	
	MRP[8]	Other	BBB+	4.9	1.81	
	Transpower	Other	AA-	8.0	1.59	

Notes on bonds analysed:

1 Vector 7.8% bond maturing 15/10/2014.
2 Powerco 6.39% bond maturing 29/03/2013; 6.53% bond maturing 29/06/2015.
3 Contact Energy 8% bond maturing 15/05/2014; 7.855% bond maturing 13/04/2017.
4 AIAL 7.25% bond maturing 7/11/2015.
5 Telecom 6.92% maturing 22/03/2013; 7.04% maturing 22/03/2016.
6 Telstra 7.515% maturing 11/07/2017.
7 Genesis 7.25% bond maturing 15/03/2014; 7.65% bond maturing 15/03/2016.
8 Mighty River Power 7.55% bond maturing 12/10/2016.
9 Transpower 7.19% bond maturing 12/11/2019.

37. Consistent with clause 5.3.25(4)-(5)(a) of the GDS IM Determination and clause 5.3.21(4)-(5)(a) of the GTS IM Determination, greatest regard has been given to the estimated debt premium on Vector's October 2014 bond. This bond is issued by an EDB/GPB, is publicly traded, has a rating of BBB+, and a term to maturity of 2.9 years.

38. As at 1 December 2011, the debt premium on the Vector bond was estimated at 1.81%. Consistent with clause (5)(b) this estimated debt premium is treated as the minimum debt premium for a bond rated BBB+ with a term of three years. This is an almost exact match with the requirements set out in the GDS and GTS IM Determinations.

39. The Commission has also had regard to the other bonds listed in the table above. However, based primarily on the Vector estimate, the Commission has determined the debt premium on a publicly traded, EDB/GPB-issued bond, rated BBB+ with a remaining term of three years to be 1.81% as at 1 December 2011.

WACC for default price-quality paths for GDBs and GTBs

40. Under clause 4.1.7 of the GDS IM Determination and the GTS IM Determination, the Commission has determined 75th percentile estimates of vanilla WACC for the DPP for GDBs and GTBs.

41. The estimate of vanilla WACC for DPPs is the same as the five-year vanilla WACC for CPPs. The parameters used to calculate the five year vanilla WACC for CPPs remain the same under the DPPs for both GDBs and GTBs.[3]

42. The 75th percentile estimate of vanilla WACC is 7.85%. The corresponding midpoint vanilla WACCs is 7.04%. The WACC is estimated as at 1 December 2011.

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[3] As originally determined, clause 4.1.2(4) of the GTS IM Determination stated that the equity beta is 0.61. This was a typographical error as the equity beta for GTBs was intended to be 0.79 (see, Commerce Commission, *Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper*, 23 December 2010, paragraphs 6.6.16, H8.2, H8.216). The Commission has amended clause 4.1.2(4) of that determination to specify an equity beta of 0.79. See, *Commerce Act (Gas Transmission Services Input Methodologies) Amendment Determination 2011, Decision 744*.