ISBN no. 978-1-869453-17-6
Project no. 14.18/13100

Public version

Cost of capital determination for information disclosure year 2014 for specified airport services (March year-end) and electricity distribution services [2013] NZCC 10

The Commission:	Airport Services Division	Energy Division
	S Begg	S Begg
	P Duignan	P Duignan
	Dr M Berry	Dr M Berry
	E Welson	Dr S Gale

Date of determination: 29 April 2013

Executive summary

1. This determination specifies weighted average cost of capital (WACC) estimates to apply for the information disclosure year 2014 for:

   1.1 Electricity Distribution Businesses (EDBs); and

   1.2 providers of specified airport services with a financial year ending in March (Wellington International Airport Limited (WIAL)).

2. For EDBs we have determined the following vanilla and post-tax WACCs.

   2.1 A mid-point estimate of vanilla WACC[1] of 6.11% for the five year period commencing on the first day of disclosure year 2014 (ie 1 April 2013). The Commission has also determined a vanilla WACC range from 5.39% to 6.83%, where the endpoints are the 25th and 75th percentile estimates respectively.

   2.2 A mid-point estimate of post-tax WACC[2] of 5.43% for the five year period commencing on the first day of disclosure year 2014 (ie 1 April 2013). The Commission has also determined a post-tax WACC range from 4.71% to 6.14%, where the endpoints are the 25th and 75th percentile estimates respectively.

3. For WIAL we have determined the following vanilla and post-tax WACCs.

   3.1 A mid-point estimate of vanilla WACC of 6.93% for the five year period commencing on the first day of disclosure year 2014 (ie 1 April 2013). The Commission has also determined a vanilla WACC range from 5.95% to 7.91%, where the endpoints are the 25th and 75th percentile estimates respectively.

   3.2 A mid-point estimate of post-tax WACC of 6.69% for the five year period commencing on the first day of disclosure year 2014 (ie 1 April 2013). The Commission has also determined a post-tax WACC range from 5.71% to 7.67%, where the endpoints are the 25th and 75th percentile estimates respectively.

4. The WACCs are estimated as at 1 April 2013.

---

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

[2] The post-tax WACC is the weighted average of the post-corporate tax cost of debt and the cost of equity.

Introduction

5. This determination specifies WACC estimates to apply for information disclosure year 2014 (that is, the 12 months to 31 March 2014) for EDBs and providers of specified airport services with a financial year ending in March (WIAL). The WACC estimates are set pursuant to:

    5.1 clauses 2.4.1 to 2.4.7 of the Commerce Act (Electricity Distribution Services Input Methodologies) Determination 2012 (the EDS IM Determination); and

    5.2 clauses 5.1 to 5.7 of the Commerce Act (Specified Airport Services Input Methodologies) Determination 2010 (the Airports IM Determination).

6. The Commerce Commission (the Commission) has 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. Additional commentary on the estimation of the risk-free rate and the debt premium is also provided.

8. 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[3] and the debt premium on bonds[4] change over time.

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

    10.1 the five year risk-free rate, and

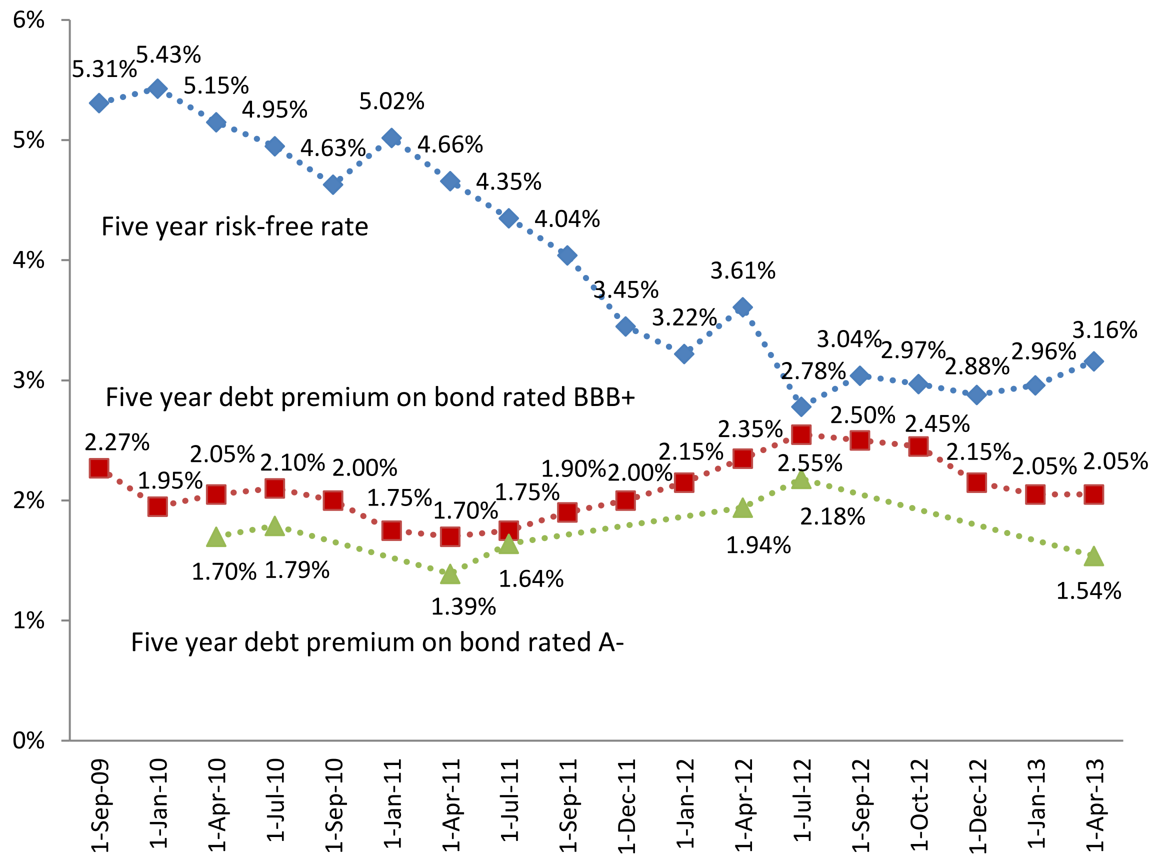
    10.2 the debt premium on bonds rated BBB+ with a term of five years.

---

3 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.

4 The debt premium is estimated on publicly traded corporate bonds according to the methodology specified in the input methodology determinations.

Figure 1: Changes in the five year risk-free rate and BBB+ and A- debt premiums over time



Reasons for differences in WACC under input methodologies determinations

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

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

 11.2 the periods in which the WACCs will apply;

 11.3 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, while a midpoint and range is determined for information disclosure);

 11.4 the assessed risk 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); and

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

WACC for EDB information disclosure year 2014

12. Under clause 2.4.1 of the EDS IM Determination, the Commission has determined the following vanilla and post-tax WACCs for EDB information disclosure year 2014.

    12.1 A mid-point estimate of vanilla WACC of 6.11% for the five year period commencing on the first day of disclosure year 2014 (ie 1 April 2013). Under clause 2.4.7, the Commission has also determined a vanilla WACC range from 5.39% to 6.83%, where the endpoints are the 25th and 75th percentile estimates respectively.

    12.2 A mid-point estimate of post-tax WACC of 5.43% for the five year period commencing on the first day of disclosure year 2014 (ie 1 April 2013). Under clause 2.4.7, the Commission has also determined a post-tax WACC range from 4.71% to 6.14%, where the endpoints are the 25th and 75th percentile estimates respectively.

Parameters used to estimate the WACC for EDBs

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

Summary of parameters

14. The parameters used to estimate the vanilla and post-tax WACCs for EDB information disclosure year 2014 are summarised in Table 1 below.

Table 1: Parameters used to calculate WACC for EDB information disclosure year 2014

Risk-free rate (five years)	3.16%	Debt premium (five years)	2.05%
Equity beta	0.61	TAMRP	7.0%
Average corporate tax rate	28%	Average investor tax rate	28%
Debt issuance costs	0.35%	Leverage	44%
Standard error of debt premium	0.0015	Standard error of WACC	0.011
Cost of debt (pre-corporate tax)	5.56%	Cost of equity	6.55%
Vanilla WACC (midpoint)	5.56% x 0.44 + 6.55% x (1-0.44) = 6.11%		
Post-tax WACC (midpoint)	5.56% x 0.44 x (1-0.28) + 6.55% x (1-0.44) = 5.43%		

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 March 2013 in respect of the 15 December 2017 and 15 March 2019 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 3.16% interest rate on a NZ government bond with a five year term to maturity as at 1 April 2013.

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 EDS 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 EDS 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 an EDB or a GPB 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 EDS IM Determination provides that the Commission will have regard to:

    21.1 bonds issued by an EDB or a GPB (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 an EDB or a GPB (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 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 2 below shows the debt premium determined by the Commission as at 1 April 2013. This table includes a summary of information on the investment grade rated bonds the Commission 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.[5]

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

Table 2: Five-year debt premium on an EDB/GPB-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 April 2013

	Industry	Rating	Remaining Term to Maturity	Debt premium	Comment
Determined Debt Premium	*EDB / GPB*	*BBB+*	*5.0*	*2.05*	*Vector premium provides floor. Regard to results of 4(c) and 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+	1.5	1.58	Minimum per subclause 5(b).
4(b)	WIAL[2]	Other	BBB+	0.6	1.97	No weight placed on WIAL bond (see paragraph 31).
4(c)	Powerco[3]	EDB/GPB	BBB	5.0	2.10	BBB+ debt premium would be less than this.
4(d)	Contact[4]	Other	BBB	4.0	2.11	5 year debt premium would be higher and a BBB+ debt premium would be less than this.
	AIAL[5]	Other	A-	5.0	1.54	BBB+ debt premium would be higher than this.
	Telecom[6]	Other	A-	5.0	1.82	BBB+ debt premium would be higher than this.
	Telstra[7]	Other	A	4.3	1.78	5 year debt premium and BBB+ debt premium would be higher than this.
	Fonterra[8]	Other	A+	2.9	1.41	5 year debt premium and BBB+ debt premium would be higher than this.
4(e)	Genesis[9]	Other	BBB+	5.0	1.84	
	MRP[10]	Other	BBB+	5.0	1.76	
	Transpower[11]	Other	AA-	5.0	1.55	
	Meridian[12]	Other	BBB+	4.0	1.77	
	CIAL[13]	Other	BBB+	6.7	2.03	

Notes on bonds analysed:

1 Vector 7.8% bond maturing 15/10/2014.
2 WIAL 7.5% maturing 15/11/2013.
3 Powerco 6.74% bond maturing 28/09/2017; 6.31% bond maturing 20/12/2018.
4 Contact Energy 7.855% bond maturing 13/04/2017.
5 AIAL 5.47% bond maturing 17/10/2017; 4.73% bond maturing 13/12/2019.
6 Telecom 7.04% bond maturing 22/03/2016; 5.25% bond maturing 25/10/2019.
7 Telstra 7.515% bond maturing 11/07/2017.
8 Fonterra 6.83% bond maturing 4/03/2016.
9 Genesis 7.185% bond maturing 15/09/2016; 5.205% bond maturing 1/11/2019.
10 Mighty River Power 7.55% bond maturing 12/10/2016; 5.029% bond maturing 6/03/2019.
11 Transpower 6.595% bond maturing 15/02/2017; 7.19% maturing 12/11/2019.
12 Meridian 7.55% bond maturing 16/03/2017.
13 CIAL 5.15% bond maturing 6/12/2019.

25. Consistent with clauses 2.4.4(4) and 2.4.4(5)(a) of the EDS 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 and has a rating of

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

BBB+. However, the October 2014 Vector bond has a remaining term to maturity of 1.5 years, which is significantly less than five years specified in clause 2.4.4(3)(d).

26. As at 1 April 2013, the debt premium on the Vector bond was estimated at 1.58%. Consistent with clause 2.4.4(5)(b), this estimated debt premium is treated as the minimum debt premium for a bond rated BBB+ with a term of five years.

27. The interpolated five year debt premium on Powerco's bonds is 2.10%. Powerco's credit rating is BBB, implying that the debt premium on a bond rated BBB+ would be less than 2.10%.

28. The Commission has also had regard to the estimated debt premium on bonds from a range of other issuers including Contact Energy (2.11%, 4.0 years, rated BBB), Auckland International Airport Limited (AIAL) (1.54%, five years, rated A-), Telecom (1.82%, five years, rated A-), Telstra (1.78%, 4.3 years, rated A) and Fonterra (1.41%, 2.9 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). A five year debt premium for BBB+ rate debt (where the company is not majority owned by the Government) would likely be above the observed estimates of the debt premium for AIAL, Telecom, Telstra and Fonterra.

29. The estimated debt premium on the Genesis bonds (rated BBB+ with a five year term to maturity) the Mighty River Power bonds (rated BBB+ with a five year term to maturity) the Transpower bonds (rated AA- with a five year term to maturity) the Meridian bond (rated BBB+ with a 4 year term to maturity) and the Christchurch International Airport (CIAL) bond (rated BBB+ with a 6.7 year term to maturity) were 1.84%, 1.76%, 1.55%, 1.77% and 2.03% respectively.

30. 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 2.05% as at 1 April 2013.

31. No weight has been placed on the estimated debt premium for Wellington International Airport (WIAL) (1.97%, 0.6 years remaining term to maturity, rated BBB+). The remaining term to maturity on the WIAL bond is only 0.6 years which is significantly less than the five year term specified in clause 2.4.4(3)(d). In addition, the estimated debt premium for WIAL has been regarded as anomalous in recent WACC determinations, because it was out of line with debt premiums for the other issuers (having regard to term maturity and credit rating).[7]

[7] Commerce Commission, *Cost of capital determination for default price-quality paths for suppliers of gas distribution and gas transmission services, and customised price-quality path proposals made by Vector Limited and GasNet Limited [2012] NZCC 38*, 20 December 2012, page 7, paragraph 26.

WACC for WIAL information disclosure year 2014

32. Under clause 5.1 of the Airports IM Determination, the Commission has determined the following vanilla and post-tax WACCs for WIAL's 2014 information disclosure year.

    32.1 A mid-point estimate of vanilla WACC of 6.93% for the five year period commencing on the first day of disclosure year 2014 (ie 1 April 2013). Under clause 5.7, the Commission has also determined a vanilla WACC range from 5.95% to 7.91%, where the endpoints are the 25th and 75th percentile estimates respectively.

    32.2 A mid-point estimate of post-tax WACC of 6.69% for the five year period commencing on the first day of disclosure year 2014 (ie 1 April 2013). Under clause 5.7, the Commission has also determined a post-tax WACC range from 5.71% to 7.67%, where the endpoints are the 25th and 75th percentile estimates respectively.

Parameters used to estimate the WACC for WIAL

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

Summary of parameters

34. The parameters used to estimate the vanilla and post-tax WACCs for WIAL information disclosure year 2014 are summarised in Table 3 below.

Table 3: Parameters used to calculate WACC for WIAL information disclosure year 2014

Risk-free rate (five years)	3.16%	Debt premium (five years)	1.54%
Equity beta	0.72	TAMRP	7.0%
Average corporate tax rate	28%	Average investor tax rate	28%
Debt issuance costs	0.35%	Leverage	17%
Standard error of debt premium	0.0015	Standard error of WACC	0.015
Cost of debt (pre-corporate tax)	5.05%	Cost of equity	7.32%
Vanilla WACC (midpoint)	5.05% x 0.17 + 7.32% x (1-0.17) = 6.93%		
Post-tax WACC (midpoint)	5.05% x 0.17 x (1-0.28) + 7.32% x (1-0.17) = 6.69%		

Risk-free rate

35. 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 March 2013 in respect of the 15 December 2017 and 15 March 2019 maturity bonds.

36. 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 3.16% interest rate on a NZ government bond with a five year term to maturity as at 1 April 2013.

Tax rates

37. 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

38. The standard error of the WACC is determined in accordance with the formula in the Airports IM Determination, and is shown to three decimal places only in the table above.

Debt premium

39. The methodology for determining the debt premium is set out in clause 5.4 of the Airports IM Determination.

40. Clause 5.4(3)(d) requires the Commission to estimate the debt premium that would reasonably be expected to apply to a vanilla NZ$ denominated bond that:

    40.1 is issued by an airport that is neither majority owned by the Crown nor a local authority;

    40.2 is publicly traded;

    40.3 has a qualifying rating of grade A-; and

    40.4 has a remaining term to maturity of five years.

41. In estimating the debt premium, clause 5.4(4) of the Airports IM Determination provides that the Commission will have regard to:

    41.1 bonds issued by an airport (that is not government-owned) with a rating of A-;

    41.2 bonds issued by another entity (that is not government-owned) with a rating of A-;

    41.3 bonds issued by an airport (that is not government-owned) with a rating other than A-;

41.4 bonds issued by another entity (that is not government-owned) with a rating other than A-; and

41.5 bonds issued by government-owned entities.

42. Clause 5.4(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 5.4(4)(a) to (e).

43. Table 4 below shows the debt premium determined by the Commission as at 1 April 2013. This table includes a summary of information on the investment grade rated bonds the Commission considered in determining the debt premium.

44. A spreadsheet showing the calculations for the debt premium (and the risk-free rate) is published on our website.[8]

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

Table 4: Five-year debt premium on an Airport-issued bond rated A-[9]

Determined debt premium on an Airport-issued bond rated A- with a remaining term of 5 years as at 1 April 2013

	Industry	Rating	Remaining Term to Maturity	Debt premium	Comment
Determined Debt Premium	*Airport*	*A-*	*5.0*	*1.54*	*AIAL is an exact match.* *Regard to results of 4(b) and 4(d).*

Subclause	Issuer	Industry	Rating	Remaining Term to Maturity	Debt premium	Comment
4(a)	AIAL[1]	Airport	A-	5.0	1.54	Exact match
4(b)	Telecom[2]	Other	A-	5.0	1.82	
4(c)	WIAL[3]	Airport	BBB+	0.6	1.97	No weight placed on WIAL bond (see paragraph 31).
4(d)	Vector[4]	Other	BBB+	1.5	1.58	5 year debt premium would be higher and an A- bond would be less than this.
	Powerco[5]	Other	BBB	5.0	2.10	A- bond would be less than this.
	Contact[6]	Other	BBB	4.0	2.11	5 year debt premium would be higher and an A- bond would be less than this.
	Telstra[7]	Other	A	4.3	1.78	5 year debt premium and debt premium on a A- bond would be higher than this.
	Fonterra[8]	Other	A+	2.9	1.41	5 year debt premium and debt premium on an A- bond would be higher than this.
4(e)	Genesis[9]	Other	BBB+	5.0	1.84	
	MRP[10]	Other	BBB+	5.0	1.76	
	Transpower[11]	Other	AA-	5.0	1.55	
	Meridian[12]	Other	BBB+	4.0	1.77	
	CIAL[13]	Other	BBB+	6.7	2.03	

Notes on bonds analysed:

1 AIAL 5.47% bond maturing 17/10/2017; 4.73% bond maturing 13/12/2019.
2 Telecom 7.04% bond maturing 22/03/2016; 5.25% bond maturing 25/10/2019.
3 WIAL 7.5% bond maturing 15/11/2013.
4 Vector 7.8% bond maturing 15/10/2014.
5 Powerco 6.74% bond maturing 28/09/2017; 6.31% bond maturing 20/12/2018.
6 Contact Energy 7.855% bond maturing 13/04/2017.
7 Telstra 7.515% bond maturing 11/07/2017.
8 Fonterra 6.83% bond maturing 4/03/2016.
9 Genesis 7.185% bond maturing 15/09/2016; 5.205% bond maturing 1/11/2019.
10 Mighty River Power 7.55% bond maturing 12/10/2016; 5.029% bond maturing 6/03/2019.
11 Transpower 6.595% bond maturing 15/02/2017; 7.19% maturing 12/11/2019.
12 Meridian 7.55% bond maturing 16/03/2017.
13 CIAL 5.15% bond maturing 6/12/2019.

45. Consistent with clauses 5.4(4) and 5.4(5)(a) of the Airports IM Determination, greatest regard has been given to the estimated debt premium on AIAL's bonds. These bonds are issued by an airport, are publicly traded, are rated A- and have a debt premium of 1.54% when linearly interpolated to give a remaining term to maturity of five years.

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

46. The estimated debt premium on the AIAL bonds exactly matches the requirements defined in clause 5.4(3)(d). Therefore, the Commission has determined the debt premium on airport-issued bonds rated A- with a remaining term to maturity of five years to be 1.54% as at 1 April 2013.

47. The Commission has also had regard to the estimated debt premiums on bonds from a range of other issuers, but none of these match the requirements in clause 5.4(3)(d) as well as the AIAL bonds. The estimated debt premiums from these other bonds are not inconsistent with the debt premium on the AIAL bonds when consideration is given to different credit ratings and terms to maturity.