

## **Cost of capital determination for the 2015 information disclosure year for Maui Development Limited [2014] NZCC 2**

**The Commission:** S Begg  
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**Date of determination:** 31 January 2014

## Executive summary

1. This determination specifies weighted average cost of capital (WACC) estimates to apply for the information disclosure year 2015 for Maui Development Limited (Maui).
2. We (the Commission) have determined the following vanilla and post-tax WACCs for Maui's 2015 information disclosure year.
  - 2.1 A mid-point estimate of vanilla WACC<sup>1</sup> of 7.66% for the five year period commencing on the first day of disclosure year 2015 (ie 1 January 2014). The Commission has also determined a vanilla WACC range from 6.85% to 8.47%, where the endpoints are the 25<sup>th</sup> and 75<sup>th</sup> percentile estimates respectively.
  - 2.2 A mid-point estimate of post-tax WACC<sup>2</sup> of 6.87% for the five year period commencing on the first day of disclosure year 2015 (ie 1 January 2014). The Commission has also determined a post-tax WACC range from 6.06% to 7.68%, where the endpoints are the 25<sup>th</sup> and 75<sup>th</sup> percentile estimates respectively.
3. The WACCs are estimated as at 1 January 2014.

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

<sup>2</sup> The post-tax WACC is the 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 31 December 2014) for Maui.<sup>3</sup> The WACC estimates are set pursuant to clauses 2.4.1 to 2.4.7 of the *Gas Transmission Services Input Methodologies Determination 2012* [2012] NZCC 28 (the GTS IM).
5. 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.
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 the regulated services reflect that both the risk-free rate<sup>4</sup> and the debt premium on bonds<sup>5</sup> change over time.
9. Changes in the risk-free rate and debt premium on bonds are illustrated below. Figure 1 shows the changes over time in:
  - 9.1 the five year risk-free rate; and
  - 9.2 the debt premium on bonds rated BBB+ with a term of five years.

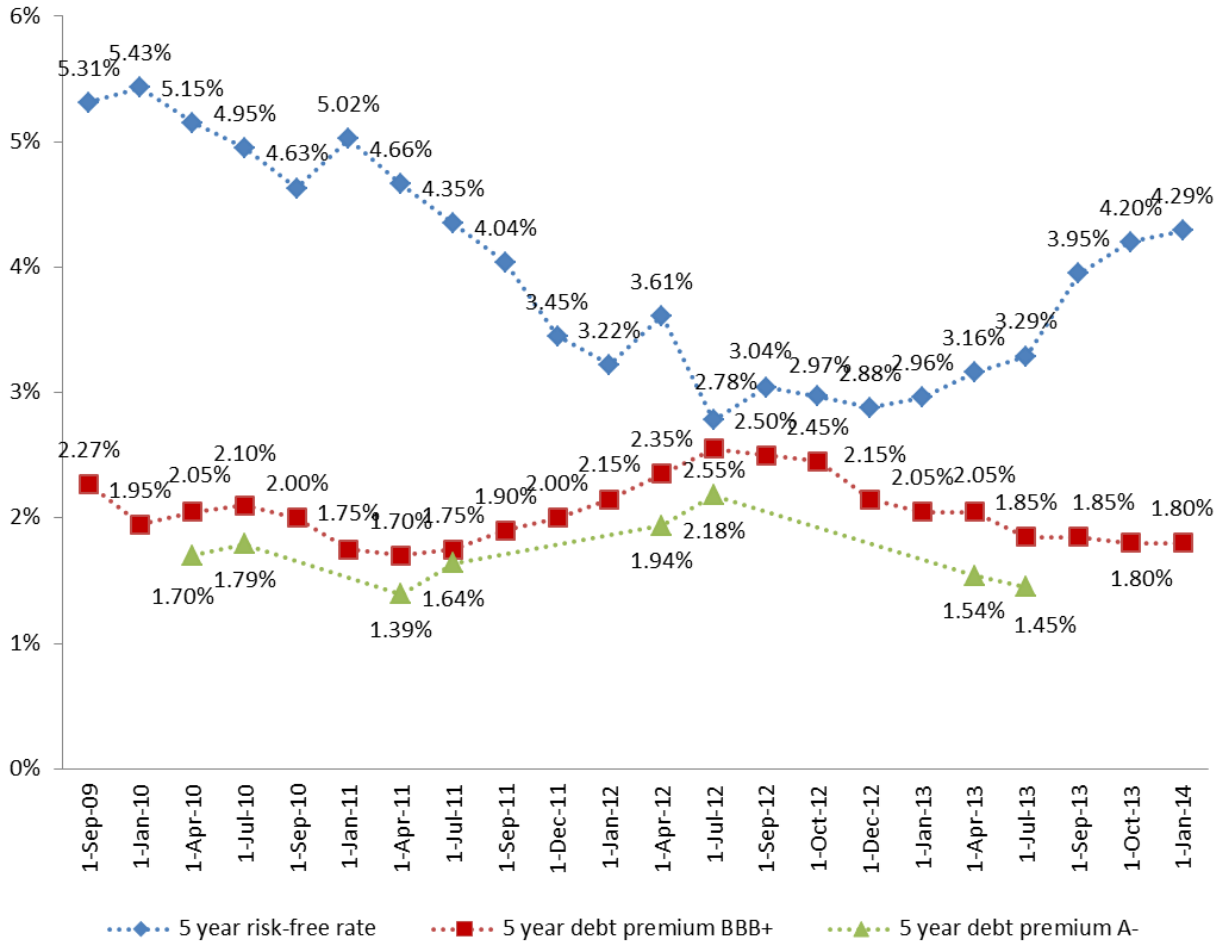
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<sup>3</sup> Consistent with the definition of “disclosure year” in the GTS IM determination, disclosure year 2015 for Maui relates to the 12 month period ending on 31 December 2014. See clause 1.1.4(2) of the GTS IM determination.

<sup>4</sup> 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.

<sup>5</sup> 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. There are differences in the WACCs estimated over time and between services under the various cost of capital input methodologies. This is due to differences in:
  - 10.1 the date of estimation for the WACCs, which results in different estimates of the risk-free rate and debt premium;
  - 10.2 the periods in which the WACCs will apply;
  - 10.3 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);
  - 10.4 the 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 the value of leverage for airports (17%) and for EDBs, GPBs, and Transpower (44%).

### WACC for Maui information disclosure year 2015

11. Under clause 2.4.1 of the GTS IM Determination, the Commission has determined the following vanilla and post-tax WACCs for Maui's 2015 information disclosure year.
- 11.1 A mid-point estimate of vanilla WACC of 7.64% for the five year period commencing on the first day of Maui's disclosure year 2015 (ie 1 January 2014). Under clause 2.4.7, the Commission has also determined a vanilla WACC range from 6.83% to 8.45%, where the endpoints are the 25<sup>th</sup> and 75<sup>th</sup> percentile estimates respectively.
- 11.2 A mid-point estimate of post-tax WACC of 6.85% for the five year period commencing on the first day of Maui's disclosure year 2015 (ie 1 January 2014). Under clause 2.4.7, the Commission has also determined a post-tax WACC range from 6.04% to 7.66%, where the endpoints are the 25<sup>th</sup> and 75<sup>th</sup> percentile estimates respectively.

### Parameters used to estimate the WACC

12. These estimates of vanilla and post-tax 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*

13. The parameters used to estimate the vanilla and post-tax WACCs are summarised in Table 1 below.

**Table 1: Parameters used to calculate WACC**

Risk-free rate (5 years)	4.29%	Debt premium (5 years)	1.80%
Equity beta	0.79	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	0.012
Cost of debt (pre-corporate tax)	6.39%	Cost of equity	8.62%
Vanilla WACC (mid-point)	$6.39\% \times 0.44 + 8.62\% \times (1-0.44) = 7.64\%$		
Post-tax WACC (mid-point)	$6.39\% \times 0.44 \times (1-0.28) + 8.62\% \times (1-0.44) = 6.85\%$		

*Risk-free rate*

14. 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 December 2013 in respect of the 15 December 2017 and 15 March 2019 maturity bonds.
15. 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 4.29% interest rate on a NZ government bond with a five year term to maturity as at 1 January 2014.

*Tax rates*

16. 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*

17. 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 1 above.

*Debt premium*

18. The methodology for determining the debt premium is set out in clause 2.4.4 of the GTS IM Determination.
19. 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:
  - 19.1 is issued by a GPB or an EDB that is neither majority owned by the Crown nor a local authority;
  - 19.2 is publicly traded;
  - 19.3 has a qualifying rating of grade BBB+; and
  - 19.4 has a remaining term to maturity of five years.
20. In estimating the debt premium, clause 2.4.4(4) of the GTS IM Determination provides that the Commission will have regard to:
  - 20.1 bonds issued by a GPB or EDB (that is not government-owned) with a rating of BBB+;
  - 20.2 bonds issued by another entity (that is not government-owned) with a rating of BBB+;
  - 20.3 bonds issued by a GPB or EDB (that is not government-owned) with a rating other than BBB+;

- 20.4 bonds issued by another entity (that is not government-owned) with a rating other than BBB+; and
- 20.5 bonds issued by government-owned entities.
21. 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).
22. Table 2 below shows the debt premium determined by the Commission as at 1 January 2014. This table includes a summary of information on the investment grade rated bonds the Commission considered in determining the debt premium.
23. A spreadsheet showing the calculations for the debt premium (and the risk-free rate) is published on our website.<sup>6</sup>

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<sup>6</sup> See [www.comcom.govt.nz/cost-of-capital](http://www.comcom.govt.nz/cost-of-capital)

**Table 2: Five-year debt premium on an GPB/EDB issued bond rated BBB+<sup>7</sup>**

Determined debt premium on an EDB/GPB-issued bond rated BBB+ with a remaining term of 5 years as at 1 January 2014						
	Industry	Rating	Remaining Term to Maturity	Debt premium	Comment	
<i>Determined Debt Premium</i>						
	<i>EDB / GPB</i>	<i>BBB+</i>	<i>5.0</i>	<i>1.80</i>	<i>Regard to results 4(b), 4(c) and 4(d) Generally consistent with 4(e)</i>	
Subclause	Issuer	Industry	Rating	Remaining Term to Maturity	Debt premium	Comment
4(a)	-	-	-	-	-	No data on applicable bonds.
4(b)	WIAL <sup>1</sup>	Other	BBB+	6.4	1.89	A 5 year debt premium would be lower than this.
4(c)	Powerco <sup>2</sup>	EDB/GDB	BBB	5.0	1.95	BBB+ debt premium would be lower than this.
4(d)	Contact <sup>3</sup>	Other	BBB	5.0	1.92	BBB+ debt premium would be lower than this.
	Telecom <sup>4</sup>	Other	A-	5.0	1.63	BBB+ debt premium would be higher than this.
	AIAL <sup>5</sup>	Other	A-	5.0	1.39	BBB+ debt premium would be higher than this.
	Telstra <sup>6</sup>	Other	A	3.5	1.45	A 5 year debt premium and BBB+ debt premium would be higher than this.
	Fonterra <sup>7</sup>	Other	A+	2.2	0.91	A 5 year debt premium and BBB+ debt premium would be higher than this.
4(e)	Genesis Energy <sup>8</sup>	Other	BBB+	5.0	1.97	
	MRP <sup>9</sup>	Other	BBB+	5.0	1.80	
	Meridian <sup>10</sup>	Other	BBB+	3.2	1.49	
	CIAL <sup>11</sup>	Other	BBB+	5.9	1.72	
	Transpower <sup>12</sup>	Other	AA-	5.0	1.30	

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.
- 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.

24. Consistent with clauses 2.4.4(4) and 2.4.4(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+. However, the June 2020 bond has a term to maturity of 6.4 years, which is more than the five years specified in clause 2.4.4(3)(d).

<sup>7</sup> The five-year debt premiums on the Powerco, Contact, Telecom, AIAL, Genesis, Mighty River Power and Transpower bonds are calculated by linear interpolation with respect to maturity.



25. As at 1 January 2014, the debt premium on the WIAL bond was estimated at 1.89%. Therefore, in considering the range of debt premiums, this estimated debt premium is treated as the maximum debt premium for a bond rated BBB+ with a term of five years.
26. The interpolated five year debt premium on Powerco's bonds is 1.95%. Powerco's bonds are rated BBB, implying the five year debt premium on bonds rated BBB+ would be less than 1.95%.
27. The Commission has also had regard to the estimated debt premium on bonds from a range of other issuers including Contact Energy (1.92%, 5 years, rated BBB), Telecom (1.63%, 5 years, rated A-), Auckland International Airport (AIAL) (1.39%, 5 years, rated A-), Telstra (1.45%, 3.5 years, rated A) and Fonterra (0.91%, 2.2 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 would likely be above the observed estimates of the debt premium for Telecom, AIAL, Telstra and Fonterra.
28. Consistent with the GTS IM, least weight has been given to the estimates of the premiums on the bonds described in subclause 4(e). The estimated debt premium on the Genesis bonds (rated BBB+, 5 years), Mighty River Power bonds (rated BBB+, 5 years), Meridian bond (rated BBB+, 3.2 years), Christchurch International Airport bond (CIAL) (rated BBB+, 5.9 years) and the Transpower bonds (rated AA-, 5 years) were 1.97%, 1.80%, 1.49%, 1.72% and 1.30% respectively.<sup>8</sup>
29. Starting with the estimated debt premium on the WIAL bond, but having regard to the debt premium on a range of other bonds (in particular those described by subclauses 4(c) and 4(d) in the GTS IM), the Commission has determined the debt premium on a publicly traded, GPB/EDB-issued bond, rated BBB+ with a remaining term of five years to be 1.80% as at 1 January 2014.

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<sup>8</sup> We note that the estimated 5-year BBB+ debt premium for MRP (1.80%) and Genesis Energy (1.97%) is equal to or greater than the determined 5-year BBB+ debt premium (1.80%). Normally it would be expected that government ownership would result in a lower debt premium but this may have been offset for Electricity Generators by a potential restructuring of the generation industry.