IRELAND, WALLACE
& Associates Limited
VALUE-BASED FINANCIAL ADVISORS

13 March 2006

Ralph Matthes
Executive Director
The Major Electricity Users' Group
PO Box 8085
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Dear Ralph,

Estimating the Cost of Capital

You have asked us to review the Transpower New Zealand Limited *Submission to the Commerce Commission on the Intention to Declare Control of Transpower*, dated February 2006 and specifically issues related to cost of capital.

1. Introduction

The Commerce Commission will no doubt be aware that Transpower has estimated cost of capital in a number of situations including for pricing of services, economic value (EV) accounting, capitalising of financing charges on capital work in progress, submissions relating to the Commission's intention to declare control, etc.

The Transpower estimates of its weighted average cost of capital (WACC) employ a version of the Brennan-Lally capital asset pricing model (CAPM).

In considering the Transpower estimates with an "efficient WACC" care is required to ensure cost of capital models and their underlying assumptions are appropriate and consistently applied. For instance, there should be consistency in the WACC estimate for pricing services and preparing EV accounts.

We are concerned at the apparent lack of consistency in Transpower's assumptions underlying its estimates of WACC for pricing and preparing EV accounts, specifically the risk free rate and beta.

Further, we consider that the market risk premium employed by Transpower is arguably high.

Finally, when taken together with gearing, the specific tax assumptions and dividend imputation adjustment employed by Transpower result in a further upward bias to the WACC estimate.

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It is our view that the bias introduced by Transpower, for example, in the 7.3% estimate of WACC for 2006-2007 pricing for grid connection exceeds a full 1% or nearly 20% of our assessment of an "efficient WACC".

2. Contrasting Cost of Capital Models and Inputs

Models

Transpower uses an extended version of the simplified Brennan-Lally CAPM adopted by the Commission.

Using comparable inputs the cost of capital calculated by Transpower will exceed that calculated by the Commission largely due to the treatment of taxation and dividend imputation. Transpower, however, in its submission on Commission's Draft Guidelines for Estimating Cost of Capital states (page 5):

> "The version of CAPM that Transpower currently uses to calculate its revenue requirement is the expanded Brennan-Lally model. That said, Transpower is comfortable with the Commission using the simplified Brennan-Lally version of CAPM. The parameters adopted by the Commission are of greater concern than the choice between the extended or simplified Brennan-Lally version of CAPM."

Recognition by Transpower that "… Transpower is comfortable with the Commission adopting the simplified Brennan-Lally model" are profound. Adopting the Commission's investor tax rate of 33% as a substitute for Transpower's rate of 19% and removing the Dividend Imputation Adjustment (a shareholder capital structure concern) reconciles the Transpower approach to the Commission's.

Inputs

Risk Free Rate (Rf)

Transpower employ a Rf rate for Pricing Grid Connection Services (PGCS) of 6.50% (April year) while in the Transpower EV accounts for 2005 use 5.9% (June year). The rate for EV accounts is stated as referenced to the 10 year government stock.[1] However the PGCS rate is simply referenced as a "Risk Free rate" and from an inspection of the historic 10 year rates[2] we are unable to identify any average monthly period when a corresponding "6.5%" rate prevailed.

The Rf actual rates (monthly average) varied from high of 6.16% for March 2005 and a low of 5.7% for February 2006.

We suspect the 6.5% reasonably matches the 1 year rate. If this is correct the change in term basis between EV accounts and PGCS creates material inconsistencies and value and pricing impacts including those derived pursuant to previous calculations.

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[1] Transpower New Zealand Limited Economic Value Statements for year ended 30 June 2005, Note 1.

[2] Reserve Bank of New Zealand, B2 Wholesale Interest Rates (monthly average) http://www.rbnz.govt.nz/statistics/exandint/B2/hb2.xls

We draw your attention to Transpower's recent submissions[3] on the Commission approach to estimating cost of capital:

> "The use of a ten year rate risk free rate … would overcome concerns about the consistency of the risk-free rates used in the CAPM equation." and,
>
> "Use of a one year interest rate would only meet the NPV = 0 test if Transpower itself targeted a one year interest rate exposure, but it does not."

Inclusion of the 10 year Rf rate for PGCS for 2005-6 would result in the Rf rate reducing by 0.34% from 6.5% to 6.16% assuming a March 2005 month rate (April pricing year) is referenced. This is equivalent to a reduction of 0.22% in the WACC estimate under the Commission's simplified Brennan Lally CAPM model assuming nil debt.

Inclusion of the 10 year Rf rate for PGCS for 2006-7 would result in the Rf rate reducing by 0.80% from 6.5% to 5.70% assuming a February 2006 month rate (most recent ex ante rate) is referenced This is equivalent to a reduction of 0.54% in the WACC estimate under the Commission's simplified Brennan Lally CAPM assuming nil debt.

MRP

Transpower uses a MRP of 7.5% in its version of the CAPM model. This is higher than the 7% currently adopted by the Commission in its CAPM model even though the relative model specifications arguably justify, all else being equal, a lower MRP in the Transpower version of the CAPM.

We consider the Commission should retain its estimate of a 7% MRP and would argue that if the Transpower CAPM version was employed a MRP of no more than 7% should be employed.

Employing a MRP of 7.0% would reduce the WACC estimate by 0.125% under the Commission's simplified Brennan Lally CAPM assuming an asset beta of 0.25 and nil debt.

Asset Beta

Transpower for the purpose of PGCS has increased its business risk/asset beta from 0.25 to 0.30 arguing regulatory risk has increased [Transpower Submission, Para 453]. However given the Electricity Commission Grid Investment Test processes for new investments and its setting of pricing methodology the full recovery of the original investment is validated by the EC.

> "The greatest fear facing Transpower is the early write offs of assets, whether it is caused by asset stranding, obsolescence, optimisation or some other factor. To ensure investment takes place, it is necessary to ensure expected write offs are compensated."[4]

Transpower fears are however addressed by Electricity Commission processes. Validated recovery of approved investments through pricing methodology affords Transpower a near risk free status. [Transpower Submission Para 34]

By its operation of the EV account Transpower is able to cushion variability in its cash flows and hence business risk by over collecting revenues and running positive balances in the account.

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[3] Transpower Submission on the Draft Guidelines: The Commerce Commission's Approach to Estimating the Cost of Capital, 2 December 2005, p7.

[4] Transpower Submission on the Draft Guidelines: The Commerce Commission's Approach to Estimating the Cost of Capital, 2 December 2005, p7.

The Transpower assessment of any change in its business risk is incomplete.

Transpower states that the shareholder explicitly takes "optimisation" risk. [Transpower Submission Para122]. By implication the Transpower business risk index (asset beta) already includes this risk and should not be further adjusted. The optimization risk was previously borne by Transpower and incorporated in the beta estimate and continues unchanged.

If there has been a change in Transpower's risk profile then this needs to be considered in context. Transpower legacy assets remain subject to ODV valuation methodology and its inherent risks and New Investment in terms of Part F subject to Indexed Historic Cost (IHC)[5] and related risks. If the legacy assets maintain the 2005 Transpower EV accounts asset beta of 0.25 then generally the New Investment asset beta would be lower reflecting surety of capital recovery Part F provides. There are potential risks associated with capital development but Transpower is seeking to eliminate these by requiring all associated costs to be to the account of customers, regardless of whether or not a project proceeds.

We would challenge the Commission and Transpower to cross check the overall average asset beta by considering each of Transpower's distinctive business parts namely,

- *ODV legacy assets* and contractual relationships [note that for EV purposes two user accounts are maintained by Transpower relate to HVDC and HVAC assets];
- *New investment assets* based on IHC valuation basis in terms of Part F arrangements;
- Excluded arrangements such as *user specific contracts* and their embedded risk sharing arrangements; and
- *New construction capital work in progress* and relevant business risk as reflected in contracting arrangements and the pricing methodology.

Transpower's business contains a spectrum of risks which range from virtual risk free (apart from credit risk) user contracts to higher than average risk which may relate to construction contracts.

An "efficient WACC"

The "efficient standard" principles adopted by the Commission as applied to cost of capital would require the lowest WACC to apply.

Cost of capital rate as applied by the Commission is dependent on financial leverage: WACC increases as a positive function of debt to capital. In MEUG's submission[6] on Cost of Capital Ireland, Wallace & Associates demonstrated by the Unison example that

> "… under the model as specified by the Commission the cost of capital rate increases with leverage. Logically this suggests the efficient cost of capital (lowest cost) is an all equity capital structure or zero leverage. Given the efficient cost of capital should be the benchmark (that is zero leverage) leverage can be ignored. Further, in the absence of debt the asset and equity betas are the same. The Commission's WACC calculation can therefore be simplified."

[5] Refer comments on "in-principle" decision in Transpower Submission to the Commerce Commission on Regulation of ELBs: Valuation of Regulatory Asset Base Decision Paper, Nov. 2005.

[6] www.comcom.govt.nz//Publications/ContentFiles/Documents/MEUG.pdf

For 2006 the least cost WACC for 2006 PGCS based on the Commission's model (and Transpower's inputs) is 6.23% assuming no debt compared to the 6.5% reflecting Transpower's leverage of 48%. The implicit increase in WACC or consumer penalty for Transpower's debt policy is 0.27% (0.35% for PGCS 2007).

The 0.27% margin reflects the operating of the Commissions model and the extra cost incurred by consumers pursuant to Transpower's financial policies. The higher WACC incidence as a consequence of debt is reflected in both the PGCS and EV accounts.

For its pricing and EV and other assessments by the Commission financing policies should be disregarded and the least cost WACC should be used as its base line. Transpower and its shareholder otherwise should be free to set their own financial policies.

3. Summary of Issues and Challenges for the Commission

These include

1. ensuring consistencies of its analysis by use of an appropriate WACC model and related inputs;

2. resolve the potential inconsistency of the 10 year and 1 year Rf rate application for PGCS and EV accounts ("where did the 6.5% come from?");

3. complete the business risk analysis by evaluating asset beta on business segments in light of the Electricity Commission processes;

4. use the Commission WACC model and not Transpower's as Transpower itself suggests;

5. recognised the least cost WACC as its base line rate by ignoring Transpower's financial policies; and

6. recognise the Transpower WACC inputs are biased: Rf by between 0.34% to 0.80%, MRP by at least 0.5% and reinstate the asset beta to 0.25.

4. Overall Impact of changes to Transpower WACC proposals

The accumulated biases in Transpower's WACC calculation is equivalent to an average overstatement by up to 1.1% points. The overstatement is equivalent to up to 20% above a baseline or efficient WACC. The basis for the WACC overstatement is summarised in Table A.

The equity premium is too high by 0.5% (given an asset beta of 0.25 and MRP of 7%); the Rf is too high by an average 0.5% (equal to 0.3% effect on WACC); and, the average penalty to debt financing is 0.3%.

Table 1 **Cost of Capital Adjustment Summary**			
			WACC Effect %
Rf			
	[0.34% to 0.8%], say	0.5%	-0.34
Equity Premium			
MRP	7.5% to 7.0%		
Asset Beta	0.30 to 0.25		
	2.30% to 1.8%		-0.50
"Penalty to Debt"			
	[0.27% to 0.35%], say		-0.30
WACC overstatement up to			**-1.14**

The consequence of an overstated WACC is that the annual EV is underestimated by up to $25 million and the revenue requirement overestimated by up to $37 million (equal to 6.2% of EV statement revenue).[7]

Yours faithfully,

Garth Ireland
Executive Director

[7] The overstatement effects are illustrated based on Operating Capital of $2.216 billion and Operating Revenue of $640 million as disclosed in Transpower Economic Value Statements for 2005. The overstatement of revenue percentage has been calculated after adjusting the revenue for the excess revenue component [37/(640-37) = 6.2%].