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Karen Murray
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Regulation Branch
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PO Box 2351
WELLINGTON

Dear Karen

Re: Cross submission in relation to MEUG's Pan Industry Input Methodologies for cost of capital

Transpower is making this submission in response to the Major Energy Users' Group (MEUG) submission on the Commission's pan industry input methodologies for the weighted average cost of capital (WACC). The MEUG's submission is supported by a report from Ireland, Wallace & Associates Limited (IWA), dated 13 August 2010. MEUG raised three issues that relate to:

- the Commission's 40% gearing assumption;
- Transpower's asset beta; and
- application of the 75th percentile WACC estimate.

Each of these issues is addressed in turn below.

Commission's gearing assumption

The MEUG submission and the IWA report criticise the Commission's use of a 40% gearing assumption in estimating the WACC. The primary concern raised by MEUG and the IWA is that the Commission's approach to estimating the WACC implies that the WACC increases as gearing increases. In these circumstances, IWA argues that it is more appropriate to adopt a gearing assumption of zero, because this assumption minimises the cost of capital. IWA explains its position as follows[1]:

> "We agree there is no precedent for zero leverage. That is hardly surprising. Other regulators assume slopes go down if they are not level. In those circumstances their concern would be that a 'zero leverage' model could set WACC too high. We may have contributed to the Commission being misled, by our earlier focus on zero leverage. It was

[1] Ireland, Wallace & Associates Limited, Report to Major Energy Users' Group, 13 August 2010, paragraph 3.38

> our shorthand way of emphasizing that regulators should assume least cost financing in an efficient market. If B-L [Brennan-Lally] CAPM / cost of capital was being used, the least cost point in that model is at leverage equals zero. If the model worked conventionally so that the line was flat, then leverage choice is immaterial."

IWA expresses concern with the Commission's reasoning in adopting a gearing assumption of 40% in circumstances where there is an anomalous upward-sloping relationship between the Commission's estimate of the WACC and the level of gearing. In particular, IWA comment as follows[2]:

> "There are several unexplained assumptions and potential non-sequiturs in [the Commission's] reasoning. It appears the Draft does assume that zero leverage would underestimate the cost of capital. Why? Secondly, the cost of equity capital is in the Commission's mind lower for zero leverage than any alternative. Why? If true, as the Commission points out elsewhere, why would a firm borrow? The reasoning is incomplete and inconsistent with the Commission's reasoning elsewhere. But it is consistent with support for the proposed counter-intuitive leverage model despite the acknowledgment of its flaws."

Transpower notes that the questions raised by IWA can be answered readily in light of the Commission's assumption that the debt beta is zero. The Commission's formula for de-levering the equity beta[3] is set out below:

$$\beta_a = \beta_e(1\text{-L}) + \beta_d \text{L}$$

> where β_a is the asset beta, β_e is the equity beta, β_d is the debt beta, and L is the leverage (expressed as the value of debt divided by the value of total assets).

However, by assuming that the debt beta is zero, the Commission's estimate of the asset beta will be understated. In their independent report on Transpower's cost of capital, Professor Officer and Dr Bishop commented on this important matter as follows[4]:

> "When the 'Vanilla' WACC is used to estimate the required rate of return for the capital tied up in the asset the asset beta can be estimated as:
>
> $$\beta_A = \beta_E.\ E/V + \beta_D.D/V$$
>
> It should be noted that the asset beta involves both an equity and a debt beta. The [Commission's] Draft Report assumed the beta of debt was zero despite using a BBB+ rated debt security as the surrogate for the company's debt. There is no doubt that credit or debt spreads (the difference between the debt return and a government debt security) are affected by general economic conditions - our analysis of MRP indicates that. The greater the risk of debt the more closely it resembles equity and therefore the more the spread is affected by market conditions and the greater its beta. **The assumption that**

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2 Ireland, Wallace & Associates Limited, Report to Major Energy Users' Group, 13 August 2010, paragraph 3.35.

3 Commerce Commission, Input Methodologies (Electricity Distribution Services) Draft Reasons Paper, June 2010, paragraph 6.9.28.

4 Professor R R Officer and Dr S Bishop, Independent Review of Commerce Commission's WACC Proposals for Transpower, 5 August 2010, page 23.

> **the beta of BBB+ debt is zero is unrealistic and will tend to bias downwards the asset beta and the regulated WACC**" (Transpower's emphasis added).

Officer and Bishop's advice that the debt beta is not zero is consistent with the Commission's advice from its expert panel on WACC, which stated[5]:

> "Within the CAPM framework, debt betas represent the systematic risk in debt returns, which arises from both default risk and maturity risk. Debt betas can affect cost of capital estimates in three ways: first, when converting estimated asset betas to equity betas (levering); second, when converting estimated equity betas of comparators into asset betas (unlevering); and, third, when estimating the firm's cost of debt. The Commission has traditionally assumed that debt betas are zero.
>
> Professors Myers and Franks recommend that the Commission accept the fact that on average debt betas have been positive. Debt betas can be positive for two reasons. First, some interest rate risk is likely to be systematic. Second, default risk and market risk are connected, especially in highly geared companies, and where there is a significant debt premium, the debt beta is unlikely to be zero."

Further consistent advice has also been provided by Associate Professor Lally, explaining that an unlevered cost of capital would under-estimate the actual WACC. The following advice from Associate Professor Lally was also quoted by IWA[6]:

> "When using the simplified Brennan-Lally CAPM in conjunction with the simplified beta gearing model, WACC … rises with leverage and therefore implies that leverage is undesirable. However, the use of debt by companies is typical. This implies that companies are acting irrationally or that there is some deficiency in the models used to estimate WACC. This paper shows that there are some deficiencies in the WACC model currently employed by the Commerce Commission, but these are not readily correctable, leaving the choice between the status quo (which overstates WACC) and **a simple alternative in the form of setting WACC equal to the unlevered cost of capital (which would understate WACC)**" (Transpower's emphasis added).

The MEUG proposition appears to recognise that the "counter-intuitive" relationship between leverage and WACC is a direct result of the Commission's inappropriate estimate of the debt beta. For instance, in response to the Commission's proposal that the debt beta be set to zero, page 4 of the appendix of MEUG's submission states:

> "[The debt beta is] problematic because without a reasonable estimate of debt beta to use in B-L CAPM / cost of capital, leads to the flawed result of cost of capital increasing with leverage."

Transpower agrees with the MEUG in relation to this matter. In practice, however, providing that the Commission's approach to de-levering and re-levering does not involve the adoption of a leverage assumption that differs significantly from the market observed data, the resulting equity beta will be reasonably accurate. In contrast, however, the submission from MEUG and IWA effectively exploits the Commission's zero debt beta assumption by arguing that the lowest point on the Commission's upward sloping curve should be adopted. In

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5 Julian Franks, Martin Lally, Stewart Myers, Recommendations to the New Zealand Commerce Commission on an Appropriate Cost of Capital Methodology, December, 2008, paragraphs 88 and 89.

6 Ireland, Wallace & Associates Limited, Report to Major Energy Users' Group, 13 August 2010, paragraph 3.4.

effect, the submission from MEUG and IWA accepts the erroneous proposition that the cost of capital reduces with leverage. On the basis of this erroneous proposition, MEUG and IWA then argue that a cost of capital assuming zero leverage should be adopted. The Attachment to this letter contains annotations to Chart 1 of IWA's report, to illustrate this point further.

In Transpower's view, the WACC anomalies identified by MEUG and IWA would be best addressed by:

- adopting a more realistic assumption in relation to the debt beta, as proposed by the Commission's WACC expert panel, and so determining an asset beta which is not erroneously under-stated as it is at present; and

- ensuring that proper regard is given to market data, including the actual levels of gearing, and the corresponding equity betas observable for comparable companies.

As noted above, MEUG and IWA propose that the Commission should adopt the unrealistic assumption of zero gearing. In Transpower's view, the Commission is correct in its decision to reject a zero gearing assumption. It is accepted by academics and advisors for the Commission and Transpower that such an approach would lead to an under-estimate of the cost of capital.

Contrary to the position put by MEUG and IWA, the interests of consumers and the purpose of Part 4 of the Commerce Act are best promoted by ensuring that the actual cost of capital is unlikely to be lower than the Commission's estimate. The approach suggested by MEUG and IWA would be contrary to good regulatory practice and would deliver an unacceptably low cost of capital.

Transpower's asset beta

The MEUG submission contends that the Commission has over-estimated Transpower's asset beta, having regard to Transpower's risk profile (compared to the EDBs), and the "immunisation" from stranded asset risk provided to Transpower through the existing settlement and proposed future IPP arrangements. Transpower rejects these contentions, noting the following:

- As explained above, the Commission's assumption of a zero debt beta when "de-levering" observed equity betas to derive an asset beta for Transpower results in the derivation of an asset beta estimate which is erroneously low.

- Transpower has obtained an independent expert opinion from Professor Officer and Dr Bishop. It is worth noting that Professor Officer and Dr Bishop are widely published and highly respected academics and practitioners in the field of cost of capital estimation. Officer and Bishop's independent report estimated an asset beta for Transpower using comparable data from Australia and the US. Officer and Bishop's approach to re-levering asset and equity betas accords with the important principle that a change in leverage does not affect the WACC. Officer and Bishop found an average asset beta (of 0.4) and equity beta (of 0.7), assuming a beta for debt of 0.2 and gearing at 60%. These beta estimates are consistent with those adopted by the Australian Energy Regulator in the electricity transmission sector.

- Transpower obtained an independent report from Harding Katz, which provides a comparison between the New Zealand and Australian arrangements for regulating electricity transmission networks. The analysis presented in that report indicates that Transpower is exposed to substantially greater stranded asset risk than its peers in Australia.

Application of the 75th percentile WACC estimate

MEUG proposes that the Commission could consider setting the cost of capital range at the 75th percentile for all new capital and the 50th percentile for all current and already committed or approved capital expenditure. In response, Transpower notes that:

- The Commission adopts the 75th percentile WACC in recognition of the errors associated with estimating WACC, and the high social costs associated with underestimation of the cost of capital in a regulatory setting.

- Even when WACC is set at the 75th percentile level, there is a one-in-four chance that the regulatory WACC estimate will be below the actual cost of capital. Importantly, this estimation error applies to investors' required returns on both existing and new assets. Investors cannot be expected to continue to provide debt and equity capital to a commercial enterprise where there is a substantial likelihood that the regulatory WACC allowance for the entire enterprise will be below the actual cost of capital.

- The independent expert opinion from Professor Officer and Dr Bishop agreed with the application of a WACC above the 50th percentile level, and noted that the Commission's approach is consistent with views expressed by the Australian Productivity Commission and UK regulators.

Should you have any queries regarding the matters addressed in this letter, please contact me any time.

Yours sincerely

Richard Fletcher
Regulatory Strategy Manager

Cc Alex Sim – Chief Advisor Commerce Commission

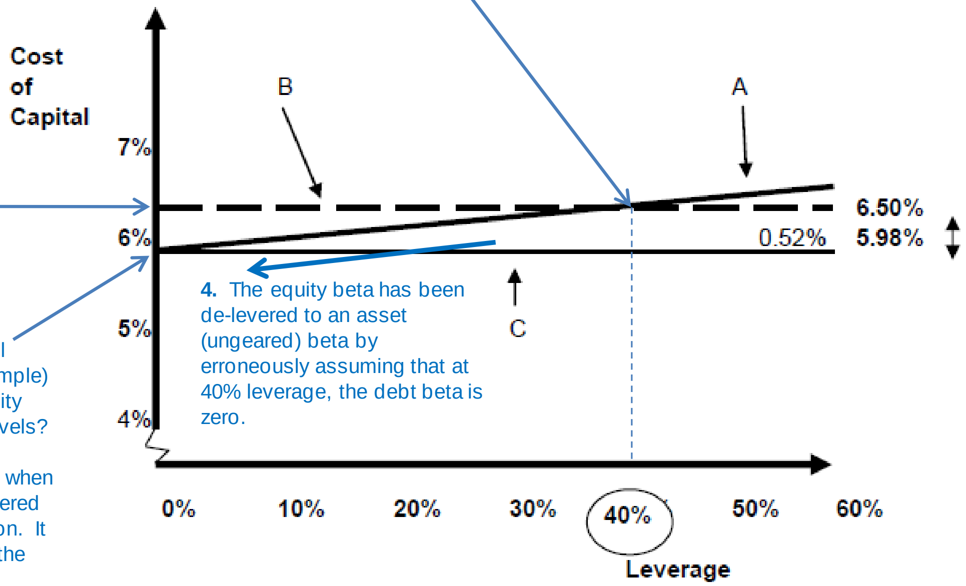
ATTACHMENT: Annotated version of Chart 1 of IWA paper

1. This point represents the Commission's WACC estimate. 40% leverage is consistent with market data used by the Commission to derive its WACC estimate (see Table 6.13 of the Electricity Distribution IM Draft Reasons).

2. In effect, the Commission de-levers market-observed equity betas (which reflect an average leverage of 40%), to derive an asset beta. The Commission then re-levers the asset beta to reflect its preferred leverage assumption of 40%. A debt beta of zero is assumed in all calculations. Given that the leverage assumed by the Commission to calculate re-levered (equity) betas is consistent with market observations (40%), and the assumed debt beta (zero) is applied consistently in the de-levering and re-levering calculations, the debt beta assumption has no impact on the WACC estimate. However, under the assumption of a fixed debt beta of zero:

- if gearing is assumed to be higher than 40%, then the estimated WACC will exceed the market-observed WACC; and
- conversely, at any assumed gearing level below 40%, the estimated WACC will be below the market-observed WACC.

3. It is widely accepted that the WACC should not change as a result of a change in leverage. Therefore, the regulatory WACC estimate cannot be less than the WACC estimate (6.5% in this example) derived from market-observed equity betas and corresponding leverage levels of 40%.



5. How can the ungeared WACC fall *below* the estimate (6.5% in this example) obtained using market-observed equity betas and corresponding leverage levels? Answer: It cannot.
The lower ungeared WACC (derived when the 40% geared equity beta is un-levered using a debt beta of zero) is an illusion. It can only be arrived at in violation of the basic principle that the WACC is unaffected by changes in leverage.