



T R A N S P O W E R

Transpower House, 96 The Terrace,
PO Box 1021, Wellington,
New Zealand
Telephone +64-4-495 7000
Facsimile: +64-4-495 7100
www.transpower.co.nz

Richard Fletcher
Ph. 04 494 7337
Fax 04 495 6942
richard.fletcher@transpower.co.nz

2 December 2009

Murray Reynolds
Economist
Commerce Commission
PO Box 2091
WELLINGTON

Dear Murray

Re: Cost of Capital – Post Workshop Submission

Please find attached Transpower's "post work shop submission" which addresses and expands on some of the points raised at the recent cost of capital conference. We have not reiterated all of the points made in our Part 4 submission to the Commission submitted in August. Unless indicated in this current submission, please assume that previous comments remain valid.

The submission has been prepared with the assistance of Castalia who have acted as our experts advisors on this matter. However, if you have any follow-up questions please contact me richard.fletcher@transpower.co.nz in the first instance.

Yours sincerely

Richard Fletcher
Regulatory Strategy Manager



Commerce Commission - Cost of Capital Workshop

Cross Submission on Behalf of Transpower

December 2, 2009

1 Introduction

The Commerce Commission held its Cost of Capital Workshop on November 12 and 13 and invited interested parties to make submissions on any matter raised during the workshop.

We have been asked by Transpower to respond to four key matters:

- Leverage—industry wide versus firm-specific parameters
- Term of risk-free rate, debt premium, efficient financing costs and Transpower's credit rating
- Beta (systemic risk)—adherence to historical precedents

These issues are addressed in Sections 2 to 4 of this submission.

2 Leverage

The discussion at the Workshop confirmed our preference for the Commerce Commission to use a firm specific leverage ratio to calculate Transpower's Weighted Average Cost of Capital (WACC) based on a forward looking estimate of Transpower's actual leverage over the regulatory period.

We believe that concerns expressed by Commissioner Duigan during the Workshop are not supported by analysis of the underlying practical restraints on increasing leverage. Commissioner Duigan noted that the Brennan-Lally Capital Asset Pricing Model (CAPM) used by the Commission gives a perverse incentive for regulated businesses to move towards increasingly higher levels of leverage if actual leverage is used to calculate the WACC.

We believe there are sound reasons for the use of an actual leverage ratio for Transpower.

2.1 Concerns over leverage incentives are based on model anomaly

The Modigliani-Miller theorem at the heart of the CAPM model indicates that capital structure (i.e. leverage) does not change the cost of capital. All else being equal,

increasing leverage will decrease a firm's credit rating thus increasing the cost of debt and the volatility and risk of equity returns. Concerns about the apparent incentive for regulated firms to increase leverage above prudent levels arise because of an anomaly in the Brennan-Lally CAPM versus the classical CAPM.

The Brennan-Lally form of the model appears to create an opportunity for the firm to achieve a higher regulated rate of return by increasing leverage. However, this model anomaly ignores the real world market constraints, recognised by the Modigliani-Miller formulation, which would preclude a regulated firm moving to imprudent and inappropriate leverage.

At some point, equity holders will perceive that the marginal benefit of increased leverage is outweighed by the increase in the cost of debt and the potentially decreasing and certainly more volatile and higher risk equity returns. Similarly, financiers will not advance debt to a firm unless it has at least an investment grade credit rating. In addition, there are likely to be covenants on existing loans, such that the firm must maintain a particular credit rating.

None of these constraints on increasing leverage are in any way captured within the Brennan-Lally formulation, with the possible exception of the debt premium increasing if the leverage, credit rating and debt premium relationship is properly modelled.

Practical financial market considerations will ensure that a regulated businesses' leverage will remain within a range that equity holders and debt providers believe is optimum and appropriate. Using actual leverage as an input into the model will not change the real constraints on the degree of leverage. The current financial climate, where the business model of highly leveraged infrastructure firms is no longer seen as valid or sustainable, will further guard against any perceived incentive to over-leverage.

2.2 Justification for use of Transpower's actual leverage

We believe there are strong reasons for the Commerce Commission to use Transpower's actual, forward looking leverage over the regulatory period in the calculation of the WACC. This is on the basis that:

- The Commission has no reason to believe that Transpower's actual capital structure is not efficient. The Commission should always consider observed leverage in the market as a better predictor of the optimum rather than some hypothetical "optimum" leverage, unless it can clearly identify market failures which would lead to inefficient outcomes
- Transpower is a single company in a single industry segment with a unique regulatory framework.

Efficient capital structure

We are not aware of any indicator which would suggest that Transpower has an inefficient capital structure. Its forward looking leverage over the proposed regulatory period will approach 55 percent and its predicted credit rating will remain stable at AA, despite a projected significant increase in capital expenditure.

In other jurisdictions where regulators use a benchmark leverage, the benchmark tends to be based on the capital structure required to retain a credit rating of at least investment grade (BBB) over at least the regulatory period. Usually, regulators aim to be a notch or two above investment grade to ensure that the regulated business has financial flexibility and is sufficiently robust to withstand a degree of financial stress. Transpower's capital structure would meet that test.

The Australian Energy Regulator (AER) has undertaken empirical studies of the average leverage for selected Australian comparators. The AER acknowledged the practical difficulties in calculating actual leverage for a business, including:

- establishing market values for debt as debt is not frequently traded and interest rate volatility may cause large variations in the market value of debt
- adjusting for complex corporate structures ('double leveraging') and complex debt instruments such as stapled securities and loan notes
- establishing market values for equity where the business is unlisted
- treatment of cash or cash equivalents (net debt versus gross debt).

Nevertheless, the AER found average leverage in the range of 62.1 percent to 65.4 percent over the period 2002 to 2007¹. On this basis it determined that the existing regulatory leverage of 60 percent was supported by available recent empirical evidence.

While Australia and New Zealand are not directly comparable, the AER analysis demonstrates that Transpower's forward looking leverage of 55 percent is close to the actual level of a range of Australian comparators.

In the absence of any evidence that Transpower's actual leverage is inefficient, we are not able to see any arguments for coming up with an alternative "efficient" leverage.

Single transmission business

Transpower is, self evidently, the single electricity transmission network owner and operator in New Zealand. In other countries, such as Australia, transmission businesses are generally considered as a group with distribution lines businesses. This would not be appropriate for Transpower. It has a substantially different risk profile to distribution lines businesses as:

- It is materially larger than the largest distribution lines company in New Zealand and an order of magnitude larger than the average distribution lines business
- It has a unique regulatory framework that is distinctly different to that applying to distribution lines businesses having for example an extensive Electricity Commission approval process for major transmission investment.

Note that in Australia, the regulatory framework that applies to electricity and gas transmission and distribution businesses is largely identical.

One impact of its materially larger size is that Transpower accesses the bond markets for debt funding to a greater extent than the distribution businesses.

3 Term of Risk Free Rate and Debt Premium

Transpower considers that the Commission should adopt a ten-year term for the risk free rate and debt premium. This will appropriately compensate regulated businesses for the prudent and efficient debt management costs they incur that are not recognised or compensated for by CAPM framework.

¹ Australian Energy Regulator, *Electricity transmission and distribution network service providers – Review of weighted average cost of capital (WACC) parameters*, May 2009, table 5.3

The key argument against the adoption of a ten year term is that it violates the NPV=0 principle. We show that this is not correct if re-financing risk is appropriately priced. In fact, use of a shorter term for the risk free rate, such as five years, to match the regulatory period breaches the NPV=0 principle as it under compensates prudent and efficient network businesses.

The Australian Energy Regulator (AER) has, in its recent review of weighted average cost of capital (WACC) parameters, re-affirmed the use of the ten year term assumption for Australian electricity and gas businesses². It did so “...to ensure that refinancing risk is not increased for the sector”³.

In this section we also discuss the treatment of efficient financing costs and Transpower’s credit rating.

3.1 CAPM doesn’t compensate businesses for re-financing risk

In the CAPM framework, debt markets are infinitely deep, liquid and homogeneous and debt can be raised instantly with no transaction costs. Consequently there is no re-financing risk, as markets are always liquid, and indeed there is no need for businesses to have debt portfolio management strategies or even a treasury function.

However, in the real world, the regulatory compact between policy makers and regulated businesses is that regulated businesses should be allowed the opportunity to recover their efficient costs of providing regulated services. It is normal commercial practice for businesses, **both regulated and unregulated**, with long lived assets to have a long term debt portfolio that, if possible, matches their asset lives. As an example of the practices of regulated Australian electricity and gas network owners and operators:

- APA Group

“The term structure of these new debt facilities is consistent with APA’s strategy to further extend the maturity of the debt portfolio to more reflect the long term nature of the asset profile.... At 30 June 2009, the average loan maturity for the Envestra group was just over nine years”⁴

- Envestra

“Envestra’s financing strategy for many years has been to extend the duration of its debt portfolio.”⁵

- Spark Infrastructure—the company reports that over 90 percent of its debt will mature in more than 5 years⁶.

The Commission must take this as evidence of a prudent and efficient debt management strategy and compensate regulated businesses for the costs of such a strategy.

There is explicit acknowledgement of the need to manage re-financing risk in regulated infrastructure businesses. Consider the following quotations:

² Australian Energy Regulator, *Electricity transmission and distribution network service providers – Review of weighted average cost of capital (WACC) parameters*, May 2009, section 6.5.2

³ AER, op. Cit., May 2009, pp.168

⁴ APA Group, *Annual Report 09*, pp. 38

⁵ Envestra, *Annual Report 2009*, pp. 7

⁶ Spark Infrastructure, *Annual Report 2009*, pp. 40 (total debt \$15.1b, maturing in more than five years \$13.7b)

“Envestra’s financing strategy for many years has been to extend the duration of its debt portfolio, aim to have refinancing in place at least six months prior to maturity, and set a limit of 15% of the debt portfolio to mature in any one year. At 30 June 2009, the average loan maturity for the Envestra group was just over nine years⁷.”

Businesses with long-lived assets tend to seek the longest-term debt to reduce or eliminate re-financing risk. Re-financing risk is best managed by:

- Having a preference for the longest term debt available to provide funding certainty (albeit with some acknowledgment of the higher cost of such debt)
- Having a range of debt maturities such that not too much debt matures in any given year (typically no more than 15 percent to 25 percent)
- Having a variety of debt instruments in a variety of markets (local and international)
- Re-financing ahead of debt maturity and having standby, short term facilities.

Refinancing risk is real but the risk and the cost are not considered in any way in the CAPM framework.

As an example of the magnitude of re-financing risk, in late 2007 a number of home mortgage originators in Australia (RAMS, Aussie Home Loans and Wizard Home Loans) collapsed, not because they couldn’t service their debt, but because the Global Financial Crisis had dried up liquidity in the United States commercial paper market and they could not re-finance their debt. Essentially, their business model was to lend long (to Australian households) and borrow short (in the United States commercial paper market)—demonstrating the risks of not matching debt maturities with asset lives. These entities were absorbed in the banking sector, which did not rely on a single market for funds.

As the CAPM framework does not recognise the cost of re-financing risk, use of a term for the risk free rate, such as five years, to match the regulatory period clearly breaches the NPV=0 principle as it under compensates prudent and efficient regulated businesses.

Businesses manage interest rate risk separately

The tendency of regulated businesses to take on longer dated debt does not mean that they take interest rate risk as a result of the potential mismatch between the regulatory period and the debt term. Businesses manage the interest rate risk separately by hedging against movements in base rates away from the risk free rate assumed by the regulator at the time of a determination, that is they take out fixed rate debt and swap to a floating rate.

There are three points to note on this hedging strategy:

- The term premium of ten year debt over five year debt cannot be hedged away
- Hedging comes at a cost
- Swapping reduces the effective term of the fixed rate debt⁸⁹.

⁷ Envestra, *Annual Report 2009*, pp. 7

⁸ Australian Energy Regulatory, *Electricity transmission and distribution network service providers – Review of weighted average cost of capital (WACC) parameters*, May 2009, tables 6.3 and 6.4

⁹ More correctly, swapping changes the effective interest rate profile of the debt.

The term debt premium and hedging costs are legitimate debt portfolio management costs for a regulated business and they should be allowed to recover these costs.

3.2 A longer debt term doesn't violate the NPV=0 principle

The key argument against a ten year term for the risk free rate, debt term and debt premium advanced by Professor Lally at the Workshop was that the ten year term violates the NPV=0 principle.

We suggest that this is incorrect for at least three reasons:

- The CAPM framework does not price re-financing risk and in the absence of a methodology for costing re-financing risk and adding it to the cash flows of a regulated business, use of a ten year term is arguably a sound proxy for the cost of re-financing risk
- If the Commission continues use of a five-year rate, then debt terms for regulated businesses are likely to decrease. As regulated businesses now face additional re-financing risk when compared to unregulated comparators, the Commission, logically, following the principle of conservation of risk, should add a “re-financing risk factor” to the asset and thus equity beta for regulated businesses. If this is not done, then the NPV=0 principle is violated as businesses are now under compensated for the cost of re-financing risk
- Given that interest rate variability and predicability is a random walk, it is not obvious that the NPV to infinity of a sequence of ten-year rates would not converge on the same value as a sequence of equivalent five-year rates.

The cost of re-financing risk

In the absence of a methodology for pricing re-financing risk, the best proxy for its cost would be gained by examining commercial debt portfolio management practices for regulated and unregulated businesses with long lived assets.

It is normal commercial practice for both regulated and unregulated businesses with long lived-assets to attempt to match the term of their debt with asset lives. This suggests that the additional premium resulting from this strategy must be assessed by these businesses as less than or equal to the true cost of re-financing risk.

It is clear, however, that this preference for long-term debt is balanced by a number of competing objectives:

- The nature of products available in the various debt markets—ten or perhaps up to fifteen years is the longest term debt generally available in the various markets (Transpower has historically issued debt out to fifteen years)
- The need to spread debt maturities to lower re-financing risk, particularly for lumpy capital expenditure
- The need to minimise the cost of debt.

The AER, based on confidential information from a number of Australian regulated electricity and gas network businesses, assessed the weighted average term of their debt portfolios at issuance to be 10.14 years¹⁰. In the absence of any counterfactual, the Commission is entitled to assume that the tendency towards debt terms longer than the

¹⁰ Australian Energy Regulatory, *Electricity transmission and distribution network service providers – Review of weighted average cost of capital (WACC) parameters*, May 2009, tables 6.1 and 6.2

regulatory period is efficient and the cost, thus, of re-financing risk is appropriately proxied by the term premium paid by these businesses.

3.3 Efficient financing costs

The Commission's view, expressed at the Workshop appears to be that the direct cost of debt (that is interest expense) will be calculated on a benchmark basis; the risk free rate plus a benchmark debt premium derived from empirical evidence in the New Zealand bond market. However debt issuance costs will be recovered by an allowance for actual costs within the regulated cash flows.

This is inconsistent and will lead to an under-recovery of costs by the regulated businesses when debt is raised in other than the New Zealand bond market. In other markets the all up cost of debt may be similar but the proportion between interest expense and debt issuance costs may be different. This is particularly acute for the small lines businesses which raise debt in private markets with an interest premium but with lower issuance costs.

It will also result in complications for Transpower when overseas debt is raised as it may not be clear which components of interest, issuance, and hedging costs (both currency and interest rate hedging) are recovered in the WACC benchmark debt premium and which are included in the debt issuance allowance.

We suggest that the Commission's methodology involve the calculation of the various debt issuance costs for a benchmark New Zealand bond issue of efficient size. That cost should be applied to the number of such bond issues required to rollover the debt share of the regulatory asset base using actual forward looking leverage. The allowance for the benchmark bond issue should be based on the direct costs of raising debt, such as underwriting fees, legal fees and credit rating fees. The costs of standby facilities to support liquidity should also be included.

This approach will avoid the mismatch between benchmark debt costs based on the New Zealand bond market and the actual issuance costs approach proposed by the Commission—as those actual issuance costs may relate to other debt markets.

3.4 Transpower's Credit Rating

A minor point arose during the Workshop when Dr Lally commented that Transpower's credit rating should not be used in considerations on capital structure as it reflected Government ownership and was thus an inappropriate comparator.

Transpower's standalone rating, without Government ownership has been assessed as A, rather than the public rating of AA with Government ownership.

We also note that the very recent debt default events in Dubai will almost certainly mean that markets will place a greater emphasis on standalone ratings for businesses such as Transpower which have government ownership but no explicit government guarantee.

4 Beta Estimation

In a footnote on the Cost of Capital – Straw Person Example paper handed out at the Workshop, the Commission appears to ask businesses to provide evidence supporting the Commission's existing policy of adjusting asset betas by 0.2 to reflect differences in regulatory regimes between the United States and other countries, such as New Zealand.

The adjustment stems from analysis by the Commission in 2004¹¹ of asset betas in comparable United States and United Kingdom businesses, given the paucity of listed New Zealand comparators. The reasoning for the adjustment was that United States regulated businesses were subject to rate of return regulation with annual resets and thus should have a lower sensitivity to unexpected changes in economic circumstances than businesses with a three to five year regulatory reset process.

Rate of return regulation contains few, if any, financial incentives when compared to United Kingdom, Australian and New Zealand incentive based approaches where efficiency gains are shared between the regulated business and customers. This would also contribute to an increase in beta for New Zealand regulated businesses.

We would suggest that, in contrast to United States rate of return regulation, which has been well established over many decades, the Commission's proposed 'Input Methodologies', while similar to United Kingdom and Australian regulatory practices does not have a long and established history and precedent and could be considered riskier.

We suggest thus, that such an adjustment to beta is justified as there are difference between the United States regulatory regime and that of New Zealand and therefore New Zealand asset betas would reasonably be expected to be higher than comparable firms or industries in the United States to compensate for the increased regulatory risk from an incentive based framework with longer price reset intervals.

Furthermore we suggest that on the grounds of regulatory consistency, the Commission should not depart from WACC parameter values unless there are sound reasons to do so. The objective of the Input Methodologies approach is to enable regulated businesses to rely on consistent approaches to regulatory issues so that they can reliably predict regulatory outcomes.

Given the wide discretion of the Commission and the arithmetical and methodological variation involved in the calculation of the various WACC parameters, this objective would not be met if the Commission arrived at different view of parameters without sound reasoning and evidence.

Note that in Australia, the National Electricity and Gas Rules require the regulator to have "persuasive evidence" before adopting a value for a WACC parameter that differs from a previous value.

The need for regulatory consistency means that a regulator should only change a previously adopted parameter value where it can be demonstrated that the new value is preferable and not just that it represents a different exercise of regulatory discretion.

¹¹ Commerce Commission, *Gas Control Inquiry Final Report*, November 2004, paras 9.69 and 9.70