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SUBMISSION ON: WEIGHTED AVERAGE COST OF CAPITAL DISCUSSION PAPER

Envestra welcomes the opportunity to provide comment on the Discussion Paper prepared by the Allen Consulting Group regarding the weighted average cost of capital methodology that the Economic Regulation Authority will have regard to when assessing Western Power Corporation's access arrangement for the South West Interconnected System. Envestra is providing comment on the Discussion Paper because the weighted average cost of capital is an important component of the regulated revenue stream common across regulated industries.

The Discussion Paper prepared by Allen Consulting Group is a well-written document that recommends the generally accepted framework for calculating the weighted average cost of capital ('WACC'). However, some of the analysis and justifications used to support conclusions are not sufficiently robust and fail to take account of effects of regulatory risk.

Given the negative economy wide effects of under-investment in the gas and electricity distribution industries, the long-lived nature of these assets and the inherent imprecision of the CAPM it is Envestra's view that the best way serve the long-term interests of consumers is for Regulators to take a pragmatic view on each of the components of the WACC provide a rate of return that is towards the upper end of the reasonable range.

Our detailed comments on the Discussion Paper are provided in Attachment A. Please call me on (08) 8227 1500 discuss any aspects of this submission.

Yours sincerely

Andrew Staniford
Commercial Manager

ATTACHMENT A

1 The Effects of Regulatory Risk[1]

The Discussion Paper does not acknowledge, or incorporate an allowance, for the existence of regulatory risk. The standard version of the CAPM relates the expected return on a stock ($E(R_i)$) to the expected market return ($E(MRP_m)$) a risk-free rate (R_f) and the stock's beta (β_i). The CAPM is usually presented as follows:

$$E(R_i) = R_f + \beta_i[E(MRP_m)]$$

The CAPM represents a forward-looking model of security pricing (expected return) under conditions of symmetry in outcomes (being based on mean-variance analysis of market portfolios). It thus suggests an expected, but not guaranteed, return appropriate to the level of systematic risk taken on by the well-diversified investor. Alternatively, the cost of capital is the expected rate of return in capital markets on alternative investments of equivalent risk. Thus the level of risk is intimately related to investors' required rate of return, however not all risks matter equally to investors[2]. The use of CAPM in determining the appropriate return on capital presupposes two important ideas:

i) All risks that are relevant to the investor are incorporated into the market's estimate of required return; and

ii) Risks are symmetric in their impact (or that a symmetries will cancel out over a large portfolio).

To the extent that risks from economic regulation (i.e. regulatory risks) are not the customary in the overall equities market, it may be argued that regulatory risks will not be incorporated into the market's estimate of the required return. Regulatory risk would thus be a form of non-diversifiable risk that would need to be compensated for in addition to market-determined returns on an asset.

Regulatory risks provide examples of asymmetric risks in the following forms:

- Disallowance of capital expenditure to be incorporated into the regulatory asset base;
- A disallowance of certain costs incurred in the operation of the business; or
- An absence of symmetry in the distribution of expected revenues, due to the imposition of price ceilings on the outputs of the regulated firm.

Each of these examples is asymmetric in that the regulated firm only faces a downside risk from the application of regulation (i.e. its returns will be reduced).

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[1] Envestra acknowledges the assistance of Ron McIver, Lecturer in Finance, School of International Business, University of South Australia, in preparing the regulatory risk section of the submission.

[2] Kolbe L A, Myers S C, *Regulatory Risk: Economic Principles and Applications to Natural Gas Pipelines and Other Industries*, Kluwer Academic Publishers, 1993, pp 129

1.1 Regulatory risk and its impact on returns

To appreciate the impact of regulatory risk on the expected return to equity investors in the regulated firm assume that the return on capital expenditures is initially set to be in line with the CAPM determined required return ($E(R_j)^{CAPM}$).

In the absence of any disallowance of capital expenditure incurred by the firm, investors would expect to receive the regulated return $E(R_j)^{regulation}$ equal to $E(R_j)^{CAPM}$ in the future. However, if there is a non-zero probability that any component of capital is disallowed inclusion in the regulatory capital base, and under the assumption that funds invested are recovered, the expected return to equity investors become as follows:

$$E(r_i)^{regualtion} = \left(\frac{K^{REG}}{K^{INVESTED}}\right) \times E(r_i)^{CAPM} + \left(\frac{K^{DIS}}{K^{INVESTED}}\right) \times 0\%$$

Conversely, where there is no recovery of funds invested, the return on investment will equate to:

$$E(r_i)^{regualtion} = \left(\frac{K^{REG}}{K^{INVESTED}}\right) \times E(r_i)^{CAPM} + \left(\frac{K^{DIS}}{K^{INVESTED}}\right) \times -100\%$$

Partial recovery of funds invested would see an expected return between these two extremes. Here K^{DIS} represents disallowed investment, $K^{INVESTED}$ the total funds invested and K^{REG} the regulatory capital base. In each case the disallowance of capital invested by the firm reduces the return on equity below the rate implied by the CAPM ($E(R_j)^{regulation} < E(R_j)^{CAPM}$). On any new investment, the risk of disallowance is asymmetric and an assessment of the size of K^{DIS} will be made according to the likely probability of disallowance of the planned capital expenditure.

Moreover, the CAPM ($E(R_j)^{regulation} < E(R_j)^{CAPM}$ will occur Non-Capital Costs, that satisfy prudency test in section 8.37 of the Access Code, are not allowed to be passed through into Reference Tariffs. Two recent examples of this are the GST Pass Through and ESC Licence Fees. As Contractors, employees, debt providers *etc* all receive their payments before equity holders any adverse (net) Non-Capital Cost outcomes are borne entirely by equity holders, thus reducing their returns below the regulator determined returns.

Regulatory risk is a special class of risk that must be recognised when setting the cost of capital[3]. The presence of regulatory risk thus requires the setting of a target return under regulation that is higher than the required return implied by CAPM to compensate investors for the risk of losses due to the regulatory framework. Inadequate regulatory rates of return will produce sub-optimal investment outcomes where regulated businesses will only invest when there is no material downside risk to the long-term detriment of consumers and economic growth.

[3] Kolbe L A, Myers S C, *Regulatory Risk: Economic Principles and Applications to Natural Gas Pipelines and Other Industries*, Kluwer Academic Publishers, 1993, pp 3-9

2 Inconsistent use of Historical Information

A particularly troubling aspect of the Discussion Paper is the inconsistent use of historical data. On the one hand historical stock market data is appropriate for estimating the Equity Beta value but on the other it is claimed that historical stock market data may over-estimate the Market Risk Premium. This is unreasonable because the data used to generate the Equity Beta estimate is a subset of the data used to calculate the Market Risk Premium. Moreover, some of the arguments used to support the need to adjust the empirical estimate of the Market Risk Premium downwards are unfounded, anecdotal and unreasonably subjective. For example:

> *"In fact, one reason for the rising realised market risk premium is precisely that the forward-looking market risk premium (and therefore the equity discount rate) has been falling."* (Discussion Paper page 25)

The evidence does not support this comment. As company profits rise so does the value of the company.

> *"Analysts are anticipating that profits will beat forecasts at many Australian companies and, as a result, are predicting that share prices will keep rising. "*[4]

Company profits have risen strongly in recent times, for example in 1996/97 total Australian company gross operating profits were $48.6 billion and in 2001/02 that amount had risen to $76.3 billion[5]. *Ceteris paribus* it seems much more plausible that the increase in the realised Market Risk Premium is a result of increased earnings/profits and not due to a theorised reduction in the equity discount rate.

> *"…it is apparent that Australia's relatively large historically realised market risk premium, like that of the US, is a result of past successes that may not be repeated."* (Discussion Paper page 27)

No evidence has been provided to support this proposition. Indeed articles in the financial press[6] contradict the above statement.

> *"Most analysts were not anticipating the 20 per cent-plus returns of 2004 - but none would rule it out, either, as 2005 started with a bang…."*

For the Economic Regulation Authority to place any weight on the views contained in the Discussion Paper about a declining Market Risk Premium it is imperative that the Allen Consulting Group provide the empirical evidence to support its view. Long-term averages of Market Risk Premium provide the best estimate for the purposes of calculating the regulatory WACC. Long-term averages smooth out the cyclical nature of stock market returns thus matching the returns expected from long-lived assets used in gas and electricity distribution. The downward adjustments to the long-term historical average Market Risk Premium advocated in the Discussion Paper downwardly bias the regulatory WACC. The empirical evidence supports a Market Risk Premium closer to 7% than 6%. The Economic Regulation

[4] The Australian, *Profits of boom,* by Geoff Elliott, 28 January 2005
[5] Company Profits, Australia (5651.0).
[6] The Australian, *Profits of boom,* by Geoff Elliott, 28 January 2005

Authority must justify more rigorously why the estimate consistent with empirical evidence should not be used in the WACC.

3 Representative of Investor Behaviour

The extensive discussion about the derivation of a value for Equity Beta in section 6.4 of the Discussion Paper is very theoretical and technical. Our concerns are that the implied precision of the beta estimates from using weekly data are illusory. Moreover, there is no evidence presented to support the implicit assumption that the shorter sample period reflects investor behaviour. This is a crucial assumption that needs to be addressed.

The statistical imprecision of beta estimates is widely acknowledged and is an important factor for consideration by the Regulator in determining the Equity Beta value that is ultimately used in the WACC. Pragmatism is required when determining the value of Equity Beta for regulatory purposes due to the potential for large negative economy wide effects of under-investment in the gas and electricity distribution industries.