FINAL REPORT

Response to ACCC draft decision on EnergyAustralia

Comments on weighted average cost of capital

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1   Introduction

The Network Economics Consulting Group is pleased to respond to the Australian Competition and Consumer Commission's (ACCC's) draft decision on EnergyAustralia's transmission network revenue caps[1] on behalf of EnergyAustralia. Our focus is on Chapter 6 of the draft decision, which relates to the Weighted Average Cost of Capital (WACC).

In this submission, we wish to focus on the ACCC's approach to specific parameter values. These are:

* the risk free rate;

* the debt margin;

* debt issuance costs; and

* beta.

This limited focus reflects the fact that the WACC model used by the ACCC and a number of the parameters values are identical or similar to those initially proposed by EnergyAustralia.

The WACC in the draft decision, while similar to previous decisions by the ACCC in electricity transmission, is still considerably lower than that implicit in comparable decisions adopted by overseas regulators. Figure 1 sets out the margin of the vanilla WACC over the prevailing 10 year Government bond for various electricity transmission decisions, with these all reflecting the outcome that would have occurred had the relevant overseas regulator adopted a market risk premium of 6%. In our opinion this is the most credible approach to comparing international WACC allowances.[2]

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[1]   Australian Competition & Consumer Commission, Draft Decision NSW and ACT Transmission Network Revenue Caps – EnergyAustralia2004/05-2008/09, 28 April 2004.

[2]   Note that while this approach to comparing regulatory decisions has been criticised by the ACCC and its consultants, the Allen Consulting Group, neither party has provided a superior approach to analysing WACC allowances in regulatory decisions. The only alternative provided by the ACCC was the comparison of total returns. However, this approach is a more restrictive measure as it assumes that investors expect the real exchange rate to remain constant and that there is no country risk premia embedded in risk free rates. For further details see NECG's submission to the Productivity Commission Review of the Gas Code in March 2004 (DR97).

Figure 1   Comparison of electricity transmission decisions
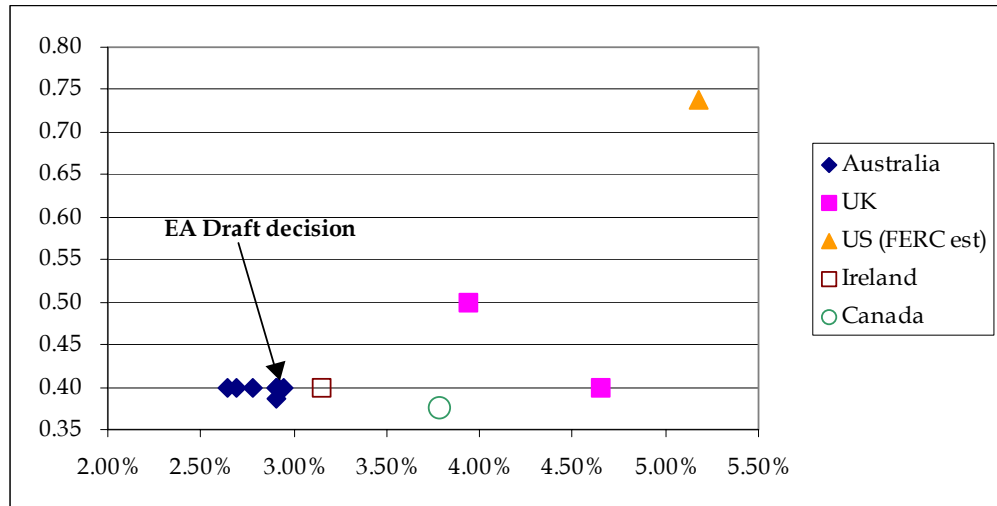
Source: NECG submission to the Productivity Commission, September 2003 (Number 56). ACCC decisions since this date have been added (Murraylink, Transend, Transgrid/EnergyAustralia).

In this submission we have restricted our comments to material included in the Commission's draft decision. Should the Commission wish to significantly change its approach on particular variables prior to a final decision,[3] we believe that EnergyAustralia and interested parties should be given an opportunity to comment prior to the decision being finalised.

The remainder of this paper is structured as follows:

- section 2 considers the bond maturity for the risk free rate;

- section 3 focuses on the debt margin;

- section 4 considers debt issuance costs;

- section 5 looks at beta; and

- section 6 sets out our concluding thoughts.

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[3]   For example, if the ACCC finalises its revisions to its Draft Regulatory Principles and chooses to incorporate features of these changes into the final decision.

2   Bond maturity for the risk free rate

NECG supports the ACCC's decision to estimate the risk free rate in the WACC from Commonwealth bonds of 10-year maturity.

The bond maturity for the risk free rate has been an area of significant dispute between the ACCC and regulated businesses for the past six years. This is also an area where the practice of the ACCC has been at odds with that of all other domestic regulators and the overwhelming majority of international regulators. Given this background, the Australian Competition Tribunal's decision on GasNet provides important regulatory precedent.

While the processes involved under the National Gas Code differ from the National Electricity Code there are important implications in the Tribunal's decision for determining the WACC for an electricity transmission provider.

First, the Tribunal accepted that adoption of the 10-year bond was consistent with the requirements of the Capital Asset Pricing Model (CAPM).

In its findings, the Tribunal concluded that GasNet had used the CAPM model correctly, stating that use of a ten year Commonwealth bond rate to determine a rate of return on equity under s8.30 of the Gas Code "was a correct use of the CAPM and in accordance with the conventional use of a ten year bond by economists and regulators where the life of the asset approximated 30 years."[4]

Second, the Tribunal argued that the ACCC's approach of aiming to adopt a "superior alternative" to GasNet's CAPM was flawed.[5]

The Tribunal argued that the ACCC's practice of adopting different bond maturities for the risk free rate and the market risk premium was inconsistent with the mathematical logic underlying the CAPM formula, and by so doing the ACCC was not applying the CAPM. It stated:

> …… In truth and reality, the use of different values for a risk free rate in the working out of a Rate of Return by the CAPM formula is neither true to the formula nor a conventional use of the CAPM. It is the use of another model based on the CAPM with adjustments made on a pragmatic basis to achieve an outcome, which reflects an attempt to modify the model to one, which operates by reference to the regulatory period of five years. The CAPM is not a model, which is intended to operate in this

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[4]   Australian Competition Tribunal, Application by GasNet Australia (Operations) Pty Ltd [2003] ACompT 6, paragraph 48.

[5]   Note this finding applies regardless of whether the role of the ACCC was to assess the proposed WACC or whether it had scope to determine a superior alternative.

way. The timescales are dictated by the relevant underlying facts in each case and for present purposes those include the life of the assets and the term of the investment.[6]

While the ACCC notes that it accepts the "legal precedent" of the decision, and states it will be "guided by this finding in future regulatory decisions", it still argues that the most appropriate approach is to match the bond maturity in the WACC with the length of the regulatory period. In its draft decision on EnergyAustralia it states: [7]

> The WACC is calculated at each revenue reset and is maintained throughout the regulatory period. Hence the term of the risk-free interest rate, which is a component of the WACC, should match the length of the regulatory period.

It is simply a fact that the WACC is calculated at each revenue reset determination, and that the WACC is maintained throughout the regulatory period. However, these facts by themselves provide little if any insight into the financing structures that are optimal for the regulated entity. Similarly, the ACCC states:[8]

> In previous revenue cap decisions, the ACCC has used government bond yields with terms matching the regulatory period as the proxy risk-free rate because:
>
> - the regulatory framework seeks to provide an efficient return on the capital
>
> - the regulatory asset value is supported by the expected cash flows during the regulatory period.

Again, the bulleted statements are features of the regulatory environment, and do not by themselves imply anything about optimal financing. We have considered more detailed arguments the ACCC has raised in earlier papers, and wish to refer the ACCC to earlier submissions on the substantive problems with matching the bond maturity with the length of the regulatory period.[9]

Given the unequivocal nature of the Tribunal's decision we recommend the ACCC reassess its underlying position on the risk free rate for electricity businesses, rather than opting out of debate by referring to "legal precedent". While we agree with the decision to base the bond maturity on the 10 year Commonwealth bond, reassessing its position will significantly reduce remaining regulatory risk with this variable for regulated businesses, including electricity transmission businesses.

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[6] Ibid, paragraph 47.

[7] ACCC, NSW & ACT transmission network revenue caps – EnergyAustralia: Draft Decision, p82.

[8] Ibid.

[9] For example, we wish to refer the ACCC to our section on the risk free rate in NECG's response to the ACCC's discussion paper on its Draft Regulatory Principles (November 2003).

3 Cost of debt

NECG believes the ACCC has systematically understated the required debt margin for an efficient electricity transmission business. This is largely due to the credit rating assumed by the ACCC in deriving the debt margin.

We wish to consider two key features associated with the determination of a credit rating:

- Issues associated with benchmarking a credit rating from other electricity providers; and

- Estimating a credit rating from cashflow projections and other information.

3.1 Determining benchmark credit rating from other electricity utilities

We believe the ACCC's approach to determining a benchmark credit rating is flawed, unnecessarily penalises an efficient electricity transmission businesses and violates principles of competitive neutrality. This is largely due to its treatment of the credit rating of Government-owned entities.

The ACCC derives its benchmark credit rating of "A" from the ratings of the following electricity companies.

Table 1   Companies considered by ACCC in deriving benchmark credit rating

Company	Long-term rating	Gearing	Ownership
Ergon Energy	AA+	49.3%	Queensland Government
Country Energy	AA	68.3%	NSW Government
EnergyAustralia	AA	51.4%	NSW Government
Integral Energy	AA	51.3%	NSW Government
SPI PowerNet	A+	79.8%	Singapore Government (Singapore Power)
Citipower Trust	A-	20.6%	Privately owned (CKI Holdings)
ESTA Utilities	A-	63.5%	Privately owned (CKI Holdings)
Powercor Australia	A-	39.7%	Privately owned (CKI Holdings)
ElectraNet	BBB+	72.6%	Privately owned

Ratings and gearing taken from ACCC draft decision page 85. Businesses above the dotted line are Government-owned entities

As can be seen, the list includes a number of Government owned entities. The rating for these businesses range from A+ to AA+, while for the non-Government owned businesses the rating is either A- (Citipower/ETSA Utilities/Powercor) or BBB+ (ElectraNet). Of these, only ElectraNet SA has a stand-alone credit rating of its own right, with the rating of Citipower, ETSA and Powercor reflecting the rating of CKI Holdings Limited.

The inclusion of the credit rating of Government owned entities violates all principles of competitive neutrality – principles the ACCC accepts in determining the value of other parameters in the WACC such as gamma.

In its Transend decision[10] and draft decision on Transgrid,[11] the ACCC justifies the inclusion of Government owned enterprises in its sample on the following grounds:

• The small sample size if such entities are excluded; and

• Its view that while Government/parent ownership may be a legitimate factor in the determination of a credit rating, it is only one factor that may affect a credit rating and does not create a significant bias.

We dispute both these views.

First, a large sample size does not necessarily create an effective sample if the additional firms included in the sample are not reflective of a benchmark provider. We believe that the most representative firm in the sample is ElectraNet – the only privately owned transmission business operating exclusively in Australia. The lack of suitable comparators suggests an alternative approach to determining a credit rating should be explored – such as considering the underlying risks of the business, undertaking cash flows modelling for previous and future regulatory periods and seeking the advice of private ratings agencies.

Second, it is difficult to credibly sustain an argument that Government/parent ownership does not introduce a significant bias into the estimates. Given that Government borrowing is considered the least risky borrowing in the economy, the default risk of Government-owned entities is clearly significantly lower than for most comparable private enterprises. We are not aware of any Australian Government-owned company that has defaulted on its debt or gone bankrupt. Not only does the sample picked by the ACCC show a divergence between Government and privately owned businesses, but a cursory look at the other private network businesses in the Standard & Poor's document quoted by the ACCC shows significantly lower ratings, as seen in Table 2.

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[10] Australian Competition and Consumer Commission, Decision, Tasmanian Transmission Network Revenue Cap 2004-2008/09, December 2003, page 80.

[11] Australian Competition and Consumer Commission, Draft Decision, NSW and ACT Transmission Network Revenue Caps - Transgrid 2004/05 -2008/09, April 2004, page 82.

Table 2   Ratings of other network businesses rated by Standard & Poor's

Company	Long-term rating	Gearing	Network sectors
AGL	A	39.2%	Gas and electricity distribution
Alinta	BBB	56.2%	Gas and electricity distribution
Envestra	BBB	80.8%	Gas distribution
GasNet	BBB	68.9%	Gas transmission
TXU Australia	BBB	67.1%	Gas and electricity distribution

Source: Standard & Poor's, Australian Report Card, Utilities, March 30, 2004.

While these companies have diverse business activities, including non-regulated activities such as retailing, three of these companies (AGL, Alinta, TXU Australia) are heavily involved in electricity distribution – the principal activity of Ergon Energy, the Government-owned business with the highest credit rating (AA+) in the ACCC's list.

In contrast to the ACCC's approach, in its decision on the NSW distribution businesses, IPART determined a benchmark rating of BBB to BBB+ for an electricity distributor – not the rating applied by Standard & Poor's for the NSW electricity distributors (AA).

Even accepting the view of Fitch ratings agency of relatively lower risks for a transmission business compared to a distribution business, the fact that many electricity distributors have a rating of BBB with gearing around 60%, implies that a rating of BBB+ for an electricity transmission provider is reasonable.

3.2   Matching credit rating to financial analysis

In Appendix B, the ACCC derives some simple financial ratios, which it argues are consistent with a credit rating of "A" for EnergyAustralia. In deriving these ratings the ACCC argues that the business profile of a transmission business such as EnergyAustralia is between "excellent" and "above average".

The ACCC derives the following ratios, which it maps to the corresponding Standard and Poor's ratings:

Table 3   Financial ratios derived by the ACCC (Table B.1)

Variable/Ratio	2004-05	2005-06	2006-07	2007-08	2008-09
Flow Funds Net Interest Cover (times)	3.11	3.15	3.23	3.26	3.33
S&P rating ("above average")	A	A	A	A	A
S&P rating ("excellent")	A	A	A	AA	AA
Flow Funds Net Debt Pay Back (years)	7.99	7.91	7.68	7.59	7.37
S&P rating ("above average")	BBB	BBB	BBB	BBB	BBB
S&P rating ("excellent")	A	A	A	A	A
Internal Financing Ratio (%)	56.42	71.44	61.04	75.90	101.38
S&P rating ("above average")	BBB	A	BBB	A	AA
S&P rating ("excellent")	BBB	AA	A	AA	AAA

We have a number of comments on this table.

First, even assuming a profile between "excellent" and "above average" is appropriate, we are not convinced that the derived ratios in Table 3 support a rating of A as stated by the ACCC.

Second, and a more serious concern, is that we believe there is an error in the calculation for earnings before interest and tax (EBIT), which in Table B.1 excludes depreciation. Correcting for this factor produces the following revised table and ratios in Table 4.

Table 4   Revised financial ratios – incorporating depreciation in EBIT

Variable/Ratio	2004-05	2005-06	2006-07	2007-08	2008-09	Average
EBIT to revenues (%)	63.58	64.03	63.09	62.77	62.49	63.19
EBITD to revenues (%)	75.19	76.06	75.92	76.02	76.14	75.87
EBIT to funds employed (%)	8.76	8.95	8.85	8.95	9.18	8.94
EBIT to regulated assets (%)	8.76	8.95	8.85	8.95	9.18	8.94
Pre-tax interest cover (times)	2.28	2.29	2.29	2.29	2.32	2.29
Flow Funds Net Interest Cover (times)	2.69	2.72	2.76	2.77	2.82	2.75
S&P rating ("above average")	BBB	BBB	A	A	A	A
S&P rating ("excellent")	BBB	BBB	BBB	BBB	BBB	BBB
Flow Funds Net Debt Pay Back (years)	10.46	10.29	10.25	10.08	9.71	10.16
S&P rating ("above average")	A	A	A	A	A	A
S&P rating ("excellent")	BBB	BBB	BBB	BBB	BBB	BBB
Internal Financing Ratio (%)	47.21	59.56	50.52	62.58	83.37	60.65
S&P rating ("above average")	BBB	BBB	BBB	A	AA	A
S&P rating ("excellent")	BB	BBB	BBB	BBB	AA	BBB

Note: Calculations undertaken by EnergyAustralia based on ACCC model.   The calculations include some minor modifications to the calculations for cash held by the business. However, these do not affect the derived ratings.

These revised ratios suggest a rating of between A and BBB, and are consistent with a rating of BBB+ over the entire period. In practice any ratings agency assessing this data

would adopt a precautionary approach given the ratios in the early years of this period are consistent with a rating of BBB.

Therefore, we conclude that the ACCC's own modelling approach is consistent with providing a credit rating of BBB+

3.3 Suggested approach

If Government entities are excluded, the limited evidence from available benchmark companies supports a rating of BBB+. The only privately owned energy firm with a rating of "A" is AGL, which operates a diverse business and has gearing less than 40%. Firms operating in electricity and gas distribution have a rating of BBB, while the most comparable firm – ElectraNet SA – has a rating of BBB+.

We also believe that the financial parameters derived from the ACCC's own modelling are also consistent with a value around BBB+.

Both these considerations support a benchmark credit rating of BBB+ rather than the assumed rating of "A" adopted in the draft decision. Based on current margins, we believe the ACCC will be understating the appropriate debt margin by around 20 basis points. In the 10 days to 28 April 2004, according to CBA Spectrum, the average margin for debt of BBB+ rating was 106 basis points.

4 Debt issuance costs

While NECG supports the ACCC for recognising that debt issuance is a significant cost that needs to be recognised, we believe that the allowance for debt issuance costs in the draft decision understates the cost to the firm of issuing debt.

We note that the allowance in the ACCC's draft decision (equivalent to 10.5 basis points on the cost of debt) is consistent with research initiated by the ACCC in the public debt market and similar to the allowance proposed by EnergyAustralia (12.5 basis points). However, NECG believes there is credible evidence to support margins well in excess of 12.5 basis points.

US data suggest that a premium of up to 50 basis points for debt issuance may be appropriate. Debt can be issued either directly by private placement or through a public issue. The issuance costs of a direct placement are considerably lower than a public issue (as considered by the ACCC). However, the interest rates paid on private placements are usually higher than those on a public issue. So there is a trade-off when issuing debt by private placement – issuance costs are lower but interest rates are higher. Brealey and Myers state:

> "a typical differential [between the interest rate on public and private issues] is on the order of 50 basis points".[12]

Hays, Joehnk and Melicher[13] conducted an empirical study of the difference in rates between public and private debt issues and found that the yield to maturity on private placements was 0.46% higher than on similar public issues.

If other factors were comparable between public and private debt, the difference in issuance costs and interest rates would be offsetting. That implies that when debt issuance costs are treated as an annual amount in cash flows the amount imputed to cashflows should be consistent with the other assumptions concerning debt. If debt issuance costs are expressed in basis points against an assumed debt, the quantum of debt should be consistent with the assumed gearing for the company and should reflect issuance costs for the company issuing the type of debt assumed in estimating the debt margin.

Because the empirical evidence cited above is about differences in rates of return rather than the quantum of issuance costs, the differences are quite large. Even if issuance costs of private placements were nil, which of course they are not, it would indicate issuance

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[12] Brealey and Myers, 1996, Principles of Corporate Finance (5th ed), United States of America: McGraw-Hill, p401.

[13] Hays, Joehnk and Melicher, "Determinants of Risk Premiums in the Public and Private Bond Market," Journal of Financial Research, Fall 1979, pp143-152.

costs for private debt issues of about 0.50% against the assumed quantum of debt for EnergyAustralia.

Evidence such as stated above was considered by the Australian Competition Tribunal before determining a cost of debt issuance of 25 basis points on the cost of debt for GasNet.[14]

In our view, the empirical evidence that is available is consistent with a total debt issuance cost in the order of up to 0.50% on the cost of debt (or equivalent amount in the cashflows). We believe that the 25 basis points allowed by the Tribunal for GasNet is a lower bound on a reasonable estimate. For a medium-sized company such as EnergyAustralia that does not issue large amounts of debt, the issuance costs are more likely to be in the range of an amount equivalent to 30 to 50 basis points on the cost of debt.

Given the available evidence, the 12.5 basis points proposed for EnergyAustralia is a conservative estimate. With regulatory support for 25 basis points, we believe this represents a more appropriate allowance at this time.

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[14] Australian Competition Tribunal, Application by GasNet Australia (Operations) Pty Ltd [2003] ACompT 6.

5 Beta

While the equity beta provided in the draft decision is of a similar magnitude to that recommended for EnergyAustralia, the ACCC makes a number of statements that implies it believes a lower beta value is justified based on market data. In doing so, we believe the ACCC is misinterpreting market data on beta through:

- statements on the relative levels of systematic risk between an electricity transmission business and the market as a whole; and

- failing to understand statistical weaknesses of the beta values of energy/utility businesses listed on the ASX.

5.1 Relationship between beta value for transmission business and market as a whole

The ACCC argues that because electricity businesses are "less risky" relative to the market, the equity beta should be less than 1.0:[15]

> The ACCC notes that in previous revenue cap decisions, an equity beta estimate of 1.0 was adopted. This suggests that the TNSP experiences the same volatility as the market portfolio in general. However, this is not consistent with the frequently held view that gas and electricity transmission businesses are less risky relative to the market, irrespective of their gearing. This view is predicated on the observation that the earnings of gas and electricity business are more stable than most other businesses in the market. Greater stability of cash flows suggests that the equity beta should be less than 1.0.

The logic of ACCC's assertion appears to be because the income streams of transmission businesses tend be more stable than those for other firms in the economy, this will translate into lower equity beats irrespective of gearing. This is not the case. In particular, an equity beta of one implies that the firm's equity share has the same systematic risk as the market as a whole – not that the firm itself has the same level of systematic risk. This is only true where the gearing of the firm is the same as the gearing of the market as a whole. Therefore, in making such comparative statements, what is of relevance is the asset beta of the market and the firm, not the equity beta. To claim that gearing does not matter is misleading.

If the gearing of the firms listed on the Australian market is considered, the asset beta of a TNSP is already significantly lower than the average asset beta of the market. Our best

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[15] Australian Competition and Consumer Commission, Draft Decision, NSW and ACT Transmission Network Revenue Caps - EnergyAustralia 2004/05 -2008/09, April 2004, p92.

estimate of the average asset beta for a firm listed on the All Ordinaries Index (value weighted) is 0.65[16] – significantly higher than the asset beta provided for TNSPs.

In estimating this value we have made the following calculations.

First, we obtained data from Bloomberg on the equity beta of all firms currently included in the ASX All Ordinaries Index, and gearing data.

Second, firms that did not have a beta – for example, if they had not been listed on the ASX for a sufficient length of time to have a beta – were excluded. Only a handful of firms were excluded, reflecting the fact that the beta values were calculated using two years of weekly data.[17] For the remaining 415 firms, we determined their relative weighting in terms of equity share.

With these adjustments, we estimated that the average equity beta of the All Ordinaries Index was 0.98 for unadjusted equity betas and 0.99 for adjusted equity betas – that is, with the Blume adjustment applied.

Gearing data was available through Bloomberg. The weighted average gearing of the firms with data was 37.9%. The average asset beta was calculated using the ACCC's version of the Monkhouse approach using two methods:

• first, and most simply, the weighted average gearing of the market of 37.9% was applied to an equity beta of 1.0 to give an average asset beta of 0.62;

• second, the asset beta of all firms with beta and gearing data was calculated, with these weighted by equity share. This produced a value of 0.65 for asset betas derived using both the raw and adjusted (Blume) equity beta values.

Estimating an average asset beta using both these methods suggests that the ACCC is already considering the underlying systematic risk of TNSP assets as significantly <u>lower</u> than firms listed on the ASX. This is a result of the higher gearing assumed for TNSPs to that applying to listed firms. Parity with the ASX would imply an asset beta in the range of 0.62 to 0.65 rather than the value of 0.40 the ACCC has adopted to date.

5.2   Relevance of current market observations

The ACCC notes that its allowances for the equity beta have been "generous" compared with market data on beta.

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[16]   Based on data from Bloomberg for the ASX extracted on 3 June 2004. Calculations assume a debt beta of zero.

[17]   Note that this is the Bloomberg default value.

While the headline numbers in regulatory decision are clearly higher than asset and equity beta values derived from listed infrastructure companies on the ASX, such a simple analysis does not take into account the statistical properties of the estimates.

Table 5 and Table 6 set out the standard error, R-squared and t-statistics for the sample companies included in the ACCC's draft decision.

Table 5   Statistical properties of beta values derived from September 2003 AGSM data

Company	Raw equity beta	Standard error	t-statistic	R-squared
Australian Pipeline Trust	0.35	0.48	0.73	0.06
Envestra	0.28	0.50	0.56	0.03
Alinta	0.33	0.65	0.51	0.03
Australian Gas Light	-0.07	0.58	-0.12	0.00
GasNet	0.05	0.59	0.08	0.00

Source: AGSM Risk Management Service, September 2003

Table 6   Statistical properties of beta values derived from December 2003 AGSM data

Company	Raw equity beta	Standard error	t-statistic	R-squared
Australian Pipeline Trust	0.36	0.47	0.77	0.05
Envestra	0.30	0.49	0.61	0.03
Alinta	0.37	0.62	0.60	0.04
Australian Gas Light	-0.06	0.58	-0.10	0.00
GasNet	0.05	0.52	0.10	0.00

Source: AGSM Risk Management Service, December 2003

All these estimates have low R-squared values, with those with the lowest R-squared values having the lowest beta. This is to be expected. The implication of such low values of R-squared is that the beta value will tend to zero. This is by virtue of the statistical property that if either beta or R-squared goes to zero, the other will follow. This can be shown below from Sharpe's CAPM:

$$\beta = Cov(R_i, R_m)/var(R_m)$$

where β is the beta, $Cov(R_i, R_m)$ is the covariance of stock i with the market, and $var(R_m)$ is the market variance. Statistically we know that the following holds:

$$Corr(R_i, R_m) = Cov(R_i, R_m)/(sd_i * sd_m)$$

Where $Corr(R_i, R_m)$ is the correlation between stock i and the market. Therefore, beta can also be represented as follows, where sd is the standard deviation of the stock and the market respectively:

$$\beta = Corr(R_i, R_m) * (sd_i/sd_m)$$

As R-squared represents the fraction of the squared error that is explained by the model, as the correlation tends to zero then so will beta.

The AGSM data suggests that the underlying relationship with beta is not stable. The high standard error for the estimates also makes reliance on such estimates for regulatory purposes problematic. These considerations imply that using such market derived betas for regulatory purposes would "systematically under compensate the TNSP" (ACCC Draft Decision p.94).

The implication from the domestic beta data is that the ACCC should be considering a wider range of factors, such as beta data from overseas comparators. This is consistent with the views of Kevin Davis in his advice to the ACCC:

> In practice, this is often not feasible, and betas are calculated for comparator firms operating in other countries and using the market portfolio of that country. It is then assumed that the systematic risk characteristics observed in that country are similar to those, which would apply here. Although this approach, and assumptions involved, can be debated, there is no obvious preferable alternative, unless there is a significant portfolio of comparator stocks trading in the local market.[18]

While there are clearly potential problems with the use of international data, it can provide additional useful information for the purpose of setting beta, especially where combined with consideration of first principles. In our original submission on behalf of EnergyAustralia, we undertook an analysis of international beta values, concluding that an asset beta of 0.425 was appropriate at this time for EnergyAustralia.

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[18] Professor Kevin Davis, "Risk Free Interest Rate and Equity and Debt Beta Determination in the WACC", Report Prepared for the ACCC, 28 August 2003, p19.

6 Conclusions

The WACC allowance in the ACCC's draft decision is similar to recent ACCC decisions, and in some cases provides similar parameter values to those proposed by EnergyAustralia. However, the ACCC's position on a number of variables imposes an inappropriately low WACC on EnergyAustralia, or in the case of debt issuance costs, the ACCC under-estimates EnergyAustralia's cashflows.

In the case of the risk free rate, it is not the actual allowance that is a problem, but rather that the ACCC's statements indicating that its "preferred position" is significantly lower than the value provided exposes EnergyAustralia to regulatory risk. We support the ACCC's decision to base the bond maturity in the risk free rate on the 10-year Commonwealth Bond. However, despite the unequivocal nature of the Australian Competition Tribunal's decision on GasNet, the ACCC still argues in favour of matching bond maturity with the length of the regulatory period. Furthermore it does so without providing supporting justification – at least in this draft decision. Should the ACCC reassess its position, it would significantly reduce remaining regulatory risk with this variable.

The ACCC also argues that its beta allowance is "biased in favour of the service provider". However, the grounds for this view are largely based on market data on beta that has questionable statistical significance, and a belief that the equity beta should be lower than the market average. In practice the asset beta of electricity transmission businesses is already significantly below that of an average firm on the ASX.

The ACCC's approach to the debt margin will understate the required debt margin for an efficient benchmark transmission business. Inclusion of Government owned comparators in the list of benchmark companies violates principles of competitive neutrality, systematically biases the credit rating upwards and systematically biases the allowance downwards. This implies the ACCC should consider other approaches to determining a credit rating, such as consideration of a wider sample of similar private companies or considering the underlying cash flows of the business in greater detail. While the ACCC does this to some extent in its calculation of financial ratios, errors in the calculation of EBIT means that the figures in the draft decision overstate the credit rating derived from the draft determination. Correcting for this error results in a benchmark credit rating of BBB+.

Based on the considerations in this paper, we conclude that as of the time of the draft decision the appropriate vanilla WACC for EnergyAustralia should be 9.14% - or 9.06% if issuance costs are to be included in the cash flows.[19] Our estimates are set out in Table 7.

Table 7   WACC estimates for EnergyAustralia (as of 28 April 2004)

Variable	ACCC draft decision	NECG/EA (with issuance costs in WACC)	NECG/EA (issuance costs in cashflows)
Nominal risk free rate	5.89%	5.89%	5.89%
Debt margin	0.87%	1.06%	1.06%
Cost of debt issuance	NA	0.125%	NA
Cost of debt	6.76%	7.075%	6.95%
Market risk premium	6.00%	6.00%	6.00%
Gamma	0.50	0.50	0.50
Effective tax rate	27.15%	27.15%	27.15%
Asset beta	0.40	0.425	0.425
Equity beta (debt beta =0)	1.00	1.06	1.06
Cost of equity	11.86%	12.23%	12.23%
Vanilla WACC	8.80%	9.14%	9.06%

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[19]   Note this is based on a conservative estimate of issuance costs equivalent to 12.5 basis points on the cost of debt.