

Energy Markets Reform Forum Comments on IPART's Draft Decision On AGLGN's Access Arrangements Application

Introduction And Recommendations

The Energy Markets Reform Forum (EMRF) welcomes the opportunity to provide comments on IPART's draft decision on AGLGN's access arrangements application. The EMRF generally supports IPART's draft decision and notes that AGLGN has largely agreed to IPART's proposed amendments, in its response to the draft decision.

The EMRF recommends the following:-

- ▶ adopt a market risk premium in the range of 2.5 to 4.5;
- ▶ adopt an equity beta in the range of 0.6 to 0.8;
- ▶ reject AGLGN's proposal regarding the redundant capital draft decision; and
- ▶ reject AGLGN's proposal for a cost pass through mechanism for probable mines subsidence costs.

Rate of Return: Market Risk Premium & Equity Beta

The EMRF supports the Tribunal's draft decision on reducing AGLGN's proposed rate of return (from 7.9% to 7.0%) but considers that the reduction should be even greater. Excessive and unjustifiable rates of return lead to inefficient and excessive investments in pipelines, as well as windfall rents to asset owners at the expense of consumers.

Unfortunately the Tribunal did not provide any supporting reason for accepting AGLGN's proposed Market Risk Premium range. The EMRF has attached to this submission a report by Headberry Partners and Bob Lim & Co entitled "Observations In Relation to ESCoSA's Draft Decision On Market Risk Premium And Equity Beta Applied to ETSA" (March 2005) which provides more recent evidence, including from overseas, that the forward looking (as opposed to historical or backward looking) Market Risk Premium is as low as the range of 2.5 to 4.5 for energy distribution network businesses. This report is very relevant to the current AGLGN access arrangements review and is submitted for the Tribunal's consideration. The report provides substantial comment on the SFG review which had been commissioned by AGLGN and submitted to the Tribunal as part of AGLGN's response to the draft decision.

The Tribunal did provide some analysis for its draft decision for a small reduction in equity beta from that proposed by AGLGN and opted for a range of 0.8 to 1.0. This range is far too high.

The EMRF draws attention to the above report by Headberry/Lim which assesses that an equity beta range of 0.6 to 0.8 is appropriate for energy distribution network businesses. The report provides more recent evidence

and analysis to support its recommendations, and includes specific comments on the SFG report commissioned by AGLN. The relevant extracts on the SFG report are described here:-

4.5 SFG¹ report and analysis

AGLGN employed SFG to review and comment on the equity beta which they believe should apply in the development of the WACC for the AGL gas distribution network review of 2005 by IPART. As might be expected, the results of their examination and analysis are that the equity beta to be applied to AGLN should be 1.0.

What is of great interest is that there is a major variability in the equity betas calculated for individual businesses, and that there is considerable variation in the equity beta for the same business when tracked over time. SFG comments they:-

“...examine the statistical reliability of standard beta estimates... demonstrate that beta estimates for individual firms, and for small portfolios of comparable firms, suffer from a high degree of statistical unreliability...[and they] examine a range of methods for estimating betas and conclude that no single method can provide a precise and statistically reliable point estimate.”²

SFG goes on to state they conclude that:-

“The uncertainty surrounding beta estimates, and the effect this has on estimates of WACC, should be quantified and explicitly addressed (e.g., by specifying ranges rather than point estimates and/or examining the sensitivity of WACC estimates to parameters that are estimated with uncertainty),”³

SFG devotes much of its report into demonstrating that the estimation of equity beta shows a high degree of volatility, and uses statistics to show that the impact of excluding certain values calculated has a major impact on the outcome of the analysis. Even using a regression analysis and selecting inputs at random, it concludes that the actual equity beta

¹ SFG is the Strategic Finance Group, a consultant employed by AGLN to prepare the report “The Equity Beta of an Energy Distribution Business”, 10 February 2005, forwarded to IPART as part of the NSW gas distribution review

² SFG, “The Equity Beta of an Energy Distribution Business”, 10 February 2005, page 3

³ Ibid, page 3

calculated for AGL over the past four years (of -0.06) must be:-

“...result of outliers and statistical aberrations.”⁴

SFG considers that if the impact of the “tech bubble”⁵ is excluded from the calculation then AGL equity beta would be much higher. This view is not denied but as the market continues to show that external events such as the tech bubble cause continuing change in the market outcomes highlighting that change itself is a constant in the market place. This point is clearly made in Headberry/Lim⁶ that changes in the world are continually occurring and all impact on the equities market which is the fundamental source of both equity beta and market risk premium. For SFG to identify only the tech bubble for specific treatment⁷ is to deny the impact of all other changes which affect the equities markets.

SFG observes that the equity betas for Australian businesses comparable to AGLGN – the regulated element of AGL – (such as Alinta, Australian Pipeline Trust, Envestra and GasNet) need to be adjusted to equate to 60% gearing, implying that these companies have a lower gearing than that of 60% assumed used by regulators to be the benchmark. In fact each of these four companies has a gearing of about 60% or greater (67%, 58%, 91% and 68% respectively⁸). As each has been able to secure funding from the market place for growth, the average equity beta of 0.7 across all (including AGL) calculated by SFG⁹ from the market values for each company would appear not only to be an appropriate value to use in the WACC development, but also is sufficient for the “average” business to secure necessary and appropriate funding.

What SFG does not include in its analysis is that despite identifying that AGL (with its overall gearing of 42%¹⁰) has a low equity beta, it does not go on to admit that this has impacted on AGL’s ability to secure funding (debt and equity) for its acquisitions over the past four to five years. The deduction that can therefore be drawn from this clear example is that the identified actual low equity beta has not significantly affected AGL’s ability to secure funds required for its expansion and investment.

⁴ Ibid, page 19

⁵ Also referred to as the “dot.com bubble” by others

⁶ Op cit page 17

⁷ SFG refers to the Allen Consulting Report relating to the QCA review of electricity businesses as supporting its view that equity beta should be 1.0. Other ACG reports (eg to ACCC in 2002, and to QCA on Dalrymple Bay in 2004) clearly imply that regulated utilities should have a lower equity beta than 1.0

⁸ Source – CommSec webpage

⁹ SFG page 35 quoting ACG table 6.1

¹⁰ Source – CommSec webpage

This example provides significant doubt on the often stated observation that granting of a low equity beta by the regulator would prevent the regulated business from acquiring funds (debt or equity) from the market place.

4.6 The implications of the SFG analysis

The SFG review and analysis identifies that equity beta (particularly for a specific entity) does not have a fixed value, but one which varies between entities and over time.

SFG provides the view that:-

“... the real goal for a regulator is not to set the regulatory equity beta to match “the 60-month equity betas...over the next 5 years” but to set a regulatory equity beta which results in returns being sufficient to attract a sufficient level of investment. Even if we could perfectly match the 60-month equity beta that will be estimated over the next 5 years, we would only be matching an imprecise and statistically unreliable estimate of the true value.”¹¹

This view is supported but when considering the equity beta of AGL as a business, it is essential to be aware that AGLGN is only a relatively small part of the entire AGL business. Other elements include energy retailing (AGL is one of the three major retailers of gas and electricity in Victoria, the dominant retailer of gas in NSW, and the dominant retailer of electricity in SA), and electricity generation (AGL is a major shareholder of Victoria’s largest generator, and has peaking generation facilities in both Victoria and SA. AGL also owns the smallest electricity distribution business in Victoria, and until recently has owned distribution, retailing and generation assets in New Zealand.

SFG has assessed that AGL as an entity¹² should attract an equity beta of 1.0, as AGL has a variety of businesses, most of which it must be agreed have a higher risk profile than owning network assets. It would appear that in order to accommodate the higher equity betas associated with retail and generation activities¹³ of AGL, this would imply quite

¹¹ SFG page 36

¹² The data used by SFG to calculate equity beta for AGL applies to the entire business entity

¹³ The AGSM has calculated average equity betas for retail businesses (1.269) and infrastructure and utilities (0.983) which included generators. These are listed by the ACCC in its draft decision on ElectraNet 2002, in table 2.2

clearly that even if AGL had an equity beta of 1.0 (which it doesn't) the AGL networks businesses must have a lower equity beta, of between 0.7 and 0.8 in order to achieve an overall equity beta of unity for the listed (aggregated) entity. In fact using the AGL equity beta of 0.66 assumed by SFG¹⁴ would reduce the equity beta for the regulated element (AGLGN) of the AGL portfolio, even further.

There is no doubt that the equity beta for individual firms varies greatly with time (as is noted earlier in reference to the market risk premium) and SFG goes to great lengths to demonstrate this. Accepting this is a feature of the equities market on which both equity beta and MRP are deduced for use in the CAPM approach, the task is for the regulator to identify what is an average at a given point in time, and to use this as a proxy for a forward looking view as the basis for the coming regulatory period. Granting too high a figure will give an unearned benefit to the regulated business at the expense of the consumer.

As it is now becoming more obvious that there is considerable doubt as to what the value of equity beta of a firm or class of firms will be at any given point in time, there is a need to ensure that the calculation of WACC is verified against an actual benchmark independently derived from the market place. Headberry/Lim has suggested that such a benchmark should be based on a review of the actual performance of businesses (such as EBIT/assets) which can be derived from the calculated WACC and the expectation of the regulated business revenue and expenditure used as the basis of the regulatory decision. Until such independent comparison is instituted there will be a continuing debate as to whether the WACC calculated will be the minimum needed to ensure the continuing viability of the regulated business.

Redundant Capital

The EMRF supports the Tribunal's assessment that both booked MDQ and throughput on the Wilton to Wollongong trunk line have dropped significantly between 2000 and 2001 and have continued to fall. This came about as a result of the commencement of the Eastern Gas Pipeline. The Tribunal has no alternative except to accept the capital redundancy provisions of the code and the EMRF to support amendment 6 (capital redundancy mechanism) proposed by the Tribunal in its draft decision. There is no case for the Tribunal's draft decision on redundant capital to be linked to a higher regulated rate of return.

Cost Pass Through: Mines Subsidence

¹⁴ SFG page 35 quoting AGC table 4.1

The EMRF is deeply concerned that AGLGN is seeking to add an additional “ Cost Pass Through Event to section 3.11(c) of its Access Arrangements for amelioration of probable damage to the Wilton to Newcastle Trunk due to mines subsidence.

legal costs likely to be incurred are already covered by approved revenues associated with corporate overhead costs, as are operating costs incurred in the normal course of operating a pipeline business.

Such a proposal from AGLGN would appear to be a double-dipping device. Another area of concern is that the damage is only deemed to be “probable” and the extent of “probable” damage has not been quantified. This could become an open-ended cash cow if the AGLGN proposal is accepted. Accordingly, AGLGN’s cost pass through for mines subsidence proposal should be rejected.

2003/04 ESCoSA

ELECTRICITY DISTRIBUTION PRICE REVIEW

OF

THE ETSA UTILITIES REVENUE CAP

Observations In Relation to ESCOSA's Draft Decision On
Market Risk Premium And Equity Beta Applied to ETSA

by

Headberry Partners P/L and Bob Lim & Co P/L

for

The Electricity Consumers Coalition of South Australia

March 2005

This is an expanded version of the February 2005 paper that was submitted to ESCoSA by ECCSA.

It contains a more detailed critique of ESCoSA's analysis.

CONTENTS

	Page
1. Introduction	3
2. Some recapping of past issues related to the level of regulated WACC	5
3. Issues surrounding Market Risk Premium	<u>10</u>
4. Issues surrounding equity beta	23
5. The ESCoSA Draft Decision	31

1. Introduction

This paper has been commissioned by the Electricity Consumers Coalition of South Australia (ECCSA) to make observations on ESCOSA's draft decision on the market risk premium (MRP) and the equity beta (EB) proposed to be applied to ETSA. ESCOSA's draft decision determines an MRP of 6% and an EB of 0.8. The implications of a reduction of equity beta by 20% will reduce the WACC awarded to regulated businesses by nearly 50 basis points (eg a reduction from 9% to 8.5%). On an asset base of \$2Bn (as applies to ETSA Utilities), this reduction equates to a saving to South Australian electricity consumers of \$10m pa, or \$50m over the regulatory period.

The members of the ECCSA include Adelaide Brighton Cement, Holden, Kimberly Clark, Mitsubishi, OneSteel, Seeley International and Zinifex. All are large consumers of electricity and therefore exposed to the costs granted by the ESCoSA to ETSA Utilities for the provision of electricity transport services to South Australian electricity consumers. It is because of this that the ECCSA is vitally concerned to ensure that the revenue awarded to ETSA Utilities is not excessive but at a level consistent with providing a long term viable cash flow to ETSA.

The Capital Asset Pricing Model (CAPM) used by regulators (both Australian and overseas (such as Ofgem in the UK) is an economic modeling approach used as a tool to assist in attempts to rationalize the capital asset (share) market. It uses the long term yield on secure debt as a basis and allocates premiums to the debt and equity elements to develop a weighted average cost of capital (WACC) used by public companies.

The "Risk Free" Rate

The long term yield used as a basis for the CAPM is the long term (commonly the 10 year) forward rate for government securities (eg the "gilts" in the UK). This is considered to be a "risk free" rate of return.

Debt Premium

The cost of debt used in the CAPM is that risk free rate plus a premium appropriate for the debt risk faced by lenders to enterprises operating in the competitive sector.

Market (Equity) Risk Premium

The premium applied in the CAPM to assess the equity premium is derived from the share market accumulation index which recognizes both share growth and share dividends. From the accumulation index for all sectors is developed the market (or equity) risk premium MRP. The accumulation index changes on a daily basis, and is particularly volatile at the times when company dividends are

paid, and when a market scare is present such as the 1929 and 1987 share market falls. Thus there is potential for there to be a large scatter of values in the equity risk premium when it is calculated for each day, and there is likely to be a very large error from the long term average market risk premium when it is calculated for a specific day.

Equity Beta

As different classes of shares have differing risk profiles (eg the property sector from the consumer staples sector, etc) the equity risk premium is modified by the application of a qualifier (the “equity beta”) which reduces or increases the value of the equity risk premium. The equity beta can be calculated from financial data including profitability and returns earned by specific companies or by comparing the accumulation indices calculated from the different industry sectors. An equity beta of unity is by definition the value of equity beta applied to the weighted average for all companies in the overall share market index.

2. Some recapping of past issues related to the level of regulated WACC

The Capital Asset Pricing Model (CAPM) has been used by Australian regulators as the basis of setting a regulated return on monopoly network assets in the gas and electricity industries for the past eight years. The first instance of this occurred when the NSW IPART set the return on the AGL assets used to distribute gas in the Sydney area in 1996. It has most recently been used by the Queensland Competition Authority for price regulation for Queensland ports and the ESCoV has stated its intention for its use for price regulation of Victorian ports and in the electricity distribution pricing review. The NSW IPART has recently completed its draft determination on AGL Gas networks, using the CAPM to set the regulated rate of return.

In 1998 the ACCC and the ESCoV (then ORG) deliberated on the access arrangements application by the Victorian Government for the gas transmission and distribution assets prior to their sale. At that time, the Victorian Government believed that the regulated return should exceed 10% but the two regulators, after holding what was to become referred to as the “The Great WACC Debate of 1998” finally determined that the regulated return should be 7.75%, after first concluding in a draft determination that 7.0% was appropriate at that time. The requested value for MRP was 6.5% but in its final decision for MRP the ACCC stated a view that it should be in the range 4.5-7.5% and opted for the mid point of 6%¹.

The ACCC did however note that [Prof R.R.] Officer:-

“... provides support for the view that the MRP may be trending downward”.²

Causing even greater confusion was that the Victorian Government initially sought an equity beta of 0.95. In its draft decision, the ACCC stated that equity beta should be 0.85 but then upwardly revised this input in its Final Decision to 1.2 stating³ that:-

“On the basis of evidence presented, the Commission was not convinced that there were significant downside risks that outweighed potential upside

¹ Page 53, ACCC Final Decision, Access Arrangement by Transmission Pipelines Australia Pty Ltd and Transmission Pipelines Australia (Assets) Pty Ltd for the Principal Transmission System Access Arrangement by Transmission Pipelines Australia Pty Ltd and Transmission Pipelines Australia (Assets) Pty Ltd for the Western Transmission System Access Arrangement by Victorian Energy Networks Corporation for the Principal Transmission System. 6 October 1998

² *ibid*, page 53

³ *ibid*, page 60

benefits which would be on top of profits implied by the target revenue calculations.⁴ Nevertheless, the Commission does acknowledge that all of these risks are difficult to quantify. Accordingly it has adopted the suggestion of financial experts at the WACC forum, that they are taken account of by choosing beta estimates towards the top end of the plausible range.

In determining the beta pertinent to TPA, submissions have suggested that regulatory arrangements which are based on revenue caps or price caps are inherently more risky than the US rate of return regulation which provided the main source of benchmark firms for beta determination. As a consequence, [Energy Projects Division of the Victorian Government] has suggested higher beta assumptions than it originally proposed would be appropriate. The asset beta range for Transco in the UK, which is subject to a similar regulatory regime to TPA, was assessed by the Monopolies and Mergers Commission 1997 price review as being between 0.45 and 0.60. [It is reported later in this paper that the new UK regulator (Ofgem) has instituted significantly lower values for equity beta than used by the UK Monopolies and Mergers Commission in 1997.]

In addition, it was suggested that the ‘newness’ of the regulatory framework introduced perceived uncertainties on the part of investors which should be taken into account in setting the cost of capital via the beta value assumption.

The Commission accepts these considerations as being relevant and has acknowledged that commensurate increase in the beta estimates may be appropriate. The asset beta (equity beta) has been increased from 0.35 (0.85) to 0.55 (1.20).⁵ Given that the risks are compensated for by the higher beta which leads to a higher rate of return, it would be difficult to justify additional compensation should one of these risk events materialise and impose additional costs on the service provider.”

The Victorian Government publicly stated that the WACC level accorded by the ACCC was too low and considered stopping the sale process for the assets as it considered that it would not receive a reasonable sale price. In fact, the asset sale did continue and the Victorian Government received a higher sale price for the assets than that which it had originally targeted. This was the first demonstrable example of where, after asset owners claimed that they were being grossly disadvantaged by low returns being granted by regulators, it can be

⁴ Upside potential for profits from increased productivity, judicious choice of annual price adjustments within the context of the price control formula, etc.

⁵ The market portfolio has an asset beta of about 0.7. Given the stability and maturity of the Victorian transmission system, an asset beta above 0.6 would be difficult to justify.

shown that regulators are in fact providing returns which exceed expectations of the market.

Since that time there has been continuing trade in regulated assets. Acquisition prices of regulated assets have consistently exceeded the regulated asset base (RAB) – recent examples demonstrating this competition for assets has been the sale of the “Epic Rest” assets to Hastings Funds Management and the DBNGP in Western Australia to an Alinta led consortium. That the purchase price for the regulated assets has consistently exceeded the RAB, is in spite of the fact that the RAB has been valued at a depreciated optimized replacement cost basis – a process which values assets by allowing the effects of inflation to be added to the asset value, contrary to the approach generally used by industry in the competitive market sector, which depreciates the purchase cost of assets.

Press reports and media releases by these new owners commonly justify the purchase of the regulated assets because of their certainty of cash flow and the long term security of return. Reflecting the acceptance of these views, bidding for regulated energy assets has been consistently strong, usually with at least 3-4 serious contenders.

That purchase prices have consistently exceeded the RAB valuation, strongly indicates that the WACC determined by regulators is at the high end of the feasible range.

2.1 The critical inputs to the CAPM formula

There are a number of the inputs to the CAPM formula where there is reasonable correlation of views between those providing the assets and those paying for the service. Certainly there appears to be wide acceptance that the risk free rate used should be the ten year Government bond rate, that the gearing should be 60% debt, and there are only marginal differences between an acceptable level for the debt premium. The input for the level of imputation (gamma) has been accepted at 50%, although it should be noted that some recent applications by regulated businesses have requested that this level should be reduced.

There are two inputs to the CAPM formula that are hotly contested, including in the ESCOSA review of ETSA. These are:-

- Market Risk Premium (MRP)
- Equity Beta (EB)

Although regulators have consistently used values of 6% for MRP and 1.0 for EB for decisions related to regulated returns for gas and electricity network assets over the past 5-6 years, they have also indicated that they have concerns that the

levels of these two inputs they are currently using may be too high. However, they then consistently advise that they will not change the values until there is more evidence providing substantiation for making a change⁶.

2.2 Comparisons of regulatory decisions

In 2002, Pareto Associates presented a comparison between the WACC's awarded by UK regulators and Australian regulators and provided a graphical presentation⁷ showing that the return on equity element of the WACC awarded by UK regulators is significantly lower than those of Australian regulators.

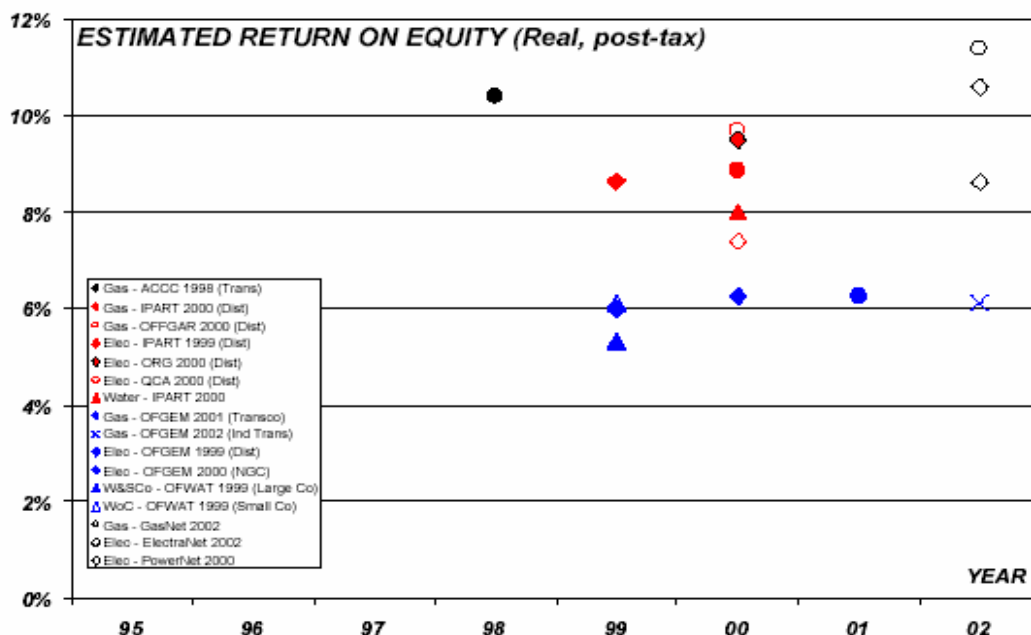


Figure 2 Comparison of estimated cost of equity from UK and Australian regulators' decisions.

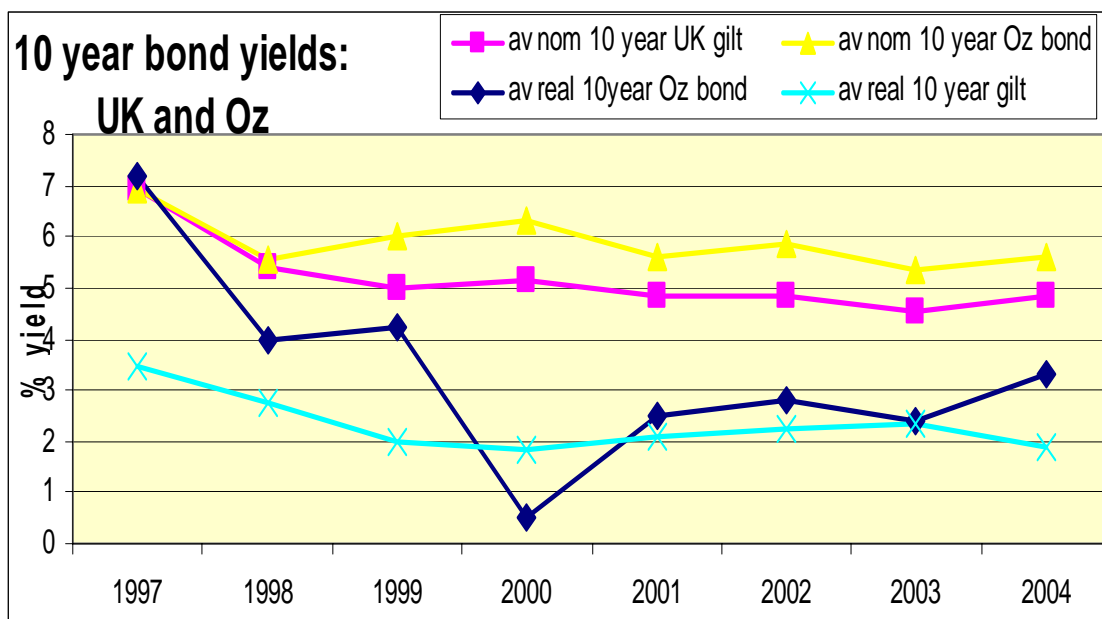
This analysis covers the period between 1997 and 2002. It should be noted that the blue markers denote overseas (UK) decisions and sit on the 6% line; the black and red markers denote Australian decisions and range between 7.5-11.5%, averaging about 9%. The UK decisions average about 6%, some 300 basis points lower than the Australian decisions.

⁶ For example, in ESCoV decision on gas distribution (2002), and ACCC on TransGrid (2004).

⁷ Pareto Associates Pty Ltd, The weighted average cost of capital for gas transmission services, June 2002, page 24

Comments by regulators have discounted the evidence of this comparison by pointing out that the base “risk free rate” is different in both countries and that the financial markets in Australia are subject to unique features (such as distance from world markets and a less competitive financial market) – such issues are addressed later in this paper.

However, it is pertinent to point out that the risk free rates in the UK and Australia bear a remarkable similarity. The UK regulators use the 10 year “gilts” as their risk free rate. As the following chart shows, the difference between the UK and Australian bonds is modest at best.



Source: RBA website and Bank of England website

Australian bond rates tend to be higher than UK rates (but not always), but the difference is not great. In fact, the average difference between the two nominal bond rates over the same period as the Pareto assessment, is consistently less than 100 basis points, and averages about 70 basis points, although the difference between the “real” rates shows a little greater volatility, but nevertheless averages about 100 basis points. This indicates that there is insufficient evidence in the general economies of the two countries to support the 300 basis points noted as existing between the UK and Australian regulators return on equities, and raises the very real question, “why do Australian regulators grant regulated business an equity return of about 200 basis points more than their UK counterparts?”

The ECCSA would point out that much of the difference lies in the inflated MRP and equity beta values used by Australian regulators.

3. Issues surrounding Market Risk Premium

Generally Australian regulators have slavishly used an MRP level of 6% since the “Great WACC Debate of 1998”, although the NSW IPART has suggested that a range for MRP of 5-6% is more appropriate. It should be stated that regulators have used the 6% value as it is assumed to reflect a long term (historical) view of this input. They also have noted⁸ that shorter term views of MRP show that perhaps a lesser amount might well apply.

The MRP over the risk free rate in the CAPM formula is intended to reflect the fact that an investor of equity requires a premium over a risk free investment in order to accept the higher risk associated with the investment. This is not denied.

It has, however, been observed (including by ESCOSA in the ETSA review) that the MRP does vary with time, and analytical work by Prof R Officer shows that the MRP has in fact varied considerably over time. The table in the ESCoV gas decision (which is also presented by ESCOSA)⁹ shows this quite clearly.

TABLE C.2
HISTORICAL AUSTRALIAN EQUITY PREMIUM – 1882 TO 2001

Time period	Equity Premium: Returns	Standard Deviation	Standard Error of the Mean
1882-2001	7.19%	16.97%	1.55%
Different Ending Point:			
1882-1950	8.00%	11.11%	1.34%
1882-1970	8.16%	13.70%	1.45%
1882-1990	7.40%	17.33%	1.66%
Different Beginning Point:			
1900-2001	7.14%	17.94%	1.78%
1950-2001	6.51%	22.60%	3.13%
1970-2001	3.37%	24.38%	4.31%

Source: Information in the first three columns provided by Professor Officer. Original information published in Officer, R., ‘Rates of Return to shares, bond yields and inflation rates: An historical perspective’, in *Share Markets and Portfolio Theory; Readings and Australian Evidence*, 2nd edition, University of Queensland Press, 1992.

The clear implication of this work as discussed by ESCOSA, is that MRP has reduced over time, and has a current shorter term value between 3-4%. The ESCoV refers to other studies which replicate the observations that MRP does vary over time.

⁸ For example, in QCA draft decision on DBCT (2004) “... the Authority notes that empirical research by Dr Lally indicates that there has been a downward long-term trend in volatility, implying estimates based on historical averaging are too high, rather than too low.” (page 184)

⁹ ESCoV (then ORG) final decision on gas distribution 2002 page 324

Whilst ESCOSA refers to other studies considered by ESCOV, it does not specifically refer to the ESCoV commissioned Mercer Consulting to provide it with an independent view of what the then current expectation of MRP might be – Mercer opined that an MRP of 3% was the then current level (4% if imputation was accounted for). The ESCoV comments¹⁰:-

“Regarding Mercer’s opinion that a consensus of market participants agrees that the expected equity premium is lower than historical excess returns, the Commission considers that Mercer’s unique position, and lack of interest in the assumption about the equity premium that is adopted by the Commission, to justify placing weight on its views, together with the other available evidence.

The Commission has subsequently received a copy of the survey results, which show that the premium of 5.87 per cent related to the views on the premium expected in the past – the average of assumptions about the forward-looking equity premium was approximately 1 percentage point lower. Table C.6 sets out the results of the survey for the different classes of respondent. The survey also canvassed views about the equity premium in the US – these results are reported also for illustrative purposes.

TABLE C.6
RESULTS OF THE JARDINE FLEMING CAPITAL MARKETS SURVEY

	Responses	Australia		United States	
		Past	Expected	Past	Expected
Academics	26	6.30%	4.92%	6.72%	5.17%
Brokers	20	5.05%	4.50%	5.93%	4.68%
Asset Consultants / Trustees	4	6.67%	3.13%	5.67%	2.13%
Corporate Managers	11	6.05%	5.27%	5.78%	4.55%
Total	61	5.87%	4.73%	6.26%	4.70%

Source: Jardine Fleming Capital Partners Limited, The Equity Risk Premium – An Australian Perspective, Trinity Best Practice Committee, September 2001.

The Commission is cognisant of the disperse beliefs across the survey participants reported, as well as the response rate to the survey (less than 50 per cent), which it has taken into account in assigning weight to these results. Subject to those caveats, it notes that some of the observations that may be made on these results are as follows.

- the average of each of the classes is lower than the long-term average of the historical excess returns to equity;

¹⁰ ibid pages 333 and 334

- the simple average of views about the future equity premium are lower than the views about the past for every class of survey participant, and thus lower still than the long-term average of the historical excess returns to equity;
- corporate managers have the highest expectations about the equity premium – but the average of expected future values is lower than the long-term average of the historical excess returns to equity; and
- the average of views across the asset consultants and superannuation trustees is very close to the views of Mercer Investment Consulting.

Thus there is little doubt that MRP does vary with time, and that the current level of MRP indicates that it is lower than the historic average. As pointed out in Headberry/Lim in a submission to ESCOSA which was commissioned by ECCSA,¹¹ there have been a number of structural changes in the Australian economy over the periods used to assess the varying MRP levels, and which might well have contributed to an enduring reduction in MRP¹².

Headberry/Lim calculates MRP (measured from accounting data released by 300+ companies using PBT/equity less 10 year bond rate) and this showed that the MRP over the past 15 years varied from -3.6% to +7.8%, averaging 3.03%. This again supports the Officer and Mercer views of the current MRP level being at ~3-4%. That the results of the Headberry/Lim report replicate results by other such luminaries as Officer and Mercer adds credence to the recommendation of Headberry/Lim that the WACC (and MRP) be benchmarked against the historic results of the EBIT/assets achieved by industry in the competitive environment.

More recent (and most importantly, independent) reports relating to the current level of MRP being less than 6% include:-

1. Mr Ian Macfarlane Governor of the Reserve Bank who states that

¹¹ "Further capital markets evidence in relation to the market risk premium and equity beta values" by Headberry Partners P/L and Bob Lim & Co P/L, December 2003

¹² Another structural change that will impact on future ERP is the fact that recent high equity prices have been driven in part by the "Baby Boomer" phenomenon. Baby Boomers were in their maximum savings mode during the 1980s and 1990s and as equities were the main asset acquired this drove up equity prices, and so inflated the ERP. In the next decade there is an expectation that the Baby Boomers will commence selling these equities to finance their future as they have no other income. This will depress equity prices resulting in a fall in the ERP. This outcome is more fully developed in the article "Follow the money" Australian Financial Review 13-14 November 2004

“It seems to me that the community has not yet come to terms with the fact that nominal rates of return on financial and real assets are likely to be much lower over the coming decade or so than over the previous two decades.”¹³

2. Mr David Bassanese,¹⁴ commentator for the Australian Financial Review, opines that the long term market risk premium might be of the order of 3.3%. Bassanese suggests that this is much higher than the historical MRP over the past 20 years which he estimates at 2.25%.
3. Economic consultant, Winton Bates (in a letter¹⁵ responding to the Bassanese article) adds the view that MRP over the past 20 years is 3.3%.
4. Dr David Rees, head of investment strategy for CommSec notes¹⁶ that

“in Australia and elsewhere estimates of ERP vary from 0 to 8%. CommSec estimates it at 3.7% and argues that the ERP has been declining in recent years, both here and in the US, but may be ready to return to higher levels.”

3.1 Analysis of the Variability of MRP

The ESCoSA observes that there needs to be added to the long term average MRP, a premium to accommodate the necessary confidence that the MRP used for the regulated business does not understate what might be considered an acceptable forward looking return. It states that :-

“due to the statistical imprecision and the fact that historical is being used to forecast the premium, the Commission treats the estimate of the market risk premium from historical data with some caution.”¹⁷

On the following page the ESCoSA goes on to imply that the actual recorded MRP (ie the difference between the actual accumulation index and the actual corresponding bond rate) might not be an appropriate measure of historical MRP as there are other studies (noted by the ESCoV in its deliberations) which aver that :-

“the expected equity premium can be expressed as the sum of the expected dividend yield and the expected capital gain”.¹⁸

¹³ “Economic Opportunities and Risks over the Coming Decades” by I.J. Macfarlane, Governor, RBA, 13 November 2003)

¹⁴ Australian Financial Review 27 September 2004 “Fat dividends may not last”

¹⁵ Australian Financial Review, 5 October 2004 (letters to the Editor “Real bond yields to hit 4pc again”)

¹⁶ Australian Financial Review, 27 October 2004 “High yields, low P/Es to continue”

¹⁷ ESCoSA draft determination page 179

This change from implying the historical MRP should not be used in preference to an **expectation** of a higher MRP runs counter to the ESCoV view that the independent view they sought from Mercer Consulting (which suggests a forward looking MRP would be between 3% and 4%) should be discounted in preference to use of long term historical data which gave a higher value.

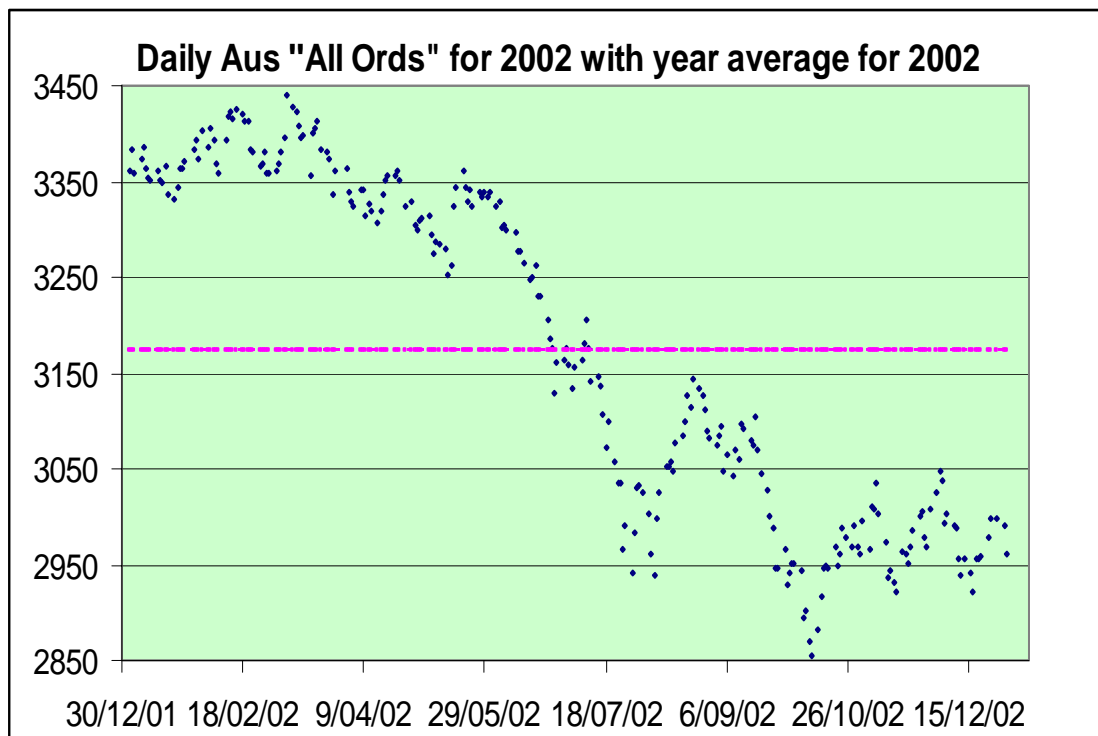
Based on the confusing logic in the draft determination, the ESCoSA suggests that the independent and recent recorded value of MRP of 3.3% **should be doubled** because of the need to incorporate both a “**confidence**” **premium** above the actual recorded amount and an **expectation** that returns might be higher than independent investment experts consider appropriate.

The following chart is a plot of the daily values for the Australian All Ordinaries index opening prices for 2002. As can be seen there is a significant scatter of the daily values varying from the year’s average of 3174. As the “all ordinaries” daily prices comprise a major element of the accumulation index¹⁹ it is easy to see that the daily variability introduces large values for the for the standard deviation and standard error calculated by Professor R R Officer for the average market risk premiums, and quoted by ESCoSA in table 10.5 of its draft determination for the ETSA review²⁰.

¹⁸ *ibid* page 180

¹⁹ The other element of the accumulation index is the share dividend which shows much less volatility, and which tends to remain closer to a constant level over long durations, generally in a 2-6% range band. This can be observed on the RBA website or in daily newspapers.

²⁰ ESCoSA Draft 2005-2010 electricity distribution price determination part A statement of reasons, 2004, page 179



Source: RBA website

Because of this daily variability and the large error and standard deviation noted by Officer, ESCoSA has determined that there needs to be a premium added to the recent 30 year average MRP of 3.3% calculated by Officer, and indeed replicated in the work by Headberry/Lim²¹ which identified an ERP of 3-4% by comparing actual returns (earnings and profits) published by the largest 300+ (by revenue) companies operating in Australia.

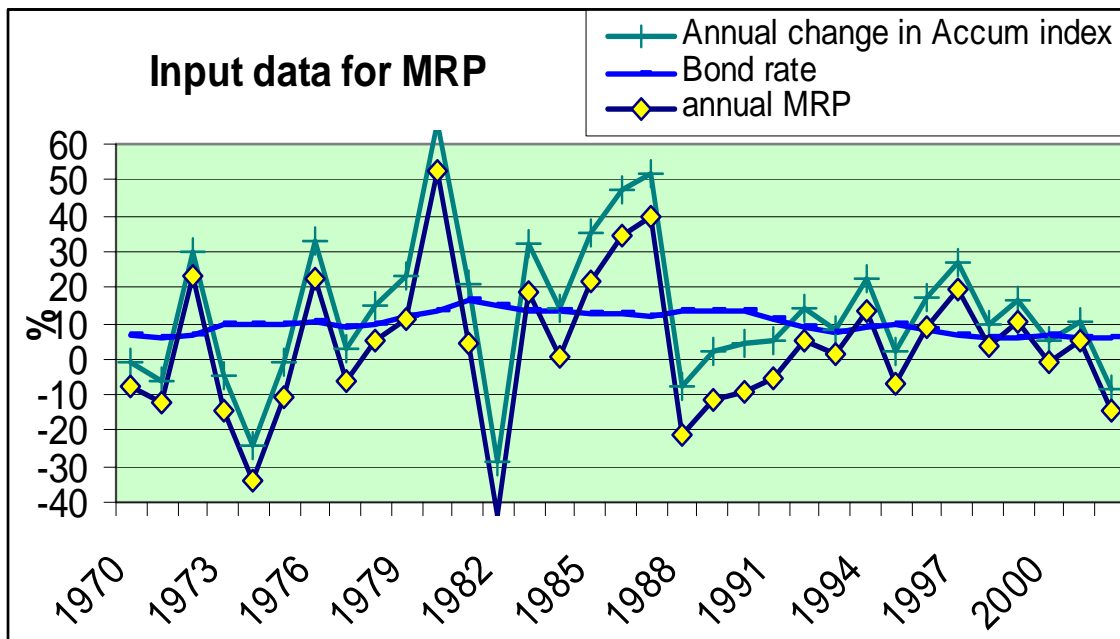
When considering the source data and its application, ESCoSA is in error in adding the standard deviation to the Officer calculated MRP for the past 30 years. If ESCoSA were trying to ensure that the MRP that they have determined should apply was just for one day in the coming regulatory period, then their approach is correct as the error which applies to **a single day's value** should fall within a reasonable error range (eg say 2 standard deviations which would give a 95% confidence level of being correct).

But for setting an MRP which is to apply for a period of five years, using the standard deviation which applies to **daily** variability, results in using an inappropriately high confidence level premium, as in reality the actual MRP for a continuous 5 year period is likely to exceed the average level by a much lesser

²¹ "Further capital markets evidence in relation to the market risk premium and equity beta values" by Headberry Partners P/L and Bob Lim & Co P/L, December 2003

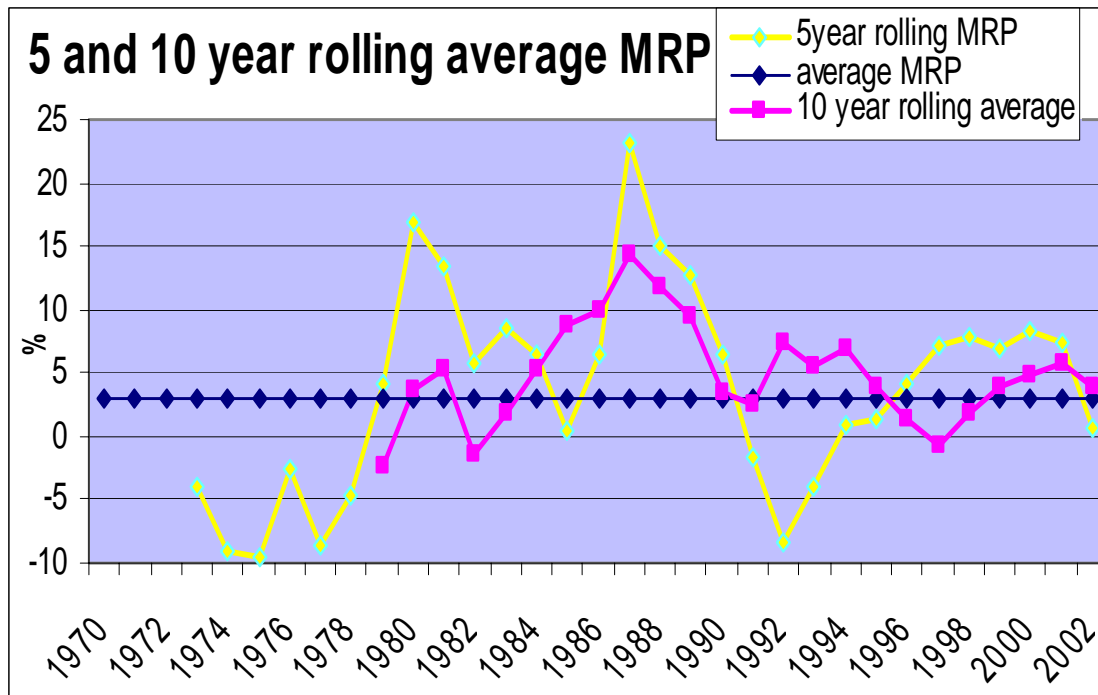
amount. Thus the risk premium to reflect a long continuous period must be much smaller than the risk premium to accommodate daily variations. Officer assesses the past 30 year term average at 3.3%.

Historic MRP is based on the change in the actual All Ordinaries Accumulation Index less the actual 10 year bond rate. The resultant MRP for each year is shown in the following chart. As can be seen in the following chart there is significant annual variation in the resultant MRP, which ranges from a high of 53% to a low of -44%. If such variation applied for a full regulatory period, then there would be some justification for the use of a high confidence premium.



Source: raw data from RBA website

The premium for setting a confidence level that the average MRP for **an entire five year regulatory period** is unlikely to greatly exceed the recent average value of 3.3%, and this is demonstrated by plotting a 5 and 10 year rolling average of the MRP to replicate the smoothing effect of setting an average MRP for an entire regulatory period. This is shown in the following chart.

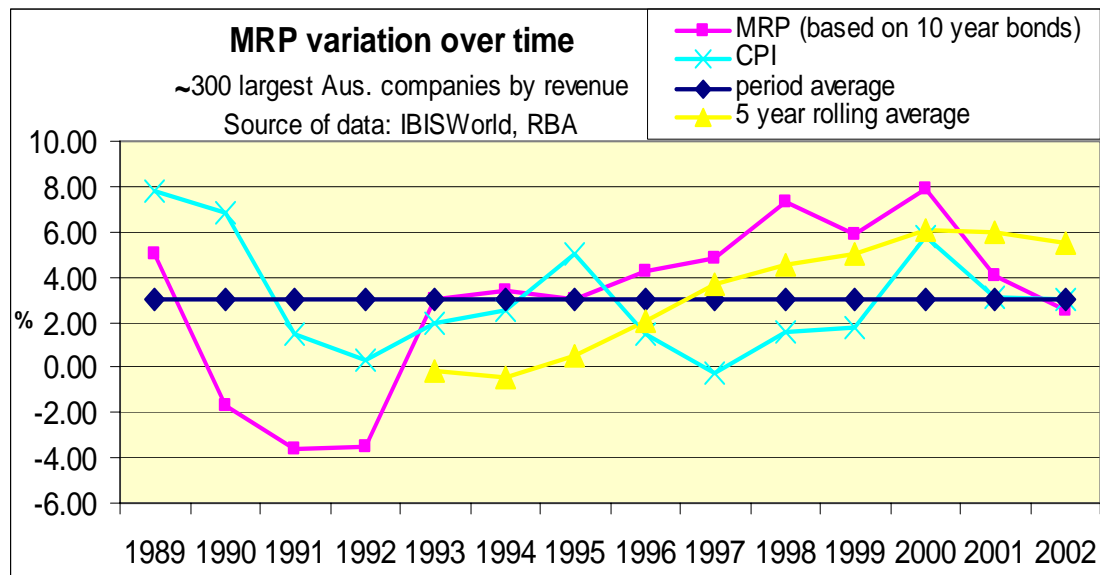


Source: manipulation of RBA source data using Excel, and adding R R Officer calculated average MRP

This chart shows that the volatility of the annually calculated MRP reduces dramatically with some reasonable averaging. This chart demonstrates the importance of using the most recent data to provide a more appropriate forward looking MRP. Using the 10 year rolling average provides a strong basis for using a forward looking MRP of perhaps 4% at best, if the decision is to not use the 30 year average of 3.3%. Certainly the chart shows that to use an MRP of 6% (ie twice the 30 year average) is excessive, and provides ETSA with an unreasonable premium on its investment.

Thus the MRP of 6% used by ESCoSA in its draft determination must be seen as excessive.

To support this view, the following chart shows a plot of MRP against 14 years of the 30 year period used by Officer for the last 30 years. The data is sourced for actual company profitability calculated for each year, and therefore a sound averaging for each year's performance. As can be seen the MRP volatility is quite low with an average of 3%. Adding a five year rolling average demonstrates that the MRP follows a similar trend to that based on the accumulation index, and again demonstrates that **at most** a forward looking MRP should be no more than 5%, still significantly below the MRP level of 6% used by ESCoSA.



Source: Headberry/Lim²²

3.2 Recent Ofgem Studies

A report by Ofgem²³ in its recent review of the cost of capital²⁴ also refers to a variation of MRP (also referred to as equity risk premium ERP) over time. It includes in its analysis the following observation

“Given the increasingly integrated nature of capital markets, Dimson, Marsh and Staunton argue that there is a strong case to adopt a global rather than a country specific approach when determining the prospective ERP. They present a forward looking ERP in the order of 3% on a geometric basis and in the order of 5% on an arithmetic basis. They argue that the ERP is almost certainly not as high as in the mid-1990s, and regard a 5%-6% geometric mean or 7.5%-8.5% arithmetic mean as excessive. The reduction in the expected ERP is due to a range of factors, such as a more stable business environment²⁵ (e.g. end of the Cold War, increased international trade and investment flows) and better opportunities for investors to diversify (both domestically and internationally).”

²² Ibid, page 21

²³ The Office of Gas and Electricity Markets (the UK regulator for gas and electricity)

²⁴ Electricity Distribution Price Control Review, Background information on the cost of capital March 2004

²⁵ These sentiments reflect the observation of Headberry/Lim about the impact of structural change of markets.

Ofgem, and its consultants, have assessed the long term MRP in the UK (in the range 5%-8% depending on the basis of the calculation used) and this shows a remarkable similarity to the range of MRP developed by Officer. Ofgem asserts that the long term values of MRP observed in the UK are reflected in the US as well. Ofgem offers the observation that this is probably related to increasing international trade (globalization) and the better opportunities available for investors to diversify globally.

In this regard it is worth noting that many of the investment funds operating in Australia have a significant proportion of their funds invested internationally²⁶. In this regard it is pertinent to note that the Australian equity market represents only 2-3% of world equities market. Failure to invest offshore has the distinct disadvantage of limiting the returns available to Australian investors. If such a high proportion of Australian investment funds are placed off shore, it then comes as no surprise that the MRP in different developed countries is similar.

In defending their stance of holding the MRP at a high level, the ACCC and other regulators have often referred to the observation that as Australia is somewhat remote from other developed countries and is more isolated from international money markets, that there is some justification for holding the Australian MRP at higher levels than in the UK or the US. Based on the observed MRPs in these other countries which replicate the observed Australian MRP, this argument would appear to have little factual substantiation, and relies more on unfounded intuition or, at best, only a reflection of past conditions. There is little doubt that with its current exports, Australia is an active competitor in the world markets.

If the long term MRP is similar in each of Australia, the UK and the US, it would be expected that similar approaches to awarding MRPs by the regulators in each country would/should be similar.

Ofgem accepts that the MRP varies over time (both upwards and downwards) and highlights the importance of using a forward looking MRP as the best reflector of an appropriate WACC to be used for its forth coming regulatory period. Despite the fact that Ofgem recognizes that the long term average MRP is considerably higher, based on its analysis **it is of the view that the *forward***

²⁶ One of the authors of this paper was a director of a medium sized investment fund and advises that the fund (on the advice of globally recognized investment advisers) operated with a nominal funding approach of 30% in international equities, 40% in Australian equities, and the balance in bonds, fixed interest and property.

looking MRP to be used in its current review is in the range 2.5 to 4.5²⁷, a change over the past five years from the 3.25-3.75 used in 1999²⁸.

That Ofgem identifies the importance of recognising there is a need to accept there is a variation in MRP, is an issue that Australian regulators have failed to either understand, or worse, have decided is an issue to be left to regulators in the future.

3.3 The implications of a variable MRP

This consensus view that recent shorter term levels of MRP are somewhat lower than a long term average of 6% raises a very important issue.

The WACC is intended to provide a forward looking estimate of financing over the next five year regulatory period. The WACC set by the regulator is intended to provide the regulated business with the ability to continue funding its existing assets and provide funds for capital expenditure. As such, it represents a common approach to financing their activities which applies equally to all regulated businesses regardless of their unique capital structure or methods for financing or raising funds.

There is little doubt from the surveys and estimates of MRP over time that the MRP does change. If regulators persist with using an MRP which is above the current market, this effectively penalizes consumers and creates an incentive for regulated businesses to over invest in order to obtain higher returns than they would get elsewhere. By using a long term average for MRP, the regulator is tacitly agreeing to provide higher returns to regulated businesses when the returns from the market are low (ie when the short term MRP is below the long term average) and lower returns to the regulated businesses when the returns from the market are high (ie when the short term MRP is above the long term average).

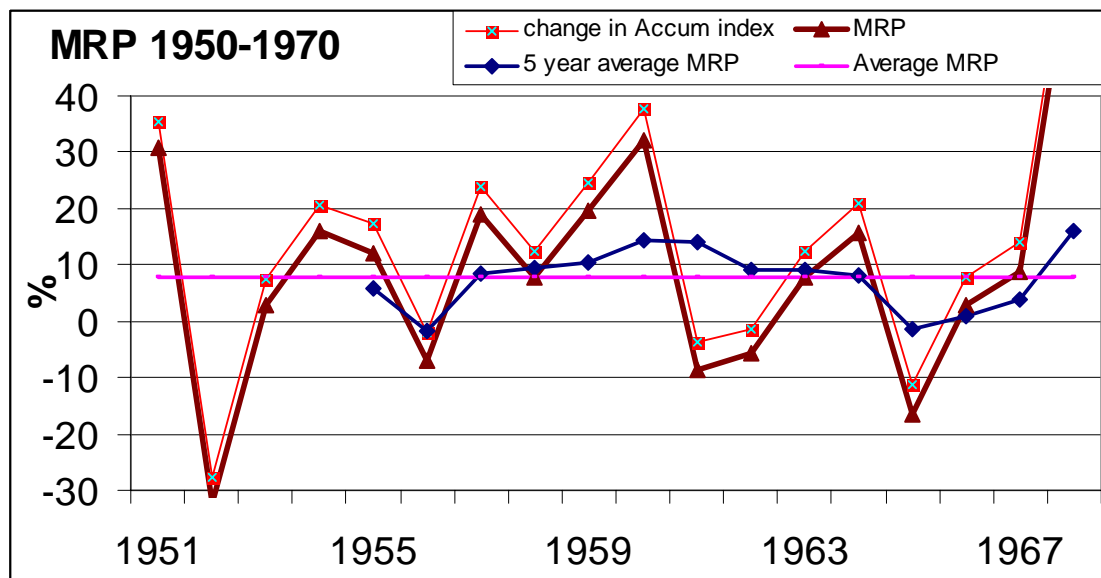
This will create a major asymmetric issue for all concerned – consumers, regulated businesses and regulators – at some point in the future. If regulators persist with basing returns on a long term average of MRP, then there must be at some point of time in the future when the long term average MRP will be lower than the shorter term MRP and therefore be insufficient **at that time** for an investor to provide equity to a regulated business.

²⁷ OFGEM report Electricity Distribution Price Control Review, Background information on the cost of Capital, March 2004, page 15

²⁸ It is important to note that Ofgem uses 20, 10 and 5 year “gilts” as the basis for assessing its risk free investment rate. “Gilts” are issued by the UK government and thus equivalent to Australian government bonds

Using the Officer data referred to above, the last 30 years have an average MRP of 3.37 (1970-2001). The long term average for MRP is estimated by Officer at 7.19 (1882-2001). Simply by just applying ratios to these numbers, this implies that for the period 1882 to 1970, the MRP would be 8.6%. Thus if at some point of time in the future the market returned to the implied returns of the period 1882 to 1970 of 8.6% and regulators persisted with using an MRP of 6% (as this is the long term average) then the owners of the regulated business would have **an insufficient return on equity by about 300 basis points** (which translates to a WACC insufficiency of some 100 basis points) to justify investing any more equity into the business²⁹. The most obvious outcome of this would be that service provision would either commence running down or there, would need to be an increase in gearing. Either outcome places stress onto the regulated business.

This point can be made more graphically. Below is a chart of the MRP calculated for the 20 year period 1950-1970. This shows that the MRP exhibit's a similar volatility as noted earlier, and it shows that the average MRP for this period is nearly 8%, well above the long term average of 6%. The rolling five year MRP shows a much reduced volatility compared to the annual movements.



Source: raw data obtained from the RBA website

This clearly shows that even in the past 50 years, a medium term average MRP of nearly 8% did actually occur. If the regulator of the day had used the long term average of 6%, regulated businesses would have been severely disadvantaged financially.

²⁹ Simply applied and assuming a gearing of 60%, the implication of using 6% MRP instead of 8.6% would result in a WACC of **at least 100 basis points below** the market levels needed at that time.

As regulated businesses are essential services by their very nature, the regulators can then be placed in an extremely invidious position. They would either have to point out to the business that there would be no increase in the return thereby creating financial stress or, and the more likely scenario, the regulator would agree to an increase in the MRP to reflect the then current conditions. As regulators have been using the long term average MRP to set the WACC, if the regulator did agree to increase the return to the business then it would have failed to execute its role in ensuring a balance between the needs of the business and the commitment to consumers to ensure equity between service and cost. **It would have been a better solution for the regulators tended to reflect the current MRP, allowing the MRP (and the WACC) to rise and fall as the market conditions actually vary, rather than using a long term average, which currently disadvantages consumers, but will lead to disadvantaging regulated businesses in the future.**

Owners of regulated businesses and regulators change over time. The only constant is the consumer. Regulators have the responsibility to ensure that their actions of today do not create problems for regulators in the future; these regulators of the future will also have to provide a balance in their decisions between regulated businesses and consumers. The outcome of continuing the practice of using inappropriate long term averages for MRP not only disadvantages consumers of today, but will also have the potential to do likewise to consumers at some point in the future.

In ensuring fairness to all, now and in the future, it must be accepted that there is an essential inconsistency in using a long term average as the basis of setting the MRP.

ESCOSA's draft decision has failed to recognize these issues, as well as failing to recognize the importance of the more recent studies undertaken by Ofgem and others.

4. Issues surrounding equity beta

Australian regulators have been consistently applying an equity beta of 1.0 for 5-6 years. This has been used as it is effectively the average equity beta for all businesses. It was also the equity beta calculated by the AGSM as representing the “Infrastructure and Utilities” sector of the stock market. As there were few regulated businesses listed on the stock exchange, regulators assumed that the “Infrastructure and Utilities” sector reflected the regulated businesses involved in electricity and gas transport – analysis of the companies comprising this Index shows the fallacy of this comparison.

In more recent times, regulators have accepted that an equity beta of 1.0 is probably on the high side of appropriate. In fact, the ACCC stated in its submissions to the Australian Competition Tribunal when the ACT heard the appeal by GasNet against the regulator’s decision for the Victorian gas transmission business, that an equity beta of 0.7 was more appropriate to the Victorian gas transmission business.

During a meeting between the ACCC and representatives of energy consumers on 1 October 2004, the ACCC made an observation that there is no doubt that using an equity beta of 1.0 for gas transport is “intuitively” too high, and this intuitive observation is supported by the Allen Consulting Group calculations³⁰ for the small number (6)³¹ of Australian gas businesses available for comparison. This report suggests that the equity beta for regulated gas businesses should be 0.7.

The Allen report notes ³² that

“... there are sound arguments for relying upon the latest market evidence when deriving a proxy beta for the regulated activities of a regulated gas transmission entity. Exclusive reliance on the latest Australian market evidence would imply adopting a proxy equity beta (re-levered for the regulatory-standard gearing level) of 0.7 (rounded-up) for these activities. Moreover, regard to evidence from North American or UK firms as a secondary source of information does not provide any rationale for believing that such a proxy beta would understate the beta risk of the regulated activities. Rather, **the latest evidence from these [overseas] markets would be more supportive of a view that the Australian estimates *overstate* the true betas for these activities,**

³⁰ Allen Consulting Group Empirical Evidence on Proxy Beta Values for Regulated Gas Transmission Activities July 2002

³¹ The six being AGL, Australian Pipeline Trust, Envestra, United Energy, AlintaGas and GasNet

³² Allen Consulting Group Empirical Evidence on Proxy Beta Values for Regulated Gas Transmission Activities July 2002. page 5

although concerns are expressed with the reliability of the beta estimates from these other countries.” (our emphasis added)

Despite the Allen observation that the calculated equity beta of 0.7 could well be too high, it was stated by the ACCC at the 1 October 2004 meeting that in accepting that the equity beta at 1.0 is too high, there is a problem in deciding what the figure should be. It was then stated by the ACCC that its “considered view” was not to reduce equity beta from the average of 1.0, but accepting at the same time that at 1.0 it is too high.

4.1 QCA and Dalrymple Bay

In its recent draft decision³³ (2004) on Dalrymple Bay Coal Terminal (DBCT) the QCA states that the equity beta for the DBCT should be 0.66. To support its view it based its draft decision on the report³⁴ commissioned from Allen Consulting Group on proxy betas for infrastructure facilities similar to the Dalrymple Bay facility. The QCA states (page 186) that:-

“ACG, in summary, identified the most important explanatory factors for DBCT’s asset beta as the nature of the product and customer base, pricing structure, and duration of contracts. Consequently, the ACG concluded that this implies that DBCT’s revenue is highly invariant to the state of the domestic economy. Along with a low operating cost structure, these factors jointly imply low systematic risk for DBCT.”

Whilst the views apply to the uniqueness of an export port facility, these same features which reduce the systematic risk apply equally, if not more so and with greater emphasis, to electricity and gas transport, with their unique products and market niches, lack of serious competition, guaranteed revenue streams and low risk on operating costs. The QCA (page 185) notes that whilst there is potential for competition to DBCT, it is :-

“... in a strong competitive position, [with] possible inter-port competition, eg Gladstone and (potentially) Abbott Point, [being] a significant issue for DBCT.”

Analysis of the relative risks between an export port such as DBCT and energy transport, shows that if anything the security of revenue and continuing demand for the service business is even higher (implying a lower equity beta) for energy transport, than that enjoyed by DBCT.

³³ QCA Draft Decision Dalrymple Bay Coal Terminal Draft Access Undertaking October 2004

³⁴ Allen Consulting Group Dalrymple Bay Coal Terminal, Analysis of Proxy Betas September 2004

4.2 Ofgem Study

Ofgem, as part of its recent price control analysis work, notes³⁵ that the observed monthly calculated equity beta of 1.0 for the period 1993-1999 for electricity businesses (and adopted by Ofgem in its 1999 review) has fallen approximately to a current level of 0.3 (page 16). Ofgem perceives that the higher equity beta was perhaps a result of the “TMT”³⁶ bubble and the benefit that regulated businesses provide “safe haven” stocks. This has exhibited the downward movement of equity betas for “safe haven” stocks and the upward movement of equity betas in “high tech” stocks. Reviews quoted by Ofgem attribute this effect would result in equity betas for electricity businesses being closer to 0.6-0.70 in both the UK and the US. As a result of their analysis Ofgem concludes (page 20) that:-

“Given the Smithers & Co report and Ofgem’s own analysis of the evidence, Ofgem has adopted a range for equity beta of 0.6 – 1 for its cost of capital calculations”

an equity beta for the regulated element of electricity businesses should lie in the range of 0.6-1.0.

4.3 The implications of the Ofgem analysis

One of the prime stated reasons for the ACCC and other regulators not to accept the findings of the Allen Consulting analysis of equity beta calculations is the view that there is a limited sample for comparison. It is then stated that in the absence of a large sample to give confidence it is “safer” for the regulator to consider that the equity beta be set at the market average ie at unity. Regulators state that setting equity beta at this level does not disadvantage the regulated business. Countering this, consumers have consistently stated that setting equity beta at unity results in a distinct financial disadvantage to consumers.

A further argument used by regulators (with the exception of ESCOSA and IPART- see below) to support their “safe” setting of equity beta at unity, is that the bulk of comparisons are from overseas observations and that the Australian market has different characteristics and therefore there might not be a direct comparison between the different markets. What this assumption overlooks is that by definition equity beta of unity is the average of the market regardless of the country and its market. All other equity betas are relative to this same

³⁵ Ofgem, Electricity Distribution Price Control Review, Background information on the cost of capital, March 2004

³⁶ TMT refers to the major influence technology, media and telecommunications stocks had on stock markets internationally during the mid to late ‘90s

average of unity. Thus it must be expected that similar equity betas would apply to similar businesses regardless of the country in which the calculation is made.

The Ofgem analysis provides a much larger sample for the analysis of equity beta and therefore provides a higher degree of confidence of the outcome. Ofgem has set the electricity distribution businesses equity beta in the range 0.6 to 1.0. This range certainly implies that an equity beta of unity is at the extreme upper range of an acceptable level.

4.4 IPART analysis

ESCOSA's draft decision on EB at 0.8 is a significant move by an Australian regulator and is a recognition of the forward-looking expectation of the relationship between the movements in the returns to ETSA to the movements in the equity market as a whole i.e. by placing weight on the market evidence of betas, albeit at the upper end of observed equity betas.

The NSW IPART in its December 2004 draft determination on the AGL Gas Networks applied an equity beta in the range of 0.8 to 1.0. The Tribunal took into account the views contained in the Headberry/ Lim study :-

“ that the proposed equity beta is too high and the comprehensive study on the equity beta it submitted in support of this view”³⁷.

IPART also undertook its own study of companies comparable to AGLGN that are traded on the Australian share market. The study shows that equity betas for these companies have historically been lower than unity and in the case of AGL (of which AGLGN is a subsidiary) the equity beta has decreased over the last three years. Whilst a backward-looking equity beta will not of itself reflect prevailing market conditions over the next 5 years, (the equity beta is a forward-looking parameter), it does, provide a relevant guide or consideration in indicating trends.

4.5 SFG³⁸ report and analysis

AGLGN employed SFG to review and comment on the equity beta which they believe should apply in the development of the WACC for the AGL gas distribution network review of 2005 by IPART. As might be expected, the results

³⁷ IPART. Revised Access Arrangement for AGL Gas Networks December 2004. Draft Decision, page 83

³⁸ SFG is the Strategic Finance Group, a consultant employed by AGLN to prepare the report “The Equity Beta of an Energy Distribution Business”, 10 February 2005, forwarded to IPART as part of the NSW gas distribution review

of their examination and analysis are that the equity beta to be applied to AGLN should be 1.0.

What is of great interest is that there is a major variability in the equity betas calculated for individual businesses, and that there is considerable variation in the equity beta for the same business when tracked over time. SFG comments they:-

“...examine the statistical reliability of standard beta estimates... demonstrate that beta estimates for individual firms, and for small portfolios of comparable firms, suffer from a high degree of statistical unreliability...[and they] examine a range of methods for estimating betas and conclude that no single method can provide a precise and statistically reliable point estimate.”³⁹

SFG goes on to state they conclude that:-

“The uncertainty surrounding beta estimates, and the effect this has on estimates of WACC, should be quantified and explicitly addressed (e.g., by specifying ranges rather than point estimates and/or examining the sensitivity of WACC estimates to parameters that are estimated with uncertainty),”⁴⁰

SFG devotes much of its report into demonstrating that the estimation of equity beta shows a high degree of volatility, and uses statistics to show that the impact of excluding certain values calculated has a major impact on the outcome of the analysis. Even using a regression analysis and selecting inputs at random, it concludes that the actual equity beta calculated for AGL over the past four years (of -0.06) must be:-

“...result of outliers and statistical aberrations.”⁴¹

SFG considers that if the impact of the “tech bubble”⁴² is excluded from the calculation then AGL equity beta would be much higher. This view is not denied but as the market continues to show that external events such as the tech bubble cause continuing change in the market outcomes thereby highlighting that change itself is a constant in the market place. This point is clearly made in Headberry/Lim⁴³ that changes in the world are continually occurring and all impact on the equities market which is the fundamental source of both equity beta and market risk premium. For SFG to identify only the tech bubble for

³⁹ SFG, “The Equity Beta of an Energy Distribution Business”, 10 February 2005, page 3

⁴⁰ Ibid, page 3

⁴¹ Ibid, page 19

⁴² Also referred to as the “dot.com bubble” by others

⁴³ Op cit page 17

specific treatment⁴⁴ is to deny the impact of all other changes which affect the equities markets.

SFG observes that the equity betas for Australian businesses comparable to AGLGN – the regulated element of AGL – (such as Alinta, Australian Pipeline Trust, Envestra and GasNet) need to be adjusted to equate to 60% gearing, implying that these companies have a lower gearing than that the 60% assumed by regulators to be the benchmark. In fact each of these four companies has a gearing of about 60% or greater (67%, 58%, 91% and 68% respectively⁴⁵). As each has been able to secure funding from the market place for growth, the average equity beta of 0.7 across all (including AGL) calculated by SFG⁴⁶ from the market values for each company would appear not only to be an appropriate value to use in the WACC development, but also is sufficient for the “average” business to secure necessary and appropriate funding.

What SFG does not include in its analysis is that despite identifying that AGL (with its overall gearing of 42%⁴⁷) has a low equity beta, it does not go on to admit that this has not adversely impacted on AGL’s ability to secure funding (debt and equity) for its acquisitions over the past four to five years. The deduction that can therefore be drawn from this clear example is that the identified actual low equity beta has not significantly affected AGL’s ability to secure funds required for its expansion and investment.

This example provides significant doubt on the often stated observation that granting of a low equity beta by the regulator would prevent the regulated business from acquiring funds (debt or equity) from the market place.

4.6 The implications of the SFG analysis

The SFG review and analysis identifies that equity beta (particularly for a specific entity) does not have a fixed value, but one which varies between entities and over time.

SFG provides the view that:-

“... the real goal for a regulator is not to set the regulatory equity beta to match “the 60-month equity betas...over the next 5 years” but to set

⁴⁴ SFG refers to the Allen Consulting Report relating to the QCA review of electricity businesses as supporting its view that equity beta should be 1.0. Other ACG reports (eg to ACCC in 2002, and to QCA on Dalrymple Bay in 2004) clearly imply that regulated utilities should have a lower equity beta than 1.0

⁴⁵ Source – CommSec webpage

⁴⁶ SFG page 35 quoting ACG table 6.1

⁴⁷ Source – CommSec webpage

a regulatory equity beta which results in returns being sufficient to attract a sufficient level of investment. Even if we could perfectly match the 60-month equity beta that will be estimated over the next 5 years, we would only be matching an imprecise and statistically unreliable estimate of the true value.”⁴⁸

This view is supported but when considering the equity beta of AGL as a business, it is essential to be aware that AGLGN is only a relatively small part of the entire AGL business. Other elements include energy retailing (AGL is one of the three major retailers of gas and electricity in Victoria, the dominant retailer of gas in NSW, and the dominant retailer of electricity in SA), and electricity generation (AGL is a major shareholder of Victoria’s largest generator, and has peaking generation facilities in both Victoria and SA. AGL also owns the smallest electricity distribution business in Victoria, and until recently has owned distribution, retailing and generation assets in New Zealand.

SFG has assessed that AGL as an entity⁴⁹ should attract an equity beta of 1.0, as AGL has a variety of businesses, most of which it must be agreed have a higher risk profile than owning network assets. It would appear that in order to accommodate the higher equity betas associated with retail and generation activities⁵⁰ of AGL, this would imply quite clearly that even if AGL had an equity beta of 1.0 (which it doesn’t) the AGL networks businesses must have a lower equity beta, of between 0.7 and 0.8 in order to achieve an overall equity beta of unity for the listed (aggregated) entity. In fact using the AGL equity beta of 0.66 assumed by SFG⁵¹ would reduce the equity beta for the regulated element (AGLGN) of the AGL portfolio, even further.

There is no doubt that the equity beta for individual firms varies greatly with time (as is noted earlier in reference to the market risk premium) and SFG goes to great lengths to demonstrate this. Accepting this is a feature of the equities market on which both equity beta and MRP are deduced for use in the CAPM approach, the task is for the regulator to identify what is an average at a given point in time, and to use this as a proxy for a forward looking view as the basis for the coming regulatory period. Granting too high a figure will give an unearned benefit to the regulated business at the expense of the consumer.

As it is now becoming more obvious that there is considerable doubt as to what the value of equity beta of a firm or class of firms will be at any given point in time, there is a need to ensure that the calculation of WACC is verified against an

⁴⁸ SFG page 36

⁴⁹ The data used by SFG to calculate equity beta for AGL applies to the entire business entity

⁵⁰ The AGSM has calculated average equity betas for retail businesses (1.269) and infrastructure and utilities (0.983) which included generators. These are listed by the ACCC in its draft decision on ElectraNet 2002, in table 2.2

⁵¹ SFG page 35 quoting AGC table 4.1

actual benchmark independently derived from the market place. Headberry/Lim has suggested that such a benchmark should be based on a review of the actual performance of businesses (such as EBIT/assets) which can be derived from the calculated WACC and the expectation of the regulated business revenue and expenditure used as the basis of the regulatory decision. Until such independent comparison is instituted there will be a continuing debate as to whether the WACC calculated will be the minimum needed to ensure the continuing viability of the regulated business.

5. The ESCoSA Draft Decision

ESCOSA's draft decision on the MRP and the equity beta only partially recognizes the absence of asymmetric risk in the rate of return adopted for ETSA. The Electricity Pricing Order (EPO) constrains the Commission in its review of ETSA, in particular, by preventing it from reviewing the Regulatory Asset Base and requiring it to accept that past capex and opex are prudent and efficient (in terms of the requirements of c1.7.2 (e) of the EPO). These are significant constraints on the veracity of the independent review, and more than likely provide ETSA with substantial additional regulated revenues (compared with a situation where all costs have to be rigorously assessed and justified). Electricity consumers in South Australia are substantially disadvantaged by such governmental fiat.

Against this background, we believe that ESCOSA should determine for ETSA:-

1. A forward looking Market Risk Premium in the range of 3-4%
2. An Equity Beta in the range of 0.6-0.8.

March 2005