

ELECTRICITY CONSUMERS COALITION OF SA

73 Longview Road
North Balwyn, Vic, 3104
Ph: 0417 397 056

Email: davidheadberry@bigpond.com

28 January 2005

The Chairman
The Essential Services Commission of SA
GPO Box 2605
Adelaide SA 5001

Attention Mr Lew Owens

Dear Mr Owens

Draft 2005-2010 Electricity Distribution price Determination

Market Risk Premium and Equity Beta

The Electricity Consumers Coalition of South Australia represents the larger users of electricity in South Australia, and includes such companies as Adelaide Brighton Cement, OneSteel, Zinifex, Kimberly Clark, Holden, Mitsubishi and Seeley International. Electricity distribution costs are a significant cost for all members and therefore your recent draft determination on ETSA Utilities price review is of great interest to ECCSA members. We are in the process of reviewing the draft determination in detail and we intend providing you with a formal response to that document by the due date of 11 February 2005.

However we did notice with considerable interest that the ESCoSA has included in its draft determination that the equity beta to be applied in the development of the ETSA Utilities WACC, should be reduced from the level of 1.0 used by other energy regulators to a value of 0.8. We applaud this movement, even if we consider that a lower level (probably to 0.7) should be used. Because of the ramifications we recognise that this new level of equity beta level used by the ESCoSA will be heavily challenged, not only by ETSA Utilities, but by all regulated energy network owners.

Because of this probable challenge we have decided to provide you with additional data which we consider will assist the ESCoSA in defending (perhaps even further reducing) the equity beta proposed for ETSA. Accordingly we attached to this letter further work establishing that using an equity beta of unity is inappropriate for ETSA Utilities, and for all other energy networks.

We have also noted that you have proposed that the market risk premium should be held at 6% - the same level as used by other regulators in Australia. We continue to

be of the view that this level is too high and we have provided additional research into why ESCoSA should reduce MRP below 6% in this current environment. Our work is also included in the attached research paper.

We would like to meet with you and the ESCoSA officers involved in the WACC development for ETSA Utilities to discuss our additional research in more depth. We suggest that this occur later in February after you have received all submissions to your draft determination. We will contact you later to arrange a time if this is acceptable to you.

If we identify any further support for your decision on equity beta (or indeed about our contentions about MRP), we will forward these as soon as we are able to do so.

We look forward to the debate that will undoubtedly occur as a result of your draft determination.

Yours sincerely

John Pike
Chairman, ECCSA

2003/04 ESCoSA

ELECTRICITY DISTRIBUTION PRICE REVIEW

OF

THE ETSA UTILITIES REVENUE CAP

Observations In Relation to ESCoSA's Draft Determination

and of the accompanying

Review of Capex and Opex by PBA

by

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

for

The Electricity Consumers Coalition of South Australia

February 2005

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1. Introduction

ETSA Utilities (ETSA) has made application to the Essential Services Commission of South Australia (ESCoSA) for approval to increase its costs to supply an electricity distribution service to electricity consumers in South Australia. If the costs were allowed to remain as ETSA applied for, then consumers would have been subjected to unreasonably inflated costs for the service.

The Electricity Consumers Coalition of South Australia (ECCSA) comprises Adelaide Brighton Cement, Holden, Kimberly Clark, Mitsubishi, OneSteel, Seeley International and Zinifex. Each of the companies in the group is connected to the ETSA distribution network and is subject to the charges permitted ETSA by ESCoSA. Further, the ECCSA members also recognize that all other electricity consumers connected to the ETSA network would pay increases in proportion to those paid by ECCSA members.

The analysis of the ETSA application by ECCSA observes that all electricity consumers will be subject to increased costs for use of the service because:-

1. There is an expectation of volume growth in SA of 2.1% (ESIPC figures), so that any revenue increase above this amount must result in increased costs to all electricity consumers, including ECCSA members.
2. The capex claim results in an increase in the RAB by nearly 40% over the next five years.
3. The ETSA capex claim shows an increase of nearly 100% above the average of the past five years and triple the amount expended in 2001/02.
4. The cash impact of the capex increase from current levels is ~\$18m increase each year (ie \$18m in year 1, \$36m in year 2) giving an average increase of \$54m per year.
5. The ETSA opex request shows an increase of nearly 100% from current levels in nominal terms.
6. The cash impact of the opex increase above current levels is by an average \$70m per year.
7. The impact of the capex and opex increased claimed will give a total increase in annual revenue to ETSA of \$112m average increase for each year of the five year regulatory period.
8. As the total yearly volume of electricity in SA is currently about 12500 GWh, this increase in cost will add \$9/MWh (or nearly 1 cent/kWh) average to the current notional average tariff which currently sits at about \$45/MWh ie there would be an increase of some 20% in distribution tariffs to accommodate these increases.
9. Allowing for volume growth of 2% per year this implies the tariff increase would need to be 18% to provide for the requested revenue changes.

10. Using this revenue and the ETSA revenue allocation policy, all tariffs would rise, probably on a consistent basis across all tariffs.

Additionally, ETSA has sought an increase in the generally used market risk premium (used in the calculation of WACC) from 6% to 6.5 and suggested the equity beta should be higher than the generally used 1.0 due to its "rural exposure".

As the ETSA application costs greatly exceed the forecast growth in consumption, there can be no doubt that the ETSA application, if allowed to go unchecked, will result in very substantial network charge increases to all electricity consumers, including all ECCSA members.

Fortunately, the ESCoSA draft determination does result in lesser amounts being granted to ETSA for the provision of the electricity distribution service. The ESCoSA draft determination proposes that total capex be reduced by \$127m to \$723m, and total opex be reduced by \$116m to \$630m. These changes will have the impact of reducing the ETSA claim by a little over \$2/MWh. The decision of ESCoSA to reduce the equity beta results in a further saving of just under \$1/MWh. On this basis the ESCoSA determination has the effect of allowing an increase in charges by nearly 10% above where they more realistically should be, even allowing for growth in consumption.

ESCoSA believes that its determination will result in a general fall in average tariff in the first year of the new regulatory period, from the current level of about \$44/MWh by some \$3/MWh¹. This is caused entirely by a reduction in the high return on assets which the (previous) government had used in developing the Electricity Pricing Order. ESCoSA noted that there are other reductions which consumers are entitled to, but by permitting the extraordinary increases in capex and opex, it is obvious that these other savings have been dissipated.

The ECCSA analysis is based on average increases over the whole of the regulatory period and includes for the further increases in capex and opex which occur in later years. ECCSA believes this is a more appropriate way of assessing the impact of the revenue changes for a regulated entity, and gives a better and more typical interpretation of the determination than purely looking at only the changes from the last year of the current regulatory period to the first year of the new period.

Notwithstanding that there might be disagreement about the extent of the reduction of revenue awarded to ETSA, there is no doubt that ESCoSA has still permitted ETSA a large increase in both opex and capex above the average level used by ETSA over the current regulatory period.

¹ Draft determination, page 217

2. The Approved Regulatory Rate of Return

The ECCSA has consistently advised the ESCoSA that the parameters used in the development of the WACC are too high. In particular, the values used for market risk premium and equity beta, need to be reduced.

ESCoSA has determined that the equity beta should be 0.8, rather than the value of 1.0 used consistently by regulators in earlier decisions. ECCSA agrees that the equity beta should be reduced but that 0.8 is still too high, and should be 0.7. Notwithstanding its view that the equity beta should be lower, ECCSA congratulates the ESCoSA on recognizing that the equity beta should be lower than 1.0.

ESCoSA has determined that the market (equity) risk premium should be set at 6%, the same value used in the past by regulators in earlier decisions. ECCSA considers this value is too high **for current market conditions**, and strongly recommends a value of between 3% and 4% should be used.

ECCSA members are all companies operating in the world economy and are well aware that the return they achieve on their assets is must lower than the returns regulators are granting regulated businesses. Despite the continuing reference to this disparity, no regulator has ever attempted to benchmark returns granted by them to what occurs in the competitive environment. Regulators have assumed that such returns can be modeled in isolation and regulated returns set without any reference to competitive outcomes. ECCSA has contributed to a number of research papers regarding this matter, and in an attempt to find a method for benchmarking has made a number of proposals to benchmark the awarded WACC. ESCoSA has failed to carryout any benchmarking of the awarded return.

Partly to support the ESCoSA move on equity beta, but more to provide more evidence to further reduce equity beta and to reduce MRP, ECCSA has prepared a detailed paper examining recent moves relating to these two parameters. This paper "Observations in Relation to ESCoSA's Draft Decision on Market Risk Premium and Equity Beta Applied to ETSA" dated **February** 2005 is appended to this submission.

This February revision expands on the version (dated January 2005) provided earlier to ESCoSA.

3. The Approved Opex

Throughout this section amounts of funding are based on a constant dollar basis, using March 2004 as the given point in time. This allows realistic and valid comparisons to be made with relation to expenditure.

The approach taken by ESCoSA to set the forecast opex is to use the 2004 actual opex used by ETSA, and to adjust for “step changes” between the two regulatory periods. From this basis a number of other assessments were made to develop the final allowance. ESCoSA used consultants (PBA) to closely examine the opex step changes and to make assessments of the allowance included in the current actual opex in order to reflect the impact of any changes.

In principle, ECCSA supports this overall approach to setting future opex for ETSA, but takes issue with the setting of the base starting point, and the decision to allow for what appear to be “additional costs” arising from step changes, but in fact either were, or should have been, included in the base opex used.

The EPO permits ETSA to have an average opex of about \$100m pa, starting at the high level of about \$115m in the first year and reducing over time to about \$90m in year 4 of the period. ETSA was able to under-run the EPO allowance in three of the four years, keeping for itself an average of some \$3m pa saving. As is now becoming normal practice by regulated businesses, the opex of a regulated business increases in the last two years of a regulatory period with the business believing that the fourth or fifth year actual opex will be used by the regulator for setting the opex for the coming period.

From the tables 8.2 to 8.17 provided in the draft determination the average opex used by ETSA over the current period averages \$99m pa and this equates to the implied starting point of \$100m pa as shown in figure 8.1, although the average opex deduced from figure 8.1, indicates an average opex of \$95m pa. This means that the starting opex used by ESCoSA is some \$4m pa overstated. Put another way, to achieve this level of average expenditure in the current period, the final year opex will have to exceed the 2003/4 opex by some 20%. This final year forecast increase (to \$120m) needs to be compared to a consistent actual opex incurred of \$98m pa +/- 3% for four of the five years of the current period.

ECCSA queries whether such a large final year increase is either likely or reasonable, particularly as the EPO allowance for this final year is significantly under this amount.

ETSA alleges that it was able to under-run the EPO allowance in the first of the three years by efficiencies which have now been fully implemented². It should be noted that in the fourth and fifth years these efficiencies have suddenly disappeared. How could this occur?

ESCoSA states (page 107) that PBA is to use the 2004 actual opex as the starting point for opex step changes, yet the tables 8.2 to 8.17, use the actual plus forecast opex for the current period as the basis to assess step changes.

If the ETSA opex for the current period is deflated to reflect a lower rise in the final year of the current period this would result in a 4% reduction in the starting point and so provide **a reduction in the proposed allowance by some \$20m.**

Maintenance expenditure, table 8.4

Discounting the starting point by 4% shows that the ESCoSA is in fact *increasing* the allowance for maintenance benchmarks. This is contrary to the statement that ESCoSA considers the relationship between capex and opex to be neutral. In fact, if the ESCoSA carried out a NPV analysis based on a return of capex to be achieved in 2-3 years of opex savings, the decision on a neutral relationship would probably be shown to be negative overall, and certainly not result in an increase as proposed by ETSA.

On this basis, ECCSA recommends that where there is doubt about the inclusion of additional costs, the benefit of any doubt should be in favour of consumers.

Vegetation management, table 8.5

The current level of vegetation management achieves the necessary service standards. ECCSA supports the adjustments made by ESCoSA and comments that there is a necessary nexus between insurance costs, reliability standards, GSLs and vegetation clearance.

Emergency response, table 8.6

ECCSA supports the approach taken by ESCoSA, but observes that if the desire is to maintain current service levels, why is the 2003/4 level of opex of \$14671 pa required to increase to \$17812 in the final year of the next period (see table 58 in PBA report)? If the 2003/4 opex is adequate then the 5 year cost for this activity should be \$75m, rather than the proposed \$86m. Rather than being a modest increase in the cost of the additional 23 employees (with each additional employee costing \$500,000 pa), it adds a further \$11m (or 15%) to the total amount allocated for this purpose.

² Ibid, page 108

As there is not an expected improvement in reliability standards as a result of the increased amount of \$11m, the ECCSA recommends that the **\$11m be deducted from the allowance for this activity.**

Network operating costs, table 8.7

These costs were always a function of the network, and just because they are now separately identified, this does not mean that they are a new cost. For these costs to be included as a new line item in the ETSA accounts means that they must show a compensating reduction in another area. It would appear that these costs were originally included in overheads, other regulated activities or in non-regulated categories³. ETSA must demonstrate where the compensating reductions in these categories occur. However, an examination of overheads and other costs shows that there is no compensating reduction in these categories to reflect the transfer of costs.

Further, PBA has identified that additional staff and assets should also be transferred to the category. We have no issue that this might be a sensible approach to cost control, but it appears that there is a net increase in opex as a result of these transfers. As there is no compensating increase in reliability and service standards, the addition of these staff and assets is a net additional cost for no discernable benefit to consumers.

Providing that there is an identifiable and equivalent reduction of costs elsewhere, then at most the allocation of costs to this account line item should be about \$50m, based on five times the 2004 costs. ECCSA recommends that the cost allocation for **network operating costs should be reduced by \$9m**, or an even greater amount if there are no compensating allowances elsewhere.

Other costs, table 8.8

ECCSA accepts the modest increase in costs permitted for this line item, recognizing that certain costs do increase over time.

Meter reading costs, table 8.9, and Incremental FRC costs, table 8.10

The ECCSA members should not be exposed to these costs as all large consumers of electricity have been paying the costs associated with the deregulation of the electricity industry for many years, and ETSA has only been incurring these FRC costs since 2002/. As it is recognized that FRC costs (including meter reading) are those incurred by small consumers, it is expected that they will be appropriately allocated to those consumers supposedly benefiting from the introduction of FRC.

³ see PBA page 117

Notwithstanding that these costs should be allocated to small consumers, ECCSA is of the view that the proposed allowances reflect the costs associated with the provision of FRC.

Outage management

ECCSA queries why ETSA should be provided with additional funds for carrying out a task which is so fundamental to its operations, and thus queries the original approval by ESCoSA to accept this work as a pass through cost in the current period.

However, the costs do appear to be reasonable.

Call centre costs

Prior to 2003/4 call centre costs were included in the AGL SLA which in total resulted in ETSA paying AGL for a range of services averaging a total of some \$8m pa. These costs were absorbed into ETSA general operating costs and included in this amount was the cost of providing call centre services. After 2002/3, ETSA transferred the call centre costs to Powercor (having a common owner with ETSA) and recorded the Powercor costs for the call centre separately.

Thus the base operating costs incurred by ETSA *have always included* the call centre operation, and to add these costs again is double counting, and certainly does not represent a step change in the work ETSA has to undertake. Whilst it is accepted that if there were a saving to be made, ETSA should transfer the call centre activity to another supplier, but to now add the costs of the call centre operation to the base opex is inappropriate and should not be permitted.

ECCSA recommends that the allowance for call centre costs should be recognized as being a cost within the base opex, and an increase in opex is not warranted. The proposed allowance of **\$11m for the call centre costs should be deleted.**

Demand side management

The ECCSA recognizes that there needs to be an attempt to identify demand side options to reduce expenditure on network augmentation. It is also noted that the EPO prevents ETSA imposing constraint costs on specific consumers⁴ and that with the disaggregation of the electricity supply chain, there is no longer a case where a clear beneficiary of demand side management can be identified.

Whilst the ECCSA has concerns that the ESCoSA is encouraging ETSA to undertake trials to identify the benefits of demand side management, it sees that using a network operator for such a task should be regarded as a “least worst”

⁴ As the EPO requires ETSA to charge the same tariffs for all consumers of the same class

option. As there is no better solution, the ECCSA accepts that these funds can be included in the ETSA opex.

However, to ensure that the maximum benefit is achieved for all consumers, a requirement should be placed on ETSA to publish the findings and outcomes of the various trials undertaken.

GSL payments

Members of ECCSA do not benefit from the Guaranteed Service Level Payment (GSL) scheme, as the benefits paid under the scheme bear little relationship to the costs that ECCSA members incur for a failure to perform to the service level. Combining this with the fact that ETSA provides an account manager to address issues relating to ECCSA members, means that the GSL scheme provides little of value for larger electricity consumers.

As a matter of principle a competitive enterprise should perform to meet the needs of its customers. It therefore seems inappropriate that ETSA customers should be providing funds to ETSA in order for ETSA to reimburse customers for a failure to comply with reasonable service standards. If punishment is the intention for the failure to meet service standards, then it would seem that a reduction in the profitability of the organization should apply (just as it would in a competitive environment) rather than adding a cost onto consumers. Otherwise, there is no incentive for performance improvement.

On this basis ECCSA recommends the allowance of **\$5m for providing GSLs should not be allowed.**

Overheads

ESCoSA proposes to increase ETSA overheads by \$10m above the level incurred during the current period. Included in the increased overhead costs are additional staff, and funding for a variety of other activities. What has not been identified by either PBA or ESCoSA is the result for consumers by increasing this funding, nor for the savings against overheads” which have arisen by introducing new accounting line items (eg call centre changeover).

PBA has effectively permitted ETSA to use the 2004/5 forecast to be used for the basis for any step changes (see PBA tables 86-106) whereas the ESCoSA determined to use the 2004 year actuals as the basis. The average cost for the new period using the 2003/4 costs would be \$126m.

Overlaying this obvious overstatement PBA has permitted a continuing increase each year above inflation⁵ in each category, and has failed to substantiate what

⁵ All costs included in both the ESCoSA draft determination and the PBA report are provided as \$March 2004

step changes are included to justify any step increases, what benefits accrue to consumers as a result of the step increases, or indeed why increases above inflation are needed. At most overhead costs might increase at the rate of demand (say 3% annually) but in fact what would normally be expected is that overheads would increase at a slower rate than overall demand, as surplus capacity and ability to manage incremental activities is used. A comparison with enterprises in a competitive environment shows clearly that overheads reduce in real terms over time.

Using the 2004 overheads as a basis, at most the new allowance for overheads should be \$126m. Compared to this PBA recommended an allowance of \$131.4m, an additional \$1m pa, but then ESCoSA has proposed a further increase of another \$1m pa above the PBA figure but provides no explanation as to why such a further increase is justified. In fact, other than noting that PBA had agreed to a “real” increase in overheads of 3%, most of the discussion about overheads relates to ESCoSA’s view that the overhead allowances should be reduced!⁶

As overhead allowances have not been reduced for allocations of revenue in other line items, there is the view that there is no basis for any increases above 2004 levels, and in fact a reduction should be the outcome. As there are no step changes to warrant an increase.

ECCSA recommends that the allowance for overheads be kept fixed at 2004 levels as no step change has been identified as justifying an increase. This would **reduce the allowance for overheads by \$10m**. Further, ESCoSA should undertake another review as to whether double counting has resulted from ETSA introducing separate accounting line items for activities previously required but included in the overhead category.

The allocation of overheads between the regulated and unregulated activities of ETSA, appear to be reasonable and are supported by ECCSA.

Other items

Other than TUoS pass through costs, ETSA has claimed an additional amount of \$47m for “other” costs – these include allowances for separation packages – VPS – (\$6m), employee bonuses (\$11m), superannuation (\$15m) and forward hedge costs (\$15m). PBA recommended that \$28m be accepted and the ESCoSA has determined to accept \$34m of these costs. The expenditure in the current period on these items is \$9m, although it is not clear that this amount as provided by ESCoSA is for the entire period, as ESCoSA notes that in the current period expenditure on VSP and bonuses totaled \$14.6m.

⁶ ECCSA supports the determination of ESCoSA that contributions to funding brand awareness and funding community projects should not be a cost to electricity consumers.

The decision to accept the same level of VSP as in the current period is confusing as ETSA has identified that a number of new employees are required and the costs for these new employees are included in the allowance, and that no existing employees are targeted for VSP. Effectively, consumers are being required to pay to make some (but no specific) employees redundant and to foot the bill for employing other employees. It is accepted that since “privatization” of ETSA there are some employees who might not be appropriate for integration into a private company, but after five years it would be expected that all such employees would have left, and ETSA comment that there is no targeting supports this view. On this basis ECCSA sees no basis for the inclusion of any funds to make employees leave, especially as ETSA plans to recruit others, and the allowance included of **\$4m should be deducted**.

Employee bonuses are noted as being an appropriate tool for management to encourage improved productivity. As against this, ETSA has noted that it considers that further reductions in opex due to productivity are unlikely as

“the trend [in opex] has flattened out in 2002/03 as the scope for efficiencies has been exhausted”⁷

ETSA points out that as a result opex since that time has increased. On this basis it seems that any investment by consumers to incentivise ETSA employees to increased productivity (and so reduce opex) will not result in any benefit to consumers, and therefore to pay \$10m in incentive payments to reduce opex costs will not achieve anything. Further, as ETSA benefits under the overall incentive scheme (by retaining a share of any under-run in opex) any bonuses paid to employees should be paid out of this fund, rather than by allocating a set amount which will be paid *regardless of whether any improvements will actually occur* and so become a consumer payment for no outcome.

If ESCoSA includes the amount for bonuses and no reduction in opex occurs, either ETSA employees get an unearned benefit or ETSA shareholders get a windfall return. If an opex reduction does occur as a result of the bonus pool, then ETSA shareholders will be able to keep a share of the opex under-run without having to contribute in anyway to its achievement. Either way consumers are being disadvantaged by providing the bonus pool funds. The ECCSA therefore considers any bonus must be paid out of actual savings achieved and not have an amount allocated to a pool, resulting in **an reduction in allowed opex of \$10m**.

Industry in general is required to provide a set amount of 9% of salaries as a superannuation benefit. This amount is the same as applies in the current year of

⁷ Ibid page 108

the regulatory period. There is no step change which supports an increase in superannuation contributions in the coming period. ETSA employee total benefits (including wages) are about 50% of total expenses (excluding TUoS and depreciation)⁸. Using this as a basis for comparison, the allowance for wages in the new opex would therefore be about \$60m pa for 2005/6. Of this at least 9% must be for superannuation, ie \$5m pa or \$25m for the regulatory period. ESCoSA proposes to add to this amount another \$15m which is a 60% premium to the national standard superannuation requirement. As the superannuation program provided by ETSA has not changed from the current period, there is no basis to increase the superannuation contribution, *other than to include superannuation contributions for the net increase in staff numbers*. From the data provided by ETSA, there has not been an increase in staff numbers to warrant such a large increase in funding contribution.

It would appear that the ETSA superannuation program is a defined benefit scheme. If there is a *current insufficiency* it is caused by ETSA under contributing in the current period and taking the difference between required contributions and actual contributions as a profit. This is no reason for ESCoSA to provide ETSA with additional funds to compensate for ETSA under contributing earlier. If the ETSA superannuation scheme is an accrual scheme, then there is no reason for an under funded situation other than ETSA not making the appropriate contributions at the time. The current regulatory allowance includes for ETSA superannuation contributions, so that either way there is no basis for additional funds being granted for superannuation in the coming period, other than for additional employees.

ECCSA recommends that the allowance for superannuation contribution should not be added, **reducing the opex funding by \$15m.**

ECCSA accepts that the additional costs for Retailer of Last Resort and for Kangaroo Island are legitimate opex costs.

Summary

ESCoSA has identified that a reasonable opex for ETSA should be \$630m for the five year period. Much of this is accepted by ECCSA except that the following allowances should be deducted from the ESCoSA assessed figures:-

Reduce base allowance to 2004 costs	\$20m
Reduce emergency response allowance	\$11m
Reduce network operating costs	\$9m
Delete extra allowance for call centre	\$11m
Delete allowance to pay for GSLs	\$5m
Hold overheads at 2004 levels – delete	\$10m

⁸ This is derived from the ETSA Financial Performance Statements for 2001 and 2003

Delete VSP allowance	\$4m
Delete bonus pool as this is funded from ETSA generated savings	\$10m
Delete additional superannuation contribution	<u>\$15m</u>
Total ECCSA recommended reductions to ESCoSA allowance	\$95m

The reductions assessed by ECCSA would bring ETSA costs to those applying at 2003/4. Viewing this amount in a global sense we recognize that there have been some changes over time which need to be incorporated into the new regulatory period, but we also recognize that ETSA did in fact incur lower opex in the first three years and that none of these opex savings have been sustained and so pass into the new regulatory period.

The approach suggested by ESCoSA and as modified by ECCSA is similar to the regulatory approach now being taken by ESCoV in its regulatory review. The ESCoV is using as a starting point for opex, the actual level incurred in the fourth year but modified by earlier actual recorded costs, and addressing only defined step changes which have occurred between the current regulatory period and the next. Where requested costs have increased by more than the expected demand increase, they are being reviewed with askance by the regulator. As a result, there is an expectation that distribution costs might fall over the entire next period as a result of increased demand and consumption. This is in counterpoint to the ESCoSA assessment which shows a fall in the first year, but with allowances rising consistently so that at the end of the period, average costs/MWh will exceed those of the current period.

The opex benchmarking work included in the PBA report does indicate that ETSA expenditure is comparable to those of a similar network arrangement. In this regard United Energy in Victoria, Aurora Energy in Tasmania, Energex in Queensland have a similar network arrangement to ETSA, all having some rural based assets, with a large and dominant central major consumption point.

The changes recommended by ECCSA will result in an average saving of just under \$1/MWh for all consumers.

4. The Approved Capex

Throughout this section amounts of funding are based on a constant dollar basis, using March 2004 as the given point in time. This allows realistic and valid comparisons to be made with relation to expenditure.

ETSA gets its capex allowance from two sources – the EPO allowance for capex in the shared network and from customer contributions. In the first four years of the current period, total allowed capex was about \$405m, of which about \$350m was from all consumers via the EPO, and some \$55m was to come from customer contributions. On average about \$88m pa was from the EPO and about \$14m pa directly from customers. In fact the total capex for the same period was \$495m, of which about \$350m came from the EPO, and some \$145m came directly from customers⁹. These amounts exclude the effect of asset disposals which would reduce the net capex to about \$340m, under the EPO allowance.

Further, ETSA has underspent allowed capital in the early years and ramped up expenditure in the later years. The main benefit accruing to ETSA as a result of this approach was their ability to retain the timing benefits of a delayed cash flow compared to the allowances included in the EPO.

Against this backdrop, ETSA has requested a net capex allowance of \$850m for investment into the ETSA network over the next five years. ESCoSA has determined that an allowance of \$723m is an acceptable level. These amounts need to be viewed in the context that over the first four years of the current period ETSA has only invested a total of about \$350m of its own money in capital works, or about \$90m pa¹⁰. As the expected capex for the final year is expected to be higher¹¹, the expectation is that (in constant dollar terms), ETSA will have invested about \$450-480m of capex in the current period, an average of about \$100m pa.

However, it must be noted that the ESCoSA approved capex is exclusive of two major metropolitan augmentations (expected to incur a capex requirement of some \$9m¹² during the next period) which ESCoSA proposes to accommodate by way of the pass through of costs. Whilst ECCSA does not oppose this approach, as it clearly requires ETSA to fully substantiate the capital needs and the outcomes at the time of proposing the expenditure, it does impact on the value to be placed on the residual capital expenditure, and the appropriateness of the amount included in the approved revenue.

⁹ See draft determination, figure 7.1

¹⁰ See figure 10.1 ETSA Utilities Expenditure Submission 2005/06-2009/10

¹¹ See PBA report figure 22

¹² See draft determination table 13.2

Reinforcements and upgrade capex

There is an expectation that demand will increase over the next period at the rate of 3% pa. and consumption increase at 1.7% pa¹³. These increases have been developed by ESIPC.

A review of previous forecasts by ESIPC in their Annual Planning Reports shows that recent forecasts (particularly of consumption) have overestimated growth, casting some doubt as to whether the forecasts used now may again be overstated.

The current capex for ETSA was predicated on similar increases in demand and consumption, neither of which eventuated¹⁴. This would imply that the capital invested during the current period should have resulted in a lower utilization of the ETSA assets. It is interesting to note that ETSA does not reflect this result in its application¹⁵.

If there was sufficient capex in the current period to address the forecast increase in demand and consumption, and at the same time maintain the average service levels SAIDI, CAIDI and SAIFI¹⁶ at the same level as being forecast by ETSA, then this throws significant doubt on the decision of ESCoSA to approve capex more than double the current rate of investment in reinforcements and upgrades, especially considering that some of the capex relating to this activity has been included as a pass through provision. Neither the ESCoSA draft determination nor the PBA report provides any substantiation as to what the massive increase in the capex for this purpose will achieve for the benefit of consumers.

The only clear comment regarding the benefits resulting from the allowed capex injection is the achievement of new planning standards set by ETSA¹⁷, and there is no accompanying outcome provided which supports why these new criteria are needed.

ECCSA recognizes that capex is required for the continuing upgrade of the shared network to manage new demand. The current level of capex of some \$20m pa was assessed for the EPO as being adequate for a demand and consumption growth similar to the current expectations. As a result of this investment (which, because there has been little actual recent growth, effectively has not been used) there must have been an overall increase in network capacity resulting from the capex invested in the current period.

¹³ See ESCoSA draft determination page 69-72

¹⁴ See ESIPC Annual Planning Report charts on pages vi and vii

¹⁵ See figure 7.2c ETSA Utilities Expenditure Submission 2005/06-2009/10

¹⁶ See PBA report figures 18,19, 20. SAIDI measures the average total duration for loss of supply, SAIFI measures the frequency of interruptions and CAIDI measures the average duration of supply interruptions

¹⁷ See PBA report page 40

After consideration of these points, it would seem that there is little reason for the doubling of capex for reinforcement and upgrade, and as there is no positive outcome for consumers being offered by ETSA for investing this capital, it would appear that the granting of a large increase is not justified.

ECCSA does not consider the granting of \$196m of capex for reinforcement and upgrade to be prudent based on the information provided by ETSA, PBA or ESCoSA. However an amount replicating the current allowance of \$91m is considered prudent. If ESCoSA believes additional capex is required above this level, then clear performance outcomes should be provided in order to convince consumers they should pay for the additional capital investment.

The impact of this assessment would be to reduce the allowed capex for reinforcement and upgrade by \$105m.

New customer connections

There is an expectation that the numbers of new customers will increase at the rate of about 1.5% (being predominantly residential customers)¹⁸. It is noted that ESCoSA is seeking better data from NIEIR to support this forecast. ESIPC notes that new house starts were very high early in the current period (due to the jump in house starts caused by the new home owners grant¹⁹) but there has been a noticeable reduction in new starts in recent times²⁰. As residences comprise the bulk of new connections, this forecast reduction in new starts has a significant impact on the capex required for new connections.

The current expenditure for new customer connections is \$167m or about \$35m pa. The ESCoSA proposes to allow an increase in capex for this purpose to \$198m or \$40m pa. The ESCoSA also notes that customer contributions will add another \$140m²¹ to this amount, bringing the total for new customer connections to about \$340m.

As most of the new customers are identified as residential or controlled load (in total some 61,000²²), this means that the proposed capex is essentially to provide for the expected demand from new residences. However, as ESIPC highlights, the number of new residential starts in the current period is higher than the expectation of new starts in the coming period. On this basis it seems that to provide a greater amount of capex for a lesser number of new residential starts is contradictory. At most it would be expected that the current level of

¹⁸ See ESCoSA draft determination page 72

¹⁹ This phenomenon is graphically shown in the PBA report table 10 which shows the jump in capex in 2001/2 (and a fall off in subsequent years) resulting from the introduction of the grant.

²⁰ See ESIPC Annual Planning report page 10

²¹ This amount is similar to the customer contributions currently being made

²² From ESCoSA draft determination, table 5.3

capex for new connections would be constant with the current period, or even demonstrate a reduction.

On this basis ECCSA cannot see that there is a justification for an increase in the allowance for capex required for new connections, and considers there is an argument which would support a reduction in the allowance.

The impact of this assessment would be to reduce the allowed capex for new connections by \$31m.

Asset replacement capex

The injection of the ESCoSA proposed capex for asset replacement will by itself reduce the average age of the ETSA assets from the current 27.5 years to 25 years in 2010. In theory the asset replacement capex would allow the replacement of all assets so that by 2010 no assets would be aged over 50 years.

On this basis the capex of \$88m for asset replacement is considered prudent and supported by the ECCSA.

Reliability capex

ESCoSA proposes to grant a “once off” amount for \$8m capex to increase reliability of supply on Kangaroo Island. Kangaroo Island is not part of the shared network and there is some concern that consumers connected to the shared network are to be levied with the costs of providing service to an “islanded network”.

As the amount of capex required for the shared network is of the same order of magnitude as that provided in the current period, it is expected that the same level of reliability of service will be maintained. On this basis the ECCSA agrees with the ESCoSA proposed capex for the shared network, but makes no observation as to whether users of the shared network should contribute to the reliability upgrade for Kangaroo Island.

Safety and environment capex

ECCSA supports expenditure on safety and protecting the environment. However at the same time it must be noted that ETSA has already achieved an acceptable standard for safety and environment protection with its current capex allowances.

There have been no discernable changes in environmental or safety standards since the EPO was established which would result in the need for a step change in the allowance for capex for these tasks. On this basis ECCSA would expect that the current rate of capex for these tasks should not require increase. The combined final year expected capex for these two aspects totals \$1.6m, so therefore a total amount for the period should not exceed \$8.8m. ESCoSA

considers that \$2.5m of capex be allocated for the once only activity of replacing substation locks, and this is also considered an appropriate cost.

We therefore do not agree that ESCoSA should increase the allowance for safety and environmental factors to 17.4m, but should only allow ETSA an allowance of \$11.3m for the next period.

The impact of this assessment would be to reduce the allowed capex for safety and environmental by \$6m.

Undergrounding

The issue of undergrounding is a vexed question. There is no doubt that undergrounding does provide a more secure service, and has the added benefits of visual amenity and less for motoring accidents. Against that is the major cost involved to provide the facility. Undergrounding on a network wide basis cannot be financially justified and therefore partial undergrounding costs would be a cost carried by all consumers for the benefit of a few.

This means that partial undergrounding for visual amenity is not equitable to all consumers. On the same basis, partial undergrounding for network security needs to provide a benefit for a significant number of consumers for it to be justified as equitable. There is probably some justification for undergrounding at traffic blackspots where there is regular damage caused by the existence of overhead power lines.

On this basis the ECCSA considers that continuing the current level of expenditure at about \$5m pa on undergrounding is acceptable providing that it is used for security or road safety.

However, if undergrounding is used primarily for visual amenity, then it should not be permitted.

IT Infrastructure

The reduction proposed by ESCoSA to IT expenditure is supported as the previous high levels have provided ETSA with an extensive IT support facility, although the decision to grant increased funding for general IT hardware should be reviewed on the basis that the current level of expenditure for these items has permitted ETSA to maintain its high level of operational performance.

Other Capex

PBA notes that a major reason for the increase in the capex allowance for “other capex” is due to the need to replace a number of elderly heavy plant items. Whilst this is considered acceptable it should be noted that in the next review the allowance should be reduced to reflect the replacement in this review.

The decision to grant capex to fund the superannuation shortfall is not accepted. It is also noted that there was a requirement under opex, to provide additional funds for superannuation to “top up” the shortfall due to lower returns. It appears that this additional claim has been awarded twice

As noted under the equivalent section examining opex, for ETSA to be granted additional funds to ensure the viability of its defined benefit super fund is not an issue for electricity consumers. This view recognizes that in times of high returns the super fund needs lesser amounts to maintain its viability. At such times ETSA does not need to add as much to the fund as at times of lower returns. Electricity consumers should only be required to ensure that the minimum contributions necessary to provide superannuation (such as required under the superannuation guaranteed level – currently 9%) are made.

For consumers to be required to pay additional contributions requires ESCoSA to ensure that ETSA has contributed at least the minimum amounts to the super fund over past periods.

As PBA considers that the superannuation contribution to capex should be some \$3.2m pa or a total of \$16m. The ECCSA considers that this amount of \$16m should be deducted from the capex allowance for “other capex” of \$74.5m

The impact of this assessment would be to reduce the allowed capex for “other” by \$16m.

Summary

It is noted that ETSA sought a capex allowance of \$849.8m. ESCoSA considers that it is prepared to allow ETSA a capex allowance of \$772.9m. The ECCSA considers that this allowance is still too high, and does not provide any real and identifiable outcomes for consumers, and based on past performance ETSA should only require \$615m (ie a further reduction of \$158m) in capex to maintain the current standards of service.

This recommended level of \$615m still represents an increase of \$85m over actual capex for the current period, or an increase of 16%. Using the WACC calculated by ESCoSA and assuming that the capex reductions are evenly spread over time, the capex reduction would reduce the average tariff by about \$0.7/MWh

It has been noted in a number of submissions that consumers are concerned that the large growth in capex will put ETSA under some pressure to manage such a large capital spend increase. If the ESCoSA persists in permitting a significant increase in capex above current levels, the ECCSA would recommend that ESCoSA implement a control mechanism similar to that imposed on ElectraNet by the ACCC. This control permits the ACCC to not only include just the actual

capex into the next period RAB, but also to claw back the revenue accrued on the capex not spent.

5. The Regulatory Asset Base

ECCSA accepts in general the approach proposed by ESCoSA to calculate the regulatory asset base (RAB), but wishes to make certain comments which are detailed below.

The GST Spike

Both ECCSA and the SA Centre of Economic studies disagrees with the ESCoSA that the benefit of the GST spike should be included in setting the RAB. Both groups have provided significant reasons for ESCoSA to exclude this deliberately inserted spike in the CPI. However, it has been noted that ESCoSA has observed that in other aspects the importance of regulatory consistency and in this regard we would point out that the ACCC has excluded the GST spike in other regulatory decisions, and therefore there is precedent for exclusion of the spike.

We do however note that ESCoSA has received legal advice that the EPO does prevent it from adjusting inflation figures for establishing the RAB.

Underspend of capex in the first period

We note that ESCoSA is required by the EPO to accept that all actual capex by ETSA is considered “prudent” and therefore must be included into the RAB.

Notwithstanding this ESCoSA should identify if the timing shift of capex spend, has permitted ETSA unearned revenue. If this is the case then ESCoSA should claw this benefit back.

Non-fixed assets

The ECCSA supports the approach taken by ESCoSA in relation to the valuation of easements and land. The views of ESCoSA are clearly in concert with the views espoused by the ECCSA in its paper on the valuation of easements²³ and those of other regulators.

Asset Stranding

The Electricity Code requires regulators to optimize the value of assets. We do note that the EPO prevents this approach. In light of this we believe that ESCoSA should impose on ETSA to responsibility to demonstrate that they have examined **and proven** the efficiency and prudence of all capital works carried out prior to commencement. The ECCSA does accept that what may appear prudent at one stage may be demonstrated as not so later and ETSA should not be exposed to this risk.

²³ Energy Transmission Easements – A Commentary on Valuation used by Transmission Companies and Regulators, July 2002, prepared by Bob Lim & Co and Headberry Partners on behalf of BHP-Billiton Petroleum and Electricity Consumers Coalition of South Australia

6. Other Issues

Demand Management

As noted in the section in opex, ECCSA supports the approach of the ESCoSA to the provision of a limited amount of funding for the purposes of establishing the viability of ETSA providing input into the debate on demand management, and to identify demand based alternatives to network augmentation. It is pleasing to note that ESCoSA will be taking an active interest in both the outcomes of the trials and of the costs that ETSA incurs.

Notwithstanding the ECCSA acceptance of the inclusion of funds in the ETSA revenue for the purposes of identifying appropriate methods for demand management, the ECCSA does have some concern that this approach can become an embedded feature of future revenue decisions. The ECCSA considers that ETSA as a regulated network owner/operator should not be provided with funds from network users which may or may not provide a benefit in other areas of the electricity supply chain. Funds granted ETSA are for the provision of a network service and should not be used for any other purpose. It is with this proviso that the ECCSA supports the inclusion of the funds (on a once-off basis only) for ETSA to carryout these trials.

As observed earlier, to ensure that the maximum benefit is achieved for all consumers, a requirement should be placed on ETSA to publish the findings and outcomes of the various trials undertaken.

Service Standards

As a basic statement, the regulatory bargain provides a service of a given standard for a given price. If networks are not providing the minimum standard to every consumer, they should be required to do so, unless they offer lower prices to those affected consumers for the reduced quality. Equally if the standard results in lower quality then the price should fall. For ETSA to require an immense increase in opex and capex yet offer no increase in quality of service is counter-intuitive.

Elements of both approved capex and opex relate to enhancing the network performance. Thus there should be a continuing improvement in quality of supply both in specific locations (those areas identified as having sub-optimal performance) and in the overall network performance. This is axiomatic. If this improvement does not occur then there is a strong doubt as to the efficacy of the investment made. This should result in the regulator reducing the cost of the

service, and in a closer assessment of the capex and opex proposed when there is a review underway.

It should be remembered that in a competitive environment one of the demonstrations of capex efficacy is an **improvement** in product quality.

The issue of service standards is one which needs an understanding of the needs of each customer connected to the network, particularly the sensitivity of the equipment connected. Some equipment is able to “ride through” voltage dips and spikes more readily than other equipment; some consumers are able to tolerate some period of outage with minimal impact whilst to others even a second off supply creates a major production problem and can result in industrial incidents.

A supply feeder connected to domestic consumers can tolerate significant voltage variation without great impact on the consumer, but it is extended outages that cause concern. Equally where a feeder supplying some industrial processes is affected by even a 10-15% voltage dip or interrupted for a few seconds, the instability created will create major production problems, with associated lost feedstock, loss of production time and extensive restarting costs. This issue is further compounded by the inability of network owners to often identify that a major voltage dip or short term failure has occurred.

It is against this variable backdrop of system needs that the setting of service standards is addressed. It is therefore essential for the regulator to address service standards where a single but large demand consumer may have differing needs to a large number of smaller demand consumers, even though the same amount of electricity is used by both. The use of SAIDI, SAIFI and CAIDI only looks at the average performance and does not necessarily reflect the impact of poor supply on large consumer.

The service standards should record as basic standards, both the frequency, duration and extent of transient voltage variations, the frequency and length of loss of supply (even if such loss is for less than one second) and the frequency and duration of occurrences of voltage spikes and dips. Whilst preferably these standard measurements should be taken at each consumer location, it is accepted that such may be impracticable. As a minimum these measurements should be taken on each main feeder in the network, and at locations where there is a large consumption of power.

On request by a consumer, networks should be required to identify the likely quality of supply at the consumer’s point of supply. However ETSA should have a program which identifies those feeders or areas in the network which are more prone to supply disturbance or disruption. These areas should be targeted for immediate quality of supply upgrades.

An incentive program should result in the consumer gaining a benefit and the network gaining increased revenue. The network needs to assess the revenue benefit it will get from improved service against the cost of achieving the service improvement. There should be no unearned benefit arising from exceeding quality of service. This means that no allowance should be made in the permitted revenue for the achievement (or non-achievement) of service standards.

Generally, large consumers of electricity do not benefit from the inclusion in the regulatory bargain of guaranteed service levels (GSL), yet they are required to pay a contribution for their provision. In setting tariffs, the benefits and costs associated with GSLs should be allocated to those who benefit from the inclusion of these.

Efficiency Carryover

The efficiency carryover mechanism is included in the regulatory bargain as a tool to provide incentive for the network owner to use its allowed capex and opex in the most efficient manner. Using this mechanism the benefits earned by ETSA are shared with consumers.

ESCoSA has provided details of the efficiency carryover mechanism²⁴ and this reveals that on a net basis, ETSA accrued a total under-run of opex of \$14.39m, and the effect of the capex over-run of \$0.05m. Netting these two amounts shows that ETSA benefited from underspending by some \$14.34m over the current period. ESCoSA also adjusted the benchmarks for an assumed 2.5% inflation. However as ESCoSA has denied the impact of the GST spike in calculating the RAB, it should use the actual inflation incurred rather than a notional inflation rate of 2.5%, as the values of the actual expenditure in opex and capex includes for actual inflation. By doing this it will result in the savings ETSA made against the benchmarks much greater, thus enhancing the values of the actual efficiency gains. Using actual inflation amounts for opex gains results in the total benefit calculated by ESCoSA of \$14.34m, the efficiency calculation shows ETSA really achieved nearly \$25m on opex savings over the period. The same impact applies to the calculation of capex efficiency

Due to the timing of the underspend (by incurring most of the savings in the early part of the period) ETSA was able to increase the benefit of this underspend on a discounted cash flow basis. Further this approach also allowed ETSA to not only hold the cash benefits, but by using the mechanism the fact that efficiency savings reduced each year, implying that efficiency gain in an earlier year was

²⁴ See ESCoSA draft determination table 6.1

not sustainable, ETSA has cleverly been able to hold the cash benefit actually achieved.

ESCOSA has identified that the efficiency carryover for the current period will be negative, and proposes not to carryover this negative amount. Thus ETSA has “gamed” the system to maximize its profitability without penalty.

By its very nature an incentive scheme provides a benefit to the business for providing consumers with an improved and/or a lower cost service. For an incentive scheme to provide only upside to the business (this is the impact of the ESCoSA proposal) utilizes only one leg of an incentive scheme, because to provide full impetus to a scheme requires the implementation of a downside for non achievement.

By excluding any downside penalty on ETSA, ESCoSA has implicitly decided to only reward good performance and this means that consumers either pay a premium on the costs for service or receive sub-standard service of the price of a standard service. It should be noted that ETSA agreed to the implementation of an efficiency carryover mechanism, complete with its upside and its downside, accepting that there was a risk of a downside (which they can manage) countering the expectation of a reward for out performance. For ESCoSA to now propose that ETSA should not be subject to the penalty for non-management of efficiency, is totally inappropriate, and not in keeping with the bargain set between ETSA and consumers.

ESCOSA has pointed out that, despite any other views they have on certain issues, they are prevented from over-riding the requirements of the EPO. As the efficiency bargain is an element of the EPO, it is pertinent to ask why this element of the EPO can be overlooked.

Tariff Rebalancing

ECCSA considers that the price control mechanism must ensure that there is no distortion or inequity of the allocation of costs incurred for each customer or customer class for the provision of the electricity transport service. In theory the tariffs used each year should return to the business the annual revenue assessed as being reasonable by the regulator. The tariffs set should provide adequate and appropriate price signals to all consumers as to the costs incurred for the transport service. If the price control mechanism acts to prevent this equitable allocation of the actual costs and/or returns a different amount to the target revenue, then the price control mechanism needs to be modified.

Equally, the frequent and excessive change in tariffs that are possible if there is no price control mechanism must be avoided because this then creates the

conditions where a distribution business can “game” the tariffs to over-recover revenue. It is therefore the responsibility of the distribution business to set tariffs so that they reflect a fair and equitable sharing of costs between customers and customer classes. As both demand and customer forecasts show relatively low annual change (between 1 and 3%), there is an expectation that, providing the initial cost allocation was correctly established, there is no need for ETSA to be able to change tariffs by more than the proposed 2.5%. Thus if ETSA is of the view that the current constraint is too low, then it must demonstrate that the setting of initial tariffs was incorrect and needs a “once-off” rebalancing.

ECCSA would recommend that ETSA be required to disclose sufficient information so that consumers can assess that the tariffs developed are equitable and reflect a fair allocation of the shared network costs based on usage – particularly information which provides a better understanding of the allocation strategy and the options being considered to address the issues.

Revenue Control

ECCSA agrees with the ESCoSA approach that there should be an immediate reduction in the tariffs at the start of the new period, and that an X factor be used which reduces the “real” tariffs on an annual basis.

Whilst ESCoSA has suggested that an immediate reduction in the average tariff of 7% combined with an X factor of 1.3% achieves the same net outcome on an NPV basis, the adjustments suggested by ECSSA will increase these percentages.

Regulated Pass through

ECCSA is concerned that the passing through of costs resulting from step changes in the overall environment passes the risk onto consumers and provides no incentive to ETSA to minimize the impact of these step changes. On the other hand it is unreasonable not to permit a regulated ETSA not to make provision in its revenue stream for such step changes.

On balance ECCSA supports the approach proposed by ESCoSA including the limitations that the approach provides for. In giving its support the ECCSA expects that ESCoSA will ensure that ETSA is required to minimize the impact of such step changes on consumers.

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

February 2005

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

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

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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%²⁵.

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

“... provides support for the view that the MRP may be trending downward”²⁶

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 stating²⁷ that:-

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

²⁵ 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

²⁶ *ibid*, page 53

²⁷ *ibid*, page 60

benefits which would be on top of profits implied by the target revenue calculations.²⁸ 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).²⁹ 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 materialize 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

²⁸ Upside potential for profits from increased productivity, judicious choice of annual price adjustments within the context of the price control formula, etc.

²⁹ 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 change³⁰.

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 presentation³¹ showing that the return on equity element of the WACC awarded by UK regulators is significantly lower than those of Australian regulators.

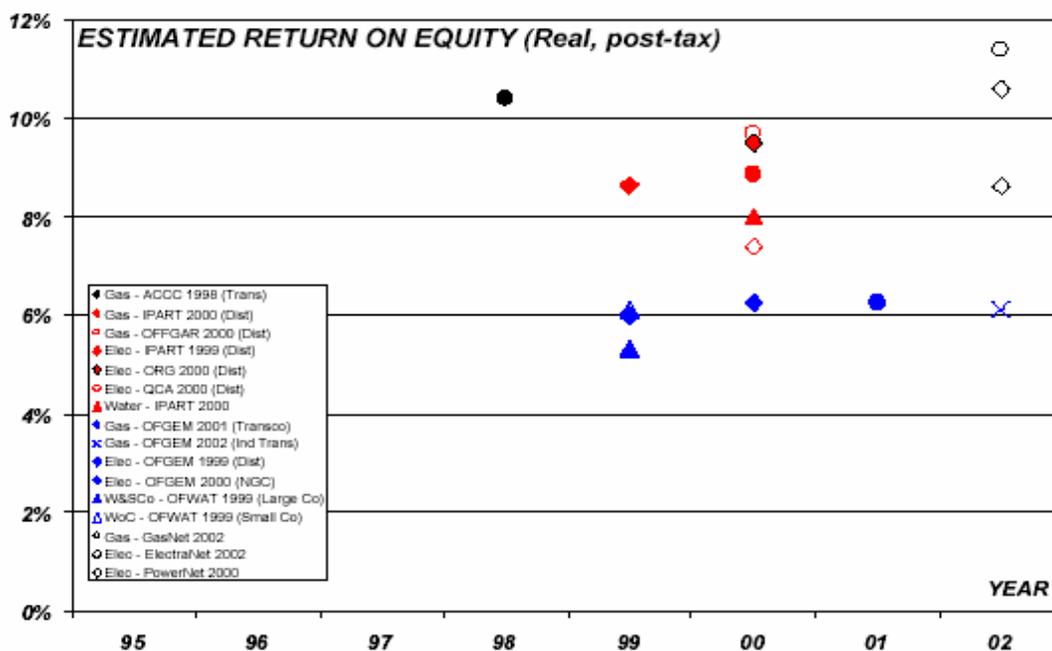


Figure 2 Comparison of estimated cost of equity from UK and Australian regulators' decisions.

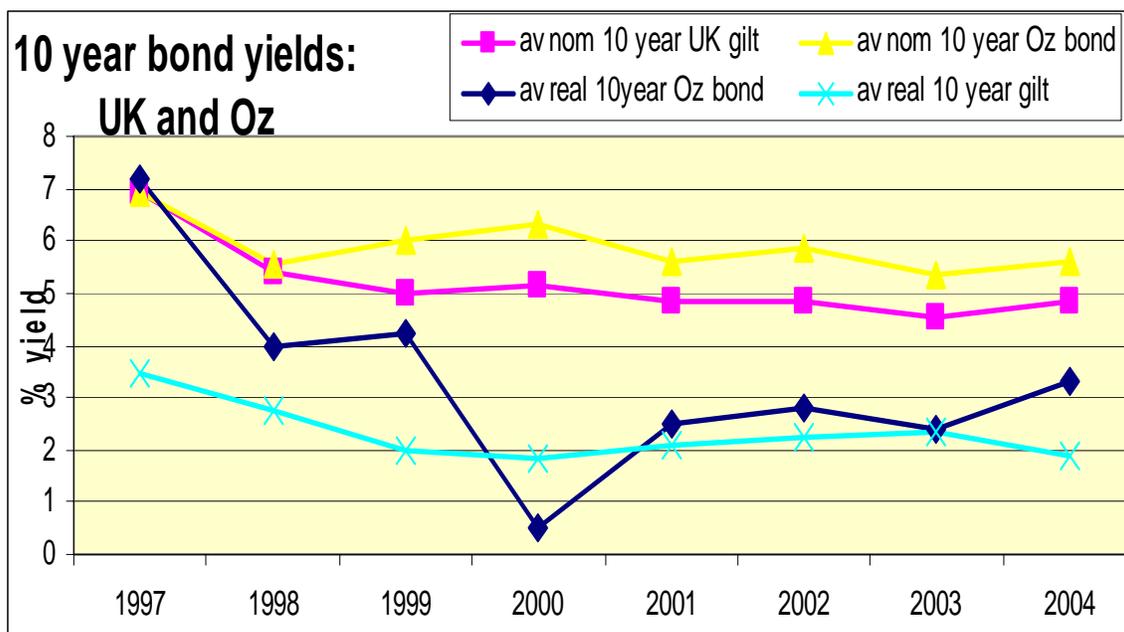
This analysis covers the period between 1997 and 2002. It should be noted that the blue markers denote overseas (UK) decisions and sit on the 6% line; the black and red markers denote Australian decisions and range between 7.5-11.5%, averaging about 9%. The UK decisions average about 6%, some 300 basis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

³⁰ For example, in ESCoV decision on gas distribution (2002), and ACCC on TransGrid (2004).

³¹ 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 noted³² 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)³³ 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.

³² 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)

³³ 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 comments³⁴:-

“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;

³⁴ 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,³⁵ 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 MRP³⁶.

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

³⁵ "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

³⁶ 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.”³⁷

2. Mr David Bassanese,³⁸ 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 letter³⁹ 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 notes⁴⁰ 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.”⁴¹

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”.⁴²

³⁷ “Economic Opportunities and Risks over the Coming Decades” by I.J. Macfarlane, Governor, RBA, 13 November 2003)

³⁸ Australian Financial Review 27 September 2004 “Fat dividends may not last”

³⁹ Australian Financial Review, 5 October 2004 (letters to the Editor “Real bond yields to hit 4pc again”)

⁴⁰ Australian Financial Review, 27 October 2004 “High yields, low P/Es to continue”

⁴¹ 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.

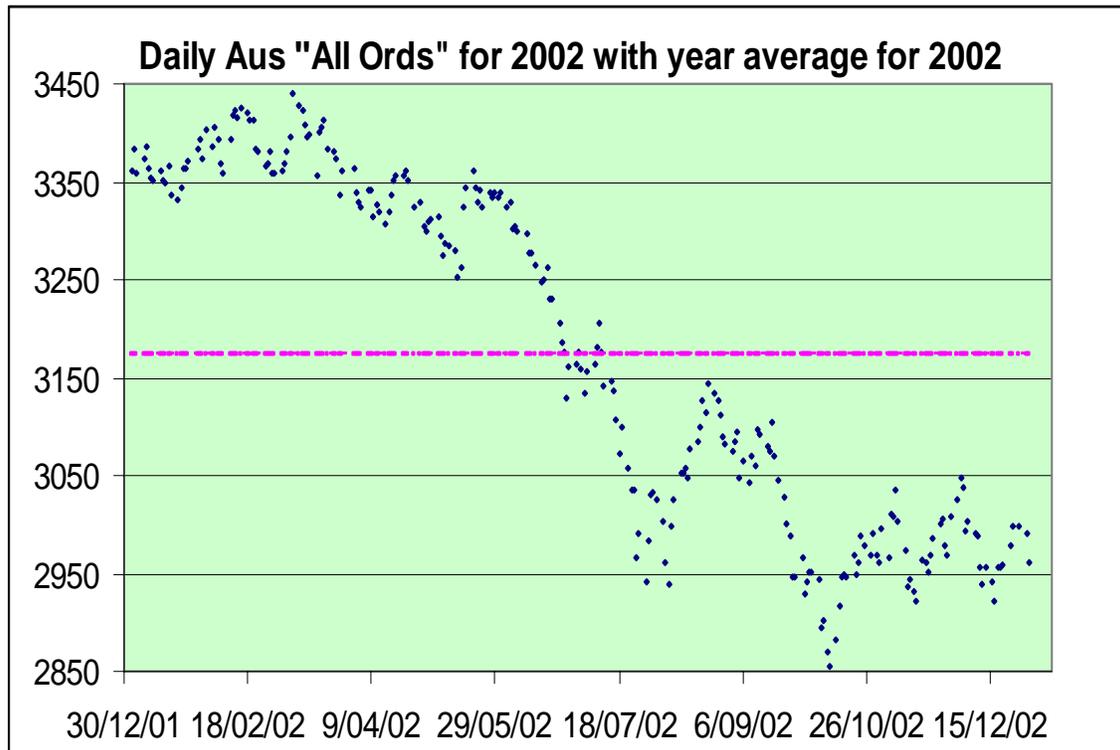
Based on the confusing logic in the draft determination, the ESCoSA suggests that the independent and recent recorded value of MRP of 3.3% **should be doubled** because of the need to incorporate both a “**confidence**” **premium** above the actual recorded amount and an **expectation** that returns 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 index⁴³ 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 review⁴⁴.

⁴² *ibid* page 180

⁴³ 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.

⁴⁴ 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/Lim⁴⁵ 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.

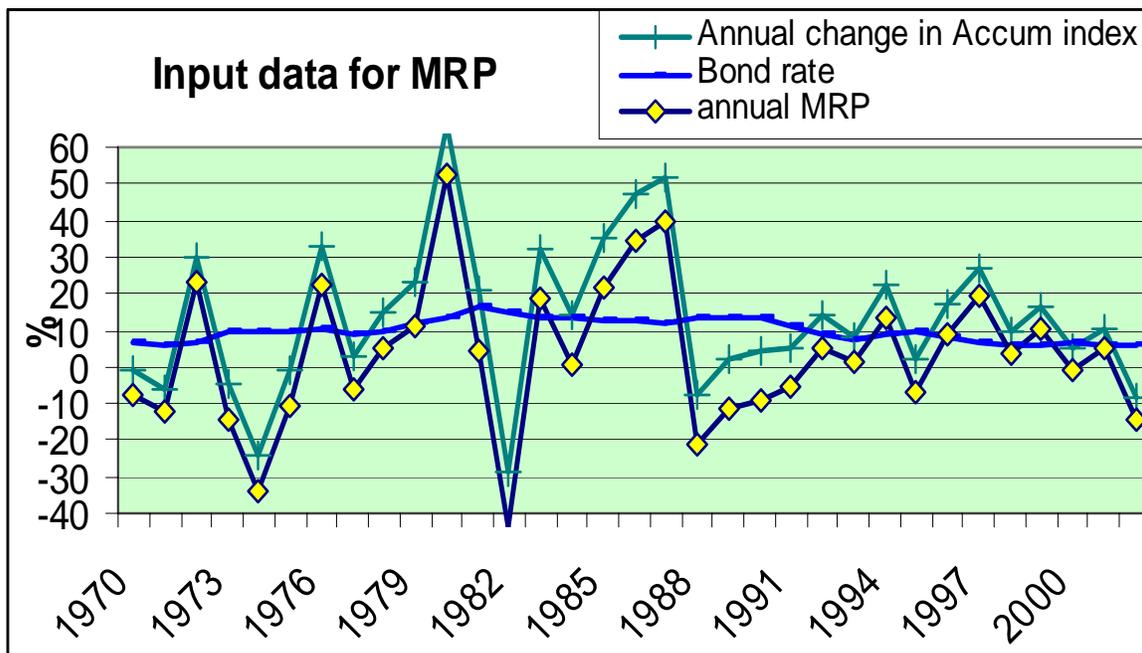
When considering the source data and its application, ESCoSA is in error in adding the standard deviation to the Officer calculated MRP for the past 30 years. If ESCoSA were trying to ensure that the MRP that they have determined should apply was just for one day in the coming regulatory period, then 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

⁴⁵ "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

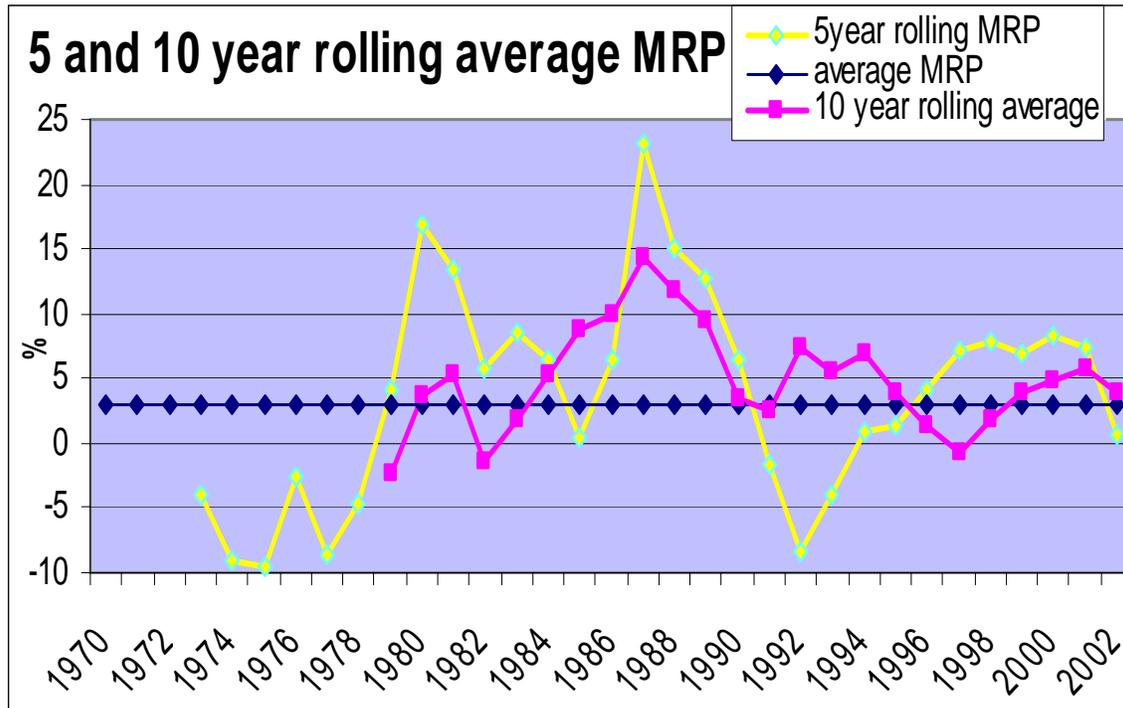
amount. Thus the risk premium to reflect a long continuous period must be much smaller than the risk premium to accommodate daily variations. Officer assesses the past 30 year term average at 3.3%.

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.

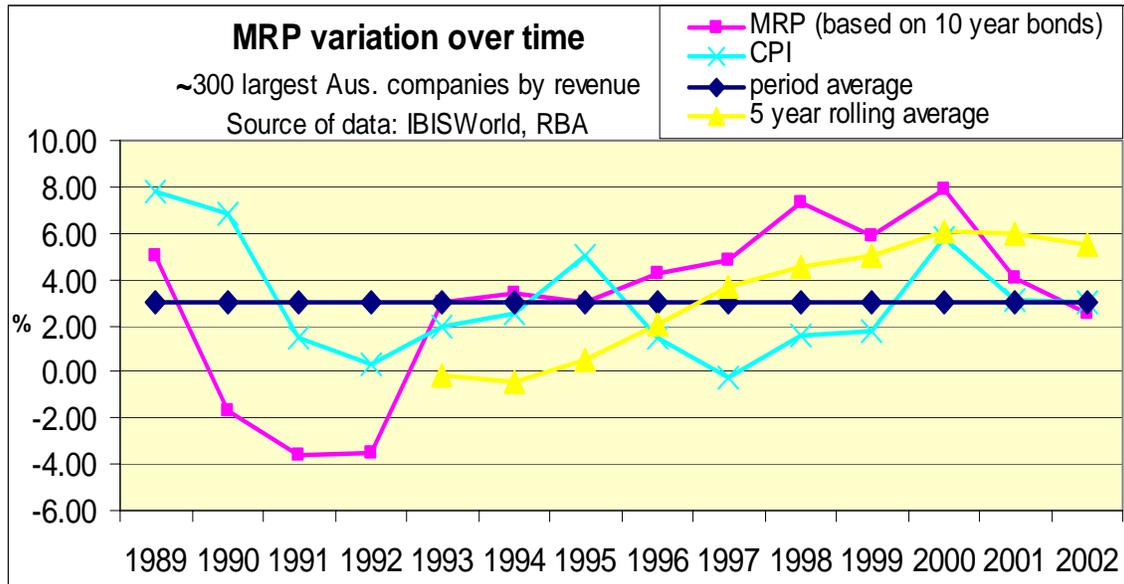


Source: manipulation of RBA source data using Excel, and adding R R Officer calculated average MRP

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/Lim⁴⁶

3.2 Recent Ofgem Studies

A report by Ofgem⁴⁷ in its recent review of the cost of capital⁴⁸ 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 environment⁴⁹(e.g. end of the Cold War, increased international trade and investment flows) and better opportunities for investors to diversify (both domestically and internationally).”

⁴⁶ Ibid, page 21

⁴⁷ The Office of Gas and Electricity Markets (the UK regulator for gas and electricity)

⁴⁸ Electricity Distribution Price Control Review, Background information on the cost of capital March 2004

⁴⁹ 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 internationally⁵⁰. 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**

⁵⁰ 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 4.5⁵¹, a change over the past five years from the 3.25-3.75 used in 1999⁵².

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).

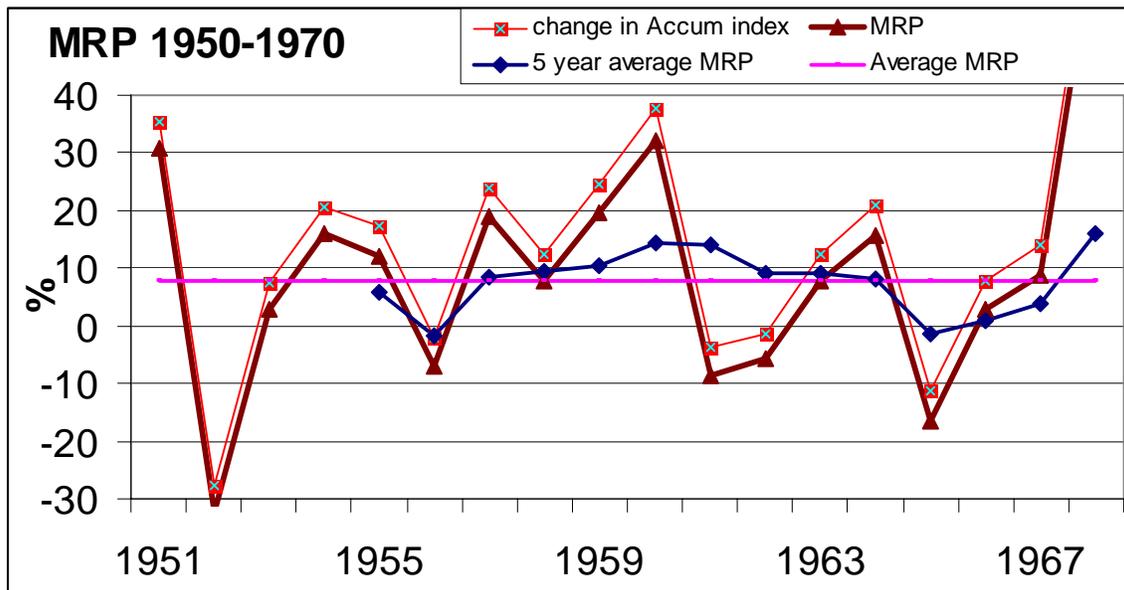
This will create a major asymmetric issue for all concerned – consumers, regulated businesses and regulators – at some point in the future. If regulators persist with basing returns on a long term average of MRP, then there must be at some point of time in the future when the long term average MRP will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

⁵¹ OFGEM report Electricity Distribution Price Control Review, Background information on the cost of Capital, March 2004, page 15

⁵² 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 business⁵³. 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.

⁵³ 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 calculations⁵⁴ for the small number (6)⁵⁵ 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 notes⁵⁶ 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,**

⁵⁴ Allen Consulting Group Empirical Evidence on Proxy Beta Values for Regulated Gas Transmission Activities July 2002

⁵⁵ The six being AGL, Australian Pipeline Trust, Envestra, United Energy, AlintaGas and GasNet

⁵⁶ 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 decision⁵⁷ (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 report⁵⁸ 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.

⁵⁷ QCA Draft Decision Dalrymple Bay Coal Terminal Draft Access Undertaking October 2004

⁵⁸ 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, notes⁵⁹ 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”⁶⁰ 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

⁵⁹ Ofgem, Electricity Distribution Price Control Review, Background information on the cost of capital, March 2004

⁶⁰ 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”⁶¹.

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.

⁶¹ IPART. Revised Access Arrangement for AGL Gas Networks December 2004. Draft Decision, page 83

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.

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