



# ***Major Energy Users Inc.***

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Dear Mr Anderson

## **Better Regulation - Equity beta issues paper**

The Major Energy Users (MEU) welcomes the opportunity to provide its comments regarding equity beta issues paper. This response continues the deep involvement the MEU has with the Better Regulation program, especially the rate of return element. This response on equity beta should be viewed in the context of MEU comments previously made on the rate of return guideline.

In its issues paper, the AER has carried a detailed assessment of the data available to assess the likely range for equity beta for a regulated network and what might be considered to be an appropriate point estimate for the value for the equity beta. This point estimate is to be an input into the SL CAPM (the "foundation" model) to be used as a starting point for subsequent analysis and comparison to determine a rate of return on equity.

The AER comes to the conclusion that the correct point estimate of equity beta for Australian regulated energy firms will lie between 0.4 and 0.7. The MEU considers that the AER approach to identifying the range is rigorous and has incorporated considerable analysis. The question then comes down to where in the range should the point estimate lie?

Despite the evidence the AER has identified to the contrary, the AER has concluded that the point estimate for equity beta lies at the very top of the range (ie at 0.70).

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## Reasons for increasing the point estimate

The AER based its reasons for increasing the point estimate above the mean of the range on four main considerations:

1. The confidence level of the analysis supports a view that the error implicit in the analysis of the data is there is a very low margin for error, implying that the point estimate is quite unlikely to lie outside the range identified.
2. Cross checks from overseas energy networks imply that the equity beta lies at the upper end of the range of Australian energy networks
3. The theoretical principles behind the Black CAPM imply that, for firms with an equity beta below unity, the equity beta will be higher than that seen from market evidence
4. Cross checks from the water sector (considered to be an equivalent to the energy sector networks) show that regulators are using equity betas at the higher end of the range.

The MEU is concerned about aspects of these reasons to bias upwardly the point estimate for equity beta.

### Overseas evidence

The AER reports calculation of grouped<sup>1</sup> overseas equity betas for networks to 2008 (excluding the tech bubble impact) as being<sup>2</sup>.

- "0.47 to 0.71 for fixed-weight portfolios (weekly/monthly by Henry)
- 0.54 to 0.68 as the average/median of portfolios (OLS, re-weighted OLS and LAD by ACG)."

The AER then provides a view that the impact of the Global Financial Crisis (GFC) has been modest, implying that these estimates are still valid post GFC. The mid points of these ranges are 0.59 and 0.61 respectively, indicating that the bias attributable from overseas firms would be some 4 to 6 basis points rather than the 15 basis points the AER has applied.

At earlier stages of the analysis of equity beta (ie before there was sufficient data in the Australian market), overseas evidence showed that equity betas were considerably lower than those calculated from the sparse data available for Australian energy network firms. This overseas data was either rejected or significantly moderated on the basis that the "tech bubble" had significantly deflated energy network equity betas by excluding the impact of this apparent

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<sup>1</sup> Grouped equity betas are used because the AER is attempting to identify equity betas for the notional energy network

<sup>2</sup> AER pages 34 and 35

aberration. If the impact of the tech bubble had not been excised, the output of the analysis would have been much lower equity betas. This means the assessments are inflated compared to un-modified empirical evidence.

The apparent outcome of the GFC was to increase equity beta estimates for regulated networks because these are classified as defensive stocks and more attractive in times of recession and sub-par growth. Since the GFC, both Europe and USA have been in the midst of recessions or very low growth (with resultant efforts of governments to improve economies<sup>3</sup>); these low international economic growths will have impacted the equity betas of firms owning energy networks yet there is no attempt to modify the outcomes to adjust the enhanced outcomes for defensive stocks such as network firms.

This means that the overseas economic outcomes since the GFC will have been to inflate the equity betas for overseas network firms. The GFC probably had a bigger impact on markets than the tech bubble, but the AER attempts to rationalise the exclusion of the tech bubble from equity beta estimates but to include the effects of the GFC. This removes a downward bias on equity beta (the tech bubble) but retain an upward bias from the GFC and the subsequent recessions affecting overseas stocks.

If it is appropriate to excise the impact of the tech bubble, it should be equally appropriate to excise the impact of the GFC yet the AER has elected not to do so and used the inflated outcomes for overseas outcomes as justification to increase the assessed point estimate.

If there was an excision of the GFC impact, just as excision of the tech bubble data depressed the equity beta, it would have been to depress the overt evidence that the AER has relied on to bias upward its assessment for equity beta.

Whilst the AER has commented that the stability of equity beta estimates in Australia (AER page 41) might be assumed to indicate that the GFC has not impacted equity betas, the impact of the GFC in Europe and the US has been much more profound than that observed in Australia. It is therefore incorrect to assume that the GFC has not impacted the equity betas seen overseas.

The MEU considers that the AER, in using quite biased overseas outcomes, has excessively overcompensated in its assessment of the point estimate as a result of incorporating inappropriately biased overseas experience into its analysis.

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<sup>3</sup> For example, the US has implemented extensive "quantitative easing" in order to improve its economy and this is still in operation

### **The Black CAPM influence**

The AER has assumed that the theory behind the Black CAPM would be to bias upward the observed equity beta.

The mid point of the identified range should be the starting point for any bias that might be applied. The mid point of the identified range of 0.4 to 0.7 is 0.55 yet the AER has increased the point estimate to 0.7 - a 27% increase - to accommodate a theory that implies empirical observation is wrong.

The massive increase in the point estimate as a result of an unproven theory appears to be excessive.

### **The water sector**

The MEU considers that the risks for the water networks are comparable to the risks for energy networks<sup>4</sup>. Therefore it would be expected that the equity betas would be similar. That the equity beta used by Australian regulators for water networks is at the high end of the range identified by the AER for energy networks is not conclusive evidence. In fact, the equity betas used by Australian regulators for Australian water networks are derived from the energy sector because there is very limited data available for the water industry.

This means that using the water industry as a basis for setting equity betas, is essentially circular. That SFG reports that the equity beta it calculated for one Australian water utility sits at the mid point of the AER range (ie 0.55) provides supporting evidence that the mid point of the AER range is probably correct.

### **The exclusion of any countervailing downward impacts on the point estimate**

It is indeed intriguing, and concerning, that the AER has only considered aspects of its analysis where a higher equity beta within the range might be considered an appropriate bias for the point estimate. In fact the AER has not considered any countervailing biases that might lead to a conclusion that the equity beta should be lower in the range. In fact the AER should have considered:

- Observations from the market, that buyers of regulated energy networks have consistently purchased the networks at higher multiples than would be implied by the regulated rates of return on equity. These higher multiples would imply that the equity beta would be lower than that used by regulators

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<sup>4</sup> The MEU would agree with this observation in general, but points out that the analogy is not quite accurate. In the case of water businesses, these firms also sell water. Therefore the water analogy is more to an aggregated energy network and franchised retailer

in the past (ie a greater reduction in equity beta than from 0.8 to 0.7 with the potential that the point estimate would be below 0.6).

- The impact of the new guidelines will actually reduce the risks faced by networks (eg the decision to move to an annually updated trailing average approach for setting the cost of debt). These reductions in risk are from an environment where risks are already considered to be very low (see the Mackenzie and Partington reports to the AER). This would imply that the equity beta should be even lower than that seen in the market in recent times.
- Due to lower interest rates since the GFC in Australia, there has been a move towards defensive stocks with high yields, of which regulated networks are a considerable part. This has the impact of increasing their equity beta yet this has been briefly addressed and then discarded on the basis that there has been some stability in Australian network equity betas pre and post the GFC. Whilst the MEU can accept that there can be no definitive assessment of this impact, the GFC must be assessed, in qualitative terms, as providing an upward bias in the empirical evidence<sup>5</sup> as there is the potential that, absent the GFC, equity betas for networks might have fallen in recent years as defensive stocks would have been relatively less attractive than other stocks.

In addition to the above qualitative assessments, the AER cites (AER page 28) the assessment provided by the Economic Regulation Authority of WA (ERA) as to the range and point estimate for equity beta for energy networks. The ERA calculates that the:

"... re-levered portfolio equity beta estimates range from 0.39 to 0.59 with a mean of 0.50."

The AER comments (AER page 41) that the ERA has used data available up to 2013 which provides the longest data series possible. The impact of this is to cause:

"...the standard errors [to] decrease once the data is extended to 2013, with the average change across the table representing a reduction [in standard error] from 0.07 to 0.04. The equity beta estimates from the longer data series are more reliable."

The import of the ERA analysis is that whilst the ERA agrees with the AER that the lower end of the range lies at 0.40, the upper end (at 0.60) is well below the AER upper range of 0.7 and the error range in the ERA work is +/- 0.04. For comparative purposes the assessment by the ERA of a mid point of 0.5 with a possible error of +0.04 would deliver an outcome of 0.54, very close to the AER range mid point of 0.55.

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<sup>5</sup> This impact would have been more evident overseas where the impact of the GFC has been much more severe, but there would have been impacts of it in Australia.

## The comparative risk profile

The AER had commissioned two reports to examine the risk profile of regulated energy networks - by Professors Mackenzie and Partington, and by Frontier Economics. Both of these reports identify that regulated energy networks have very low risk profiles. Mackenzie/Partington in their report went so far as to state (AER page 6):

"...that the equity beta of the benchmark efficient entity would be very low, though it is difficult to determine a specific value based on conceptual analysis."

The MEU agrees with this observation, yet the AER has failed to even address as to what level of equity beta would be considered to be "very low" by comparing equity betas from other sectors of the market.

In its decision on ElectraNet in December 2002 (ACCC page 33), the ACCC provided an assessment of equity betas from different sectors of the economy and provided a table of the outcomes. Based on the equity beta of 0.983 calculated for Infrastructure and Utilities, the ACCC (and other regulators) applied, at the time, an equity beta of 1.0 for regulated networks. In this regard, the sector included a much wider cohort of firms than just firms with regulated networks.

**Table 3.4 Average equity beta by industry listed on the ASX**

| <b>Industry</b>                   | <b>Average Equity Beta</b> |
|-----------------------------------|----------------------------|
| Property trusts                   | 0.366                      |
| Alcohol and tobacco               | 0.420                      |
| Food and household                | 0.424                      |
| Transport                         | 0.463                      |
| Diversified industrials           | 0.719                      |
| Engineering                       | 0.756                      |
| Building materials                | 0.857                      |
| Paper and packaging               | 0.953                      |
| Developers and contractors        | 0.954                      |
| Banks and finance                 | 0.967                      |
| Infrastructure and utilities      | 0.983                      |
| Tourism and leisure               | 1.084                      |
| Chemicals                         | 1.128                      |
| Investment and financial services | 1.131                      |
| Retail                            | 1.269                      |
| Mining and energy                 | 1.305                      |
| Insurance                         | 1.394                      |
| Other metals                      | 1.502                      |
| Miscellaneous industrials         | 1.568                      |
| Diversified resources             | 1.571                      |
| Gold                              | 1.678                      |
| HealthCare and bio-technology     | 1.899                      |
| Media                             | 2.076                      |
| Telecommunications                | 2.772                      |

Source: Australian Graduate School of Management centre for research in finance; risk measurement service

Since this chart was published, networks have their own sector (the Utilities" sector of the ASX, so a new comparative assessment would differentiate utilities from infrastructure. The MEU accepts that recent assessments might have different outcomes than applied 10 years ago, but the issue that the table addresses is what levels of equity beta are considered to be "very low". The table shows that averages of less than 0.4 would be considered to be at the low end of the scale. Certainly an equity beta of 0.70 as proposed by the AER would not be considered to be "very low" as Mackenzie and Partington advise.

The MEU considers that the AER should develop a similar table using current data so that the Mackenzie/Partington observation can be seen in context as the MEU considers that this context needs to be utilised by the AER in developing its point estimate.

The commentary by the ACCC in the 2002 ElectraNet decision (and the accompanying ACG report) also provides an interesting counterpoint to the views expressed by the AER in this assessment of equity beta.

### **Overall assessment of the AER draft decision**

Overall, the MEU considers that the AER has erred significantly in setting the point estimate for equity beta at the extreme upper end of the acceptable range. The MEU considers that is sufficient evidence to support a view that the mid point of the acceptable range (ie at 0.55) will provide a more appropriate point estimate for equity beta than the unnecessarily conservative point estimate suggested by the AER.

Should you wish to discuss the MEU views expressed in this response in more detail please contact the undersigned at [davidheadberry@bigpond.com](mailto:davidheadberry@bigpond.com) or on (03) 5962 3225

Yours faithfully



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