The Allen Consulting Group

MEMORANDUM

To: Essential Services Commission of South Australia

From: Dr. Michael Lawriwsky, Director, The Allen Consulting Group

Date: 29 September, 2006

Re: Note on sources of evidence about gamma considered by ACG

1. The Brief

You have asked the Allen Consulting group (ACG) to provide you with further elaboration of the other pieces of evidence that were relied on in forming our view about the appropriate gamma for regulatory purposes in the context of Envestra's Proposed Revisions to its Access Arrangement.

2. Evidence about gamma considered by ACG

In ACG's initial report to ESCOSA dealing with rate of return issues in the context of Envestra's Proposed Revisions to its Access Arrangement, we reviewed the following evidence in relation to the establishment of a gamma estimate for regulatory purposes.[1]

2.1 Regulatory precedent

ACG noted that regulatory precedent had, until 2005, been almost exclusively of the view that a single point estimate of 0.50 was the best estimate of gamma for regulatory purposes. During 2005 the QCA, the ESC in Victoria and ESCOSA had determined an estimate of 0.50 in electricity distribution. However, in the case of gas distribution, during 2005 the ERA determined a gamma range of 0.30 to 0.60 and IPART determined a range of 0.30 to 0.50. We also showed that the ACCC has invariably adopted a point value of 0.50 for both gas and electricity transmission.

The regulatory determinations that we reviewed took into account a wide range of studies estimating gamma, and have resulted in regulated rates of return that external evidence (such as is provided by a comparison of the market and regulatory values of regulated businesses) suggest have provided appropriate returns to regulated businesses and resulted in continuing investment and provision of regulated services.

It is also worth noting that the AEMC has recently adopted a point value of 0.50 for gamma in its Draft Rule for electricity transmission revenue regulation.

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[1] The Allen Consulting Group (January 2006), *Envestra's Proposed Revisions to its Access Arrangement: Revenue Project*, Report to the Essential Services Commission of South Australia, section 6.8.

2.2 Empirical evidence

In reviewing empirical evidence on gamma it is important to distinguish estimates of theta (the value of franking credits in the hands of shareholders, as a proportion of face value) and F (the proportion of franking credits distributed to shareholders). Gamma is the product of theta and F. In our advice to ESCOSA, ACG stated that 'a benchmark utility would have the incentive to distribute all of its franking credits over time'. Hence, it was and is ACG's view that F, the proportion of franking credits distributed to shareholders, should be taken as approximately unity when considering the regulated benchmark utility.

Empirical evidence considered in detail by ACG when reviewing the appropriate regulatory gamma included the following:

- Brown and Clarke (1993)[2] estimated a theta range of 0.16 (1989-1991) and 0.63 (1989-1991)
- Bruckner, Drews and White (1994)[3] estimated a theta range of 0.34 (1987-1990) and 0.69 (1990-1993)
- Hathaway and Officer (1996)[4] estimated a theta of 0.63 (1985-1995)
- Cannavan, Finn and Gray (2004)[5] estimated a theta range of 0.50 (1995-1997) and 0.00 (1997-1999)
- Hathaway and Officer (2004)[6] estimated a theta of 0.50 (1986-2004) and an F of 0.71 appropriate to the average business, and noted that while the observed dividend drop-off relative to the theoretical drop-off (i.e. 'theta') 'varied around 50% [in] recent years [it] has shown an increase to above 60%...'[7]

Thus the theta estimates in the evidence reviewed ranged from zero to 0.69, which would then translate into the same range for gamma.

3. Summary

In summary, our judgement on gamma was based on a range of evidence that we have considered in previous advice on this matter. This evidence included:

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[2] Brown, P. and A. Clarke (1993) 'The Ex-Dividend Day Behaviour of Australian Share Prices Before and After Imputation', *Australian Journal of Management*, Vol. 18.

[3] Bruckner, K., N. Dews and D. White (1994), *Capturing Value from Dividend Imputation*, McKinsey & Company.

[4] Hathaway and Officer (1996), *The Value of Imputation Credits*, Working Paper, Melbourne University Business School.

[5] Cannavan, D., F. Finn and S. Gray (2004), 'The valuation of dividend imputation credits in Australia', *Journal of Financial Economics*, Vol. 73, pp.167-197.

[6] Hathaway, N. and R.R. Officer (2 November, 2004), *The Value of Imputation Tax Credits*: Update 2004, Capital Research Pty. Ltd.

[7] Hathaway, N. and R.R. Officer (2 November, 2004) p.24.

- the established regulatory precedent – and what we consider to be the 'regulatory norm' of a gamma value of 0.50 and market risk premium of 6 per cent – together with the view expressed in many regulatory decisions (with which we agree) that regulators should be cautious about varying from previous precedent, noting the desirability of creating predictability on regulatory outcomes; and

- the empirical estimates, which provide a range of between 0 and 0.69.

In the work for ESCOSA, we also undertook our own estimates of the value of 'gamma' using only the most recent period of data in order to isolate a period that reflected current taxation arrangements (2004-2005). However, while we initially found a value that was at the upper end of the range that was provided in other studies, we also noted that our results also should be taken with caution, and hence recommended that the best point estimate of gamma is 0.50.

Our revised estimate (after the errors in the data provided by Aspect Huntley were identified and remedied) of gamma for the 2004-2005 period was 0.49, which comprised 0.22 in 2005 (but not significantly different to zero) and 0.72 in 2004 (significantly different to zero). As advised earlier, having regard to the weight of evidence that we considered, and the desirability of stability and predictability in regulatory outcomes, we remain of the view that a gamma of 0.50 is the best estimate of this variable for regulatory purposes.