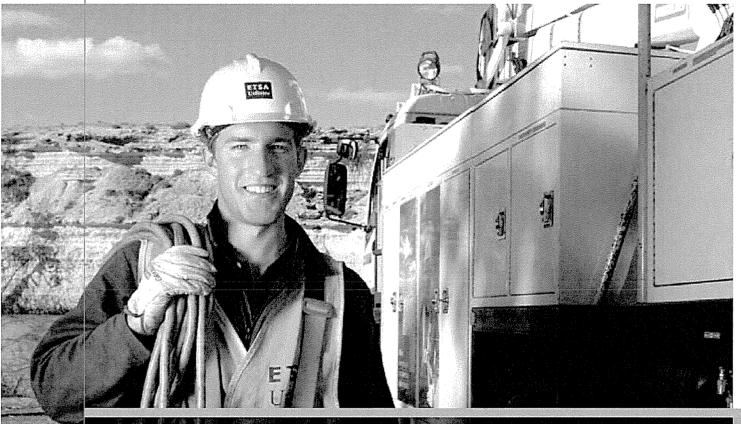
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# ETSA Utilities Regulatory Proposal 2010–2015

1 July 2009

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1 July 2009

## FOREWORD FROM THE CEO

Electricity is essential to our modern way of life. It is increasing in its importance, as society and individuals rely on it for so many of our activities. Investment in a secure and reliable distribution network is fundamental to South Australia's success.

ETSA Utilities is fast approaching the end of the second regulatory period since the commencement of the National Electricity Market. This Regulatory Proposal concerns the work programs that should be undertaken, and regulatory framework that is to apply, in the third regulatory period—from 2010 to 2015.

In the first regulatory period, from 1999 to 2005, ETSA Utilities received funding to install the necessary systems to allow the commencement of full retail competition, and to develop customer information and network management systems to better manage customer experiences.

The second regulatory period, from 2005 to 2010, saw the introduction of incentive schemes providing financial rewards and penalties to ETSA Utilities based on these customer experiences—schemes designed to ensure that customers received a high quality and reliable electricity supply at the lowest possible price. During this period, ETSA Utilities has met its reliability and service standard targets, significantly improved customer service performance, particularly in response to extreme weather events, and delivered a reduction in the real price of distribution services for residential, commercial and industrial customers.

Benchmarking ETSA Utilities' operating and capital costs over this period, relative to its counterparts elsewhere in Australia, shows ETSA Utilities is operating at the efficient frontier. Encouraged by the regulatory regime, ETSA Utilities has driven business efficiency to new levels. No other distribution business has achieved these levels of performance.

However, new priorities have emerged that need to be addressed in the coming regulatory period. As with the two previous regulatory periods, addressing these priorities will require additional expenditure above the current efficient levels.

ETSA Utilities has undertaken a significant review of the range of complex issues that we and the electricity supply industry face, culminating in our consultation document: 'The South Australian Distribution Network: Directions and Priorities'. This consultation, undertaken with government, customers and the broader community, has identified that new priorities for the period 2010 to 2015 must include:

- Improving the security of supply, in recognition of business, government and residential consumers' increasing dependency on electricity.
- Strengthening the resilience of the network in the face of global warming impacts, such as increased bushfire risks and extreme weather events, and supporting the introduction of smart grid technologies.
- Supporting the strong growth and gradual restructuring of the South Australian economy based on mining, defence and tourism industries.
- Being positioned to support key infrastructure projects, including those associated with water, public transport and major private industrial and residential developments.
- Recognising the increasing age of existing assets and the need to progressively replace and upgrade them to meet increasing demands for power accentuated by more urban infill and architectural designs that contribute to peak demand growth.

Customers, large and small, are less tolerant of power outages than previously; households and businesses have far more air conditioning and sensitive electronic equipment than was the case in the first regulatory period, and we expect these trends to continue. ETSA Utilities therefore considers it critical that funding be provided to undertake the necessary capital and operating expenditure programs to meet these expectations and priorities. South Australia's future depends on it.

Although we are proposing a significant increase to our current expenditure programs, with gross capital expenditure averaging approximately \$550 million per annum, and operating expenditure averaging \$230 million per annum, the impact on prices to consumers is considered reasonable relative to the benefits that will be delivered. Furthermore, these proposed levels of expenditure will see ETSA Utilities remain at the efficient operating frontier relative to other distribution businesses, and most importantly, will ensure that ETSA Utilities can continue to deliver the safe, secure and reliable electricity supply that customers have come to expect.

Final pricing impacts are not yet certain, owing in part to their dependence on key factors such as interest rates which will not be known until closer to the date of the AER's final determination. However, based on current parameters, this Proposal is anticipated to require real distribution price increases of approximately 10% per annum. This equates to increases of around \$25 per annum in the \$1,100 annual electricity cost to a typical residential customer, taking into account reduced consumption resulting from various government greenhouse-related initiatives.

ETSA Utilities considers that this Proposal appropriately balances the needs of our customers and stakeholders, and addresses the key challenges and opportunities that will be faced over the 2010–2015 regulatory control period.

Our Proposal seeks to openly and transparently describe these key issues and our proposed responses. We consider that this approach will appropriately support the AER in undertaking their distribution determination process, and provide customers and stakeholders with further opportunity to contribute to the regulatory framework and priorities for the South Australian distribution network over the period 2010–2015.

**Lewis Owens** 

Chief Executive Officer ETSA Utilities

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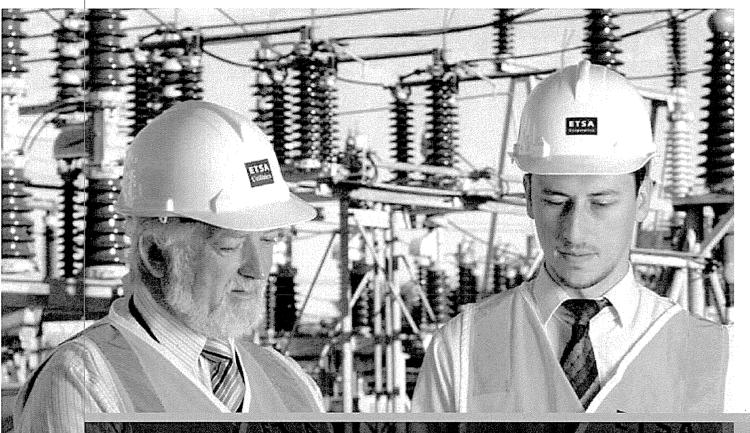
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Chapter 13: Weighted average cost of captial

## 13

#### WEIGHTED AVERAGE COST OF CAPITAL

In this chapter of the Proposal, ETSA Utilities sets out the Weighted Average Cost of Capital (WACC) that it considers should be applied in ETSA Utilities' distribution determination.

This is the first time that the AER will be conducting a distribution determination under the new Chapter 6 of the National Electricity Rules (the Rules) and, in particular, it will be the first revenue determination following the issue of the AER's Statement of Regulatory Intent (SORI) on the WACC parameters.

Although the SORI provides the starting point for establishment of the WACC, there are still two important WACC related matters that can arise for determination within the individual network service provider's revenue determination, and in ETSA Utilities' case both these issues do in fact arise:

- the first matter is whether to apply, or depart from, each particular WACC parameter in the SORI; and
- the second matter concerns how to source the data for those WACC parameters that are expressed in the SORI as methodologies rather than fixed integers (one such parameter is the debt risk premium).

On the first matter (whether to apply or depart from individual WACC parameters in the SORI), ETSA Utilities considers that the use of the WACC parameters in the SORI is appropriate for all parameters except for two. In respect of the market risk premium and gamma, ETSA Utilities considers that there is persuasive evidence to justify a departure from the SORI.

On the second matter (how to source the data for WACC parameters that constitute a methodology), ETSA Utilities makes detailed submissions in this chapter on how the data for the 10 year BBB+ debt risk premium specified in the SORI should be sourced.

The principal material on which this chapter is based is a series of expert reports attached to the Proposal. This chapter of the Proposal does not repeat those materials and instead focuses on the conclusions to be drawn from the materials when taken together, and how to apply those conclusions in the final decision. Additionally the following proposals are made concerning the derivation of the WACC:

- ETSA Utilities is required by the SORI to propose an averaging period which will remain confidential until after the period is over. Accompanying this Proposal, ETSA Utilities is supplying a letter to the AER proposing the averaging period; and
- ETSA Utilities considers that the AER's methodology in the NSW Electricity Distribution Determination for determining the inflation rate is appropriate and has adopted this approach in this Proposal.<sup>234</sup> This approach involves, 'adopting an average inflation forecast based on the RBA's short-term inflation forecasts and the mid-point of its target inflation band'.<sup>235</sup>

<sup>234</sup> AER, Final decision New South Wales distribution determination 2009–10 to 2013–14 (28 April 2009) 236.

<sup>235</sup> Ibid.

## RELEVANT RULES AND THE STATEMENT OF REGULATORY INTENT

Rule 6.5.2 of the National Electricity Rules requires that a Regulatory Proposal apply a rate of return to the regulatory asset base. This cost of capital is calculated by determining the WACC and is calculated as follows:<sup>226</sup>

$$WACC = k_{c} \frac{E}{V} + k_{d} \frac{D}{V}$$

Where:

 $k_{e}$  is the return on equity, determined using the Capital Asset Pricing Model and is calculated as:

 $r_r + \beta_c \times MRP$ 

r, is the nominal risk free rate;

 $\beta_{\epsilon}$  is the equity beta;

MRP is the market risk premium;

 $\frac{E}{V}$  is the value of equity as a proportion of the value of equity and debt;

 $\frac{D}{V}$  is the value of debt as a proportion of the value of equity and debt;

 $k_a$  is the return on debt and is calculated as:

 $k_a = r_i + DRP$ 

 $r_r$  is the risk free rate of return; and

DRP is the debt risk premium.

The Rules provide for a review to be undertaken by the AER every five years and the first such review has recently been concluded<sup>237</sup> (the WACC Review) which, for the distribution sector, resulted in the publication of the AER's Statement of Regulatory Intent<sup>238</sup>. Under the SORI, the current default values for the WACC parameters are as follow:

- r, is to be calculated on a moving average basis from the annualised yield on Commonwealth Government
   Securities (CGS) with a maturity of 10 years. The period is to be as close and reasonably practicable to the commencement of the regulatory period and initially proposed with the DNSP and agreed by the AER. If the AER does not accept the period, it may specify a period to be applied;<sup>239</sup>
- ß, is 0.80;<sup>240</sup>
- MRP is 6.5 per cent;<sup>241</sup>
- The value of debt as a proportion of the value of equity and debt D/V is 0.60;<sup>242</sup>
- The credit level rating is BBB+<sup>243</sup>; and
- The assumed level of imputation credits (γ) is 0.65.244

<sup>237</sup> AER, Final decision, Electricity transmission and distribution network service providers, Review of the weighted average cost of capital (WACC) parameters, May 2009

<sup>238</sup> AER, Electricity transmission and distribution network service providers, Statement of regulatory intent on the revised WACC parameters (distribution), May 2009

<sup>239</sup> Ibid [3.2]-[3.3].

<sup>240</sup> Ibid, [3.4].

<sup>241</sup> Ibid, [3.5]

<sup>242</sup> Ibid, [3.6]

<sup>243</sup> Ibid, [3.7].

<sup>244</sup> Ibid, [3.8]

#### MARKET RISK PREMIUM

Although the Market Risk Premium (MRP) is not defined in the Rules, ETSA Utilities agrees with AER's characterisation of the MRP as:245

'[t]he expected return over the risk free rate that investors would require in order to invest in a well diversified portfolio of risky assets. The MRP represents the risk premium investors who want to invest in such a portfolio can expect to earn for bearing only non-diversifiable (i.e. systematic risk). The MRP is common to all assets in the economy and not specific to an individual asset or business'

In the WACC Review, the AER determined that 6.5% should be the value adopted in the SORI. That value was established during the global financial crisis but on the basis that the SORI values will apply as default values for revenue determinations made over the next five years until 2014 and each such revenue determination will itself last five years. In other words, although the 6.5% figure was established during the global financial crisis, it was established on the basis of a 10 year horizon. In that context, limited weight was apparently placed on the crisis in formulating the parameters.246

By contrast, ETSA Utilities Revenue Proposal is lodged in 2009 at a time at which the global financial crisis is having a significant impact on financial markets. ETSA Utilities' regulatory control period will commence in mid 2010 and any recovery is likely only to be embryonic by then. Consequently, a key question for the review is how to establish a forward looking cost of capital for the five years 1 July 2010 to 30 June 2015 having regard to prevailing market conditions.

#### 13.2.1

### The AER's decision making framework

The Rules provide that in exercising its discretion in making a distribution determination, the AER must accept the revenue requirements in a Regulatory Proposal if the AER is satisfied that those amounts have been properly calculated using the post-tax revenue determined or forecast in accordance with the requirements of Part C of Chapter 6 of the Rules. 247

With respect to the WACC inputs in the proposed revenue control, the starting point is that the inputs are consistent with the SORI unless there is persuasive evidence to depart:

'A distribution determination to which a statement of regulatory intent is applicable must be consistent with the statement unless there is persuasive evidence justifying a departure, in the particular case, from a value, method or credit rating level set out in the statement.' 248

ETSA Utilities, together with the Queensland electricity distributors, are the first to have their resets occur since the release of the SORI and this will occur in the midst of the global financial crisis.

Rule 6.5.4 caters for exactly this situation in that it provides for departure from the SORI parameters. The relevant requirements are as follows:

- '(h) In deciding whether a departure from a value, method or credit rating level set out in a statement of regulatory intent is justified in a distribution determination, the AER must consider:
  - (1) the criteria on which the value, method or credit rating level was set in the statement of regulatory intent (in underlying criteria); and
  - (2) whether, in light of the underlying criteria, a material change in circumstances since the date of the statement, or any other relevant factor, now makes a value, method or credit rating level set in the statement now inappropriate.
- (i) If the AER, in making a distribution determination, in fact departs from a value, method or credit rating level set in a statement of regulatory intent, it must:
  - (1) state the substitute value, method or credit rating level in the determination: and
  - (2) demonstrate, in its reasons for departure, that the departure is justified on the basis of the underlying criteria.'

<sup>245</sup> WACC Review, 175.

<sup>246</sup> See, eq. AER, Explanatory Statement Electricity transmission and distribution network service providers Review of the weighted average cost of capital parameters (December 2008) 34–35, the AER noted that the 'regulatory regime insulates energy network businesses from volatility' and 'while it is obviously important to be cognisant of the current volatility in financial markets, the AER considers it equally important not to over-react to current market conditions ... [and] the AER intends to take a longer term perspective'. Similarly in the WACC Review at page 47 having noted that the MRP may be above 6 per cent given the global economic crisis that, 'the AER does not consider that the weight of evidence suggests a MRP significantly above 6 per cent should be set'.

The underlying criteria which the MRP value of 6.5 per cent was reached in the SORI are the criteria applied by the AER in the WACC Review. In the WACC Review the AER stated that following NER criteria applied:

- 'the need for the rate of return to be a forward looking rate of return that is commensurate with prevailing conditions in the market for funds and the risk involved in providing regulated transmission or distribution services (as the case may be)
- the need to achieve an outcome that is consistent with the [National Electricity Objective], and
- the need for persuasive evidence before adopting a value or method that differs from the value or method that has previously been adopted for it'249

The AER also adopted the following revenue and pricing principles when evaluating the MRP, the MRP should:

- 'provid[e] a service provider with a reasonable opportunity to recover at least the efficient costs
- provid[e] a service provider with effective incentives in order to promote efficient investment, and
- hav[e] regard to the economic costs and risks of the potential for under and over investment'250

ETSA Utilities agrees that these are the relevant underlying criteria for establishing the MRP.

#### 13.2.2

#### Persuasive evidence justifying a departure from the SORI'S MRP

Given current financial circumstances and on the basis of robust empirical expert evidence, ETSA Utilities is of the view that a market risk premium of 6.5 per cent is inappropriate. In the WACC Review the AER recognised that:

'[b]ased on the weight of evidence, the AER considers that there is persuasive evidence to depart from the previously adopted MRP of 6 per cent'.251

The AER's reasoning in adopting a MRP of 6.5 per cent is not clear, however it did express the view that regulatory certainty and stability considerations suggest the MRP should not be set considerably above 6 per cent. 252 ETSA Utilities considers that whilst regulatory stability and certainty are desirable they are not an end unto themselves and what is primarily required is for the AER to have regard to the evidence before it.

In the WACC Review the AER recognised that in determining the MRP the Rules require the AER to have regard to the prevailing conditions in the market for funds, 'at the time of the reset determination' (rather than at the time of the WACC Review).253 The SORI also permits departure from the SORI parameters where there is persuasive evidence.254

In this Proposal ETSA Utilities presents new persuasive evidence that the MRP currently exceeds well beyond 6.5 per cent. It cannot be in dispute that the cost of equity capital has risen considerably in the midst of the global financial crisis and the effect on the cost of equity capital is apparent from the following two reports commissioned by ETSA Utilities.

Competition Economists Group (Attachment J.1) provides a report which demonstrates:

- The global financial crisis has significantly impacted financial markets, consequently effecting current estimates of the forward looking MRP; and
- Current forward looking growth models estimate the MRP being in the range of 8.3-16.7%.

Professor Officer and Dr Bishop (Attachment J.2) have:

- Considered the underlying basis and reasoning that the AER applied to support its determination of an MRP of 6.5 per cent:
- Reviewed Competition Economists Group's work; and
- Have undertaken work of their own on the appropriate forward looking market risk premium in the present economic environment.

Professor Officer and Dr Bishop express the view that the current forward looking MRP over the regulatory control period is well above 6.5% and taking a conservative approach support the use of 8% as the appropriate value for the MRP for the period 2010 to 2015.

#### 13.2.3

#### ETSA Utilities' proposed Market Risk Premium

On the basis of the expert material presented, ETSA Utilities considers that there is persuasive evidence justifying a departure from the MRP in the SORI and a conservative MRP value of 8% be adopted consistent with expert evidence presented.255

<sup>249</sup> WACC Review, 175; Rule 6.5.4(e).

<sup>250</sup> WACC Review, 175-176.

<sup>251</sup> WACC Review, 238.

<sup>252</sup> Ibid.

<sup>253</sup> WACC Review, 235.

<sup>254</sup> SORI, 5.

#### THE VALUE OF IMPUTATION TAX CREDITS

Gamma is the assumed utilisation of imputation credits and as the AER has noted the 'generally accepted regulatory approach' to date in Australia has been to define the value of imputation credits in accordance with the Monkhouse definition. Under this approach, 'gamma' (v) is defined as the product of the imputation credit payout ratio' (F) and the 'utilisation rate' (θ). Gamma has a range of possible values from zero to one'. 256

Until the value of 0.65 was adopted in the WACC Review, the value adopted for gamma was almost universally 0.5 with occasional use of ranges that included 0.5 with a midpoint lower than that value.

In adopting a value of 0.65 in the WACC Review, the AER has relied upon the work of a number academic studies. In particular, the WACC Review's 0.65 figure was based on:

- Fbeing assumed to be 1
- θ being derived from the mid-point of the outcomes of two empirical studies adopting different approaches to estimate the relevant value:
  - Beggs & Skeels (2006);257 and
  - Handley & Maheswaran (2008).<sup>258</sup>

With respect to the assumption of 1 was drawn ultimately from an assumption that Associate Professor Handley understood to be used by Professor Officer. That assumption was adopted as being broadly consistent with a numeric consideration concerning the proportion of credits that are distributed over time and the time value of money for any credits that are not immediately distributed.

The methodology that the AER adopted and certain of the material relied upon was made available to the interested parties only at the time of the Final Decision and ETSA Utilities has not previously had an opportunity to review and comment on that material.

For example, key material upon which the AER relied (Associate Professor Handley's April 2009 Report)<sup>259</sup> has not yet been the subject of consultation with interested parties. Certain important issues arise from that work. Firstly, Associate Professor Handley interprets an assumption in the Officer (1994) model as providing a basis for adopting a distribution rate of 1. Secondly, Associate Professor Handley suggested that firms would be able to distribute all retained credits as financial markets find innovative ways to access retained credits.260

With the assistance of a number of the authors of the studies upon which the AER relies, ETSA Utilities has reviewed that work and commissioned important new work on these issues. Attached to this Proposal is important new evidence from

Professor Officer (Attachment J.3) and Associate Professor Skeels (Attachment I.4) which identify serious flaws with the basis upon which the 0.65 figure was determined. Additionally, professional tax advisor, Mr Feros of Gilbert and Tobin (Attachment J.5) exposes an unsafe assumption concerning tax planning which was made by Associate Professor Handley in his April 2009 Report.

This new evidence demonstrates that in the WACC Review the AER did not have sound basis to depart from the previously adopted value of 0.50 and, indeed, that on the current state of learning, there is no concrete basis to adopt an estimation of gamma of 0.65 or any other purported estimated figure.

Section 13.3.1 outlines how under the Rules a WACC parameter in the SORI is to be departed from if there is persuasive evidence justifying that departure. With important new evidence on the question of the gamma, it is necessary for the AER to both take that evidence into account and re-consider the weightings applied to all the previous evidence relative to the new evidence.

<sup>256</sup> WACC Review, 393.

<sup>257</sup> D Beggs and C Skeels, 'Market Arbitrage of Cash Dividends and Franking Credits' The Economic Record, 82(258) (September 2006) 239.

<sup>258</sup> J Handley and K Maheswaran, 'A Measure of the Efficacy of the Australian Imputation Tax System' The Economic Record, 84(264) (March 2008).

<sup>259</sup> J Handley, Further Comments on the Valuation of Imputation Credits (15 April 2009)

<sup>260</sup> Ibid 8.

Table 13.1: Regulatory precedents in relation to the value of imputation credits

Regulatory precedent	Value of inputation credits
2000 ESCV Electricity Distribution Price Review	0.50
2000 IPART AGL Gas Distribution Final Decision	0.30-0.50
2000 OffGAR Alinta Gas Distribution Final Decision	0.50
2001 ACCC Moomba to Adelaide Gas Transmission Final Decision	0.50
2001 ACCC Powerlink Electricity Transmission final Decision	0.50
2001 QCA Envestra and Allgas Gas Distribution Final Decision	0.50
2002 ACCC ElectraNet Electricity Transmission Final Decision	0.50
2002 ACCC GasNet Gas Transmission Final Decision	0.50
2002 ACCC SPI PowerNet Electricity Transmission Final Decision	0.50
2002 ESCV Gas Distribution Final Decision	0.50
2003 ACCC Moomba to Sydney Pipeline Gas Transmission Final Decision	0.50
2003 ACCC MurrayLink Electricity Transmission Final Decision	0.50
2003 ACCC Transend Electricity Transmission Final Decision	0.50
2003 OTTER Aurora Electricity Distribution Final Decision	0.50
2004 ICRC ActewAGL Electricity Distribution Final Decision	0.50
2004 IPART Electricity Distribution Final Decision	0.50
2005 ESCOSA Electricity Distribution Price Review Final Decision	0.50
2005 QCA Electricity Distribution Final Decision	0.50
2005 IPART Revised Access Arrangement for AGL Gas Networks Final Decision	0.30-0.50
2005 ERA Final Decision on the Proposed Access Arrangement for the Goldfields Gas Pipeline	0.30-0.50
2006 ESCOSA proposed revisions to the access arrangement for the South Australian gas distribution system Final Decision	0.35-0.60
2007 AER Powerlink Electricity Transmission Final Decision	0.50
2008 AER SPAusNet Electricity Transmission Final Decision	0.50
2008 AER ElectraNet Electricity Transmission Final Decision	0.50
2009 AER Transend Electricity Transmission Final Decision	0.50
2009 AER Transgrid Electricity Transmission Final Decision	0.50
2009 AER ActewAGL Electricity Distribution Final Decision	0.50
2009 ESCV revisions to the access arrangements for the Victorian gas distribution system final decision	0.50

#### 13.3.1

### Underlying criteria in the WACC Review

In determining whether to depart from a gamma of 0.65, the Rules require the AER to apply the underlying criteria which applied in the SORI. In the WACC Review the AER applied the same criteria as identified in 13.2.1.261 The AER also considered that a best estimate of gamma should be based on a marketwide estimate for businesses across the Australian economy'.262

ETSA Utilities agrees that these are the relevant underlying criteria for establishing the gamma.

#### 13.3.2

#### Distribution rate

The AER set the payout ratio at 1. ETSA Utilities provides new evidence demonstrating that a payout ratio of 1 is not supportable and justifies a departure from the SORI. Attached to this Proposal is new material from Officer (Attachment J.3) which expresses significant concerns with the views of Associate Professor Handley and the AER in the WACC Review that underpinned the decision to set the payout ratio at 1.0 in setting gamma at 0.65.

In addition, ETSA Utilities also notes expert evidence from a taxation professional (Attachment J.4) demonstrating that in practice firms face significant legal and commercial restrictions on their ability to fully distribute imputation credits. This report goes directly to a key assumption of Associate Professor Handley's which underpinned his analysis as to the value of retained imputation credits.

In light of the new evidence provided by Professor Officer, ETSA submits that the value for F used by the AER in developing the SORI is not robust or safe such that the value of F is well below 1.0.

#### 13,3,3

#### Theta

As there is new evidence which was not before the AER in the WACC Review in relation to the distribution rate, it is necessary and appropriate to re-examine the appropriate value of theta  $(\Theta)$ .

#### Reliance on Beggs & Skeels

The SORI relied on the Beggs & Skeels study as one of the two estimates of  $\Theta$ . <sup>263</sup> That paper was prepared as a theoretical exercise for academic purposes and it was not prepared with the notion that it would be used to establish prices for important essential infrastructure services.

With that in mind, ETSA Utilities has commissioned Associate Professor Skeels to review the use to which his original paper has been put by the AER in the WACC Review. From his review, he has established significant concerns on that point and more generally with the approach taken by the AER (Attachment J.5). Associate Professor Skeels has clearly expressed the view that:

- The AER incorrectly interpreted the Beggs & Skeels (2006) point estimate of 0.572 as a lower bound of theta. Using standard and robust statistical analysis Associate Professor Skeels demonstrates that the lower bound would in fact be 0.33;
- There is no scientific basis for the averaging the estimates of Beggs & Skeels (2006) and Handley and Maheswaran (2008); and
- The AER's estimate of theta is upwardly biased.

The expert report from Associate Professor Skeels provides new evidence that raises significant concerns with respect the value of  $\theta$  and therefore gamma as determined by the AER. The value of  $\theta$  is not robust or safe and in light of the expert report from Associate Professor Skeels is overstated.

#### Reliance on taxation statistics

In its WACC Review, the AER's estimates of redemption rates for imputation credits have been taken from a study published by Handley and Maheswaran (2008), which measures the ratio of franking credits redeemed by investors over the number of imputation credits created in a given year. <sup>264</sup>

ETSA Utilities has significant concerns with any estimate of theta that is based on the redemption rate of imputation credits, since this method does not provide a *market* value of theta. In our opinion, the fundamental problem with the use of redemption rates was articulated by SFG Consulting when it stated that:<sup>265</sup>

'In my view, measuring how many investors use a particular type of asset does not give us a value of that asset. When estimating the risk-free rate, for example, we do not consider how many investors use government bonds, we examine their market price.'

<sup>263</sup> D Beggs and C Skeels, above n 24.

<sup>264</sup> J Handley and K Maheswaran, above n 25.

<sup>265</sup> SFG Consulting, The impact of franking credits on the cost of capital of Australian firms: Report prepared for ENA, IPIA and Grid Australia (16 September 2008) 5.

Notwithstanding these concerns, the AER has continued to rely on redemption rate estimates, primarily due to the advice received from Associate Professor Handley, who argues that redemption rates: 266

'represent[] a simple average of utilisation rates across investors rather than a (complex) weighted average and assuming the set of investors is indicative of the set of investors in the domestic market portfolio, this estimate may be interpreted as a reasonable upper bound on the value of gamma.'

This statement highlights Associate Professor Handley's position that the market value of imputation credits should be determined by the value of an investor's actual holdings in the domestic market. It is telling that Associate Professor Handley provides no peer reviewed academic literature to support this position. In contrast, NERA<sup>267</sup> has drawn attention to a number of seminal finance papers, such as Brennan (1970)<sup>268</sup> and Guenther and Sansing (2007)<sup>269</sup> that contradict this position. For example, Guenther and Sansing demonstrate that the tax penalty on dividends will depend on a wealthweighted average of tax rates across all investors, not a holdings-weighted average.

ETSA Utilities' view is that no weight should be placed on such a solely theoretical proposition, especially where it is directly contradicted by empirical expert analysis that has been published in peer-reviewed financial (or economic) journals.

In addition to the use of the redemption rate of imputation credits not being capable of providing a market value of theta, its use has also been shown to:

- Systemically overestimate the value of theta, since it under-represents the influence of international investors and ignores the cost to investors of accessing credits; and
- Lead to an illogical result, in that a policy decision to restrict
  the investment of foreign investors in Australian capital
  markets would result in an increase in the market value of
  distributed imputation credits (and so a reduction in the
  cost of capital).

To redeem an imputation credit an investor must first own shares in a company that issues Australian franked dividends. Consequently, this approach is at best a proxy for the holdings of investors in the Australian equity market.<sup>270</sup>

However, Brennan (1970) and Guenther and Sansing (2007) both demonstrated that the value of imputation credits will be determined by the wealth-weighted average across all investors. It follows that since Australian residents hold a greater proportion of their wealth in domestic equities, compared with international residents, a holdings based estimate of theta will have an upward bias. This bias is exacerbated because Handley and Maheswaran (2008) also assume that the redemption rate for domestic residents is 100 per cent. Also attached to this proposal is new expert evidence setting out the legislative and commercial restrictions demonstrating the difficulties firms face in seeking to distribute imputation credits.

NERA also highlights that for domestic investors to gain access to a portfolio heavily weighted with high-imputation credit-yield domestic equities, they must bear more risk than would otherwise be the case if they were to diversify<sup>27</sup>. It follows that the assumption that a redeemed imputation credit is valued by investors at one dollar, overstates the *market* value of theta since it does not take any account of the cost to investors of that additional risk.

Finally SFG demonstrated for the redemption rate to be a reasonable estimate for theta then it must follow that an artificial reduction in the amount of foreign capital available to Australian firms (eg, the passing of a law to restrict foreign investment) would lead to an increased estimate of theta and a proportional decrease in the estimated cost of capital. In other words, the introduction of ownership restrictions for international investors would increase redemption rates since more imputation credits would flow to domestic shareholders, thereby increasing the value of theta. It follows that any restrictions in foreign ownership would results in a decrease in the cost of capital to domestic firms. This is an illogical conclusion.

ETSA Utilities has strong reservations about estimates of theta (and by implication gamma) that have been derived from redemption rates.

<sup>266 )</sup> Handley, above n 26, 19 (emphasis added).

<sup>267</sup> NERA, AER's Proposed WACC Statement—Gamma: A report for the Joint Industry Associations (30 January 2009).

<sup>268</sup> M Brennan, 'Taxes, market valuation and corporate financial policy' National Tax Journal 23 (1970) 417.

<sup>269</sup> D Guenther, and R Sansing, The effect of tax-exempt investors on stock ownership and the dividend tax penalty, (Working Paper, Dartmouth College, 2007).

<sup>270</sup> ETSA Utilities notes that this is not strictly true as not all companies distribute a similar level of imputation credits. For example, many Australian firms have substantial international operations that preclude the fully franking of dividends. Also other companies have very small dividend yields that diminish the opportunity to distribute imputation credits. Shareholders in these Australian firms will be underrepresented by the use of redemption rates.

<sup>271</sup> NERA, AER's Proposed WACC Statement—Gamma: A report for the Joint Industry Associations (30 January 2009) 17.

#### ETSA Utilities' proposed value of imputation tax credits

This submission provides new persuasive evidence that the values attributed to both F and  $\theta$  used in developing the SORI are overstated such that the value of gamma reached by the AER is neither robust nor safe. The new evidence provided by Professor Officer indicates a value of F that is well below 1.0. The new evidence provided by Associate Professor Skeels provides new evidence that a value of 0.65 for  $\theta$ , as determined by the AER, is overstated. ETSA Utilities considers this new evidence suggests a value of gamma, if anything, that is below o.s.

In light of this new evidence it is necessary and appropriate to re-examine other aspects of the AER's decision on F and  $\theta$ . ETSA Utilities notes expert evidence from a taxation professional that goes directly to a key assumption of Associate Professor Handley which underpinned his analysis as to the value of retained imputation credits. In addition, ETSA Utilities also notes serious concerns regarding the use of redemption rates to estimate  $\theta$ .

ETSA Utilities considers that the evidence suggests a value of gamma that is below 0.5. There is limited material upon which the AER can safely estimate a gamma. Accordingly ETSA Utilities' revenue determination should return to the previous regulatory precedent. Regulators have reviewed the strengths and weaknesses of the available data and given the lack of unanimity and strength in the data an approximation of 0.5 has generally been adopted (either as a point estimate or as a possible value within a range). It can be observed that this value is exactly the mid-point between the theoretical possible extremes of o and 1.

## 13.4

#### DEBT RISK PREMIUM

As noted above, in calculating the WACC the return required on debt is estimated by summing the risk free rate and the 'debt risk premium'—the additional return required to investors for assuming the corporate risk attached to a particular firm. Clause 6.5.2(e) of the Rules provide that the:

'debt risk premium for a regulatory control period is the premium determined for that regulatory control period by the AER as the margin between the annualised nominal risk free rate and the observed annualised Australian benchmark corporate bond rate for corporate bonds which have a maturity equal to that used to derive the nominal risk free rate and a credit rating from a recognised credit agency'

#### 13.4.1

#### Statement of Regulatory Intent

The Statement of Regulatory Intent provides that the credit level rating to apply when calculating the debt risk premium is BBB+ 272

ETSA Utilities accepts the use of a BBB+ credit level to determine the benchmarking crediting rating in estimating the debt risk premium. However, ETSA Utilities wishes to make a number of observations in relation to the underlying sources of data and interpretation of these statistics.

#### 13.42

#### Estimating the cost of debt and the debt risk premium

Attached to this Proposal are two expert reports examining the reliability of the two primary data sources (Bloomberg and CBASpectrum) for estimating the yield on corporate bonds. The first paper, produced jointly by the Victorian Electricity Distribution Businesses (Attachment J.6) makes it clear that current benchmark estimates from Bloomberg materially underestimate the yield on a BBB+ corporate bond.

The second expert report from CEG (Attachment J.7) identifies a number of methodological concerns with both Bloomberg and CBASpectrum and finds that it would be undesirable to rely solely in either source. Further, CEG state that at least no more weight be given to the Bloomberg service over CBASpectrum.

#### ETSA Utilities' proposed debt risk premium

Consistent with the findings of CEG,<sup>273</sup> ETSA Utilities proposes that a simple average of the estimated yields reported by Bloomberg and CBASpectrum<sup>274</sup> be used.

<sup>272</sup> AER, Electricity transmission and distribution network service providers, Statement of regulatory intent on the revised WACC parameters (distribution), May 2009, [3.7].

<sup>273</sup> CEG, Estimating the cost of 10 year BBB+ debt (June 2009) 59-60.

<sup>274</sup> CEG notes that CBA Spectrum can on occasion produce aberrant results. CEG then considers how these aberrant results can be identified and consider that in any averaging process these results be excluded. ETSA Utilities concurs with this view.

## ETSA UTILITIES' PROPOSED WACC PARAMETERS

On the basis of the analysis above, ETSA Utilities proposes WACC parameters that at the time of preparing this Regulatory Proposal deliver a nominal vanilla WACC of approximately 9.36%. In reaching this value, ETSA Utilities has adopted values for the WACC parameters as shown in Table 15.2.

With the exception of the market risk premium and the gamma, the parameters used in the above table are those from the SORI.

Table 13.2: ETSA Utilities' proposed WACC parameters

Parameter	Value <sup>(t)</sup>
Nominal risk free rate	[4.22%]
Expected inflation rate	[2.47%]
Equity beta	0.80
Market risk premium	8.00%
Gearing level (Debt/Equity)	0.60
Credit rating level	BBB+
Debt risk premium	[4.57%]
Gamma	0.50
WACC	[9.52%] <sup>(2)</sup>

#### Notes

- The numbers in brackets are indicative 'place holders' only. They reflect the values measured during the first quarter of calendar year 2009 and will be updated with data from the agreed averaging period.
- (2) For the purpose of calculating ETSA Utilities' indicative revenue and prices for the 2010–2015 regulatory control period, as discussed in chapter 16, a nominal vanilla WACC of 9.04% has been applied. This WACC has been determined using the observed nominal risk free rate, inflation rate and debt premium for the first quarter of calendar year 2009, and the SORI parameters for MRP and gamma.