Submission to the AER on its Preliminary Determination

Value of imputation credits

Summary

This document sets out Ergon Energy's response to the Australian Energy Regulator (AER) on the value of imputation credits (or 'gamma').

The level of gamma significantly affects the returns that investors receive and it is essential that Ergon Energy is permitted to earn a fair market return at all times in order to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity.

Our originally proposed gamma of 0.25 achieves this and is materially preferably to the AER's preliminary decision to apply a gamma of 0.4.

As such, we have not updated our revised Regulatory Proposal to reflect the AER's Preliminary Determination.

Outcomes

Setting gamma at 0.25 delivers a fair rate of return for the capital invested.

Contents

1. Introduction

On 30 April 2015, the Australian Energy Regulator (AER) released its Preliminary Determination on Ergon Energy's Regulatory Proposal for the regulatory control period commencing on 1 July 2015 and ending on 30 June 2020.

This document details our response to the AER's Preliminary Determination on the value of imputation credits (or 'gamma'). Ergon Energy considers that the AER's preliminary decision to apply a gamma of 0.4 is flawed. The AER should apply our originally proposed value of 0.25 in its Substitute Determination in order to ensure that the returns are commensurate with the returns that investors can obtain in equity markets at large.

Ergon Energy has structured this document in the following manner:

- Chapter 2 summarises the AER's Preliminary Determination in relation to gamma.
- Chapter 3 outlines evidence that has been submitted since the lodgement of our October Regulatory Proposal that is relevant to our response.
- Chapter 4 provides our response to the positions adopted by the AER.

2. AER's Preliminary Determination

Clause 6.5.3 of the NER requires the income tax building block to be adjusted for the value of imputation credits (gamma). Gamma is estimated as the product of:

- the payout ratio or distribution rate
- the value for distributed imputation tax credits (theta).

In our October Regulatory Proposal, we proposed a gamma of 0.25. This reflects a distribution rate of 0.7 and theta of 0.35.

The AER did not accept our proposed value of imputation credits and substituted it with 0.4. The AER reached this conclusion by selecting the mid-point from a range of 0.3 to 0.5. Each of the data points that contribute to the AER's range were also derived from the multiplication of pairs of numbers – one representing a distribution rate (see below) and a tax credit utilisation rate (see below). Further, the AER departed from its Rate of Return Guideline (Guideline) in deriving the value of imputation credits, citing new evidence and advice.

2.1. Distribution Rate

The AER used an estimate of 0.8 for the distribution rate when considering estimates of the utilisation rate that relate to listed equity only, and an estimate of 0.7 when considering estimates of the utilisation rate that relate to all equity.

The AER estimated the distribution rate using the 'cumulative payout ratio approach', which uses data from the Australian Tax Office on the accounts used by companies to track their stocks of imputation credits.

2.2. Utilisation Rate

In determining the most appropriate value of theta, Ergon Energy relied on advice provided by SFG Consulting (Professor Gray and Dr Jason Hall).[1] Analysis by Gray and Hall concluded that:

- 0.35 remains the best estimate for theta at the current time using an updated dividend drop-off approach. This approach has been honed and tested in multiple previous regulatory determinations
- other market value studies support an estimate between zero and 0.35.

As explained by Gray and Hall, dividend drop off studies tend to give "high side" valuations compared with other market valuation techniques. NERA corroborates this view and explains why the value estimate is a "high side" estimate. Ergon Energy considered the value of 0.35 for theta is the best estimate in the current environment, having regard to the purpose of estimating gamma within the context of the National Electricity Rules (NER) and the allowed rate of return objective.

The AER rejected our proposed utilisation rate (theta) of 0.35. The AER placed significant reliance of the 'equity ownership approach' to estimate the utilisation rate consistent with its Guideline. Under this approach, the AER considered a reasonable estimate for the utilisation rate was:

- 0.56 and 0.68, if all equity is considered, and
- 0.38 and 0.55, if only listed equity is considered.

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[1] *08.01.03 - SFG Consulting: An Appropriate Regulatory Estimate of Gamma.*

It also had regard to tax statistics, which suggested an estimate of the utilisation rate in the range of 0.4 and 0.6.

The AER did not agree with our market-based approach. The AER stated the equity ownership approach and tax statistics provide more direct and simpler evidence, and there are limitations with the implied market value studies.

The AER departed from its Guideline in terms of the data used in determining the utilisation rate. It has re-examined the National Accounts data relating to the percentage of Australian equity held by domestic investors. Specifically, it has focused on the types of equity that it considers are most relevant to a benchmark entity, and the specific classes of investor that are expected to either utilise or waste the imputation credits they receive.

3.   Evidence submitted since October 2014

There is broad consensus among network service providers (NSPs) in relation to gamma. The same supporting materials and submissions presented by Ergon Energy have also been presented to the AER at the same time by other NSPs. In the AER's Preliminary Determination, the AER noted that, in addition to the material that we submitted with our October Regulatory Proposal, there have been two additional reports jointly commissioned by Ergon Energy and a range of other NSPs. These are:

- *SFG Consulting – Estimating gamma for regulatory purposes*[2]
- *NERA – Distribution and redemption rates from taxation statistics (March 2015).*[3]

The AER's Preliminary Determination correctly assumes that we support and rely on these reports. We have therefore formally submitted these documents as part of this submission.

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[2] SFG Consulting (2015), *Estimating gamma for regulatory purposes*, 6 February 2015.
[3] NERA (2015), *Estimating Distribution and Redemption Rates from Taxation Statistics*, March 2015.

4.   Our response

Ergon Energy considers that the AER's preliminary decision to apply a gamma of 0.4 is flawed. The AER should apply our proposed value of 0.25 in its Substitute Determination in order to ensure that the returns are commensurate with the returns that investors can obtain in equity markets at large. These positions are supported by two additional reports:

- *Frontier Economics – An appropriate regulatory estimate of gamma*[4]
- *NERA – Distribution and redemption rates from taxation statistics (June 2015).*[5]

There are two fundamental differences of view that explain how Ergon Energy's approach differs so substantially from that of the AER:

1. The first fundamental difference of approach concerns what is meant by the term "value of imputation credits" in clause 6.5.3 of the NER. Ergon Energy and our advisors have consistently contended that this term must mean the valuation revealed in openly traded equity markets. The reasons for this view are explained at Section 4.1 below. By contrast, in a range of regulatory documents published over the past five years the AER and its consultants have advanced one, two, three and even more formulations of argument and explanation that seek to bridge the gap between the reference in the NER to a "value", on the one hand, and the AER's preferred measure of the redemption rate. The details of these issues are discussed at Section 4.2 below.

2. The second fundamental difference of approach concerns the set of comparator businesses that should be used when establishing a benchmark distribution rate. There are two key differences. First, the AER takes the view that the data for the distribution rate and the data for the valuation of imputation credits need to be drawn from the same set of firms. However, arbitrage in traded markets ensures that there is a single economy-wide market equilibrium value for imputation credits, but the distribution rate obviously differs between firms depending on the considerations driving their capital structures. Second, even if it were appropriate to look at a limited group of "comparator firms", the AER's approach to selecting that subset is inconsistent over time and inconsistent with other aspects of its approach to rate of return regulation. In particular, the AER has taken a strong stand that the relevant "benchmark efficient" network operator is a "pure play", wholly domestic business that is not necessarily stock market listed. However, the only way that the distribution rate could be 0.8 is by applying primary weight to a small subset of the largest (and therefore multinational and diversified) listed firms which are not valid comparators for the purpose of estimating the distribution rate for the benchmark efficient entity. The details of the issues concerning the distribution rate are discussed in Section 4.6 below.

There are also significant "second order" differences of view between the AER approach and the analysis prepared by Gray and Hall, and NERA upon which Ergon Energy relies:

1. As explained in Section 4.3, the only useful guidance that a *correctly observed* redemption rate study can provide when estimating gamma are as an upper bound. Then, *even if* the AER's redemption rate approach were correct (or if a redemption rate estimate is calculated for the purposes of an upper bound check), Gray and NERA are of the view that the AER's implementation of that approach is flawed. This issue is discussed at Section 4.4 below.

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[4] Frontier Economics (2015), *An appropriate regulatory estimate for gamma*, June 2015.
[5] NERA (2015), *Estimating Distribution and Redemption Rates: Response to the AER's Final Decisions for the NSW and ACT Electricity Distributors and for Jemena Gas Networks. A report for ActewAGL Distribution, AGN, APA, AusNet Services, CitiPower, Energex, Ergon Energy, Jemena Electricity Networks, Powercor, SA Power Networks and United Energy*, June 2015.

2. Similarly, while disagreeing with us that a market valuation should be taken, the AER is of the view that *even if* a market valuation is to be taken, there are criticisms of Gray and Hall's work that need to be addressed. Section 4.5 below addresses these points.

We also note the Preliminary Determination suggests that the figure of 0.4 is supported primarily by work undertaken by Lally[6] and Handley[7] but on closer examination (discussed below) their reports contradict each other and the AER's approach.

Section 4.7 draws together the above points and explains why a final decision substituting a figure of 0.25 for gamma in place of the 0.4 figure that appears in the Preliminary Determination would constitute a materially preferable decision from the viewpoint of contributing to the National Electricity Objective (NEO).

In our view, the existing body of empirical work thoroughly supports a figure of no more than 0.25. We do not propose to submit any new studies at this time. However, we are concerned that the AER's Preliminary Determination has not properly addressed the points that our experts and its own have made. Consequently, we have asked Gray and Hall to prepare a report that revisits key aspects of the existing materials and which collates the various ways in which the body of evidence contradicts the AER's gamma estimate of 0.4. This report, *Frontier Economics – An appropriate regulatory estimate of gamma,* is lodged with this submission and the discussion below draws mainly on this report.

4.1. Gamma represents a market valuation not a redemption rate

The regulatory structure has always bracketed together the regulatory determination of the return on capital and the estimate of gamma. For example, the NER require the AER to address both issues in the Guideline. This is not surprising. If the regulatory system establishes an efficient rate of return for a benchmark NSP from the prevailing market prices in traded debt and equity markets, so too must the gamma.

Indeed if the gamma is determined not from market data but from a "conceptual analysis" that causes the regulator to diverge from the actual market based valuation a mismatch will necessarily arise between regulatory allowances and investors' investment return requirements and this will necessarily distort investment decisions positively or negatively, either way to the long term detriment of consumers.

As Gray and Hall's report explains:[8]

"In the regulatory setting, the regulator first estimates the return that shareholders' require and then reduces that according to the estimate of gamma. For example, suppose the regulator determines that shareholders require a return of $100 and that those shareholders will receive imputation credits that are worth $20 to them. The regulator would then allow the firm to charge prices so that it can pay a return of $80 to the shareholders. That is, the regulator's estimate of gamma determines the quantum of the reduction in the return that the firm is able to provide its shareholders by other means (dividends and capital gains).

If, for example, the regulator's assessment of the value of imputation credits is greater than the true value of imputation credits to shareholders, the shareholders will be under-compensated. In

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[6] Lally, M. (2013), *The estimation of gamma*, *Report for the AER*, 23 November 2013.

[7] Handley, J. (2014), *Advice on the Value of Imputation Credits, Report prepared for the Australian Energy Regulator*, 29 September 2014; and Handley, J. (2015), *Further Advice on the Value of Imputation Credits, Report prepared for the Australian Energy Regulator*, 16 April 2015.

[8] *Frontier Economics – An appropriate regulatory estimate for gamma*, paras 12, 16, and 18, pp8-9.

this case, the reduction in other forms of return (dividends and capital gains) will exceed the true value of the imputation credits.

Thus, when estimating gamma, the appropriate question to consider is this: What is the quantum of dividends and capital gains that shareholders would be prepared to give up in order to receive imputation credits? It is precisely this question that is addressed by market value studies that seek to quantify the relative value (to investors in the market for equity funds) of dividends, capital gains, and imputation credits.

The alternative is to reduce the regulatory allowance for returns from dividends and capital gains according to the proportion of investors who may be eligible to redeem credits, rather than according to the value of those credits. This approach will inevitably result in investors being mis-compensated because there is no attempt to consider whether the value of what investors are required to give up (dividends and capital gains) is equivalent to the value of what they receive in its place (imputation credits).

…

In my view it is abundantly clear that there are three components to the return on equity – dividends, capital gains, and imputation credits – and that a greater assumed value of imputation credits will result in a reduction in the regulatory allowance that generates dividends and capital gains. This is precisely what occurs in Row 35 of the PTRM – the return that could otherwise be provided to equity holders is reduced by the regulator's assessment of the value of imputation credits. Any suggestion that the regulatory allowance that generates dividends and capital gains is independent of the regulatory assumption about imputation credits is erroneous."

It is disappointing that an economic regulator such as the AER would not have faith in the market mechanism to deliver a valuation and that it would prefer its own "conceptual" valuation.

Indeed in amending the meaning of gamma in the NER and inserting the definition in the National Gas Rules, the Australian Energy Market Commission did not raise any concerns with the regulatory approach that had developed to estimating gamma which, up to that point, had amounted to a market value. Indeed the word change was a move to bring the NER into line with regulatory practice.

Pages 11 to 16 of Gray and Hall's report identify a series of re-formulations by the AER and its consultants over the last five years as to what the AER says gamma represents. Initially, the AER's formulation appeared to over-look the express requirement in the NER that gamma be a "value".

Network businesses responded by stressing the need for the gamma to be a "value" and asserting that the plain meaning of "value" imports the use of standard market valuation techniques. This precipitated a series of "back and fill" attempts to articulate how the gap could be bridged between the word "value" which appears in the NER and the AER's preferred conceptualisation of gamma as a measure of the number of credits redeemed. This led first to several internally inconsistent discussions ("we consider the word 'value' used in these contexts is being used in a generic sense to refer to the number that a particular parameter takes";[9] "utilisation value"[10] and the "pre-personal-tax and pre-personal-cost"[11]) and then finally an assertion that the redemption rate might actually

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[9] AER, Explanatory Statement: Rate of Return Guideline, December 2013, Appendix H, p 150.
[10] AER Determination Attachment 4, [4-22]..
[11] AER Determination Attachment 4, [4-11].

constitute a way to estimate value if that term is construed in a particular way ("the use of redemption rates as a measure of estimating the value of credits is driven by conceptual considerations"[12]).

The fact that the AER has been unable to provide a consistent and coherent explanation of how its preferred redemption rate concept reconciles with the language in the NER, and more significantly the notion that investors quite clearly seek market valued returns strongly suggests that the approach it takes is unsafe.

The simple fact is that by taking redemption rates as the measure of gamma instead of studies of the value the market places on gamma, the AER's Preliminary Determination rejects the current definition in the NER of gamma as a value.

4.2. Issues with the AER's theoretical or conceptual analysis

Pages 17 to 24 of Gray and Hall's report details how:

• Lally's theoretical conception rests on a demonstrably incorrect assumption that there is no foreign ownership of Australian equity, and which is inconsistent with the way in which all other Weighted Average Cost of Capital parameters are estimated[13]

• Handley's theoretical conception is inconsistent with core theoretical underpinnings of the Capital Asset Pricing Model which the AER uses as the foundation model for establishing the return on equity (i.e. that investors will determine the composition of their domestic and foreign investment portfolios in isolation from each other)[14]

• Handley does not appear to be able to clearly reconcile his current work with his former writings in that he simultaneously asserts that "[gamma] should not exceed its redemption value" and that "using 'upper bound' in this context was unnecessary and confusing"[15]

• the above two experts' approaches are demonstrably inconsistent with each other (in that the former does not conceive of foreign ownership while the latter does)[16]

• both the above experts disagree with the approach taken by the AER (e.g. Lally explicitly states that key aspects of the AER's approach is "not correct" and that he does "not agree")[17]

• the AER has inappropriately interpreted Lally's "second preference" as muted support for the AER's approach which is of a conceptual or theoretical nature when it is merely an observation that, although the AER's approach is conceptually inconsistent with Lally's approach, it happens to deliver the second closest numeric result to Lally's own method.[18]

Further, Gray and Hall's report notes that the text book authored by Associate Professor Partington upon whose work the AER relies extensively in relation to establishing its preferred allowed rate of return for equity, defines gamma as "the market value of franking credits as a percentage of face value" and that "the market value of the franking credit is likely to differ from its face value". Indeed Partington states that: "We do not know exactly what the market value is, but the evidence suggests that franking credits are valued at a **significant discount to their face value**" [emphasis added]

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[12] Handley, J. (2015), *Further Advice on the Value of Imputation Credits, Report prepared for the Australian Energy Regulator*, 16 April 2015, p14 and p28.
[13] *Frontier Economics – An appropriate regulatory estimate for gamma*, paras 59-60, p17.
[14] *Frontier Economics – An appropriate regulatory estimate for gamma*, paras 61-63, pp17-18.
[15] Presumably what Professor Handley means is that the redemption rates are in fact an upper bound but also he is of the view that the redemption rate will be the primary influence on an investor's valuation and that the valuation would not differ significantly below it but if that is indeed what was meant it could have been more easily stated and the first half of his view remains an important point in support of Ergon Energy's approach in *Frontier Economics – An appropriate regulatory estimate for gamma*, para 92, p24.
[16] *Frontier Economics – An appropriate regulatory estimate for gamma*, para 67, p18.
[17] *Frontier Economics – An appropriate regulatory estimate for gamma*, paras 74-75, pp19-20.
[18] *Frontier Economics – An appropriate regulatory estimate for gamma*, paras 42-43.

which is inherently contradictory to the use of redemption rates as a "value of imputation credits" or gamma. [19]

What emerges from the above observations is that there is only weak and contradictory support even amongst the AER's own finance experts for using the redemption rate as a point estimate of theta.

4.3. A redemption rate can only constitute an upper bound, not a point estimate

Investors cannot rationally value an imputation credit above its face amount – they will never realise more than 100 per cent of its face amount. On the other hand, there may be many reasons including those identified previously by Gray and Hall as to why an imputation credit may be valued at less than 100 per cent of its face amount. Therefore, if a robust measure of redemption rates can be calculated, it can only be of use for economic regulatory purposes as an upper bound on the estimate of theta. This is further explained by Gray and Hall's report. [20]

As noted above, Handley previously stated that he considered the redemption rate is an upper bound for gamma and he still considers that the theta "*should not exceed its redemption value, since this, by definition, represents the ultimate source of value of a credit*". [21]

4.4. Flaws with the AER's redemption rate estimates

NERA explores why redemption rates will exceed, and markedly so, the value of those imputation credits:

> "Imputation credits are of some use to domestic investors but are of little or no use to foreign investors. So the value that the market places on imputation credits distributed will largely depend on the impact that foreign investors have on equity prices."[22]

> "[O]ne can expect the rate at which credits are redeemed to exceed, significantly, the impact of credits on the cost of equity, theta."[23]

And further:

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[19] Brealey, R., Myers, S., Partington, G. and Robinson, D. (2000), *Principles of Corporate Finance: Australian edition,* p168 in *Frontier Economics – An appropriate regulatory estimate for gamma*, para 97, pp24-25.

[20] *Frontier Economics – An appropriate regulatory estimate for gamma,* pp23-34.

[21] Handley, J. (2015), *Further Advice on the Value of Imputation Credits, Report prepared for the Australian Energy Regulator,* 16 April 2015, p15.

[22] *NERA – Estimating Distribution and Redemption Rates (June 2015)*, pi.

[23] *NERA – Estimating Distribution and Redemption Rates (June 2015)*, pi.

> "[T]he use of a domestic pricing model by the AER does not justify a presumption that the impact of foreign investors is restricted and that theta, consequently, take on a non-negligible value – contrary to claims that Handley makes in a September 2014 report."[24]

The NER require the AER to deliver a reasoned determination. A frustrating aspect of the AER's Preliminary Determination is that it asserts that the AER is now considering a broader range of data[25] than it did in the Guideline without detailing how the different studies considered have actually produced a particular estimate of theta and in turn a specific value for gamma of 0.4. Instead, a range of statistics is used, with thetas ranging from 0.43 to 0.58 combined with two different distribution ratios of 0.7 and 0.8 to deliver a range for gamma.

Gray and Hall's latest report[26] also illustrates that the AER's methodology contains key internal inconsistencies when it comes to actually performing a redemption rate estimate:

- There is inconsistency as to whether the relevant redemption rate is a firm specific or market-wide parameter.

- Although the AER's Preliminary Determination states that it has taken into account tax statistic studies delivering numbers of 0.43, 0.45, 0.44 and 0.58, the AER's Preliminary Determination for Ergon states that its estimate is based on "an imputation credit utilisation rate (theta) of 0.6."[27] A figure as high as 0.6 is only supported by one of the AER's statistics and only if it is rounded upwards to one decimal place. The other three statistics cited in the AER's Preliminary Determination all support a substantially lower number.

Gray and Hall[28] also note that the equity ownership model may quite reasonably over-estimate the actual redemption rate due to the 45-day rule. Although Gray and Hall do not themselves estimate the size of any over-statement because the necessary data is not available, they do note that Handley and Maheswaran provide an indication that it may be material.

In summary, if a redemption rate were used as the value of imputation credits (and we have explained above why this would be the wrong thing to do), such a redemption rate should be significantly below the 0.6 level that the AER appears to use.

4.5. The AER's criticisms of Gray and Hall's valuation studies

The AER has asserted that there is "new evidence" that means that very dated valuation studies should again be considered when taking a market value even though it had previously rejected them. The claimed "new evidence" comprise just two sentences in a paper by McKenzie and Partington.[29]

By contrast, Gray and Hall[30] have provided a considerably more thoughtful analysis that explains why the newer, post 2000 based studies are strongly preferable bases to assess market value.

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[24] *NERA – Estimating Distribution and Redemption Rates (June 2015),* pii.
[25] AER Preliminary Determination Attachment 4, p18, Tables 4.1 and 4.2.
[26] *Frontier Economics – An appropriate regulatory estimate for gamma,* p31.
[27] AER Preliminary Determination, Attachment 3, p 274, Table 3-36.
[28] *Frontier Economics – An appropriate regulatory estimate for gamma,* p38.
[29] McKenzie, M. and Partington, G. (2013), *Review of Aurizon Network's draft access undertaking,* Report for the Queensland Resources Council, 5 October 2013.
[30] *Frontier Economics – An appropriate regulatory estimate for gamma,* pp33-35.

The Preliminary Determination asserts[31] that there remain empirical estimation issues with Gray and Hall's work but in our view these points have already been answered by Gray and Hall[32] and, in many cases, also the Australian Competition Tribunal and we do not propose to repeat those points in this submission.

The Preliminary Determination asserts that Gray and Hall's drop off studies should be 'recalibrated' by dividing them upwards by an amount of 0.05. The idea of making an adjustment arises from the possibility that investors may value not only imputation credits but also dividends at less than their "face value". Gray and Hall have provided further analysis of whether this is an appropriate adjustment to make and on page 37 of their current report they provide a further explanation reaffirming why no adjustment should be made. The challenge here is to remember that a higher theta represents a lower return to investors. To explain the effects of the AER's adjustment, Gray and Hall consider a hypothetical in which an investor values dividends at only 90 per cent of the face value.

In summary, this hypothetical illustrates that:

"Rather than allowing a *higher* return, the AER proposed adjustment would result in a *lower* allowed return. The AER would propose that the 0.35 estimate should be divided by 0.9 to produce an adjusted estimate of 0.39. This higher theta would then result in shareholders receiving a *lower* return than they otherwise would. That is, rather than compensating investors for the lower value of dividends, the effect of the AER's proposed adjustment would be to compound the problem by *reducing* the amount of dividends that the firm is able to distribute. Thus, such an adjustment produces a perverse outcome."[33]

4.6. Distribution rates

The Guideline uses a 70 per cent distribution rate while the Preliminary Determination[34] uses both 70 per cent and 80 per cent for the various data sets considered. Any departure from the Guideline requires a properly reasoned basis which has not been provided in the Preliminary Determination instead asserting,[35] without explanation, that there some form of "internal consistency grounds" at play:

"As set out in the draft decisions and in section A.9.2 of this preliminary determination, we consider that there are good reasons – on internal consistency grounds – for using in certain circumstances an estimate of the distribution rate based on only listed equity. However, the service providers did not comment on these reasons in their revised proposals."

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[31] AER, Preliminary Determination – Attachment 4, p 4-84 to 4-91
[32] *SFG – Estimating Gamma for Regulatory Purposes.*
[33] *Frontier Economics – An appropriate regulatory estimate for gamma,* p38.
[34] AER Preliminary Determination Attachment 4, p18, Tables 4.1 and 4.2.
[35] AER Preliminary Determination Attachment 4, p65.

This submission is Ergon Energy's first opportunity to comment on the alleged "internal consistency grounds" and we do so as follows.

Superficially the notion of internal consistency is appealing to the eye and in many contexts (like the need for both the rate of return on equity and gamma to both be market based valuations if investors are to receive appropriate incentives to invest) there are strong grounds that can be articulated as to why two values have a relationship of "internal consistency". However, it is necessary to consider what the two allegedly "consistent" concepts are measuring before jumping to the conclusion that a relationship of sameness should apply.

In this case, the two measures are very much independent concepts and there is no reason to suppose that the optimal data set used to measure them should be the same. Indeed there are strong reasons why the optimal data sets may differ when measuring the distribution rate and theta. The distribution rate is a measure of the proportion of a firm's earnings that it returns to shareholders in-period versus the earnings it retains to fund its capital requirements. This is obviously a question that is firm specific. Each firm will have different capital requirements and patterns for earnings. Just as the 60:40 debt to equity ratio is established as an optimal financing structure for a benchmark energy business, so too is the distribution decision.

By contrast, investors can effectively trade imputation credits via the purchase and sale of stocks and there is an extensive opportunity for arbitrage between the values of stocks in different industries and there is no reason to suppose there will not be a single prevailing equilibrium price for imputation credits.

In other words, the distribution rate is inherently firm specific while the same equilibrium market clearing value of distributed credits will be observable throughout the economy. NERA states:

> "The distribution rate…is a firm specific parameter. One firm, after weighing up the costs and benefits of distributing credits, may decide to distribute all of the credits that have been created over some period. A second firm may rationally decide to distribute no credits – perhaps because it wishes to use internally generated funds to finance new projects."[36]

Gray and Hall's studies take a whole-of-stock-market dividend drop off analysis to ensure that there is a wealth of data contributing to a robust valuation of theta but there is no reason to suppose that a benchmark efficient entity's optimal distribution rate would match that of, for example, a company running a television station. Putting it differently, investors can trade their holdings in both power companies and television stations to effectively purchase or divest imputation tax credits but the companies concerned will logically determine their distribution rates according to their capital investment needs.

At the very least, there is broad support for the notion that the distribution rate should be firm specific (even if there is debate about where to draw the theta value from). This is supported by the AER,[37] NERA,[38] Gray and Hall[39] and Lally.[40]

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[36] *NERA – Estimating Distribution and Redemption Rates (June 2015)*, piii.
[37] AER, Preliminary Determination – Attachment 4, p 4-20.
[38] *NERA – Estimating Distribution and Redemption Rates from Taxation Statistics (March 2015)*, Table 3.4, p12.
[39] *Frontier Economics – An appropriate regulatory estimate for gamma*, paras 99-101, p26.
[40] Lally, M. (2013), *The estimation of gamma, Report for the AER*, 23 November 2013, p41.

The more important question, therefore, is what is the correct distribution rate to adopt in the context where it is acknowledged that the distribution rate is a firm specific parameter. The AER[41] has rejected the notion that the distribution rate should actually be determined by looking at energy network company stocks because the data set is small (which we agree with) and it is alleged that doing so might create an incentive to manipulate the distribution rate (which seems surprising). So the question is what is the next best source for a suitable distribution rate.

The AER has decided that the benchmark efficient entity is "*a pure play, regulated energy network business operating within Australia*".[42] As Gray and Hall's report[43] and NERA's work[44] explain, the top 20 Australian listed companies are predominantly multinational companies who are able to use dividends paid out of foreign profits to distribute a greater proportion of the imputation credits created from their domestic operations. It is not surprising that these firms have more than an 80 per cent imputation credit distribution rate while other stocks are considerably lower. These top 20, predominantly multinational, listed entities are inappropriate comparators (at least unless their data is averaged with small firms in the economy who have low distribution rates). This list, for example, includes businesses with well-known international profiles such as BHP Billiton, the ANZ Bank, Macquarie Group, Rio and Westfield Corporation, all of whom self-evidently have significant foreign earnings. When the top 20 firms are "backed out" of the over-all data concerning listed equity the figure is close to 70 per cent.

> "The point is that any firm with foreign profits will be able to distribute more imputation credits than they would otherwise have been able to. The 20 largest multinational companies obviously have material foreign income and they would obviously be able to distribute fewer imputation credits without that foreign income."[45]

If there is no better benchmark to use, the very broadest statistic is appropriate – that being the economy-wide distribution rate of 70 per cent.

We note that the AER has said that Handley has criticised SFG's analysis on the second of the above points as "incomplete and over-simplified". [46] This criticism cannot be accepted where Handley's own analysis of the point is even briefer and incomplete and, in any event, the current report takes this analysis further.

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[41] AER (2013), *Explanatory Statement, Rate of Return Guideline*, December 2013, p164.

[42] AER (2013), *Explanatory Statement, Rate of Return Guideline*, December 2013, p45.

[43] *Frontier Economics – An appropriate regulatory estimate for gamma*, paras 111-118, pp28-29.

[44] *NERA – Estimating Distribution and Redemption Rates from Taxation Statistics (March 2015)*, p13 and 23; and *NERA – Estimating Distribution and Redemption Rates (June 2015)*, p vii – "We believe that the AER's 2009 statement that a benchmark network service provider need be neither large and publicly listed nor publicly listed is correct. Thus we believe that Handley is wrong to advocate the use of a distribution rate that places a large weight on large publicly listed firms and no weight on private firms. It is difficult to see that there is a case for setting the distribution rate to be any different than the value accepted by the Australian Competition Tribunal in its 2010 decision and the market-wide value chosen in the AER's Rate of Return Guideline of 0.70. This value is based on a cumulative distribution rate computed using tax statistics aggregated across all companies – both private and public."

[45] *Frontier Economics – An appropriate regulatory estimate for gamma*, para 109, p29.

[46] AER, Preliminary Determination – Attachment 4, p 4-66.

4.7. Materially preferable NEO decision

When revoking and substituting the Substitute Determination in place of the Preliminary Determination, the AER should replace the gamma of 0.4 with a gamma of no more than 0.25 because:

- The AER has used estimates of the utilisation rate produced by the equity ownership approach without making adjustments for the fact the simplifying assumptions underlying that approach do not hold in practice .

- the AER has used estimates of the utilisation rate produced by taxation statistics to support a value for the utilisation rate at the lower end of the range suggested by the equity ownership approach when the evidence before the AER is that taxation statistics are an upper bound on the utilisation rate;

- the NER require gamma must be a market value.

- Gray and Hall's robust dividend drop-off studies deliver a value for theta of 0.35.

- The AER's criticisms and adjustments to Gray and Hall's work are unfounded.

- Gray, Hall and NERA agree that amongst different market valuation methods, dividend drop-off studies tend to give high values for gamma.

- The AER's partial reliance on distribution rates of 80 per cent is inconsistent with its conception of the benchmark firm and each of the legitimate measures are approximately 70 per cent.

- Combining a theta of 0.35 with a distribution rate of 70 per cent gives a gamma of 0.25.

It is essential that electricity network businesses are permitted to earn a fair market return at all times in order to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity. If a fair return is not permitted, the business cannot attract the equity investments needed to maintain assets and replace them when required.

In the short term, no discernible difference in service may be observed because investment decisions are made for the long term. However, in the short term incentives arise to delay replacement investments or efficient capital augmentations and instead to continue to rely on the existing assets beyond when they should be most efficiently replaced.

In the longer term, if regulatory determinations were to persist with providing inadequate returns for more than a single five year regulatory control period, and if investors responded by refusing to provide any further equity injections when capital was needed (as they might reasonably do), network businesses may be required to take on a higher leverage putting the whole business at a higher risk of long run financial failure. Financial failure is, of course, a very low probability but high risk event for consumers and other end-users.

Equally, a significantly below market return during the current five year regulatory control period would negatively affect investors perception of the sovereign risk of investing. This would raise the long term revenue expectations when investing to the long term detriment of consumers across the National Electricity Market.

As Gray and Hall's report on gamma explains, the level of gamma significantly affects the returns that investors received and it is essential that electricity network businesses are permitted to earn a fair market return at all times in order to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity. For the reasons outlined in this submission, the AER's Preliminary Determination of a gamma of 0.4 does not reflect the value of imputation credits as required by the NER and will not deliver a fair rate of return for the capital invested.

Supporting documents

The following documents support our response to the AER on gamma:

Name
SFG Consulting – Estimating gamma for regulatory purposes
NERA – Estimating Distribution and Redemption Rates from Taxation Statistics (March 2015)
Frontier Economics – An appropriate regulatory estimate of gamma
NERA – Estimating Distribution and Redemption Rates from Taxation Statistics (June 2015)

The following supporting documents are provided for ease of reference:

Name
Handley: Advice on the NERA report Estimating distribution and redemption rates from taxation statistics, May 2015
Handley – Advice on the Value of Imputation Credits, September 2014_2
Handley - Further advice on the value of imputation credits, April 2015_4
NERA Do Imputation Credits Lower the Cost of Equity Cross-Sectional Tests
SFG - An appropriate regulatory estimate of gamma - 2014
SFG Consulting Dividend drop-off estimate of theta, March 2011
SFG Report - Reconciliation of DDM estimatesl, Submission to draft AER rate of return guideline, Oct 2013

Definitions, acronyms, and abbreviations

AER	Australian Energy Regulator
Gamma	Value of imputation credits
NEO	National Electricity Objective
NER	National Electricity Rules