Rate of return, gamma and inflation

Access Arrangement Information for the 2016-21 ACT, Queanbeyan and Palerang Access Arrangement

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8 Rate of return, gamma and inflation

Key points

- ActewAGL Distribution proposes a rate of return of 7.15 per cent for the 2016-21 access arrangement period.
- The return on debt is based on:
  - a trailing average portfolio approach with transitional arrangements based on a hybrid approach which is consistent with the AER's assumptions how the benchmark entity would have structured its debt portfolio before the new Rules were implemented;
  - providing to the AER, throughout the access arrangement period, the proposed averaging periods used to estimate the return on debt; and
  - an objective process to establish which data source provider(s) and extrapolation method estimate the return on debt most accurately.
- The return on equity is based on:
  - the simple average of four return on equity models, a method which recognizes that no one model is superior to all others; and
  - expert advice in relation to the different input parameters for each model.
- ActewAGL Distribution also proposes:
  - that the value of imputation credits be set at 25 per cent, consistent with expert advice and previous decisions by the Australian Competition Tribunal;
  - debt raising costs of 24.3 bps; and
  - a forecast inflation rate of 2.55 per cent be used for the 2016-21 access arrangement period.
- Adopting a risk adjusted return on capital is important to ensure that network providers can access necessary funds to make efficient investments in the network which will enable ActewAGL Distribution to provide cost efficient gas distribution network services to its consumers.

This attachment sets out ActewAGL Distribution's proposed allowed rate of return for the 2016-21 access arrangement period. The attachment, including accompanying appendices, also addresses the requirements of the RIN.

8.1 Summary

The return on capital aims to compensate ActewAGL Distribution's debt and equity holders for the opportunity cost of lending or investing their funds in a benchmark entity that operates the ACT network. These funds are essential to deliver safe and reliable gas and service outcomes to ActewAGL Distribution's customers. ActewAGL Distribution, operating as the benchmark efficient entity, competes for these funds against other businesses and industries. It is therefore essential that the rate of return on

a risk/return basis is sufficient to attract these funds. The NGL and NGR aim at allowing this return. Specifically, the rate of return objective in the NGR states:

> The *allowed rate of return objective* is that the rate of return for a service provider is to be commensurate with the efficient financing costs of a benchmark efficient entity with a similar degree of risk as that which applies to the service provider in respect of the provision of reference services (the *allowed rate of return objective*).

Based on the models described in further details in this chapter, ActewAGL Distribution considers a rate of return (nominal vanilla WACC) of 7.15 per cent applying from 1 July 2016, as shown in Table 8.1, to be consistent with the NGL and NGR. This is a significant reduction on that allowed for the current access arrangement of 10.04 per cent, due to lower costs of debt as the market has stabilised after the global financial crisis as well as lower interest rates which is further discussed below.

In determining the rate of return, ActewAGL Distribution considered each of the factors set out in rule 87(5). ActewAGL Distribution considers that this rate of return proposal achieves the rate of return objective[1] and is in the long term interest of consumers. It will provide a rate of return that, on a risk/return basis, is sufficient to attract funds to invest in the development and maintenance of the ACT network.

Table 8.1 Summary of ActewAGL's proposed rate of return, 2016-21

Component	*Value*
Return on equity	9.87%
Return on debt	5.34%
Gearing	60%
Gamma	0.25
Nominal vanilla WACC	**7.15%**
Inflation	2.55%

ActewAGL Distribution notes that the matters discussed within the rate of return and gamma appendices are subject to the outcome regarding the current applications for merits review in the Australian Competition Tribunal and judicial review in the Federal Court of Australia of recent AER decisions. ActewAGL Distribution notes that those decisions may affect positions raised in this proposal.

Although this proposal is based on a significantly lower rate of return than that determined in 2010 by the AER, ActewAGL Distribution considers that this proposal satisfies the overall financeability of ActewAGL Distribution. ActewAGL Distribution notes that if its proposed rate of return methodology is not accepted by the AER and it is replaced with a method consistent or similar with the recent electricity and gas determinations in the April and June 2015 final decisions, it will have implications for ActewAGL Distribution's key financeability ratios which are relied upon by agencies such Standard and Poors' to determine credit ratings. In particular, ActewAGL Distribution considers that the fund from operations to debt ratio, which Standard and Poor's uses as an input into determining a credit ratio, is consistent with a BBB to BBB+ rating. ActewAGL Distribution would not accept any rate of return outcome that does not

[1] The rate of return objective is set out in Rule 87 (3).

result in an overall financial position consistent with the assumptions underpinning the benchmark efficient entity and this proposal.

ActewAGL Distribution notes that a number of regulators in Australia (e.g IPART) and overseas, apply financeability tests to ensure that their decisions provide sufficient revenues/cash flows to maintain the pre-determined credit rating. For example, the Office of Gas and Electricity Markets (Ofgem) in the United Kingdom considers a number of credit metrics to ensure its decisions are consistent with the credit rating of the benchmark efficient entity assumed in the United Kingdom. This has led Ofgem to accelerate depreciation in a number of its decisions. ActewAGL Distribution has not varied the depreciation on the basis that ActewAGL Distribution considers that this proposal allows the business a BBB to BBB+ credit rating over the access arrangement period. ActewAGL Distribution reserves its rights, however, to amend the depreciation schedule should the methodology to estimate the rate of return be changed by the AER.

8.2 Background on the rate of return and why this proposal is in the long term interest of consumers

The rate of return reflects the costs of raising funds to invest in the ACT network. If this rate is too high, then customers may over pay. If this rate is too low or volatile, the benchmark efficient entity will have difficulty raising funds to deliver its capital expenditure program and maintain its network, and therefore will adversely affect the safety and reliability needs of its customers.

As noted above, the rate of return should reflect the costs of raising debt and equity funds of the benchmark efficient entity and not specifically the costs that ActewAGL Distribution would incur. This means that ActewAGL Distribution must consider what the market requires by way of return before investing capital in a network like that of ActewAGL Distribution. This also means that as market conditions change so too should the rate of return. In its Rate of Return Guideline, the AER's proposed conceptual definition of the benchmark efficient entity *is a pure play, regulated energy network business operating within Australia*.[2]

Current market conditions indicate that the cost of capital has decreased substantially versus the last reset in 2010. During the 2010 access arrangement review, interest rates and perceptions of risk were high as global and domestic markets were still grappling with the global financial crisis. This resulted in a rate of return allowance of 10.04 per cent, broken down into a return on equity of 10.83 per cent and a return on debt of 9.52 per cent. Since then, interest rates and the return on debt have fallen substantially, including some risk perception. ActewAGL Distribution's proposed rate of return of 7.15 per cent reflects these falls, and passes the benefit of these on to consumers.

In estimating the rate of return for this proposal, ActewAGL Distribution has considered the new rules, the AER's Rate of Return Guideline and associated submissions, and the AER's decisions in relation to the first networks that became subject to review by the AER in 2014-2015, including the ActewAGL Distribution electricity network.

ActewAGL Distribution considers that this proposal balances the interests of consumers in the lowest possible sustainable prices, while maintaining a safe and reliable network, with facilitating access for ActewAGL Distribution to the capital market to compete with other industries and businesses for funds

[2] AER, Better Regulation, Rate of Return Guideline, December 2014, p 7

necessary to undertake investments in the network in the 2016-21 access arrangement period. If the rate of return ActewAGL Distribution receives is less than proposed, then ActewAGL Distribution could be required to make decisions to deter or avoid efficient expenditure it is unable to afford to undertake. This is likely to lead to ActewAGL Distribution deferring or cancelling some of the efficient, planned network investment. Underinvestment would, in the long term, result in a less reliable network, higher maintenance costs, and ultimately higher prices to consumers.

8.3 The NGR and Rate of Return Guideline

In 2012, changes were made to the NGR in respect of the rate of return to put greater emphasis on meeting an overall rate of return objective and considering a wider range of evidence, relative to previous reviews.

The new Rules allow for more flexibility. For instance, the AER can now use past data to estimate the return on debt (under a trailing average) and is not bound to use a single model to estimate the return on equity (as was the case for electricity networks previously and was, in practice, also applied to gas networks).

The AER is now required to publish a Rate of Return Guideline every three years that sets out how it intends to estimate the rate of return, or WACC, for both electricity and gas networks.

Although this guideline is non-binding, it encourages a continued evolution of estimating the rate of return in Australia. The AER published its first rate of return guideline in December 2013 after a consultation process. Common ground was reached on some elements of rate of return estimation, including on assuming a 10 year term for the risk free rate and term to maturity for the return on debt, and a gearing of 60 per cent for the rate of return.

This proposal starts with the new rules and the Rate of Return Guideline, and focuses on areas where ActewAGL Distribution does not agree with the position reached by the AER in its Rate of Return Guideline and its recent gas and electricity decisions (made in April/June 2015). As noted above, ActewAGL Distribution considers that this proposal best promotes the long-term interest of consumers by balancing the need to attract efficient investment in the network with the risk of overpayment for that investment.

8.4 Calculating the rate of return

The allowed rate of return is split into a return on equity, a return on debt and gearing – each is estimated separately below. Consistent with the Rate of Return Guideline and rule 87(4), ActewAGL Distribution proposes estimating this return as a nominal vanilla WACC:

Nominal vanilla WACC = E/V * Re + D/V * Rd

where
Re = investors' required nominal return on equity;
Rd = investors' required nominal return on debt;
E/V = the proportion of capital financing that is equity; and
D/V = the proportion of capital financing that is debt.

The return on equity (Re) and return on debt (Rd) are calculated as follows:

Re = Rf + βe * MRP

Rd = Rf + DRP

Where:

Rf = the required return by investors on a risk free (zero beta) asset;

βe = investors' expectation of the equity beta;

MRP = the market risk premium; and

DRP = debt risk premium

Gearing, credit rating, the return on equity and return on debt are discussed below.

8.4.1 Gearing and credit rating

ActewAGL Distribution proposes a gearing of 60 per cent, consistent with the Rate of Return Guideline and recent final decisions for electricity and gas networks made by the AER in April/June 2015. This ratio has been considered efficient for a stand-alone gas distribution business, and is consistent with the proposed return on equity and the allowance for debt margin.

The AER concludes, in its Rate of Return Guideline and in its final decision for ActewAGL Distribution's electricity network in April 2015, that the median credit rating for regulated energy businesses is BBB+.

The AER refers to a sample of regulated networks as well as its view that the benchmark gearing ratio of 60 per cent and the benchmark credit rating are interrelated3.

ActewAGL Distribution does not consider that the risk between electricity and gas distribution businesses is similar. ActewAGL Distribution considers that the evidence shows that gas distribution businesses are more risk exposed than other energy network businesses. ActewAGL Distribution considers that this is further supported by empirical evidence of actual credit ratings. This is discussed in more detail in appendix 8.01.

Based on this, ActewAGL Distribution proposes that a credit rating of BBB be adopted.

8.4.2 Return on equity

8.4.2.1 The NGR requirements for the return on equity

Rule 87 of the NGR requires that the return on equity be estimated such that it contributes to the achievement of the rate of return objective. The objective is that the rate of return for a service provider is to be commensurate with the efficient financing costs of a benchmark efficient entity with a similar degree of risk as that which applies to the service provider in respect of the provision of reference services.

In estimating the return on equity, regard must be had to the prevailing conditions in the market for equity funds.4 Regard must also be had to several relevant matters including:5

relevant estimation methods, financial models, market data and other evidence;

[3] AER, Attachment 3, Rate of return, ActewAGL final decision 2015-19, April 2015, p 3-29.
[4] NGR, Rule 87(7)
[5] NGR, Rule 87(5)

the desirability of using an approach that leads to the consistent application of any estimates of financial parameters that are relevant to the estimates of, and that are common to, the return on equity and the return on debt; and

any interrelationships between estimates of financial parameters that are relevant to the estimates of the return on equity and the return on debt.

Rule 87 of the NGR requires consistency between approaches when estimating the rate of return and the value of imputation credits.6

As with all of its economic regulatory functions and powers, when assessing ActewAGL Distribution's proposal under the NGR and NGL, the AER is required to do so in a manner that will or is likely to contribute to the achievement of the National Gas Objective (NGO).7 Further, where there are two or more possible decisions in relation to ActewAGL Distribution's proposal that will or are likely to contribute to the achievement of the NGO, the AER is required to make the decision that the AER is satisfied will or is likely to contribute to the achievement of the NGO to the greatest degree.8

To the extent the AER's decision on the return on equity involves the exercise of discretion, the AER must take into account the revenue and pricing principles in section 24 of the NGL.9 The revenue and pricing principles include that a service provider should be provided with a reasonable opportunity to recover at least its efficient costs, and reference tariff should allow for a return commensurate with the regulatory and commercial risks involved in providing the reference service to which that tariff relates.

Rule 87 of the NGR was amended in November 2012 to remove any requirement or preference in favour of a particular model. These changes to the NGR were directed at ensuring that all relevant models and market data are taken into account, in order to ensure that the best estimate of the rate of return is obtained. The AEMC was seeking to avoid formulaic rate of return estimation driven by a single model or estimation method, such as the SL-CAPM.10 The AEMC observed that all financial models (including the SL-CAPM) are based on certain theoretical assumptions and all have varying degrees of weaknesses, and as such, no one model can be said to provide the right answer.11 The AEMC therefore considered that estimates are likely to be more robust and reliable if they are based on a range of estimation methods, financial models, market data and other evidence.

There is a range of asset pricing models used to measure the return on equity that satisfy these NGR requirements, each incorporating different assumptions about the behaviour of investors and measures of risk. ActewAGL Distribution considers that what is now required under the NGR is an approach to estimating the return on equity that is not tied to a single model or estimation procedure. The approach to estimating the return on equity must take into account all relevant evidence, and where that evidence

[6] NGR, Rule 87(4)(b)
[7] NGL, s 28(1)(a)
[8] NGL, s 28(1)(b)(iii)
[9] NGL, s 28(2)(a)(i)
[10] AEMC, *Draft Rule Determinations: National Electricity Amendment (Economic Regulation of Network Service Providers) Rule 2012; National Gas Amendment (Price and Revenue Regulation of Gas Services) Rule 2012*, August 2012, p. 47.
[11] AEMC, *Draft Rule Determinations: National Electricity Amendment (Economic Regulation of Network Service Providers) Rule 2012; National Gas Amendment (Price and Revenue Regulation of Gas Services) Rule 2012*, August 2012, p. 48.

is relevant and probative as to the required return on equity, give it a direct role in the estimation process. The AEMC's guidance on the return on equity is further discussed in appendix 8.02.

ActewAGL Distribution considers that this is the approach that best achieves the NGO, as it ensures that the return on equity properly reflects the return required to promote efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers.

The AER's Rate of Return Guideline sets out how the AER proposes to calculate the return on equity. However, as explained below, based on advice from SFG Consulting, Frontier Economics and others, ActewAGL Distribution considers that the AER should place more weight upon a broader range of evidence in estimating the return on equity, and in not doing so, has departed from the Rate of Return Guideline. ActewAGL Distribution also notes that this issue has been appealed by ActewAGL Distribution and the NSW DNSPs in respect of the April 2015 electricity decisions and is currently before the Australian Competition Tribunal (Tribunal). ActewAGL Distribution refers to and adopts the contentions advanced in those appeals in respect of the AER's approach to estimation of the return on equity and, accordingly, attaches a copy of the relevant applications to the Tribunal and the submissions in support of the grant of leave for review (appendices 8.40-8.41), which further elucidate those contentions, to this proposal.

8.4.2.2 Rate of Return Guideline

ActewAGL Distribution's return on equity estimate departs from how the AER's Rate of Return Guideline estimates the return on equity as well as from the recent April/June 2015 final decisions for electricity networks. The reasons for this are that ActewAGL Distribution considers that the AER's proposed return on equity approach omits relevant information and constrains the use of information to the parameters of the foundation model. This result in some information being given disproportionate weight or prevent relevant information from being used. It is also likely to continue to generate a highly variable estimate of the return on equity due to heavy reliance on only a few sources of evidence which are not well adapted to changing market conditions. Some specific issues with the AER's proposed approach are:

no role is provided for the Fama French model, despite substantial evidence that this model is used widely by market practitioners and that the HML factor in the Fama French model represents a priced risk that the AER's SL–CAPM does not capture (see appendices 8.06 and 8.07);

- the DGM and "Black CAPM" are not used to inform the overall return on equity estimate notwithstanding that these models also capture risks that the AER's SL–CAPM is not able to measure (see appendices 8.08-8.11);
- the equity beta of 0.4 to 0.7 with a point estimate of 0.7 places too much weight on unreliable Australian regression data and omits relevant international evidence and evidence from other models, thus resulting in a return on equity estimate which does not reflect the full range of evidence available, as shown in appendices 8.11 and 8.12; and
- the AER's current 6.5 per cent estimate of the MRP is too low and does not take into account the prevailing market conditions and evidence provided by other relevant models.

The AER's return on equity point estimate is not informed by all relevant information in the market. In contrast, ActewAGL Distribution's estimate of the return on equity (sourced from expert reports from

SFG Consulting and Incenta) is informed by various sources of relevant information and is calculated using models that have a sound theoretical basis, and which combined are robust and superior to utilising the AER's SL-CAPM alone.

ActewAGL Distribution's approach to determining a return on equity point estimate addresses the deficiencies in the AER's approach and so results in an estimate that represents the return on equity for the benchmark efficient firm better than one derived using the AER's approach. Accordingly, ActewAGL Distribution's approach better meets the NGR requirements, including the allowed rate of return objective.

Further the AER's approach to return on equity fails to take into account the relevant revenue and pricing principles. The use of the AER's foundation model approach results in significant risk of underestimating the return on equity, which would hinder rather than contribute to the achievement of the allowed rate of return objective, and would fail to provide ActewAGL Distribution with a reasonable opportunity to recover at least the efficient costs it will incur in providing reference services. This would not be in the long-term interest of consumers as it is likely to result in underinvestment in the network. Accordingly, the AER should instead adopt SFG Consulting's multi-model approach.

In summary, ActewAGL Distribution considers that its proposal better meets the rule requirements and contributes to the achievement of the NGO than that proposed by the AER, in estimating the return on equity under prevailing conditions in the market for funds (as required by rule 87(7)). Appendix 8.02 provides further details of ActewAGL Distribution's return on equity proposal and specifically addresses issues raised by the AER in recent decisions. ActewAGL Distribution's return on equity proposal is also supported by independent expert reports included in appendices 8.06- 8.22, including how the return on equity has been calculated in detail.

8.4.2.3 Return on equity estimate

Consistent with the NGR, ActewAGL Distribution has used models and other evidence to estimate the return on equity. This is also consistent with the AER's Rate of Return Guideline that recognises that "all models are incomplete"12 in relation to the return on equity.

Consistent with ActewAGL Distribution's understanding of the NGR, however, ActewAGL Distribution deals with this by considering a range of relevant models, testing these against the NGR requirements, and then weighting these to arrive at a single return on equity estimate.

Specifically, ActewAGL Distribution proposes combining estimates from four return on equity models:

- the Sharpe-Lintner capital asset pricing model (**SL-CAPM**).
- the Black CAPM.
- the Fama-French three-factor model.
- the dividend discount model.

This represents a departure from the AER's Rate of Return Guideline, which contemplates the use of the SL-CAPM as the foundation model, with the Black CAPM and dividend growth models informing

[12] AER, Better Regulation, Explanatory Statement, Rate of Return guideline, December 2013, p 64

foundation model parameter estimates (namely, the equity beta and MRP estimates) and the Fama-French three-factor model having no role.13

To use each model ActewAGL Distribution has first estimated a number of parameters. Some of these are common to several models, such as the risk-free rate and equity beta, but some are not.

ActewAGL Distribution has relied on reports from independent experts, that have been previously submitted by ActewAGL Distribution in relation to its ACT electricity distribution review in 2014/15, the Victorian DNSPs in April 2015, to estimate most of these parameters and the return on equity for the four different return on equity models and new reports developed as part of this proposal. These parameter and return on equity estimates differ from the Rate of Return Guideline.

The expert reports support the following:

- SL-CAPM equity beta estimate of 0.82 compared to 0.70 in the Rate of Return Guideline. This recognises that there is limited Australian data available to derive a reliable estimate, and so partially relies on foreign data from the US;
- return on the market estimate of 10.81 per cent, compared to 9.14 per cent using the Rate of Return Guideline methodology (MRP of 6.5 per cent plus risk free rate of 2.64 per cent). ActewAGL Distribtion's market return relies principally on forward-looking estimates of that return and properly incorporates the value of imputation credits consistent with how the tax building block is calculated within the PTRM; and
- the reliance on the four return on equity models referred to above.

ActewAGL Distribution has taken a simple weighted average of the estimates from each model to get a return on equity of 9.87 per cent, as shown in Table 8.2. By taking an average that places positive weight on each model, ActewAGL Distribution recognises that no one model is clearly superior to others (or provides all relevant information). Taking an average also promotes stable returns over time.

In appendix 8.02, ActewAGL Distribution provides more details of its return on equity proposal and provides reasons why it considers a departure from the Rate of Return Guideline and the recent April/June 2015 final decisions by the AER better meets the rate of return objective of the NGR.

Table 8.2 Return on equity investment

Component	*Value*	*Weighting*
SL-CAPM	9.32%	25%
Black CAPM	9.93%	25%
Fama-French	9.93%	25%
Dividend discount model	10.32%	25%
Weighted average	**9.87%**	

[13] AER, Rate of Return Guideline, December 2013, p. 13

8.4.3 Return on debt

8.4.3.1 The NGR requirements for the return on debt

The return on debt must be estimated such that it contributes to the achievement of the allowed rate of return objective (Rule 87). In estimating the return on debt, the NGR (Rule 87(11)) require that regard be had to:

(a) the desirability of minimising any difference between the allowed return on debt and the return on debt of a benchmark efficient entity referred to in the allowed rate of return objective;

(b) the interrelationship between the return on equity and the return on debt;

(c) the incentives that the return on debt may provide to capital expenditure over the regulatory control period, including as to the timing of any capital expenditure; and

(d) any impacts (including in relation to the costs of servicing debt across regulatory control periods) on a benchmark efficient entity referred to in the allowed rate of return objective that could arise as a result of changing the methodology that is used to estimate the return on debt from one regulatory control period to the next.

The NGR provide that the return on debt may be estimated using a methodology that results in the return on debt being the same for the entire regulatory period or different for different regulatory years (Rule 87 (9)). Where the methodology for estimation of the return on debt is of the latter type, a resulting change to ActewAGL Distribution's annual revenue requirement must be effected through the automatic application of a formula that is specified in the decision on the access arrangement for that access arrangement period (Rule 87(12)). The NGR (Rule 87(10)) also state that:

> Subject to subrule (8), the methodology adopted to estimate the return on debt may, without limitation, be designed to result in the return on debt reflecting:
>
> a) the return that would be required by debt investors in a benchmark efficient entity if it raised debt at the time or shortly before the time when the AER's *decision* on the access arrangement for that *access arrangement period* is made;
>
> b) the average return that would have been required by debt investors in a benchmark efficient entity if it raised debt over an historical period prior to the commencement of a regulatory year in the *access arrangement period*; or
>
> c) some combination of the returns referred to in subrules (a) and (b).

The return on debt is the required yield (or interest) on issued debt. Unlike with the return on equity, the return on debt can more easily be observed by looking at the price and promised payments on traded bonds for firms with a similar degree of risk as the benchmark efficient entity.

8.4.3.2 Return on debt estimate

ActewAGL Distribution proposes its return on debt be calculated in accordance with the approach proposed by the AER in its Rate of Return Guideline, with the exception that ActewAGL Distribution proposes:

- the use of a credit rating of BBB rather than BBB+ as proposed by the AER; and

- the use of a different form of transitional arrangement for estimating the return on debt to that proposed by the AER in its Rate of Return Guideline and recent April/June 2015 decisions. Specifically, ActewAGL Distribution proposes a transitional arrangement premised on the 'hybrid' debt management strategy. This is consistent with what the AER considers that businesses would have implemented under the previous Rules, including the costs for the trailing average debt risk premium plus the 5 year swap rate at the beginning of each regulatory period plus the transaction costs of swaps (that the AER does not propose to compensate businesses for in its April/June 2015 final decisions for gas and electricity businesses); and
- specification of the averaging periods for use in the estimation of the return on debt for the second and subsequent regulatory years of the 2016-21 access arrangement period otherwise than in this proposal and during, rather than prior to the commencement of, the 2016-21 access arrangement period.

ActewAGL Distribution notes that the AER's description of the financing practices of the relevant efficient entity, under the 'on-the-day' approach, is that it would:

- *borrow long term (10 year) debt and stagger the borrowing so only a small proportion (around 10 per cent) of the debt matured each year*
- *borrow using floating rate debt, or borrow fixed rate debt and convert it to floating rate debt using fixed-to-floating interest rate swaps at the time of the debt issue, which extended for the term of the debt (10 years)*
- *enter floating-to-fixed interest rate swaps at, or around, the time of the service provider's averaging period, which extended for the term of the regulatory control period (typically five years).* [14]

Consistent with this approach, ActewAGL Distribution has calculated a return on debt estimate consisting of:

- the historical trailing average DRP for the ten years prior to 2015-16 (2.35 per cent);
- the average of one to 10 year swap rates during the period 2-30 January 2015 (2.69 per cent); and
- swap transaction costs (23 basis points).

After annualisation this results in a return on debt estimate of 5.34 per cent.

In addition, ActewAGL Distribution proposes:

- the use of averaging periods as follows:
  - an averaging period of [redacted] for 2016/17;
  - for the 2017/18 and subsequent regulatory years, an averaging period occurring in that regulatory year as nominated by ActewAGL Distribution by 30 April each year before the commencement of respective regulatory years; and

[14] AER, *Attachment 3 Rate of return, ActewAGL final decision 2015-19, April 2015,* p. 3-170.

- a method to select which data source provider and extrapolation method to use during the annual return on debt updates should there be a material divergence (20 bps) between sources and extrapolation methods.

ActewAGL Distribution notes that the AER's approach to the estimation of the return on debt is currently the subject of merits and judicial review applications before the Australian Competition Tribunal and Federal Court of Australia. To the extent that these proceedings give rise to findings by the Tribunal or the Federal Court that are applicable to ActewAGL Distribution in the context of its access arrangement proposal for the 2016-17 to 2020-21 access arrangement period, ActewAGL Distribution considers the AER should apply those findings to it.

ActewAGL Distribution provides more details in respect of its return on debt proposal in appendix 8.01. In preparing its proposal, ActewAGL Distribution has relied on a number of independent experts. These are included in appendices 8.23-8.29. Overall ActewAGL Distribution considers that its proposal better achieves the rate of return objective of the NGR than the AER's Rate of Return Guideline and its recent final decisions for electricity and gas in April/June 2015.

8.4.4 Gamma

8.4.4.1 The NGR requirements for gamma

ActewAGL Distribution considers that it is clear that under the NGR the AER is required to estimate "the value of imputation credits"[15] to investor in the business. This is required under Rule 87A of the NGR. Other key aspects of the NGR and the NGL relating to gamma are:

- **Consistency with rate of return.** Rule 87 of the NGR, which relates to the rate of return, requires consistency between the approaches to estimating the rate of return and the value of imputation credits.
- **National Gas Objective.** As with all of its economic regulatory functions and powers, when assessing ActewAGL Distribution's proposal under the NGR and NGL, the AER is required to do so in a manner that will or is likely to contribute to the achievement of the NGO. Further, where there are two or more possible decisions in relation to ActewAGL Distribution's proposal that will or are likely to contribute to the achievement of the NGO, the AER is required to make the decision that the AER is satisfied will or is likely to contribute to the achievement of the NGO to the greatest degree.
- **Revenue and pricing principles.** To the extent the AER's decision on the value to be adopted for gamma involves the exercise of discretion, the AER must take into account the revenue and pricing principles in section 24 of the NGL[16]. The revenue and pricing principles include that a service provider should be provided with a reasonable opportunity to recover at least its efficient costs and reference tariffs should allow for a return commensurate with the regulatory and commercial risks involved in providing the reference service to which that tariff relates.

[15] NGR 87A (1)
[16] NGL, s 28(2)(a)(i).

- **Past Tribunal decisions.** In *Application by Energex Limited (No 2)* [2010] ACompT 7, the Australian Competition Tribunal (**Tribunal**) accepted (at [91]) that redemption rates from tax statistics simply indicate the upper bound for theta. The Tribunal had before it two market value studies which produced different estimates of theta - a study by Beggs and Skeels (2006) and a study by SFG (2010) which sought to replicate the Beggs and Skeels (2006) methodology. The Tribunal identified shortcomings in the methodology used in both studies and observed that the results of both studies should be treated with caution. The Tribunal therefore sought a new 'state-of-the-art' dividend drop-off study[17].

  ActewAGL Distribution considers that what is required under the NGR is an estimate of the value of imputation credits to investors in the business. This interpretation is consistent with the broader regulatory framework and the task set by the NGR to determine total revenue by reference to the various specified building blocks, as well as being consistent with past regulatory practice, and previous decisions of the Tribunal.

ActewAGL Distributions considers that this interpretation best achieves the NGO, as it ensures that the adjustment for imputation credits in the taxation building block properly reflects the actual value of imputation credits to investors, not merely their notional face value or *potential* value. Accounting for gamma in this way ensures that the overall return received by investors (including the value they ascribe to imputation credits) is sufficient to promote efficient investment in, and use of, infrastructure, for the long-term interests of consumers.

8.4.4.2 Gamma estimate

Under the Australian taxation system, tax credits (imputation credit) created by an Australian company may be redeemed by domestic shareholders. An imputation credit is created for each dollar of eligible tax paid by companies. Imputation credits are distributed to shareholders through the payment of franked dividends. Imputation credits therefore represent a benefit to domestic shareholders for their investment in the company in addition to dividends (and capital gains). The utilisation of imputation credits is represented by the Greek character γ (gamma). Gamma is defined in the NER as "the value of imputation credits".

It is important to establish an accurate estimate of gamma, since it affects the overall level of return received by investors, and therefore their willingness to invest necessary capital. If gamma is set too high (i.e. if the value of imputation credits to investors is over-estimated), the overall return to investors will be reduced, thus potentially affecting the ability of the efficient benchmark entity to attract capital and invest in the network.

As discussed above, ActewAGL Distribution considers that what is required under the NGR is an estimate of the value of imputation credits to investors in the business. This interpretation is consistent with the broader regulatory framework and the task set by the NGR to determine total revenue, as well as past regulatory practice, and previous decisions of the Tribunal.

[17] This was completed in 2011 by SFG Consulting. In 2013, on behalf of the network services provider, SFG Consulting updated this study and concluded that 'the conclusions from that earlier study [2011] remain valid when tested against the updated data set'.

This is also the interpretation that best achieves the National Gas Objective (NGO), as it ensures that the adjustment for imputation credits in the taxation building block properly reflects the actual value of imputation credits to investors, not merely their notional face value or potential value. Accounting for gamma in this way ensures that the overall return received by investors (including the value they ascribe to imputation credits) is sufficient to promote efficient investment in, and use of, infrastructure, for the long-term interests of consumers.

ActewAGL Distribution proposes to calculate gamma in the orthodox manner, as the product of:

- the distribution rate (that is, the extent to which imputation credits that are created when companies pay tax, are distributed to investors); and
- the value of distributed imputation credits to investors who receive them (referred to as theta, or θ).

ActewAGL Distribution proposes a distribution rate of 0.7, consistent with the AER's Rate of Return Guideline. Empirical evidence continues to support a distribution rate of 0.7.

ActewAGL Distribution proposes a value for theta of 0.35. This is different to the value of theta proposed in the AER's Rate of Return Guideline of 0.7 and also a departure from the AER's revised theta in its final decisions for the ACT/NSW DNSPs in April 2015 of 0.57.

ActewAGL Distribution's estimate of theta is based on the market value of distributed imputation credits, as indicated by dividend drop-off analysis, consistent with the Tribunal's decision in *Application by Energex No 2* and *Application by Energex Limited (Distribution Ratio (Gamma)* No 3 [2010] ACompT 9, and in accordance with the dividend drop off methodology adopted by the Tribunal following that decision and its application in a study conducted by SFG Consulting: *Application by Energex Limited (Gamma) No 5* [2011] ACompT 9. Dividend drop-off analysis seeks to infer a market value for imputation credits, based on movements in share prices around the time dividends are paid out. The present SFG Consulting study is simply an updated version of the 'state of the art' study commissioned by the Tribunal in the *Energex* proceedings.

By contrast, ActewAGL Distribution considers that the method adopted by the AER for the estimation of theta in the Rate of Return Guideline and the final decisions for the ACT/NSW DNSPs of April 2015 will not result in an estimate of gamma which reflects the value that equity-holders place on imputation credits. The AER's method involves the following errors:

- the AER's (revised) definition of theta is conceptually incorrect and inconsistent with the requirements of the NGR;
- the AER uses equity ownership rates as direct evidence of the value of distributed credits (theta), when in fact equity ownership rates will only indicate the maximum set of investors who may be eligible to redeem imputation credits and who may therefore place some value on imputation credits. Theta can be no higher than the equity ownership rate and will in fact be lower due to factors which reduce the value of credits distributed to Australian investors (e.g. the 45-day rule, transaction costs etc.);

- the AER has erred in its interpretation of the equity ownership data – the ranges used by the AER for the equity ownership rate are inconsistent with the evidence presented by the AER in its recent final decisions of April/June 2015;
- the AER also uses redemption rates as direct evidence of the value of distributed credits (theta), when in fact redemption rates are no more than an upper bound (or maximum) for this value;
- the AER has erred in concluding that market value studies can reflect factors, such as differential personal taxes and risk, which are not relevant to the task of measuring theta. Market value studies are direct evidence of the value of imputation credits to investors; and
- the AER has erred in its interpretation of market value studies. The AER considers market value studies in a very general manner, rather than considering the merits of the particular market value estimate proposed ActewAGL Distribution. This is an irrational and unreasonable approach to considering the evidence put forward in relation to the market value of imputation credits.

While (correctly) observing that the market-wide distribution rate is 0.7, the AER has also relied on a higher estimate of the distribution rate for listed equity only in its recent decisions of April/June 2015. Given that data on the distribution rate is available for all equity, it is neither necessary nor appropriate to separately identify a distribution rate for listed equity only, especially when this is based only on a limited sample.

The AER's conclusion in its recent final decisions in April/June 2015 as to the value for gamma is inconsistent with the evidence presented to it and included in this proposal, including the AER's own analysis of the equity ownership rate and redemption rate - these measures show that the AER has overestimated the value of imputation credits.

ActewAGL Distribution considers that the correct approach to estimating gamma is:

- estimating the distribution rate using ATO data; and
- estimating theta using market value studies – these studies are the best available method for deriving a point estimate of gamma; and
- adopting this approach leads to a conclusion that the best estimate of gamma is 0.25.

In support of this position, ActewAGL Distribution provides appendices 8.03 and 8.30-8.34.

The AER's decision on gamma in its recent decisions for the ACT/NSW DNSPs of April 2015 is currently subject to review by the Tribunal. ActewAGL Distribution refers to and adopts the contentions advanced by it in those appeals in respect of the AER's approach to estimation of gamma and, accordingly, attaches (in appendices 8.40-8.41) a copy of the relevant applications to the Tribunal and the submissions in support of the grant of leave for review, which further elucidate those contentions, to this proposal.

8.4.5 Inflation

For this proposal, ActewAGL Distribution has calculated the forecast inflation using the AER's approach. Forecast inflation is the geometric average of the forecast annual inflation for each of the ten years from 2017 to 2026 as set out in Table 8.3.

Table 8.3 Calculation of forecast inflation

	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25
Forecast CPI, %	2.75	2.75	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5

The annual inflation forecasts:

- for the first two years are the expected inflation outcomes stated in the RBA's most recent Statement on Monetary Policy from February 2015; and
- for the subsequent eight years are the midpoint of the RBA's long-term inflation target range. The range is two per cent to three per cent, so the midpoint is 2.50 per cent.

ActewAGL Distribution recognises that the inflation forecast will be updated before the AER's draft and final decisions.

ActewAGL Distribution notes that recently in Australia and globally, expectations concerning inflation appear to be volatile and it may be that the best method for estimating inflation may evolve during the period that this revenue proposal is being considered. ActewAGL Distribution therefore signals its intention to revisit the method for inflation estimation that is applied in its final modelling. ActewAGL Distribution also notes that, to the extent that the access arrangement is deemed by the AER to begin on 1 July 201518 by the time that the AER makes its final decision there will be several quarters of actual inflation published by the ABS that will ultimately be used to roll-forward ActewAGL Distribution's capital base which represent the inflation that the forecast should corresponds to. ActewAGL Distribution notes that the AER should have regard to that published data.

8.4.6 Debt raising costs

Consistent with ActewAGL Distribution's revised proposal in relation to its electricity network submitted to the AER on 20 January 2015, ActewAGL Distribution considers that the AER should allow benchmark debt raising costs that include:

- debt raising transaction costs;
- costs associated with the maintenance of a liquidity level consistent with Standard & Poors' criteria; and
- Costs associated with the refinancing of debt three months before it matures – also consistent with Standard & Poors' criteria.

ActewAGL Distribution has engaged Incenta to update its debt raising cost estimate using the same methodology as in ActewAGL Distribution's revised submission in January 2015 as discussed in its expert reports in May 2014 and January 2015 (included in appendices 8.35 and 8.36). Applying Incenta's methodology on ActewAGL Distribution's gas network results in total debt raising costs of 23.4 bps.

[18] ActewAGL Distribution does not agree that this is appropriate.

8.4.7 Equity raising costs

ActewAGL Distribution has used the AER's latest version of the PTRM to calculate equity raising costs and found that, based on its submitted expenditure programs for the 2016-21 access arrangement period, it would not incur any equity raising costs.

Abbreviations used in this document

Abbreviation	Full term
ACT	Australian Capital Territory
AEMC	Australian Energy Market Commission
AER	Australian Energy Regulator
bps	basis points
DNSPs	distribution network service provider
MRP	market risk premium
NER	National Electricity Rules
NGL	National Gas Law
NGO	National Gas Objective
NSW	New South Wales
PTRM	post-tax revenue model
RIN	Regulatory Information Notice
Rules, the	National Gas Rules
SL-CAPM	Sharpe-Linter Capital Asset Pricing Model
Tribunal	Australian Competition Tribunal
WACC	weighted-average cost of capital