

REVENUE PROPOSAL 2019 - 2023

Attachment 3

Rate of Return

28 March 2017





Company Information

ElectraNet Pty Ltd (ElectraNet) is the principal electricity transmission network service provider (TNSP) in South Australia.

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Note

This attachment forms part of our Revenue Proposal for the 2018-19 to 2022-23 regulatory control period. It should be read in conjunction with the other parts of the Revenue Proposal.

Our Revenue Proposal comprises the overview and attachments listed below, and the supporting documents that are listed in Attachment 15:

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Attachment 1 – Maximum allowed revenue
Attachment 2 – Regulatory asset base
Attachment 3 – Rate of return (this document)
Attachment 4 – Value of imputation credits
Attachment 5 – Regulatory depreciation
Attachment 6 – Capital expenditure
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3. Rate of Return

3.1 Key points

- We have calculated a rate of return of 6.02% based on the Australian Energy Regulator's (AER's) standard approach to applying its Rate of Return Guideline (Guideline), as set out in Table 3.1 below. This represents a significant reduction from our current rate of return of 7.50%.
- The rate of return or Weighted Average Cost of Capital (WACC) is made up of a weighted average of the return on equity and return on debt. Our proposed approach to the return on debt and the return on equity is consistent with the AER's Guideline and recent decisions.
- Our proposal applies the AER's prevailing approach to the return on equity calculated using the Sharpe–Lintner Capital Asset Pricing Model (SL-CAPM) as the foundation model. We have also applied the AER's Guideline transition to a trailing average return on debt.
- In relation to expected inflation, we propose the market based, break-even approach because we consider it gives rise to the best estimate of expected inflation presently available. We note the AER has commenced a review of its methodology for estimating expected inflation and we submit that the review, and any associated review of the transmission Post Tax Revenue Model (PTRM) should take place in conjunction with the consideration of our Revenue Proposal.
- However, we note that there remains a number of outstanding legal reviews relevant to the approach to the rate of return and expected inflation. We will monitor these reviews and update our position if necessary.
- Our current forecast is based on an indicative averaging period and is subject to ongoing change based on prevailing market conditions, and is expected to be updated by the AER prior to its final determination. Under the AER's Guideline, the cost of debt will be updated annually based on prevailing rates and transitioned to a 10 year trailing average approach.
- If, after submitting this proposal, there are changes to the AER methodology or accepted alternative methodologies, or application approaches, we reserve the right to apply a different approach to the calculation of these parameters.

Parameters	Proposal
Risk free rate	2.83%
Equity beta	0.7
Market risk premium	6.5%
Return on equity	7.40%
Return on debt	5.10%
Inflation (see Section 3.11)	1.97%
Gearing ratio	60%
Gamma (see Attachment 4)	0.25
Corporate Tax rate	30%
Nominal vanilla WACC	6.02%

Table 3.1: Our proposed rate of return

3.2 Introduction

This attachment deals with the allowed rate of return, to be determined as a weighted average of the return on equity and the return on debt on a nominal vanilla basis consistent with the estimate of the value of imputation credits.¹

Interrelated with the rate of return is the estimate of expected inflation which is also addressed in this attachment.

Network service providers require capital to invest in their businesses. These funds are provided by the owners (through equity) or lenders (through debt). Both equity and debt investors require a return on the funds they provide and this return reflects the single largest cost to networks.

In order to promote the National Electricity Objective, it is crucial that the rate of return be set to enable a network to attract necessary capital and undertake efficient investment in the network in the long term interests of its customers. To promote efficient investment, a regulated network must be provided with a reasonable opportunity to recover its efficient costs, which includes its financing costs.

Specifically in relation to the allowed rate of return, this requires:

- The allowed rate of return to be estimated such that it achieves the Allowed Rate of Return Objective (ARORO), being a rate of return commensurate with the efficient financing costs of a Benchmark Efficient Entity (BEE) with a similar degree of risk as that which applies to the Transmission Network Service Provider in respect of the provision of prescribed transmission services.²
- The return on equity must reflect the returns required by owners in order to invest in the BEE, contribute to the ARORO and have regard to prevailing market conditions.³
- The return on debt must provide the network with a reasonable opportunity to recover at least the efficient debt financing costs of the BEE and contribute to the ARORO.⁴

The AER published its Guideline in December 2013. The AER has, with some exceptions, largely applied its Guideline approach in its decisions made since 2013.

Since that time, a number of networks have sought merits (and judicial) review of the AER's decisions, including in relation to the return on equity, the return on debt and expected inflation. The Tribunal handed down its decision on a number of reviews in February 2016.⁵ The AER has sought judicial review of the Tribunal's decision by the Full Federal Court. In addition, a number of merits and judicial review applications remain on foot.⁶

¹ National Electricity Rules (NER) 6A.6.2(d)

² NER 6A.6.2(c)

³ NER 6A.6.2(f) and (g)

⁴ NER 6A.6.2(h)

⁵ The lead decision in Application by Public Interest Advocacy Centre and Ausgrid [2016] ACompT1 (Ausgrid)

⁶ For example, merits review applications by CitiPower Pty Ltd (ACT 4 of 2016), Powercor Australia Ltd (ACT 5 of 2016), ActewAGL Distribution (ACT 6 of 2016), Jemena Electricity Networks (Vic) Ltd, ACT 7 of 2016 and AusNet Electricity Services Pty Ltd (ACT 8 of 2016) and judicial review of the Tribunal's decision in Application by SA Power Networks [2016] ACompT9 in NSD 2032/2016.



Consistent with our Preliminary Revenue Proposal, in this proposal we have applied the AER's prevailing (Guideline) approach to the return on equity and return on debt. We will however monitor developments arising from the ongoing legal reviews and update our approach if necessary.

In respect of expected inflation, ElectraNet considers that the market based break-even approach to estimating expected inflation⁷ gives rise to the best estimate of expected inflation currently available. We propose that approach and welcome the AER's 2017 review of its methodology for estimating expected inflation.

ElectraNet relies upon the following publicly available expert reports relating to the return on equity and the return on debt, and refers stakeholders to these documents:

- Competition Economists Group (CEG), *The AER's current interpretation of the ARORO*, September 2016
- CEG, Criteria for assessing fair value curves: an update, September 2016
- CEG, Debt staggering of Australian businesses, December 2014
- CEG, Replication and extension of Henry's beta analysis, September 2016
- Frontier Economics, *The market risk premium*, September 2016

The expert reports relied upon in relation to expected inflation are listed later in this attachment.

The remainder of this attachment is structured as follows:

- Section 3.3 sets out our responses to customer feedback.
- Section 3.4 sets out the overarching legal framework.
- Sections 3.5 and 3.6 set out proposals in relation to the BEE and gearing.
- Section 3.7 addresses departures from the Guideline.
- Section 3.8 sets out our proposal in relation to the return on equity.
- Section 3.9 sets out our proposal in relation to the return on debt.
- Section 3.10 sets out our indicative WACC proposal based on our placeholder averaging periods.
- Section 3.11 sets out our proposal in relation to expected inflation.
- Section 3.12 addresses relevant interrelationships.

3.3 Our response to customer feedback

In developing our Revenue Proposal we have engaged with our customers and wider stakeholders on our plans and proposals through our early engagement program. Table 3.2 provides a summary of the key points arising from our stakeholder engagement in relation to the rate of return parameters, and our responses to those points.

⁷ Calculated using the Fisher equation

What we heard	Our Response
Stakeholders welcomed our proposal to adopt rate of return parameters in line with recent AER determinations and subsequent Court decisions.	We have maintained the approach to the rate of return parameters and expected inflation as outlined in our Preliminary Revenue Proposal. We continue to apply the AER's prevailing approach to the return on equity and return on debt parameters, subject to the outcomes of ongoing legal reviews. We propose to estimate expected inflation using a market based (break-even) approach for the reasons set out in Section 3.11.
It was suggested that a more appropriate forecast inflation figure would be 2.4%, which is just below the mid-point of the Reserve Bank of Australia's target range of 2-3%, rather than the indicative 2% proposed in our Preliminary Revenue Proposal.	As noted above, we have adopted a market based inflation estimate in this Revenue Proposal. As explained in Section 3.11, we consider this method provides the best estimate of expected inflation presently available. The AER has recently announced a review of its methodology for estimating expected inflation. We welcome the review and will work with the AER and determine the appropriate approach going forward.
Stakeholders noted an expectation that the Revenue Proposal would include more information about past, current and future revenue streams associated with rate of return parameters, particularly given such amounts are typically the largest component of costs recouped from energy customers, including businesses.	This Attachment contains full details of our proposed rate of return parameters, including our approach to expected inflation, as noted above.

Table 3.2: How we are responding to customer feedback

Further information on the outcomes of our early engagement program are contained in the Customer Engagement Outcomes Report⁸.

3.4 Legal framework

The return on capital building block must be calculated by applying a rate of return determined in accordance with NER 6A.6.2 to the value of the Regulatory Asset Base (RAB) as at the beginning of the relevant regulatory year.⁹

The allowed rate of return must be determined such that it achieves the ARORO, being:

The rate of return for a Transmission Network Service Provider is to be commensurate with the efficient financing costs of a BEE with a similar degree of risk as that which applies to the Transmission Network Service Provider in respect of the provision of the prescribed reference services¹⁰.

The rate of return must be a weighted average of the return on equity and the return on debt and determined on a nominal vanilla basis that is consistent with the estimate of the value of imputation credits.¹¹

⁸ ElectraNet, Customer Engagement Outcomes Report, March 2017 (ENET049)

⁹ NER 6A.6.2(a)

¹⁰ NER 6A.6.2(b)

¹¹ NER 6A.6.2(d)

In determining the allowed rate of return, regard must be had to:¹²

- relevant estimation methods, financial models, market data and other evidence;
- 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 the estimates of financial parameters that are relevant to the estimates of the return on equity and the return on debt.

The overarching requirements on the AER in estimating the rate of return are to:

- Perform its regulatory functions in a manner that will or is likely to contribute to the achievement of the National Electricity Objective (NEO), being to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to price, quality, safety, reliability and security of supply of electricity and the reliability, safety and security of the national electricity system.¹³
- Where there are two or more possible decisions open to the AER that will contribute to the achievement of the NEO, the AER must make the decision that it is satisfied will or is likely to contribute to the achievement of the NEO to the greatest degree.¹⁴

The AER is also required to take into account the Revenue and Pricing Principles (RPP), being relevantly:

- That a regulated network service provider should be provided with a reasonable opportunity to recover at least the efficient costs the operator incurs in providing direct control network services and complying with a regulatory obligation or requirement or making a regulatory payment.¹⁵
- A regulated network service provider should be provided with effective incentives in order to promote economic efficiency with respect to direct control network services the operator provides. The economic efficiency that should be promoted includes:
 - efficient investment in a distribution or transmission system with which the operator provides direct control network services;
 - the efficient provision of electricity network services; and
 - the efficient use of the distribution or transmission system with which the operator provides direct control network services.¹⁶
- Regard should be had to the RAB with respect to a distribution system or transmission system adopted in as the case requires, a previous distribution determination or transmission determination or determination or decision under the National Electricity Code or jurisdictional electricity legislation regulating the revenue earned, or prices charged, by a person providing services by means of that distribution system or transmission system or adopted in the Rules.¹⁷

¹² NER 6A.6.2(e)

¹³ National Electricity Law (NEL), section 7

¹⁴ NEL, section 16(d)

¹⁵ NEL, section 7A(2)

¹⁶ NEL, section 7A(3)

¹⁷ NEL, section 7A(4)

- A price or charge for the provision of a direct control network service should allow for a return commensurate with the regulatory and commercial risks involved in providing the direct control network service to which that price or charge relates.¹⁸
- Regard should be had to the economic costs and risks of the potential for under and over investment by a regulated network service provider in, as the case requires, a distribution system or transmission system with which the operator provides direct control network services.¹⁹
- Regard should be had to the economic costs and risks of the potential for under and over utilisation of distribution system or transmission system with which a regulated network service provider provides direct control network services.²⁰

3.5 The benchmark efficient entity

A key concept in the determination of the allowed rate of return is the definition of the BEE. The ARORO requires that the rate of return be commensurate with the efficient financing costs of the BEE with a similar degree of risk as that which applies to the same service provider in respect of the provision of the prescribed transmission services.

In its Guideline and recent decisions the AER defines the BEE as a pure play, regulated energy network business operating within Australia acting efficiently.²¹

It is noted that the Australian Competition Tribunal recently found this definition of the BEE to be incorrect. In particular, the Tribunal found that the BEE referred to in the ARORO is not a regulated entity.²² Rather, the BEE is likely to refer to the hypothetical efficient competitor in a competitive market for those services.²³ The Tribunal also found that the BEE will not necessarily be identical for all service providers.²⁴ That decision is under judicial review by the Full Federal Court but the decision is yet to be handed down. ElectraNet will monitor legal developments on this issue as they occur.

3.6 Gearing

The benchmark gearing ratio is used to weight the allowed return on equity and return on debt to calculate the weighted average cost of capital.

ElectraNet proposes a gearing ratio of 60%, consistent with the AER's Guideline and recent decisions.

3.7 Departure from the rate of return guideline

In this Revenue Proposal we have applied the AER's prevailing (Guideline) approach to estimating the return on equity and the return on debt. We note however that a number of legal reviews relating to these issues remain unsolved. We will monitor developments on these issues and update our position if necessary.

¹⁸ NEL, section 7A(5)

¹⁹ NEL, section 7A(6) ²⁰ NEL section 7A(7)

²⁰ NEL, section 7A(7)

AusNet Transmission Draft Decision 2017-18-2021-22 Attachment 3-24

Application by PIAC, Ausgrid, [2016] ACompT1, [907]

²³ Ibid at [914]

²⁴ Ibid at [907] and [916]



It is noted that the approach to expected inflation was not specifically addressed in the AER's Rate of Return Guideline. We note, however that, for the reasons set out in Section 3.11 of this attachment, our proposal is to depart from the AER's current approach. We also note that the AER has commenced a review of its methodology for estimating expected inflation. ElectraNet believes that the PTRM should be amended to adopt a market based approach, and intends to work with the AER during the course of this review to confirm the correct approach moving forward.

3.8 Return on equity

3.8.1 Proposal

In its Guideline, the AER estimates the cost of equity using the "foundation model approach". The AER uses the SL-CAPM to provide what it describes as a starting point estimate. It then uses other relevant material to inform the parameter estimates for the SL-CAPM and to determine the final return on equity estimate.

ElectraNet acknowledges the Tribunal's decision in *Ausgrid* which found the AER's foundation model approach is not an incorrect application of the NER. Accordingly, in this proposal we have applied the foundation model approach and estimate the return on equity using the SL-CAPM. The following sections sets out our proposal in relation to the input parameters to the SL-CAPM, namely the risk free rate, equity beta and the market risk premium.

3.8.2 Risk free rate

Consistent with the Guideline, ElectraNet proposes that the risk free rate be estimated based on the average yield on Commonwealth Government Securities (CGS) with a 10 year term over its proposed averaging period.

3.8.3 Equity beta

ElectraNet proposes an equity beta of 0.7 consistent with the AER's Guideline estimate.

In its Guideline and recent decisions, the AER estimates equity beta at 0.7, from a range of 0.3 to 0.7. The AER relies primarily on empirical estimates set out in Professor Henry's 2014 report. Professor Henry's 2014 report presented empirical estimates of equity beta for a set of nine Australian energy network firms using data from 29 May 1991 to 28 June 2013.

ElectraNet notes that that some networks have provided to the AER updates of the empirical estimates in Henry's 2014 report. The updated data shows that equity beta estimates have increased.²⁵

While ElectraNet proposes an equity beta of 0.7 consistent with the AER's Guideline, we note that estimate is conservative based on updated empirical estimates.

As set out in AusNet Transmission's Revised Regulatory Proposal 2017-2022 and CEG: Replication and extension of Henry's beta analysis, September 2016

3.8.4 Market risk premium

ElectraNet proposes a market risk premium (MRP) of 6.5%, consistent with the AER's Guideline estimate.

In recent decisions, the AER commenced by establishing a range of MRP estimates from 4.8 to 8.84% from the bottom of its historical averages and the top of its construction of the dividend growth model (DGM). It then derived its point estimate of 6.5% from within this range.^{26.}

The historical excess returns relied upon by the AER are said to range from 4.8% to 6.0%. The AER refers to a baseline estimate for the MRP of 5.5 to 6.0% reflecting a range based on arithmetic averages.

The AER's DGM estimates indicate a market risk premium estimate above this baseline with a range of 7.57 to 8.84%. The AER considers its DGM model to be theoretically sound but to be subject to certain limitations in practically implementing it. The AER considers the DGM estimates provide some support for a point estimate above the range from historical returns. However the AER still uses its DGM estimate to establish the upper point of its range of MRP estimates and says it has not changed the weight it applies to the DGM.²⁷

Consistent with the Guideline the AER gives limited consideration to other evidence but broadly concludes it supports its MRP estimate of 6.5%.

ElectraNet notes that some networks have provided expert reports in support of a higher MRP estimate.²⁸ ElectraNet also notes the Tribunal's decision in *Ausgrid* that the AER's approach to MRP was not subject to error, and proposes an MRP of 6.5%, noting that expert opinion suggests the estimate could be higher. As with other parameters, ElectraNet will monitor any further developments in respect of the estimate of the MRP.

3.8.5 Cross checks on the overall return on equity

In recent decisions the AER considers various cross checks of its return on equity estimate. The AER considers that in conducting cross checks the relevant matter is the equity risk premium. It is noted that under the Rules, it is the return on equity that is relevant and the equity risk premium is only one part of the overall return on equity.

As Frontier Economics has noted,²⁹ even if it was the case that the equity risk premium allowed by the AER was consistent with that adopted by some market practitioners, the task would not finish there – it would still be necessary to consider the other elements of the return on equity. There is evidence that market practitioners regularly adopt higher risk-free rates and apply other uplifts to the return on equity. These adjustments and uplifts tend to increase in frequency and magnitude as government bond yields fall – as they have in the prevailing market conditions.

²⁶ For example AusNet Transmission Draft Decision, Attachment 3-45. Powerlink Transmission Draft Decision, Attachment 3-40

²⁷ AusNet Transmission Draft Decision, Attachment 3-207

For example, AusNet Transmission proposed an MRP of 7.5% in its Revised Regulatory Proposal relying on a report from Frontier Economics: *The market risk premium*, September 2016. TransGrid has also proposed an MRP of 7.5% in its 2018/19 – 2022/23 Revenue Proposal on a similar basis

²⁹ Frontier Economics, *The Market Risk Premium*, September 2016, page 44, paragraph 165



Frontier gives two examples of its concerns with the AER's approach.³⁰ Firstly, that the AER's conclusion in recent decisions that its allowed equity risk premium lies within the Grant Samuel range did not recognise that Grant Samuel did not consider its mechanistic range as being appropriate for current market conditions and corrected that range to one (adjusted for imputation) that the AER's equity risk premium falls outside (below). Second, an example is given of an adjustment to the risk-free rate which, when taken into account, also produces a premium materially above the AER's allowance.

As noted above, ElectraNet's proposal in respect of the return on equity is consistent with the Guideline. However, the analysis of the cross-checks explained above shows this approach is conservative and a higher return on equity could be justified.

3.8.6 Return on equity averaging period (risk free rate)

ElectraNet has used a placeholder risk free rate averaging period for the purposes of calculating its proposed return on equity. The placeholder period is 1 to 31 December 2016.

3.8.7 SL-CAPM parameter estimates

The following parameter estimates are based on the indicative averaging period identified above. ElectraNet will update these estimates after the Draft Decision.

Parameters	Proposal
Risk free rate	2.83%
Equity beta	0.7
MRP	6.50%
Return on Equity	7.40%

Table 3.3: Parameter estimates

3.9 Return on debt

3.9.1 Proposal

ElectraNet agrees with the AER's approach to determining the return on debt using a trailing average approach. This approach recognises that, in practice, the actual return on debt of a BEE will be determined by historical rates at the time of debt issue and better reflects the actual practice of energy networks and other businesses who raise debt with staggered maturities. It is also more replicable than the "on-the-day" methodology previously adopted.

However, there remains significant uncertainty around the correct approach to estimating the return on debt using a trailing average approach, including whether there should be a transition to the trailing average approach and if so, in what form.

As noted above, we have applied the AER's prevailing approach to the return on debt. We will continue to monitor any further developments in respect to these issues given a number of diverse recent decisions and unresolved legal processes (discussed further below).

³⁰ Ibid, pages –41-43, paragraphs154-160

ElectraNet proposes that the return on debt be estimated:

- using a 10 year transition from the "on-the-day" approach to a trailing average approach in the manner set out in the Guideline. That is, the return on debt is to be updated each regulatory year through the application of a formula, being that set out in section 6.3.2 of the Guideline;³¹
- adopting a 10 year debt term for the BEE (as per the Guideline);
- adopting a BBB+ credit rating for the BEE (as per the Guideline);
- adopting a gearing ratio of 60% for the BEE (as per the Guideline); and
- using a simple average of two independent third party data sources, namely:
 - the 10 year estimate from the non-financial corporate BBB rated data series published by the Reserve Bank of Australia (RBA) (adjusted to extrapolate the data series from a 'target' 10 year term to an 'effective' 10 year term, to interpolate the monthly data points to produce daily estimates, and to convert the estimates from semi-annual to an effective annual rate); and
 - the 10 year yield estimate from the Australian corporate BBB rated Bloomberg Valuation Service (BVAL) data series published by Bloomberg (adjusted to convert the estimates from semi-annual to an effective annual rate).

This approach gives rise to an indicative cost of debt of 5.10% in the first regulatory year of the regulatory period calculated over our placeholder averaging period.

ElectraNet submits that its proposal is consistent with the Guideline, but notes that it will continue to monitor any further developments in respect to these issues. If, after submitting this proposal, there are changes to the AER methodology or alternative methodologies, or application approaches, including by way of outcomes in the outstanding legal reviews discussed in this section, ElectraNet reserves the right to revise its Revenue Proposal to apply a different approach to the calculation of these parameters.

3.9.2 Legislative framework

NER 6A.6.2 provides that:

- the return on debt must be estimated such that it contributes to the achievement of the ARORO (NER 6A.6.2(h));
- the return on debt may be estimated using a methodology which results in the return on debt being the same or different (or potentially different) for each regulatory year in the regulatory control period (in the latter case, any resulting change to the annual revenue requirement must be effected through the automatic application of a formula specified in the revenue determination (NER 6A.6.2(i) and (l));
- the methodology adopted to estimate the return on debt may, without limitation, be designed to result in the return on debt reflecting either of, or a combination of, the following (NER 6A.6.2(j)):

³¹ Guideline, pp. 19-20



- the return that would be required by debt investors in a BEE if it raised debt at the time or shortly before the making of the revenue determination for the regulatory control period;
- the average return that would have been required by debt investors in a BEE if it raised debt over an historical period prior to the commencement of a regulatory year in the regulatory control period.
- regard must be had to the following factors in estimating the return on debt (NER 6A.6.2(k)):
 - the desirability of minimising any difference between the estimated return on debt and the return on debt of a BEE referred to in the ARORO;
 - the interrelationship between the return on equity and the return on debt;
 - the incentives that the return on debt may provide in relation to capital expenditure over the regulatory control period, including as to the timing of any capital expenditure; and
 - any impacts (including in relation to the costs of servicing debt across regulatory control periods) on a BEE referred to in the ARORO 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.

3.9.3 The guideline approach

Prior to the issue of its Guideline, the AER's approach to estimating the cost of debt involved the use of an "on-the-day" approach, under which a fixed prevailing rate of return on debt was estimated and applied throughout the regulatory control period.

In the Guideline, the AER proposed to move to a trailing average approach to estimating the cost of debt under which:

... The trailing average will be calculated using a simple 10 year average and will be updated annually. The yearly average will be calculated over a period of 10 or more consecutive business days using yield estimates from an independent third party service provider for a 10 year debt term and the closest proximate for a BBB+ credit rating. There will be a 10 year transition period from the current 'on the day' approach to the trailing average portfolio approach.³²

The trailing average approach estimates the average return that would have been required by debt investors in a BEE if it raised debt over a 10 year historical period prior to the commencement of the regulatory period. It assumes that the BEE would have a staggered debt portfolio where 10% of its debt is refinanced each year.

In the Explanatory Statement for the Guideline, the AER acknowledged that the trailing average (as compared to the "on-the-day" approach) "more closely aligns with the efficient debt financing practices of regulated businesses and means that prices are likely to be less volatile over time".³³ The AER's change to this methodology was also described as "a major change in the regulatory framework... arrived at... through an extensive consultation process and analysis".³⁴

³² Guideline, p. 4

³³ Explanatory Statement – Rate of Return Guideline, p. 12

³⁴ Explanatory Statement – Rate of Return Guideline, p. 101

As noted above, ElectraNet agrees with the AER that the trailing average approach better reflects the actual practice of energy networks and other businesses who raise debt with staggered maturities, is clearly better aligned with the actual financing practices of the BEE (whether regulated or unregulated), and is a more replicable approach, than the "on-the-day" methodology previously adopted by the AER. ElectraNet agrees with the AER that a trailing average approach reflects an efficient debt financing strategy.³⁵

The question that arises is whether, and in what form, a transition from the "on the day" methodology to the trailing average approach is needed:

Transition

The 10 year transition proposed by the AER (and adopted by ElectraNet in its proposal) involves a transition of the entire return on debt (i.e. not just the risk-free rate component) over a ten year period such that:

- in the first year, the return on debt is based entirely on the prevailing rate of return (similar to the "on-the-day" approach);
- in the second year, the prevailing rate of return is given 90% weight and 10% weight is given to the observed rate in the first year;
- in the third year, the prevailing rate of return is given 80% weight and 10% weight is given to observed rates in each of the first and second years; and
- so on, until in the tenth year the rate of return represents a full trailing average with equal weighting given to each of the observed rates over the previous ten years.³⁶

The AER first implemented the trailing average approach to estimating the cost of debt, and its proposed 10 year transition, in a number of distribution determinations made under the NER in April 2015³⁷ and an access arrangement final decision made under the National Gas Rules in June 2015.³⁸

The businesses that were the subject of those determinations and decisions sought merits review of the AER's decisions in respect of the return on debt (amongst other things) and, on 26 February 2016, the Australian Competition Tribunal (Tribunal) found error in the AER's decisions for each service provider and remitted the decisions "*in relation to the trailing average approach*" to the AER to be remade.³⁹ Those remitters are yet to be completed by the AER.

The AER has sought judicial review of the Tribunal's decisions in *Ausgrid*,⁴⁰ including in relation to the return on debt, which were heard by the Full Federal Court in October 2016. The Court's decisions on those applications remain reserved.

In its recent draft and final decisions for various businesses the AER has maintained the same approach to a 10 year transition to the implementation of the trailing average.

³⁵ Explanatory Statement – Rate of Return Guideline, p. 12

³⁶ Guideline, pp. 19-20

³⁷ Distribution determination final decisions published on 30 April 2015 for each of Ausgrid, Endeavour Energy, Essential Energy and ActewAGL Distribution

³⁸ Final access arrangement decision published on 3 June 2015 for Jemena Gas Networks (NSW) Ltd

³⁹ Applications by Public Interest Advocacy Centre Ltd and Ausgrid [2016] ACompT 1 order 1(b); Applications by Public Interest Advocacy Centre Ltd and Endeavour Energy [2016] ACompT 2, order 1(b); Applications by Public Interest Advocacy Centre Ltd and Essential Energy [2016] ACompT 3, order 1(b); Application by ActewAGL Distribution [2016] ACompT 4, order 1(c); Application by Jemena Gas Networks (NSW) Ltd [2016] ACompT 5, order 1(a)

⁴⁰ Action nos. NSD 415, 416, 418, 419 and 420 of 2016 in the Full Federal Court of Australia



However, there remains uncertainty (and unresolved legal processes) as to the appropriate form of transition (that satisfies the requirements of the NER). We summarise below the issues that remain in contention in the reviews. ElectraNet will continue to monitor these issues as they develop.

Immediate or no transition

The NER require that both the overall allowed rate of return be determined such that it achieves the ARORO,⁴¹ and that the return on debt for each regulatory year be estimated such that it contributes to the achievement of the ARORO.⁴²

The ARORO is that:

...the rate of return for a Transmission Network Service Provider is to be commensurate with the efficient financing costs of a BEE with a similar degree of risk as that which applies to the Transmission Network Service Provider in respect of the provision of prescribed transmission services.

The AER stated in the Guideline, and continues to maintain, that the BEE referred to in the ARORO is a "*pure play, regulated energy network business operating within Australia*".⁴³

Prior to the Tribunal's decision in *Ausgrid*, the assumption that the BEE was a regulated energy network business formed a key part of the AER's reasoning for applying a full transition from the "on-the-day" approach to the trailing average approach (i.e. the Guideline transition approach). In the Explanatory Statement for the Guideline, the AER stated that one of the considerations in applying the transition was "*that the benchmark efficient firm is likely to need a transition in moving from the current 'on the day' approach to the trailing average approach*".⁴⁴

The rationale, therefore, in the Guideline for the transition was that the BEE had previously adopted efficient financing practices in response to the previous "on-the-day" approach (such as entering into hedging contracts) that would need to be unwound in moving to the trailing average approach. This rationale, of course, is only valid if the BEE is assumed to be a regulated entity that structured its debt financing practices to meet the requirements of the previous method of regulation. An unregulated BEE would have engaged in efficient financing practices unaffected by the AER's previous regulatory practice.

However, in *Ausgrid*, the Tribunal found that the assumption underlying the AER's rationale for the transition was incorrect, and the BEE referred to in the ARORO should be considered to be an unregulated entity.⁴⁵ The Tribunal held that:

The BEE, in the view of the Tribunal, is likely to refer to the hypothetical efficient competitor in a competitive market for those services. Such a BEE is not a regulated competitor, because the regulation is imposed as a proxy for the hypothetical unregulated competitor. Otherwise, the starting point would be a regulated competitor in a hypothetically regulated market. That would not be consistent with the policy underlying the purpose of the NEL and the NGL in relation to the fixing of terms on which monopoly providers may operate.

⁴¹ NER 6A.6.2(b)

⁴² NER 6A.6.2(h)

⁴³ For example see AER's Draft Decision for Powerlink (29 September 2016), Attachment 3, pp. 3-20, 3-29, 3-135 to 3-136

⁴⁴ Explanatory Statement – Rate of Return Guideline, p. 120. See also pp. 121-122

⁴⁵ Ausgrid at [907]

Indeed, the concept of a regulated efficient entity as the base comparator would divert the AER from the role of fixing the terms for supply of services on a proxy basis compared to those likely to obtain in a competitive market, and focus its attention on some different and unidentified regulated market.⁴⁶

While the Tribunal found the AER's approach to the BEE to be in error in *Ausgrid*, it remitted the issue of the return on debt to the AER and did not determine what transition, if any, should have been applied. As noted above, the AER has sought judicial review of the Tribunal's decisions in *Ausgrid et al.*⁴⁷ These review applications were heard by the Full Federal Court in October 2016. The Full Federal Court is yet to deliver its decisions on those applications.

The finding that the BEE is unregulated leads to an argument that no transition to the trailing average approach is required, and the trailing average approach should be implemented immediately.

An unregulated BEE, in the current and previous regulatory control periods, would not have structured its debt financing strategy to respond to the AER's previous "on-the-day" approach (as an unregulated entity in the competitive market is not affected by the AER's regulatory approach). Rather, the unregulated BEE would have structured its debt financing strategy in such a way that mirrors the trailing average approach. This is because the unregulated BEE, operating in a workably competitive market, is likely to already hold a staggered long term (i.e. of approximately 10 year term) debt portfolio, such that no transition to that position is required.

Since the Tribunal's decision in *Ausgrid*, the AER has continued to adopt the Guideline transition approach in its Draft and Final Decisions, although justified on a different basis.⁴⁸

The AER now justifies the Guideline transition on the basis of a so-called "zero NPV investment condition", which other businesses have recently identified concerns with.⁴⁹

For the reasons set out above, there remains uncertainty about the proper definition of the BEE referenced by the ARORO (whether it is a regulated or an unregulated entity) and whether an immediate implementation of the trailing average approach (i.e. with no transition) satisfies the NER, the ARORO and NEO (and to a greater degree that the Guideline transition approach).

The "hybrid transition" alternative

Since the publication of the Guideline, some businesses have proposed a hybrid transition of just the base rate component of the return on debt. The Tribunal has recently considered proposed hybrid transitions in the merits review applications made by Jemena Gas Networks (NSW) Ltd⁵⁰ and SA Power Networks.⁵¹

⁴⁶ Ausgrid at [914]

⁴⁷ Action nos. NSD 415, 416, 418, 419 and 420 of 2016 in the Full Federal Court of Australia

⁴⁸ For example see AER's Draft Decision for Powerlink (29 September 2016), Attachment 3

⁴⁹ CEG, *The AER's current interpretation of the ARORO*, September 2016, section 9, report for AusNet Services

⁵⁰ Application by Jemena Gas Networks (NSW) Ltd [2016] ACompT 5 (JGN)

⁵¹ Application by SA Power Networks [2016] ACompT 11 (SAPN)



It is accepted by the AER that businesses (and the BEE) cannot hedge, and have not hedged, the debt risk premium (DRP) component of the return on debt.⁵² The AER has also previously accepted (based on advice from Chairmont, who recommended the adoption of the hybrid transition⁵³) that the hybrid transition would "provide a good match" between the allowed return on debt and the efficient financing costs of a BEE (being the focus of the ARORO).⁵⁴

However, the AER continues to maintain a preference for the Guideline transition approach over a hybrid transition.

Although in JGN the Tribunal found error in the AER's approach to the return on debt (in relation to the definition of the BEE as discussed above), and remit the matter to the AER, the merits of the hybrid transition approach (as proposed by Jemena Gas Networks (NSW) Ltd) were not addressed in any detail by the Tribunal in that decision.

The hybrid transition approach was discussed in more detail by the Tribunal more recently in SAPN, which found no error in the AER's approach of rejecting the hybrid transition approach proposed by SA Power Networks in favour of the AER's Guideline transition approach.

In doing so, the Tribunal found that the AER had not erred in its interpretation and reliance on NER 6.5.2(k)(4) (the equivalent of NER 6A.5.2(k)(4)). That Rule requires the AER to have regard to any impacts (including in relation to the costs of servicing debt across regulatory control periods) on a BEE referred to in the ARORO 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 Tribunal found no error in the AER's reliance on this rule to enable a consideration of more than just the periods immediately surrounding the change in regulatory approach, and including the effects over the life of the asset.⁵⁵ This, the Tribunal said, justified the attention given by the AER to its "NPV=0" criterion in assessing the return on debt.⁵⁶

ElectraNet notes that there remains uncertainty around the hybrid transition because SA Power Networks has sought judicial review of the Tribunal's decision in *SAPN*, which is yet to be heard by the Court,⁵⁷ and because the AER is yet to reconsider Jemena Gas Networks (NSW) Ltd's proposed hybrid on remitter.

Further, the Tribunal's decision in *SAPN* did not consider at all the definition of the BEE as both parties appear to have proceeded on the basis that the BEE was a regulated entity.

Other recent decisions

In addition to the uncertainty arising from the matters set out above, both the immediate implementation and hybrid transition approaches were raised before the Tribunal again even more recently in merits review applications made by (predominantly) Victorian electricity businesses.⁵⁸ Those matters were heard by the Tribunal in November 2016 and the Tribunal is yet to deliver its determinations on those Applications.

⁵² Explanatory Statement – Rate of Return Guideline, p. 105

⁵³ Chairmont Financing practices under regulation: Past and transitional, October 2015

⁵⁴ For example see AER's Final Decision for SA Power Networks (29 October 2015), Attachment 3, p. 3-165

⁵⁵ SAPN, [289]

⁵⁶ SAPN, [289]

⁵⁷ Action no. NSD 2032 of 2016 in the Federal Court of Australia

⁵⁸ Action nos. ACT 3, 4, 5, 6, 7 and 8 of 2016 in the Tribunal

Conclusion

ElectraNet proposes to apply the AER's Guideline transition to the trailing average approach, but notes the alternative approaches discussed above which are still subject to outstanding legal reviews. ElectraNet will monitor developments in those reviews and any impact on this Revenue Proposal and reserves the right to revise its Revenue Proposal if necessary.

3.9.4 Credit rating

ElectraNet adopts the AER's Guideline credit rating of BBB+.

3.9.5 Implementation – data sources

As noted above, ElectraNet's proposal is to calculate the return on debt using the AER's approach relying upon a simple average of two independent third party data sources, namely:

- the 10 year estimate from the non-financial corporate BBB rated data series published by the RBA (adjusted to extrapolate the data series from a 'target' 10 year term to an 'effective' 10 year term, to interpolate the monthly data points to produce daily estimates, and to convert the estimates from semi-annual to an effective annual rate); and
- the 10 year yield estimate from the Australian corporate BBB rated BVAL data series published by Bloomberg (adjusted to convert the estimates from semiannual to an effective annual rate).

3.9.6 New issue premium

ElectraNet notes that there is cogent evidence that there exists a cost "premium" to businesses issuing bonds into the primary debt market that is not accounted for in the data sources used by the AER to estimate the return on debt (being observations on the secondary debt market).

Despite the evidence for the existence of such a premium (quantified by CEG at 27 basis points on 10 year BBB rated debt⁵⁹), ElectraNet does not seek, in this proposal, to add any explicit allowance for the "new issue premium" to its return on debt proposal but notes that the existence of such a premium results in our proposed return on debt being conservative.

3.9.7 Averaging period

ElectraNet proposes that the return on debt be calculated over the averaging periods set out in our confidential letter to the AER accompanying this Revenue Proposal.

See, for example, CEG, *The new issue premium*, October 2014, a report for Citipower, Jemena, Powercor, SA Power Networks, AusNet Services and United Energy, p. 54; and CEG, *Critique of AER analysis of New Issue Premium*, December 2015, report for Australian Gas Networks, CitiPower, Jemena Electricity Networks, Powercor and United Energy

3.9.8 Debt raising costs

As discussed in Attachment 6, ElectraNet's proposal includes an amount of \$0.7 million in respect of debt raising costs for the next regulatory period. This is consistent with the AER's recent decision in respect of debt raising costs⁶⁰ and has been determined by applying the standard benchmark methodology reflected in the AER's Post Tax Revenue Model (PTRM).

3.10 WACC proposal

Our proposed rate of return on capital, or WACC derived using the accepted methodologies described above is set out in Table 3.4 below.

Parameters	Proposal
Risk free rate	2.83%
Equity beta	0.7
Market risk premium	6.5%
Return on equity	7.40%
Return on debt	5.10%
Inflation (see following section)	1.97%
Gearing ratio	60%
Gamma (see Attachment 4)	0.25
Corporate Tax rate	30%
Nominal vanilla WACC	6.02%

Table 3.4: Our proposed rate of return

3.11 Expected inflation

3.11.1 Proposal

The estimate of expected inflation influences the determination of a number of revenue building blocks, including the indexation of the RAB, depreciation and the return on capital. ElectraNet's concern is that if the estimate of expected inflation used to derive the building blocks is not accurate and consistent with investors' inflation expectations, the result will be a potential under-recovery of costs (if the forecast of inflation is too high) or an over-recovery (if the forecast is too low).

The estimate of expected inflation is an estimate of inflation expectations in the nominal WACC. It is used in the AER's transmission PTRM to convert the nominal WACC to a real WACC and (through a negative adjustment to depreciation) to avoid the double counting that would otherwise arise from applying a nominal rate of return to an inflation-adjusted capital base. Accordingly, the estimate of expected inflation used in the building block determination to make negative adjustments to revenue must be consistent with and reflect investor's inflation expectations.

⁶⁰ AER Draft Decision: AusNet Services transmission, Attachment 3-339- 341

Our concern is that the AER's current approach to estimating inflation, relying on RBA short-term inflation forecasts and long-term inflation targets, does not produce an estimate of expected inflation which is consistent with inflation expectations in the market. At times the AER's approach has implied negative real bond rates, despite the fact that positive indexed bonds were available in the marketplace. The consequence is that the (negative) adjustment made to total revenue for expected inflation during the course of the forthcoming regulatory period. As a result, we cannot expect to recover at least our efficient costs and the AER's decision will not contribute to the achievement of the NEO.

Our proposal is to estimate expected inflation by reference to a market-based approach (the break-even approach) which we submit gives rise to an estimate of expected inflation which is consistent with market expectations, most particularly those implicit in the nominal WACC, as reflected in bond rates. ElectraNet submits that it is open to the AER to apply this alternative method to the PTRM method and in any event notes the AER has announced a review of its expected inflation methodology in the PTRM. That review should take place in conjunction with ElectraNet's transmission determination process.

We rely upon the following expert reports submitted in support of this proposal:

- CEG: Best estimate of expected inflation, September 2016 (ENET096)
- CEG: Inflation compensation addendum to September report, December 2016 (ENET097)
- CEG: Update to inflation report empirical results, March 2017 (ENET053)
- CEG Measuring expected inflation for the PTRM June 2015 (ENET056)
- CEG Measuring expected inflation for the PTRM, January 2016 (ENET055)

3.11.2 Legislative framework

Under Rule 6A.5.4 of the National Electricity Rules, the annual building block revenue requirement for each regulatory year of a regulatory control period must be determined using a building block approach, under which the building blocks include "indexation of the regulatory asset base", a "return on capital" and "depreciation" (return of capital).

Pursuant to the return on capital rules, the allowed rate of return is to be determined on a nominal vanilla basis.⁶¹ This nominal rate of return is applied to an indexed RAB. However, the effect of this combination is a double compensation for inflation, once through the nominal rate of return and once through the indexation of the RAB across regulatory periods.

This is addressed in the Rules through the "indexation of the regulatory asset base" building block in 6A.5.4(b)(1):

- the regulatory asset base is calculated in accordance with clause 6A.6.1 and schedule 6A.2; and
- the building block comprises a negative adjustment equal to the amount referred to in clause S6A.2.4(c)(4) for that year (being the amount necessary to maintain the real value of the regulatory asset base as at the beginning of the subsequent year by adjusting that value "for inflation").

⁶¹ Rule 6A.6.2(d)(2)



The indexation of the RAB building block is therefore in effect, a deduction from the annual revenue requirement equal to expected inflation. A higher estimate of expected inflation will therefore lead to a larger deduction from the annual revenue requirement in each year.

Rule 6A.5.3(b)(1) provides that the PTRM must specify the methodology that the AER determines is likely to result in the best estimate of expected inflation. The estimate of expected inflation is then used to make the negative adjustment to the building blocks described above (through the depreciation building block) to avoid the double compensation for inflation that would otherwise arise.

Rule 6A.6.1(e)(3) provides for the RAB to be rolled forward to the beginning of the next regulatory period using out-turn inflation.

As CEG explains⁶², the AER's PTRM and RAB roll forward model work together to deliver compensation for inflation as follows:

- 1. Take a nominal input for the cost of debt and equity;
- 2. Deduct the estimate of expected inflation to arrive at a real return which is then embedded in the real regulated revenue path;
- 3. Provide nominal compensation that is equal to:
 - a) The real return derived in step 2; plus
 - b) In the RAB roll forward, compensate for the inflation that actually occurs (out-turn inflation) over the regulatory control period.

The real revenue path in step 2 is the final output of the PTRM model.

The AER has previously recognised that the objective of the expected inflation estimate is to convert the nominal return to a real return (step 2 above)⁶³. As noted above, this is necessary to avoid a double counting of inflation.

The AER further explained the operation of its PTRM and Roll Forward Model (RFM) and the role of expected inflation in its recent Explanatory Statement, *Proposed amendments to electricity distribution roll forward model* released on 31 August 2016:

A nominal WACC, not a real WACC, is the input to the PTRM at the start of each AER final decision. The real WACC (which drives PTRM outcomes) is derived from the nominal WACC by deducting the expected inflation rate. Hence, an overestimate of inflation means the real WACC will be too low (and vice versa). However, the forecast inflation and the nominal WACC are jointly estimated on consistent terms.⁶⁴ Directly using the real WACC in the model means we have assumed that this pair of inputs is correctly matched. For example, if forecast inflation is overestimated, but this overestimate of inflation is already included in the nominal rate of return, the real WACC will still be correct. Hence, the construction of the model means we isolate changes in revenue outcomes that reflect the difference between forecast and actual inflation, not errors in the forecast inflation embedded in the WACC.

⁶² CEG Best estimate of expected inflation, September 2016, section 3 (ENET096)

⁶³ AER Final Decision, AusNet Distribution, at 3-154

⁶⁴ The AER's footnote 8 reads "As noted above, this is why forecast inflation in the PTRM is a constant inflation rate with a 10 year horizon."

If the estimate of expected inflation does not reflect market expectations of inflation built in to the nominal rate of return, the deduction from annual revenues will be too high and the network under-compensated for inflation.

3.11.3 The AER's estimate is inconsistent with inflation expectations

CEG explains that the expected inflation input to the PTRM determines, in combination with the nominal cost of capital inputs to the PTRM, a real rate of return that is delivered to the regulated entity. The AER's current methodology is to estimate the nominal cost of capital inputs based on:

- nominal corporate bond yields for the cost of debt; and
- nominal government bond yields as the risk free rate used to determine the cost of equity.

The key issue is whether the AER's estimate of expected inflation which it uses in the PTRM to make a negative adjustment to the total revenue is consistent with inflation embedded in the nominal WACC. As noted above, the nominal WACC is derived using corporate bond yields for debt and government bond yields for equity. It is logical that the same market data should be used to derive inflation expectations.

Under normal market conditions, the mid-point of the RBA target range may be a reasonable proxy of inflation expectations in the market at large. The RBA is generally considered to be a credible monetary authority able to meet its targets under normal market conditions.

However, current market conditions are not normal,⁶⁵ and Australia is arguably in a "low inflation trap". As CEG explains, monetary policy loses its power to lift inflation back to target levels when interest rates approach the "zero lower bound".⁶⁶ This is because monetary policy's most direct effect on the economy and therefore on inflation is through lower interest rates. However, the RBA cannot set a cash rate below zero (or at least not materially below zero) because at those levels, businesses and households will prefer to hold cash - delivering a zero rate of interest. It follows that the potential for monetary policy to stimulate economic activity diminishes as interest rates approach zero.

- There is various evidence that Australia is presently facing this low inflation trap, including: RBA cash rates are at record low levels of 1.5%.⁶⁷
- Actual inflation for the past two years has been low, at around 1.5% or lower (see Figure 3.1 below) with the June Quarter 2015 to June Quarter 2016 CPI being 1%⁶⁸ and December Quarter 2015 to December Quarter 2016 being 1.5%.⁶⁹
- In its May 2016 Statement of Monetary policy (SoMP), the RBA dramatically reduced its range for forecast inflation from 2-3%, to 1.5-2.5%.⁷⁰ The RBA's February 2017 SoMP forecasts year ended June 2017 CPI to be 2% and year ended forecast to December 2018 in the range of 1.5 to 2.5%.⁷¹

66 Ibid

⁶⁵ CEG: Measuring expected inflation for the PTRM, June 2015 (ENET056), section 2 and 2.1, section 5.5, 5.6

⁶⁷ *CEG, Best estimate of expected inflation*, September 2016 (ENET096), at [68]. The RBA cash rate has remained at 1.5% as at March 2017

⁶⁸ ABS, CPI Australia, June 2016, released 27 July 2016

⁶⁹ ABS, CPI Australia, December 2016, released 25 January 2017

⁷⁰ RBA, Statement of Monetary Policy, May 2016, table 6.1

⁷¹ RBA, Statement of Monetary policy, February 2017, table 6.1, page 57



- As CEG demonstrate, break-even inflation estimates are well below AER forecasts even at a horizon of 10 years.⁷²
- Commentary from the RBA Governor and commentators that Australia faces a "protracted" period of "persistent" low inflation.⁷³
- Evidence that in recent years, inflation has been below target levels in all developed countries, including Australia.⁷⁴ This can be seen from the following chart (the light shading reflecting the RBA's target range of 2.0% to 3.0%):



Figure 3.1: Actual inflation vs RBA's prior semi-annual forecast ⁷⁵

The AER acknowledges that if monetary policy loses its effectiveness to influence economic activity, inflation expectations may deviate from the mid-point of the inflation target range.⁷⁶ Given current market conditions, inflation should be expected to be below the midpoint of the RBA target range. The AER's approach is therefore not a direct estimate of inflation expectations prevailing at the current time.

It must also be recalled that the AER is seeking to estimate inflation expectations during the regulatory period, over a 10 year horizon. In this context, the actual inflation environment that persists at present and during the forthcoming averaging period is highly relevant to investors' expectations of inflation over the forthcoming 10 year term.

The concerns with the AER's approach in current market conditions is further demonstrated by the chart below. The yield on 10 year indexed CGS over the last 5 years is provided in the below figure extracted from the updated CEG analysis.⁷⁷

⁷² CEG: Update to inflation report empirical results, March 2017 (ENET053), Figures 2 and 3

⁷³ CEG, Best estimate of expected inflation, September 2016 (ENET096), section 5.6 and Appendix A [189]

⁷⁴ CEG Measuring expected inflation for the PTRM, June 2015 (ENET056), paragraphs 27-33

⁷⁵ CEG Update to inflation report empirical results, March 2017 (ENET053), Figure 6

⁷⁶ AER Draft Decision, AusNet Services table 3-19, page 3-132

⁷⁷ CEG Update to inflation report empirical results, March 2017 (ENET053), Figure 1

It is relevant to compare this yield with the estimated real risk free rate applying the AER's current methodology, which is to deduct its estimate of expected inflation from the yield on 10 year nominal CGS.

ElectraNet



Source: AER, RBA, CEG analysis

Figure 3.2: Competing 10 year real risk free rate estimates (last 5 years)

It can be seen that until late 2014, the AER's methodology implied a real risk free rate that was similar to the yield on indexed CGS. After that time, the AER's estimate of the real risk free rate fell significantly. That is, the AER's estimate, until recently, implied that investors were expecting to lend to the Australian government in return for receiving less in purchasing power after 10 years than they invested originally. This is inconsistent with the fact that the indexed CGS were offering guaranteed positive real returns and there is no logical explanation for this.

CEG note that since its September 2016 report, the implied real 10 year CGS has climbed back to positive territory, but maintain that the AER's methodology for estimating inflation has the potential to generate illogical results.⁷⁸ Further CEG note that in the above Figure 3.2, the divergence between the yields of indexed CGS and the real 10 year CGS yields implied by the AER's inflation estimates continues to remain substantial, indicating the unreasonableness of the AER's inflation estimates since investors could receive higher returns by buying inflation indexed CGS instead of nominal CGS.⁷⁹

The above analysis shows that the AER's approach does not give rise to an appropriate estimate of expected inflation.

⁷⁸ CEG Update to inflation report empirical results, March 2017 (ENET053), paragraph 8

⁷⁹ CEG Update to inflation report empirical results, March 2017 (ENET053), paragraphs 7 to 9

3.11.4 The break-even approach

Until 2008 the AER used the break-even approach to estimate expected inflation. This approach measures inflation by reference to the difference between the yields on nominal and real Commonwealth government bonds. After 2008, the AER changed to its current method due to concerns that post the global financial crisis, a scarcity of indexed bonds meant the results from the break-even approach were not reliable. We agree that during this time, it was appropriate to move to a different methodology.

Equally, we contend that market conditions are now such that the AER's method of relying (primarily) on RBA target inflation, in circumstances where current market conditions hamper the effectiveness of monetary policy to achieve those targets, does not represent an appropriate estimate of expected inflation, and there should be a change in approach.

As noted above, it is bond investors' expectations of inflation which are relevant and break-even inflation provides a measure of those expectations. This section explains the basis for estimating expected inflation using the break-even approach and why the AER's concerns with that approach in recent decisions are unfounded.

CEG's report demonstrates that since 2011, break-even inflation estimates have more accurately predicted actual inflation than the RBA forecast ranges relied upon by the AER. CEG show that using a 1 year, 2 year and 3 year break-even inflation rate, break-even inflation rates have typically performed best.⁸⁰



Figure 3.3: 1 year break-even inflation vs RBA range⁸¹

⁸⁰ CEG: Best estimate of expected inflation, September 2016 (ENET096), section 5.3, updated in CEG Update to inflation report empirical results, March 2017 (ENET053), Figures 5 and 7 and 8

⁸¹ CEG Update to inflation report empirical results, March 2017 (ENET053), Figure 5



A similar story exists using 2 year inflation estimates. Once more, break-even inflation has performed materially better than the mid-point of the RBA range for the most recent years:



Figure 3.4: 2 year break-even inflation vs RBA range⁸²



The same can be seen from the 3 year inflation estimates:

Figure 3.5: 3 year break-even inflation vs RBA range⁸³

⁸² CEG Update to inflation report empirical results, March 2017 (ENET053), Figure 7

⁸³ CEG Update to inflation report empirical results, March 2017 (ENET053), Figure 8



The break-even approach also meets the AER's requirement of flexibility and allowing market conditions to be reflected in regulatory outcomes.⁸⁴ Again, it arguably performs better than the RBA target-band approach in this respect. CEG has shown in the following chart that break-even inflation has responded quickly to actual inflation falling well below RBA targets from late 2015.⁸⁵ By contrast, the AER's measure of inflation does not respond quickly.



Figure 3.6: Break-even inflation vs AER inflation (10 years) vs actual inflation (1 year) less 2.5%

Further, CEG's expert opinion is that falls in CGS yields in recent years have been associated with a similar fall in inflation expectations, rather than falls in real yields. This can be seen from the figures on the following pages.⁸⁶

⁸⁴ AER, Rate of Return Guideline, December 2013, p6

⁸⁵ CEG Update to inflation report empirical results, March 2017 (ENET053), Figure 2 and paragraphs 10 and 11

⁸⁶ CEG: Update to inflation report empirical results, March 2017 (ENET053), Figures 9 and 10





Figure 3.7: 10 year nominal CGS rates and 10 year break-even inflation



Figure 3.8 10 year nominal CGS rates and 10 year AER inflation

CEG observe that the 10 year nominal CGS yield series is highly correlated with the 10 year break-even inflation estimates, while the AER 10 year inflation estimates did not respond and provide no explanatory power for the variation in nominal CGS rates.⁸⁷

⁸⁷ CEG: Update to inflation report empirical results March 2017 (ENET053), paragraphs 16 and 17



CEG conclude that based on its analysis, the AER's estimate of inflation is unrealistically stable and has not responded to a dramatically changing inflation environment and leads to an overestimate of expected inflation.⁸⁸ The CEG report establishes that break-even estimates of inflation have better predicted actual inflation than the AER's method relying on RBA forecast and target ranges and ElectraNet submits that the break-even approach will better estimate inflation expectations of investors.

3.11.5 AER's concerns with the break-even approach

CEG shows that most of the problems the AER has suggested in recent decisions exist with the break-even approach, do not withstand closer scrutiny.⁸⁹

Firstly, the AER states that the size and liquidity of the indexed CGS is still limited. Further, increased absolute liquidity in the indexed CGS market does not necessarily imply that this market has become more liquid relative to the nominal CGS market.⁹⁰

However, the smaller size (short supply) of the indexed CGS market was previously attributed as a reason for break-even inflation overstating expected inflation (not understating it). If these 'distortions' still exist then they imply that the actual expected inflation is even lower than the break-even rate.⁹¹

The AER states that the size and liquidity of the indexed CGS market is still limited, referencing a Treasury paper from 2012. The AER references page 7 where the following quote can be found:

"The use of bond market break-evens is also made somewhat problematic by the limited size and liquidity of the indexed bond market in Australia"

However, it is clear from the context that this statement applies to the historical data being used in the paper – not necessarily to the data at the time of writing.

Further, since 2012 there has been significant new issues of indexed bonds. For example, the Treasury paper states: "*In late 2009, however, the AOFM*⁹² *resumed its indexed bond issuance program and the market has since grown to just over* \$16 *billion outstanding. There are currently five indexed bond lines on issue, with maturities ranging from 2015 to 2030.*"

The AER states "Liquidity bias can be material and difficult to identify and remove from the break-even rate - particularly as evidence indicates that it can vary considerably over time." However, of the two papers that the AER cites, one is from 2001 – when the TIPS market was in its infancy (a period when all of the rest of the AER's cited articles agrees that there was a newness/strangeness/liquidity premium) and the other paper similarly covers the period 1999 to 2008 which includes the infancy of the indexed bond market and the GFC.

⁸⁸ CEG: *Best estimate of expected inflation*, September 2016 (ENET096), Section 5.8

⁸⁹ See AER, Draft decision AusNet Services transmission determination 2017-18 to 2021-22: Attachment 3 – Rate of Return, July 2016, p3-133 to 3-136 for the AER's criticisms

⁹⁰ AER Draft Decision, AusNet Services at 3-136

⁹¹ CEG Best estimate of expected inflation, September 2016 (ENET096), at [105]-[106]

⁹² The Australian Office of Financial Management-part of the Department of Treasury and responsible for the management of the Australian Government's net debt portfolio

In relation to CPI swaps as an estimate of expected inflation, Appendix B to the CEG report⁹³ shows that this measure will tend to be biased upwards to account for risk premiums and capital costs for the banks providing these products. Consistent with that, inflation swap estimates of expected inflation remain above break-even estimates and ElectraNet submits they are not an appropriate basis on which to estimate forecast inflation.

Secondly, the AER has alleged four *potential* aspects of bias in the break-even approach. The AER relies upon a number of articles in support of its position. CEG has undertaken a review of the literature relied upon by the AER as well as papers not cited by the AER.

CEG's literature review shows an overwhelming conclusion that the potential sources of bias are small and just as likely to result in an over-estimate of expected inflation as an under estimate.⁹⁴ For example:

- <u>Convexity bias</u> this is said to exist because of two phenomena. Firstly, it is said that nominal security (bond) yields are more volatile than indexed bond yields, and therefore the difference between the two is not purely the inflation expectation of holders.⁹⁵ Secondly, it is said that bond investors are more sensitive to reductions in yield than to increases in yield. Therefore, it is argued, there is a bias which tends to raise nominal bond prices (and so depress their yields), relative to indexed bond prices, narrowing the spread in yields between them and so tending to underestimate the inflation estimate produced by the break-even methodology. The source the AER cites in support of this potential bias is not an empirical study, but is a brief, high-level Bank of England Quarterly article from 2002 (Scholtes 2002). It does not set out any data on which the convexity bias theory might be based and does not attempt to estimate the impact of the convexity bias.⁹⁶
- <u>Inflation risk premium bias</u> the AER notes this generally results in an overestimate of inflation rather than an underestimate. This is confirmed by CEG's review of the Grishchenko and Huang (2012) paper cited by the AER.⁹⁷
- <u>Liquidity premium bias</u> this is said to exist because nominal bonds have a premium in them for liquidity essentially arising from the fact that indexed bonds are relatively less liquid. The AER contends therefore that the difference between nominal and indexed bonds is not purely based on inflationary expectation.⁹⁸ The AER relies on Shen and Corning [2001]. CEG find that the article provides little, if any, support for the AER's propositions⁹⁹ in support of the existence of this potential bias. However, that paper is old and relates to the US securities market.
- <u>Inflation Indexation lag bias</u> this is said to potentially be an underestimate or overestimate and it is potentially small.

⁹³ CEG Best estimate of expected inflation, September 2016 (ENET096)

⁹⁴ CEG, Best estimate of expected inflation, September 201 (ENET096), Section 6, supplemented in CEG Inflation compensation, addendum to September report, December 2016 (ENET097), section 1

⁹⁵ See the AER's explanation in Table 3-20 at Attachment 3, 3-155 of the AusNet Services transmission determination 2017-18 to 2021-22 Draft Decision

⁹⁶ Scholtes, C., 'On market-based measures of inflation expectations', Bank of England Quarterly Bulletin, Spring 2002, p71, CEG, 6.1.3 (ENET054)

⁹⁷ CEG, *Best estimate of expected inflation,* September 2016 (ENET096), Section 6.2.4

⁹⁸ See the AER's explanation in Table 3-20 at Attachment 3, 3-133 of the AusNet Services transmission determination 2017-18 to 2021-22 Draft Decision

⁹⁹ CEG, *Best estimate of expected inflation*, September 2016 (ENET096), Section 6.2.5



Only the convexity and liquidity premium issues are said to result in a potential downward bias of expected inflation forecasts and even if such a downward bias existed, the quantum of any such bias has not been identified by the AER. CEG's review of the literature not relied upon by the AER supports the conclusion that if any bias exists, it is small and does not necessarily result in an under estimate of inflation.¹⁰⁰

As CEG also point out, in regulatory decisions made prior to late 2008, no adjustments for any perceived bias when using the break-even approach to estimate expected inflation were made. When adjustments were later made the estimate of expected inflation used was lower than break-even inflation. That is, consistent with adjusting for an upward bias.¹⁰¹ CEG also explain that the existence of positive bias is confirmed by the existence of CPI indexed bonds.¹⁰²

3.11.6 Summary

The AER's methodology for estimating 10 year inflation results in an estimate that is currently much higher than expectations implied in bond market prices. The AER's approach is not a direct measure of inflation expectations, is not a good estimate of the expected inflation in the market place and is likely to lead to under-recovery of compensation for inflation.

CEG shows that break-even inflation provides a better estimate of expected inflation. The AER's methodology assumes that investors expect that inflation will be in the middle of the RBA target range (2.5%) at horizons beyond 2 years. While this may have been a reasonable assumption historically (and may be in future years) it:

- cannot always be presumed to be reasonable; and
- is not a reasonable assumption in current market circumstances.

As CEG's report shows, in current circumstances the AER's estimate of expected inflation, in particular the assumption that investors expect inflation to average 2.5% beyond 2 years, is at odds with the available evidence, including:

- The AER's estimate of expected inflation has implied in recent times that investors expect a negative real return on the risk free rate. The fact that they can achieve a positive guaranteed real risk free return simply by buying inflation indexed CGS demonstrates this is illogical.
- Break-even inflation estimates (1.97% in ElectraNet's indicative averaging period) are well below AER estimates (recently around 2.4% or 2.5%) even at a horizon of 10 years.
- In the current monetary policy environment, where policy rates are close to the zero lower bound, the greatest risks to inflation are to the downside. This risk is not theoretical, as all Western developed countries currently have monetary policy settings with policy rates close to zero and all are currently undershooting inflation targets.

¹⁰⁰ CEG, *Best estimate of expected inflation,* September 2016 (ENET096), Section 6.3 supplemented in CEG *Inflation compensation, addendum to September report,* December 2016 (ENET097), Section 1

¹⁰¹ CEG Inflation compensation, addendum to September report, December 2016 (ENET097), Section 1.3

¹⁰² Ibid, Section 1.5

- Expected inflation is the actuarially expected inflation (average of all possible inflation outcomes weighted by their probability). So, even if investors perceived that the most likely expected inflation was 2.5%, expected inflation would be below this once the greater downside risks were appropriately weighted.
- Break-even inflation forecasts have been more reliable than the AER's forecasting methodology in recent years. Break-even inflation forecasts accurately predicted the recent fall in inflation below the bottom of the RBA's target range while the AER's methodology did not.
- An expectation that Australian inflation will jump to 2.5% at the end of the RBA forecast period is inconsistent with the fact that Australian (and global) inflation rates have been persistently below target for many years, with instances of deflation in Australia (March quarter 2016 CPI), US, Japan, the UK and the Eurozone. They have also responded more quickly to recent changes in actual inflation than the AER approach.
- Falling 10 year break-even inflation is a statistically significant explanatory variable when regressed against nominal CGS yields suggesting that most of the recent fall in nominal CGS yields is due to falling inflation expectations (not falling required real returns as implicitly assumed by the AER).

Finally, CEG has shown that the AER's perceived limitations of the break-even approach, and its finding that it is not satisfied it would improve its estimate of expected inflation, are unfounded and incorrect.

Based upon the considerations above, ElectraNet's proposal is to use break-even inflation being the only direct and consistent measure of inflation expectations in the market.¹⁰³ Using an indicative averaging period 1 to 31 December 2016 (to be updated for the Final Decision) this gives a ten-year inflation estimate of 1.97 percent. ElectraNet submits that this is the best estimate of expected inflation possible in the circumstances, based on a valid and verified methodology.

3.11.7 The PTRM issue

In recent decisions the AER has raised procedural reasons for not adopting other approaches to estimating expected inflation. The AER's reasoning is summarised below:

- a building block proposal must be prepared in accordance with the AER's PTRM;
- the contents of the PTRM must include a method that the AER determines is likely to result in the best estimates of expected inflation;
- the PTRM can only be amended in accordance with the relevant consultation procedures, which set out a separate process for the review and consultation of the PTRM which is outside of the determination process; and
- it follows that the method for estimating expected inflation cannot be amended through the price determination process.

However, the AER's position that it is unable to change the method of estimating expected inflation as a result of constraints in the Rules for amending the PTRM fails to take account of the following:

¹⁰³ The ERA uses a break-even inflation approach, and we have simply adapted the ERA's Fisher equation spreadsheet model to different dates. This spreadsheet model is available upon request.



- The Rules require that the annual revenue requirement for each regulatory year include an adjustment equal to the amount by which the RAB is adjusted for inflation in that year, as well as amounts for depreciation and a return on capital.¹⁰⁴
- It is necessary for the AER to determine an estimate of expected inflation as an input into these building block decisions.
- The Rules do not require that the inflation estimate used to determine the above building blocks be determined in accordance with the method specified in the PTRM.
- The AER is also required to specify appropriate methodologies for indexation of the RAB.¹⁰⁵
- The AER's determination includes a decision on the annual revenue requirement which must include the indexation of the RAB.
- The PTRM provisions do not relieve the AER of its obligations under the NER to determine an accurate estimate of inflation and to provide the service provider with a reasonable opportunity to recover at least its efficient costs. If the estimate of inflation is inaccurate, the annual revenue requirement will not reflect efficient costs. In turn, this will not result in a decision which promotes the achievement of the NEO, being to promote the efficient investment in, and efficient operation and use of electricity services in the long term interests of consumers. The AER's interpretation leads to a position where it must rigidly apply the method for estimating inflation which is specified in the PTRM without regard to whether that method gives rise to an estimate which meets the requirements of the Rules.
- Further, the consultation procedures on which the AER relies are discretionary and it is completely in the control of the AER whether it reviews and amends the PTRM at any given time. It would be a perverse outcome and contrary to the regulatory scheme if the method for estimating inflation was essentially locked into the PTRM with no ability to review that method or its resulting estimate when applied to a building block determination.

ElectraNet submits that in making the transmission determination, it is open to the AER to apply an alternative method to the PTRM method.

However, ElectraNet acknowledges the Tribunal's decision in *Application by SA Power Networks*¹⁰⁶ (SAPN decision) to the effect that the PTRM was binding on both the AER and SA Power Networks and inflation could not be considered outside of the model.¹⁰⁷ However the Tribunal also noted that the consultation procedures for amending or replacing the PTRM do not appear to preclude a review of the PTRM occurring during a determination process, if there is adequate time within the consultation procedures to do so. It noted that "*In that way a DNSP need not be prejudiced should it wish to advance an alternative model as SAPN sought to do.*"¹⁰⁸

¹⁰⁴ Rule 6A.5.4

¹⁰⁵ Rule 6A.4.2(a)(4)

¹⁰⁶ [2016] ACompT11

¹⁰⁷ At [619]

¹⁰⁸ At [618]

3.11.8 Review of the PTRM

The AER recently commenced a review of its methodology for estimating expected inflation. ElectraNet welcomes the review and submits that the review, including any review of the transmission PTRM under the consultation procedures, if that is necessary, can be conducted in conjunction with ElectraNet's transmission determination process.

In conducting the review, it is accepted that all available methods and possible structural changes to the PTRM (and possibly Rule changes) to address the current difficulties around estimating expected inflation, should be considered. Some alternative approaches that could be considered include:

- Updating the estimate of expected inflation in the PTRM each year for actual inflation this would involve replacing the estimate of expected inflation in each year of the access arrangement period with the actual CPI (out-turn inflation) for the relevant year. For example, at the same time the return on debt is updated each year. We understand that this alternative approach has already been proposed by APA in respect of its Roma to Brisbane Access Arrangement Proposal.
- Rolling forward the RAB in the RFM using the same estimate of expected inflation instead of actual inflation – this would prevent the current mismatch that applies when the estimate of expected inflation used in the PTRM differs from actual inflation used to roll forward the RAB.

In presenting these alternatives, we do not submit that any of them are a better alternative to the break-even approach or that they do not suffer from limitations. Rather, they are included to advance the AER's and stakeholders' consideration of this complex issue. CEG also raise some potentially important issues in terms of how the regulatory regime compensates for deviations between actual inflation and expected inflation at the time of a regulatory determination which should also be considered further.¹⁰⁹

3.12 Interrelationships

3.12.1 Return on equity and the value of imputation credits

There is a recognised interrelationship between the return on equity and the value of imputation credits. Some estimates of the MRP need to be grossed up for the value of imputation credits and a higher theta estimate implies a higher required return on equity.

If the AER were to adopt an estimate of theta of 0.35, while maintaining its current approach to estimating the MRP, ElectraNet submits that no adjustment to the AER's MRP estimate of 6.5% would be necessary. This is because the historic excess returns estimates on which the AER primarily relies for its MRP are relatively insensitive to the estimate of theta.

3.12.2 Interrelationship between the rate of return and expected inflation

As noted in the submissions on Expected Inflation above, there is an interrelationship between:

¹⁰⁹ CEG, Inflation Compensation – Addendum to September Report, 14 December 2016 (ENET097), Section 2



- The method for, and estimate of, expected inflation and the amount that is deducted from total revenue. As explained above, if actual inflation turns out to be materially lower than had been forecast, the deduction revenue will be too large. This will lead to under-recovery of costs over the long-term.
- The allowed rate of return and the estimate of expected inflation. The deduction from the annual revenue requirement for indexation is needed to avoid a "double counting" of inflation. This results from the application of a nominal rate of return to an indexed capital base. It is important that the estimate of inflation that is used to make the negative adjustment to revenue is consistent with expectations which are built-in to the nominal rate of return.



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