Submission to the AER on its Preliminary Determination

Rate of Return – Cost of Debt

Summary

The capital already invested in the network and the financing and costs associated with that capital, has by far the greatest impact on prices. The cost of funding this capital is determined by multiplying the value of the asset base by the proposed rate of return.

It is more important than ever for Ergon Energy to ensure we have an appropriate rate of return to attract funds should we be required to do so.

Our required cost of debt is relatively consistent with the Australian Energy Regulator's Rate of Return Guideline calculations. However, we maintain departures are required in relation to:

- **the credit rating. Ergon Energy considers a BBB credit rating is an appropriate benchmark**
- **the weighting approach. Ergon Energy believes the Post Tax Revenue Model-based weighting approach better meets the National Electricity Rules requirements.**

We are also proposing to apply the "hybrid" debt management transition approach.

Outcomes

We have been able to propose a much lower rate of return, thanks to current market conditions, which is again supporting our commitments around electricity prices.

The updated rate of return of 7.41% in our revised Regulatory Proposal is below the 8.02% we proposed as a placeholder in October 2014 and a reduction on the previous period's 9.72% and the 8.50% rate set in the 2005-10 period (under the regulation of the QCA).

This supports our target to reduce what we charge for the use of our network in 2015-16, and keep increases overall in network charges under inflation for the next five years.

Contents

1. Summary

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

This document details our response to the AER's Preliminary Determination on the cost of debt. Our revised Regulatory Proposal estimates the return on debt in a way that:

- maintains the position in our October Regulatory Proposal concerning consistency with the Rate of Return Guideline on:
  - adoption of a 10 year term to maturity
  - use of an independent third party data provider to estimate the return on debt
- maintains our departure from the Rate of Return Guideline concerning:
  - the notional credit rating assumption
  - the weighting approach
- departs from the Guideline and adopts the "hybrid" transition (also referred to as Option 3 in the AER's Preliminary Determination).

As part of our revocation and substitution submission, we are submitting a revised regulatory proposal. For the reasons set out in this submission, we consider:

- The AER's approach to transition leads to a significant mismatch between the permitted return and the actual costs of a long-term staggered debt portfolio and base rate hedging that the AER has acknowledged to be the efficient approach to financing under the "on the day" method.
- The AER's transition effectively substitutes an "on the day" debt benchmark taken at a time of record low interest rates for the actual efficient costs of a benchmark efficient firm.
- The AER proposes to set an allowed rate of return during the regulatory control period that effectively "rolls the dice one last time" by starting the regulatory control period with another 100% "on the day" allowance that will only progressively be replaced over the next 10 years.
- There is no legislative basis to "carry over" alleged windfall gains or losses from any previous regulatory control periods when applying the rate of return objective on a forward looking basis.
- Proper assessment and analysis suggests that Ergon Energy will be significantly under-compensated if the AER proceeds with a transition on the debt risk premium component of the return on debt in the regulatory control period 2015-20 to square up the perceived windfall gain in the regulatory control period 2010-15 without having regard to the cumulative outcome under the on-the-day approach for Ergon Energy between 2001/02 and 2014/15, which is actually a windfall loss.
- Given there is no 'windfall' gain to be brought to account because it is both factually absent and legally impermissible, the only appropriate transition is one that reflects the actual transactions that an electricity network business would enter into to move from a staggered long-term debt portfolio with base rate hedging to the long-term position in which the hedging component is progressively unwound.
- Our proposed PTRM-weighted trailing average correctly compensates a NSP who considers the prevailing cost of debt to be fairly priced when planned capital expenditure is undertaken, which is reasonable in an efficient market.

- It is important to set the benchmark credit rating by taking a period rather than an instantaneous average while on the other hand ensuring that the data is not too dated. Businesses that benefit from implicit government guarantees are inappropriate to include in the comparators sample.

Ergon Energy has structured this document in the following manner:

- Chapter 2 sets out the positions put forward by Ergon Energy in our October Regulatory Proposal.
- Chapter 3 outlines evidence that has been submitted since the lodgement of our October Regulatory Proposal that is relevant to our response, as well as other influencing factors.
- Chapter 4 summarises the AER's Preliminary Determination in relation to the cost of debt.
- Chapter 5 provides our response to the positions adopted by the AER and details amendments made in our revised Regulatory Proposal.

2. Ergon Energy's October Regulatory Proposal

Ergon Energy's Regulatory Proposal submitted on 31 October 2014 adopted many aspects of the AER's Rate of Return Guideline (the Guideline). This included an acceptance that the allowed return on debt could be determined by gradually moving from the "on the day" method of estimating the return on debt to the trailing average method in a manner that was consistent with the Guideline.

Nevertheless, we still submitted that a departure from the Guideline was necessary. We explained that the benchmark credit rating should be BBB not BBB+. We considered it necessary to depart from the "simple" weighting approach where equal weights are applied to all elements of the trailing average in favour of a weighted average, based on changes in the Post Tax Revenue Model (PTRM) debt balance.

We felt a departure was necessary because a PTRM-based weighting approach better satisfies the requirements of the National Electricity Rules (NER):

- it reduces the difference between the actual and benchmark return on debt, as per clause 6.5.2(k)(1) of the NER
- it is also a clear, transparent approach that can be easily implemented and reflects the practices of a benchmark efficient network service provider (NSP).

Our proposal identified several shortcomings with the "simple average" advocated in the Guideline. We noted that it cannot recognise deviations in capital expenditure which will similarly be reflected in uneven borrowing profiles across the regulatory control period. In its Guideline the AER argued that applying a PTRM-weighted approach may change the definition of the efficient benchmark firm. However, in our October Regulatory Proposal, we explained why we disagreed with this position as the method of calculation is irrelevant to the issue of what is considered the efficient benchmark firm.

We noted the approved capital expenditure within the PTRM is based on the AER's own decision based on the criteria and factors in the NER. Applying a PTRM weighted approach to the calculation of the cost of debt does not affect this. In fact, *regardless* of how the cost of debt is determined, the AER's approved PTRM debt balances will be used to determine the dollar value of the return on debt allowance. All Ergon Energy is proposing is that increases in the debt component of the forecast capital expenditure approved in the PTRM are compensated at the prevailing cost of debt rather than the historical average cost of debt.

3. Other influencing factors

The transition to the trailing average method is without question the most significant issue concerning the debt allowance in this regulatory control period for regulated NSPs.

We explain below that downward movements in the debt risk premium has revealed a flaw in the AER's approach of phasing in the trailing average in the way described in the Guideline. Using the prevailing market data at the time the AER's Guideline developed, we were comfortable that the AER's approach to transition would deliver a reasonable approximation for the transition that a real electricity network business will have to go through in response to the adoption of the trailing average form of regulation.

In the period since lodging our regulatory proposal the debt risk premium has fallen further and this "on the day" fall relative to efficient hybrid debt financing practices further depressed the over-all weighted average cost of capital relative to market rates. Ergon Energy, like other network businesses have realised that, to deliver a market based return, it would also be necessary to remedy flaws in the AER's approach on debt by bringing it back into alignment with the efficient hybrid debt financing practices of a benchmark efficient entity.

We observe that TransGrid and the Networks New South Wales (NSW) businesses have sought a cost of debt that applies no transition, as they employed the trailing average approach under the previous NER. They have argued that was the approach that was efficient for them – that their large size prevented them from adopting the hybrid approach because the swaps market is not sufficiently deep to meet their requirements.

We note that the AER has raised new matters in relation to debt financing practices of the benchmark efficient entity which are relevant to the issue of transitional arrangements. In particular, the AER acknowledges that the benchmark efficient entity would have a portfolio of long term debt with a staggered portfolio of issuance and maturity.[1]

The new analysis and evidence referred to by the AER implies that there is no longer a rational basis for adopting the transitional arrangements set out in the Guideline and adopted by Ergon Energy in our October Regulatory Proposal.

We also observed that Jemena Gas Networks (Jemena) submitted changes to its proposed approach to debt transition. It stated:

> "In light of the AER's new findings (in the draft decision) relating to efficient debt financing practices under the previous regulatory approach, and the material departure of the newly proposed rationale for the proposed transition of the DRP in the draft decision—which consciously forces or seeks a mismatch between actual and allowed return on debt—it is clear that the [under the] guideline approach … there will be a mismatch between the allowed return on debt and the required return on debt for the benchmark efficient entity.

[1] AER Preliminary Determination Attachment 3, p3-444.

At the time of JGN's original proposal the mismatch generated by adopting the guideline approach was not material and the rationale behind the approach was not set out as a conscious design to achieve a net loss for the services provider in the forthcoming period. This mismatch is now significant and this conceptual departure material."[2]

Jemena included the following expert reports in support of its revisions. Both reports are available on its website and have been reviewed by the AER:

- Gray (SFG Consulting), *Return on debt transition arrangements under the NGR and NER*, February 2015
- Hird and Young (CEG), *Critique of the AER's JGN draft decision on the cost of debt*, April 2015.

We observe that after initially proposing an allowed return determined by gradually moving from the "on the day" method of determining debt to the trailing average method in a manner that was consistent with the Guideline, SA Power Networks advocated for a different approach. It considered establishing the allowed rate of return for debt commonly referred to as the "hybrid" approach would provide a transition path that a benchmark firm could in reality implement.[3]

We engaged Professor Stephen Gray of Frontier Economics to provide additional advice on the factors since we lodged our October Regulatory Proposal. We have taken into account his evidence when revising our Regulatory Proposal[4].

3.1. Trailing average, transition and the AER Guideline

Further downward movements in the debt risk premium significantly further depressed the overall weighted average cost of capital and revealed flaws in the AER's approach on debt. The AER's approach to transition leads to a significant mismatch between the permitted return and the actual costs of a long-term staggered debt portfolio and base rate hedging that the AER has acknowledged to be the efficient approach to financing under the "on the day" method.

The mismatch arises because the AER's transition effectively substitutes an "on the day" debt benchmark taken at a time when the debt risk premium is depressed [relative to an historical average] for the actual efficient costs of a benchmark efficient entity that reflects the costs of raising debt over the last 10 years. The AER has acknowledged that the benchmark efficient entity would today have long-term debt with staggered maturities reflecting an average of interest rates for debt raised throughout the last 10 years with hedging of the base interest rate. However, the AER proposes to apply a significantly lower debt risk premium. Further, as the next regulatory control period commences in 2020, that lower debt premium would still be contributing a 50% weight to a firm's debt allowance when, in reality, the debt would have been raised at higher prevailing costs.

[2] Jemena Gas Networks (2015), *2015-20 Access Arrangement, Response to the AER's draft decision & revised proposal*, *Appendix 7.10 – Return on debt response,* 27 February 2015, section 4.2, p37.
[3] SA Power Networks (2015), *Submission to the AER on the SAPN Issues Paper*, 30 January 2015, p10.
[4] Gray (Frontier Economics) Cost of Debt Transition, June 2015

In its defence of the Guideline approach, the AER argues it is using the "QTC method" for calculation. We understand this expression to refer to submissions made by Queensland Treasury Corporation (QTC) in 2012 as part of the Australian Energy Market Commission's (AEMC) review of proposed changes to the NER. One of the main proposed changes was for the allowed return on debt to be determined using a trailing average of historical benchmark debt yields.

During the AEMC's consultation process, a number of NSPs and the AER expressed concerns over the use of a trailing average approach:

- Some NSPs were concerned that their existing base rate (i.e. swap) hedges would need to be unwound prior to maturity.
- The AER was concerned that NSPs would opportunistically switch between the on-the-day and trailing average approaches based on differences between the prevailing and historical average benchmark debt yield.
- A continuous historical time series of the 10-year BBB+ debt risk premium (DRP) was not available at the time.

To address these specific concerns, QTC proposed a transitional arrangement where the starting value of the allowed return on debt equals that average 10-year benchmark debt yield during a NSP's next rate reset period. It is important to note that QTC's primary objective at that time was to obtain broad stakeholder support for a trailing average approach. Without a transition that took into account the concerns identified above, it is unlikely that NSPs and the AER would have supported the trailing average approach.

Subsequent to QTC's original proposal the AER determined NSPs would not have the option to switch between different return on debt approaches, and that the same trailing average approach will apply to all NSPs. In addition, historical estimates of the 10-year benchmark debt yield became available from the Reserve Bank of Australia (RBA) from January 2005. As a result, concerns over opportunistic switching by NSPs and data availability (which the QTC submissions were focused toward) are no longer relevant.

The AER's draft decisions for the NSW and Australian Capital Territory (ACT) NSPs represented the first implementation of the AER's proposed transition arrangements. In those decisions, the AER set out the detail about precisely how its proposed transition will work. The AER also set out its rationale for the proposed transition. This rationale is based largely on a report from Lally (2014) that the AER published along with its draft decisions. That is, these draft decisions represented the first proper articulation of the AER's rationale for transitional arrangements.

The AER has "refined" its rationale in the final decisions for NSW/ACT NSPs and this position is largely reflected in the AER's Preliminary Determination for Ergon Energy. This is outlined in Chapter 4.

4. AER's Preliminary Determination

The AER rejected our rate of return because it was not satisfied that Ergon Energy's proposed (indicative) 8.02 per cent rate of return for the 2015–16 regulatory year was determined such that it better achieved the allowed rate of return objective

The AER substituted a lower rate of return (5.85 per cent), because it was satisfied this lower rate of return was allowed rate of return is commensurate with the efficient financing costs of a benchmark efficient entity with a similar degree of risk as that which applies to Ergon Energy in providing standard control services.

Importantly, in setting this lower rate of return, the AER did not accept the arguments raised by many NSPs about prevailing conditions which highlight the significant mismatch between the permitted return and the actual costs of a long-term staggered debt portfolio and base rate hedging. The AER's reasoning as to why it did not accept the arguments in decisions for other NSPs, is summarised below.

4.1. Approach to transition

In its Preliminary Determination, the AER reaffirmed that an efficient practice of a benchmark firm regulated under the previous "on the day" method would have been to raise long-term debt on a staggered basis and hedge against movements in the base interest rate between the date debt is actually raised and the regulatory averaging period. The AER also noted that the debt management practices actually adopted by the businesses under the previous NER are irrelevant in assessing the proposed transition arrangements from the hybrid debt management approach to the trailing average approach.

The Preliminary Determination considered four possible options for transition including the hybrid method (which was one of the options rejected). The key considerations were based on work by Lally. At page 149 of the AER Preliminary Determination for SA Power Networks, the AER summarises Lally's advice as follows:

> "The NPV principle is a fundamental principle of economic regulation. The NPV principle is that the expected present value of a benchmark efficient entity's regulated revenue should reflect the expected present value of its expenditure, plus or minus any efficiency incentive rewards or penalties. In other words, departures from cost recovery are acceptable and desirable, so long as they are the result of management induced efficiencies or inefficiencies, rather than windfall gains or losses. Windfall gains or losses would result in a service provider being over- or under-compensated for its efficient costs. The building block model which the NER require us to use is based on this principle." [5]

5 AER Preliminary Determination Attachment 3 at [3-444].

"[T]here is a strong connection between the NPV principle, the allowed rate of return objective and the NEL revenue and pricing principle of providing service providers with a reasonable opportunity to recover at least efficient costs. Lally advised that each of these principles or objectives are equivalent. We therefore consider it is useful to assess the four return on debt approaches for consistency with the NPV principle."[6]

4.2. The effect of the AER's proposed transition:

There are two components of the yield on 10-year BBB+ corporate bonds:

- the base risk-free rate (or base swap rate); and
- the DRP (or swap risk premium)

The base risk-free rate is the rate that the market would require from lending to a borrower that presents negligible risks of being unable to service the debt in full.

The DRP is a premium to compensate the lender for risks including, for example, the risk that the particular borrower might default or be downgraded such that the market value of the debt falls. Other things being equal, the more likely the lender is to default, the higher the DRP required by lenders[7].

Both components are currently lower than their average over the last 10 years. Consequently:

- If there is no transition (such that the trailing average approach is implemented immediately) the allowed return on debt will reflect the (higher) 10-year trailing average immediately.
- Under the AER's proposed transition, the (higher) risk-free rate and DRP over the last 10 years will never enter the allowed return on debt. Rather, the allowed return at the beginning of the next regulatory control period will reflect the (lower) current yields.

The AER notes that its benchmark efficient firm will finish the current regulatory control period with:

- a base risk-free rate that reflects the current rate of the day. The interest rate swaps issued at the beginning of the regulatory control period will conclude at the end of the current regulatory control period leaving the firm with exposure to the current base risk-free rate, and
- a DRP that reflects the 10-year trailing average, since the DRP is set when the debt was originally issued (10% per year over the last 10 years).

This would seem to imply a transition approach whereby:

- a 10-year transition is applied to the base risk-free rate, and
- the DRP allowance is immediately set according to the 10-year trailing average without any transition.

This is because:

[6] Ibid.

[7] Frontier, *Cost of Debt Transition,* June 2015, para 14

- The assumed efficient firm has an actual DRP cost that already reflects a 10-year trailing average, so no transition is required for that component. Moving straight to the trailing average approach for that component would produce a match between the regulatory allowance and the efficient debt service cost.
- The assumed efficient firm begins the next regulatory control period with exposure to the spot base risk-free rate. It will take 10 years before the firm's exposure to the base risk-free rate reflects a 10-year trailing average. Consequently, a 10-year transition period is required to produce a match between the regulatory allowance and this component of the efficient debt service cost.

The AER adopts the above rationale for the risk-free rate component, however introduces a new rationale for also applying its transition approach to the DRP. The AER claims that, at the beginning of the current regulatory control period (i.e. five years ago), the DRP was at a relatively high level, which resulted in a "windfall gain" for the benchmark firm – the AER considers that the benchmark firm would have locked in the DRP progressively over the previous 10 years, but then allowed a return based on the (higher) DRP at the beginning of the regulatory control period under the previous NER. Indeed, this sort of mismatch between the regulatory allowance and the efficient debt service cost is the reason for the AER adopting a new approach under the new NER.

The AER notes that the current DRP is lower than the 10-year trailing average. The AER argues that it should apply the current (lower) DRP rather than the (higher) 10-year trailing average as a way of squaring up or balancing out the perceived "windfall gain" from the previous regulatory control period. The AER's perceived "windfall gain" over the last regulatory control period would be squared up by deliberately imposing a "windfall loss" over the forthcoming regulatory control period by setting the regulatory allowance (based on the current DRP) below the efficient cost (which reflects a 10-year trailing average). The AER's rationale on the DRP effectively amounts to a "claw back" of outcomes from past regulatory control periods, which is not allowed under the NER.

The AER considers that the debt management approach that was actually adopted by the businesses under the previous NER is irrelevant. The AER considers that the efficient benchmark firm would have adopted the hybrid debt management approach under the previous NER and therefore this is the appropriate benchmark and all firms should be assessed on this basis. By extension, the transition approach also needs to be assessed on this basis. The purpose of the transition is to avoid the requirement for the benchmark firm to close out (prior to maturity) any hedging transactions (interest rate swaps) that were put in place under the previous on-the-day approach.

The transition arrangement that is appropriate for a hybrid debt management approach is for a 10-year transition to apply to the base risk-free rate only, as the DRP already reflects a 10-year average (referred to as the hybrid transition). The hybrid transition correctly reflects the efficient costs that can be achieved by the benchmark firm in performing actual debt transactions in the market to transition from the efficient hybrid debt management approach under the previous NER to the trailing average approach under the new NER.

In summary, the AER's proposed transition reduces the allowed revenues for regulated firms and does not correctly reflect the efficient costs that can be achieved by the benchmark firm in transitioning from a change in regime relating to the efficient debt management strategy (hybrid approach) under the previous NER to the efficient debt management strategy (trailing average approach) under the new NER.

4.3. Calculating the trailing average

The AER's Preliminary Determination transitions NSPs to the trailing average portfolio approach over a period of 10 years. In applying this approach, the AER determines the allowed rate of return on debt in the first regulatory year based on the estimated prevailing rate of return on debt for that year (consistent with the "on the day" approach). In subsequent years historic weights are progressively averaged in, with the prevailing rate in each year having a weight of 10 per cent.

The AER used an equal (simple) weighted trailing average approach to estimate the return on debt and, in doing so, rejected Ergon Energy's proposal to base the weighting approach on the debt component of the forecast capital expenditure approved in the PTRM.

> "Energex and Ergon Energy's proposals presented some evidence to suggest how the PTRM-weighted average might better promote these two factors. However, we are not satisfied that the PTRM-weighted average will necessarily better promote these two factors in all circumstances." [8]

The AER's Preliminary Determination includes its own conceptual consideration of our proposed approach, which is not controversial:

- The approach weights the prevailing rates in each of the past 10 years by the amount of debt that the NSP forecasted in its PTRM to have raised in that year.
- Using the Guideline capital structure assumption (60:40) where the capital expenditure forecast of a NSP leads to an increase in its Regulatory Asset Base (RAB) in the PTRM, the NSP's debt portfolio in the PTRM will also increase by the assumed capital structure percentage.
- If a NSP is increasing its debt portfolio, it is raising new debt in addition to refinancing the maturing portion of its existing debt portfolio.

The AER also made it clear that its satisfaction criteria should be based on its own assessment of what produces the better outcome. Specifically, the AER considers that one approach to determining the allowed return on debt will generally meet the requirements of the rules better than another approach if it produces an allowed return on debt that more closely reflects the return on debt of the benchmark efficient entity. However, it also accepts that assessment task is difficult and must be done mainly with regard to conceptual considerations.[9]

[8] AER, *Preliminary Determination Attachment 3*, p139.
[9] AER, *Preliminary Determination Attachment 3*, p438.

5. Our response

5.1. Overview

In the current regulatory process, there are four distinct avenues by which Ergon Energy may express its views:

(a) in the regulatory proposal itself (lodgement of which is provided for in clause 6.8.2 of the NER)

(b) in information "accompanying" the regulatory proposal (which a number of rules recognise as a distinct category of material from the regulatory proposal itself – see clause 6.9.1(a)(3) and clause 6.11.1(b)(1) of the NER)

(c) in a submission lodged by the business during the periods in which the AER invited submissions on the Preliminary Determination (see clause 6.9.3(a)(5)), and

(d) in the submissions in response to the revocation and substitution of the Preliminary Determination (see clause 11.60.4(b) of the NER which expressly states that "any person" may make a submission and which adds that "Without otherwise limiting the manner in which the affected DNSP may make such submissions, the affected DNSP may make a submission in the form of revisions to the *regulatory proposal* that it submitted to the *AER* in relation to the distribution determination referred to in paragraph (a).").

In relation to (c) above, there is no explicit limitation preventing Ergon Energy from making a submission on our own Regulatory Proposal and, indeed, clause 6.11.1A(d) of the NER explicitly acknowledges Ergon Energy might make submissions on a revised Regulatory Proposal both during and after the AER's invitation to make submissions has expired.

Looking forward, our revocation and substitution submission amends aspects of what we originally proposed based on the AER's Preliminary Determination, and other influencing factors that have occurred since we lodged our October Regulatory Proposal eight months ago.

5.2. Response to AER's decision on trailing average

5.2.1. Transition to the trailing average method

The Preliminary Determination acknowledges that the benchmark firm regulated under the "on the day" method would have raised long term debt on a staggered basis with hedging for movements in base interest rates to minimise (but not eliminate) the effect of movements in base interest rates between the regulatory averaging period and the time debt was actually raised on the difference between the allowed and actual costs of debt.

The AER notes in their recent draft decisions for Jemena Gas Networks (Ltd):

> "We consider an efficient financing practice of the benchmark efficient entity under the on-the-day approach would have been to borrow long term and stagger the borrowing so that only a small proportion of the debt matured each year. We consider the benchmark efficient entity would have combined this practice with interest rate swap contracts to match the risk free rate component of

its return on debt to the on-the-day rate. Specifically, we consider an efficient financing practice would have been:

- To borrow long term (10 year) debt and stagger the borrowing so that only a small proportion (around 10 per cent) of the debt matured each year

- To borrow using floating rate debt (or to borrow fixed rate debt and convert this to floating rate debt using fixed-to-floating interest rate swaps at the time of issuing the debt and which extended for the term of the debt, being 10 years), and

- To enter into floating-to-fixed interest rate swaps at, or around, the time of the service provider's averaging period and which extended for the term of the access arrangement period, being typically 5 years)." [10]

In practice, service providers adopted a range of different financing strategies under the previous Rules. The most common strategies used as noted by Professor Stephen Gray of Frontier Economics were:

a. "Trailing Average" or "fixed-rate staggered maturity" approach: A number of service providers adopted the approach of issuing fixed-rate debt on a staggered maturity cycle. This is the approach that is generally adopted by unregulated infrastructure service providers. It is also the same approach that the AER now considers would be adopted by the benchmark efficient entity under the current Rules; and

b."Hybrid" approach: A number of service providers adopted the strategy of issuing floating rate debt (or fixed rate debt converted to floating rate debt using interest rate swaps) on a staggered maturity cycle and using interest rate swaps to fix the rate at the beginning of each regulatory period. This is the approach that the AER considers to have been the efficient approach under the previous Rules".

Under the trailing average approach, the firm issues 10% of its debt financing needs each year as fixed-rate 10-year debt. Thus, each year 10% of the firm's debt matures and it is replaced by a new issuance of 10-year fixed-rate debt.

[10] AER (2014), Draft *Decision, Jemena Gas Networks (NSW) Ltd Access Arrangement 2015-16 to 2019-20, Attachment 3 – Rate of return*, November 2014, p1114.

> Under the hybrid approach, the service provider would also issue approximately 10% of its total debt requirements, each year, but in the form of 10-year floating rate debt (or 10-year fixed-rate debt swapped to floating). This would commit the firm to debt service costs that consisted of a floating base rate that changed from quarter to quarter (usually set according to the bank bill swap rate) plus a fixed debt risk premium that is determined when the debt is first issued and which is fixed for the life of the loan." [11]

Professor Stephen Gray further notes:

> "There is debate between some service providers and the AER about the debt management strategy (or strategies) that would have been "efficient" under the previous Rules. **Both strategies that have been considered involve the firm entering the forthcoming regulatory period with a DRP cost that reflects the 10-year trailing average**. Thus, it appears to be uniformly accepted that, in relation to the DRP, the efficient cost over the forthcoming regulatory period will equal the 10-year trailing average".[12]

The AER also correctly notes, that under the efficient debt financing approach under the previous Rules:

> "This financing strategy would have resulted in the risk free rate component of the benchmark efficient entity's actual return on debt matching the on-the-day rate, **while the debt risk premium component each year would reflect the historical average of the debt risk premiums over the previous 10 years**" [13]

Despite this, the AER proposes to set an allowed rate of return during the regulatory control period that effectively starts with another 100 per cent "on the day" allowance that will only progressively be replaced over the next 10 years in accordance with the AER's proposed transitional arrangements. In this regard, the AER states:

[11] Frontier Economics (2015), Cost of Debt Transition, paragraphs, 18-20.
[12] Frontier Economics (2015), Cost of Debt Transition, paragraph 10 (b).
[13] AER, ActewAGL draft decision, Attachment 3: Rate of return, p. 3-115 – 3-116.

"We adopt the same transitional arrangements for **both** the risk free rate and debt risk premium components of the return on debt. **However, our reasons for adopting transitional arrangements differ for these two components.**" [14]

Even as the next regulatory control period commences the AER's final use of the previous "on the day" allowance will still continue to determine 50 per cent of our debt allowance. The "on the day" data will apply for 10 years when previously it was used for a maximum of five years. However, the real problem with the transition is that it is loaded against the business. We know that interest rates (both base rates and DRP) are lower now than they were over the last 10 years over which debt was issued.

Recall, that an efficient benchmark business would have a staggered debt portfolio that includes bonds issued at much higher interest rates than currently prevail so we know with almost complete certainty that the allowance set according to the AER's methodology will not cover the efficient costs of the benchmark firm over the next 10 year period until the transitionary final use of the "on the day" allowance has completely worked its way out of the system.

In its draft decision for the NSW NSPs, the AER introduced a new rationale for applying its transition approach to the DRP. The AER claims that, at the beginning of the current regulatory control period (i.e. five years ago), the DRP was at a relatively high level, which resulted in a "windfall gain" for the benchmark firm – the AER considers that the benchmark firm would have locked in the DRP progressively over the previous 10 years, but then been allowed a return based on the (higher) DRP at the beginning of the regulatory control period under the previous NER. Indeed, Ergon Energy understands that this sort of mismatch between the regulatory allowance and the efficient debt service cost is the reason for the AER adopting a new approach under the new NER.

The AER's proposed DRP transition will be applied to an average PTRM debt balance (measured over the next 10 years) that is higher than the average balance during the period when the alleged net windfall gains occurred. This is relevant to Ergon Energy given the large increase in debt between 2001 and 2015.

Even if the AER is legally permitted to consider past outcomes, there is no reason to assume that the dollar value of any past gains (which must have occurred when the PTRM debt balance was smaller) will match the future losses that the AER intends to propose (which will be based on a larger average PTRM debt balance over the next 10 years). Furthermore, the expected loss is sensitive to the AER's on-the-day DRP estimate during a service provider's next rate reset period.

In relation to the AER's proposed transitional arrangements, Professor Stephen Gray notes:

"…the AEMC did not allow for possible transitional arrangements as a means of clawing back (or squaring up) past gains or losses. Rather, the AEMC stated that the purpose of transitional arrangements is to allow service providers to **unwind any financial arrangements that might have been put in place under the previous Rules**. That is, the purpose of the transitional

[14] AER (2014), Draft *Decision, Jemena Gas Networks (NSW) Ltd Access Arrangement 2015-16 to 2019-20, Attachment 3 – Rate of return*, November 2014, pp112.

> arrangements are to allow a service provider who had adopted one debt management strategy under the previous Rules to transition to a new debt management strategy under the new Rules" [15]

The unwinding arrangements the AEMC refers to relates to the base rate and not the DRP.

Whether the firm had adopted the hybrid or the trailing average approach under the previous Rules, the DRP has been locked in progressively over the last 10 years when the firm issued debt. Consequently, as of today, the DRP component of the firm's actual efficient cost of debt is equal to the 10-year trailing average.

Professor Stephen Gray notes:

> "If, under the current Rules, the AER moves immediately to a 10-year trailing average for the DRP component of the return on debt there would be no windfall gain in relation to the DRP. This is because, over the forthcoming regulatory period there would be a match between:
>
> a. The allowed DRP – which would be set according to the 10-year trailing average; and
>
> b. The DRP that would be incurred by the benchmark firm – also set according to the 10-year trailing average. " [16]

In relation to the AER's argument that the NER permit it to consider "any impact'of the change in the NER, Professor Stephen Gray notes:

> "…Moreover, in relation to the DRP the change of rules has no impact on the efficient practice of the benchmark efficient entity – there is uniform agreement that the benchmark efficient entity would be doing exactly the same thing under the new Rules as the old and that the efficient cost would be the same under the new Rules as the old" [17]

While other criteria have been included in the Preliminary Determination, from our review the AER's main reason for imposing an approach that now results in a substantive under-recovery is to off-set what it argues are windfall gains made from the application of the "on-the-day" approach.

For both legal and economic reasons we cannot agree with the AER's approach, based on Lally's advice, to interpreting the National Electricity Law (NEL) and clause 6.5.2 of the NER.

[15] Frontier Economics (2015), Cost of Debt Transition, paragraph 71.
[16] Frontier Economics (2015), Cost of Debt Transition, paragraph 44.
[17] Frontier Economics (2015), Cost of Debt Transition, paragraph 90.

Professor Stephen Gray considers the AER's rationale on the DRP transition is, in effect, a rule change.

> "The regulatory adjustment is, in effect, a rule change. The AER does not consider that it misapplied the Rules in its previous determination. Rather, the AER's view is that its proper application of the Rules to its previous determination has produced an outcome that it disagrees with, and it now seeks to redress that by setting the forthcoming regulatory allowance below its own assessment of the efficient cost. In effect, this amounts to the AER retrospectively changing the rules that applied to the previous regulatory period" [18]

Additionally, Professor Gray notes:

> "Also, whereas the AER suggests that its change in methodology has the effect of creating a "windfall gain" for the firm, it does not. If there was any sort of gain over the previous regulatory period it was not the result of changing the methodology, but rather the result of properly applying the Rules that covered the previous period. The only result of changing the methodology (in relation to DRP) is to eliminate henceforth any difference between the allowed "return on debt and the return on debt of a benchmark efficient entity" in the future." [19]

Inconsistency with regulatory requirements

First, the Net Present Value (NPV) concept referred to by Lally is not explicitly referred to in name or concept anywhere in the NEL or the NER. Nor are we aware of any Court or Australian Competition Tribunal case that has recognised that the NPV principle is implicit in the requirements of the economic regulatory instruments. Although it may be the case that in certain circumstances Lally's NPV principle would lead to the same outcome as applying the allowed rate of return objective, the National Electricity Objective or the revenue and pricing principles, there is a significant danger that applying the NPV principle instead of the legal requirements as drafted may lead to a result that is inconsistent with those legal standards. For the reasons set out below, there is a risk that applying Lally's NPV principle would lead the AER into error where the timeframe over which Lally advocates that the analysis should be undertaken is at odds with the timeframe for decision making required by the NEL and the NER.

Second, it cannot be that Lally's NPV concept can be simultaneously "equivalent" to both the allowed rate of return objective and the revenue and pricing principle that requires businesses to be given a reasonable opportunity to recover efficient costs because those two legal standards are distinct and separate considerations. In recognition of the need to foster efficient investments, the revenue and

[18] Frontier Economics (2015), Cost of Debt Transition, paragraph 80 (b).
[19] Frontier Economics (2015), Cost of Debt Transition, paragraph 91.

pricing principle sets out a principle that establishes a *minimum* ability for regulated businesses to have a reasonable opportunity to recover *at least* their efficient costs. This revenue and pricing principle is to be taken into account by the AER *when exercising an economic regulatory function* and the only such functions of the AER concern the making of regulatory determinations applying to defined regulatory periods.

By contrast, the allowed rate of return objective which must be satisfied *at the time of the regulatory determination* applying to the return on equity and debt *for the regulatory control period*, that the allowed rate of return should be commensurate with the efficient financing costs of a benchmark efficient NSP. Additionally, there is a recognition that there may be impacts (most obviously additional costs arising from the change) that a business may experience when there is a change of regulatory approach and this impact should be taken into account in the allowed rate of return for debt. It is conceivable that there may also be some impacts of a change in regulatory approach that enable the business to make savings but it stands to reason that these are likely only to arise concurrently with additional costs and so they would be taken into account as a smaller net cost impact.

The allowed rate of return objective targets an optimal debt allowance and it is therefore quite distinct from and not equivalent to the concept that the network business should be provided with at least a reasonable opportunity to recover its efficient costs.

As the AER's Preliminary Determination itself illustrates, the NPV principle asserts both a minimum and a maximum and in that respect it is similar to the allowed rate of return objective but dissimilar from the revenue and pricing principle. Indeed, in the AER's Preliminary Determination it is asserted that the NPV principle requires that the allowance that would otherwise be permitted be *reduced* to remove an alleged windfall gain that a *minimum* revenue requirement can, by itself, never require. In other words, the revenue and pricing principle which sets out a minimum cannot be "equivalent to" either the allowed rate of return objective nor the NPV principle as each of these establish a target that is neither a minimum nor a maximum.

Further, the NPV principle is said to apply over the life of the regulatory assets that in Ergon Energy's case include many assets that predated the National Electricity Market (NEM) and modern economic regulation. By contrast, the allowed rate of return objective and the revenue and pricing principle must be applied at the time of the regulatory determination in relation to the regulatory control period.

More specifically, clause 6.12.1 requires the AER to make a determination concerning the allowed rate of return at each regulatory determination for a defined regulatory control period in accordance with clause 6.5.2. In this case, that period is the period 2015 to 2020. Consistent with CPI-X regulation, the NER are written with all the relevant concepts expressed in the present tense to apply on their terms at the time of the determination – not over an extended retrospective period. Clause 6.5.2(b) of the NER provides that:

> The allowed rate of return is to be determined such that it achieves the allowed rate of return objective.

Clause 6.5.2(c) of the NER provides that:

The *allowed rate of return objective* is that the rate of return for a *Distribution Network 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 *Distribution Network Service.*

Clause 6.5.2(h) of the NER provides that:

The return on debt for a *regulatory year* must be estimated such that it contributes to the achievement of the *allowed rate of return objective.*

Clause 6.5.2 (j) of the NER provides that:

Subject to paragraph (h), the methodology adopted to estimate the return on debt may, without limitation, be designed to result in the return on debt reflecting:

(1) 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 making of the distribution determination for the regulatory control period;

(2) 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 regulatory control period; or

(3) some combination of the returns referred to in subparagraphs (1) and (2).

Additionally, clause 6.5.2(k) of the NER provides that:

In estimating the return on debt under paragraph (h), regard must be had to the following factors:

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

…

(3) 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

(4) 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.

Third, the Lally approach is a significant abrogation of the "guarantee" inherent in the CPI-X form of regulation to the effect that once a regulatory control period is passed, subject to any explicitly defined carry-over incentive, the past revenues cannot be clawed back nor can past cost over-runs be claimed. This is the fundamental economic principle that would inform the interpretation of how the rules should apply across periods.

Even if there were a windfall gain to be had, that gain would have occurred in the previous regulatory control period and under the Australian "CPI-X" form of regulation reducing a firm's prospective allowance based on past over-recovery is not permitted. CPI-X regulation was adopted into Australia from the United Kingdom where it was known as "RPI-X" regulation. This form of regulation was devised by now Professor Littlechild when he was a civil servant in the UK's Royal Treasury working on the privatization of British Telecom in the mid-1980s.

The distinguishing feature of RPI-X regulation,[20] in the words of Littlechild himself, is that the business' allowed revenues are established for the full regulatory period of approximately five years (four at the time Littlechild initially invented the system) and this return is "guaranteed"[21] for the business over the life of the regulatory proposal regardless of whether in fact its costs are higher or lower than the regulatory allowance established.

This is why even today the regulatory structure provides for a multiple year regulatory control period and why clause 6.5.9 still today refers in detail to the establishment of "X-factors".

Under the current regulatory regime, the position prior to the advent of the NEM is wholly irrelevant. Even if the charges of the Queensland Competition Authority could be demonstrated to have provided net subsidies to customers or to have involved raising revenues for the owners in relation to the network assets that Ergon Energy still operate today, these became bygones when national economic regulation commenced.

Again, there is no legislative basis to "carry over" alleged windfall gains or losses from any previous regulatory control periods when applying the allowed rate of return objective on a forward looking basis for the regulatory control period 2015-20.

In our view the AER has also misinterpreted clause 6.5.2(k)(4) of the NER which provides for the impacts across regulatory control periods of making a change. As the AER itself notes, the AEMC indicated that "[i]ts purpose is to allow consideration of transitional strategies so that any significant

[20] That is compared with the main alternatives: rate of return regulation as traditionally used in North America and the other proposal of granting tax incentives for efficiency improvements that was also proposed at the time RPI-X regulation was invented.
[21] For example, see the interview of Stephen Littlechild by Jean-Michel Glachant published by the European University Institute on 7 October 2013 and Littlechild (2014), *RPI-X, competition as a rivalrous discovery process, and customer engagement*, 31 March 2014.

costs and practical difficulties in moving from one approach to another is taken into account." [22] This provision does not provide a general license to bring to account costs over the life of the regulatory assets but rather focuses on the specific impacts of a movement from one regime to another – that is the costs arising from the change itself.

Finally, we note that the AER's approach implies such a long transition path that it would span two entire regulatory control periods. It is not explained how the AER considers it has jurisdiction now to determine what will occur in the 2020 to 2025 period. Nor have the impacts of doing so been adequately considered. For instance, in the first year of the AER's third regulatory control period (i.e. 2020-21) the trailing average will have only just obtained a 50 per cent weighting and it is unclear whether that will be consistent with the requirements of clause 6.5.2(k)(4) of the NER which requires regard to be had to 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."

Economically flawed

The AER has performed no calculations or assessment to quantify its alleged windfall gain for Ergon Energy for the previous regulatory period under the previous Rules. Professor Stephen Gray notes:

> "The quantum of the regulatory adjustment is unspecified. The AER has not quantified the extent to which it disagrees with the outcome of its application of the rules to the previous regulatory period, nor has it quantified the extent of its proposed under-compensation in the forthcoming regulatory period, nor has it suggested that there is any reason to think that the two would be of equal magnitude." [23]

Even if it was appropriate for the AER to impose a windfall loss in the forthcoming regulatory period to square up a perceived windfall gain in the previous period, Professor Stephen Gray notes:

> "The AER has not considered whether there may be windfall gains or losses from previous regulatory periods that should also be considered in any squaring up calculations." [24]

> "Thus, the amount of any gain to be clawed back depends on how many prior regulatory periods are included in the regulator's mental accounting. That is, any windfall gain that may have accrued in the prior regulatory period may have already been squared up by shortfalls in prior regulatory periods. Keeping a running balance of yet to be squared up excesses or shortfalls is a complex task that would vary materially depending on the starting point that was adopted." [25]

[22] AEMC, Final Rule Change Determination, 29 November 2012, p 85.
[23] Frontier Economics (2015), Cost of Debt Transition, paragraph 80 (c).
[24] Frontier Economics (2015), Cost of Debt Transition, paragraph 102 (b).
[25] Frontier Economics (2015), Cost of Debt Transition, paragraph 68 (c).

"…even if it is open to the AER to seek to square up its perception of windfall gains and losses from past regulatory periods, there is no evidence to suggest that the AER's proposed transition arrangements will in fact achieve that objective." [26]

We therefore tested the AER's assumptions surrounding carry-over effects to see if there was any financial accuracy supporting the AER's position (notwithstanding concerns raised above regarding the legitimacy of the AER's reasoning under the framework).

QTC has performed a detailed modelling exercise for Ergon Energy to estimate the windfall gains/losses produced by the previous on-the-day approach, and the prospective losses that the AER proposes to impose on Ergon Energy over the next two regulatory control periods. The windfall gain/loss model is attached to our submission and is modelled as follows:

(a) the historical analysis period covers the 2001-02 to 2004-05, 2005-06 to 2009-10 and 2010-11 to 2014-15 regulatory control periods[27];

(b) the windfall gains/losses are based on the difference between the allowed DRP in Ergon Energy's past regulatory determinations and the PTRM-weighted trailing average DRP under the hybrid approach;

(c) each starting value in the trailing average calculation equals the allowed DRP for the 2001-02 to 2004-05 regulatory control period;

(d) the prospective losses over the next two regulatory control periods are based on the expected difference between the outcomes that would be achieved with an immediate transition to the trailing average (for the DRP only), compared to the AER's proposed transition.

QTC's analysis shows that Ergon Energy would have experienced a cumulative *windfall loss* of **$18.2 million** over the last three regulatory control periods, which is equivalent to **0.3 per cent** of the opening PTRM debt balance for 2015-16. The present value of the expected losses under the AER's transition is **$232.1 million**, which is equivalent to **3.8 per cent** of the opening PTRM debt balance for 2015-16[28].

If a simple trailing average is used to estimate the DRP under the hybrid approach, the historical outcome is a windfall gain of **$114.5 million**, however the present value of the expected losses under the AER's transition is **$267.1 million**, which is more than twice the amount of the windfall gain[29]. Of course, a simple trailing average of the DRP will not reflect the true cost of debt because Ergon Energy's PTRM debt balance increased from $1,549.7 million to $6,061.3 million between 2001 and 2015. In practice, these large additional borrowings could only have been funded at the prevailing DRP, which is what is reflected in the PTRM-weighted trailing average.

QTC's results contradict the AER's rationale for imposing a transition on the DRP. When properly measured, Ergon Energy has experienced a cumulative windfall loss over the last three regulatory

[26] Frontier Economics (2015), Cost of Debt Transition, paragraph 103.
[27] Ergon Energy was regulated by the Queensland Competition Authority (QCA) for the first two control periods and the AER for the third control period. Both regulators used an on-the-day approach to determine the allowed return on debt in these periods.
[28] QTC (2015), *Return on debt transition analysis*, June 2015, p10.
[29] QTC (2015), *Return on debt transition analysis*, June 2015, p11.

control periods. The AER's transition will simply add to these losses. QTC's analysis on the return on debt transition is attached to our submission.

The expected future losses produced by the AER's proposed DRP transition are unlikely to be commensurate with the cumulative historical mis-match created by the on-the-day approach. This is because:

- The dollar value of the cumulative historical mis-match, which could be positive or negative, depends on the service provider's past PTRM debt balances and past differences between the trailing average and the service provider's allowed DRPs under the on-the-day approach.
- The dollar value of the expected future losses will depend on a service provider's PTRM debt balances in the next two regulatory control periods, the starting value of the trailing average and the AER's on-the-day DRP estimate during a service provider's next rate reset period.

The on-the-day DRP estimate during a service provider's next rate reset period will not affect the historical gain or loss, however it will have a significant impact on the expected future losses under the AER's proposed transition. As such, there is no reason to assume that the AER's proposed transition will offset (ie, be commensurate with) the dollar value of the historical cumulative mis-match.

The outcomes for Energex and Ergon Energy are consistent with these observations as the present value of the future expected losses bear no resemblance to the past outcomes under the on-the-day approach, which are actually cumulative losses.

Deliberately imposing future losses on a service provider is a very significant action and one that should be subject to a very high level of scrutiny.

If the AER, despite Ergon Energy's protests to the contrary, decides that an accurate estimate of the cumulative historical mis-match for the benchmark efficient service provider is possible and legally permissible, the correct approach is not the AER's proposed transition. The correct approach the AER should take is to:

- not apply a transition to the DRP, and
- make an adjustment to the annual allowed revenues in the next regulatory control period with a present value equal to the cumulative historical mis-match (which may be positive or negative).

In relation to other reasons for the AER's transitional arrangements, Professor Stephen Gray notes:

> "The ex post selection of an averaging period for each of the last 10 years is a relevant issue to consider. However, it is quite simple to resolve this issue without using it as a reason to abandon the application of a trailing average entirely. Rather than let one party or another select a short averaging period from within each year, the averaging period could simply be set to the entire year – so that there could be no possible allegation of ex post optimisation." [30]

[30] Frontier Economics (2015), Cost of Debt Transition, paragraph 80 (c).

Ergon Energy's proposed starting value for the allowed return on debt has been determined in accordance with this approach. QTC's historical analysis of gains and losses referred above has also been done on the same basis.

QTC's estimates of the allowed return on debt under a hybrid transition (excluding swap transaction costs) for Ergon Energy in 2015-16 are set out below [31]:

Tenor	Base Swap rate (%)	Ergon Energy PTRM-weighted DRP (%)	Ergon Energy total rate (%)
1 year	2.50	1.81	**4.31**
2 year	2.51	1.88	**4.39**
3 year	2.58	2.31	**4.89**
4 year	2.77	3.67	**6.44**
5 year	2.89	2.73	**5.62**
6 year	3.00	2.75	**5.75**
7 year	3.12	2.94	**6.06**
8 year	3.20	2.83	**6.03**
9 year	3.28	2.71	**5.99**
10 year	3.36	1.65	**5.01**
Average	2.92	2.53	**5.45**

Based on CEG's swap transaction cost estimate of 0.23 per cent, the total allowed return on debt for Ergon Energy for 2015-16 is 5.68 per cent.

5.3. Credit rating

Ergon Energy is still of the view that BBB remains the most appropriate metric for the underlying credit rating in calculating the cost of debt.

In summary, there is only a very small sample of businesses that are appropriate to use as comparators for the benchmark efficient network business. Businesses that benefit from implicit government guarantees are inappropriate to include in the comparators sample. In this regard, the AER should not include AusNet, which is majority owned by a government, in the comparator set. Ergon Energy was excluded from the AER's comparator sample due to its government ownership.

The problem with taking an instantaneous or "on the day" average of a very small sample is that the credit ratings are not constant and the benchmark could move each time the credit rating agencies moved one of the comparator businesses even by one notch. For this reason it is important to set the benchmark credit rating by taking a period rather than an instantaneous average. On the other

[31] QTC (2015), Return on debt transition, table 6, page 13.

hand, the data should not be too dated. Additionally, the material increase in risks facing network businesses over the past two years supports a lowering of the benchmark credit rating. On this basis, Ergon Energy has applied a BBB credit rating in our revised Regulatory Proposal.

5.4. Extrapolation

In our October Regulatory Proposal, Ergon Energy attached a report from QTC which detailed our preferred methodology (method 2) for extrapolating the RBA BBB curve to a 10-year tenor. Ergon Energy considers that an extrapolation method which uses all of the BBB swap spread and effective tenor estimates published by the RBA will produce more robust and realistic estimates of the slope of the BBB swap spread curve than a method (method 1) which only uses the RBA's BBB swap spreads for target tenors of seven and 10 years and the associated effective tenors. Method 1 in comparison to method 2 produces larger and more volatile slope and extrapolation margin estimates. Method 1 as referred to in QTC's report is effectively the AER's extrapolation methodology. Method 2 is the methodology developed by QTC.

We remain of the view that QTC's extrapolation methodology is more robust and comprehensive than the AER's extrapolation methodology. However, without making any concessions and preserving our position for future regulatory processes, we no longer press for inclusion of QTC's extrapolation methodology in our revised Regulatory Proposal at this time and have used the AER's methodology in calculating our updated rate of return estimates and our windfall gain/loss model estimates referred above.

5.5. Approach and application (weighting)

The allowed rate of return objective requires the AER to determine a return on debt that is commensurate with the efficient financing costs of the benchmark efficient entity. The AER must also have regard to other factors including the desirability of minimising any difference between the allowed return on debt and the return on debt of the benchmark efficient entity.

The AER's approach assumes that the entity is equally funded with a portfolio of fixed rate debt with annual maturities from one to 10 years. Each year 10 per cent of the existing debt balance is refinanced and repriced at the prevailing 10-year cost of debt. The cost produced by the portfolio will equal a 'simple trailing average' over the 10-year cost of debt over the last 10 years.

Problems occur when the benchmark debt balance increases over time due to the partial funding of capital expenditure with new debt. In this case the AER's simple trailing average approach compensates the additional borrowings at the average cost of debt over the last 10 years, even though an entity can only borrow at the prevailing cost of debt. As a consequence, the debt management strategy implied by a simple trailing average cannot be replicated in practice.

A simple trailing average is an internally inconsistent approach for determining the return on debt when the benchmark debt balance is increasing. Even though 10 per cent of the existing debt balance is refinanced at the prevailing cost of debt, a new borrowing to fund capital expenditure that is made *at the same time* is assumed to be funded at the average cost of debt over the last 10 years.

As large differences between the prevailing and historical average cost of debt will naturally occur over time, it is unlikely that a simple trailing average will minimise the difference between the allowed return on debt and the return on debt for the benchmark efficient entity.

Ergon Energy proposes a weighted trailing average approach to determine the allowed return on debt, with weights based on the annual percentage changes in the (AER approved) PTRM debt

balance. This approach preserves the main features of the AER's simple trailing approach, such as a 10-year debt term and an even debt maturity profile out to 10 years, while compensating increases in the PTRM debt balance at the prevailing cost of debt rather than the average cost of debt over the last 10 years.

While the AER appeared to acknowledge that the PTRM-weighted average leads to better outcomes, at least in many circumstances, they were not satisfied that Ergon Energy has provided sufficient evidence for proposed departure from the Guideline using the reasons outlined below.

The AER provided few arguments (if any) justifying the use of a simple weighted trailing average as a *superior* method to reflect the return on debt of the benchmark efficient entity. There was also little analysis from the AER itself, other than an analysis of our own evidence, which it appeared to broadly accept. The AER certainly provided no evidence to demonstrate that the Guideline method was superior. Most of the AER's arguments concentrated on why the AER was not convinced it needed to depart from the Guideline – for the moment at least.

5.5.1. Not satisfied there is a clear case to depart

The AER acknowledges that the approved forecast capital expenditure is the best estimate of the actual capital expenditure for the benchmark efficient entity:

> "We agree that a service provider's approved [PTRM] capex forecast likely reflects the capex that a benchmark efficient entity at the beginning of a regulatory period would plan to make".[32]

It follows that a PTRM-weighted trailing average will produce a return on debt that better reflects the return on debt for the benchmark efficient entity compared to a simple trailing average under the most likely scenario. However, the AER seeks to apply a level of satisfaction for departure such that the PTRM-weighted trailing average method must be superior in *all possible* scenarios.

Having already established that the PTRM-weighted trailing average is superior to the AER Guideline method in the most likely scenario, it is difficult to understand why the AER sets the bar at so high a level to prompt departure.

Nevertheless, we asked QTC to assist us in assessing the AER's concerns. Their response is attached.[33] In summary:

- The most appropriate return on debt approach is the one that produces the best estimate of the return on debt and provides better capital expenditure incentives in the most likely scenario and in the greatest number of plausible alternative scenarios.
- Compared to a simple trailing average, a PTRM-weighted trailing average will produce a return on debt that better reflects the return on debt for the benchmark efficient entity if actual capital expenditure equals forecast capital expenditure and when actual capital expenditure is consistently greater than 50 per cent of forecast capital expenditure.

[32] AER (2015), *Preliminary Decision, Ergon Energy determination 2015-16 to 2019-20, Attachment 3 – Rate of return*, April 2015, p445.
[33] QTC (2015), *PTRM-weighted trailing average approach*, June 2015.

- As the AER considers its approved forecast capital expenditure to likely reflect the capital expenditure that will be undertaken, it is highly likely that actual capital expenditure will consistently be greater than 50 per cent of forecast capital expenditure.
- A simple trailing average is internally inconsistent because it compensates two new borrowings that are made at the same time at different costs of debt. The annual refinancing of 10 per cent of the existing PTRM debt balance is compensated at the prevailing cost of debt, while the increase in the PTRM debt balance for the same year is compensated at the average cost of debt over the last 10 years.
- A PTRM-weighted trailing average:
  - correctly compensates a NSP who considers the prevailing cost of debt to be fairly priced when planned capital expenditure is undertaken, which is reasonable in an efficient market, and
  - allows a NSP to incorporate any interest rate forecasts it may have into its financing decisions without departing from its planned capital expenditure profile. Consistent with incentive-based regulation, any gains or losses that result from these decisions should be borne by the NSP rather than consumers.
- Regardless of whether a simple or weighted trailing average is used, the dollar value of the return on debt allowance will be determined by the AER's approved PTRM debt balances. The actual capital expenditure of the benchmark efficient entity does not affect this calculation. As such, the AER must decide if the increases in PTRM debt balance are to be compensated at the prevailing cost of debt, which is also used to compensate 10 per cent of the existing PTRM debt balance that is refinanced at the same time, or the average (and unachievable) cost of debt over the last 10 years.

Based on the above, QTC concludes that a PTRM-weighted trailing average will produce a better estimate of the return on debt for the benchmark efficient entity and provide better capital expenditure incentives in the most likely scenario and the greatest number of plausible alternative scenarios compared to a simple trailing average.

The Economic Regulation Authority (ERA) of Western Australia also supports the use of a PTRM-weighted trailing average approach for estimating the return on debt stating in a recent discussion paper:

> "A key advantage of the PTRM approach would be that it allows for prevailing rates to apply to new investments, without an ex post true up. This occurs because the prevailing rate is increased in the weighting, at the time of the access arrangement review, to the extent that the forecast capex adds to outstanding debt in the PTRM. The result is that the prevailing rate becomes the marginal cost of debt for the new forecast capex.
>
> "While the PTRM weightings may add incentives to game the capex estimate and their timing under some circumstances, it may also provide incentives to stick to capex forecasts in others. For example:

- If the cost of debt was expected to rise over the forecast period, then there would be an incentive to increase capex forecast, all other things equal.

- If the cost of debt was expected to decline, then there would be an incentive to defer capex.

- However, ultimately, such deviation could be a fairly non-productive game, given the difficulties associated with predicting interest rate changes and their exact timing. [34]

"…differences between a trailing average and the prevailing cost of debt do arise and will be relevant for forecast investment."[35]

"…QTC considers that using forecast (Post Tax Revenue Model – PTRM) debt balances, ex ante, to determine weights 'is appropriate to ensure that changes in the debt balance are correctly compensated at the prevailing cost of debt'.

This adds some complexity. However, it is not insurmountable. Indeed, QTC and DBP both demonstrate that the spreadsheet calculation relating to weights would be straightforward, at least for the PTRM approach."[36]

"By weighting the trailing average to account for new capex, it can be made to ensure that the cost of capital for new capex reflects prevailing rates". [37]

…

[34] ERA (2015), *Estimating the return on debt, Discussion Paper,* 4 March 2015, paras 146 -147.
[35] ERA (2015), *Estimating the return on debt, Discussion Paper,* 4 March 2015, para 71.
[36] ERA (2015), *Estimating the return on debt, Discussion Paper,* 4 March 2015, paras 75-76.
[37] ERA (2015), Estimating the return on debt, Discussion Paper, 4 March 2015, paras 142.

"In conclusion, the Authority considers that the PTRM weights approach is, on balance, desirable, in order to ensure appropriate incentives for new capex. [38]

PTRM weights should be adopted ex ante for the trailing average components, in order to ensure that forecast capex faces the prevailing cost of capital."[39]

5.5.2. Both approaches lead to similar outcomes

The AER uses a fairly simplistic adjustment to the model to suggest that both approaches will lead to similar outcomes with assumed volatility over time:

"If rates move up and down over time, we expect the PTRM-weighted average and the simple average to produce broadly the same allowed return on debt on average over time".[40]

The inference is that there is no need to adopt a PTRM-weighted average as the simple average will produce the same results if one waits long enough. However, this view is not justified on the analysis the AER put forward. We do not believe the AER's conclusions are correct. Notwithstanding the lack of substantiation, this would not be sufficient to warrant the continuance of a method which does not reflect the return on debt for the benchmark efficient entity when compared to our method purely on the basis that one gets to the right answer some time in the future.

5.5.3. Incorrect Incentives

The AER forms the view that because the PTRM-weighted approach may assign higher weights in some years, this may induce incorrect incentives.

"…if the benchmark efficient entity did seek to defer large capex programs in adverse market conditions, this would undermine the ability of the PTRM-weighted average to reflect the return on debt of the benchmark efficient entity. This is because the PTRM-weighted average would potentially assign large weights to high prevailing market rates when the benchmark efficient entity might have specifically sought to avoid or minimise borrowing at those rates."[41]

Based on this logic the AER suggests that the PTRM does not provide better capital expenditure incentives relative to the simple weighted average.

[38] ERA (2015), *Estimating the return on debt, Discussion Paper,* 4 March 2015, para 152.
[39] ERA (2015), *Estimating the return on debt, Discussion Paper,* 4 March 2015, para 160.
[40] AER, *Preliminary Determination Attachment 3*, p443.
[41] AER, *Preliminary Determination Attachment 3*, p445.

"…if factors other than the form of the allowed return on debt are the primary drivers of capex planning, it is not clear how the PTRM-weighted average will necessarily provide better capex planning incentives relative to the simple average…. It is also not clear to us that the PTRM-weighted average would provide better incentives to either adhere to or depart from capex forecasts."[42]

The incentives to undertake planned capital expenditure depend on whether the return on debt approach provides correct compensation for the cost that will be incurred by the benchmark efficient entity when it issues debt to fund the planned capital expenditure. As such, it is unclear how a simple trailing average, which compensates new borrowings at the average cost of debt over the last 10 years, will provide better incentives than an approach that compensates new borrowings at the prevailing cost of debt. On this point, QTC stated:

"The investment distortion referred to by Ergon Energy relates to a situation where the prevailing cost of debt differs from the simple trailing average return on debt when a new borrowing is made. For example, if the prevailing cost of debt is 7.0 per cent and the simple trailing average return on debt is 6.0 per cent, a service provider will be incentivised to delay its planned capex or fund the capex with a short-term floating-rate bank debt facility and 'hope' that it can refinance with 10-year fixed-rate debt within a reasonable period of time at a cost that is closer to the simple trailing average."[43]

The AER appears to have little concern for the possible distortions in behaviour that are inherent in the simple trailing average approach. The QTC used the above scenario to outline the possible distortions that may occur:

"Even if the service provider considers the prevailing cost of debt to be fairly priced, which is reasonable in an efficient market, it will be under-compensated if it borrows at the prevailing cost of debt. In fact, doing so would be equivalent to undertaking a new project with a negative net present value….When faced with the prospect of a certain loss the service provider may be incentivised to adopt a financing strategy 'as if' it expected the cost of debt to fall even though it considers the prevailing cost of debt to be fairly priced:

- The service provider may delay capex in the hope (rather than expectation) that the cost of debt will match the simple trailing average within a reasonable period of time.

[42] AER, *Preliminary Determination Attachment 3*, p446.
[43] QTC (2015), *PTRM-weighted trailing average approach*, June 2015, p7.

- The service provider may temporarily fund the planned capex with a short-term floating-rate bank debt facility in the hope (rather than expectation) that it can refinance with 10-year fixed-rate debt within a reasonable period of time at a cost that is closer to the simple trailing average."[44]

In an efficient market, there is no reason for a NSP to depart from its planned capital expenditure profile *because of* the level of the prevailing cost of debt. As such, a PTRM-weighted trailing average provides correct compensation for a NSP who considers the prevailing cost of debt to be fairly priced, which is a reasonable consideration in an efficient market.

A PTRM-weighted trailing average still allows a NSP to incorporate any interest rate forecasts it may have into its financing decisions without departing from its planned capital expenditure profile. These forecasts are of no relevance to the allowed return on debt, which is always determined using the AER's annual estimates of the 10-year benchmark debt yield and the AER's approved PTRM debt balances.

In contrast, a simple trailing average is likely to distort the investment and/or financing decisions of a service provider whenever the prevailing cost of debt is higher than the average cost of debt over the last 10 years. It will also over-compensate NSPs at the expense of consumers when the prevailing cost of debt is below the average cost of debt over the last 10 years.

5.5.4. Immaterial and complexity

While the AER acknowledges that the PTRM weighted average might better meet key aspects of the NER, because it was not completely satisfied, it assessed the materiality of the impact of departing from the Guideline approach.

"In deciding whether we should depart from the Guideline approach in favour of the PTRM-weighted average, we have also considered the potential materiality of this decision for the service provider's allowed revenue."[45]

The AER's analysis suggested that the difference in allowed revenue in the upcoming regulatory control period between using the PTRM-weighted average versus the simple average might be immaterial.[46] This factor, combined with the perceived complexity of Ergon Energy's approach justifies, in the AER's mind, rejecting a departure from the Guideline.

The AER also noted Energex and Ergon Energy did not provide any quantitative analysis of materiality.[47]

Further, the AER indicated that perceived complexity is a relevant consideration:

[44] QTC (2015), *PTRM-weighted trailing average approach*, June 2015, p9.
[45] AER), *Preliminary Determination, Attachment 3*, p447.
[46] AER , *Preliminary Determination Attachment 3*, p447.
[47] AER, *Preliminary Determination Attachment 3* , p447.

"This is a more complex approach, which effectively weights the prevailing rates in each of the past 10 years by the amount of debt that the service provider was forecasted in its PTRM to have raised in that year.

However, ultimately they did not satisfy us that the PTRM-weighted average will sufficiently advance the objective and requirements of the rules to warrant adoption of this more complex approach in place of our Guideline approach."[48]

However, by comparison we note the ERA's position on the perceived complexity of the PTRM-weighted approach:

"This adds some complexity. However, it is not insurmountable. Indeed, QTC and DBP both demonstrate that the spreadsheet calculation relating to weights would be straightforward, at least for the PTRM approach."[49]

Neither materiality nor complexity should be a primary consideration when assessing the relative merits to calculating the cost of debt. We would argue that if complexity was a primary consideration, the AER would not apply a trailing average or, for that matter, a PTRM.

Similarly, materiality should not be a consideration if the method proposed produces a return on debt that better reflects the return on debt for the benchmark efficient entity. Nevertheless, in response to the AER's claim that Ergon Energy did not provide quantitative analysis of materiality, we asked QTC to assess the AER's concerns. Their response is below:

"…the AER's analysis cannot be used to assess the materiality of the differences between a simple and PTRM-weighted trailing average…the benchmark debt yields in Ergon Energy's return on debt model are hypothetical yields that were only provided to demonstrate how the weighted trailing average calculation is performed. As such, these yields cannot be used to address the issue of materiality.

The AER's proposed transition will usually produce relatively small differences in the first regulatory control period because the 10 initial yields in both trailing averages are the same. This

[48] AER, *Preliminary Determination Attachment 3* , p138.
[49] ERA (2015), *Estimating the return on debt, Discussion Paper,* 4 March 2015, para 76.

does not provide an accurate estimate of the likely annual differences across multiple consecutive regulatory control periods."[50]

To demonstrate this, QTC used the PTRM debt balances for the last three regulatory control periods, and the upcoming regulatory control period 2015-20, to estimate the annual differences that would have occurred between a simple and PTRM-weighted trailing average[51]. QTC concludes:

"Based on the PTRM debt balances and actual 10-year BBB+ yields since 2001, the annual difference between a simple and PTRM-weighted trailing average would have frequently exceeded 1 per cent of the annual revenue requirement. An annual difference between the simple and weighted trailing average of just 0.2 per cent will produce a cost mismatch that is equivalent to about 1 per cent of the annual revenue requirement. Historically, the annual difference has been as large as 0.5 per cent, which is equivalent to about 2 per cent of the annual revenue requirement."[52]

5.5.5. Preference to defer to Guideline consultation

Finally, after all considerations, the AER appears to wish to defer consideration of this issue to the next consultation on the Guideline:

"On balance, therefore, we choose to maintain the Guideline approach of calculating the allowed return on debt as the simple average of the prevailing market rates in each of the past 10 years, following a transition period. We acknowledge, however, the potential advantages of the PTRM-weighted average in some circumstances. We are therefore open to future consideration—especially under the next guideline development process—of any new evidence that clearly demonstrates that the PTRM-weighted average better meets the objective and requirements of the rules."[53]

Notwithstanding the AER's preference to worry about this at a later time, based on the above analysis, a departure from the Guideline is appropriate. QTC's report addresses the concerns raised by the AER in the Preliminary Determination, so a decision to defer any consideration for departure from the current approach is inappropriate and unnecessary.

[50] QTC (2015), *PTRM-weighted trailing average approach*, June 2015, p10.
[51] QTC's modelling of this is attached to our proposal
[52] QTC (2015), *PTRM-weighted trailing average approach*, June 2015, p13.
[53] AER, *Preliminary Determination Attachment 3*, p139.

As such, there is no plausible reason why Ergon Energy should have to wait until 2020 to have the correct approach applied.

The NER requirements in this regard appear quite clear. We ask the AER to consider again the evidence put before it and decide in favour of a departure from the Guideline in respect to the simple average approach to estimating the cost of debt.

Supporting documents

The following documents support our response to the AER on the cost of debt:

Name
CEG Critique of the AER's JGN Draft Decision on the cost of debt (report prepared for Jemena), April 2015
ERA: Estimating the Return on Debt Discussion Paper, 4 March 2015
Frontier Economics: Cost of Debt Transition, June 2015
QTC: Ergon Debt Transition analysis (model) , June 2015
QTC: Ergon Materiality Test (model), June 2015
QTC: PTRM-weighted trailing average report, June 2015
QTC: Return on Debt Transition Analysis
Schlogl: the AER's JGN draft decision on the cost of debt (report prepared for UE and Multinet), April 2015
SFG: Return on debt transition arrangments under the NGR and NER (report prepared for Jemena and UED) February 2015

The following supporting documents are provided for ease of reference

Name
AEMC Rule Determination, National Electricity Amendments (Economic Regulation of Network Service Providers) Rule 2012) National Gas Amendment (Price and Revenue Regulation of Gas Service) Rule, 2012
AER: Final decision- SA distribution determination 2010-11 to 2014-15
AusNet Electricity Services Pty Limited: Electricity Distribution Price Review 2016 – 2020, April 2015
CEG: Efficient debt financing costs, January 2015
ESCOSA: 2005-2010 Electricity Distribution Price Determination Part A StatementofReasonsFinal April 2005.pdf
Galchant: Interview of Stephen Littlechild by Jean-Michel Glachant European University Institute October 2013
Littlechild: RPI-X and competition July 2014
NERA: The Relation Between the MRP and RFR Evidence from Independent Expert Reports A report for United Energy Apr 2015
RBA Statement on the Conduct of the Monetary Policy 2013.pdf
SAPN memo on Bloomberg extrapolation.pdf

Definitions, abbreviations and acronyms

ACT	Australian Capital Territory
AEMC	Australian Energy Market Commission
AER	Australian Energy Regulator
DRP	Debt risk premium
ERA	Economic Regulation Authority of Western Australia
Guideline	Rate of Return Guideline
NEL	National Electricity Law
NEM	National Electricity Market
NER	National Electricity Rules
NSP	Network service provider
NSW	New South Wales
PTRM	Post Tax Revenue Model
QTC	Queensland Treasury Corporation
RAB	Regulatory Asset Base
RBA	Reserve Bank of Australia