

Final Plan Attachment 10.4

The AER's Current Interpretation of ARORO

A Report by CEG

September 2016

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The AER's current interpretation of the ARORO

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September 2016



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Executive summary

1. The allowed rate of return objective (ARORO) in r6A.6.2 (for electricity transmission service providers)¹ states:

The allowed rate of return objective is that the rate of return for a Transmission 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 Transmission Network Service Provider in respect of the provision of prescribed transmission services

The AER's pre 2016 interpretation

2. Prior to 2016 the AER had interpreted the ARORO as requiring that the allowed rate of return is commensurate with the financing costs that a benchmark efficient entity, following an efficient debt management strategy, would actually incur. It was on this basis that the AER's rate of return guideline considered that adopting a trailing average was consistent with the ARORO.²
 - *We consider that holding a portfolio of debt with staggered maturity dates is likely **an efficient debt financing practice of the benchmark efficient entity** operating under the trailing average portfolio approach.*
 - *We consider that the regulatory return on debt allowance under the trailing average portfolio approach is, **therefore**, commensurate with the efficient debt financing costs of the benchmark efficient entity.* [Emphasis added.]
3. That is, the AER took the view that because businesses could efficiently fund themselves following a trailing average debt management strategy the adoption of the trailing average was consistent with the ARORO.
4. Similarly, the AER has previously used the same interpretation of the ARORO (i.e., interpreting 'efficient financing costs' as relating to an efficient debt management practice) to justify applying a transition to a trailing average. This was on the basis that the AER believed a benchmark efficient debt management strategy for the (assumed to be regulated) benchmark efficient entity (BEE) would have been to use

¹ The ARORO is effectively the same for electricity distribution and gas service providers.

² AER, Better Regulation | Explanatory Statement | Rate of Return Guideline, December 2013, , p. 102.

interest rate swaps to reset 100% of its base interest costs at the beginning of each regulatory period.³

5. On this basis the AER rejected the immediate adoption of a historical trailing average (immediate transition), the AER stated that such a transition:⁴

*...does not approximately match the allowed return on debt with **the efficient financing costs of a benchmark efficient entity** over the 2016–20 period **as it transitions its financing practices to the trailing average approach**. Given a benchmark efficient entity will already have financing practices in place it entered into in the past, it needs time to unwind these practices and gradually adopt practices that match the trailing average approach. [Emphasis added.]*

6. That is the AER believed that compensating for historical average base rates of interest would not be commensurate (“approximately match”) with the efficient financing costs of a benchmark efficient entity (as defined by it) whom it believed would have used interest rate swaps to reset its base rate of interest.

Our interpretation

7. Our interpretation is, at least at the high level, the same as the AER’s pre 2016 interpretation. That is, the plain economic interpretation is that efficient (debt) financing costs of a BEE referred to in the ARORO related to the costs a BEE would incur following a benchmark efficient debt management strategy. We differed with the AER primarily on the issue of:
- whether the BEE is a regulated entity; and
 - even if the BEE is a regulated entity, whether BEE would have used swap rates in the manner argued by the AER to reset 100% of its base rate every year; and
 - whether it was reasonable for the AER to ignore the historically incurred debt risk premium costs that a BEE could not have reset at each regulatory reset.

The AER’s 2016 interpretation of the ARORO

8. The AER’s new interpretation of the ARORO is encapsulated in the below quote from AusNet Services’ electricity *distribution* final decision.

³ AER, preliminary decision, AusNet electricity distribution, October 2015, p. 3-185 to 3-186.

⁴ AER, preliminary decision, AusNet electricity distribution, October 2015, p. 3-165.

“We do not consider a benchmark efficient entity's past financing practices determine its efficient financing costs...”⁵

9. Notably this direct language is not repeated in AusNet Services’ draft electricity transmission decision – although the interpretation is the same. The AER’s new interpretation is that “efficient financing costs” have nothing to do with how a business would actually efficiently finance itself.
10. The AER’s new view is that the ARORO requires an interpretation of efficient financing costs as being the rates prevailing at the beginning of a regulatory period. The AER states that the use of prevailing rates in this fashion will satisfy the NPV=0 criteria whereby the present value of cash-flows (*before* efficiently incurred debt financing costs are removed) will be equal to the statutory value of the RAB. The AER defines this criterion as synonymous with the ARORO.⁶ This position is most clearly stated as set out in the following quote:⁷

We note that given the ARORO is standalone, the ARORO will be achieved if the present value of expected return on (and of) capital cash flows equal the start-of-period opening RAB.

Critique of the AER’s 2016 interpretation

11. We do not believe that that AER’s 2016 interpretation is consistent with a reasonable economic interpretation of the ARORO. The AER’s change in interpretation is not explicitly conceded and, consistent with that, is not explained. The AER does attempt to provide a rationale for its new interpretation (as opposed to an explanation for its change in interpretation). We consider that this rationale is flawed. In support of this view we note:
 - The AER’s new interpretation relies on treating the ARORO as synonymous with what the AER, and its new experts (Partington and Satchell), describe as the “zero NPV investment criterion”. However, there is not a single unique version of the zero NPV investment criterion. Indeed, the AER’s pre 2016 interpretation of the ARORO was justified as consistent with a different form of “the” zero NPV investment criterion – one which required compensation to match efficient costs of an efficient debt management strategy. Indeed, Lally’s advice that the use of prevailing rates to compensate a business violated this version of “the” NPV=0 criterion.

⁵ AER, SP AusNet, Final Electricity Distribution Determination, 3-316. .

⁶ See AER, AusNet Draft Transmission Determination, p. 3-95 first paragraph under the heading “Approaches that contribute to the achievement of the ARORO”.

⁷ AER, AusNet Draft Transmission Determination, p. 3-278.

- The AER does not acknowledge that the pre 2016 interpretation was supported by a different NPV=0 criterion. Rather, the AER proceeds ‘as if’ there is only one version and, therefore, only one regulatory policy that is consistent with it (the use of prevailing rates). This substitution of (a version of) the NPV=0 criterion for the ARORO leads to a failure to properly grapple with the important economic issues of interpretation. These issues are discussed in section 3.
- Apart from relying on (the new version of) the NPV=0 criterion as paramount when interpreting the ARORO, the only other justifications provided for the new interpretation are that:
 - The market for capital finance is competitive and, therefore, the regulator should compensate based on prevailing rates; and
 - The AER considers that economic efficiency is advanced by having sole reliance on prevailing rates when compensating for the cost of debt.

The first of these is a non-sequitur. In our view, there is no reason to infer that the existence of competitive financial markets implies the AER’s (new) interpretation of the ARORO is appropriate. The second of these relies on a premise that we strongly disagree with as a matter of economic analysis. In fact, compensating based on the basis of costs incurred under an efficient debt management strategy will best promote efficient investment. However, even if it were the case that setting compensation purely based on prevailing rates promoted economic efficiency, it is not obvious that this is relevant to the ARORO which requires compensation to be commensurate with “efficient financing costs” not “efficient financing incentives”. These issues are discussed in section 4.

- If the AER was correct that the sole reliance on prevailing rates when setting compensation promoted economic efficiency then this might imply that there is a tension between the National Electricity Objective’s (NEO’s) focus on promoting efficient incentives and ARORO’s focus of compensating based on efficient costs. However, in our view the AER is not correct with respect to the promotion of efficient incentives and there is no tension between the NEO and the ARORO. (Moreover, given the AER is proposing to transition to a trailing average then, on its logic, the end point of its transition would be inconsistent with both the NEO and the ARORO). These issues are discussed in section 5.
- The AER has also inconsistently applied its new interpretation of the ARORO. In particular, the AER slips between its new and old interpretations when discussing: how its proposed transition is NPV=0; why it is adopting a trailing average in the long run; and why it adopts a 10 year term for the cost of debt. These issues are discussed in section 6.
- The AER also relies in places on a number of other analytical/factual statements that we consider are clearly wrong or without foundation. These are discussed in Section 8.



12. Finally we note that under both our and the AER's pre 2016 interpretation of the ARORO one must determine what the benchmark debt management strategy of the BEE is. The answer to this may be different depending on whether the BEE is deemed to be regulated or not. Section 9 addresses some facts relevant to an assessment of an unregulated BEE' debt management strategy.

1 Introduction

13. I have been asked by Johnson Winter & Slattery to provide a report advising on the AER's interpretation of the ARORO in the AER's recent Draft Decision for AusNet Services transmission determination.
14. The remainder of this report has the following structure:
 - Section 2 provides CEG's economic interpretation of the ARORO and contrasts the AER's/AER's experts' previous interpretation of the ARORO with the AER's new interpretations of the ARORO;
 - Section 3 contrasts the AER's/AER's experts' previous interpretation of the NPV=0 criterion with the AER's new (and AER's new expert's) interpretation of the NPV=0 criterion;
 - Section 4 explores how the AER justifies its new interpretation of the ARORO;
 - Section 5 explores whether there is any tension between the NEO and the ARORO;
 - Section 6 describes the inconsistent application of the AER's new interpretation of the ARORO
 - Section 7 discusses potential inconsistencies in the AER's approach to ARORO and other requirements/objectives in the NER/NEL;
 - Section 8 provides a critique of other statements the AER relies on to justify the continued use of 100% weight to prevailing estimates of the cost of debt; and
 - Section 9 provides a discussion of facts relevant to any assessment of the debt management strategy for an unregulated BEE.
15. I acknowledge that I have read, understood and complied with the Federal Court of Australia's Practice Note CM 7, "Expert Witnesses in Proceedings in the Federal Court of Australia". I have made all inquiries that I believe are desirable and appropriate to answer the questions put to me. No matters of significance that I regard as relevant have to my knowledge been withheld.



Thomas Nicholas Hird

2 Contrasting the AER’s old and new interpretation of the ARORO

16. The allowed rate of return objective (ARORO) in r6A.6.2 (for electricity transmission service providers)⁸ states:

The allowed rate of return objective is that the rate of return for a Transmission 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 Transmission Network Service Provider in respect of the provision of prescribed transmission services

2.1 CEG’s plain economic interpretation of the ARORO

17. In our view, the natural economic meaning of the ARORO’s reference to *the efficient financing costs of a benchmark efficient entity* is a reference to a ‘financing cost’ that has been, or is forecast to be, incurred by a “*benchmark efficient entity*”.⁹ Given that the AER’s previous interpretation, as outlined in the previous section, shared this same premise, we consider that the AER’s interpretation was correct (at least in this respect).
18. The instruments by which efficient financing takes place are, broadly speaking:
- Debt instruments. All parties, the AER included, believe that a BEE efficiently raises debt finance by issuing debt contracts with staggered issue date/maturity and where the contracts involve a legally binding promise to pay a fixed nominal rate of return over a maturity horizon of around 10 years;
 - Equity instruments which have no contractually fixed/promised rate of return.
19. Efficient financing costs incurred by a BEE will reflect the weighted average cost of these instruments. The cost of the debt financing incurred by a BEE reflects the average interest rate paid on debt contracts that a BEE has efficiently entered into in order to fund the RAB and these will reflect, at least in part, investors’ required returns at the time that funding contract was entered into. The cost of equity financing does not involve any binding historically entered into nominal contractual

⁸ The ARORO is effectively the same for electricity distribution and gas service providers.

⁹ Equivalently, a ‘financing cost’ is an amount that must be paid to investors in return for the use of their capital to fund an investment (and any subsequent refinancing of that investment). In the current context, that is the *historical investments* that are reflected in the statutory value of the RAB. The RAB reflects the accrued value of all past investment that have yet to be returned to investors via regulatory depreciation.

payments to equity investors and, therefore, can be presumed to reflect the prevailing rate of return required by equity investors at any given time.

20. Our interpretation was broadly the same as the AER's. We differed with the AER primarily on the issue of:
- whether the BEE is a regulated entity; and
 - even if the BEE is a regulated entity, whether the BEE would have used swap rates in the manner argued by the AER to reset 100% of its base rate every year; and
 - whether it was reasonable for the AER to ignore the historically incurred debt risk premium costs that a BEE could not have reset at each regulatory reset.

2.1.1 Implementing the ARORO

21. In our view, there are two distinct steps involved in estimating the return on debt (cost of debt) for any entity – including the 'benchmark efficient entity' envisaged in the ARORO. The basis for this conclusion is the view that, before one can embark on an estimation process, one must define what it is that is being estimated. To define what is being estimated, it is necessary to:
- define a financing strategy for a *"benchmark efficient entity with a similar degree of risk as that which applies to the service provider in respect of the provision of reference services"*; and
 - estimate the *"efficient financing costs"* of implementing that strategy.
22. The second step cannot proceed without the first step.
23. Once a benchmark efficient debt management strategy is defined, the next step is to estimate the financing costs associated with that strategy. This step requires the collection and analysis of financial market price/yield information relevant to determining the costs incurred in implementing the benchmark efficient financing strategy at the relevant times. This step focuses on data collection, interpretation and manipulation, to arrive at an estimate of the costs of implementing the benchmark efficient strategy defined in the first step. Relevant decisions that must be made are:
- whether and how to use third party estimates of the yields on broad categories of corporate debt. This might include estimates of the yields on bonds of particular maturities/credit ratings, as published by Bloomberg, RBA, and Reuters;
 - whether and how to use third party estimates of the yield on specific debt instruments (e.g., a specific bond issued company "X", another bond issued by company "Y", etc.); and
 - what sources for these data should be used and what, if any, differential weighting should be applied to the data sources.

24. The ARORO envisages that:
- it is possible to define a “*benchmark efficient entity with a similar degree of risk as that which applies to the service provider in respect of the provision of reference services*”;
 - “*efficient financing costs*” for that entity can be estimated; and
 - the service provider should receive compensation that is “*commensurate*” with this.
25. In the context of setting the allowed cost of debt, we consider that this requires:
- a benchmark efficient debt financing strategy to be defined;
 - the costs of efficiently implementing that strategy to be estimated; and
 - compensation commensurate with this to be provided to the service provider.
26. In our view, the definition of a benchmark efficient financing strategy must be such that it would be possible for a benchmark efficient entity to undertake that strategy. This does not necessarily mean that a specific regulated entity must actually implement or be able to implement that strategy, or that it must be the most efficient strategy for that entity. However, it must be conceivable that this strategy would be efficient for a benchmark entity facing the same risks.
27. By way of specific examples:
- if it is not possible to issue 100 year debt, or it is known to be prohibitively expensive to attempt to do so, then issuing 100 year debt should not be included in the definition of a benchmark efficient debt financing strategy;
 - if it is inefficient to refinance 100% of all debt each year then the assumption of 100% refinancing each year should not form part of the definition of benchmark efficient debt financing strategy; and
 - if it is impossible to trade certain derivative contracts, or if it is known to be prohibitively costly to do so, then the trading of such derivative contracts should not be included in the definition of benchmark efficient debt financing strategy.
28. To define and cost a debt management strategy that includes one or more activities that are inefficient, even for the benchmark efficient entity, would, in my view, be inconsistent with attempting to estimate compensation that “*is commensurate with the efficient financing costs of a benchmark efficient entity*”.
29. The Australian Energy Market Commission’s (AEMC) Final Rule Determination suggests that it envisaged its Rule change would require that the regulator clearly

define a benchmark debt financing strategy and then estimate the costs of implementing that strategy:¹⁰

*While the Commission considers that allowing the regulator to estimate the return on debt component of the rate of return using a broad range of methods represents an improvement to the current approach, it is a separate issue from that of benchmark specification and measurement. A **historical trailing average approach still requires the regulator to define a benchmark and use appropriate data sources to measure it. Arguably, it is even more important that the benchmark is defined very clearly and can be measured, because it needs to be estimated periodically in the future.** [Emphasis added.]*

30. Similarly, the AEMC clearly envisaged that the definition of an efficient benchmark entity would include a definition of that benchmark entity's efficient debt financing strategy:¹¹

*The first factor in the rule requires the regulator to have regard to the characteristics of a benchmark service provider and how this influences assumptions about **its efficient debt management strategy.** [Emphasis added.]*

2.2 AER's previous interpretation of the ARORO

31. In our view, a plain reading of the ARORO requires the regulator to form a view of what financing costs would be incurred by a benchmark efficient entity and to provide compensation, in the form of the allowed rate of return, that was commensurate with those costs.
32. Until relatively recently, the AER appeared to adopt this interpretation. For example, in its 2015 preliminary decision for AusNet Services electricity distribution, the AER stated:¹²

In determining our approach to estimate the return on debt, we make a series of underlying decisions about the characteristics of the benchmark efficient entity. Having done so, we then design an approach that will

¹⁰ AEMC, *National Gas Amendment (Price and Revenue Regulation of Gas Services) Rule 2012*, 29 November 2012, p. 90

¹¹ AEMC, *National Gas Amendment (Price and Revenue Regulation of Gas Services) Rule 2012*, 29 November 2012, p. 84

¹² AER, preliminary decision, AusNet electricity distribution, October 2015, p. 3-153

reasonably reflect these benchmark characteristics and promote the objectives in the law and the rules.

33. The AER went on as follows:¹³

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

*We consider **the efficient debt financing costs of a benchmark efficient entity** as those which are expected to minimise its debt financing costs over the life of its assets, while managing refinancing risk and interest rate risk:*

- *Refinancing risk—the risk that a benchmark efficient entity would not be able to refinance its debt when it matures.*
- *Interest rate risk—the risk associated with a mismatch between the allowed return on debt and a benchmark efficient entity's actual return on debt.*

Our approach to the meaning of efficient financing costs was broadly supported by expert advice commissioned by us (Chairmont, Lally), and by advice commissioned by the service providers in recent regulatory processes (Frontier, SFG).

34. In this passage, the AER was explicit that the efficient financing cost of a benchmark efficient entity related to the costs that it would incur in managing both refinance and interest rate risk for its debt portfolio. The AER went on to define precisely what it believed the appropriate proxy for this efficient debt management strategy was:¹⁴

*We consider an **efficient financing practice of a benchmark efficient entity** under the on-the-day approach would have been to borrow long term and stagger the borrowing so only a small proportion of the debt matured each year. We consider a benchmark efficient entity would have combined this practice with interest rate swap contracts to broadly match the base rate component of its actual return on debt to its return on debt allowance. Specifically, we consider an efficient financing practice would have been to:*

¹³ AER, preliminary decision, AusNet electricity distribution, October 2015, p. 3-166

¹⁴ AER, preliminary decision, AusNet electricity distribution, October 2015, p. 3-185 to 3-186.

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

Our reasoning is that this financing strategy:

- *compared with the alternative broad debt financing strategies, would have more effectively managed refinancing risk and interest rate risk, and resulted in a lower expected actual return on debt;*
- *was generally adopted by most privately owned service providers under the on-the-day approach.*

Under this financing strategy, the base rate component of a benchmark efficient entity's actual return on debt would have broadly matched the on-the-day rate, while the debt risk premium component each year would have reflected the average of the previous 10 years.

The staggering of debt under this strategy would have lowered the refinancing risk, compared with the risk if a benchmark efficient entity had issued all its debt during the averaging period. Adopting a staggered debt portfolio with interest rate swaps, compared with a staggered debt portfolio without interest rate swaps, would have led to the same degree of refinancing risk. However, the former strategy would also have resulted in:

- *lower interest rate risk—this is because interest rate risk would have been borne on only the debt risk premium component of the return on debt, rather than on the total return on debt*
- *a lower actual return on debt—this is because hedging via interest rate swaps would have reduced the effective term of the debt. Because longer term debt is typically more expensive than otherwise equivalent shorter term debt (given the holders of long term debt face greater risks), reducing the effective term would have likely reduced the actual return on debt, on average.⁶⁰²*

Our assessment that the above strategy was an efficient financing practice of a benchmark efficient entity under the on-the-day approach is supported by expert advice from both an academic perspective (Dr Lally) and a financial market practitioner perspective (Chairmont). [Emphasis added.]

35. Similarly, in section 7.3.3 of its Rate of Return Guideline the AER states:¹⁵

Given the observed practices of regulated network businesses and the definition of the benchmark efficient entity, we consider that the following practice is likely to constitute an efficient debt financing practice of the benchmark efficient entity under current 'on the day' approach:

- *holding a debt portfolio with staggered maturity dates and using swap transactions to hedge interest rate exposure for the duration of a regulatory control period.*

36. The adoption of this assumed efficient financing practice of a benchmark efficient entity underpinned the AER's analysis of why its proposed transition to a trailing average was consistent with the ARORO and why other approaches were not. For example, in rejecting the immediate adoption of a historical trailing average (immediate transition), the AER stated that such a transition:¹⁶

*does not approximately match the allowed return on debt with **the efficient financing costs of a benchmark efficient entity** over the 2016–20 period **as it transitions its financing practices to the trailing average approach**. Given a benchmark efficient entity will already have financing practices in place it entered into in the past, it needs time to unwind these practices and gradually adopt practices that match the trailing average approach. [Emphasis added.]*

37. That is, given that the AER defined a benchmark efficient entity's debt management practice as having used interest rate swaps to reset base rates of interest every five years (in the manner set out in the quote at paragraph 34 above), the AER believed that compensating for historical average base rates of interest would not be commensurate ("approximately match") with the efficient financing costs of a benchmark efficient entity (as defined by it).

38. In summary, the AER's previous interpretation of the ARORO (and the interpretation of its experts and all other stakeholders) was that:

"...efficient financing costs of a benchmark efficient entity with a similar degree of risk as that which applies to the service provider in respect of the provision of reference services"

is meant to be interpreted according to its plain economic meaning. Specifically, these costs refer to such costs that would be incurred by an entity when implementing an efficient financing strategy, including debt management strategy, in order to

¹⁵ AER, *Explanatory Statement: Rate of Return Guideline*, December 2013, p. 107.

¹⁶ AER, preliminary decision, AusNet electricity distribution, October 2015, p. 3-165.

finance assets used to provide services with a similar degree of risk as that which applies to the service provider in respect of the provision of reference services.

2.3 The AER's new interpretation of the ARORO

39. The AER's new interpretation of the ARORO is encapsulated in the below quote from AusNet's electricity *distribution* final decision.

"We do not consider a benchmark efficient entity's past financing practices determine its efficient financing costs..."¹⁷

40. Notably this direct language is not repeated in AusNet's draft electricity *transmission* decision – although the interpretation is the same. Here the AER clearly and explicitly states its position that "efficient financing costs" have nothing to do with how a business would actually efficiently finance itself. Rather, efficient financing costs are a hypothetical/conceptual concept that is not determined by reference to actual financing practices, and associated costs, efficiently incurred by a benchmark efficient entity.

2.3.1 The AER's new interpretation is that the ARORO is synonymous (a version of) with an NPV=0 criterion

41. The AER's new view is that the ARORO requires an interpretation of efficient financing costs as being the rates prevailing at the beginning of a regulatory period. The AER states that the use of prevailing rates in this fashion will satisfy the NPV=0 criteria whereby the present value of cash-flows (*before* efficiently incurred debt financing costs are removed) will be equal to the statutory value of the RAB. The AER

¹⁷ AER, SP AusNet, Final Electricity Distribution Determination, 3-316. In the same decision the AER also states (at 3-316):

We do not consider 'efficient financing costs' in the ARORO refers to historical costs, requiring compensation for losses (or gains) from unhedged mismatch with the previous regulatory allowance. Rather, achieving the ARORO requires a benchmark efficient entity be ex-ante appropriately compensated in present value terms and for the allowance to lead to efficient compensation (see section H.2.1). If provided with ex-ante efficient compensation, then a benchmark efficient entity has a reasonable opportunity to recover its efficient debt financing costs.

The on-the-day rate is an appropriate measure of 'efficient financing costs' and reflects the prevailing cost of debt in the capital market near the commencement of the regulatory period. This is consistent with the cost of capital being a forward-looking opportunity cost (see section H.1.1).

defines this criterion as synonymous with the ARORO.¹⁸ This position is most clearly stated as set out in the following quote:¹⁹

We note that given the ARORO is standalone, the ARORO will be achieved if the present value of expected return on (and of) capital cash flows equal the start-of-period opening RAB.

42. Here the AER is claiming that a sufficient condition for the satisfaction of the ARORO is that the NPV=0 criterion (as now defined by it) is satisfied. It is clear that the AER also regards this as a necessary condition.²⁰

2.3.2 The AER's new NPV=0 criterion assumes zero debt financing

43. The AER's new version of the NPV=0 criterion involves a very specific thought experiment. It imagines that a potential investor is valuing access to a benchmark efficient entity's expected future revenues net of efficient operating expenditures and taxes *but before efficiently incurred debt financing costs*. In that case, an investor would value this (hypothetical) cash-flow stream at RAB if, and only if, the AER uses the investor's prevailing discount rate (used in the valuation) to set the allowed return on capital.
44. The cash-flow being valued in the above paragraph is hypothetical in that it is *before efficiently incurred interest costs*. A valuation of cash-flow before interest only has any relevance to an entity that has not already engaged in debt financing. In the AER's hypothetical valuation the entity performing the valuation is not the BEE that is actually providing (and therefore has already financed) assets necessary to provide

¹⁸ See AER, AusNet Draft Transmission Determination, p. 95 first paragraph under the heading "Approaches that contribute to the achievement of the ARORO".

¹⁹ Ibid, p. 278.

²⁰ Ibid, p. 95. "*We consider the ARORO requires that the allowed rate of return appropriately compensates investors for capital investments (in an ex-ante sense) and aims to minimise the long run cost of capital (all else being equal).*³⁸¹ *We consider ex-ante efficient compensation should result in the ex-ante allowed return on capital cash flows having a present value equal to the present value of the ex-ante efficient cost of capital cash flows required to finance the RAB. **This means the allowed return on and of capital cash flows should have a present value equal to the statutory value of the RAB. This is a zero NPV investment condition, as discussed in section 3.3.3***"

Ibid, p. 102. "*As the services providers operate under an ex-ante regulatory regime, we consider the ARORO requires us to provide ex-ante efficient compensation. This does not entail compensating for historically incurred costs.*"

Ibid, p. 270. "*As discussed in section H.6.1, we consider the ARORO requires us to set an allowed rate of return for a benchmark efficient entity such that the return on its investment in its RAB equals its efficient cost (that is, the zero NPV investment condition). **The prevailing market cost of capital is the only discount rate that sets the present value of expected future cash flows equal to the RAB.***"

services with a similar degree of risk as that which applies to the service provider in respect of the provision of reference services.

45. Rather, the AER’s hypothetical valuation only makes sense from the perspective of an entity that has not financed any assets but, instead, is interested in purchasing the assets using finance available at current market rates. (In fact, even in this hypothetical the AER’s logic is unsound – as we demonstrate in sections 6 and 7.)
46. That is, the AER’s hypothetical present value thought experiment is relevant **if, and only if**, it can be assumed that the ARORO’s reference to “*efficient financing costs of a benchmark efficient entity*” assumes that the entity has no pre-existing debt finance or relates to an entity that is not currently providing any service but is interested in acquiring the assets of a company that *is* currently providing the services.
47. In effect, the AER is assuming what it sets out to prove by hypothecating a valuation of a BEE where the BEE has no historically incurred debt costs. In that circumstance, and only in that circumstance, can it be assumed that efficient debt financing costs consist of purely prevailing debt financing costs. Of course, this effectively defines a BEE as an entity that has never actually financed any of its assets through debt – only hypothetically being available to do so at prevailing rates. Moreover, as soon as such a hypothetical BEE did actually finance any assets with debt, it must immediately cease to be a BEE because, from that moment on, its financing costs would include some historically incurred costs.

3 Contrasting the AER's old and new NPV=0 criteria

3.1 NPV=0 has multiple meanings

48. The concept of an NPV=0 criterion has multiple meanings. Importantly, it can be said to support a view that:
- NPV=0 requires that allowed revenues have the same present value as efficiently incurred costs – including efficient staggered debt financing costs that have already been incurred by the BEE in the past and are forecast to be incurred in the future; or
 - NPV=0 requires that a third party that has not previously financed any assets (and therefore has no pre-existing debt financing costs) would value the regulated assets at their statutory RAB value.
49. These are very different, but equally valid, possible definitions of the NPV=0 criterion. However, stating that one or the other of these criteria satisfies the ARORO, without acknowledging that the other exists, tends to obscure rather than enlighten the interpretation of the ARORO. This conclusion applies doubly so, given that different interpretations of the NPV=0 criterion have been said to be consistent with the ARORO at different times by the AER and its experts – but the AER has failed to clearly acknowledge this change.
50. Specifically, up until the end of 2015 the AER and its experts adopted the first interpretation of the NPV=0 criterion – which was consistent with the AER's old interpretation of the ARORO. In 2016 the AER and its (new) experts have adopted the second interpretation of the NPV=0 criterion consistent with the AER's new interpretation of the ARORO.
51. The continual reference back to the NPV=0 criterion, as is done throughout the AER's July 2016 draft decision for AusNet, actually disguises the important issues of interpretation because it allows the AER to repeatedly posit a 'short-hand' interpretation of the ARORO that is presented as being uncontentious but is, in reality, ambiguous.

3.2 The AER's old vs new NPV=0 criteria

52. In its preliminary decision for AusNet Services electricity distribution, the AER also took the view that its (old) interpretation of the ARORO was equivalent to an "NPV=0" criterion. Specifically, the AER defined the NPV=0 criterion as being satisfied if the present value:

- of revenues; less
- efficiently incurred cost (including staggered debt financing costs efficiently incurred by the BEE)

is equal to zero.

53. For example, the AER's October 2015 preliminary decision for AusNet Services states:²¹

*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...*

...

*Accordingly, there is a strong connection between the NPV principle, the allowed rate of return objective and the NGL 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. It follows that providing service providers with a reasonable opportunity to recover their efficient costs will also provide effective incentives for efficient investment. And if service providers are fairly compensated for their efficient costs, but not over-compensated, then consumers will not pay more than necessary for a safe and reliable network. [Emphasis added.]*

54. The emphasis added in the first paragraph of the above quote draws attention to the fact that historically incurred debt financing costs are a component of the benchmark

²¹ AER, preliminary decision, AusNet electricity distribution, October 2015, p. 3-173 to 3-174. Note that the We also note that the ACCC has, similarly, expressed the NPV=0 condition on the same terms. That is, the ACCC has stated that the NPV=0 condition is met if the business's actual debt costs match the regulatory allowance. (ACCC, Estimating the Cost of Debt, April 2013, see: first paragraph on page 5 and more generally pages 5 to 7. Last paragraph of section 5.2 on page 19.) The ACCC Regulatory development branch, clearly states that the NPV=0 condition cannot be achieved if the AER sets the cost of debt allowance based on prevailing 'on the day' rates (at least not unless businesses were to issue five year debt once every 5 years). (Ibid, pages 6 to 7.) The ACCC acknowledged that such a debt management strategy would not be efficient and that, in order to manage refinance risk, businesses issue debt in a staggered manner. The ACCC proposed that compensation be set on a trailing average basis in order that the regulatory allowance would more closely match efficient debt costs – which was the ACCC's interpretation of the requirements under the rules. (First two full paragraphs on page 14.)

*As a regulator is **required to model the cost of debt using efficient debt profiles** it can estimate the cost of debt using a portfolio approach. (Emphasis added)*

efficient entity's expenditure and, therefore, in order to satisfy this version of the NPV=0 criterion the allowed regulated revenue must be commensurate with these costs.

55. The emphasis added in the second paragraph of the above quote draws attention to the fact that, in this passage, the AER draws no distinction between the concept of efficient financing costs in the ARORO and the concept of efficient costs in the revenue and pricing principles. It says that the NPV=0 criterion satisfied both.
56. However, the AER's new view, as set out in section 2.3, is that 'efficient financing costs' referred to in the ARORO are purely prevailing while 'efficient costs' referred to in the revenue and pricing principles refers to actual historically incurred financing costs (see section X). Clearly, a single NPV=0 criterion cannot satisfy both the ARORO and the revenue and pricing principles.
57. We also note that Lally's advice to the AER was, very clearly, applying the AER's old version on the NPV=0 criterion. That is, the NPV=0 criterion that Lally advised was consistent with the ARORO was very clearly inconsistent with the AER's new interpretation of the ARORO (and the associated new version of the NPV=0 rule). This is evident from the following advice Lally gave the AER in 2015:²²

*In summary, the legal requirement for the allowed cost of debt to be **commensurate with the costs of a BEE** is formalized through the NPV = 0 principle. ... Given that firms stagger their debt, regulatory use of the prevailing cost of debt (the on-the-day regime) **will not satisfy the NPV = 0 principle due to mismatches between the allowed and incurred costs of debt at the commencement date of the regulatory business.***

58. That is, Lally is quite clear that using prevailing rates to set compensation violates the NPV=0 criterion because it does not reflect the actual efficient staggered debt

²² Lally, *Review of submissions on the cost of debt*, 21 April 2015, p. 25. See also page 22 where Lally states.

However, in the presence of debt, there are a range of policies that a BEE might pursue and the regulator's choice of regime might lead the BEE to change its policy, leading to a further change in regulatory action, and so on. Under such conditions, the NPV = 0 principle should be viewed not simply as a regulatory policy that gives rise to NPV = 0 but a compatible combination of regulatory policy and BEE actions that satisfies the NPV = 0 principle; this compatible combination must involve a course of action by a BEE that is feasible in the absence of regulation and a regulatory regime whose imposition would not cause the BEE to change this behavior ("matching" regulatory policy). There may be more than one combination that satisfies this definition.

See also Lally, *Review of Submissions on Transition Issues for cost of debt*, October 2015, p. 7

*I favour continued use of the on-the-day regime because its disadvantages (**violation of the NPV = 0 principle**, greater bankruptcy risk, and greater output price variation) are minor and less significant than its advantages, which are ease of implementation and lesser incentive problems for capex and new entrants (or lesser complexity if these incentive problems are addressed).*

financing costs a BEE actually has incurred (in past and forecast future financing of the RAB). This is, of course, the exact opposite of the AER's new interpretation of the NPV=0 criterion (as applied to the ARORO at least). This old version of the NPV=0 criterion was accepted by the AER up to and including AusNet's electricity distribution preliminary decision – which quoted extensively from the same Lally report quoted from above.

3.3 The AER has substituted Partington and Satchell's NPV=0 criterion for Lally's NPV=0 criterion

59. The AER's draft decision for AusNet Services electricity transmission no longer references Lally's advice on the equivalence between the ARORO and "the" NPV=0 criterion. Instead, the AER now references advice from Partington and Satchell:²³

Similarly, Partington and Satchell consider the rule requirements are consistent with the zero NPV investment condition, stating:

*The national electricity and gas objectives are to achieve efficient investment and efficient operation in the long term interest of consumers, while the revenue and pricing principles allow for the recovery, by the regulated businesses, of efficient costs including a return on capital and having regard for the costs and risks of overinvestment. There is very clear criterion that can be applied to meet these requirements. **That criterion is that investment in regulated assets should be a zero NPV activity.** [Emphasis added.]*

60. We do not necessarily disagree with the last sentence of the quote (that investment in regulated assets should be a zero NPV activity). The problem is that, contrary to the second last sentence, this does not have a 'very clear' meaning – two of which are discussed in section 3.2. Indeed, the fact that the AER and its experts have adopted two diametrically opposed versions highlights the problem.

3.4 The AER's new/old view is that the new/old NPV=0 criterion must/must not be applied purely prospectively

61. The AER's October 2015 preliminary decision for AusNet Services was explicit in rejecting the application of the NPV=0 criterion purely for an assessment of future compensation compared to future costs (i.e., a purely prevailing approach). This rejection of a purely prevailing application was made in the context where:
- given the old interpretation of the NPV=0 criterion; and

²³ AER, AusNet Transmission draft decision, July 2016, p. 3-265

- the AER’s interpretation of a benchmark efficient debt management strategy;
- only the “hybrid” transition satisfied the NPV=0 criterion based on a prevailing application.

62. The hybrid transition sets the cost of debt allowance based on the benchmark efficient entity resetting its base interest rate costs in the swap market but still incurring historical debt risk premium (DRP) costs (on the basis that the DRP could not be hedged to the regulatory cycle). The AER accepted that the “hybrid” transition to a trailing average provided compensation that was closest to its assumed prospective efficient financing costs of a benchmark efficient entity.²⁴

We consider the hybrid transition (Option 3) may be a reasonable approach and contribute to the achievement of the allowed rate of return objective, but it is not our preferred approach. The benefits of this approach are that it:

- *maintains the outcomes of service provider's past financing decisions consistent with the principles of incentive regulation by continuing to apply the on-the-day rate to the component of the debt which service providers had most control over (the base rate component)*
- ***provides a good match between the allowed return on debt and a benchmark efficient entity's financing costs over the period it takes a benchmark efficient entity to transition its financing practices to the trailing average approach.***
[Emphasis added.]

63. However, the AER immediately proceeded to qualify this support for the hybrid on the basis that historical differences between allowed revenues and financing costs were relevant to the application of the NPV=0 criterion ‘over the life of the assets’.

The downside of the hybrid transition includes:

- *Transitioning from the on-the-day approach using the hybrid transition can create a mismatch between the allowed return on debt and the efficient financing costs of a benchmark efficient entity **over the life of its assets**. The change in the regulatory regime can therefore create windfall gains or losses to service providers or consumers. Windfall gains or losses do not result from a service provider's efficient or inefficient decisions. In effect, they are a side effect of changing the methodology for estimating the return on debt at a particular point in time. They should be avoided, so that economic*

²⁴ AER, preliminary decision, AusNet electricity distribution, October 2015, p. 3-163.

regulatory decisions deliver outcomes based on efficiency considerations, rather than timing or chance.

64. It is clear that if the hybrid matched compensation to costs prospectively then the only way that one could conclude that it did not do so ‘over the life of the assets’ must be because there was a belief that there are relevant historical differences between allowed and efficient costs. The AER elaborates on this point:²⁵

In other words, we are satisfied that the rules require us to consider whether the regime change results in a benchmark efficient entity being over or under compensated over the life of its assets. That is, we consider another relevant impact is on whether the NPV principle is satisfied or not, in light of the regime change.

65. By contrast, now that the AER has adopted its new version of the NPV=0 criterion, its position has also changed. The AER’s new position is that the NPV=0 criterion must be applied purely prospectively using prevailing rates at the beginning of the regulatory period, and the only question that is relevant is whether future revenues have an NPV (when evaluated by a party with no pre-existing debt financing costs) equal to the value of the RAB.

²⁵

AER, preliminary decision, AusNet electricity distribution, October 2015, p. 3-175

4 How does the AER justify its new interpretation

66. Recall that the NPV=0 criterion can be, validly, defined to mean two different things:
- NPV=0 requires that allowed revenues have the same present value as efficiently incurred costs – including efficient staggered debt financing costs incurred by the BEE in the past and forecast to be incurred in the future; or
 - NPV=0 requires that a third party that has not previously financed any assets (and therefore has no pre-existing debt financing costs) would value the regulated assets at their statutory RAB value.
67. The following quote is extracted from the AER’s June 2016 draft decision for AusNet Services transmission. In it the AER is implicitly defining the “NPV=0 criterion” to mean the second of the above definitions. However, the importance of what the AER is doing is, in our view, disguised by the use of ill defined ‘jargon’, such as the use of the “zero NPV investment condition”, as well as the repeated use of “ex-ante” as an adverb:²⁶

*We consider a rate of return that meets the ARORO must provide **ex-ante** compensation for efficient financing costs (we refer to this as **ex-ante** efficient compensation).*

*We consider ex-ante efficient compensation should result in the ex-ante allowed return on capital cash flows having a present value equal to the present value of the ex-ante efficient cost of capital cash flows required to finance the regulatory asset base (RAB). This means we must set, ex-ante, an allowed rate of return for a benchmark efficient entity such that the return on its investment (in its RAB) equals its efficient cost. **This is a zero net present value (NPV) investment condition**, which is a forward looking concept that shows a benchmark efficient entity is provided with a reasonable opportunity to recover at least efficient financing costs over the life of its investment (in its RAB). Partington and Satchell described it as follows:*

***The zero NPV investment criterion** has two important properties. First, a **zero NPV investment means** that the ex-ante expectation is that over the life of the investment the expected cash flow from the investment meets all the operating expenditure and corporate taxes, repays the capital invested and there is just enough cash flow left over to cover investors’ required return on the capital invested. Second, by*

²⁶ AER, draft decision, AusNet Transmission, July 2016, p. 3-259

definition a zero NPV investment is expected to generate no economic rents. Thus, ex-ante no economic rents are expected to be extracted as a consequence of market power. The incentive for investment is just right, encouraging neither too much investment, nor too little.

As discussed in section 3.3.3 and H.5.1, we consider efficient financing costs, for debt and equity, should be based on (appropriately benchmarked) prevailing market rates. This reflects the current opportunity cost of capital for investments of similar risk to a benchmark efficient entity in the position of a service provider supplying regulated services. The opportunity cost of capital is the rate used to discount firms' expected future cash flows in NPV calculations.

Under the ex-ante regulatory regime, we reset the allowed rate of return (through the returns on debt and equity) at the commencement of each regulatory period (or annually for the allowed return on debt if we use a trailing average). If the allowed rate of return is reset to reflect the prevailing market cost of capital, it provides ex-ante efficient compensation over each reset period.

68. The first three paragraphs of the quote do not advance the interpretation of the ARORO in any way. Two individuals could agree that the ARORO requires a “zero NPV investment criterion” to be satisfied but disagree on which of the previously outlined definitions is appropriate. Nothing in the first three paragraphs (including the quote from Partington and Satchell) sheds any light on these critical issues of interpretations.²⁷ The AER fails to set out these interpretations side-by-side, and does not make it clear that it is (now) choosing the second over the first. Naturally, this means that there is no clear explanation of why the AER has changed its views.

²⁷

The same two individuals could both agree with the AER's statement that:

“...ex-ante efficient compensation should result in the ex-ante allowed return on capital cash flows having a present value equal to the present value of the ex-ante efficient cost of capital cash flows required to finance the regulatory asset base (RAB). This means we must set, ex-ante, an allowed rate of return for a benchmark efficient entity such that the return on its investment (in its RAB) equals its efficient cost.

But they could both disagree on what constitutes “ex-ante efficient cost of capital cash flows required to finance the regulatory asset base”. Specifically the AER's use of this phrase could mean:

- the estimated efficient financing costs actually payable by an benchmark efficient entity that has actually financed the RAB (including costs associated with debt financing that would already be efficiently in place).
- the ex ante efficient financing costs that would be incurred by hypothetical benchmark efficient entity purchasing the RAB today and financing this purchase using prevailing rates of interest.

69. The AER’s new views are only clearly enunciated in the last two paragraphs of the above quote. But the reasons for these views are not explained. Instead, the reader is referred back to “section 3.3.3 and H.5.1”.

4.1 Explanation provided in section 3.3.3 and H.5.1

70. Most of the section 3.3.3 in the AER’s draft decision is devoted to interpreting whether or not a benchmark efficient firm is regulated. This is, in itself, peculiar because this would only seem to be a relevant consideration under the AER’s old interpretation of the ARORO - where the AER believed that it was relevant to ask how a BEE would have responded to regulation. Under the AER’s new interpretation of the ARORO, this is irrelevant because the AER now believes that how a BEE would actually have financed itself is irrelevant.
71. The only space provided to the AER’s rationale for its new interpretation of the ARORO is on pages 3-17 to 3-18. We repeat this discussion in full below. However, we break it up into two sections (before and after the AER sub-heading “Elements of the ARORO—efficient financing costs”).

We are to determine the allowed rate of return such that it achieves the ARORO. The 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 provider in respect of the provision of standard control services.

The regulatory regime is an ex-ante (forward looking) regime. As such, we consider a rate of return that meets the ARORO must provide ex-ante compensation for efficient financing costs. This return would give a benchmark efficient entity a reasonable opportunity to recover at least its efficient financing costs. This is a zero net present value (NPV) investment condition, which can be described as follows:

The zero NPV investment criterion has two important properties. First, a zero NPV investment means that the ex-ante expectation is that over the life of the investment the expected cash flow from the investment meets all the operating expenditure and corporate taxes, repays the capital invested and there is just enough cash flow left over to cover investors’ required return on the capital invested. Second, by definition a zero NPV investment is expected to generate no economic rents. Thus, ex-ante no economic rents are expected to be extracted as a consequence of market power. The incentive for investment is just right, encouraging neither too much investment, nor too little.

Under our regulatory framework, a benchmark efficient entity’s assets are captured in its RAB. The return on capital building block allows a benchmark efficient entity to finance (through debt and equity) investment

in its network. Because investments usually carry a degree of risk, to satisfy the zero NPV condition the allowed rate of return must be sufficient to compensate a benchmark efficient entity's debt and equity investors for the risk of their investment.

72. This discussion is, like the quote provided in the previous section, devoid of any content that might explain why the AER now believes that the ARORO requires it to only use prevailing rates. Indeed, it repeats the same discussion of the ambiguous “NPV investment criterion”. If anything the statement that:

The return on capital building block allows a benchmark efficient entity to finance (through debt and equity) investment in its network

suggests that a focus on actual debt financing costs incurred in funding investment in the network would be appropriate (inconsistent with the AER’s new view of the ARORO).

73. It is only after the heading “Elements of the ARORO—efficient financing costs” that the AER explains why it believes the ARORO requires it to use purely prevailing rates.

Elements of the ARORO—efficient financing costs

*A key concept in the ARORO is 'efficient financing costs'. Because the market for capital finance is competitive, a benchmark efficient entity is expected to face competitive prices in the market for funds. **Therefore**, we consider efficient financing costs are reflected in the prevailing market cost of capital (or WACC) for an investment with a similar degree of risk as that which applies to a service provider in respect of the provision of regulated services. As Alfred Kahn stated, 'since the regulated company must go to the open capital market and sell its securities in competition with every other would-be issuer, there is clearly a market price (a rate of interest on borrowed funds, an expected return on equity) that it must be permitted and enabled to pay for the capital it requires'.*

*We consider employing a rate of return that is commensurate with the prevailing market cost of capital (or WACC) is **consistent with the zero NPV investment condition (see above)**. We also consider **economic efficiency more generally is advanced by employing a rate of return that reflects rates in the market for capital finance**. Similarly, Partington and Satchell interpret efficient financing costs as the opportunity cost of capital, which is a market rate of return for assets with a given level of risk. [Emphasis added.]*

74. In short, despite conceding that if a BEE actually financed the RAB it would do so with staggered debt issuance, the AER believes that the ARORO requires it to only compensate for efficient financing costs on the basis of prevailing rates because:

- a. The market for capital finance is competitive;
 - b. Prevailing rates are consistent with the “zero NPV investment condition”; and
 - c. The AER considers that economic efficiency is advanced by sole reliance on prevailing rates.
75. We now address each point in turn. First, the AER does not actually explain why a competitive financial market implies that it should interpret “efficient financing costs of a BEE” as referring to prevailing rates (or, indeed, why this would not be true if financial markets were not competitive). The use of the word “therefore” to begin the second sentence is *therefore* a non-sequitur. In our view, there is no reason to infer that the existence of competitive financial markets implies the AER’s (new) interpretation of the ARORO is appropriate.
76. Second, the use of prevailing rates is consistent with one definition of the “zero NPV investment condition” and inconsistent with another. In order to justify the use of prevailing rates, the AER needs to justify the new interpretation of that criterion over the old interpretation. No such justification is provided (nor is it even acknowledged explicitly that the interpretation has changed).
77. Third, we disagree with the AER that setting the allowed rate of return on the basis of prevailing rates promotes economic efficiency (see section 5). However, even if this were true, the AER fails to explain how this is relevant to the interpretation of “efficient financing costs of a BEE”. That is, even if it were true that setting the allowed rate of return equal to prevailing rates promoted economically efficient investment (or other economically efficient outcomes), it does not follow that this implies anything about the “efficient financing costs of a BEE”.
78. In our view it is clear that the ARORO is referring to efficient financing *costs*. However, the AER appears to be interpreting the reference to “efficient financing *costs*” as being equivalent to “efficient financing *incentives*”. That is, the AER’s final justification for setting the allowed rate of return only holds if the ARORO can be interpreted as stating:
- The allowed rate of return objective is that the rate of return for a service provider is to be commensurate with the efficient financing ~~costs~~ incentives of a benchmark efficient entity with a similar degree of risk as that which applies to the service provider in respect of the provision of reference services.*
79. This, in our view, is clearly not a valid economic interpretation of the ARORO. Of course, having regard to promoting efficient incentives is consistent with the National Electricity Objective (NEO).²⁸

²⁸

The National Gas Objective expresses the same objectives or gas services.

The National Electricity Objective is 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.

80. If there was a tension between the ARORO and the NEO (which we do not believe that there is), the AER could conceivably rely on its unsubstantiated views about efficient incentives to favour a policy that serves the NEO even if it is inconsistent with the ARORO. However, the AER cannot interpret, at least on a plain economic reading, the ARORO as requiring the AER to set the rate of return based on prevailing rates purely on the basis that the AER believes this promotes economically efficient outcomes.
81. The AER's section H.5.1 essentially repeats the same logic (and much of the same text) as section 3.3.3 of its decision. The main difference is that the AER goes into (slightly) more detail in relation to its views on the efficient incentive properties of using prevailing rates (we deal with this issue in the next section).

4.2 Summary

82. In summary, the AER has, in our view, not provided any well-reasoned justification for why it is interpreting the ARORO to require that it sets the allowed rate of return based on prevailing estimates of the cost of debt.

5 Is there a tension between the NEO and the ARORO

83. The NEO, as set out in the NEL, is:

...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.

84. The NEO and the revenue and pricing principles (RPP) in the NEL apply more broadly than to just the cost of debt and equity funding. However, in our view, the requirements set out in the NEL are consistent with our interpretation that the NEL requires an estimate of the allowed return on debt to be based on an estimate of the cost of following a benchmark efficient debt financing strategy.

85. In our view, if the allowance for the return on debt is based on a benchmark financing strategy that is consistent with the strategy that a benchmark efficient entity would undertake, then the regulated entity will:

- have appropriate incentives to invest and maintain its assets in a manner that promotes the NEO;
- have “a reasonable opportunity to recover at least the efficient costs the service provider incurs in providing reference services” - consistent with the RPP;
- be provided with effective incentives in order to promote economic efficiency – consistent with of the RPP;
- have tariffs that allow for a return commensurate with the regulatory and commercial risks involved in providing the reference service – consistent with the RPP; and
- have appropriate incentives to invest in the network - consistent with the RPP.

86. Similarly, setting tariffs to reflect the cost of debt associated with a benchmark efficient debt financing strategy is consistent with promoting efficient utilisation of gas networks by customers. In fact, in our view, achieving the allowed rate of return objective is an important foundation for achieving the NEO and the RPP.

87. Only if the cost of debt allowance is set consistent with a well-defined benchmark efficient debt management strategy can a business attempt to replicate that strategy such that its own efficient costs are commensurate with the allowance. If a business cannot do this because the cost of debt allowance is not based on a well-defined debt management strategy, then a gap between the allowed and achievable cost of debt can potentially be created. The effect of this gap can be to:

- weaken incentives to invest and maintain its assets in a manner that fails to promote the NEO;
 - deny “a reasonable opportunity to recover at least the efficient costs the service provider incurs in providing reference services” - inconsistent the RPP;
 - weaken incentives for efficient investment and thereby fail to promote economic efficiency – inconsistent with the RPP;
 - result in tariffs that do not allow for a return commensurate with the regulatory and commercial risks involved in providing the reference service – inconsistent with the RPP; and
 - fail to provide appropriate incentives to invest in the network - inconsistent with the RPP.
88. Consistent with the above, it is our view that promotion of the ARORO also promotes the NEO and helps achieve consistency with the RPP.

5.1 The AER’s views to the contrary

89. In section H.5.1 of the AER’s July 2016 draft decision for AusNet Services transmission, the AER sets out its views on economic efficiency and the “application to debt financing”. It does so in the context of interpreting the ARORO. We have already explained why we do not regard this as appropriate - because the ARORO does not directly reference promoting efficient outcomes but rather setting compensation commensurate with efficient costs. We have also, immediately above, explained why we believe that setting compensation commensurate with efficient costs (actually incurred) will promote efficient outcomes.
90. However, the AER expresses the view that:²⁹
- We consider that productive, allocative and dynamic efficiency are advanced by employing a return on debt that reflects prevailing rates in the market for funds. This will also promote the long term interests of consumers in line with the National Electricity Objective / National Gas Objective (NEO/NGO).*
91. If the AER was correct about this, and if it was the case that compensating based on actually incurred efficient debt financing costs would not promote the NEO, then there would be a tension between achieving the NEO and the ARORO (as we interpret it).
92. Unfortunately, the AER never provides a cogent explanation of why it believes that compensating based on 100% of the prevailing cost of debt (even if actual efficiently

²⁹ AER, draft decision, AusNet Transmission, July 2016, p. 3-255.

incurred cost of debt by a BEE in financing the RAB is different) will promote efficient investment. We provide below the extracts that are most informative in attempting to determine why the AER holds this view.³⁰

An on-the-day approach better reflects the prevailing cost of debt in the capital market near the commencement of the regulatory control period. Due to this, it:

- *Better reflects investors' opportunity cost of debt and expectations of future returns near the commencement of the regulatory control period. It therefore provides a better signal for efficient investment decisions that increase dynamic efficiency. This is consistent with the AEMC's view that the return on debt framework should minimise the risk of creating distortions in service providers' investment decisions.*

93. This is as close as the AER gets to explaining its view. There are other places where such claims are made, such as:³¹

We consider an allowed return on debt that reflects the prevailing market cost of debt promotes efficient investment decisions. When firms make investment decisions, they estimate the cost of capital based on prevailing market rates. This is important because the cost of capital is based on investors' expectations of future returns. Firms then use this estimate to set a discount rate at which they discount the expected future cash flows of the proposed investment in order to determine its viability (that is, whether the NPV of the expected cash flows is greater than or equal to zero).

5.2 Critique of the AER's views to the contrary

94. The above is as detailed a justification for the AER's views as is available. While this is a somewhat sparse discussion of investment incentives it does appear to have in common views that were, at one time, expressed by the West Australian Economic Regulatory Authority (ERA). Specifically, the ERA was of the view that using prevailing rates (and indeed resetting prevailing rates every year on 100% of the debt portfolio) would promote efficient investment.

95. The ERA's basis for this view was that:

- A business must finance incremental investment at prevailing rates; and
- If the businesses is always being compensated based on prevailing rates it will always expect to earn its cost of a new investment.

³⁰ AER, draft decision, AusNet Transmission, July 2016, p. 3-98

³¹ AER, draft decision, AusNet Transmission, July 2016, p. 3-270

96. We pointed out to the ERA that this logic was only true if the life of the asset had the same term as the cycle used by the regulator to reset prevailing rates.³² If this was not the case, as indeed it is not, then the logic did not hold. A business investing in a 50 year asset regulated under a regime of annually resetting prevailing rates will be certain that:
- Compensation in the first year of the asset’s life will match costs;
 - Compensation in the remaining 49 years of the asset’s life will not (unless by pure chance).
97. The same logic applies with a 5 year reset (as envisioned by the AER). A business investing in a 50 year asset regulated under a regime that resets at prevailing rates every 5 years will be certain that:
- Compensation in the first year of the asset’s life will match costs if that compensation is undertaken at the beginning of the first of the 5 year regulatory period; and
 - Compensation will not match costs (unless by pure chance) for:
 - the remaining 49 years of the investment envisioned in the first dot point;
 - any of the investment undertaken at any time later in the regulatory period.
98. We pointed out to the ERA that adopting a trailing average³³ would actually substantially improve the incentives for efficient investment by better matching compensation to efficient costs over the life of the assets. Moreover, we pointed out to the ERA that if the trailing average was weighted by the amount of financing (and refinancing) occurring in each year then this would perfectly match compensation to costs. That is, only a trailing average (not a prevailing) approach could achieve the incentive properties of matching marginal financing costs to marginal investment decisions over the life of the assets.
99. The ERA ultimately adopted a trailing average approach³⁴ and, in doing so, it conceded the veracity of these views.³⁵

ATCO’s consultant CEG argues that firms consider interest rates over the life of an investment project, not just the prevailing rate, when making

³² For example, see ATCO Gas Australia, Response to the ERA’s Draft Decision on required amendments to the Access Arrangement for the Mid-West and South-West Gas Distribution System, 27 November 2014, Appendix 9.2.

³³ This could be a trailing average of the whole cost of debt or a trailing average of the DRP with compensation for the base rate of interest based on an assumed (“hybrid”) swap overlay

³⁴ The ERA adopted the hybrid trailing average approach.

³⁵ ERA, Estimating the return on debt, 4 March 2015, pp. 10 to 14.

investment decisions (see discussion of this point below). If one agrees with such a longer term perspective, then the differences between the present value of the trailing average and the on the day approach at any point in time become less important, while the superior performance of the trailing average in terms of the present value condition would tend to favour the trailing average (see next section below on the present value issues).

Further, it is possible to weight the trailing average approach to ensure that new investment faces a marginal cost of debt that is based on the prevailing rate (see below). This attenuates the shortcomings of the trailing average that relate to prediction performance.

...

A weighted trailing average approach, annually updated, can be implemented to remove distortions for new investments, as compared to the simple (equal weighted) trailing average approach. Weighting the trailing average can restore the marginal cost of debt back to the on the day prevailing rate of the immediate annual update

...

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

100. In short, if there really was an incentive problem of the type raised by the AER then the best solution (better than retaining an ‘on the day’ prevailing rate approach) would be move to a trailing average immediately – and weight the trailing average by incremental financing activity (a relatively trivial spread-sheeting exercise).
101. Our view is that the AER’s implied analysis of efficiency incentives is overly simplistic. Were the AER to continue to hold that view, the internally consistent approach would be to *reject* the sole reliance on prevailing rates and instead adopt a weighted trailing average.

5.3 Summary

102. There is no tension between the ARORO and the NEO/RPP. All of the objectives in the NEL and the NER are internally consistent and are promoted by setting the allowed rates of return commensurate with efficient financing costs that a BEE would incur were it to actually finance investments in regulated assets.

6 Inconsistent application of the AER's new interpretation of the ARORO

103. The AER's new interpretation of the ARORO is that you must not have regard to actual efficient debt management practices when determining the efficient financing costs of a BEE. However, the AER, unsurprisingly, finds it difficult when drafting its decision to truly divorce an interpretation of 'efficient financing costs' from the actual efficient practice of a BEE. This section highlights some examples of where the AER slips between its old and new interpretations of the ARORO.

6.1 Discussion of transition

104. Under the heading 'transition into the staggered portfolio' the AER puts its position in terms of what a business would actually do:³⁶

On the first year of a trailing average, a business would either:

- *Raise an equal-weighted portfolio of 1, 2, 3 ... 9, 10 year debt. Each year 10 per cent of this would expire and the business would replace this with 10 year debt.*
- *Raise 10 year debt. Each year it would refinance 10 per cent of this and replace this with more 10 year debt.*

We have calculated the return on debt allowance assuming the latter option. We have calculated the return on debt allowance assuming the latter option. Since we expect this would be the higher cost option given interest rates on longer-term debt securities are often higher than those on shorter-term debt securities, our debt allowance should be conservative in the service providers' favour.

105. Here the AER is justifying its approach on the basis of what a business would actually do and the interest costs it would actually pay during a transition to a trailing average. This focus on the financing actions of a business is anathema to its stated interpretation of the ARORO, which rejects the relevance of actual financing strategies.

³⁶ AER, AusNet Transmission draft decision, pp. 279-280.

106. However, this focus on what a business would actually do is entirely consistent with CEG’s plain economic interpretation of the ARORO (and the AER’s previous interpretation and the advice of its previous experts as well as the ACCC).³⁷
107. The fact that the AER ‘slips’ back into a focus on what a business would actually do is inconsistent with its new interpretation of the ARORO and, in our view, evidence of how powerful the plain economic interpretation of the ARORO is

6.1.1 The AER reconciles using prevailing rates even though its example is framed on what a business would actually do

108. It is notable that in the AER’s analysis, discussed above, the AER manages to conclude that the use of prevailing rates is consistent with an NPV=0 criterion *despite* framing the problem in terms of what a business would actually do. As described in section

³⁷ As set out in sections 2 and 3 above. As also noted by the AER noted in its October 2015 preliminary decision for AusNet For example, see AER, preliminary decision, AusNet electricity distribution, October 2015, p. 3-174.

Lally advised that the NPV principle should be viewed as a compatible combination of regulatory policy and service providers' actions that satisfy the NPV principle.

That is, Lally’s advice, accepted by the AER, was that satisfying the NPV=0 criterion required the regulator to set the allowed rate of return in a manner that was compatible with the efficient financing costs that a business would actually incur. That is why Lally advised:

Given that firms stagger their debt, regulatory use of the prevailing cost of debt (the on-the-day regime) will not satisfy the NPV = 0 principle due to mismatches between the allowed and incurred costs of debt at the commencement date of the regulatory business. (Lally, Review of submissions on the cost of debt, 21 April 2015, p. 25.)

Specifically, efficiently managing refinancing risk means that a business cannot be expected to reset all of its debt financing costs at the beginning of the regulatory period. Therefore, setting a regulatory allowance ‘as if’ they did fails to satisfy the NPV=0 criterion - as defined by Lally and previously accepted by the AER. See also page 22 of the same Lally report where Lally states

However, in the presence of debt, there are a range of policies that a BEE might pursue and the regulator’s choice of regime might lead the BEE to change its policy, leading to a further change in regulatory action, and so on. Under such conditions, the NPV = 0 principle should be viewed not simply as a regulatory policy that gives rise to NPV = 0 but a compatible combination of regulatory policy and BEE actions that satisfies the NPV = 0 principle; this compatible combination must involve a course of action by a BEE that is feasible in the absence of regulation and a regulatory regime whose imposition would not cause the BEE to change this behavior (“matching” regulatory policy). There may be more than one combination that satisfies this definition.

See also Lally, *Review of Submissions on Transition Issues for cost of debt*, October 2015, p. 7

*I favour continued use of the on-the-day regime because its disadvantages (**violation of the NPV = 0 principle**, greater bankruptcy risk, and greater output price variation) are minor and less significant than its advantages, which are ease of implementation and lesser incentive problems for capex and new entrants (or lesser complexity if these incentive problems are addressed).*

2.3.2, this is only possible if it is assumed that the business has zero debt financing in place. This is, indeed, what the AER implicitly assumes when it set out to ‘mathematically’ prove that only compensation based on prevailing rates can deliver an NPV=0 result.

109. When the AER states:³⁸

On the first year of a trailing average, a business would either:

- *Raise an equal-weighted portfolio of 1, 2, 3 ... 9, 10 year debt. Each year 10 per cent of this would expire and the business would replace this with 10 year debt.*
- *Raise 10 year debt. Each year it would refinance 10 per cent of this and replace this with more 10 year debt.*

both courses of action clearly imply no (zero) pre-existing debt financing exists. If a business has already debt financed its investment (which obviously it must have done given that the assets, in the main, were put in place in the past) then that debt (or the subsequent refinancing of that debt) remains a liability for the business. Only if all pre-existing debt expired on the same day that the trailing average began could either of the posited options be plausibly undertaken. Of course, this would be inconsistent with the AER’s view that actual efficient debt financing practice involves a staggered maturity profile to manage refinance risk.

110. Moreover, it is relevant to note that the second option (the one that actually matches the AER transition) is not a plausible strategy even if the firm had zero debt at the start of the transition. This is because if the firm issued only 10 year debt at the start of the transition it would have to wait 10 years to refinance that debt. It could not refinance 10% of this debt each year because none of it actually comes up for refinance until 10 years after it was first issued.³⁹

6.2 The AER’s interpretation of the ARORO when adopting a trailing average

111. In the AER’s rate of return Guideline explanatory statement the AER states:

The allowed rate of return objective requires us to set a rate of return commensurate with the efficient financing costs of the benchmark efficient

³⁸ AER, AusNet Transmission draft decision, pp. 279-280.

³⁹ The business could conceivably attempt to buy back 10% of its initial issuance after one year (if they could convince the debt holders to sell their debt). However, because of the transaction costs (and interest rate risk) involved no business would issue 10 year debt with the intention buying back 10% of it in each subsequent year.

entity. We do not consider this to be only a theoretical proposition. Rather, it should be consistent with observable good practice in efficient businesses. ⁴⁰

112. This is consistent with our interpretation of the ARORO but not the AER’s new interpretation. Similarly, the AER directly linked the adoption of a trailing average (i.e., a move away from prevailing rates) in its Rate of Return Guideline to the actual debt financing costs of a BEE as follows (emphasis added).⁴¹

In summary:

- *We propose to use a single definition of a benchmark efficient entity and specify a single approach to estimating the return on debt.*
- *We consider that holding a portfolio of debt with staggered maturity dates is likely **an efficient debt financing practice of the benchmark efficient entity** operating under the trailing average portfolio approach.*
- *We consider that the regulatory return on debt allowance under the trailing average portfolio approach is, **therefore**, commensurate with the efficient debt financing costs of the benchmark efficient entity.*
- *We further consider that the trailing average portfolio approach is consistent with other requirements of the rules, RPP, and the objectives.*
[Emphasis added.]

113. The AER’s current position is that the above logical statement is wrong. The AER’s current position is that the efficient debt financing strategy of the BEE is irrelevant to an assessment of whether the allowed rate of return is commensurate with efficient costs.

114. Notably, the AER acknowledges that its (new) NPV=0 criterion will be violated by the adoption of a trailing average – because future allowed rates of return will reflect, in part, historical interest costs. The AER does not provide a satisfactory explanation for why this permanent violation of (what it defines as) the ARORO is acceptable. The AER simply states that:⁴²

“Despite this, we can show the service provider would have a reasonable opportunity to recover at least efficient costs over the term of the RAB.”*

⁴⁰ AER, Better Regulation | Explanatory Statement | Rate of Return Guideline, December 2013, p. 28

⁴¹ AER, Better Regulation | Explanatory Statement | Rate of Return Guideline, December 2013, , p. 102.

⁴² AER, AusNet Transmission draft decision, p. 279.

(*Asterisk is not in original but is inserted for context. Specifically, the AER is referring to the failure of a trailing average to be consistent with the AER's NPV=0 criterion.)

115. The AER's reasoning in the above quote is internally inconsistent. On one hand, the AER strenuously rejects any transition other than one that starts with prevailing rates of return on the basis that using historical rates of return is inconsistent with the ARORO (i.e., inconsistent with the AER's new version of the NPV=0 criterion). However, diametrically opposed to this position, the AER accepts the adoption of a trailing average cost of debt, which would mean, if ne accepted the AER's new interpretation of the ARORO, that the ARORO would be permanently violated into the future.
116. It is striking that the AER is only applying its version of the NPV=0 criterion to the issue of a return on debt transition, but has made no serious attempt to apply this criterion to determine any other aspect of the regulatory framework – including the ultimate post-transition structure of regulation (and the term of debt issuance as discussed in section 6.3 immediately below). No adequate explanation is provided as to why the AER considers that the ARORO requires the sole reliance on prevailing rates at the beginning of a transition but not at the ultimate end point of the transition.
117. We make this point purely to highlight internal inconsistencies in the AER's current position. We agree with the AER's old position that, as expressed in the Rate of Return Guideline and set out above, that the trailing average “more closely aligns with the efficient debt financing practices of regulated businesses”⁴³ and:⁴⁴
 - *We consider that the regulatory return on debt allowance under the trailing average portfolio approach is, **therefore**, commensurate with the efficient debt financing costs of the benchmark efficient entity.* [Emphasis added.]

6.3 The AER's interpretation of the ARORO when adopting a 10 year term for debt issuance

118. The AER states in the AusNet Services transmission draft decision:⁴⁵

*We are satisfied that measuring the allowed return on debt by reference to a **10 year benchmark term is commensurate with the efficient***

⁴³ AER, Better Regulation | Explanatory Statement | Rate of Return Guideline, December 2013, p. 12

⁴⁴ Ibid, p. 102.

⁴⁵ AER, AusNet Transmission draft decision, p. 105.

financing costs of a benchmark efficient entity. Our reasons for adopting a 10 year benchmark debt term are:

- A long debt tenor is consistent with **the long lived assets** of a benchmark efficient entity and reduces refinancing risk.
- A 10 year term is similar to (though somewhat longer than) the **industry average term at issuance** of a sample of firms that are comparable to the benchmark efficient entity.

*Regulated network assets are long lived, and have asset lives that are longer than the terms commonly available for debt. **Refinancing risk** is the risk that a firm would not be able to refinance its debt at a given point in time due to this mismatch in terms. ...*

119. The AER's reasoning in this regard is, in our view, correct. However, it is clearly based on the actual efficient financing practice of a BEE. That is, the interpretation of 'efficient financing costs of a BEE' here is the costs that a BEE incurs in actually efficiently financing its assets given its real world constraints (including managing refinance risk).
120. Having regard to this consideration is, once more, anathema to the AER's interpretation of the ARORO as being synonymous with its (hypothetical) NPV=0 criteria (whereby the present value of revenues net of operating costs/tax but before interest costs equal the value of the RAB).
121. Under the AER's interpretation of the ARORO, the term of debt used to estimate 'prevailing rates' must match the term at which the regulator will reset allowed rates of return. (Under a continuation of the on-the-day approach this is 5 years.) This has nothing to do with the term at which a BEE will efficiently borrow. If this is not the case then the present value of cash flows (as defined by the AER to ignore efficiently incurred interest costs) will not be equal to the RAB.
122. The AER attempts to step around this issue in its mathematical appendix by couching its proof in the following manner.⁴⁶

***For simplicity**, assume the term of the risk free rate matches the regulatory period (five years) under the on-the-day approach.¹¹⁰⁶ (Emphasis added.)*

123. However, it is not 'for simplicity' that the AER makes this assumption, which is not consistent with actual AER practice. Rather, it is because the mathematical proposition that the AER is attempting to demonstrate does not hold if this assumption is not made.

⁴⁶ Ibid, 276.

124. It is standard practice in mathematical expositions for the author to use the phrase ‘for simplicity’ to denote an assumption that, while not always true, simplifies the exposition of the fundamental point being made without any, or substantial, loss of generality of the conclusion. However, the AER’s assumption that allowed rates of return are based on a 5 year horizon does not fit into this category because the ‘proof’ is invalid whenever the assumption is violated (which it is in the current context given that the AER (correctly) compensates on a 10 year horizon for the cost of debt).
125. Moreover, it is not just the ‘risk free rate’ for which this assumption must be true but also the DRP and the MRP. All of these parameters must be estimated on a 5 year horizon in order for the AER’s mathematical results to hold.
126. If this is not the case, then under the AER’s own logic, the rate of return will be based on a 10 year horizon while the discount rate that the AER alleges a third party entity would use to value cash-flows would be based on a 5 year horizon. These would not match and the AER’s NPV=0 criteria would not be met.
127. It is important to reiterate that we do not accept the AER’s proposition that the ARORO requires (or even allows) it to assume that the relevant financing costs are those of a hypothetical investors that has not, as yet, actually financed any regulated assets. The point we are making is that the AER’ approach is not actually consistent with what it says is the correct interpretation of the ARORO.
128. The AER attempts to elaborate on its ‘simplifying’ assumption at footnote 1106 which is repeated below (emphasis added).

*In practice, we have used a 10 year term to estimate the allowed rate of return. Given interest rates on longer-term debt securities are often higher than those on shorter-term debt securities, **this would lead to overcompensation all else being equal.** However, we assume no material overcompensation given this excess allowance on the return on debt may compensate service providers for their **hedging costs in relation to debt capital.** And, in relation to the return on equity, we assume no material overcompensation given we use a MRP estimate which is partly reliant on historical MRP estimates, which are estimated using the yield to maturity on 10 year Commonwealth Government Securities (CGS).*

129. However, in this justification the AER is adopting a definition of ‘overcompensation’ that is not by reference to prevailing rates (as per its interpretation of efficient financing costs of a BEE) but which is, rather, made relative to the costs incurred by a BEE given an actual efficient debt management practice. That is, the AER is justifying its adoption of a 10 year term for the cost of debt (which is reset every 5 years in the AER’s mathematical calculations) rather than a 5 year term for the cost of debt (which its interpretation of the ARORO requires) on the basis that a businesses will actually incur costs associated with a 10 year term.

130. We completely agree with this observation and conclusion. However, the same logic suggests that the AER should (or, at least, on its own logic could) have regard to other costs that a BEE would efficiently incur when managing its debt portfolio facing real world constraints. That is:
- If the fact that businesses efficiently issue 10 year debt justifies the AER departing from adopting a 5 year tenor (which would otherwise be suggested by its NPV=0 interpretation of the ARORO); then
 - the same considerations also justify the AER incorporating historical efficiently incurred debt financing costs into its allowed rate of return.
131. That is, the AER here slips between different interpretations of the ARORO – relying in part on the correct plain economic interpretation that efficient costs reflects efficient practice – even during the process of attempting mathematically justify its alternative interpretation. Doing so invalidates the AER’s alleged ‘proof’ that setting compensation based on prevailing rates satisfies its new NPV=0 criterion. If the AER has regard to actual efficient practice by a BEE to justify a departure from its interpretation of the ARORO in relation to one aspect of debt management (efficient term of debt issued) then the same logic implies a departure to accommodate other aspects of efficient practice (i.e., efficient use of staggered debt maturity).

7 Inconsistent approach to ARORO and other objectives

132. The AER argues that the use of prevailing rates in its transition is also appropriate on the basis that doing so fulfils other requirements/contributes to other objectives in the NER/NEL. We address these arguments individually in this section.

7.1 Reasonable opportunity to recover at least efficient costs

133. The AER states that a continuation of the on the day regime provides service providers with the reasonable opportunity to recover at least efficient costs over each regulatory period and over the term of the RAB.⁴⁷ The AER argues that this is consistent with NEL s.7A(2).
134. However, in arriving at this conclusion the AER interprets “efficient costs” referred to in s.7A(2) to have the same interpretation the AER gives to “efficient financing costs” in the ARORO (i.e., the prevailing rates).⁴⁸

*We set a rate of return that is commensurate with the efficient financing costs of a benchmark efficient entity with a similar degree of risk as the service provider in respect of the provision of prescribed transmission services. **This provides a reasonable opportunity to recover at least the efficient financing costs of providing those services.** The service providers' actual returns could differ from those of a benchmark entity depending on how efficiently it operates its business. This is consistent with incentive regulation. That is, our rate of return approach drives efficient outcomes by creating the correct incentive by requiring service providers to retain (fund) any additional income (costs) by outperforming (underperforming) the efficient benchmark.*

135. Even if one accepted the AER’s ARORO interpretation, this interpretation of NEL s.7A(2) appears problematic because s.7A(2) refers to the costs a service provider incurs:

*A regulated network service provider should be provided with a reasonable opportunity to recover at least the efficient costs **the operator incurs** in*

⁴⁷ For example, see *ibid*, p. 275 first dot point. Similarly, the AER argues that its transition to a trailing average provides service providers with a reasonable opportunity to recover at least efficient costs *over the term of the RAB*.

⁴⁸ AER, AusNet Transmission draft decision, p. 3-37.

- (a) *providing direct control network services; and*
- (b) *complying with a regulatory obligation or requirement or making a regulatory payment. (Emphasis added.)*

136. The AER’s position that it should ignore efficiently incurred staggered debt financing costs when interpreting the ARORO is, at best, tenuous. Making the same claim in relation to s.7A(2) would appear to be even more at odds with the plain wording of s.7A(2).

137. Notably, the AER states in relation to its position that:

This is consistent with NEL s.7A(2). Lally advised that this principle in the NEL is ‘equivalent’ to the NPV principle. See Lally, The risk free rate and the present value principle, 22 August, 2012. SFG also appears to support using the NPV principle to assess rate of return approaches. SFG, Preliminary analysis on rule change proposals: Report for AEMC, February 2012, p. 47.

138. However, as we have already seen in section 3, when Lally most recently “advised that this principle in the NEL is ‘equivalent’ to the NPV principle”, he was **not** using the AER’s definition of the NPV=0 criterion. Rather, he was using the definition we propose, which is based on recovery of efficiently incurred staggered debt issuance. Thus, the reference that the AER attributes to Lally actually contradicts with the AER’s position.⁴⁹

⁴⁹ At least, the reference that the AER provides would be against itself if the AER had correctly referenced Lally’s advice. However, the 22 August 2012 Lally paper referenced makes no reference whatsoever to the NEL or to the NER for that matter. Moreover, it does not even mention ‘debt’. It would appear that the AER has misstated the correct source of the Lally advice that s.7A(2).

In any event, the correct references are easily located simply by going back to the AER’s draft decision for AusNet electricity distribution – recalling that in that draft decision the AER had not posited its new interpretation of the ARORO/NPV=0 principle. In that decision the AER stated:

Accordingly, there is a strong connection between the NPV principle, the allowed rate of return objective and the NGL 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.⁵⁶⁸

⁵⁶⁸ *Lally advised that the NPV principle should be viewed as **a compatible combination of regulatory policy and service providers’ actions that satisfy the NPV principle**. For more details on the NPV principle in respect of the return on debt, see: Lally., Trailing average cost of debt, 19 March 2014, pp. 8–9; Lally, Transitional arrangements for the cost of debt, November 2014, pp. 22-25; and Lally, Review of submissions on the cost of debt, November 2014, pp. 18-37. [Emphasis added.]*

AER, AusNet Electricity distribution preliminary decision, October 2015, p. 174.

The compatibility between the regulatory policy and the service providers’ actions are precisely at the core of the plain economic interpretation of the ARORO set out in section 2.1 which, as we have already

7.2 AER's reconciliation of the ARORO and 6A.6.2(k)(1)

139. This section attempts to set out the economic tension in the AER's attempt to reconcile its new interpretation of the ARORO to 6A.6.2(k)(1) – noting that the latter refers back to the ARORO. These economic tensions raise seeming tensions of legal interpretation which we note but do not attempt to resolve.
140. Specifically, the AER interprets the reference in 6A.6.2(k)(1) to “*the return on debt of a benchmark efficient entity referred to in the allowed rate of return objective*” (emphasis added) to mean a return on debt that has efficiently staggered (historical) debt financed costs (for an elaboration of why this is clear see the discussion below under in section 7.2.1.). However, this is clearly not the same as the AER's interpretation of “efficient financing costs of a BEE” within the ARORO (which the AER interprets as meaning prevailing rates).
141. It follows that, for the AER's interpretation of the rules to be internally consistent it must be the case that:
- “the return on debt of a benchmark efficient entity referred to in the allowed rate of return objective”* (as used in 6A.6.2(k)(1));
- is not the same as
- the efficient (debt) financing costs of a BEE (as referenced in the ARORO).
142. There is not, in our view, a plain economic reading that would justify such a distinction. However, the AER may be interpreting the reference back to the ARORO as purely restricted to a reference to the BEE mentioned in the ARORO (not a reference to the efficient financing costs of a BEE mentioned in the ARORO).
143. In this case, it may be logically possible to distinguish the reference in 6A.6.2(k)(1) back to the ARORO as not actually referencing the concept of ‘efficient financing costs’ referred to in the ARORO. This may, as a matter of legal logic, allow the AER to hold a different interpretation of “*the return on debt of a BEE referred to in the ARORO*” and “*the efficient (debt) financing costs of a BEE*” actually set out in the ARORO.
144. However, as a matter of economic logic this would be a peculiar reading. The return on debt of a BEE referenced in 6A.6.2(k)(1) is clearly a debt financing cost of a BEE. Referring back to the ARORO would, on a plain economic reading, simply make clear that the debt financing cost referred to in 6A.6.2(k)(1) is the debt portion of the BEE's overall financing cost referred to in the ARORO. There does not seem to be any reason to refer back to the BEE in the ARORO other than to make this point clear

explained is also consistent with Lally's version of the NPV=0 test – which is what is referenced in the immediately above quote.

(noting also that in other contexts the BEE is mentioned in the rules without a reference back to the ARORO (i.e., 6A.6.2(j) and 6A.6.4)

7.2.1 AER interpretation of 6A.6.2(k)(1)

145. The following quotes (all emphasis added) relate to the AER's interpretation of 6A.6.2(k).

*In determining the allowed return on debt, we are required to have regard to the 'mismatch' between a benchmark efficient entity's **actual debt cost outcomes** (or cash outflows) and the return on debt allowance. (3-263)*

*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 ARORO. We understand this factor to mean the difference between the return on debt allowance and **the cost of debt a benchmark efficient entity would incur**. However, we do not consider that this permits us to set a rate of return that will not meet the ARORO or will not achieve the NEO/NGO. (First dot point on page 3-29)*

*Further, the trailing average approach may have particular benefits that an on-the-day approach cannot achieve. For instance, when it advised the AEMC, SFG stated that 'if it can be demonstrated that the benefits of a regulated rate of return which is less variable over time outweigh the costs associated with investment distortions, then a trailing average should be considered'. The potential benefits mainly relate to smoother prices and **a potentially reduced mismatch between a benchmark efficient entity's actual debt cost outcomes (or cash outflows) and the allowed return on debt** (see section H.6.1), which we discuss further below. (3-273)*

146. These quotes make clear that the AER is interpreting 6A.6.2(k)(1) as referring to a mismatch between allowance and actually incurred (staggered issuance) cost of debt rather than prevailing rates.

7.3 Limiting the impact on a BEE of a change in regulatory methodology

147. The AER's view is that the initial use of prevailing rates for 100% of the cost of debt in the AER's transition to a trailing average is consistent with having regard to any impact that a change in regulatory methodology would have on a benchmark efficient entity of a change in regulatory methodology. In doing so, the AER assumes that the relevant 'impact' is minimised by retaining the use of prevailing rates in the transition.

148. In our view, the correct approach to this assessment is to ask whether the impact of changing the methodology is to results in a better match to the BEE’s efficiently incurred financing costs. If so, then the change in methodology requires no transitional arrangements.
149. We agree with the AER in general terms that, if the BEE is a regulated firm, a change in regulatory methodology implemented by the regulator such that regulated businesses will rationally respond to the change in methodology by changing their debt management practices, should be associated with a transition in circumstances where:
- The current regulatory methodology is based on compensating a specific replicable (efficient) debt management strategy; and
 - The new methodology is based on compensating a different replicable (efficient) debt management strategy.
150. In which such cases, a transition that appropriately takes into account the costs that a BEE will incur in modifying their debt management strategy may be necessary.
151. However, we would characterise the current circumstance as one where the current regulatory methodology has an error (it does not compensate based on any replicable (efficient) debt management strategy). In which case this error should be corrected immediately so that the method does reflect a replicable (efficient) debt management strategy – thereby immediately minimising the extent of mismatch.
152. Put simply, there is no basis for imposing a transition process for the correction of an error.

7.4 Mismatch between prevailing rates and actual debt costs

153. The AER’s approach to the ‘mismatch’ issue provides another example of where the AER slips between the competing interpretations of efficient financing costs. The rules refer to *‘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’*. On page 264 the AER states:

Moreover, the desirability of minimising (ex-post) debt cash flow mismatch is not the only type of interest rate mismatch risk we consider relevant. The rules require us to have regard to the desirability of minimising this type of mismatch for a benchmark efficient entity.

154. Here the AER is conceding that the reference to “the return on debt of a benchmark efficient entity **referred to in the allowed rate of return objective**” in the Rules is a reference to the **‘cash’ historical** cost of debt, since ex-post cash flows would,



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by definition, refer to historical values. This is, obviously, internally inconsistent with the AER's more general position that the ARORO is referring only to prevailing rates.

8 Other views expressed by the AER

8.1 Interest rate risk and windfall gains

155. The AER argues that it is irrelevant that the use of prevailing rates may result in windfall gains or losses to a benchmark efficient entity relative to the interest costs that they are actually paying. It is argued that any assessment of windfall gains/losses must be carried out by reference to a departure from prevailing rates.⁵⁰
156. The AER argues that a difference between prevailing rates and efficiently incurred historical rates reflects past exposure to ‘interest rate risk’. The AER states that using historical rates in the cost of debt allowance ‘removes realised losses or gains from interest rate risk’ and this is an undesirable outcome because:⁵¹
- a. regulated businesses have been appropriately compensated for bearing interest rate risk in the past; and
 - b. it would amount to ‘cost of service’ regulation and would be inconsistent with ‘incentive regulation’. (The AER describes this exposure to interest rate risk as “...regulated firms should be required to bear the consequences of their chosen financing approach...”⁵²
157. We first note that the use of the term ‘interest rate risk’ is misleading. The correct characterisation of the relevant risk is ‘regulatory risk’ arising from the failure of the regulator to set compensation for the cost of debt based on a replicable (efficient) staggered debt issuance strategy.
158. By way of analogy, imagine that the regulator had in the past set the cost of debt based on an estimate of the efficient costs that a BEE would actually incur plus a random number, generated once every 5 years, of between -3% and +3%. Let the current application of this methodology result in the random number being -2%. This would mean that continued application of the method would result in the business being undercompensated by 2% on its efficiently incurred cost of debt.
159. This is, in fact, not dissimilar to what is actually the case given the past sole reliance on prevailing rates (both base rate and DRP). When prevailing rates happened to be higher/lower than the average cost of efficiently staggered debt issuance the business would benefit by a more or less random amount. However, to describe this as

⁵⁰ AER, AusNet Transmission draft decision, 3-100 last paragraph

⁵¹ AER, AusNet Transmission draft decision, p. 102.

⁵² AER, AusNet Transmission draft decision, p. 268 and similar statement on p. 101.

‘interest rate risk’ is unhelpful. It is, in fact, regulatory risk created by the regulator not compensating based on efficiently incurred staggered debt finance costs.

160. The statement regarding past compensation for bearing this risk is demonstrably wrong. It relies on a presumption that measured equity betas capture all risks and provide all necessary compensation for those risks. This is simply not correct. The cost to a business of a regulator compensating based on prevailing rates that do not adequately reflect their actual efficient costs has little, if anything, to do with beta risk. Not all risks have a beta component to them (indeed most do not).⁵³ If a service provider stands to lose \$50m in the next regulatory period as a result of undercompensating their efficient debt costs there is no reason to believe that this is offset by \$50m of additional compensation built into the cost of equity allowance via a higher equity beta.
161. Moreover, any impact on measured equity betas as a result of past exposure to this regulatory risk is likely to be to negative rather than positive. If risk premiums rise in a depressed economy (and fall in a booming economy) then service providers under the on the day regime will tend to make windfall gains (losses) in a depressed (booming) economy (because prevailing risk premiums compensated by the AER will be above (below) trailing average levels at which service providers fund themselves). This implies reduced beta risk because the service providers are making gains when most other asset classes are depressed (depressed economy) and making gains when the economy is booming and most other asset classes are performing well. This means that service providers’ betas have, if anything, likely been depressed in the past by exposure to this ‘regulatory risk’. Certainly, there is no reliable basis to argue that the potentially very large losses that would be suffered as a result of the AER not removing this regulatory risk have in any way been compensated in the form of a higher beta in the past.
162. The same point we have made above applies here. If the previous regulatory regime incorporated an error in accurately compensating for efficient financing costs there is no basis on which to impose a transition to remove that error rather than simply eliminating the error immediately. By way of example, there would be no basis to ‘transition out’ the ‘random number error’ we hypothesise above as being equivalent to the use of ‘on the day’ rates.
163. The statement regarding cost of service regulation is also demonstrably wrong. The use of benchmarked estimates of historical cost of debt does not constitute cost of service regulation. Cost of service regulation is where a firm is able to pass on its own costs to customers. The use of benchmarked historical estimates of the cost of debt

⁵³ By way of example, terrorist acts tend to be both low in frequency and unrelated to the state of the stock market (beta equals zero) – yet the cost of a terrorist act on a service provider’s network could still be material. One cannot assume that because the service provider was previously exposed to the risk of terrorist attack that, therefore, they have been adequately compensated in the past via the measured equity beta and, therefore, no compensation is required for an actual terrorist attack.

from Bloomberg/RBA/Reuters does not constitute “cost of service” regulation in the way the AER is inferring it does.

8.2 Service providers hedged ‘nearly their entire’ base rate

164. The AER states that it believes that the best evidence is that businesses hedge close to 100% of their portfolio to prevailing rates and, by implication, are little affected by current low rates.⁵⁴

*Further, we consider a full transition necessary to satisfy the ARORO and NEO/NGO even if firms partially hedged. It is also worth noting that service providers proposing this transition did not appear to hold the view that hedging one third of the base rate was optimal ex-ante because they appeared to have hedged **nearly their entire base rate in practice**. [Emphasis added.]*

165. It is important to note that, as per the first sentence in the above quote, the AER’s new interpretation of the ARORO is that *efficient financing practices* are irrelevant to determining the *efficient financing costs* of a BEE. Therefore, the AER’s views on what service providers actually did is provided as an aside.
166. Of course, actual financing practice (both of service providers and the hypothetical BEE) was previously central to the AER’s views on satisfying the ARORO (and still is in relation to, for example, debt term as per discussion in section 6.3). In this context it is relevant to note that, immediately prior to the AER’s change in interpretation of the ARORO (and change in experts advising it on this interpretation), CEG provided a detailed and comprehensive rebuttal⁵⁵ of:
- The AER’s views that 100% hedging reflected actual practice (which is repeated more or less unchanged in the AusNet Services transmission draft decision); and
 - The AER and its then experts’ (Lally and Chairmont) views that 100% hedging was theoretically efficient.
167. Subsequent to receiving that submission the AER did not commission any further advice from Lally or Chairmont in response to CEG’s critique. The AER did alter its theoretical interpretation of the ARORO in such a manner to allow it to reach the conclusion that 100% weight to prevailing rates should be used even if:
- The weight of evidence was that actual hedging by regulated service providers was much less than 100%; and

⁵⁴ AER, AusNet Transmission draft decision, p. 103.

⁵⁵ CEG, Critique of the AER’s approach to transition, January 2016. In particular, see sections 4 and 6.



- The theoretical/empirical evidence overwhelmingly supported a view that much less than 100% hedging was efficient.

168. Our view is that our January 2016 report established both of the above contentions as reliable facts.

9 Debt management strategy for an unregulated BEE

9.1 Unregulated businesses also stagger their debt portfolios

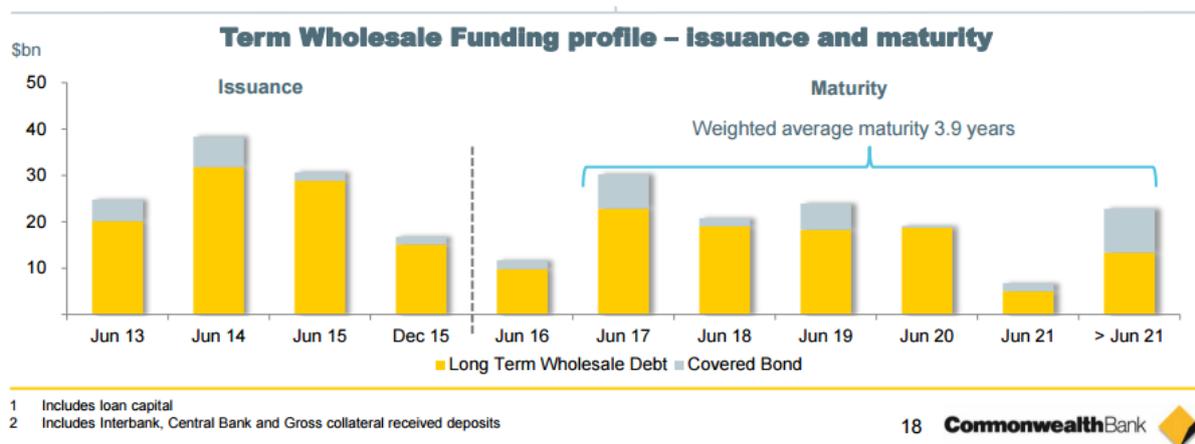
169. In a previous report for DBP, the owner and operator of the Dampier to Bunbury Natural Gas Pipeline (DBNGP) in Western Australia, CEG submitted empirical evidence that majority of firms in Australia – both regulated and unregulated – practice some form of debt staggering instead of structuring all of their debt to fall due at the same time.⁵⁶
170. We have not repeated the study with more recent data, but a cursory examination of selected firms suggests that the conclusions from our previous report as set out above are likely to remain unchanged.
171. Our present analysis covers the following five firms from the ASX 20, selected as the five largest firms in different industries. That is, we begin at the largest firm in the ASX 20 and select it (the Commonwealth Bank). We then select the next largest firm that is from a different industry (not a bank) and so on until we have five firms from five different industries. These five firms are:
- Commonwealth Bank;
 - BHP Billiton Ltd;
 - Telstra Corporation;
 - Wesfarmers Ltd; and
 - CSL Ltd.
172. The debt maturity profiles of each of the above five firms are shown in Figure 9-1 and Figure 9-5, where it can be seen that all five firms stagger their debt to various degrees. Three of the five firms have debt maturing in 2026 and beyond, while Wesfarmers has debt falling due up to 2023, and Commonwealth Bank combines its long term debt into a “> Jun 21” category.
173. Notably, BHP Billiton explicitly states that it aims to maintain a maturity profile that is “well balanced with low refinancing risk”, while Wesfarmers explains that its debt management strategy includes “[c]ontinued focus on maturity profile”. These

⁵⁶ CEG, Debt staggering of Australian businesses, December 2014. Available at: <https://www.erawa.com.au/cproot/13288/2/Submission%2012%20-%20Appendix%20G%20-%20Efficient%20Debt%20Stagering%20By%20Competitive%20Firms.pdf>

comments suggest that the staggered debt profiles of these businesses are the result of intentional debt management practices that the businesses consider to be strategically beneficial to themselves, and do not occur as a random result.

9.1.1 Commonwealth Bank

Figure 9-1: Commonwealth Bank debt profile



Source: Commonwealth Bank, *Debt Investor Update for the half year ended 31 December 2016, February 2016*, p. 18.

9.1.2 BHP Billiton Ltd

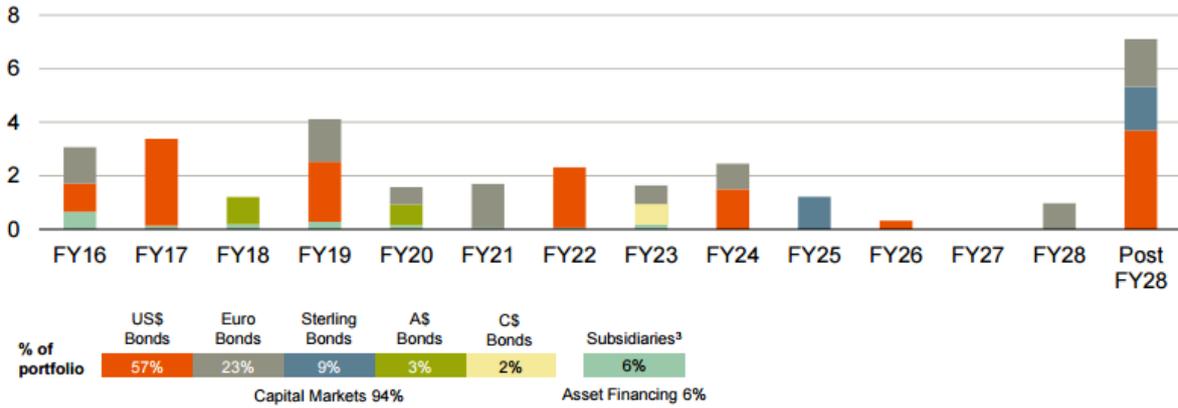
174. On the same slide from which the chart on Figure 9-2 below was taken, BHP Billiton emphasised the following point, which show that the company views a staggered debt portfolio as a way to reduce refinancing risk:

We continue to optimise our balance sheet

- *The Group's maturity profile is well balanced with low refinancing risk*
- *The debt portfolio is diversified across currency and tenor*
- *Central funding allows the Group to efficiently balance liquidity and financing costs*
- *Cash and cash equivalents US\$6.8 billion plus US\$6.0 undrawn committed facility*

Figure 9-2: BHP Billiton debt profile

A well-balanced debt maturity profile¹
(US\$ billion²)

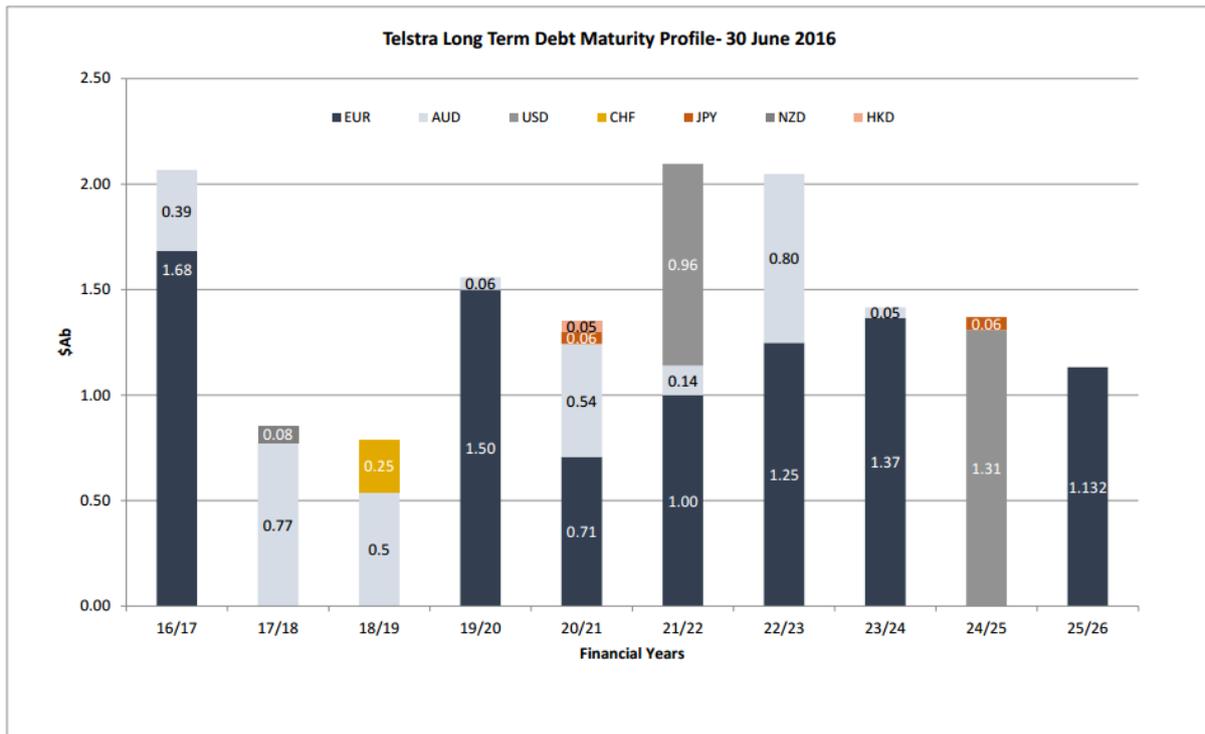


1. All debt balances are represented in notional US\$ values and based on financial years.
2. Subsidiary debt is presented in accordance with IFRS 10 and IFRS 11.

Source: BHP, Debt investor presentation, 2015 financial year, slide 9.

9.1.3 Telstra Corporation

Figure 9-3: Telstra debt profile



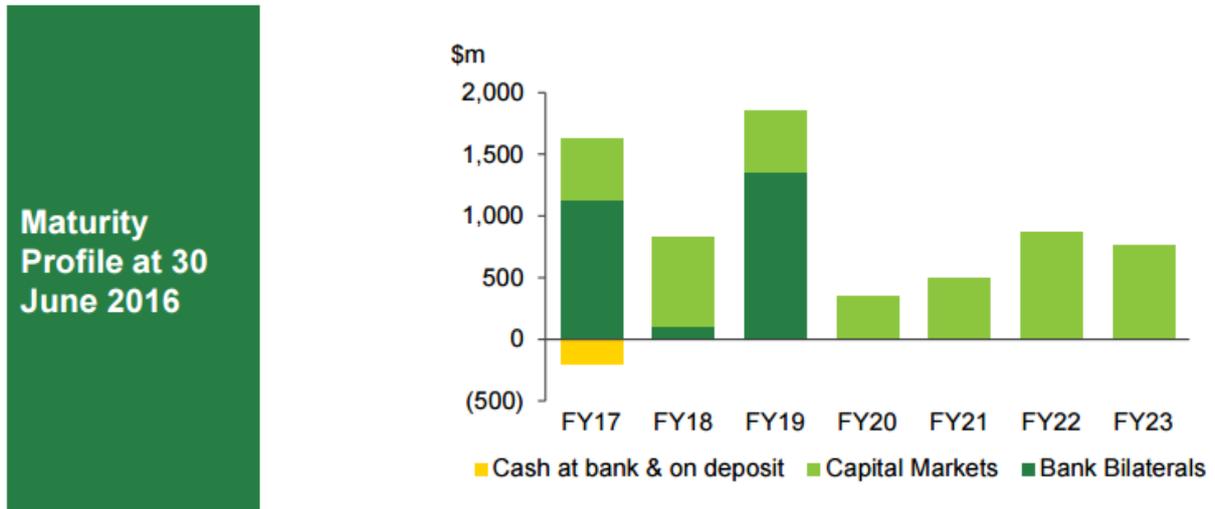
Source: Telstra, Debt Maturity Profile (Currency), June 2016; available at <https://www.telstra.com.au/content/dam/tcom/about-us/investors/pdf-e/debt-maturity-profile-300616.pdf>

9.1.4 Wesfarmers Ltd

175. It is relevant to note that Wesfarmers explicitly listed the following refinancing objectives as part of their pro-active debt management strategy:⁵⁷

- Continued focus on maturity profile and maintaining liquidity headroom in revolving bilateral bank facilities;
- Commitment to maintain diversity of funding sources including the domestic and international debt capital markets; and
- Standard terms and conditions across all DCM programmes, with a common guarantee structure that applies to all funding arrangements.

Figure 9-4: Wesfarmers Ltd debt profile



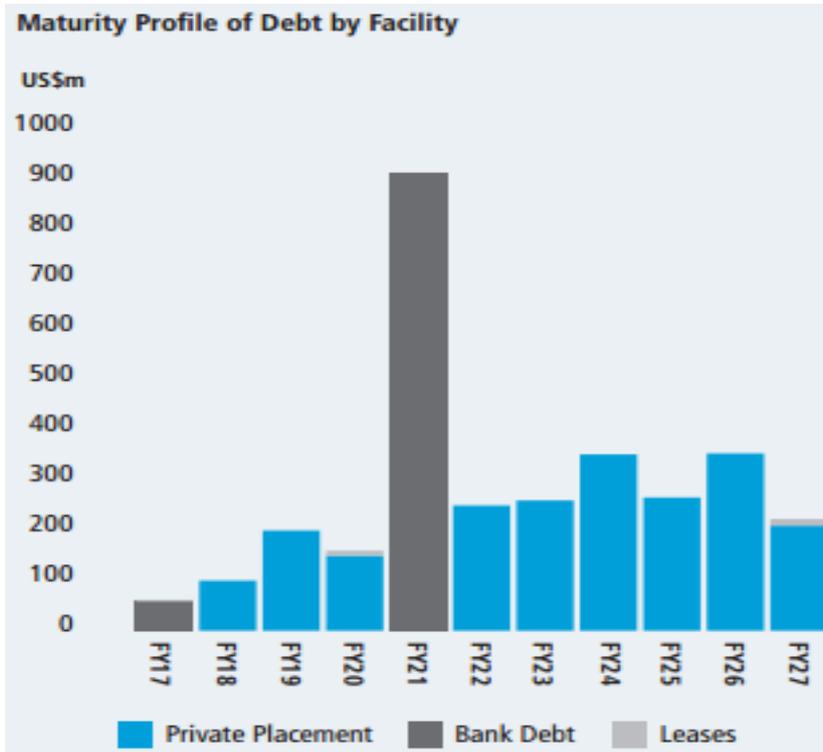
Source: Wesfarmers, 2016 Full-year Results: Debt Investor Update, p. 40.

⁵⁷

Wesfarmers, 2016 Full-year Results: Debt Investor Update, p. 39.

9.1.5 CSL Ltd

Figure 9-5: CSL Ltd debt profile



Source: CSL, CSL Limited Annual Report 2015-16, p. 103.

9.2 Unregulated firms do not hedge base rate to the regulatory period

176. It is, by definition, true that unregulated firms do not hedge their base rate to the regulatory reset of the allowed rate of return – because they do not face any regulatory resets.