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Transition to a Trailing Average Approach

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1 Executive summary

1. This report assesses the AER's rationale, as expressed in the explanatory statement to the draft rate of return Guideline, for applying a transition from the 'on the day' approach to setting the cost of debt allowance to a 'trailing average' approach. I have been specifically asked to make this assessment in the context of its application to a business that already funds itself with a debt management strategy that is akin to a trailing average (i.e., a debt portfolio with staggered debt issuance without swap contract overlay to alter the base interest rate exposure).
2. This report follows, and draws heavily on, my previous report for the NSW DNSPs entitled *Efficiency of staggered debt issuance* as included in the NSW DNSPs submission to the AER on the Rate of Return Guideline Issues Paper on 18 February 2013. In that report I concluded that the 'on the day' approach to setting the cost of debt allowance was problematic and that a 'trailing average' approach would be superior. Specifically, I concluded that the regulatory benchmark for setting the cost of debt allowance should ideally have the following properties.
 - i. **It is able to be implemented by a business** (hedgeable).
 - ii. **Implementation involves low transaction costs for the business** – if there are two equally implementable debt raising strategies then, other things equal, the strategy that involves the lowest transaction costs (direct and indirect) should be preferred.
 - iii. **It minimises the prospect and consequences of estimation error** – a business should be able to be confident that, if it manages to the benchmark strategy, its cost of debt will move with the AER's estimate of costs – especially during periods in which its costs are rising materially.
 - iv. **It gives rise to relatively low price volatility for customers and does not result in higher prices when customer budgets are under stress** – customers are not as well placed to hedge against volatility in network prices and especially do not want to be facing higher prices when they are facing broader budgetary threats, e.g., due to a financial crisis.
 - v. **It should reflect the standard practice of businesses operating in similar environments to network energy businesses.**
3. In relation to the first key point, the 'on the day' approach is unhedgeable in the sense that it is impossible (or prohibitively costly) to refinance a firm's entire debt portfolio at the beginning of each regulatory period (i.e., to match the cost of debt under the 'on the day' approach). I note that the unhedgeable nature of the current benchmark means that there is no single debt financing approach that businesses can be expected to adopt under the current regime. Rather, different businesses may rationally have decided to adopt different strategies to deal with the unhedgeable nature of the current benchmark.

4. I concluded that, relative to a 'trailing average' approach, the 'on the day' approach performed poorly on each of these criteria. In its draft Guideline the AER has determined that it is appropriate to adopt a trailing average. The AER's explanation for why it has changed its approach and adopted a trailing average is consistent with the criteria and framework that I used to reach the same conclusion.
5. However, the AER's decision to impose a single transition path, irrespective of a business's actual financing strategy, that retains the 'on the day' approach for the first year of the next regulatory period¹, is inconsistent with the framework and criteria that I set out previously. Specifically, for a business that is already funding itself using a trailing average approach, the AER's transition delays the realisation of the benefits of moving to a trailing average.
6. This is not necessarily true in relation to firms who are not currently funding themselves using a trailing average approach. For these firms, the AER transition may be appropriate to the extent that it creates path for the cost of debt allowance that is more hedgeable given their starting point. However, for a firm already funding itself using a trailing average such a rationale for transition does not apply.
7. The basis for the AER's decision to require all businesses to transition, even those already on a trailing average, gives weight to a consideration that is outside the above assessment criteria/framework. Most specifically, the AER has given weight to an objective that seeks to align the cost of debt allowance during the transition with the cost of debt allowance that customers/businesses would have expected to have been set under a continuation of the 'on the day' approach. This is encapsulated in the following quote:

The reasonable expectations of the consumers would not be met if a switch to the trailing average portfolio approach were implemented without a transition. A transition can allow for more gradual adjustment to the change in regulatory approach. The same logic, of course, also applies to the reasonable expectations formed by service providers.

8. The AER's concern here can be illustrated with an example. Imagine that a continuation of the 'on the day' approach was expected to set an allowance for the cost of debt at 7% p.a. in the future. Yet, an estimate of the trailing average cost of debt expected to apply at the beginning of the next regulatory period was 8% p.a. Let this be the cost of a debt that an efficient business funding itself using the trailing average methodology would incur.
9. In this example, current and future expected interest rates (7%) are below average interest rates over the last N years (8%) – where N is the term of the trailing average. If there was no change in approach used to set the cost of debt allowance then prices

¹ Followed by a gradually transition to a trailing average for all businesses

would be based on a 7% allowance rather than the 8% allowance associated with the trailing average.

10. *Relative to a baseline of regulatory practice as normal*, immediate implementation of a trailing average approach would give rise to a 1% loss/gain to customers/businesses. This would apply in the first year of the next regulatory period and would be expected to reduce over time to zero as historical data points are dropped out of the trailing average.
11. Of course, a gain/loss could equally be defined *relative to a baseline of the efficient financing costs of a business employing a trailing average strategy* (being the strategy that the AER has determined is sufficiently better than the ‘on the day’ approach to warrant a change). In which case, there would be no gains/losses from immediate adoption of a trailing average. In fact, imposing a transition would create winners and losers relative to such a baseline.
12. Which baseline to adopt when thinking in terms of gains and losses is not a matter of positive economics but rather is a matter of normative opinion. Different people could disagree on whether it is fairer to:
 - give customers prices that reflect what they would have received under a continuation of the ‘on the day’ regime; versus
 - give equity investors in a business an allowance that reflects the efficient costs associated with their financing strategy (where that financing strategy reflects the strategy that the AER has deemed more efficient in the long run than the ‘on the day’ regime).
13. I do not attempt to opine on which of the above is fairer. Ultimately, this is not a matter of economics but is a normative value judgement.
14. However, there are fundamental economic efficiency differences between these two approaches. Where the business is already funding itself using the trailing average approach, the choice between transitioning to, or immediately adopting, a trailing average has different implications for efficiency and transaction costs.
15. At a high level, the failure of a regulator to set an allowance that reflects a business’s efficiently incurred financing costs can have serious implications for the way in which investors rationally view the operation of the regulatory regime and, therefore, their incentives to invest. This general principle underpinned the criteria I set out in my previous report that I reproduced above. These criteria can be used to assess the imposition of a transition on a business that already funds itself using a trailing average strategy. Specifically:
 - i. The AER trailing average transition retains the unhedgeable characteristics of the ‘on the day’ approach and causes the same exposure to unnecessary risks for a business that already finances in this way. The AER transition approach ‘locks

- in' a component of the 'on the day' approach for the next N years. The longer an unhedgeable benchmark is used (including in transition) the greater the level of unnecessary risks that investors are exposed to.
- ii. The above risks can, at best, be partially hedged against. Moreover, any attempt by a business to partially reduce such risks will create transaction costs for the business. These transaction costs would be avoided if no transition was put in place.
 - iii. The AER transition increases the risks associated with measurement error. The AER transition approach gives, in the first year of the next regulatory period, 100% weight to the estimate of the 'on the day' cost of debt at the beginning of that year and this continues to have (declining) weight in the cost of debt allowance for the next N years (where N is the term of the trailing average). An immediate adoption of the trailing average gives 1/N weight to each of N years. It therefore dramatically reduces the potential for estimation error in a single year to affect the accuracy of the cost of debt allowance over the next N years.
 - iv. Unexpected price volatility can create costs to customers in managing and smoothing their budgets (i.e., above and beyond the costs of paying higher/lower prices). The effective incorporation of an 'on the day' approach at the beginning of the transition significantly increases the level of uncertainty faced by customers and businesses about the level of compensation that will actually be provided.
 - v. Finally, imposing a transition delays the time until the benchmark cost of debt allowance reflects the standard practice of businesses operating in similar environments to network energy businesses. The fact that other businesses generally fund using a trailing average approach provides a strong indication that this practice is efficient. Delaying the implementation of a trailing average where a business already funds itself in this way delays the time at which its cost of debt allowance will reflect efficient costs.
16. When the above analysis is considered in the context of the revenue and pricing principles of the National Electricity Law, there is a strong case for not imposing any transition on a business that already funds itself using a trailing average approach. Imposing transition on such a business may deny them a reasonable opportunity to recover at least the efficient financing costs – inconsistent with the requirements of subsection (2) of the revenue and pricing principles. Similarly, to the extent that the transition path sets a cost of debt allowance that is below the efficient cost of debt for that business then that business may be denied a return that is commensurate with the regulatory and commercial risks involved in providing the its services – inconsistent with subsection (5) of the revenue and pricing principles.

2 Introduction

17. My name is Tom Hird. I have a Ph.D. in Economics and 20 years of experience as a professional economist. My *curriculum vitae* is provided separately.
18. This report has been prepared for Ausgrid, Endeavour Energy and Essential Energy (the NSW DNSPs). I have been asked to provide a report assessing the AER's reasoning for applying transition arrangements between the current 'on the day' approach to setting the cost of debt allowance and the 'trailing average' approach.
19. I have been asked to give particular consideration to the reasonableness of this transition path being applied to a business that already funds itself using a trailing average strategy (i.e., has a fixed rate debt portfolio with staggered debt issuance without any swap contract overlay to alter the base interest rate exposure from the average of past debt issues).
20. In this regard I have been referred to the revenue and pricing principles of the National Electricity Law (NEL) and asked to perform this assessment in that context. The most relevant aspects of the revenue and pricing principles are subsection (2) and (5) as set out below.
 - (2) *A regulated network service provider should be provided with a reasonable opportunity to recover at least the efficient costs the operator incurs in-*
 - (a) *providing direct control network services; and*
 - (b) *complying with a regulatory obligation or requirement or making a regulatory payment.*

...
 - (5) *A price or charge for the provision of a direct control network service should allow for a return commensurate with the regulatory and commercial risks involved in providing the direct control network service to which that price or charge relates.*
21. The remainder of this report is structured as follows:
 - Section 3 summarises the criteria used to decide that a trailing average approach is the most efficient benchmark for estimating the cost of debt allowance;
 - Section 4 applies the same criteria to assess the AER's proposed transition approach to estimating the cost of debt allowance. This section also reviews the AER's rationale for departing from the criteria used to decide to adopt a trailing average in the long run; and
 - Section 5 concludes.

3 Criteria for adopting a trailing average

22. The AER's rationale for adopting a trailing average approach in preference to an 'on the day' approach is largely consistent with my previous advice.

3.1 My previous advice

23. In my previous report for the NSW DNSPs entitled *Efficiency of staggered debt issuance*, on which this report draws heavily, I argued that the 'on the day' approach to setting the cost of debt allowance was problematic and that a 'trailing average' approach would be superior. Specifically, I concluded that the regulatory benchmark for setting the cost of debt allowance should ideally have the following properties.

- i. **It is able to be implemented by a business** (hedgeable).
- ii. **Implementation involves low transaction costs for the business** – if there are two equally implementable debt raising strategies then, other things equal, the strategy that involves the lowest transaction costs (direct and indirect) should be preferred.
- iii. **It minimises the prospect and consequences of estimation error** – a business should be able to be confident that, if it manages to the benchmark strategy, its cost of debt will move with the AER's estimate of costs – especially during periods in which its costs are rising materially.
- iv. **It gives rise to relatively low price volatility for customers and does not result in higher prices when customer budgets are under stress** – customers are not as well placed to hedge against volatility in network prices and especially do not want to be facing higher prices when they are facing broader budgetary threats, e.g., due to a financial crisis.
- v. **It should reflect the standard practice of businesses operating in similar environments to network energy businesses.**

24. In relation to the first key point, the 'on the day' approach is unhedgeable in the sense that it is impossible (or prohibitively costly) to refinance a firm's entire debt portfolio at the beginning of each regulatory period (i.e., to match the cost of debt under the 'on the day' approach). I note that the unhedgeable nature of the current benchmark means that there is no single debt financing approach that businesses can be expected to adopt under the current regime. Rather, different businesses may rationally have decided to adopt different strategies to deal with the unhedgeable nature of the current benchmark.

3.2 The AER analysis

25. The AER's rationale for changing from the 'on the day' approach to the 'trailing average' approach is set out in the following quote.²

*To summarise, we are satisfied that the trailing average portfolio approach is consistent with the allowed rate of return objective and recognises **'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'**. Further, it provides service providers with incentives to engage in efficient debt financing practices and hence promotes overall efficiency of investment, operation and use of, electricity and natural gas services for the long term interest of consumers in a manner consistent with the NEO and NGO. Finally, the trailing average portfolio approach is capable of providing the benchmark efficient entity with a staggered debt portfolio with **a reasonable opportunity to recover at least the efficient debt financing costs**. This implies that a service provider with a similar degree of risk is also provided with the same opportunity. Thus, if the parameters of the trailing average are chosen to reflect the degree of risk that applies to the service provider in respect of the provision of regulated services, the trailing average portfolio approach is consistent with the NEL and NGL.*

In addition to the considerations above, the trailing average portfolio approach provides the following benefits:

- *It smooths movements in the return on debt over a number of years, which would result in **lower price volatility for energy consumers** and more stable returns for investors than the "on the day" approach.*
- *It **minimises the consequences of a single measurement error**.*
- *It **is more reflective of the actual debt management approaches of non-regulated businesses** and, therefore, is more likely to represent efficient financing practice. [Emphasis added.]*

26. I expressed a similar rationale for the adoption of a trailing average in my previous report. The highlighted quotes above can be related back to my five criteria as follows:

- Achieving criteria i, hedgeability:

² AER, Explanatory Statement to the Draft Rate of Return Guideline, page 83-84.

- *“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”; and*
 - *Providing “a reasonable opportunity to recover at least the efficient debt financing costs”.*
- Achieving criteria iii, reducing measurement error:
 - *“It minimises the consequences of a single measurement error.”*
- Achieving criteria iv, reducing measurement error:
 - *“It smooths movements in the return on debt over a number of years, which would result in lower price volatility for energy consumers and more stable returns for investors than the “on the day” approach”*
- Achieving criteria v, reflect industry practice:
 - *It is more reflective of the actual debt management approaches of non-regulated businesses and, therefore, is more likely to represent efficient financing practice.*

27. Of the five criteria that I set out, the only one that I set out that is not relied on by the AER as a rationale for adopting a trailing average is criteria ii, avoiding transaction costs.

4 Assessing the AER transition against established criteria

4.1 AER transition mechanics

28. The mechanics of the AER's proposed transition arrangements are relatively simple.³ In the first year of the next regulatory period the cost of debt allowance would be set exactly as it would be under the 'on the day' approach. That is, 100% weight would be given to a cost of debt estimate measured in an averaging period immediately prior to the beginning of the regulatory period.
29. However, in the second year of that regulatory period the weight given to that estimate of the cost of debt would be reduced from 100% to 90% (assuming a ten year transition) - with the residual 10% weight taken up by an estimate of the cost of debt measured in an averaging period taken during the first year of regulatory period. In the third year of the transition (also the third year of the next regulatory period) 80% weight would be given to the initially estimated cost of debt, 10% weight given to each estimate taken during the first and second years of the regulatory period, and so on.

4.2 Assessment of AER transition

30. The same criteria that were used to assess, and ultimately recommend, the trailing average approach can be used to assess the application of the AER's transition arrangements to a trailing average.

4.2.1 Hedgeability

31. My first criterion was that the method for setting the cost of debt must be hedgeable. This means that a business must have a reasonable opportunity to align its actual cost of debt to the cost of debt allowance. I agree with the conclusion in the Explanatory Statement that:⁴

“the trailing average portfolio approach is capable of providing the benchmark efficient entity with a staggered debt portfolio with a reasonable opportunity to recover at least the efficient debt financing costs”

32. In my view the 'on the day' approach is not, in general, capable of providing a reasonable opportunity to recover at least the efficient debt financing costs. The

³ See Appendix J of the Explanatory Statement to the Draft Rate of Return Guideline.

⁴ AER, Explanatory Statement to the Draft Rate of Return Guideline, page 83.

reason is that the ‘on the day’ approach is not hedgeable. In order to hedge to the ‘on the day’ approach 100% of a business’s interest rate costs must be able to be reset over a short window of time. In order to achieve this 100% of all debt must be refinanced in the short window (averaging period) used to estimate the cost of debt allowance – and the estimate of the cost of debt allowance in that window must be accurate. Any attempt to do this would create unacceptable refinancing risk – as appears to be acknowledged in the Explanatory Statement.⁵

As we discuss in section 6.3.3, raising the entirety of the benchmark efficient entity’s debt once for every regulatory control period would expose the benchmark efficient entity to substantial refinancing risk. Therefore, it may not be an efficient financing practice.

33. It must be noted that some businesses may have entered into swap contracts (at some transaction costs as discussed in the next section) that reset their base interest rate exposure at the beginning of the regulatory period. This allows for a partial hedge of the ‘on the day’ allowance. It is only partial because it does not hedge against movements in the debt risk premium component of the cost of debt – a component that has been historically large since the beginning of the GFC in 2007 at the same time that the base interest rate has been historically low.
34. The proposed transition is unhedgeable precisely because the proposed transition to trailing average retains, in large part, the ‘one the day’ approach. During the first year of the transition 100% of the cost of debt allowance is based on the ‘on the day’ approach. Assuming a 10 year term for the cost of debt, 90% of the allowance is based on the ‘on the day’ approach in the second year, 80% in the third year and so on until the trailing average is fully implemented in the 10th year.
35. This makes it impossible for a business to hedge to the regulatory allowance during the AER’s proposed transition. This is particularly true of a business that already funded itself using a trailing average approach. Such a business will have a cost of debt that is based on a trailing average of market conditions while the regulatory allowance will, at least initially, be based on a snapshot of market conditions during a short window at the beginning of the regulatory period.
36. That is not to say that immediate adoption of a trailing average for all firms would be appropriate. In particular, firms who have already entered into swap contracts to reset their base interest rate exposure at the beginning of the regulatory period may be able to better hedge the AER transition than an immediate implementation of a trailing average.
37. Fundamentally, the unhedgeable nature of the ‘on the day’ approach means that there is no single ‘dominant’ financing strategy for businesses under that regime. Any

⁵ AER, Explanatory Statement to the Draft Rate of Return Guideline, page 81.

transition arrangements need to reflect this fact if the transition arrangements are to be hedgeable.

4.2.2 Transaction costs

38. I have been asked to consider the specific case of a business that already funds itself using a trailing average approach and who is faced with the AER proposed transition. Such a business is exposed to a mismatch between its funding costs and the regulatory allowance. Moreover, the extent of that mismatch depends on how market conditions evolve over the short window prior to the next regulatory period.
39. Thus, this mismatch can be broken down into two different components, each of which has its own subcomponents:
- i. The mismatch that exists right now between their costs and the allowance that is expected to be provided under the AER transition. This is made up of the expected mismatch between:
 - a) base interest rates paid/allowed; and
 - b) risk premiums paid/allowed.
 - ii. The variability in that mismatch around the expected level that might occur between now and the first averaging period of the transition. Including in relation to variation in the:
 - c) base interest rates allowed; and
 - d) risk premium allowed.
40. There is no mechanism by which the business can hedge the mismatch associated with ib) or iib). This is because there is no financial product that allows a business to hedge against changes in the risk premium on its own debt.
41. Similarly, the mismatch in ia) above cannot be altered or hedged against by any change in debt management policy. This mismatch represents the difference between the base interest rate on the business's books now (which reflects an average of base interest rates in the past when debt has been issued) and the base interest allowance the business expects to receive – which will be set in a future averaging period.
42. However, there is a mechanism by which the business could potentially hedge against movements in base interest rates between now and the future averaging period (hedge against the mismatch in iia). This would involve:
- taking out a set of pay floating/receive fixed swap contracts on its entire debt portfolio – the effect of which is to turn the entire portfolio into floating rate debt;

- taking out a further set of pay fixed swap contracts that expire during the future averaging period – the effect of which is to refix base interest rates, but only up to the first averaging period in the AER’s transition.

43. By engaging in this type of derivative trading the business could attempt to protect itself against unexpected reductions in base interest rates (and therefore the regulatory allowance) between now and the first averaging period of the AER transition (and, equally, remove any upside from an unexpected rise in base interest rates and, therefore, the regulatory allowance). Of course, as already explained, this would still leave exposure to a mismatch associated with the sources described at ia), ib) and iib) above.
44. However, any attempt by a business to reduce such risks (even to the very partial level set out above) will create potentially prohibitive transaction costs. That is, the partial level of hedging provided by such a strategy is not free. It will have costs in terms of fees and charges by the arrangers of such trades. There will also be counterparty risks inherent in the contracts. Perhaps more significant, especially for a large business operating in a less than perfectly liquid market, buy/sell margins will be incurred going into both legs of the above swap strategy.
45. In summary, the proposed transition is in large part not hedgeable by a firm that is funding itself with a trailing average approach. To the extent that it is hedgeable, potentially significant transaction costs would need to be incurred to achieve this partial hedge. These transaction costs would not be incurred if there was no transition to a trailing average for such a firm.

4.2.3 Measurement error

46. The ability of a firm to feasibly manage to the benchmark debt raising strategy can also be compromised if there is material scope for estimation error by the regulator. This is especially problematic if estimation errors are more likely to occur when the consequences are the most serious – such as in times of financial crisis.
47. The AER transition increases the risks associated with measurement error. The AER transition approach gives, in the first year of the next regulatory period, 100% weight to the estimate of the ‘on the day’ cost of debt at the beginning of that year and this continues to have (declining) weight in the cost of debt allowance over the transition.
48. If N is 10 then the same measurement will be given 90% weight in the second year, 80% weight in the third year and so on. This can be compared to the immediate adoption of the trailing average approach where this measurement will have only 10% weight in each of the 10 years. An immediate adoption of the trailing average dramatically reduces the potential for estimation error in a single year to affect the accuracy of the cost of debt allowance over the next 10 (or N) years.

4.2.4 Potential for customers to manage their exposure to the cost of debt

49. If customers' income (salaries / government benefits/ business sales) are not correlated with energy prices then volatility in energy prices (caused by volatility in energy infrastructure prices) will flow through into volatility in customers' net cash-flows. This will be especially problematic if the volatility is likely to result in energy costs increasing during periods in which their own budgets are under stress, e.g., during financial crises.
50. Individual consumers have only a limited capacity to enter into arrangements that mitigate such volatility in the prices they pay for delivered energy – especially where that volatility arises from network prices. For this reason, final consumers will generally prefer a cost of debt allowance that minimises volatility in network debt costs (and so network prices and energy costs) – even if businesses are themselves indifferent to such fluctuations (due to their ability to manage their debt costs to the benchmark allowance).
51. The AER's proposed transition retains the exposure to the volatile 'on the day' cost of debt for customers. For example, if the cost of debt turns out to be unusually high/low in the averaging period at the beginning of the next regulatory period for a business then 100% of this will be automatically translated into a higher/lower cost of debt allowance (and higher/lower energy price) in the first year of the AER's transition.
52. By comparison, immediate adoption of a trailing average approach would mean that the cost of debt allowance would be, to a large degree, known in advance of the next regulatory period. This is because the trailing average would use historical data that is already publicly known. Thus, this source of uncertainty would be removed. Of course, customers budgeting will depend on volatility in the overall price of energy and the cost of debt allowance is just one factor - albeit an important one – influencing that price.

4.2.5 Potential for customers to manage their exposure to the cost of debt

53. Finally, imposing a transition delays the time until the benchmark cost of debt allowance reflects the standard practice of businesses operating in similar environments to network energy businesses. As noted in my previous report, the fact that other businesses generally fund using a trailing average approach suggests that it is efficient. This has been recognised by the AER as described in section 3. Where a business already funds itself in this way, delaying the implementation of a trailing average delays the time at which cost of debt allowances reflects efficient costs.

4.2.6 Summary

54. Based on an application of the same five criteria used to determine that a trailing average allowance is superior to an ‘on the day’ allowance I conclude that, for a business already funding itself using a trailing average, immediate adoption of a trailing average is superior to the AER’s proposed transition. This is unsurprising because, in this situation, the delay in the implementation of a trailing average simply delays the benefits associated with adopting a trailing average.

4.3 AER rationale for imposing a transition

55. The AER’s rationale for applying the above transition, even to businesses that are already aligned with a trailing average debt management strategy focuses on criteria other than the five criteria that I have applied – and which the AER largely applied in determining a change in methodology for setting the cost of debt allowance was required. I consider that these additional criteria can be summarised as:

- consistency with expectations of allowances under the ‘on the day’ approach;
- practical ease of implementation; and
- avoiding gaming by businesses.

4.3.1 Consistency with expectations

56. The AER maintains that it is desirable for a transition to provide outcomes consistent with the continued application of the ‘on the day approach’. This is illustrated in the below quote.⁶

*Overall, we consider that there should be a transition from the ‘on the day’ approach to the trailing average portfolio approach. Consistent with the first bullet point above, we consider a transition is necessary to provide a gradual adjustment to the change of approach to the allowed return on debt estimation. This would accommodate any potential discrepancy between the new approach to estimating the return on debt and **reasonable expectations consumers, service providers, and investors formed before the rule change.***

*In particular, unexpected and immediate changes in approaches to setting allowances for the return on debt can be disruptive to both businesses and consumers (to the extent that they may result in significant changes in energy prices and cash flows **compared to the expected levels**). Appropriate, gradual changes to the regulatory framework may be more desirable. For instance, under the ‘on the day’ approach energy consumers*

⁶ AER, Explanatory Statement to the Draft Rate of Return Guideline, page 95.

reasonably expected energy prices to be volatile from one regulatory control period to the next. In particular, to the extent that the prevailing market rate of return on debt is mean-reverting, consumers would expect that if they face higher than average energy prices today, they would face lower than average prices in the future.

The reasonable expectations of the consumers would not be met if a switch to the trailing average portfolio approach were implemented without a transition. A transition can allow for more gradual adjustment to the change in regulatory approach. The same logic, of course, also applies to the reasonable expectations formed by service providers. [Emphasis added.]

57. In the above quote, the AER has given weight to an objective that seeks to align the cost of debt allowance during the transition with the cost of debt allowance that customers/businesses would have expected to have been set under a continuation of the 'on the day' approach.
58. The AER's concern here can be illustrated with an example. Imagine that a continuation of the 'on the day' approach was expected to set an allowance for the cost of debt at 7% p.a. in the future. Yet, an estimate of the trailing average cost of debt expected at the beginning of the next regulatory period was 8% p.a. Let this be the cost of a debt that an efficient business funding itself using the trailing average methodology would incur.
59. In this example, current and future expected interest rates (7%) are below average interest rates over the last N years (8%) – where N is the term of the trailing average. If there was no change in approach used to set the cost of debt allowance then prices would be based on a 7% allowance rather than the 8% allowance associated with the trailing average.
60. Relative to a baseline of regulatory practice as normal, immediate implementation of a trailing average approach would give rise to a 1% loss/gain to customers/businesses. This would apply in the first year of the next regulatory period and would be expected to reduce over time to zero as historical data were dropped out of the trailing average.
61. However, this involves a specific way of defining a 'gain' and 'loss'. A 'gain' or a 'loss' could equally be defined relative to a baseline of the efficient financing costs of a business employing a trailing average strategy. (Noting that that is the strategy that the AER has determined is sufficiently better than the 'on the day' approach to warrant a change in regulatory approach.) In which case, there would be no gains/losses from immediate adoption of a trailing average. In fact, imposing a transition would create winners and losers relative to such a baseline. Specifically, customers would 'gain' by having prices set below efficient financing costs and the business would 'lose' by virtue of the same difference.

62. Which baseline to adopt when thinking in terms of gains and losses is not a matter of positive economics but rather is a matter of normative opinion. Different people could disagree on whether it is fairer to:
- give customers prices that reflect what they would have received under a continuation of the ‘on the day’ regime; versus
 - give equity investors in a business an allowance that reflects the efficient costs associated with their financing strategy (where that financing strategy reflects the strategy that the AER has deemed more efficient in the long run than the ‘on the day’ regime).
63. I do not attempt to opine on which of the above is fairer. Ultimately, this is not a matter of economics but is a normative value judgement.
64. However, there are fundamental economic efficiency differences between these two approaches. These differences link back to my five criteria. Where the business is already funding itself using the trailing average approach, the choice between transitioning to, or immediately adopting, a trailing average has different implications for efficiency and transaction costs.
65. At a high level, the failure of a regulator to set an allowance that reflects a business’s efficiently incurred financing costs can have serious implications for the way in which investors rationally view the operation of the regulatory regime and, therefore, their incentives to invest. This general principle underpinned the criteria I set out in my previous report and which I have analysed in the previous section. My conclusions from that section are usefully repeated here:
- i. The AER trailing average transition retains the unhedgeable characteristics of the ‘on the day’ approach and causes the same exposure to unnecessary risks for a business that already finances in this way.
 - ii. The above risks can, at best, be partially hedged against. Moreover, any attempt by a business to partially reduce such risks will create transaction costs for the business.
 - iii. The AER transition increases the risks associated with measurement error.
 - iv. The AER transition creates more uncertainty around future prices because 100% of the cost of debt allowance is based on market conditions at a future date – which may be potentially very different to expectations.
 - v. Finally, imposing a transition delays the time until the benchmark cost of debt allowance reflects standard practice of businesses operating in similar environments to network energy businesses.
66. In this context it is worth making an observation on the issue of price volatility faced by customers. The AER states:

*In particular, unexpected and immediate changes in approaches to setting allowances for the return on debt can be disruptive to both businesses and consumers (to the extent that they may result in significant changes in energy prices and cash flows **compared to the expected levels**). Appropriate, gradual changes to the regulatory framework may be more desirable. For instance, under the 'on the day' approach energy consumers reasonably expected energy prices to be volatile from one regulatory control period to the next. In particular, to the extent that the prevailing market rate of return on debt is mean-reverting, consumers would expect that if they face higher than average energy prices today, they would face lower than average prices in the future.*

67. Here, the AER is not focussing on volatility of the actual allowance. Rather, it is focussing on the variation between the difference between:
- today's expectations of the future allowance under the on the day regime; and
 - today's expectation of the future allowance under the new regime.
68. Put simply, the AER is focussing on whether, at the time it makes its decision, its decision is likely (expected) to raise or reduce the cost of debt allowance. The AER treats any impact of its decision on the expected level of the future allowance as a negative.
69. This is a very different concern to a concern about limiting future volatility in the actual cost of debt allowance. Indeed, the AER's transition locks in uncertainty around the future cost of debt allowance because it proposes to set the cost of debt allowance solely with regard to market conditions immediately prior to the next regulatory period (at least for the first year of the transition).
70. Indeed, the AER locks in this uncertainty precisely because it wants to reduce the prospect that its decision will create any winners/losers in an expectational sense relative to a baseline of continuation of the *status quo*.
71. In this regard I also note that to the extent that customers are closely following regulatory developments and running their own version of building block models to predict future prices then it is possible that they may be face a 'price shock' in an expectational sense as a result of a decision to immediately adopt a trailing average approach when setting the cost of debt. However, it seems more likely that most customers will form their expectations of future prices based on past prices. In this context, the relevant question is whether imposing a transition creates a price shock relative to current prices (rather than future hypothetical prices if the AER did not adopt a trailing average).

4.3.2 Practical considerations and gaming

72. The AER Explanatory Statement has the following text:⁷

We have also had regard to practical considerations. Without a transition, we would need to estimate the trailing average of the return on debt for each service provider at the commencement of the next regulatory control period. Some elements of the average would be based on historical data that might not be readily available, depending on the choice of a specific third-party data set. We would also need to reach an agreement with each service provider on the averaging periods for historical data where there is no transition. In this case, a service provider may prefer the averaging periods that deliver the highest estimates of the past rates of return. A transition that does not use historical data would avoid this issue.

Finally, as we discussed earlier, there is a concern that, given the guideline is not binding, service providers would seek to switch from one return on debt approach to another and back at the time of their determinations, depending on which approach provides them with the highest return on debt. The implementation of a transitional arrangement may deter a service provider from seeking to opportunistically switch between approaches given this would require a further transitional arrangement. Any further transitional arrangement would delay the full commencement (and any 'windfall gains' received by the service provider) of any new approach to the return on debt. Any transitional arrangement where only forward-looking data is used to estimate the return on debt allowance would be effective in deterring service providers from gaming in this manner.

We consider that a single approach to estimating the return on debt and a single definition of the benchmark efficient entity goes some way to addressing this concern. In particular, we propose specifying one approach in the draft guideline. Therefore, a service provider would need to provide a compelling case to move away from the approach adopted in the guideline.

73. In my view the rationale set out above is not sufficiently strong to justify applying a single transition to all businesses.

74. In terms of deriving historical estimates, in a real sense it is easier/less fraught to estimate the cost of debt historically because the AER has already made decisions over this period and analysed much of the relevant data. In addition, the time pressure associated with this analysis is much less intense than if an estimate must be arrived at within a few weeks of the end of an averaging period in order to feed into regulatory prices during the first year of a regulatory period.

⁷ AER, Explanatory Statement to the Draft Rate of Return Guideline, page 96.



Similarly, in order to accommodate the position of a business that funds themselves using a trailing average approach, it is not necessary for the AER Guidelines to provide that business, or any other business, a 'menu' of different methodologies that they can freely choose between at the beginning of their next regulatory period. Rather, the Guidelines could simply require that its proposed transition be put in place unless it can be established that a business is currently funding itself using the trailing average approach.

5 Conclusion

75. Subsection (2) and (5) of the revenue and pricing principles of the National Electricity Law (NEL) state:

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

(a) providing direct control network services; and

(b) complying with a regulatory obligation or requirement or making a regulatory payment.

...

(5) A price or charge for the provision of a direct control network service should allow for a return commensurate with the regulatory and commercial risks involved in providing the direct control network service to which that price or charge relates.

76. The basis for the AER's decision to require all businesses to transition, even those already on a trailing average, gives weight to a consideration that goes ultimately to a conception of what is fair. Specifically, that it is desirable to ensure that there are no expected winners or losers relative to a baseline of 'no change' in regulatory approach.

77. As an economist I am not in a position to opine upon the validity of this conception of fairness, although I note that there are other principles of fairness that could be adopted. In particular, it could be argued that it is fair to ensure that investors receive, and customers pay, compensation in line with reasonably efficiently incurred costs. These two principles of fairness:

- avoiding a situation where customers/businesses do not receive the level of prices/compensation they expected under the pre-existing approach to regulation; *versus*
- avoiding a situation where a business is denied the opportunity to recover efficient costs

can be at odds with each other if, for example, a baseline of 'no change' in regulatory approach were to over/under compensate efficient costs.

78. On a straightforward economic reading of the revenue and pricing principles, it would appear to that avoiding a violation of the latter principle takes precedence over avoiding a violation of the former principle.

79. Under the ‘on the day’ approach the cost of debt allowance was unhedgeable which means that actual business funding practices were forced to diverge from the regulatory benchmark. In my view, it is not reasonable to conclude that a business funding itself using a trailing average approach has adopted an inefficient funding strategy. This is especially the case in the context of an overall acceptance that a trailing average approach should ultimately be adopted as the benchmark for the industry as a whole.
80. It follows that the costs that are estimated to be incurred under that strategy should be regarded as the business’s efficient costs for the purposes of the revenue and pricing principles. Moreover, as described in section 4, there are potentially material economic efficiency costs associated with requiring a transition to a trailing average for a business that is already funding itself using a trailing average strategy. This further suggests that efficient costs for such a business should be determined to be consistent with a trailing average.
81. This analysis suggests that no transition should be imposed on a business that already funds itself using a trailing average approach. Imposing a transition on such a business may deny them a reasonable opportunity to recover at least the efficient financing costs the business incurs – inconsistent with the requirements of subsection (2) of the revenue and pricing principles.
82. Similarly, to the extent that the transition path sets a cost of debt allowance that is below the efficient cost of debt for that business then that business may be denied a return that is commensurate with the regulatory and commercial risks involved in providing the its services – inconsistent with subsection (5) of the revenue and pricing principles.



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