

Mr. Warwick Anderson  
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Australian Energy Regulator  
GPO Box 3131  
Canberra ACT 2601

By email: [Rateofreturn@aer.gov.au](mailto:Rateofreturn@aer.gov.au)

9 November 2017

Dear Mr. Anderson,

**Re: Submission to the AER's Preliminary position on the regulatory treatment of inflation**

Spark Infrastructure welcomes the opportunity to contribute to the Australian Energy Regulator's (AER's) Preliminary position on the regulatory treatment of inflation.

Spark Infrastructure provided a submission to the AER's Discussion paper on the regulatory treatment of inflation in June 2017. In that submission, we outlined our view that there are errors in the regulatory framework because of a mis-match between the AER's method for estimating the efficient cost of debt and the compensation provided for the efficient cost of debt through the post-tax revenue model (PTRM) and the roll-forward model (RFM). This gives rise to unnecessary forecasting error risk.

The AER (and its consultants) have acknowledged that there is a problem with the interaction between the PTRM and RFM that results in equity holders bearing the risk of the AER's forecast of expected inflation being inaccurate and that the impact could be substantial.

However, the AER considers that no change to the forecasting method or regulatory framework is required because its method is the best estimate, forecasting errors and impact are small and symmetrical, and the overall compensation is appropriate.

Spark Infrastructure is pleased that the AER has acknowledged the problems in the interaction between the PTRM and RFM and that these problems give rise to risk to equity holders. However, a critical assumption that the forecasting errors and impact are small and symmetrical and therefore no change is required, is not supported by the material provided. Spark Infrastructure considers that the AER's method for forecasting expected inflation and the operation of the RBA's inflation targeting regime could give rise to asymmetric forecasting errors which could have a significant impact.

Further, the risk is not appropriately compensated for through the overall rate of return because the following assumptions underpinning this position are flawed:

- The risk is systematic and therefore captured in the equity beta for a benchmark efficient entity (BEE)
- The data used to estimate the equity beta for the BEE incorporates the impact on risk of the change in estimating the efficient cost of debt for a BEE based on the trailing average portfolio approach
- A network service provider (NSP) can mitigate the risk through inflation-indexing debt and the cost of mitigating this risk should be borne by equity holders under the incentive framework.

Our position remains that the compensation for efficient costs of debt and equity should be based on the AER's method for estimating the efficient cost of debt and equity and this can be achieved through correcting the operation of the PTRM and RFM to remove the forecast error risk. Compensation for this risk through an

adjustment to the overall rate of return would be an imperfect solution and unnecessarily increases costs to customers.

The Preliminary position to maintain the current approach is not in the long-term interests of consumers because this will:

- Increase uncertainty - the methods for estimating efficient costs are de-linked from the models utilised to provide compensation for efficient costs, and
- Distort incentives for efficient investment - customers pay more, or less, than efficient costs.

Correcting the error now will prevent customers paying too much in the future and ensure service levels are maintained.

Spark Infrastructure recommends that:

- This risk is removed by correcting the operation of the PTRM and RFM to ensure compensation for efficient costs is consistent with the AER's estimate of efficient costs by including an annual adjustment to revenue of an amount equal to the difference between expected and actual inflation multiplied by 60% of the regulatory asset base (RAB) (noting that this could also be done by including a present value equivalent amount in the RAB at the beginning of the next regulatory period).
- The impact on incentives in the current and future regulatory periods is addressed by providing for a one-off adjustment to PTRM revenues to apply to the regulatory period following the current regulatory period for the difference between the forecast inflation and actual inflation on 60% of the RAB over the current regulatory period.

This submission focusses on the regulatory framework and operation of the PTRM and RFM because a more accurate estimate of inflation will not address the forecasting error risk in the regulatory framework. Whereas, addressing the regulatory framework will address issues arising from an inaccurate forecast of inflation. Further, we support the ENA's submission on improving the accuracy of the expected inflation forecasting method.

Regardless of the outcome of this review, the AER should clearly articulate the reasons and thresholds that can be applied equally if the situation was reversed. If equity holders are not to be kept whole for past and future lower real return resulting from forecast errors, equity holders must be allowed to recoup higher real returns if inflation rises above the AER's forecast in the future.

Please contact myself or Sally McMahon on 0421057821 with any follow up questions or discussion regarding this submission.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Rick Francis'.

**Rick Francis**  
**Managing Director & CEO**  
**Spark Infrastructure**

## **ATTACHMENT: Spark Infrastructure’s submission on the AER’s preliminary position on the regulatory treatment of inflation**

### **1. Introduction**

Spark Infrastructure does not support the AER’s preliminary position that no change is required to the method for forecasting expected inflation or the regulatory framework and interaction of the PTRM and RFM because it results in compensation for the return on equity being different to the estimate of the efficient return on equity because of forecast error.

The AER (and its consultants) have acknowledged that there is a problem with the interaction between the PTRM and RFM that results in equity holders bearing the risk of the AER’s forecast of expected inflation being inaccurate (forecast error risk) and that the impact could be substantial.

However, the AER considers that no change to the forecasting method or regulatory framework is required because its forecasting method is the best estimate, forecasting errors and impact is symmetrical, and the overall compensation is appropriate.

Our position remains that the compensation for efficient costs of debt and equity should be based on the AER’s method for estimating the efficient cost of debt and equity and this should be achieved through correcting the operation of the PTRM and RFM to remove the forecast error risk. Compensation for this risk through an adjustment to the overall rate of return is an imperfect solution and unnecessarily increases costs to customers.

This submission addresses the errors underpinning the AER’s preliminary position. That is:

- The errors and impact of the AER’s method for forecasting inflation are not small and symmetrical – this goes to the materiality of the risk
- The risk is not appropriately compensated through the overall rate of return – this goes to the method for addressing the issue.

Further, we recommend that prior to finalising its position on the regulatory treatment of inflation the AER should attempt to:

- Demonstrate that the forecasting errors are small and symmetrical. This includes consideration of the impact on inflation expectations of multiple years of inflation below the Reserve Bank of Australia’s (RBA’s) target range and the effectiveness of monetary policy initiatives on raising inflation compared to lowering inflation
- Explain how the overall rate of return provides sufficient compensation for the exposure of equity holders to the inability to realise the expected real return, and why this risk is systematic (if the AER continues to so argue)
- Assess the implications on incentives for investment of equity holders continuing to be exposed to this risk in periods when the AER’s estimate of expected inflation is higher and lower than actual inflation.

Regardless of the outcome of this review, the AER should clearly articulate the reasons and thresholds that can be applied equally if the situation was reversed. Spark Infrastructure maintains that the first best solution would be to ensure that consumers pay no more, or less, than efficient costs and equity holders have an ability to recover efficient costs by removing the forecast error risk in the operation of the PTRM and RFM. If equity holders are not to be kept whole for past and future lower real return resulting from forecast errors, equity holders must be allowed to recoup higher real returns if inflation rises above the AER’s forecast in the future.

### **2. The errors and impact of forecasting inflation are not small and symmetrical**

The AER’s Preliminary position is that there is no need to change the regulatory framework because the overall package of inflation compensation is appropriate. However, critical to this view is that any forecasting errors are relatively small and the risk of over or under estimation of inflation is symmetric.<sup>1</sup> If the errors are not small and symmetrical, the AER has acknowledged that the impact on equity holders could be substantial and magnified by

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<sup>1</sup> SAPERE, *Efficient allocation and compensation for inflation risk*, 25 September, p. 21.

leverage.<sup>2</sup> Further, even if the errors are small and symmetrical, equity holders face additional costs or bear the risk if NSP's choose to adopt the efficient debt strategy for a BEE.<sup>3</sup>

The AER has not sought to assess the symmetry or size of the forecasting errors arising from any of the forecasting methods identified which affects the materiality (and appropriate compensation for) the issues arising from the regulatory treatment of inflation in the PTRM and RFM.<sup>4</sup> This assumption is critical to the magnitude of the consequences arising from the risk to equity holders acknowledged by the AER. If this analysis is not or cannot be undertaken, then it cannot be assumed that the issues arising are not material and substantial.

The AER states that its method for forecasting expected inflation produces the best estimate of expected inflation because it is the most congruent with long term market expectations, transparent, replicable and simple. The AER's position is based on the following assumptions:

- The RBA will be successful in inflation targeting and place an equal weight on above target outcomes as below target outcomes (no asymmetry around median outcomes)
- A timely reversion to the target range (within 1-2 years).

The importance of these assumptions to the AER's conclusions is outlined in the ACCC/AER Working Paper No. 11,

*"If, however, RBA inflation targeting is perceived to have lost its effectiveness and expectations are not anchored within the target band, the estimates from the AER's current method may be less congruent with 10 year market expectations of inflation. The heavy weighting toward the midpoint introduces the risk that the AER's estimator becomes largely oblivious to systematic and relevant information that inform or reflect changes to long term inflation expectations."*<sup>5</sup>

No information has been presented that there is symmetry around median outcomes or that there will be a timely reversion to the target range. Indeed, current information suggests the opposite. The information relied on by the AER does not reflect the current conditions or the impact of the changes in the rate of return rules implemented in 2013. Most notably, inflation has not returned to the target range for the last 4 years.

The more recent analysis provided by the AER's consultant, Shaun P. Vahey, illustrates that inflation has been outside of the RBA's target range 55 per cent of the time since inflation targeting was introduced and the outcomes have been below the target range more than they have been above the target range. Further, he notes that this skew has become more pronounced in the last ten years (2008 to 2017) as illustrated in the chart reproduced below.<sup>6</sup>

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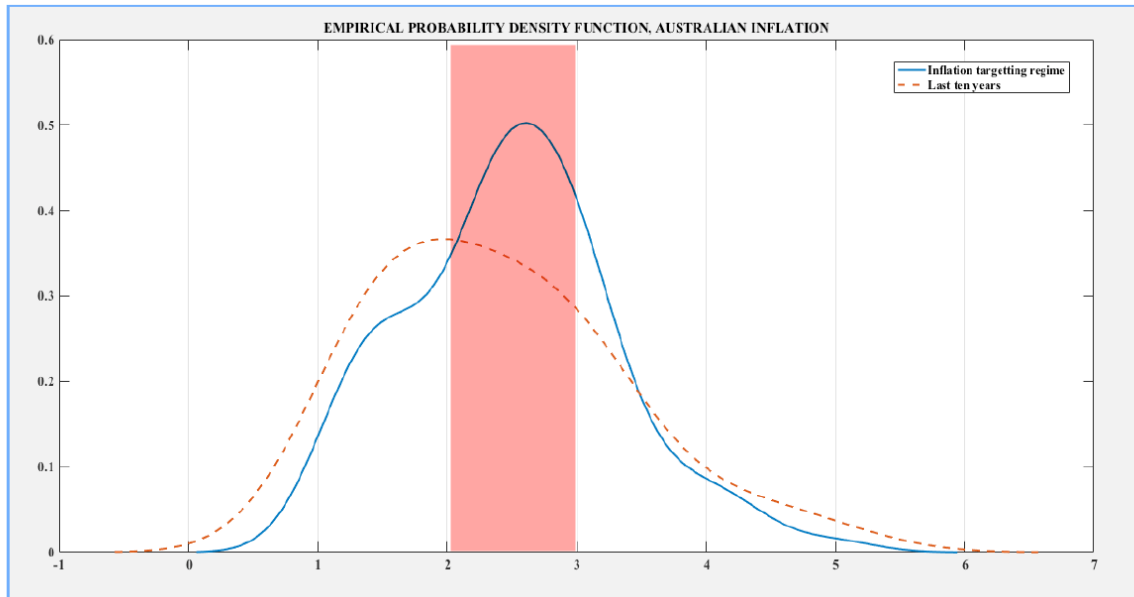
<sup>2</sup> AER, *Regulatory treatment of inflation, Preliminary position*, October 2017, p. 77 and SAPERE, *Efficient allocation and compensation for inflation risk*, 25 September, p. 17.

<sup>3</sup> Ibid, p. 32.

<sup>4</sup> Empirical analysis was outside the scope of the SAPERE report. See SAPERE, *Efficient allocation and compensation for inflation risk*, 25 September, p. 21.

<sup>5</sup> ACCC/AER, *Working Paper Series, Best estimates of expected inflation: a comparative assessment of four methods, Working Paper No. 11*, February 2017, p. 38.

<sup>6</sup> Shaun P. Vahey, *Report to the AER on estimating expected inflation*, September 15, 2017, p. 13 and 14.



It is unlikely to remain appropriate for inflation expectations to remain ‘anchored’ to the mid-point of the RBA’s target band when inflation has remained below the target band for four years. This situation has not occurred during the period since the RBA has practiced inflation targeting and is likely reflective of expansionary monetary policy being less effective in low inflation environments (when the policy rate is at, or near, the zero lower bound) than is contractionary monetary policy. That is, the policy interest rate can always rise but cannot fall (materially) below zero. Therefore, under the RBA inflation targeting regime, inflation is more likely to be lower than the mid-point of the target range more often, and for longer periods.

The more pronounced skew in the last 10 years, and indeed a fall in the mean to 2.4%<sup>7</sup>, provides support for the generally accepted view that monetary policy is more effective in reducing inflation than increasing inflation and that the RBA’s inflation targeting regime would result in inflation falling to 3% more quickly than it might rise to 2% when it is outside the band. It is also important to note, that once inflation is within the target band, the RBA has no policy to target the mid-point.

Under the inflation targeting regime, the AER’s current method (which places 80% weight on the mid-point of the RBA’s target band) is likely to produce asymmetrical forecast errors. The impact of this could be substantial, and the actions taken to mitigate this risk (e.g., via the use of inflation indexed debt and/or inflation swaps) are ineffective and costly (i.e., the potential for mismatch cannot be eliminated given the structure of the current regime’s treatment of inflation). This is discussed further in the next section.

### 3. The risk is not appropriately compensated through the overall rate of return

The AER considers that it is appropriate to target a real rate of return and the regulatory framework delivers a real return<sup>8</sup>. The AER also acknowledges that targeting a real rate of return approach could have a substantial impact on returns to equity holders as a result equity returns being the residual amount after nominal debt costs are paid. Nevertheless, the AER states that the overall compensation through the rate of return is appropriate because the effect is not new, and it is appropriate for a NSP to bear the risk of financing decisions under an incentive regime.<sup>9</sup>

This position relies on all the following assumptions being true:

<sup>7</sup> Shaun P. Vahey, *Report to the AER on estimating expected inflation*, September 15, 2017, p. 14.

<sup>8</sup> Although, the AER acknowledges that there are deviations from the delivery of a real rate of return (for example, the first-year effect) it considers that they are minor and symmetrical and therefore do not affect the overall conclusion – see AER, *Regulatory treatment of inflation, Preliminary position*, October 2017, p. 77.

<sup>9</sup> AER, *Regulatory treatment of inflation, Preliminary position*, October 2017, p. 81.

1. The risk is systematic and therefore captured in the equity beta for a BEE
2. The data used to estimate the equity beta for the BEE incorporates any impact of the change in approach to estimating the efficient cost of debt for a BEE after 2013
3. A NSP can mitigate the risk through inflation-indexing debt and the cost of mitigating risk through inflation indexing debt should be borne by equity holders under the incentive framework.

Spark Infrastructure, the AER and SAPERE all agree that,

*“The long-term interest of consumers requires both an ex-ante expectation of real returns and that the returns are able to be achieved ex post.”<sup>10</sup>*

Under the AER’s preliminary position, the long-term interests of consumers are not promoted because:

- The NSP is not provided with an opportunity to recover its efficient costs when inflation is less than the AER’s forecast of expected inflation
- Customers pay more than necessary when inflation is more than the AER’s forecast of expected inflation
- Investment may be inefficiently deferred when inflation is low potentially impacting on the longer-term reliability and security of services and leading to future catch up expenditure which increases price volatility
- Investment may be inefficiently brought forward when inflation is high contributing to higher prices on average over the longer term.

Another view is that despite these issues, providing a real rate of return is in the long-term interests of consumers because it facilitates a stable real price path for customers.

The benefits to consumers of maintaining prices in real terms assumes that customers understand and accept price variations when they match changes in inflation and that retailers either directly pass through changes in network costs to customers or the network costs are clearly itemised on a customer’s bill. It is unlikely that consumers could discern whether prices remained constant in real terms given that there are many adjustments made in the annual price variation in addition to the adjustment for actual inflation through the annual CPI-X adjustment.

Further, if the forecasting error risk is symmetrical, real prices on average over the longer term would be unaffected by improving the accuracy of the forecast or matching the method for estimating efficient costs with the method for compensating for efficient costs. If the forecasting error risk is not symmetrical and stable real prices is an objective, this could be addressed through the adjustment mechanism.

### **3.1. The risk is systematic and therefore captured in the equity beta for a BEE**

The risk that compensation for efficient debt costs will differ to the method for estimating efficient debt costs (because of the forecasting error risk) is not a systematic risk and the AER has provided no information to demonstrate that it is.

For this risk to have a systematic component it must be the case that the AER systematically overestimates actual inflation when the stock market performs well/badly. There is no reason to believe that AER forecast errors have any systematic correlation with stock market performance. Moreover, if this was the case then it is just as likely that the current regime depresses measured equity beta. That is, that higher than forecast inflation is associated with poor stock market performance (or vice versa).

Further, the comparator firms captured in the data to estimate the equity beta and credit ratings do not reflect ‘pure play’ regulated NSPs. The comparator firms include firms that have both regulated and unregulated businesses as well as firms that are not subject to economic regulation at all. The inflation forecast error risk is, by definition, not faced by unregulated businesses included in the comparator firms for BEEs.

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<sup>10</sup> AER, *Regulatory treatment of inflation, Preliminary position*, October 2017, p. 71 and SAPERE, *Efficient allocation and compensation for inflation risk*, 25 September, p. 3.



### **3.2. The data used to estimate the equity beta for the BEE incorporates the impact of the change from the ‘on the day’ to the trailing average approach to estimating the efficient cost of debt for a BEE**

The data used to estimate equity beta and credit ratings is for periods prior to the change in the rate of return rules, prior to the AER’s adoption of the trailing average portfolio approach and prior to the period where inflation has been outside RBA’s target band for more than the 1-2 year assumed reversion rate. Therefore, current estimates of equity beta adopted by the AER could not be said to incorporate these impacts.

The AER has claimed that the change to the trailing average portfolio approach for estimating efficient debt costs has not increased the inflation exposure to equity holders and equity holders are less exposed to risk in total<sup>11</sup>. The AER adopted the trailing average portfolio approach to estimating the efficient cost of debt to better match the regulatory compensation for debt to efficient debt practices and in recognition that the ‘on the day’ approach was preventing NSP’s from adopting more efficient debt management practices as they attempted to replicate the revenue compensation. The AER, and stakeholders generally, concluded that a trailing average cost of debt better achieved the allowed rate of return objective (ARORO) because the BEE efficiently issued long term year debt on a staggered basis.

Under the ‘on the day’ approach, the 10 year ‘on the day’ inflation forecast was consistent with the 10 year ‘on the day’ cost of debt. That is, 100% of the nominal cost of debt was estimated at the beginning of the regulatory period as was 100% of the ‘expected inflation’ rate. Whereas the trailing average portfolio approach captures debt market conditions over the approximately 10-year period when debt not yet matured was issued (not the ‘on the day’ debt market conditions). It is inconsistent to continue to use a 10 year ‘on the day’ inflation forecast to calculate the real return on debt to be provided through the PTRM when debt costs are estimated based on nominal debt market conditions over the previous 10 years. This is acknowledged by the AER and SAPERE.<sup>12</sup> Therefore, without a corresponding change in the way expected inflation is forecast to match the method for estimating debt costs, the forecasting error risk has been exacerbated.

### **3.3. An NSP can mitigate the risk through inflation-indexing debt and the cost of mitigating risk through inflation indexing debt should be borne by equity holders under the incentive framework**

The AER’s Preliminary position is that an NSP can choose whether to expose equity holders to the risk of over or under estimation of inflation by choosing whether to inflation index debt<sup>13</sup> and that equity holders bearing the benefit or detriment of this decision is consistent with an incentive based regime. An NSP cannot mitigate this risk through inflation indexing debt and should not wear risk that it cannot manage or imposed costs.

SAPERE characterised the risk as arising from differences between estimated expected inflation and expected inflation embedded in the nominal WACC and between estimated expected inflation and actual inflation (in the presence of fixed nominal debt costs).<sup>14</sup> Issuing inflation indexed debt will not eliminate this risk. A firm issuing inflation indexed debt will have a trailing average of real debt costs. This is not the same as a trailing average of nominal debt (issued over the previous 10 years) less an on-the-day estimate of expected inflation. Indeed, this would typically result in a very different real cost of debt than that compensated by the AER.

Replicating real compensation for debt costs would require an inflation swap contract overlay and the AER to adopt a different definition for expected inflation (see options for replicating real compensation for debt costs in Box 1). The costs of inflation indexing debt and the inflation swap contract are not compensated under the current approach to estimating the efficient cost of debt or through the operation of the PTRM and RFM.

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<sup>11</sup> AER, *Regulatory treatment of inflation, Preliminary position*, October 2017, p. 59 and 84.

<sup>12</sup> SAPERE, *Efficient allocation and compensation for inflation risk*, 25 September, p. 16.

<sup>13</sup> AER, *Regulatory treatment of inflation, Preliminary position*, October 2017, p. 80.

<sup>14</sup> SAPERE, *Efficient allocation and compensation for inflation risk*, 25 September, p. 21.

**Box 1: Options to replicate real compensation for debt costs**

If an NSP sought to match its debt strategy to the compensation for a real return on debt to mitigate this forecast error risk, the NSP would need to adopt (and the regulatory regime match) a debt strategy that includes an inflation swap contract overlay to:

1. Turn nominal debt into real debt at the time it is issued or
2. Turn nominal debt into real debt every 5 years in line with the regulatory cycle.

Both options would require the AER to change its approach to defining expected inflation. Under option 1, the expected inflation estimate would need to be the 10-year trailing average of 10-year inflation swaps and under option 2, the AER would need to use 5-year inflation swap rate as its 'on-the-day' estimate of expected inflation.

Option 1 would be implemented by:

1. Issue 10-year debt in every year consistent with the trailing average portfolio debt strategy
2. Turn the debt in to an effective inflation indexed bond using interest rate swaps by simultaneously entering in to 10-year inflation swaps so that the business pays floating inflation and receives the fixed leg of the swap.

The cost of debt under option 1 would be:

- a) The 10-year trailing average of yields on 10-year fixed rate corporate debt; less
- b) The 10-year trailing average of 10-year fixed inflation swaps (note that a) and b) can be thought of as a 10-year trailing average real cost of debt); plus
- c) The actual inflation over the regulatory period; plus
- d) The transaction costs the strategy (debt issuance plus swap contracts).

Option 2 would be implemented by:

1. Issue 10-year debt in every year consistent with the trailing average portfolio debt strategy
2. Turn the entire nominal portfolio of debt in to a real portfolio every 5 years using inflation swaps by entering in to 5-year inflation swaps where the business pays floating and receives fixed once every five years.

The cost of debt under option 2 would be:

- a) The 10-year trailing average of yields on 10-year fixed rate corporate debt; less
- b) The 5 years 'on the day' 5-year fixed inflation swap rate; plus
- c) The actual (floating) inflation over the regulatory period; plus
- d) The transaction costs the strategy (debt issuance plus swap contracts)

Option 2 is more likely to replicate the current regime's real debt compensation but still fails because:

- Lags in the AER's escalation of the RAB mean that the relevant 5-year period over which the swap needs to be taken is not the regulatory period. Specifically, inflation is compensated in the RAB using lagged actual inflation – so the AER would have to set expected inflation equal to the 5-year inflation swap rate around one year (depending on the lags) before the regulatory decision occurs for a business to be able to use this instrument to reliably convert its nominal debt into real debt using the same inflation conditions as used by the AER and over the same period inflation will be compensated in the RAB
- The timing differences are very material in their impact on cash-flows introducing a further risk that may outweigh the risk that this strategy attempts to manage. (Specifically, any hedging provided by this strategy is in present value terms – not cash-flow terms. Deviations of actual inflation from the fixed rate in the swap will cause large fluctuations in cash-flows within the regulatory period which are offset in present value terms by a change to the RAB. Cash-flows will be made more volatile under this 'hedging' strategy.)



These debt strategies may deliver a cost of debt more consistent with the real return on debt compensation provided by the AER in the overall real rate of return. However, these alternatives are more costly and irrelevant because the AER has confirmed that it estimates the efficient return on debt by assuming the BEE issues fixed nominal debt each year<sup>15</sup>.

The role of a specified efficient debt strategy for a BEE becomes unclear if it is expected that an efficient NSP should do something other than adopt the efficient debt strategy, and its not relevant to compensation or efficiency incentives. Indeed, de-linking compensation for efficient debt cost from a defined efficient debt strategy is likely to increase uncertainty and risk as it would be unclear to the NSP and investors what elements of the benchmark will be relevant to compensation for efficient costs (locking in nominal debt, the term of debt, credit rating) and the NSP would be unable to manage the risk.

SAPERE recognised the additional cost and risk under the current regulatory treatment of inflation but only if forecasting errors are small and symmetrical and inflation indexing debt was effective in mitigating the risk,

*“if the forecasting error is relatively small and the risk of over or under estimation of inflation is symmetric (that is, there is no systematic forecasting error), then it is likely that suppliers can bear the risk (because over time the losses to equity holders would be offset by windfall gains). Alternatively, the risk associated with differences between estimated and actual inflation could be managed by issuing inflation-indexed debt, although this brings some costs as noted by Ausgrid in their submission.”*<sup>16</sup>

Where an NSP manages its costs so that they are different to the BEE, an effective incentive framework would result in the NSP wearing the benefit or cost of those decisions. Any benefit or detriment of financing decisions under the incentive framework should be anchored to the BEE so that the NSP only benefits when it chooses a more efficient approach – that is more efficient than the BEE. However, under the current regulatory framework for the treatment of inflation and the operation of the PTRM and RFM, the NSP incurs the benefit or detriment if it exactly matches the decisions of the BEE simply because of forecasting error risk. This de-links the incentives for efficiency from the desirable efficient behaviour which is not consistent with the intent of an incentive framework. Further, this approach would not achieve the ARORO because the NSP would not receive an overall rate of return that is commensurate with the efficient financing costs of a BEE with a similar degree of risk.

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<sup>15</sup> AER, *Regulatory treatment of inflation, Preliminary position*, October 2017, p. 80.

<sup>16</sup> SAPERE, *Efficient allocation and compensation for inflation risk*, 25 September, p. 21.