Review of Regulatory Tax Approach

Response to the AER Discussion Paper

23 November 2018

Energy Networks Australia

Contents

1 Overview

Key messages

- Energy Networks Australia (ENA) agrees that the efficient benchmark approach should be maintained consistent with an incentive-based regulatory framework.
- The principle that any changes in benchmark assumptions or other changes of approaches must be prospective needs to be maintained to support efficient network investment and regulatory confidence.
- The standard approach of using the statutory corporate tax rate (currently 30%) should be maintained and network businesses agree with the AER that the Tax Asset Base should not be adjusted at the time of a corporate transaction.
- It can be efficient for networks to adopt diminishing value (DV) depreciation for some assets but evidence shows there is no basis for assuming that diminishing value tax depreciation should be applied to all assets in all networks.
- The guiding principle should be that diminishing value is used in circumstances where a benchmark efficient operator would adopt it. This requires a case by case consideration of the circumstances in which the network is operating.
- ENA does not agree with the AER and its consultants that it is efficient for gas networks to adopt a 20-year tax life for some gas pipeline assets given current tax provisions.
- AER Rate of Return Guideline Independent Panel has highlighted that internal consistency requires that the same approach to gearing and the return on debt must be used when determining the allowed return and the corporate tax allowance. There is no basis for any change to the current approach to gearing and the allowed return on debt.
- Network businesses understand concerns that an immediate deduction for refurbishment expenditure creates a positive net present value (NPV) outcome for some networks under the current regulatory approach.
- It is important for the positive NPV issue to be addressed in a way that does not cause adverse consequences for consumers. Network businesses are keen to work with the AER, Consumer Challenge Panel and other stakeholders to developed and consider options to ensure this.

Energy Networks Australia (ENA) welcomes the opportunity to provide this response to the AER Discussion Paper *Review of regulatory tax approach*.

ENA's participation in this review is aimed at supporting outcomes that promote the long-term interests of consumers, and are acceptable and workable for all stakeholders. Review outcomes must also deliver the sustainable business outcomes for networks that are a precondition for the long-term investment in energy infrastructure that is vital for Australia's growing energy needs.

A number of aspects of this review involve complex inter-relationships that must be thoroughly understood to avoid changes having unintended consequences that may not be in the long-term interests of consumers.

Potential changes to the treatment of income expensing of refurbishments is a key example of this. Accompanying this submission is detailed modelling ENA has prepared to highlight potential unintended incentive impacts of some possible changes.

The resolution of these complex incentive-related issues will require detailed collaborative options development and consultation processes, and ENA welcomes the commencing of this dialogue with AER and the Consumer Challenge Panel.

ENA looks forward to participation in further consultations with the AER and other stakeholders to ensure that proper consideration is given to any proposed changes in AER approach.

2 Benchmark incentive-based approach

» ENA agrees with the AER and its consultants that the efficient benchmark approach should be maintained within the incentive-based regulatory framework. The efficient benchmark approach:

- Is consistent with the entire framework for economic regulation in Australia;
- Creates incentives for NSPs to operate efficiently;
- Reveals efficient behaviour, which flows through to changes in the benchmark (e.g., any move to DV depreciation from the AER process); and
- Avoids inter-generational equity issues that could result from true-ups (PwC, 2018).

2.1 Overview

The ENA submission of May 2018 deals extensively with the operation of Australia's incentive-based regulatory framework.[1] ENA's view is that the incentive-based regulatory framework should be maintained and that a cost-plus framework where a margin is added to actual costs should be avoided.

The incentive-based regulatory framework encourages network service providers (NSPs) to operate efficiently. Consumers then benefit when that efficient behaviour is revealed. An example of this is the use of diminishing value tax depreciation for some assets. That revealed behaviour is potentially leading to a change in the benchmark regulatory allowance that will benefit consumers.

2.2 Position in AER Discussion Paper

The Discussion Paper sets out the AER's views on this issue:

> *Our view is that a benchmark incentive approach to forecasting tax costs serves the long-term interests of consumers better than a tax pass-through approach. We consider that a benchmark approach is important for economic efficiency, which serves the long-term interests of consumers, as it provides incentives for businesses to adopt the most efficient practice which consumers are able to benefit from. That is, if a business is able to be more efficient compared with our benchmark costs, then through our regulatory framework, it is generally able to retain part of the benefits which are then passed onto consumers in subsequent determination periods.*
>
> *This also applies to our calculation of the expected tax costs of the regulated businesses i.e., if there are more efficient tax practices that a business can adopt, to legally reduce its tax liability, then it is able to keep*

[1] ENA Submission, 31 May 2018, Section 3.

those benefits - which are then passed onto consumers, albeit following subsequent reviews of our tax approach e.g., in this discussion paper we have identified possible changes for stakeholder comment.

We consider the alternative of a tax cost pass-through is unlikely to encourage businesses to adopt efficient tax practices as there would be no incentive to do so – as any tax liability would be wholly passed onto consumers. This could lead to increased consumer charges over time (compared with a benchmark incentive approach).

Further, determining the actual taxes paid for only the regulated services of an energy network would require consideration of the drivers of the face value tax difference identified earlier. It would be difficult to monitor and enforce a ring-fence around regulatory tax, and so this also risks consumers paying tax costs above their efficient level.[2]

2.3 ENA position

ENA agrees with the AER and its consultants that the standard approach of using the statutory corporate tax rate (currently 30%) should be maintained.

ENA agrees with the AER and its consultants that the efficient benchmark approach should be maintained within the incentive-based regulatory framework. The efficient benchmark approach:

- Is consistent with the entire framework for economic regulation in Australia;
- Creates incentives for NSPs to operate efficiently;
- Reveals efficient behaviour, which flows through to changes in the benchmark (e.g., move to DV depreciation); and
- Avoids inter-generational equity issues that could result from true-ups (PwC, 2018).

ENA acknowledges that the individual circumstances of each network are relevant. For example, networks differ in terms of the age of their assets, their ownership structures, the extent to which they are able to refurbish rather than replace assets and so on. Under incentive-based regulation, the appropriate approach is to ask 'what would a benchmark efficient operator do in the circumstances of that network?'. That is, what would happen if the particular network was operated by a benchmark efficient network.

This is materially different from a framework under which there are many benchmarks such that the 'benchmark' for each network is effectively defined to be the actual costs of that network. Such an approach is not an incentive-based benchmark framework. It would be a not so thinly veiled move to cost plus regulation.

[2] AER Discussion Paper *Review of regulatory tax approach*, November 2018, p. 97.

3 Entity structure and ownership

Key messages

- ENA agrees with the AER and its consultants that the standard approach of using the statutory corporate tax rate (currently 30%) should be maintained:
  - Evidence suggests that few entities face a different corporate tax rate.
  - There is no obvious alternative – alternative approaches are likely to require the tracing of income flows through entities (including international entities) and into the hands of the final investors (including international investors).

3.1 Issue

The AER's regulatory model assumes that the benchmark efficient entity pays tax at current the statutory rate of 30% on its taxable income. The high-level evidence suggests that the actual tax paid by private sector NSPs is lower than the AER's allowance for corporate tax. As set out in the ENA's August submission, and as identified by the AER and its consultants, there are many reasons for this difference including tax deductions for research and development expenditure that is funded by NSPs without any consumer contribution, tax loss carry-forwards associated with transaction stamp duty payments that are funded by NSPs without any contribution from consumers, and expenses related to a purchase price in excess of the RAB that are funded by NSPs without any contribution from consumers.

It is also possible that some part of the difference between the regulatory allowance and actual corporate tax payments could arise due to NSPs being structured in such a way that they pay corporate tax at a rate of less than 30%. That is, rather than having deductible expenses that lower taxable income, it is possible that NSPs are structured in such a way as to reduce the rate that is applied to taxable income. Ultimately, this is an empirical question, and the AER commissioned PwC to investigate it.

3.2 Position in AER Discussion Paper

The AER's Discussion Paper concludes that the proportion of network assets that may be subject to a tax rate lower than 30% is very small.

For example, the Discussion Paper states that:

> *Our core finding is that a 30 per cent tax rate reflects the costs incurred by owners of most regulated networks. Less than 17 per cent of regulated energy assets are owned by investors with an applicable tax rate that may be less than 30 per cent. This 17 per cent of regulated energy assets is an upper bound because some portion of these investor groups will pay tax at the 30 per cent rate. As a proportion of privately-held networks (excluding state or territory government owned networks) this upper bound is 34 per*

cent. Consideration against our efficient cost criteria suggests that the current approach (using a 30 per cent tax rate) should be maintained.[3]

The PwC report further notes that only a small proportion of the 17 per cent of flow-through entities are concessionally taxed at rates of 15% or zero, and that these entities facing lower rates do not materially contribute to the difference between the regulatory allowance and actual tax paid:

...we also have observed certain concessionally taxed investors in flow through holding structures. Whilst they comprise a small minority of the overall investment in the regulated network assets (by TAB value) being a maximum of 16.6% (13.7% of which may currently attract a headline tax rate as low as 15%, and 2.9% of which may currently attract a tax rate of nil – refer section 2.2.1 below) it is also worth noting that at this stage there has not been a significant distribution of taxable profits which would attract concessional tax rates from the information we have been provided. Accordingly, in the first instance (subject to our comments below), the lack of profits seems to be the primary explanation of the difference between tax paid and the forecast cost of taxation for regulatory purposes, rather than the concessional tax rates which may be applied to certain upstream investors.[4]

3.3 ENA position

ENA agrees with the AER and its consultants that the standard approach of using the statutory corporate tax rate should be maintained:

- Evidence suggests that few entities face a different corporate tax rate. The question of what degree of corporate tax *should* be paid by various complex stapled structures is clearly not a matter for the AER. The key point is that the relevant evidence is that such structures do not have a material effect on the amount of corporate tax paid by the NSP sector.
- There is no obvious alternative:
  - Alternative approaches are likely to require the tracing of income flows through entities (including international entities) and into the hands of the final investors (including international investors); and
  - If an alternative approach were to be adopted:
    - The result would be windfall losses to existing asset owners; and
    - The set of potential future network buyers would be artificially limited to only those entities who could meet or better the proposed benchmark. For example, the change may result in only foreign sovereign wealth funds being able to purchase any network business.

Since there appears to be no real problem to fix in this assumption, and because any changes are likely to be more detrimental to the long-term interests of consumers,

[3] AER Discussion Paper *Review of regulatory tax approach*, November 2018, pp. 41-42.
[4] PwC Report, p. 12.

ENA agrees that no change is warranted to the ownership structure that is used in the regulatory model.

The AER's Discussion Paper also notes that there is an interaction between ownership structure and tax loss carry-forwards. The AER highlights that the 'discrepancy' identified in the ATO's brief high-level note on this issue simply compared the regulatory allowance with cash taxes paid – ignoring the important effect of tax loss carry-forwards:

> *The ATO note was focused on 'cash' tax payments by these networks during that period, but some businesses paid no tax (or less tax) because instead they drew down their pre-existing tax losses. Even if actual taxable revenue, tax expenses and therefore taxable income for each year within the period exactly aligned with AER forecasts, no tax would be paid because of earlier events.*[5]

That is, a network with taxable income of $100 and tax loss carry-forwards may pay no cash taxes, but should still be taken to have paid the standard $30 of corporate tax – rather than the $30 being paid in cash, it is paid in the form of reducing the balance of tax losses that can be carried forward. The cost is precisely the same to the owners of the firm – an asset is reduced by $30 in relation to the firm's tax obligations in that year.

The AER concludes that:

> *The net effect of the existence of accrued tax losses, a relatively low proportion of owners with less than 30 per cent tax rates, and the increase in those tax rates over time, is that even on a prospective basis the entity ownership structures do not appear to be a material driver of the tax difference.*[6]

ENA agrees with this conclusion.

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[5] AER Discussion Paper *Review of regulatory tax approach*, November 2018, p. 43.
[6] AER Discussion Paper *Review of regulatory tax approach*, November 2018, p. 44.

4 Asset revaluations

Key messages

» ENA agrees with the AER and its consultants that the Tax Asset Base should not be adjusted at the time of a corporate transaction:
  - Such a change would result in the perverse outcome of customers in different suburbs and different sides of the street paying different charges depending on historical corporate transactions.
  - Consumers do not contribute to any purchase price in excess of the RAB, so they should not receive the benefit of the tax deduction in relation to that payment.
  - Such a change would distort the market for such transactions, which is not socially desirable (Lally, 2018).

4.1 Issue

The Discussion Paper states that the effect of some corporate transactions can be to change the tax cost base recognised by the ATO.[7] By way of example, a buyer may pay $120 for a network with a RAB/TAB of $100. If that transaction allowed the buyer to claim $120 of depreciation, there would be a difference between the regulatory allowance (based on $100 of depreciation deductions) and actual corporate tax paid (based on ($120 of depreciation deductions).

However, as set out in our May submission, ENA understands that since 2001, such adjustment of the tax asset base is not permitted under Division 58 of the *Income Tax Assessment Act*. Consequently, if any changes are to be made on a prospective basis only, this issue would seem to be redundant.

4.2 Position in AER Discussion Paper

The AER's Discussion Paper concludes that:

> *We are not proposing to adjust the TAB in response to market transactions for regulated assets. We consider that it remains appropriate to preserve a consistent regulatory approach that insulates consumers from changes in market valuation, on both the RAB and TAB. Where an asset trades at a multiple in excess of its RAB, the incremental value sits outside the regulatory framework. Customers do not pay for higher return on capital and return of capital building blocks, but they also do not pay a lower tax building block.*[8]

[7] AER Discussion Paper *Review of regulatory tax approach*, November 2018, p. 81.
[8] AER Discussion Paper *Review of regulatory tax approach*, November 2018, pp. 82-83.

4.3 ENA position

ENA agrees with the AER and its consultants that the Tax Asset Base should not be adjusted at the time of a corporate transaction. We agree with the AER's reasoning that since consumers do not contribute to any purchase price in excess of the RAB, they are not entitled to receive the benefit of the tax deduction in relation to that payment. Payments and tax deductions that are outside the regulatory framework have no relevance to the calculation of allowed revenues.

ENA also notes that any change in relation to the treatment of asset revaluations would result in the perverse outcome of customers in different suburbs and different sides of the street paying different charges depending on historical corporate transactions.

5 Diminishing value vs. straight line depreciation

Key messages

- ENA agrees with the AER and its consultants that it can be efficient for entities to adopt diminishing value (DV) depreciation for some assets:
  - ENA agrees with the principle that the regulatory corporate tax allowance should match the benchmark efficient practice that would be adopted by a benchmark efficient firm in the relevant circumstances.
  - The evidence suggests that some NSPs are using DV depreciation for some assets, which is an example of revealed efficient behaviour under the incentive-based regulatory framework.
- ENA considers that any change should be prospective, applying to new assets only – for the reasons identified by the AER and its consultants:
  - Tax law does not allow changes mid-stream.
  - Immediate change may disadvantage consumers.
  - Changing mid-stream would involve material administrative and modelling complexity.
- ENA considers that there is more work to be done to determine how to implement the change:
  - ENA proposes that there is no basis for assuming that diminishing value tax depreciation should be applied to all assets in all networks. Even among private sector networks, straight line tax depreciation is used for approximately one third of assets. If a default starting point estimate of the proportion of diminishing value depreciation is required, it should be based on the observed evidence.
  - The guiding principle should be that DV is used in circumstances where a benchmark efficient operator would adopt DV. This requires a case by case consideration of the circumstances in which the NSP is operating. Thus it should be open to each NSP to submit, in its regulatory proposal, that an efficient operator in its circumstances would adopt a proportion of diminishing value depreciation that differs from the relevant industry average. .
  - ENA suggests that further engagement on this point is required.

5.1 Issue

The AER's default regulatory model uses straight line depreciation when computing the regulatory allowance for corporate tax. Many private sector owned networks use diminishing value depreciation for tax purposes for many of their assets.

If, for a particular asset, the regulatory model uses straight line tax depreciation, but the NSP actually adopts diminishing value depreciation, the result is a timing benefit to the NSP that has NPV>0.

5.2 Position in AER Discussion Paper

The AER's Discussion Paper reports that diminishing value depreciation is adopted for approximately 60% of all assets owned by private sector NSPs. This leads the AER to conclude that the use of diminishing value depreciation (in those circumstances where it is used) may reflect the efficient practice of an efficient NSP operator. Thus, in those circumstances, the regulatory model should be revised to reflect the efficient practice:

> *Based on the above analysis we conclude that a switch from straight-line to diminishing value method should be considered as a potential change to the benchmark tax depreciation method. This is because it is reasonable to assume that a benchmark efficient entity will select the diminishing value tax depreciation approach…The fixed asset registers show that the diminishing value method is chosen by non-NTER entities in respect of more than 60 per cent of assets by value.*[9]

5.3 ENA position

The principle of matching the practice of a benchmark efficient operator

ENA agrees with the principle that the regulatory corporate tax allowance should match the benchmark efficient practice that would be adopted by a benchmark efficient firm in the relevant circumstances. Consequently:

- Where a benchmark efficient operator would adopt diminishing value depreciation for tax purposes, that is the approach that should be adopted for the regulatory tax allowance; and
- Where a benchmark efficient operator would adopt straight line depreciation for tax purposes, then that is the approach that should be adopted for the regulatory tax allowance.

ENA agrees with the AER and its consultants that it can be efficient for an NSP to adopt diminishing value (DV) depreciation for some assets in some circumstances. Where those cases can be identified, it is appropriate to use DV depreciation when computing the corporate tax allowance.

Specifically, ENA considers that there is no basis for assuming that diminishing value tax depreciation should be applied to all assets in all networks. Even among private sector networks, straight line tax depreciation is used for approximately one third of assets. If a default starting point estimate of the proportion of diminishing value depreciation is required, it should be based on the observed evidence.

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[9] AER Discussion Paper *Review of regulatory tax approach*, November 2018, pp. 66-67.

Moreover, Australian taxation law mandates that some assets must be depreciated using the straight line method (e.g., in-house software under section 40-70(2) of the ITAA 1997).

ENA considers that it should also be open to each NSP to submit, in its regulatory proposal, that an efficient operator in its circumstances would adopt a proportion of diminishing value depreciation that differs from the industry average.

The principle of prospective change

ENA considers that any change to the method of depreciation used when computing the regulatory tax allowance should be prospective, applying to new assets only.

In this regard, the ENA agrees with the reasons identified by the AER and its consultants:

- Tax law does not allow changes to depreciation methods mid-stream during the life of the asset.
- An immediate change may disadvantage current consumers.
- Changing tax depreciation methods mid-stream would involve material administrative and modelling complexity. While administrative and modelling complexity alone do not automatically rule out an immediate change in approach, they have to be weighed against the benefits of such an immediate change, which seem small at best (and more likely negative).

The Discussion Paper notes that Consumer Challenge Panel 22 and Energy Consumers Australia both submitted that the AER could consider a change to diminishing value depreciation for *existing* assets – on the basis that it is already being used, so the change would reflect the existing costs. ENA notes that precisely the opposite submission was made in relation to the transition to the trailing average return on debt. In that case, some networks submitted that they had been using the trailing average approach for many years, so the trailing average allowance should be adopted immediately because that reflects the existing costs. The AER rejected that argument and applied the trailing average approach on a prospective basis only. Regulatory consistency would require that the same approach should be adopted in relation to diminishing value depreciation.

Identification of the benchmark efficient practice

The central issue in any move to the use of DV depreciation when computing the regulatory allowance for corporate tax is the identification of the circumstances in which a benchmark efficient operator would use DV depreciation for tax purposes.

ENA considers that there is more work to be done to determine how to implement any such change. The guiding principle should be that DV is used in circumstances where a benchmark efficient operator would adopt DV. This requires a case by case consideration of each class of assets and the circumstances in which the NSP is operating. For example, if there is evidence that (substantially) all networks use diminishing value depreciation for a particular class of assets, it would be reasonable to consider that to be the efficient approach for that class. However, if, across the

industry, a material proportion of assets within a class were depreciated using the straight line method, it would be unreasonable to assume that the diminishing value approach is efficient for that class. An analysis of why straight line depreciation is used for a material proportion of those assets would be required.

In summary, ENA is concerned that any changes in relation to diminishing value depreciation should be evidence-based, taking into account the important evidence that a material proportion of assets across the industry are currently depreciated using the straight line approach. At a minimum, the proportion of assets within each class that is assumed to be subject to diminishing value depreciation should be based on evidence of the actual practice in relation to that class of assets – not based on a high-level assumption that is independent of any evidence.

The guiding principle should be that DV is used in circumstances where a benchmark efficient operator would adopt DV. This requires a case by case consideration of the circumstances in which the network is operating. Thus it should be open to each networks to submit, in its regulatory proposal, that an efficient operator in its circumstances would adopt a proportion of diminishing value depreciation that differs from the industry average.

Implications for regulatory (economic) depreciation

ENA notes that any implications for regulatory depreciation are separate from the regulatory taxation review. Thus the AER does not need to form a view about the issues set out below as part of the current Tax Review. However, some of the principles that the AER has identified in the current review would also seem to be relevant to regulatory depreciation. ENA members would welcome the opportunity to engage with the AER on these issues after completion of the current review.

In has advice to the AER, Dr Lally notes that it is possible to separately consider the methods applied for tax and economic depreciation. ENA agrees with Dr Lally that:

- Regulatory tax depreciation should mirror the benchmark efficient approach to tax depreciation. Any difference between the regulatory approach and the benchmark efficient approach to tax depreciation will result in a violation of the NPV=0 condition.
- All methods of economic depreciation (i.e., in the RAB roll-forward model) preserve the NPV=0 condition. This is because the RAB rolls forward at the WACC, such that the present value of the recovery of the RAB remains constant.[10]

Thus, the NPV=0 condition:

- Requires that regulatory tax depreciation should mirror the benchmark efficient approach to tax depreciation; and

[10] This argument, of course, is based on the assumption that the regulator has set an allowed return that is precisely equal to the return that investors require. Where that assumption does not hold, different depreciation methods will produce different NPVs. For the remainder of this section, we set aside this problem.

- Has nothing to say about the choice of economic depreciation methods because all methods preserve the NPV=0 condition.

Consequently a different criterion must be used to select the appropriate method for economic depreciation. ENA suggests that inter-generational equity considerations would seem to be relevant when selecting the appropriate method for economic depreciation.

Consider the following analogy to explain the issue.

Two parents purchase a new car for $30,000 and make it available for their child to attend university for three years. At the end of that period, the child returns the car, which could be sold at that time for $15,000. The parents then make the car available to their second child for three years, during which time its resale value falls to $8,000. The third child then uses the car for three years, during which time it frequently breaks down, requires considerable maintenance, and requires relatively more fuel and oil, and its resale value falls to $4,000.

Even though all three children used the same car for a three-year period, it is not the case that they all received the same value. The first child had the use of a brand new car that ran efficiently and required little in the way of maintenance expenses. The value obtained by the third child is clearly materially lower.

The same applies to each network asset. The generation of consumers that has the benefit of the asset in the first five years of its life receives more value from the asset than the generation of consumers that has the benefit of the asset during years 46-50 of its life. Many assets are less reliable and require higher maintenance costs during the last five years of their life than during the first five years.

As a matter of principle, inter-generational equity considerations would seem to require that each generation of consumers should contribute funding towards an asset equal to the value they obtain from that asset. Thus, if the economic value of an asset follows a DV profile, that same profile should be used for the regulatory allowance for economic depreciation.

This could also be easily accommodated within the current regulatory determination process. In their five-yearly regulatory submissions, NSPs would propose which economic depreciation method best reflected the true decline in value for each asset class, presenting evidence for that view. If the AER agrees that the proposed approach does indeed reflect the true decline in value, then any new assets purchased during that regulatory control period would have that economic depreciation method applied to them for the remainder of their useful lives.

It is possible that other considerations are also relevant to the selection of an appropriate method for determining regulatory depreciation (i.e., considerations other than NPV neutrality and inter-generational equity). Thus, ENA members would welcome the opportunity to engage with the AER on these issues after completion of the current review.

6 Asset lives for gas pipelines

Key messages

- ENA does not agree with the AER and its consultants that it is efficient for NSPs to adopt a 20-year tax life for some gas pipeline assets:
  - ENA does not agree with the principle that the regulatory corporate tax allowance should exclusively match one of the possible approaches that can be adopted by a benchmark efficient firm in the relevant circumstances.

6.1 Issue

The Discussion Paper notes that, for some gas pipelines, Australian taxation law allows depreciation over 20 years, whereas the regulatory model adopts a longer life for tax depreciation.

In cases where this difference arises, there is a timing benefit to the NSP that has creates a net present value benefit.

6.2 Position in AER Discussion Paper

The Discussion Paper concludes that, where Australian taxation law allows depreciation over 20 years that is likely to be the most efficient approach. In this case, the regulatory model should be changed to reflect that efficient approach.

6.3 ENA position

ENA dis-agrees with the AER and its consultants that it can be efficient for NSPs to adopt a 20-year tax life for some gas pipeline assets where Australian taxation law allows that approach. In this regard, the ENA notes the current choice that is available to NSPs under taxation legislation to adopt longer lives than 20 years and therefore dis-agrees that it should be accepted that the benchmark efficient practice is to adopt 20 years.

6.4 Background to the 20 year life for gas assets

The provisions introducing statutory capped effective lives in 2002 were intended to provide an incentive to businesses and promote investments in the Australian gas industry. According to the Explanatory Memorandum to the *Taxation Laws Amendment Bill (No. 4) 2002*, these provisions were introduced because the Commissioner intended to revise upwards the effective lives of certain assets. The Commissioner's determination on effective lives is based solely on the consideration of factors relating to an asset's effective life, and does not take into account wider policy implications, such as the impact on investment decisions or broader economic considerations. The purpose behind the statutory capped effective lives was "to address the broader national interest where large increases in 'safe harbour' effective lives resulting from the review of the existing effective life determination by the

Commissioner would have a significant effect on investment in industries with national economic implications".

The AER's Review of Regulatory Tax Approach *Discussion Paper* (p.50) appears to assume that tax law currently requires the use of the 20 year statutory capped effective life for gas assets. However, this cap is not compulsory, and entities have a choice on whether they adopt the Commissioner's effective lives (in which case, the statutory cap will have to be adopted) or whether they self-assess the effective lives of these gas assets. In the event that an entity chooses to self-assess the effective life of gas assets based on their own circumstances, the capped life will not apply to these assets.

There is clear precedent amongst NSPs of the continuation of self-assessment post the changes introduced in 2002. There are various reason why an NSP would have elected not to adopt the shorter lives for tax purposes, including the ability to access and pass on franking credits to shareholders and also concerns around the continuing ability to recoup tax losses in future periods given the material timing differences created by adopting shorter lives for tax than accounting purposes (which for gas assets are longer than 20 years given the long life nature of these assets).

Post 2002 there was considerable focus on carry forward tax loss provisions and when combined with the introduction of International Accounting Standards in 2005 which included a new tax effect accounting standard, businesses were faced with uncertainty on the ability to not only carry forward tax losses but also to recognise them under accounting standards. There was therefore a risk that tax losses could either be lost, or unable to be recognised, causing negative economic implications. In this environment it was not uncommon for a business to forego the opportunity to increase tax deductions through accelerated depreciation but rather remain aligned with accounting depreciation rates. To therefore suggest that the benchmark efficient practice would be to adopt 20 year lives is to ignore these very real considerations that businesses have been faced with.

If it is accepted that the benchmark efficient practice could reasonably be expected to be either the adoption of 20 year lives or self-assessed lives, as allowed for by tax legislation since 2002, then it should be accepted that an NSP should be entitled to also have that choice in the depreciation of its regulatory tax asset base. This is consistent with observed practice since 2002 where many businesses chose not to adopt 20-year lives.

ENA also notes that the application of any 'cap' to assets that are regularly replaced at the end of their lives is unlikely to meet the materiality threshold. This can be explained via a simple example. Suppose a NSP has two $100 assets that each have a 40-year economic life and which are replaced on a staggered basis so that one is replaced when the other is 20 years old. If tax depreciation is calculated over 40 years, in each year both assets will record depreciation of $2.50. If tax depreciation is calculated over 20 years, in each year the asset that is less than 20 years old will record depreciation of $5.00 and the older asset will already be fully depreciated for tax purposes. Thus, for assets on a regular replacement cycle, the proposed change would have no impact for a business in steady state.

7 Interest expense

Key messages

- ENA agrees with the AER Rate of Return Guideline Independent Panel that internal consistency requires the same approach to gearing and the return on debt must be used when determining the allowed return and the corporate tax allowance.
- ENA considers that there is no basis for any change to the current approach to gearing and the allowed return on debt:
  - If actual gearing differs from the AER's benchmark 60 per cent gearing in general across NSPs, the appropriate response would be to change the benchmark gearing assumption and use it consistently throughout the regulatory process. The fact that a particular NSP might adopt gearing that differs from the benchmark is irrelevant. Under incentive-based regulation, NSPs are free to depart from a benchmark, understanding that they (and not consumers) bear the risk of doing so.
  - Debt that sits outside the RAB is irrelevant to the regulatory allowance. If a network buyer pays in excess of the RAB, the buyer must find the excess with no contribution from consumers. That excess sits outside the regulatory framework and so is irrelevant to the task of regulatory allowance setting;
  - If there is evidence that NSPs are paying a higher cost of debt than the regulatory allowance, the appropriate response would be to change the benchmark return on debt allowance and use it consistently throughout the regulatory process.
  - ENA considers that hybrid securities appear to be a side issue that is completely irrelevant to the vast majority of NSPs. If any change were to be made in this area, there is a risk of the AER creating an incentive to 'race to the bottom' as identified by Dr Lally. That is, a small number of NSPs have issued a small volume of hybrid securities. If the corporate tax allowance were based on NSPs having issued hybrid securities, NSPs would be incentivised to issue hybrids to match, or better, the regulatory allowance. Dr Lally has warned against creating incentives for NSPs to adopt more aggressive tax structures than they currently employ.
- ENA does not understand why the AER is unable to make a determination on this point. It is unclear what evidence the AER could uncover from the RIN information to warrant a change to its approach in this area.

7.1 Issue

The Discussion Paper observes that the ATO's high level note identified that some NSPs may claim a tax deduction for interest expense that is higher than the AER's allowance for the return on debt.[11]

The Discussion Paper identifies four possible reasons for this difference:[12]

- Actual gearing may be different from the AER's benchmark 60 per cent gearing;
- Actual debt levels may be different from the level of debt the AER has deemed in its RAB (calculated as 60% x RAB) - reflective of differences in market value and RAB value;
- Actual cost of debt may be different from the AER's benchmark cost of debt; and
- There may be hybrid securities that the AER has treated as equity in its return on capital assumption, but the payments made under them are deductible for tax purposes.

7.2 Position in AER Discussion Paper

The Discussion Paper states that the AER has not yet had time to determine whether the evidence warrants any change to the current approach.

7.3 ENA position

ENA considers that no change to the current approach is warranted.

- If actual gearing differs from the AER's benchmark 60 per cent gearing in general across NSPs, the appropriate response would be to change the benchmark gearing assumption and use it consistently throughout the regulatory process. The fact that a particular NSP might adopt gearing that differs from the benchmark is irrelevant. Under incentive-based regulation, NSPs are free to depart from a benchmark, understanding that they (and not consumers) bear the risk of doing so.
- Debt that sits outside the RAB is irrelevant to the regulatory allowance. If a network buyer pays in excess of the RAB, the buyer must fund the excess with no contribution from consumers. That excess sits outside the regulatory framework and so is irrelevant;
- If there is evidence that NSPs are paying a higher cost of debt than the regulatory allowance, the appropriate response would be to change the benchmark return on debt allowance and use it consistently throughout the regulatory process.
- ENA considers that hybrid securities appear to be a side issue that is completely irrelevant to the vast majority of NSPs. If any change were to be made in this area, there is a risk of the AER creating an incentive to 'race to the bottom' as identified by Dr Lally. That is, a small number of NSPs have issued a small volume of hybrid securities. If the corporate tax allowance were based on NSPs having

[11] AER Discussion Paper *Review of regulatory tax approach*, November 2018, p. 87.
[12] AER Discussion Paper *Review of regulatory tax approach*, November 2018, p. 90.

issued hybrid securities, NSPs would be incentivised to issue hybrids to match, or better, the regulatory allowance. Dr Lally has warned against creating incentives for NSPs to adopt more aggressive tax structures than they currently employ.

ENA considers it is possible to reach a clear determination on this issue, noting it is unclear what evidence the AER could uncover from the RIN information to warrant a change to its standard approach in this area.

Actual gearing different from benchmark gearing

In its Draft Rate of Return Guideline, the AER determined benchmark gearing of 60% based on empirical evidence from relevant comparator firms, being the listed network businesses that are subject to AER regulation. Having determined the benchmark efficient capital structure, individual businesses are free to adopt whatever capital structure they choose.

For example, an NSP is free to adopt higher gearing if it chooses. This will have the effect of increasing the net return to equity holders (to the extent that the NSP receives an allowed return on equity for capital that is actually financed by debt), but at the cost of bearing more risk. If NSPs in general adopt that strategy, the higher gearing will become apparent in the market evidence and the AER would change the benchmark at the next opportunity.

However, there is no evidence of this occurring. The AER's benchmark estimate of 60% gearing is based on market evidence that NSPs tend to gear at 60%.

The Discussion Paper notes that the ATO's claim that some NSPs gear in excess of 60% is irrelevant because it is erroneously based on book values instead of market values.[13]

Even if there was evidence of a particular NSP gearing in excess of 60%, there would be no reason to change the allowance for corporate tax. Under incentive based regulation, NSPs are free to depart from a benchmark, understanding that they (and not consumers) bear the risk of doing so.

The Discussion Paper also notes that:

- Dr Lally has advised against any change to gearing for tax purposes; and
- The Independent Panel has clearly stated that:

> *The only significant interaction of the gearing ratio with other building blocks is with the taxation component. Because interest costs are tax deductible, consistency requires the same gearing ratio to be used in the rate of return and taxation building blocks.*[14]

[13] AER Discussion Paper *Review of regulatory tax approach*, November 2018, p. 90.
[14] AER Discussion Paper *Review of regulatory tax approach*, November 2018, p. 91.

Market value of debt / Debt that sits outside the RAB

When a network is purchased at a price in excess of the RAB, the absolute dollar amount of debt finance will be greater than the 'RAB debt finance,' even if the new owner adopts precisely the benchmark gearing proportion.

For example, a network with RAB of $100 is assumed to have $60 of debt financing. If that network sold for $120, there would be $72 of debt finance if the purchase price was financed with 60% debt. The interest on the additional $12 of debt finance would create an additional tax deduction. However, that is irrelevant because consumers pay no more than a rate of return on the RAB. In this example, the additional $20 (including $12 of debt finance) sits outside the regulatory framework. The new owners of the network must fund that $20 themselves, with no contribution from consumers.

Since the network owners pay the interest on the additional $12 of debt (with no contribution from consumers) they are entitled to the tax deduction in relation to it.

The Discussion Paper notes that consistency with the AER's conclusions on asset revaluations requires that no change be made in relation to debt that sits outside the RAB:

> *This option [no change] is also consistent with the argument discussed in Chapter 7 about not adjusting the TAB in response to market transactions for regulated assets. As discussed, where an asset trades at a multiple in excess of its RAB, the incremental value sits outside the regulatory framework. Customers do not pay for higher return on capital and return of capital building blocks, but they also do not pay a lower tax building block.*[15]

Moreover, for interest expense to be deductible, NSPs that are subject to the Australian thin capitalisation provisions must satisfy either:

a) the 'safe harbour' gearing limit of 60%; or

b) the arm's length debt test.

As such, there is no guarantee that the ATO would allow interest deductions on gearing in excess of 60%. Indeed, the ATO has recently indicated that interest deduction is its number one area of focus. Consequently, before the AER could increase the assumed gearing level above 60%, it would require ATO confirmation that interest on the higher amount would be deductible.

For all of the reasons set out above, ENA considers that no change should be made in relation to debt that sits outside the RAB.

Cost of debt

Another possible reason for actual interest deductions exceeding the regulatory allowance is that the actual rate of interest paid by NSPs exceeds the AER's allowed return on debt.

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[15] AER Discussion Paper *Review of regulatory tax approach*, November 2018, pp. 93-94.

However, if that is the case, the appropriate response would be to change the benchmark allowance for the return on debt – to conform to the evidence about the efficient cost of debt.

ENA considers that there is no basis for having one benchmark efficient allowed return on debt in one part of the regulatory model and a different estimate of the same thing in another part of the same regulatory model.

The Independent Panel's comments about consistency being required between the benchmark efficient gearing ratio used to compute allowed returns and the corporate tax allowance apply equally to the allowed rate of return on debt.

Hybrid securities

The Discussion Paper also considers two types of hybrid security that are used to a small extent by a small number of NSPs:

» AusNet Services has issued non-convertible subordinated notes, although the Discussion Paper observes that:

> *…we noted that given the relative size of AusNet Services' current level of debt and hybrid securities, adjusting for these hybrid securities was unlikely to have a material impact on the overall gearing estimates, and that these particular notes are not stapled to its shares.* [16]

» Spark Infrastructure has used stapled shareholder loan notes, however the Discussion Paper observes that:

> *…this may not be a material driver (given that it only applied to one of the five businesses in our comparator set).* [17]

and that:

> *…we are cognisant of the difficulty in separating the loan notes from its stapled shares in order to calculate a different gearing for tax purposes, given that they cannot be traded separately and, as such, have no separate existence from the share (the share price encompasses the value of the loan note).* [18]

ENA agrees that hybrid securities appear to be a side issue that is completely irrelevant to the vast majority of NSPs.

For the same reason that the benchmark efficient corporate structure should not be changed to accommodate a small number of firms that have departed from it, the benchmark efficient capital structure should not be changed to include hybrid securities that might be used to finance a tiny minority of total NSP assets. If any such change were to be made, there is a risk of the AER creating an incentive to 'race to the bottom' as identified by Dr Lally.[19]

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[16] AER Discussion Paper *Review of regulatory tax approach*, November 2018, p. 95.
[17] AER Discussion Paper *Review of regulatory tax approach*, November 2018, p. 95.
[18] AER Discussion Paper *Review of regulatory tax approach*, November 2018, p. 95.
[19] AER Discussion Paper *Review of regulatory tax approach*, November 2018, p. 59.

Moreover, the quantification of the effects of hybrid securities would be extremely complex for a number of reasons:

- The AER has already identified that shareholder loan notes cannot be traded separate from the underlying share, so there is no obvious basis for determining the proportion of value that pertains to the note versus the underlying share;
- The deductibility of interest paid on shareholder loan notes may be capped by thin capitalisation rules. Thus, it would not be enough to determine the separate value of the notes – that would have to be cross-referenced against the thin capitalisation rules; and
- Shareholder loan notes are typically issued by NSPs that have foreign investors. Consequently, if any change were to be made in relation to such notes, a corresponding change would be required in relation to gamma – it would be inconsistent to reflect tax deductibility of an instrument that is used by foreign investors, but then to assume that the same instrument is held by the usual proportion of domestic investors.

8 Refurbishments

Key messages

Overview and proposed next steps

- ENA understands that the AER's concern is that an immediate deduction for refurbishment expenditure creates a positive NPV for some NSPs under the current regulatory approach.
- There are a number of ways of addressing this positive NPV. Some of the approaches that might be considered have material adverse consequences such as creating:
  - an incentive for NSPs to prefer the more costly option of replacing assets rather than refurbishing them.
  - inter-generational inequity (a short-term benefit to current consumers at the expense of future consumers); and
  - an incentive for NSPs to expense expenditure that they currently capitalise, *reducing* corporate tax payments.
- ENA suggests that it is important for the positive NPV issue to be addressed in a way that does not cause adverse consequences.
- Consequently, ENA proposes that the next stage of this process should be for the AER to produce a number of specific options for addressing this issue and to engage in a round of consultation with stakeholders to identify the likely incentive effects of each. ENA would be pleased to assist in the process of identifying potential options and in explaining the likely incentive effects of each.

Broad system-wide effects

- It is possible for NSPs to refurbish some assets, extending their lives, rather than replacing them. The cost of refurbishment is typically dramatically lower than replacing the asset, providing a material benefit to consumers.
- Whether refurbishment expenditure is immediately deductible, or whether it is capitalised and depreciated for tax purposes, is a complex and uncertain question. Some networks expense some of this expenditure, but a number of networks capitalise this expenditure.
- It would be difficult for the AER to identify which particular types of expenditure might be immediately deductible, given the complexity and uncertainty in this area of tax law and the fact that deductibility turns on the particular circumstances of each case. The AER should avoid an approach that involves setting a regulatory allowance on the basis of what the AER thinks the ATO might allow as deductible expenditure into the future.
- Rather, there are approaches that address the positive NPV for those networks that deduct expenditure that do not require the AER to take a stance on how the ATO might assess an NSP's expenditure into the future. A sharing approach, similar to other incentive mechanisms, would be one example.

NSP incentives and effects on consumers

- The current regulatory arrangements create an incentive for NSPs to refurbish assets where possible, which has the effect of reducing costs to consumers.
- A change to recognise the up-front tax deduction in the regulatory model would create a strong incentive for NSPs to propose replacing assets rather than refurbishing them. This would result in higher costs to consumers.
- Moreover, if a NSP *did* continue to refurbish under an approach where the tax allowance was based on actual tax deductions, the result would be a wealth transfer from future consumers to current consumers. Current consumers would pay materially less than under the current regulatory approach, and future consumers would pay materially more. Indeed, in the first year of a refurbishment, consumers would pay less than if no expenditure had been made at all. They therefore receive the benefit of a newly refurbished asset *and* a reduction in network costs – which raises issues of inter-generational equity.
- ENA considers this issue to be the most important and most complex element of the AER's Regulatory Tax Approach Review. It is vitally important that this issue, and the various complexities that are intertwined within it, is thoroughly understood so that a properly informed decision can be made in relation to it.
- ENA suggests that extensive consultation and testing of the analysis presented below is required before an informed decision can be made on this issue.
- ENA submits that this issue is too important and too material (to NSPs and consumers) to be decided on the basis of a high-level conceptual NPV=0 point, without proper regard to the inter-generational equity and incentive effects. It is very important that proper consideration of this issue is not short-circuited in order to meet an artificially imposed timetable.

Key regulatory principles

- ENA considers that the key principles to be observed in this area are that, whatever change the AER might decide to make:

1. No change is made that requires the AER to speculate about what the ATO may or may not allow as deductible expenditure into the future;
2. No change should be made that would result in NSPs moving from efficient refurbishments to expensive replacements; and
3. NSPs that currently capitalize should not be 'forced' to expense in order to match the regulatory allowance.

8.1 Issue

In the discussion that follows, this submission refers to 'replacements' as being material expenditure that clearly must be capitalised and it refers to 'refurbishments' as being lower-cost expenditure that *may* be deductible. The term 'may' is used

because this is a complex and uncertain area of tax law. Thus, there are two issues for a network to consider:

- Whether to physically replace or refurbish an asset; and
- If the refurbishment option is selected, whether that expenditure should be deducted or capitalised.

It is possible for NSPs to refurbish some assets, extending their lives, rather than replacing them. The cost of refurbishment is typically dramatically lower than replacing the asset, providing a material benefit to consumers. In one of the examples presented below, a distribution pole can be refurbished at a cost of $500, whereas a full replacement would cost between $5,000 and $10,000.

Under current Australian taxation law, the full cost of some refurbishments may be immediately deductible, whereas the regulatory model assumes that tax deductions will be provided in the form of depreciation over the useful life of the asset. In cases where this difference arises, there is a timing benefit to the NSP that has NPV>0.[20] However, whether a particular refurbishment is immediately deductible is a complex and uncertain question. Some networks expense some of this expenditure, but a number of networks capitalise all such expenditure.

We demonstrate below that there are other issues intertwined with the NPV=0 issue in the case of refurbishments. Those other issues include inter-generational equity, and the incentives for NSPs to pursue (lower cost) refurbishments rather than (high cost) replacements.

We explain that this issue is the most important and most complex element of the AER's Regulatory Tax Approach Review. It is vitally important that this issue, and the various complexities that are intertwined within it, is thoroughly understood so that a properly informed decision can be made in relation to it.

8.2 Position in AER Discussion Paper

The Discussion Paper concludes that, where Australian taxation law allows immediate expensing of a refurbishment cost, the regulatory model should be changed to reflect that approach. The reasoning that drives this recommendation is that it would ensure that the cash flows preserve the NPV=0 condition:

> *The choice to immediately expense capex (where possible) is also an efficient approach that reduces the present value of tax costs. On this basis, we consider amending our regulatory models to allow for certain*

[20] Section 25-10 of the *ITAA 1997* states an immediate deduction is available for repairs to a depreciating asset that is used solely for producing assessable income. Determining what is a 'repair' is a question of fact that depends on the circumstances of each case. For example, a repair may be interpreted as a restoration of a thing to a condition it formerly had without changing its character. This leads some NSPs to capitalise refurbishment capex that extends the useful life of an asset. By contrast, a minor or incidental improvement of the depreciating asset may still constitute a repair but that would have to be assessed in relation to the particular circumstances of each case.

capex to be included in the RAB but expensed immediately for regulatory tax purposes.[21]

The AER is clear about its preliminary view being driven by the NPV=0 condition:

In response to the example raised by ENA, Dr Lally illustrates in his advice to the AER that if the expenditure is immediately deductible and the AER instead acts as if the expenditure is gradually deductible, the revenues will be set above the NPV = 0 level. Reducing the revenues to recognise the true tax situation will satisfy the NPV = 0 principle, and this is the desirable outcome in the long-term interest of consumers.[22]

8.3 ENA position

ENA agrees that an approach that matches the regulatory allowance to the actual tax deductions would comply with the NPV=0 condition over the life of the refurbished asset, under certain assumptions. However, there are three potential problems with this conclusion:

- In some cases, there is uncertainty about whether the refurbishment cost is immediately deductible. Under Australian taxation law, a refurbishment of a component of an asset may be immediately deductible, but the replacement of a whole asset would not. In some areas there is uncertainty about the boundaries of an 'asset.' Thus, there is some risk that the NSP or AER definition of a replaced 'asset' may, over time, be inconsistent with the ATO definition. This has resulted in a number of networks adopting a conservative approach of routinely capitalising all such expenditure.
- The 'matching' approach would result in a short-term benefit to current consumers at the expense of future consumers, which raises inter-generational equity issues. This is most immediately apparent from the fact that, under the matching approach, consumers in the first year of a refurbished asset would pay *lower* network fees *and* have the benefit of the newly refurbished asset. This occurs at the expense of future consumers, who would pay higher network fees and receive the use of a depreciated asset.
- The matching approach would create an incentive for NSPs to prefer replacements to refurbishments in their regulatory proposals. There are two reasons for this:
  - **Allowed revenue incentive effect**: Under the matching approach, the allowed revenues would be materially higher over the forthcoming five or ten years if the NSP proposed $100 of (capitalised) replacement expenditure than if it proposed $100 of (deductible) refurbishment expenditure.
  - **Net cash flow incentive effect:** Under the matching approach, the NSP would recover replacement expenditure at a faster rate (in NPV terms) than

[21] AER Discussion Paper *Review of regulatory tax approach*, November 2018, pp. 56-57.
[22] AER Discussion Paper *Review of regulatory tax approach*, November 2018, p. 61.

refurbishment expenditure. That is, the 'speed of money' would favour replacement expenditure.

The remainder of this section details the complex interactions in the context of a worked example.

ENA considers this issue to be the most important and most complex element of the AER's Regulatory Taxation Approach Review. It is vitally important that this issue, and the various complexities that are intertwined within it, is thoroughly understood so that a properly informed decision can be made in relation to it. ENA suggests that extensive consultation and testing of the analysis presented below is required before an informed decision can be made on this issue.

ENA submits that this issue is too important and too material (to NSPs and consumers) to be decided on the basis of a high-level conceptual adherence to a NPV=0 approach, without proper regard to the inter-generational equity and incentive effects. It is very important that proper consideration of this issue is not short-circuited in order to meet an artificially imposed timetable.

Consequently, ENA proposes that the next stage of this process should be for the AER to produce a number of specific options for addressing this issue and to engage in a round of consultation with stakeholders to identify the likely incentive effects of each. ENA would be pleased to assist in the process of identifying potential options and in explaining the likely incentive effects of each.

8.4 Examples of refurbishments

NSPs are able to provide a series of examples whereby refurbishment is materially more economical than asset replacement. A number of indicative examples are as follows:

- Network poles:

  NSPs advise that the main problem that arises with distribution poles relates to rusting at ground level. NSPs are able to excavate around the base of the pole and re-plate the lower part of the pole for a cost of approximately $500 per pole. By contrast, replacement of the pole would cost $5,000 to $10,000 depending on the number of wires supported by the pole and whether any additional equipment is attached to the pole. The high cost of replacement occurs because wires need to be re-strung and other equipment on the pole needs to be replaced.

  Other NSPs advise that wooden poles can also be 'staked.' Pole replacements cost in the order of $7,000 to $10,000 and have a standard life of 45 years. Pole staking extends the life of a pole by eight to ten years at an average cost of $800 to $1,000.

- Substation circuit breakers:

  This switching equipment can be refurbished at a cost of approximately $10,000 for each of six units in a set. The replacement cost for such a set would be in the order of $1 million to $2 million.

NSPs also advise that the circuit breaker 'truck' or mechanism which contains oil (resulting in a risk of fire) can be replaced with a vacuum mechanism. This significantly mitigates the risk associated with these circuit breakers at a relatively modest cost of $30,000 to $40,000 each. This defers the need to replace the circuit breaker by about 10-15 years. This compares to the full replacement cost of $300,000 to $500,000 per circuit breaker panel which includes civil modifications and cable transfers with a standard life of 45 years.

» **Transformer boxes**:

The green transformer boxes that are commonly seen near pavements and in buildings can be refurbished for a cost of approximately $20,000. A complete rebuild, including re-setting all connections is likely to cost in the order of $200,000.

8.5 Issues to consider

There are two key issues to consider when analysing the incentive effects for an individual NSP in relation to the refurbish versus replace decision:

» **Timing of tax deductions**:

The AER's tax review has highlighted the fact that some refurbishment expenditure may be immediately deductible whereas the regulatory tax allowance assumes that the asset will be depreciated over its useful life. Other things equal, this provides a timing benefit to the NSP that results in NPV>0.

» **Depreciation in the current regulatory model**:

NSPs have indicated that, on average, refurbishments have a life span approximately half that of a full replacement. However, under the current regulatory arrangements, refurbishment costs generally enter the RAB for the relevant asset class. For example, the costs involved in refurbishing a Stobie pole would flow into the RAB for distribution lines and would be depreciated over the standard life of distribution lines– even though the expected life of the refurbishment is approximately half that period.

If the AER has set the allowed return on capital equal to the true required return, this would be NPV-neutral over the life of the asset – because the RAB generates a return equal to the WACC, the present value of cash flows will equal the RAB regardless of the pattern of regulatory depreciation. However, there are two issues to consider here:

– Even if the delayed depreciation is NPV-neutral, it results in a delay in the recovery of the NSP's capital. For example, under the current approach, an NSP may have to wait 50 years to recover its investment in the refurbishment of a pole that had a life of only 25 years. The 'speed of money' is a crucial consideration for any NSP – a long delay in the recovery of capital is highly unattractive to any commercial business. Although the theoretical regulatory model treats all NPV-neutral outcomes as being the same, that is certainly not the case for a commercial business, where the speed of money creates strong incentives.

- If an NSP considers that the AER's allowed return on capital is inadequate (relative to national and international benchmarks) that NSP will consider delayed depreciation to have a negative impact on the NPV of the allowed cash flows in relation to that asset. For clarity, this is a point about the incentives facing the NSP, in which case the relevant consideration is whether *the NSP considers* the allowed return on capital to be adequate.

8.6 Numerical example

8.6.1 Overview

This section begins by considering an NSP determining whether to replace or refurbish a single asset. In both cases, the outcome is an asset that has a useful life of 20 years and the same functionality whether it is refurbished or replaced. The key difference is that the refurbishment option costs 30% of the cost of a full replacement.

The analysis in this section is accompanied by a spreadsheet model (Attachment A) that is attached to this report.

This model allows the user to vary inputs to test the sensitivity of the outcomes to various different input assumptions. The main conclusions are robust to any such sensitivity analysis.

Specifically, the analysis demonstrates that:

- **Under the current approach, there is a strong incentive to refurbish, which benefits NSPs and consumers.**

  Under the AER's current approach (allowing tax depreciation over the life of refurbished assets):

  - There is a strong incentive for the NSP to refurbish the asset as this involves a (20%) smaller investment and results in a positive NPV (because the expenditure is immediately deductible whereas the regulatory tax allowance assumes that the asset will be depreciated over its useful life).
  - There is also a strong incentive for all consumers to prefer the refurbishment. Current and future consumers pay less in every year of the asset's life under the refurbishment approach than if the asset is replaced.
  - That is, the NSP and current and future consumers are all better off under the refurbishment option.

- **The matching approach would create an incentive to replace assets, to the disadvantage of consumers.**

  Under an approach where the tax allowance was based on actual deductions (up-front expensing of refurbished assets for tax purposes) there is a strong incentive for the NSP to replace the asset rather than refurbishing it. This is because the NSP would recover a very small proportion of the initial outlay over the initial five-year regulatory period, relative to the replacement option. NSPs cannot ignore the commercial reality that the timing of cash flows is an important consideration when making capital allocation decisions.

  The incentive to prefer the approach that recovers capital more quickly is exacerbated in circumstances where NSPs and their investors consider the

allowed return on equity to be inadequate relative to other national and international benchmarks. Thus, a change to recognise the up-front expensing of refurbished assets is likely to lead NSPs to replace assets instead of refurbishing them. This would result in consumers (current and future) bearing higher costs than under the status quo approach.

- **If an NSP did continue to refurbish after such a change, the result would be a wealth transfer from future consumers (who would pay more) to current consumers (who would pay less).**

  To the extent that NSPs did continue to undertake refurbishments, such a change would result in current consumers benefitting while future consumers would bear higher costs than under the status quo approach.

8.6.2 The setting for the illustrative example

We begin by considering the refurbishment or replacement of an asset with the following properties:

- Cost of $100 to replace and $30 to refurbish;
- Replacement has an economic life of 20 years and refurbishment has an economic life of 10 years. In both cases, regulatory depreciation is over 20 years;[23]
- WACC of 6%; and
- Corporate tax rate of 30%.

To keep this initial example as simple as possible:

- We assume straight line depreciation over the life of the asset for regulatory and tax purposes;
- We assume all equity financing to avoid having to model the tax deductibility of interest payments on debt;
- We ignore the inflation indexation of the RAB; and
- We ignore gamma.

A version of the analysis that includes these complications does not provide any additional insights and is simply more complicated without providing a materially different result.

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[23] ENA considers that regulatory depreciation should reflect the true economic depreciation profile of the asset. Inter-generational equity requires that each generation of consumers should contribute according to the value of each asset that is 'used up' by that generation. If a refurbished asset has half the life of a replaced asset, it should be depreciated over its true life. Otherwise future generations of consumers will be contributing to the cost of an asset that no longer exists. Having made this point, the worked example below is based on the actual current regulatory arrangements. If regulatory depreciation were reduced to match the economic life of refurbishments, the strength of the incentive for NSPs to prefer replacements to refurbishments would be reduced, but not eliminated.

8.6.3 Analysis of the replacement option

The **Replace asset** panel in the attached spreadsheet shows that in Year 1:

» Allowed revenue is calculated as set out in Table 1 below.

Table 1: Calculation of allowed revenue

Component	Regulatory allowance
Return of capital (depreciation)	5.00
Return on capital (6% × 100)	6.00
Corporate tax allowance $\left(6.00\frac{30\%}{1-30\%}\right)$	2.57
Total allowed revenue	**13.57**

Source: Sample estimates for illustrative purposes. See attached spreadsheet.

» The relevant corporate tax and net cash flow calculations are set out in Table 2 below.

Table 2: Corporate tax calculations

Return component	Regulatory allowance
Total allowed revenue	13.57
Depreciation deduction	5.00
Taxable income (13.57 – 5.00)	8.57
Corporate tax (30% × 8.57)	2.57
Net (after tax) cash flow to the firm (13.57 – 2.57)	11.00

Source: Sample estimates for illustrative purposes. See attached spreadsheet.

The attached spreadsheet also shows that the present value of the net cash flows over the life of the assets is equal to the $100 cost of the asset. Thus, the investment has NPV=0.

The PV of the net cash flows over the first regulatory period amount to approximately 44% of the cost of the asset.

The **Allowed revenue** row is of most relevant to consumers, as this is the amount that consumers pay to the NSP via the allowed revenues.

8.6.4 Analysis of the refurbishment option: Current arrangements

We now consider the refurbishment of the asset under the regulatory arrangements that are currently in place. The differences between the replacement and refurbishment options are:

- The cost is $30 instead of $100;
- The cost can actually be expensed immediately for tax purposes, even though the regulatory tax allowance assumes that the asset will be depreciated over its useful life.
- The true life of the refurbished asset is only 10 years, so a second refurbishment will be required after 10 years.

The **Refurbish asset: Current approach** panel in the attached spreadsheet shows that in Year 1:

- Allowed revenue is calculated as set out in Table 3 below.

Table 3: Calculation of allowed revenue

Component	Regulatory allowance
Return of capital (reg depreciation)	1.50
Return on capital (6% × 30)	1.80
Corporate tax allowance $\left(1.80\frac{30\%}{1-30\%}\right)$	0.77
Total allowed revenue	**4.07**

Source: Sample estimates for illustrative purposes. See attached spreadsheet.

- The relevant corporate tax and net cash flow calculations are set out in Table 4 below.

Table 4: Corporate tax calculations

Return component	Regulatory allowance
Total allowed revenue	4.07
Depreciation deduction	0.00
Taxable income	4.07
Corporate tax (30% × 4.07)	1.22
Reg net (after tax) cash flow to the firm (4.07 – 1.22)	2.85

Source: Sample estimates for illustrative purposes.

The reason there is no tax deduction for depreciation in this case is because the entire cost of the asset is immediately deductible.

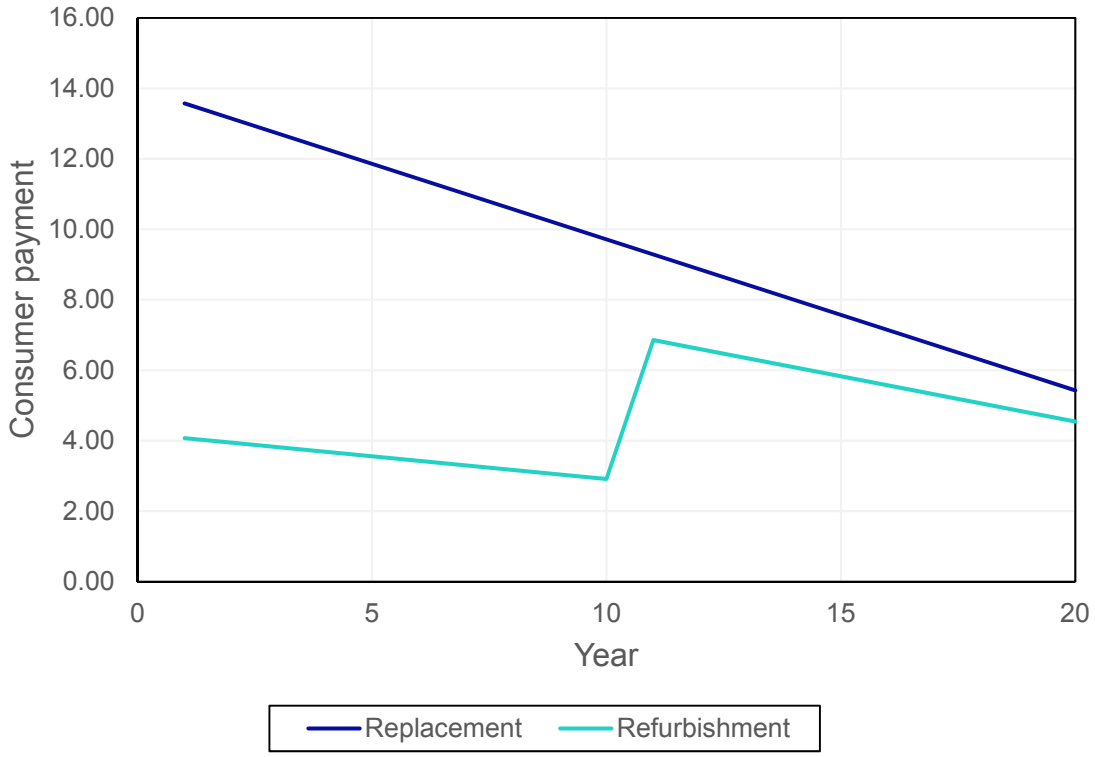
The key points to draw from the analysis of this case are:

- The present value of the cash flows exceeds the cost of the refurbishment so that NPV>0. This is because the cost of the refurbishment is immediately deductible whereas the regulatory tax allowance assumes that the asset will be depreciated over its useful life, creating a timing difference.
- The allowed revenues (i.e., payments made by consumers) are materially lower in every year of the asset's life than for the replacement option above. This occurs because the refurbishment costs materially less than the full replacement of the asset.
- There is a regulatory timing error (cells in grey) that arises because the true life of the asset is less than the assumed regulatory life. The NPV of this regulatory timing error is zero, but it creates an inter-generational equity problem as customers in Years 11 to 20 are contributing towards payment for the refurbishment after its economic life is complete.
- The regulatory timing error delays the recovery of capital expended, but that delay is offset by the up-front tax deduction.
- The NSP recovers 49% of the refurbishment cost during the first five years of its life. This is driven primarily by the immediate tax deduction. It creates a strong incentive to pursue the refurbishment.

A comparison of the costs borne by consumers in relation to this asset is shown in Figure 1 below. It shows that all consumers, current and future pay less if the asset is refurbished than if it is replaced.

The increase in Year 11 arises due to the second refurbishment being required at that time. Note that the first refurbishment is still being 'paid off' by consumers at this point.

Figure 1: Annual cost to consumers: Replacement vs. refurbishment under current approach



Source: See attached spreadsheet.

8.6.5 Analysis of the refurbishment option: Matching tax allowance to actual tax deduction

The final case considered in the attached spreadsheet is identical to the refurbishment option above, but where the regulatory tax allowance reflects the immediate deductibility of the refurbishment cost.

The **Refurbish asset: Matching approach** panel in the attached spreadsheet shows that in Year 1:

- Allowed revenue is calculated as set out in Table 5 below. Note that the corporate tax allowance is greater in this case because the regulatory tax allowance does not include any deduction for depreciation.

Table 5: Calculation of allowed revenue

Component	Regulatory allowance
Return of capital (reg depreciation)	1.50
Return on capital (6% × 30)	1.80
Corporate tax allowance $\left(3.30\frac{30\%}{1-30\%}\right)$	1.41
Total allowed revenue	**4.71**

Source: Sample estimates for illustrative purposes. See attached spreadsheet.

» The relevant corporate tax and net cash flow calculations are set out in Table 6 below.

Table 6: Corporate tax calculations

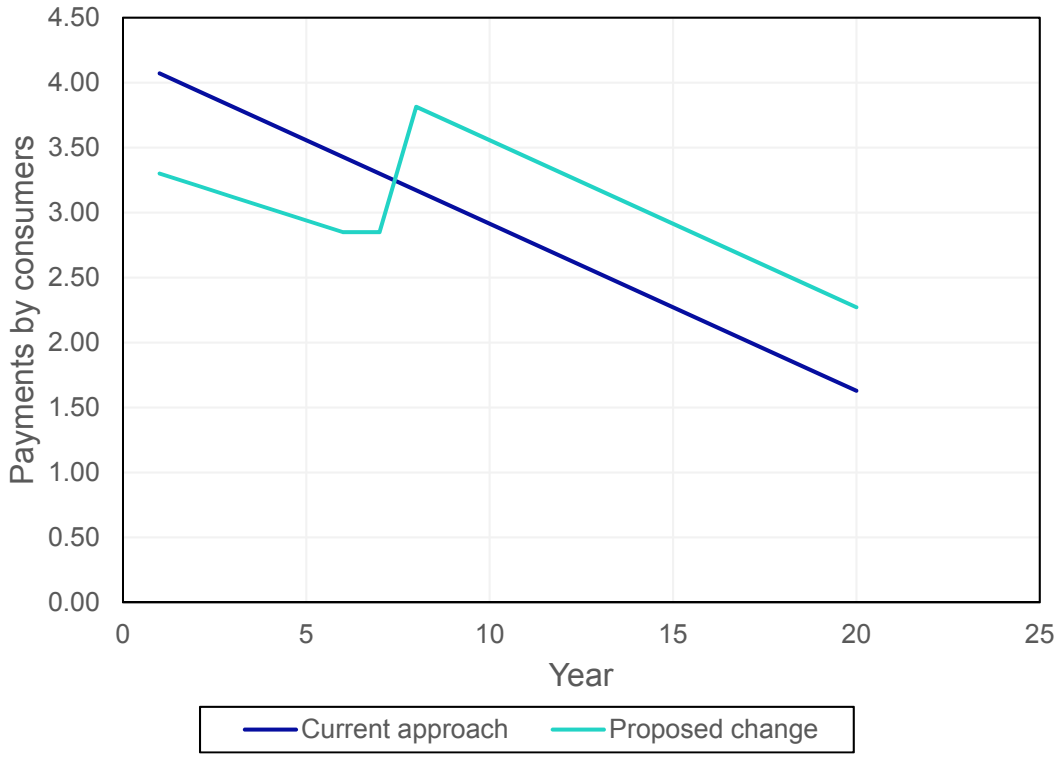
Return component	Regulatory allowance
Total allowed revenue	4.71
Depreciation deduction	0.00
Taxable income	4.71
Corporate tax (30% × 4.71)	1.41
Reg net (after tax) cash flow to the firm (4.71 – 1.41)	3.30

Source: Sample estimates for illustrative purposes. See attached spreadsheet.

The key points to draw from the analysis of this case are:

1. The **present value of the cash flows is equal to the cost of the refurbishment** so that NPV=0.
2. **There is the same (NPV=0) regulatory timing error as in the current approach to refurbishments.**
3. **The profile of cash flows paid by consumers changes dramatically.** Current consumers receive a material benefit as the entire value of the immediate tax deduction flows to them. This results in all future consumers paying more than under the current arrangements. This pattern of cash flows paid by consumers (for the first refurbishment) is illustrated in Figure 2 below. Note that this figure sets out the cash flows in relation to the first refurbishment only. In both cases, consumers 'pay for' that refurbishment over 20 years, even though it has an economic life of only 10 years.

Figure 2: Annual cost to consumers: Refurbishment under current versus matching approach



Source: See attached spreadsheet. Up-front tax benefit is accounted via tax loss carry-forwards.

8.6.6 Incentive effects

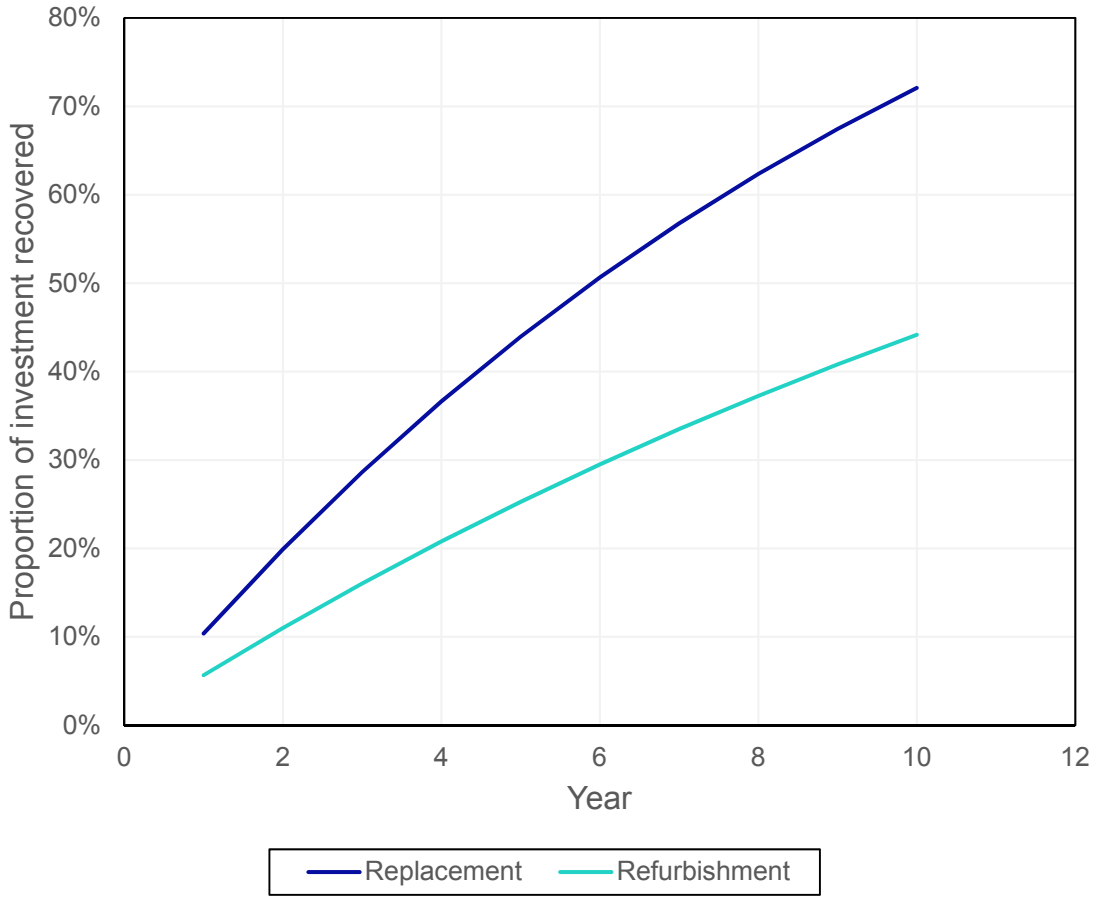
A change to reflect the immediate tax deduction for refurbishment costs would create two incentive effects that would favour the more expensive replacement option:

» **Outlaid capital is recovered faster for replacements than for refurbishments.**

The PV of the cash flows over the first regulatory period amount to only 25% of the cost of the asset. The rate of recovery of capital for the replacement option and the refurbishment option are set out in Figure 3 below. The 'speed of money' is materially greater for the replacement option than for the refurbishment option. This arises because, under the matching approach for refurbishments:

- The 'speed of money' is delayed by the fact that regulatory depreciation occurs over 20 years whereas the true economic life of the refurbishment is only 10 years.
- There is no timing advantage associated with the immediate deductibility of the refurbishment cost – this is neutralised by the change to the regulatory tax allowance.

Figure 3: Recovery rate of invested capital: Replacement versus refurbishment under matching approach



Source: See attached spreadsheet.

» **Allowed revenues are reduced by refurbishment expenditure.**

Each NSP will include a capital expenditure budget in its five-yearly regulatory submission. This will include replacement CAPEX and refurbishment CAPEX. Suppose the total CAPEX budget is $100 per year over the regulatory control period:

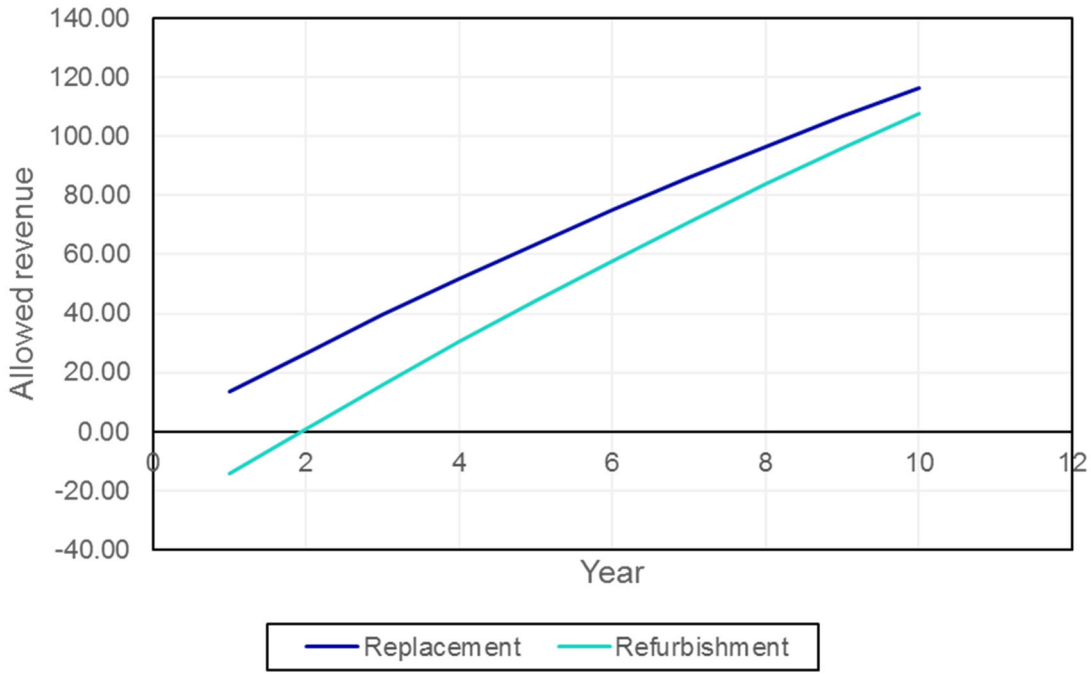
- If the NSP submits that expenditure as replacement CAPEX, allowed revenues will increase.
- If the NSP submits that expenditure as refurbishment CAPEX, under the matching, its allowed revenues will be lower than under the replacement option, and for the early years of the regulatory period allowed revenues will be lower than if the NSP had made no CAPEX expenditure at all.

Under the Australian regulatory framework, the AER sets the allowed revenues and the NSP is then free to spend CAPEX as it deems appropriate during the regulatory period. That is, the NSP receives a revenue allowance from the AER then goes about managing its business as efficiently as possible. Thus, there

would be a clear incentive for no NSP to ever submit any refurbishment CAPEX, as that would reduce the revenue allowance.

The allowed revenues in relation to a CAPEX program of $100 per year for the next regulatory period are shown in Figure 4 below.

Figure 4: Recovery rate of invested capital: Replacement versus refurbishment under matching approach



Source: See attached spreadsheet.

8.7 Summary of incentive effects

The key incentive effects set out above are as follows:

1. If the AER tax allowance was based on the actual treatment adopted (or proposed) by the particular NSP, there would be a strong incentive for all NSPs to adopt (or propose) the capitalisation of all expenditure. This is because a regulatory allowance that reflects immediate deductibility would actually reduce allowed revenues over the near-term regulatory periods, which are the primary concern of NSP managers, investors, lenders, credit rating agencies, investment analysts, and so on.
2. If the AER tax allowance was based on a benchmark assumption about the proportion of refurbishment expenditure that is immediately deductible, NSPs are likely to respond in one of two ways:
    a. Switch from refurbishing assets to replacing them. This would be materially less efficient and more expensive for customers, but it would

allow NSPs to continue to capitalise all expenditure without bearing a shortfall in their regulatory allowance.

b. Match the regulatory assumption. NSPs that do continue to perform refurbishments would be incentivised to match the regulatory assumption and deduct expenditure instead of capitalising it. Otherwise, there would be a material and immediate cash flow shortfall for NSPs that would otherwise capitalise that expenditure. This move from capitalisation to expensing would have the effect of *reducing* actual corporate tax paid in the short term.

3. If the depreciable term of refurbished assets is set equal to the life of those assets, the regulatory timing error identified above is corrected, but the problem of refurbishment expenditure having the effect of reducing allowed revenues remains.

4. There are a range of other approaches to addressing the positive NPV issue, all of which will have different incentive effects. It is for this reason that ENA proposes that a number of candidate approaches be identified and properly examined to determine what incentives they might create.

8.8 Key principles

ENA considers that the key principles to be observed in this area are that, whatever change the AER might decide to make:

1. No change is made that requires the AER to speculate about what the ATO may or may not allow as deductible expenditure into the future;

2. No change should be made that would result in NSPs moving from efficient refurbishments to expensive replacements; and

3. NSPs that currently capitalize should not be 'forced' to expense in order to match the regulatory allowance.

8.9 Proposed next steps

ENA proposes that the next stage of this process should be for the AER to produce a number of concrete options for addressing this issue and to engage in a round of consultation with stakeholders to identify the likely incentive effects of each. ENA would be pleased to assist in the process of identifying potential options and in explaining the likely incentive effects of each.