

10 May 2013

Mr. Sebastian Roberts
General Manager
Australian Energy Regulator
GPO Box 520
Melbourne VIC 3001

Dear Mr Roberts

Response to AER's issues paper on expenditure incentives

Ausgrid, Endeavour Energy and Essential Energy (the NSW DNSPs) welcome the opportunity to provide comments to the Australian Energy Regulator (AER) on the expenditure incentives guidelines issues paper. We note that the AER provided stakeholders with additional information on 6 May 2013 relating to the issues paper. As requested by the AER, we will respond to the additional material separately by 22 May 2013.

We strongly support incentive regimes that encourage distributors to seek efficiencies and which safeguard customers from imprudent expenditure decisions. Our submission focuses on how the incentive design proposed by the AER can be improved. These design issues are summarised below and are set out in more detail in Attachment 1.

Proposed capex incentives

The overarching National Electricity Objective (NEO) in the National Electricity Law (NEL) is to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity. The challenging task for the AER is to create an incentive design that avoids the economic and social costs that arise from either insufficient or excessive investment.

We agree with the AER that there is a systemic issue with the current incentive framework, particularly as there is no incentive mechanism that applies to capital expenditure (capex) that is comparable to the operating expenditure (opex) Efficiency Benefit Sharing Scheme (EBSS) and that this may distort investment decisions between capex and opex. In addition, the current regulatory framework does not provide a continuous incentive for capex across the regulatory period, which may lead to inefficient timing of investment.

While we support the development of a capex incentive scheme, the AER's proposed Capital Expenditure Sharing Scheme (CESS) raises a number of concerns, including:

- The significant increase in the penalty rate for overspends relative to the current framework;
- The potential duplication of penalties in light of an *ex-post* review; and
- The asymmetric design of the scheme as it relates to penalty and reward rates.

Table 1 below summarises our internal analysis of the portion of revenue recovered for a capex overspend in the first year of a regulatory period under the following scenarios:

- Scenario 1 - No overspend as amount included in original capex allowance;
- Scenario 2 - Current *ex ante* scheme;
- Scenario 3 - AER's proposed CESS (penalty applied to future revenues); and
- Scenario 4 - AER's proposed CESS plus overspend removed in *ex post* review.

Table 1 – Revenue recovery of a capex overspend under various scenarios

	Revenue Recovery
Scenario 1 – If project had been included in forecast allowance	100%
Scenario 2 – Current scheme	68%
Scenario 3 – AER's CESS scheme	42%
Scenario 4 – Ex post review and CESS penalty combined	-33%

As illustrated above, for a capex overspend in Year 1 of the current regulatory period, a DNSP would:

- Recover 68% of required revenues under the current *ex ante* framework;
- Recover 42% of the required revenues under the AER's proposed CESS; and
- Would experience revenue losses of 33% (i.e. pay an additional revenue stream for the investment) if the project is excluded from the RAB as a result of the AER's *ex post* review and the CESS is applied.

The AER's proposed CESS as detailed in Attachment C of the issues paper highlights a significantly more onerous penalty regime for capex overspends (70% penalty rate) than the current *ex ante* framework. While discussions with AER staff and additional models provided by the AER on 6 May 2013 suggest that a much lower penalty rate for capex overspends is being contemplated (i.e. similar to the reward rate for capex underspends), this is not evident from the issues paper.

As highlighted in Table 1, we are concerned that under the proposed CESS (Scenario 3), a DNSP would recoup less than half (42%) of the required revenues for a capex overspend even if the required investment is demonstrated to be prudent in the circumstances.

In this respect we note that there are likely to be legitimate reasons why a DNSP would need to efficiently spend above its capex allowance. The determination is made at a point in time and therefore forecasts cannot fully account for changes in all operating circumstances. A prudent and efficient DNSP responds to changing circumstances including those relating to economic conditions, customer-driven demand, asset information and new legislative and regulatory obligations; therefore we consider that the CESS should be adjusted to take account of these factors.

We are also concerned that the AER is considering applying overlapping penalties for a capex overspend, whereby a DNSP could receive a revenue penalty under the CESS and also have that capex removed from the RAB via an *ex-post* review. While we understand from AER staff that the removal of capex from the RAB should represent the maximum penalty for an overspend, the issues paper as currently drafted applies (in our view inappropriately) a CESS penalty on top of the capex removed from the RAB via the *ex post* review.

Finally, we do not support the proposed asymmetry in the CESS, where penalties are substantially higher than rewards. We consider a symmetric scheme provides continuous incentives for a DNSP to achieve efficiencies and would not distort investment incentives between capex and opex. Importantly, we do not believe there is a compelling case for higher penalty rates for overspends than reward rates for underspends, as the risks of inefficient underspending – including reduced reliability and future electricity price rises when investment “catches up” – are as important as the risks of overspending.

For these reasons, and to ensure there are not inefficient incentives to underspend or overspend created by the scheme, we consider that a symmetric scheme be established that initially takes a moderate approach to penalty and reward rates.

An alternative approach would be to modify the existing capex incentives by making minor modifications to the existing *ex-ante* framework to address identified issues with perverse incentives. This includes higher penalties for over expenditure in the latter years of the regulatory period, such that a DNSP has a continuous incentive to find efficiencies. The scheme would remain symmetrical.

Finally, we agree that the AER should undertake targeted, rather than comprehensive, *ex-post* reviews, where it considers there are specific instances of unnecessary or highly inefficient expenditure. This would provide the required safeguards to customers from poor investments by DNSPs while minimising the costs of compliance to the AER and network businesses.

Proposed changes to opex incentives

Attachment 1 highlights concerns with the proposed changes to the Efficiency Benefit Sharing Scheme (EBSS) for opex. The AER has signalled that it may rely more on exogenous benchmarks to set forecast opex than in past, but that the EBSS penalties or rewards may still be applied in these cases.

The NSW DNSPs consider that the current EBSS is working as intended and provides strong incentives to ‘reveal’ efficiencies in cost structures, and that this forms an effective basis for setting future opex allowances.

Where the AER moves away from its current ‘revealed efficient cost’ approach to a regime that sets opex based on exogenous benchmarks, an EBSS penalty (designed to reveal efficient costs) should not apply as the link between current and future costs has been severed. If a business’s opex is set below its efficient revealed cost on the basis of exogenous benchmarks, the business would not only have insufficient revenues to meet efficient costs, but would also (inappropriately) face ongoing penalties under the EBSS for opex being higher than target (as set by the benchmark).

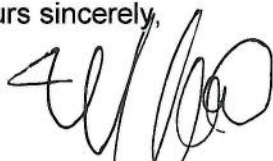
We consider that an EBSS penalty should be removed in cases where an exogenous benchmark has been used in preference to revealed costs. In any case, we note that there are inherent issues with using benchmarking as a determinant of opex allowances. These issues have been raised extensively with the AER as part of the Expenditure Assessment guideline development process. Benchmarking is inherently limited and is likely to have a high degree of error when comparing firms operating in very different circumstances.

Therefore, clarity is sought from the AER on the operation of the EBSS, should benchmarking be applied to the setting of opex for the next NSW determinations.

The new incentive framework also needs to consider efficient opex and capex trade-offs that may, in isolation, breach either an opex or capex allowance, but remain within a total expenditure allowance and provide a more efficient cost structure overall. For instance, it may be entirely efficient for a business to incur higher opex in order to avoid capex; however, separately benchmarking opex to an independent benchmark may inappropriately exclude the (efficient) higher opex from regulatory allowances. It is unreasonable to assume that regulatory allowances should be based on efficient benchmark frontiers for capex and opex in isolation.

If you would like to discuss our submission further, please contact Mr Mike Martinson, Group Manager Regulation at Networks NSW on (02) 9249 3120 or via email at michael.martinson@endeavourenergy.com.au.

Yours sincerely,



Justin De Lorenzo
Group Chief Financial Officer
Networks NSW

Attachments: 1. *NSW DNSP Detailed Comments on the AER's Incentive Mechanisms Issues Paper*

Attachment 1

NSW DNSP Detailed Comments on the AER's Incentive Mechanisms Issues Paper

The following detailed comments from the NSW DNSPs are in response to the AER's issues paper on incentive mechanisms and complement and support the Energy Networks Association (ENA) response on this matter. We focus on high level concerns with the scheme, and use worked examples to illustrate the issues we have identified. This attachment is structured as follows:

- Section 1 - We suggest principles that could be used to evaluate the effectiveness of proposed incentive schemes. The principles reflect the NEO and Revenue and Pricing Principles in the NEL.
- Section 2 - We raise key concerns with the AER's capex incentive scheme including the excessive penalties that would accrue under its operation. We also note that the scheme may create perverse incentives as a result of its asymmetric design, and that the CESS penalty should not duplicate the penalty that arises when investment has been excluded from the RAB. As an alternative, we suggest minor modifications to the existing framework in combination with a targeted ex-post review.
- Section 3 - We identify issues with changing the way the EBSS is to be applied in making regulatory decisions. In particular, we note that the EBSS calculation should not be applied mechanistically if the AER does not use actual costs to determine forecast allowances in the next regulatory period.

1. Principles underlying the development of incentive guidelines

At a high level, we consider the AER could provide more detail to stakeholders on the objectives underlying the development of incentive schemes, and how these align to the NEL. We suggest the following principles would give effect to the NEO and the Revenue and Pricing Principles under the NEL:

- Ability for a DNSP to earn a rate of return commensurate with the efficient financing costs of a benchmark efficient entity with a similar degree of risk, where that investment is demonstrated to be prudent and efficient;
- Progressively lower capital and operating costs by encouraging a DNSP to implement productive and dynamic efficiencies, and to pass on these gains to customers over time. This should not incentivise behaviour that results in declining service standards;
- Ability to adjust expenditure to changing circumstances over the regulatory period. This includes changes in external cost conditions, current information on safety and reliability, and forecasting error in the determination; and
- Neutral and continuous incentives that do not lead to perverse expenditure decisions, or gaming of the regulatory framework. In particular, incentives that provide the same level of revenue penalty or reward, regardless of whether the efficiency relates to opex or capex.

Our responses to the proposed scheme and our suggested alternatives have been framed around meeting these principles effectively.

2. Concerns with the AER's proposed capex scheme

We recognise the concerns raised by the AER with the current incentives for capex. In particular, we agree that the current *ex-ante* framework is not achieving the principles outlined in Section 1.

Under the current framework, a DNSP is not able to claw-back revenue (return on and depreciation) when it spends more than the regulatory allowance. At the end of the regulatory period however, the capex is rolled into the Regulatory Asset Base (RAB)¹ enabling the DNSP to earn a return for the remaining life of the asset. Simply speaking, the DNSP experiences a financial loss over the regulatory period, but is able to earn a fair rate of return for the remaining years of the (depreciated) investment.² The incentive is symmetric, applying the same level of reward for under-spends.

We agree that the *ex ante* framework does not provide sufficient incentives to lower capital costs toward the end of the regulatory period, and provides weaker incentives for assets with long lives. We also understood the concerns of customers and AEMC in rolling forward over-spends, without a review of whether the investment was required.

The AER has proposed incentives that seek to respond to the underlying concerns with the current framework. The proposed incentives are:

- Substitute the *ex-ante* incentive framework with the new Capital Expenditure Sharing Scheme (CESS). The incentive is substantially stronger with the penalty/reward based on the capital over-spend, rather than the revenue (return on and depreciation) accruing to the investment. The scheme provides for stronger penalties than rewards, and applies a discount rate to ensure a consistent incentive across the regulatory period.
- Undertake an *ex post* review in circumstances where the DNSP has exceeded its capital allowance. The AER would conduct a very limited and narrow review of expenditure based on the process expounded in the issues paper.

The AER's proposed scheme

We consider the AER's proposed scheme is a disproportionate response to the issues with the current framework. In particular, the AER has substantially amplified the penalties for overspends to a point where a DNSP may be incentivised not to respond to valid changes in economic or technical circumstances. This may lead DNSPs to defer necessary investment to avoid a harsh penalty, and may lead to increased operational risks.

In the sections below, we discuss 3 major concerns with the scheme. We then propose an alternative approach that addresses the concerns with the current framework and which better meets the principles outlined in section 1.

¹ The AER can decide to amplify the strength of the incentive by calculating the value of the RAB with reference to the actual depreciation.

² Provided the investment is for standard control services, and there has been no re-classification for the services provided by the asset.

a. The power of the incentive is excessive

Our main concern is that the AER has substantially increased the power of the penalty for exceeding the capital allowance. Appendix A provides a worked example of the disproportionate penalty that would be suffered by the DNSP under the new CESS scheme.

Based on our understanding of the AER's CESS, as outlined in Attachment 3 of the issues paper, it appears that a DNSP would only recoup 42 per cent of the revenues that would have accrued had the investment been included in the allowance.³ From a financial perspective, the DNSP would only receive \$4.20 of the \$10 overspend in present value terms. The power of the incentive is significantly stronger than the current *ex ante* framework, where a DNSP would recover 68 per cent of the revenues for that investment.

The high NPV penalty under the CESS scheme is a result of a DNSP incurring a revenue penalty early in the asset's life. The calculation mechanism in the CESS bases the penalty on the level of capital overspends, rather than the returns that accrue from the investment.⁴ This is at odds with the current *ex ante* framework which calculates penalties based on revenue/ building blocks.⁵

The key question is whether such a high level of penalty is warranted in the context of the regulatory framework. Table 2 on the following page sets out why it is inappropriate to apply such a high powered incentive including:

- There are legitimate reasons why a DNSP may overspend the forecast capex allowance. In this respect there is an inherent degree of error in a forecast allowance, and it is almost certain that a DNSP will need to respond to circumstances not foreseen at the time of the determination.
- The new regime has introduced a limited *ex-post* review to safeguard consumers from paying for unnecessary investment.

In our view, deferring capital investment will lead to consumer detriment in the long term and not meet the principles outlined in Section 1. We do not support high powered incentives that increase the financial fallout from the setting of an incorrect allowance and that place incentives to constrain otherwise efficient expenditure to support, amongst other things, the reliability of the network and the incentive for businesses to reveal their efficient costs.

Therefore, to ensure there are not inefficient incentives to underspend or overspend created by the scheme, we consider that a symmetric scheme be established that initially takes a moderate approach to penalty and reward rates. We believe this to be a prudent approach for the introduction of any new scheme.

³ We note that this issue was raised at the AER's forum on 29 April, and that the AER was to give greater consideration as to whether the penalty should be based on returns on capital rather than revenue.

⁵ Our view is that it is inappropriate to use capex as a basis for calculating benefits. Unlike opex, a DNSP is provided with a return from the initial investment over the life of the asset. This enables the DNSP to pay back debt holders and provide a normal rate of return for its equity holders over the working life of the asset. This is referred to as 'financial capital maintenance' and is a central tenet of the method to determine regulated prices.

Table 2: Why high powered ex-ante incentive is not appropriate

<p>There is an inherent degree of error in the forecast allowance</p>	<p>The DNSP's proposal is prepared 6 to 7 years before the end of the regulatory period, and therefore cannot have sufficient foresight to cater for every circumstance.</p> <p>Further, the AER undertakes a review of the proposal based on the information and other analysis such as benchmarking. This assessment process is a subjective exercise that can never be completely accurate. There is no evidence to suggest that the AER's determination includes a contingency allowance or errs on the side of caution in setting allowances.</p>
<p>Circumstances will be different to expected at the time of the determination</p>	<p>A regulatory allowance will never have complete foresight on how circumstances will change over the course of the regulatory period. A prudent DNSP responds to changes in:</p> <ul style="list-style-type: none"> • economic circumstances, • cost pressures, • new information on asset conditions, • changes in the demand environment or • new legislation and schemes. <p>These factors may drive a prudent DNSP to invest in new assets or bring forward investment to meet these changing variables.</p> <p>The mechanisms nominated by the AER to provide for an ex-post adjustment to revenues (pass throughs, contingent projects and re-openers) have a very high threshold and are related to specific events.⁶ This is not likely to capture the range of events and systematic changes that affect a DNSP's cost structures, and would be almost impossible to identify as 'uncontrollable' cost items.⁷</p>
<p>There is now an ex-post review to safeguard customers from unnecessary and imprudent investment</p>	<p>Unlike the previous regime, the new Rules permit the AER to undertake a limited 'ex-post' review in limited cases where investment appears to be imprudent or inefficient. The AER has the ability to exclude the investment from the RAB, which means that the DNSP will not recover any revenue for the investment. In our view, the ability to undertake ex-post reviews provides sufficient safeguards for customers, and a very substantial deterrent for DNSPs to undertake unnecessary or imprudent investment.</p>

⁶ Unlike TNSPs, a DNSP is characterised by a large volume of smaller cost projects, and therefore it is unlikely that the cost of a single project would meet the threshold of a contingent project or re-opener. We also note that pass throughs have an extremely high threshold of 1 per cent of smoothed revenue under the new Rules. Our view is that the threshold is too high for a distributor, given that the capex associated with 1 per cent of revenue for Ausgrid (a large distributor) would be approximately \$150 million. A threshold of (the lower of) 1 per cent of smoothed revenue or \$15 million of capex is considered more appropriate.

⁷ For instance, it would be very difficult to create an uncontrollable cost event for variation in real cost escalation as a result of changes in the economy. It would also be difficult to nominate a specific uncontrollable cost for duty of care projects, where a DNSP has initiated works in response to a systematic safety or environmental concern that was only diagnosed in the course of the regulatory control period.

b. Asymmetric nature of incentive is unjustified, and will lead to perverse outcomes

The proposed scheme is asymmetric, providing extremely high penalties (70%) for overspends and more moderate rewards for underspends. The AER has not identified the empirical basis for introducing asymmetry to the framework. Indeed the AER correctly noted that the conclusions from its analysis of past overspends have been varied and tend to point to NSP specific circumstances or characteristics.

In the absence of evidence to demonstrate a tendency to overspend, we consider that the power of incentive should be consistent in any circumstance. This would enable DNSPs to take advantage of efficiency opportunities as they arise, rather than basing the decision on whether they are over or under the regulatory allowance.

Further, the asymmetric nature of the incentive regime may lead to unequal incentives for opex and capex. For example, a DNSP may replace an asset rather than incur maintenance costs if the reward from an underspend is higher for opex.

c. The combination of ex ante and ex post may lead to unjustified double penalties

We agree that *ex-post* reviews provide an effective safeguard to protect consumers from clearly unnecessary or inefficient expenditure. The penalty under the *ex-post* review is severe, including the inability to recover any revenue to fund the financing costs of the investment.

However, the issue paper suggests that the AER is considering applying the CESS penalty even in cases where the capex has been excluded from the RAB. In these circumstances, the DNSP would incur a negative return for its investment, receiving zero revenue as a result of exclusion from the RAB, and a further revenue penalty under the CESS.

Such a high level of penalty is unjustified given that the consumer has already been safeguarded from funding the investment. We note that at the public forum on 29 April 2013, the AER indicated that its intent was to not apply a double penalty, and we would support this position.

Proposed alternative to AER's scheme

As outlined above, we support the establishment of a symmetric scheme that initially takes a moderate approach to penalty and reward rates.

An alternative approach would be to modify the existing capex incentives by making minor modifications to the existing *ex-ante* framework to address identified issues with perverse incentives. This includes higher penalties for over expenditure in the latter years of the regulatory period, such that a DNSP has a continuous incentive to find efficiencies. The scheme would remain symmetrical.

Our suggested alternative is:

- Use revenue (return on and depreciation) as the basis for calculating the penalty/reward. This would provide more appropriately powered incentives relative to the CESS which uses total capex as a basis for calculating the penalty/ reward;

- Alter the existing scheme to provide higher incentive rates for investment in the final years of the regulatory period. The design of the incentive would then be able to provide an equal incentive rate in NPV terms across the regulatory period; and
- Continue to apply a symmetric scheme to ensure that DNSPs have the same powered incentives to take advantage of efficiency opportunities.

The *ex-ante* incentive could be used in conjunction with a limited and targeted *ex-post* review to safeguard customers from paying returns for investment that is clearly imprudent.

3. Issues with changes to the EBSS scheme

The AER has indicated that it may use exogenous benchmarks instead of a revealed cost approach when setting forecast opex. At the same time it would continue to apply the EBSS penalty or reward.

The proposed approach would no longer result in a fair sharing of efficiency gains or losses with customers. The sharing properties of the EBSS are premised on the AER using actual opex (revealed efficient costs) as a basis for determining forecast opex. If exogenous benchmarks are used to set opex allowances, the DNSP would bear the total reward or penalty under the EBSS calculation.

Given this, we consider that the EBSS revenue penalty should not be applied mechanistically in cases the revealed costs approach is not used by the AER. Rather, the penalty amount should be removed in cases where an exogenous benchmark has been used in preference to revealed costs.

In any case, we note that there are inherent issues with using benchmarking as a determinant of opex allowances. These issues have been raised extensively with the AER as part of the Expenditure Assessment guidelines. Benchmarking is inherently limited and is likely to have a high degree of error when comparing firms operating in very different circumstances.

Appendix A – Power of the capex incentives

The purpose of this appendix is to provide a worked example of the power of the incentive under the proposed CESS, and to compare this to other scenarios.

The power of the incentive on decision making can best be measured by identifying the financial loss/ gain accrued by the business under an incentive scheme. This provides a more insightful understanding of how effective the scheme is at deferring investment, and whether that level of penalty achieves the right balance in decision making.

a. Conceptual framework for assessing power of incentive

A DNSP has very strong incentives to defer investment when it cannot recover sufficient revenue to pay back its equity and debt holders. Under the PTRM, a DNSP receives a revenue cashflow over the life of the asset, based on the return on and depreciation of the asset.

An objective way to assess the power of the incentive is to understand the difference in revenue the DNSP receives, compared to what it would have been entitled had the investment been included in the allowance.

$$\text{Percentage of revenue not recovered} = \frac{\text{PV (Actual revenue received)}}{\text{PV (Forecast revenue if was in allowance)}}$$

This provides a measure of the shortfall in financing costs experienced by a business as a result of the operation of the incentive, and consequently a measure to assess the power of the incentive. From a financial perspective this is akin to calculating the present value of an investment.

b. Method of analysis

To undertake analysis on the power of the incentive, we have used the example provided in Appendix 3 of the AER's issues paper. The example refers to a \$10 overspend in Year 1. We have looked at 4 scenarios including:

- Scenario 1 – (Base Case) No capex incentive applied;
- Scenario 2 - The current ex-ante scheme;
- Scenario 3 - The proposed CESS scheme; and
- Scenario 4 - The proposed CESS scheme and ex post review.

The example relies on a nominal WACC of 10 per cent. We have assumed a similar discount rate and assumed the asset has a life of 40 years. To calculate the power of the penalty (percentage of revenue not recovered) we have:

- Forecast nominal revenue - We identified the revenue stream that would have accrued had the investment been included in the forecast allowance. We use the calculations in the PTRM to determine the nominal cash flow that would accrue to a single asset;
- Actual nominal revenue - We identified the actual revenue received by the DNSP as a result of the operation of the incentive, including any penalties/ rewards (for example the revenue penalty under the CESS); and

- Discounted cashflows – We used the nominal WACC to discount the nominal cash flows. This provides a measure of the time value of money.

c. Outcomes of analysis

The following analysis shows that the power of the incentive under the CESS is extremely high (42 per cent of revenue recovered) compared to the current framework (68 per cent of revenue recovered). We also show that the application of a double penalty under the ex post review results in the DNSP forsaking all revenue accruing from the investment and having to incur a revenue penalty equal to 33 per cent of revenues.

(i) Scenario 1– No incentive applied

The Base Case calculates the present value of the \$10 overspend if there was no incentive in place. In this case, the DNSP earns the same amount of return that it would have received if the investment had been included in the forecast allowance.

From a total return point of view, the DNSP receives a nominal dividend stream of \$41.45 over the 40 years of investment. When a discount rate (equal to the WACC) is applied to the cash flows, it can be seen that the DNSP receives a return approximately⁸ equal to the \$10 original investment.

Under this circumstance, the present value of the investment is equal to the original investment, and it has received no penalty on the revenue recovered. The calculation can be seen in Section D.

(ii) Scenario 2 – Current ex-ante scheme

Under the current framework, a DNSP is not able to 'clawback' the revenue profile (return on and depreciation) for investment that exceeds the capital allowance during the regulatory period. However, at the end of the period, the total capital allowance is rolled into the asset base at its depreciated value.

Under this circumstance, the DNSP is penalised for the \$10 overspend in Year 1 by not being able to recover the returns that it would have received. The analysis shows that a DNSP loses a total of \$3.43 of the investment.

	Year 1	Year 2	Year 3	Year 4	Year 5
Revenues - If included in allowance	\$ -	\$ 1.07	\$ 1.08	\$ 1.09	\$ 1.09
Revenues under current scheme	\$ -	\$ -	\$ -	\$ -	\$ -
Loss	\$ -	\$ 1.07	\$ 1.08	\$ 1.09	\$ 1.09
Loss (Discount rate applied)	\$ -	\$ 0.98	\$ 0.89	\$ 0.82	\$ 0.74

A more thorough analysis (see Section D) shows the total revenue that the investment receives as a result of the incentive compared to what it would have received. This

⁸ The DNSP receives \$10.64. However the additional 64 cents relates to the manner in which the PTRM rolls the asset into the RAB in the year following investment. To compensate, the DNSP for the time value of money, the PTRM provides a return on the \$10 using $0.5 \times \text{WACC}$, based on the assumption that the DNSP has spent the capex half-way through the period.

shows that a DNSP only receives \$7.21 of the original \$10 investment, or a 68 per cent⁹ of what it would have received under the PTRM.

It should be noted that the above example assumes the overspend occurs in Year 1. Under the existing scheme the power of the penalty declines as the regulatory period progresses. The loss diminishes to zero in Year 5, providing a perverse incentive to incur overspends towards the end of the period. This is the reason why we consider that the existing scheme could be modified to remove this timing issue, and to maintain the power of the incentive throughout the period.

(iii) Scenario 3 – The AER's CESS scheme

The AER's proposed scheme introduces a new incentive mechanism. The key feature of the scheme is that it applies a revenue penalty (reward) in the next period based on the level of capex overspend (underspend).

The calculation of the revenue penalty can be seen from the table below. The calculation of penalty for a \$10 overspend is calculated as follows:

- The overspend is escalated by the discount factor ($\$10 \times 1.4641$) = \$14.64;
- The AER applies a 30 per cent reduction to account for sharing of loss with customers $\$14.64 \times 0.7$;
- The AER applies a further reduction to acknowledge that the DNSP has already incurred a loss for not being able to clawback revenue. This adjustment takes into account the time value of money; and
- The total penalty is then summed for each year.

	Year 1	Year 2	Year 3	Year 4	Year 5	Penalty
Overspend	\$ 10	\$ -	\$ -	\$ -	\$ -	
Calculation		1.00	1.00	1.00	1.00	
Cost incurred by DNSP	0	1.00	1.00	1.00	1.00	
Discount factor	1.4641	1.331	1.21	1.1	1	
Brought forward cost of overspend	\$ 14.64	\$ -	\$ -	\$ -	\$ -	
Share of brought forward overspend borne by DNSP (70 per cent)	\$ 10.25	\$ -	\$ -	\$ -	\$ -	
Amount DNSP has already lost	0	1.331	1.21	1.1	1	
Penalty	\$ 10.25	-\$ 1.33	-\$ 1.21	-\$ 1.10	-\$ 1.00	\$ 5.61

In this scenario, the DNSP is able to still roll-in the full amount of the overspend into the RAB at the end of the period, and recoup revenue for the remainder of the life of the asset.

The CESS scheme impacts the revenue that a DNSP receives on the \$10 investment in 3 ways:

- The DNSP receives zero revenue for the overspend in the regulatory period, rather than the revenue associated with it. This is the same penalty as the current incentive scheme under Scenario 2 of \$3.43;

⁹ It should be noted that the return is based on the \$10.64 return a DNSP receives to reflect the half WACC as discussed in Scenario 3.

- The DNSP receives a negative revenue penalty of \$5.61 in the next regulatory period; and
- The DNSP is able to roll in the overspend at the forecast depreciation profile. This has the effect of a higher RAB than otherwise would have been.

Overall, the DNSP receives only \$4.47 for the original \$10 investment, which means a total revenue recovery of 42 per cent.¹⁰ This shows that the CESS is a far more powerful incentive scheme than the current framework which enables the DNSP to recoup 68% per cent of the investment. Section D provides more details on the cash flows used to calculate the penalty.

(iv) Scenario 4 – Double penalty for CESS and ex post review

The AER has indicated that it will still apply the CESS penalty, even if the AER exclude the investment from the RAB under its review of past capex. The AER would only exclude the amount from the RAB if the investment is clearly found to be imprudent or inefficient.

The implication is that the DNSP would not receive any returns from the investment, but still have a negative revenue penalty apply in the next period. This means that for the original \$10 investment, the DNSP gets zero back, and actually has to pay an additional \$3.43 to customers. Further detail on the cashflows can be found at Section D.

¹⁰ It should be noted that the return is based on \$10.64 return a DNSP receives to reflect the half WACC as discussed in Scenario 3.

d. Data analysis of cash flows

The section below provides further detail on the cashflow analysis used to calculate the penalty of the incentives identified in section 3.

Scenario 1: No incentive applied

Under scenario 1, the cashflows reflect the AER's PTRM as it would apply to a single asset class.

Scenario 1 - Base case														
Regulatory years														
Nominal cash flow														
Cash flow (discounted)														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
\$ -	\$ 1.07	\$ 1.08	\$ 1.09	\$ 1.09	\$ 1.09	\$ 1.10	\$ 1.10	\$ 1.10	\$ 1.11	\$ 1.11	\$ 1.11	\$ 1.11	\$ 1.12	\$ 1.12
\$ -	\$ 0.98	\$ 0.98	\$ 0.89	\$ 0.82	\$ 0.74	\$ 0.68	\$ 0.62	\$ 0.57	\$ 0.52	\$ 0.47	\$ 0.43	\$ 0.39	\$ 0.36	\$ 0.32
Regulatory years														
Nominal cash flow														
Cash flow (discounted)														
	15	16	17	18	19	20	21	22	23	24	25	26	27	28
\$1.12	\$1.12	\$1.12	\$1.12	\$1.11	\$1.11	\$1.11	\$1.10	\$1.10	\$1.09	\$1.08	\$1.07	\$1.07	\$1.05	\$1.04
\$0.29	\$0.27	\$0.24	\$0.22	\$0.20	\$0.18	\$0.16	\$0.15	\$0.13	\$0.12	\$0.12	\$0.11	\$0.10	\$0.09	\$0.08
Regulatory years														
Nominal cash flow														
Cash flow (discounted)														
	29	30	31	32	33	34	35	36	37	38	39	40	41	42
\$ 1.03	\$ 1.02	\$ 1.00	\$ 0.98	\$ 0.95	\$ 0.92	\$ 0.90	\$ 0.88	\$ 0.85	\$ 0.82	\$ 0.79	\$ 0.76	\$ 0.72	\$ 0.68	\$ 0.64
\$ 0.07	\$ 0.06	\$ 0.06	\$ 0.05	\$ 0.05	\$ 0.04	\$ 0.04	\$ 0.04	\$ 0.03	\$ 0.03	\$ 0.02	\$ 0.02	\$ 0.02	\$ 0.02	\$ 0.00
Sum of discounted revenue														
\$ 10.64														
Recovery on investment														
100%														

Scenario 2 – AER's current scheme

Under scenario 2, the DNSP is unable to recover the lost revenue that would have accrued had the investment been in the capex allowance. The grey box shows that the DNSP receives zero returns for the first 5 years. After this period, the DNSP is able to earn a return on the remainder of the investment, with the roll forward based on actual investment. This means that the revenue profile is the same as the base case from Year 6 onwards.

Scenario 2 - Current scheme		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Regulatory years															
Nominal cash flow		\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1.10	\$ 1.10	\$ 1.10	\$ 1.11	\$ 1.11	\$ 1.11	\$ 1.11	\$ 1.12	\$ 1.12
Cash flow (discounted)		\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.68	\$ 0.62	\$ 0.57	\$ 0.52	\$ 0.47	\$ 0.43	\$ 0.39	\$ 0.36	\$ 0.32
Regulatory years		15	16	17	18	19	20	21	22	23	24	25	26	27	28
Nominal cash flow		\$ 1.12	\$ 1.12	\$ 1.12	\$ 1.11	\$ 1.11	\$ 1.11	\$ 1.10	\$ 1.10	\$ 1.09	\$ 1.08	\$ 1.07	\$ 1.07	\$ 1.05	\$ 1.04
Cash flow (discounted)		\$ 0.29	\$ 0.27	\$ 0.24	\$ 0.22	\$ 0.20	\$ 0.18	\$ 0.16	\$ 0.15	\$ 0.13	\$ 0.12	\$ 0.11	\$ 0.10	\$ 0.09	\$ 0.08
Regulatory years		29	30	31	32	33	34	35	36	37	38	39	40	41	42
Nominal cash flow		\$ 1.03	\$ 1.02	\$ 1.00	\$ 0.98	\$ 0.97	\$ 0.95	\$ 0.92	\$ 0.90	\$ 0.88	\$ 0.85	\$ 0.82	\$ 0.79	\$ 0.76	\$ 0.00
Cash flow (discounted)		\$ 0.07	\$ 0.06	\$ 0.06	\$ 0.05	\$ 0.05	\$ 0.04	\$ 0.04	\$ 0.03	\$ 0.03	\$ 0.02	\$ 0.02	\$ 0.02	\$ 0.02	\$ 0.00
Sum of discounted revenue		\$	7.21												
Recovery on investment			68%												

Scenario 3 – AER's CESS scheme

Under the CESS scheme, the DNSP loses the revenue within period (grey highlights) exactly the same as the current scheme. However, the DNSP also receives a penalty of \$5.61 in the first year of the following regulatory period.

At the same time, however, the DNSP is able to roll forward the asset base using 'forecast depreciation' meaning that the value of the opening RAB is higher than it would have been had actual depreciation been used.¹¹ For this reason, the revenue profiles are different to the base case, including higher revenues for years 6 to 41, and an additional revenue recovery in the final year. The negative penalty in Year 6 (-\$4.43) is a combination of:

- The roll forward of the RAB using forecast depreciation leads to a revenue increase of \$1.18; and
- The penalty of \$5.61 calculated under the CESS.

¹¹ We have replicated this by removing the straight line depreciation for the first regulatory period. This has the effect of indexing the original investment by inflation without deducting depreciation.

Scenario 3 - AER CESS scheme

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Regulatory years														
Nominal cash flow	-	-	-	-	-	4.43	1.19	1.20	1.20	1.21	1.21	1.22	1.22	1.22
Cash flow (discounted)	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Regulatory years	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Nominal cash flow	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.22	1.22	1.22	1.21	1.20	1.19
Cash flow (discounted)	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Regulatory years	29	30	31	32	33	34	35	36	37	38	39	40	41	42
Nominal cash flow	1.19	1.17	1.16	1.15	1.14	1.12	1.10	1.08	1.06	1.04	1.02	0.99	0.97	3.11
Cash flow (discounted)	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Sum of discounted revenue	\$													\$ 4.47
Recovery on investment														42%

Scenario 4 - Double penalty for CESS and ex post review

Under this scenario, the DNSP receives no return on income at all, and also incurs the CESS penalty.

Scenario 4 - CESS penalty and Ex-post review RAB rem

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Regulatory years														
Nominal cash flow (Current scheme)	0	0	0	0	0	-5.61	0	0	0	0	0	0	0	0
Cash flow (discounted)	0	0	0	0	0	-3.48337	0	0	0	0	0	0	0	0
Regulatory years	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Nominal cash flow (Current scheme)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cash flow (discounted)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Regulatory years	29	30	31	32	33	34	35	36	37	38	39	40	41	42
Nominal cash flow (Current scheme)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cash flow (discounted)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sum of discounted revenue	-\$													3.48
Recovery on investment														-33%

