

Better Regulation

Explanatory Statement

Capital Expenditure Incentive Guideline

for Electricity Network Service Providers

November 2013



No. S. C. S. C.

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Shortened forms

Shortened term	Full title
AER	Australian Energy Regulator
AEMC	Australian Energy Market Commission
augex	Augmentation expenditure
capex	Capital expenditure
CEM	Carbon + Energy Markets
CESS	Capital Expenditure Sharing Scheme
COSBOA	Council of Small Business Australia
CRG	Consumer Reference Group
DNSP	Distribution Network Service Provider
DSDBI	Victorian Government Department of State Development and Business Innovation
EBSS	Efficiency Benefit Sharing Scheme
ENA	Energy Networks Association
EUAA	Energy Users Association of Australia
F&A	Framework and approach
guideline	Capital Expenditure Incentive Guideline
MEU	Major Energy Users Inc.
National Electricity Rules (NER)	The rules as defined in the National Electricity Law.
NSP	Network Service Provider
opex	Operating expenditure
repex	Replacement expenditure
PIAC	Public Interest Advocacy Centre Ltd.
RIN	Regulatory Information Notice
RIO	Regulatory Information Order
STPIS	Service Target Performance Incentive Scheme
TNSP	Transmission Network Service Provider
WACC	Weighted Average Cost of Capital

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Summary

This explanatory statement accompanies the AER's Capital Expenditure Incentive Guideline. It forms part of our Better Regulation program of work which delivers an improved regulatory framework focused on the long term interests of consumers.

There are two key elements to how we implement incentive-based regulation: the setting of expenditure forecasts and the incentives an electricity network service provider (NSP) faces to beat these forecasts.

As part of the Better Regulation Program, we have further developed our expenditure forecast assessment approach and the expenditure incentives framework we apply to NSPs regulated under the National Electricity Rules (NER). This guideline is specifically concerned with further improving the incentives facing NSPs to undertake efficient and prudent capital expenditure (capex). Our forecasting approach is outlined in our Expenditure Forecast Assessment Guideline.

This guideline follows on from the AEMC's rule changes in November 2012. In particular, the AEMC amended the NER to include a number of new 'tools' that the AER can apply to incentivise NSPs to spend capex efficiently, having regard to an overall capital expenditure incentive objective.¹ Ultimately, the aim is that consumers pay only for efficient and prudent capex undertaken by NSPs.

Incentive-based regulation

We use incentive-based regulation across all energy networks we regulate. Incentive-based regulation provides NSPs with financial incentives to improve their efficiency. This includes financial rewards where NSPs improve their efficiency and financial penalties where they become less efficient. Consumers benefit from improved efficiencies through lower regulated prices.

We apply incentive-based regulation through an approach known as the building block model. Under this approach, we forecast what revenue a NSP requires to cover its efficient and prudent costs over a regulatory control period. Regulated prices are based on the building blocks and the forecast demand for the regulated services during a regulatory control period.

The building blocks are set out below in Figure 1.

1

NER, Cl. 6.4A(a) and 6A.5A(a).

Figure 1 The building block approach



Regulatory control periods are typically for five years. If a NSP is able to deliver the regulated services at a lower cost than the building blocks we forecast prior to the start of the regulatory control period, both consumers and the NSP share in the benefits.

There are two types of expenditure a NSP incurs in carrying out regulated services – capital expenditure (capex) and operating expenditure (opex). Capex is the cost of purchasing and installing assets like poles and wires. Capex typically varies from year to year. Opex is the cost of running an electricity network and maintaining the assets. Opex typically is relatively stable from year to year.

Under the building block model, a NSP will benefit from more efficient expenditure because it will earn higher profits in the current regulatory control period by reducing its expenditure.

More efficient expenditure will benefit consumers because:

- Lower capex will lead to a lower Regulated Asset Base (RAB) when it is updated for actual capex prior to the next regulatory control period. This will lower the maximum regulated prices a NSP can charge consumers from the next regulatory control period.
- We will use a NSP's historical expenditure to inform our future expenditure forecasts. For instance, as opex is generally recurrent, we typically use the total opex a NSP incurred in a recent year to inform our annual forecasts of opex. Capex is less recurrent in total. However, we are often able to use the average annual unit costs of various categories of capex to inform our annual forecasts of capex. This means if a NSP is able to reduce its opex, or its unit costs for capex, this will help to set efficient forecasts of the NSP's expenditure in the future.

AEMC rule changes on capex incentives

In making its rule changes, the AEMC determined there were two main problems with the current incentives facing NSPs to deliver efficient capex under the existing rules:

1. The power of the incentive to incur capex efficiently declines during a regulatory control period. This is because if a NSP makes an efficiency gain in year one of a regulatory control

period any benefit will last for four more years before the RAB is updated for actual capex. In year five, however, the benefit will be approximately zero. Under this approach, a NSP has an incentive to spend more capex towards the end of a regulatory control period. This may lead to inefficient capex and inefficient substitution of opex for capex towards the end of a regulatory control period.

2. Capex above the allowance is not subject to any regulatory scrutiny which means that there is a risk that capex above the allowance may be inefficient.

To address these problems, the AEMC made rule changes which strengthened our ability to apply both 'ex ante' and 'ex post' measures when making a regulatory determination.

Ex ante measures provide up front incentives for NSPs to pursue efficient capex. As part of its rule changes, the AEMC gave us the discretion to:

- Apply a new capex incentive mechanism known as a Capital Expenditure Sharing Scheme (CESS) to incentivise NSPs to undertake efficient capex by further rewarding efficiency gains and penalising efficiency losses. CESS rewards or penalties will apply as an additional incentive mechanism building block as part of a NSP's regulated revenue.
- Scope to use depreciation based on actual or forecast capex to update a NSP's RAB at the end of a regulatory control period.

Ex post measures allow us to assess the efficiency and prudency of capex after it is incurred. This helps to ensure we only use efficient and prudent capex to set regulated prices. As part of the new ex post measures:

- We will make a statement on the efficiency and prudency of any capex to be rolled into the RAB.
- We may exclude from the RAB:
 - Inefficient or imprudent capex overspends
 - capitalised operating expenditure (opex)
 - inflated related party margins.

Figure 2 shows how these measures fit together. Our approach to implementing these measures is set out in the guideline accompanying this explanatory statement. This statement explains the reason for our approach.



Ex ante measures in the capex incentive guideline

A CESS will provide additional financial rewards for a NSP that improves its efficiency and additional financial penalties for a NSP that becomes less efficient. In most circumstances we will apply a CESS, in conjunction with forecast depreciation to roll forward the RAB.

These two mechanisms will work together to provide a NSP with a reward of 30 per cent of any underspend during a regulatory control period. Similarly, a NSP's penalty for overspending will be 30 per cent of any overspend. As a NSP would face the same reward and penalty in each year of a regulatory control period, this addresses one of the AEMC's key concerns with the previous capex incentives which declined over the period. This approach will help to further encourage a NSP to pursue efficient capex by:

- Encouraging more efficient capex particularly towards the end of a regulatory control period.
- Encouraging more efficient substitution between capex and opex. NSPs already currently receive a reward/penalty of about 30 per cent of any efficiency gain/loss in opex. We have decided to also set the reward and penalty for capex at 30 per cent to achieve better balance between opex and capex. We expect this will further encourage NSPs to seek the most efficient solution when deciding whether to incur capex or opex.

The design of the CESS is broadly the same as we proposed in our draft guideline. One key change we have made in our final guideline is to allow for adjustments to CESS payments where a material amount of capex is deferred between regulatory control periods. Without such an adjustment, consumers may not benefit where capex is deferred between from one regulatory control period to the next. The modifications we have made to the CESS in this guideline further strengthens our ability to pass on these benefits to consumers.

At this stage we expect we will apply the CESS to all NSPs in the forthcoming regulatory control period. However, we note our decision on whether to apply the CESS is subject to the requirements

set out under cl. 6.5.8A and 6A.6.5.A of the NER. We will make this decision when we make a regulatory determination.

Our decision to roll forward the RAB using forecast depreciation, rather than actual depreciation, in most circumstances is also the same position as we proposed in our draft guideline. We will use forecast depreciation because, in combination with the CESS, it will provide a NSP with a reward of 30 per cent of any underspend and a penalty of 30 per cent of any overspend during the regulatory control period. We consider this will encourage efficient capex. Actual depreciation would lead to higher powered incentives than if we used forecast depreciation. We consider we would only need to increase the incentives facing NSPs if we are concerned about persistent overspending or capex inefficiency, or, if a CESS did not apply.

The CESS is discussed in section 2. Depreciation is discussed in chapter 3.

Ex post measures in the capex incentive guideline

We will undertake an ex post review of the efficiency and prudency of capex. Our review will have two purposes:

- 1. it will inform our statement of the efficiency and prudency of capex being rolled into the RAB
- 2. it will inform our decision on whether to exclude inefficient or imprudent capex overspends from the RAB.

We will apply a two stage process for the ex post review.

The first stage will consider a number of factors including:

- whether the NSP has overspent
- whether the overspend is significant
- the NSP's history of capex
- how the NSP's capex compares with similar NSPs.

If we have concerns after undertaking this high level assessment, we will progress our review to stage 2. Stage 2 will be a more detailed assessment of the NSP's capex including an assessment of the NSP's planning and management processes and an assessment of the efficiency and prudency of capex undertaken by the NSP. To the extent that inefficient or imprudent overspends are identified in stage 2, the capex will not be rolled into the NSP's RAB.

This process has not changed from what we proposed in the draft guideline. However, we have further clarified in the final guideline when and how we would carry out the ex post review.

In addition to excluding overspends from the RAB, we also have the ability to exclude capitalised opex and inflated related party margins. We have maintained the approach in the draft guideline for these two processes.

Ex post measures are discussed in chapter 4.

How the measures work together

Taken together, the ex ante and ex post measures outlined in the guideline should contribute to achieving the capital expenditure incentive objective. In particular, the CESS will provide NSPs with clear incentives to pursue efficiency gains through the regulatory control period. They will have a constant incentive to reduce capex irrespective of the year of the regulatory control period and whether they have overspent or underspent in total.

The ex post measures will complement the CESS to provide NSPs with an additional incentive to ensure that any overspends are efficient and prudent. Under the CESS, NSPs bear 30 per cent of the cost of an overspend whether it is efficient or not. If the overspend is found to be inefficient, however, the NSP will bear 100 per cent of the inefficient overspend. In addition, we now have the ability to exclude inefficient related party margins and capitalised opex that does not benefit consumers.

These new measures should mean that consumers pay only for efficient and prudent overspends and that consumers share in the benefits where a NSP is able to spend less than its forecast capex allowance.

These new measures also complement our existing incentive schemes for opex (Efficiency Benefit Sharing Scheme) and for service standards (Service Target Performance Incentive Schemes). After the implementation of these new measures for capex, a NSP's incentives to incur efficient capex will now also be better balanced with its incentives to incur efficient opex and its incentives to improve service standards.

1 Introduction

The AER is Australia's independent national energy market regulator. We are guided in our role by the objectives set out in the National Electricity and Gas Laws which focus us on promoting the long term interests of consumers.

In 2012, the Australian Energy Market Commission (AEMC) changed the rules governing how we determine the total amount of revenue each electricity and gas network business can earn. The Council of Australian Governments also agreed to consumer focused reforms to energy markets in late 2012.

The Better Regulation program we initiated is part of this evolution of the regulatory regime. It includes:

 seven new guidelines outlining our approach to network regulation under the new regulatory framework

National electricity and gas objectives

The objective of the National Electricity and Gas Laws is to promote efficient investment in, and efficient operation and use of, energy services for the long term interests of consumers of energy with respect to—

(a) price, quality, safety, reliability and security of supply of energy; and

(b) the reliability, safety and security of the national energy systems.

- a consumer reference group (CRG) to help consumers engage and contribute to our guideline development work
- an ongoing Consumer Challenge Panel (CCP) (appointed 1 July 2013) to assist us incorporate consumer interests in revenue determination processes.

This guideline is concerned with introducing enhanced incentives for NSPs to pursue efficient capex during the regulatory control period. This is through the introduction of a new CESS and new ex post measures to ensure consumers pay only for efficient and prudent capex overspends.

This chapter provides an introduction and background to the guideline.

1.1 How does the AER determine electricity network prices?

We are responsible for determining prices charged by electricity Transmission Network Service Providers (TNSPs) and Distribution Network Service Providers (DNSPs) in the National Electricity Market (NEM).

In determining a NSP's prices, we first determine the revenue a NSP requires to cover its efficient and prudent costs. That is, the revenue a NSP requires to cover its efficient capital costs (in the form of depreciation and a return on investment), its efficient operating costs, its tax liabilities and any payments to/from an incentive mechanism. We use the building block approach for this purpose (see Figure 3).

Figure 3 The building block approach



In order to understand the current incentives for efficient capex it is necessary to understand how these costs are forecast and funded under the building block approach.

1.1.1 Capital expenditure

Since capital assets are generally expensive and long lived, it makes sense to recover capital assets over their useful working life rather than when the asset is commissioned. To achieve this, capex is funded through a return on and of capital.

- The return on capital is provided as a return on the NSP's asset base (given by the weighted average cost of capital (WACC) multiplied by the Regulatory Asset Base (RAB)). The RAB reflects all of the assets owned by the NSP that are being used to provide the regulated service. The return on capital provides the NSP with a return on its investment.
- The return of capital is given by depreciation. This essentially provides for the initial capital outlay to be recovered over the life of the asset.

To determine a NSP's capex allowance for a regulatory control period, the AER will consider a NSP's capex proposal and either accept this or determine an alternative capex allowance.

Once a NSP's capex allowance is determined, the NSP is provided with a return on and of capital to fund that capex. For each year of the upcoming regulatory control period, a NSP's capex allowance will be the sum of:

- the forecast RAB multiplied by the WACC²; and
- depreciation.³

² The forecast RAB is the actual RAB at the end of the previous regulatory control period, plus any forecast capex undertaken in the current regulatory control period, minus any actual depreciation (from assets in place prior to the start of the regulatory control period), minus any forecast depreciation (from capex undertaken during the regulatory control period).

³ This is the sum of actual depreciation for assets in place prior to the start of the regulatory control period and forecast depreciation for capex to be undertaken during the regulatory control period.

As the capex allowance is set before the regulatory control period commences, a NSP has an incentive to spend less than the allowance so as to earn higher profits. If a NSP spends less than its allowance it will still earn revenue to cover the whole allowance. Hence it can 'keep the difference' between the allowance and what it cost to finance the actual capex until the end of the regulatory control period. Conversely, if a NSP spends more than its allowance, its revenue will not cover the overspend meaning that the NSP has to bear the cost of financing the overspend within the regulatory control period.⁴

At the end of a regulatory control period, the RAB is updated for actual capex and depreciation⁵ undertaken during the period. At this stage, the NSP no longer earns a benefit (or loss) on its capex underspend (or overspend). Instead, any underspend or overspend is passed onto consumers through the RAB which ultimately leads to lower (or higher) future prices.

In this way, incentive-based regulation provides incentives for NSPs to 'beat' the allowance. This should encourage NSPs to pursue capex efficiency improvements that will ultimately benefit both the NSP and electricity consumers. The relative sharing ratio between the NSP and consumers will be determined by the year in which the overspend or underspend occurs, whether actual or forecast depreciation is used to roll forward the RAB, and the life of the asset.

The incentive power varies across a regulatory control period. For example, if the WACC is 8 per cent, the asset life 10 years and forecast depreciation is used, the incentive power varies from 60 per cent in year 1 to around zero in year 5. This means that if a NSP can save \$10 in year one it will retain \$6 (and \$4 will go to consumers). Under these assumptions, the average power of the incentive under the current regulatory regime ranges from approximately 30 per cent for an asset with a life of 10 years to 17 per cent for an asset with a life of 50 years (see Table 1).

 Table 1
 Average power of the incentive under the current regulatory regime

Asset life	10 years	20 years	30 years	40 years	50 years
Average power	29.68%	21.72%	19.07%	17.74%	16.94%

Use of actual or forecast depreciation to roll forward the RAB

Whether we use actual or forecast depreciation to roll forward the RAB affects the power of the incentive for efficient capex. Actual depreciation is the depreciation associated with actual capex undertaken during the regulatory control period. Forecast depreciation is the depreciation associated with the capex allowance for the regulatory control period.

Actual depreciation leads to higher powered incentives than forecast depreciation. This means:

 If there is a capex overspend, actual depreciation will be higher than forecast depreciation. This means that the RAB will increase less at the next regulatory control period than if forecast depreciation were used. Hence, the NSP will earn less into the future (i.e. it will bear more of the cost of the overspend into the future) than if forecast depreciation had been used to roll forward the RAB.

⁴ It is these incentives to reduce expenditure that make historic costs a good indicator of future costs where capex is recurrent and predictable. That is, a NSP's efficient costs are 'revealed' over time.

⁵ That is, actual or forecast depreciation.

If there is a capex underspend, actual depreciation will be lower than forecast depreciation. This means that the RAB will increase more at the next regulatory control period than if forecast depreciation were used. Hence, the NSP will earn more into the future (i.e. it will retain more of the benefit of an underspend into the future) than if forecast depreciation had been used to roll forward the RAB.

The incentive from using actual depreciation to roll forward the RAB also varies with the life of the asset. Using actual depreciation will provide a stronger incentive for shorter lived assets compared to longer lived assets. Forecast depreciation, on the other hand, leads to the same incentive for all assets.

1.2 Rule changes

The changes to the NER made on 29 November 2012 were initiated by the AER in September 2011.⁶ One of our concerns with the former NER was that the incentives for efficient capex did not appear to have been sufficient to ensure all NSPs remained within their capex allowances. Since all capex was automatically rolled into the RAB, NSPs could potentially benefit from overspending in the later years of the regulatory control period. This meant that consumers were potentially paying more than they should for electricity network services. To address these concerns we proposed changes to:

- 1. The incentives for efficient and prudent capex we recommended that only 60 per cent of any capex overspend should be rolled into the RAB, with the remaining 40 per cent to be borne by the NSP.
- Allow discretion to use forecast depreciation we requested this for both transmission network service providers (TNSPs) and distribution network service providers (DNSPs) (this discretion was already provided for DNSPs).
- 3. Review related party margins to ensure that only efficient and prudent related party margins are rolled into the RAB (previously all capex incurred was rolled into the RAB).
- 4. Review capitalisation policy changes to ensure that NSPs do not profit from capitalising opex.

The AEMC agreed that there were issues with the existing incentives for efficient capex. It was concerned that the incentives for efficient capex declined over the regulatory control period. It was also concerned about a lack of regulatory scrutiny for capex overspends being rolled into the RAB.⁷

The AEMC's rule change gave effect to the last three of our proposals above. In response to the first proposal, the AEMC gave us the ability to develop Capital Expenditure Sharing Schemes through the Capital Expenditure Incentive Guideline. In addition, the AEMC's rule change included a requirement for us to undertake an ex post efficiency review of capex being rolled into the RAB, and gave us the ability to disallow from the RAB capex above the allowance that is not efficient or prudent. In developing these measures, the AER is required to consider a new capital expenditure incentive objective:

The capital expenditure incentive objective is to ensure that, where the value of a regulatory asset base is subject to adjustment in accordance with the Rules, then the only capital expenditure that is included in an

⁶ For more on the rule change process, see: <u>http://aemc.gov.au/Electricity/Rule-changes/Completed/economic-regulation-of-network-service-providers-.html</u>

⁷ AEMC, Final Position Paper: Economic Regulation of Network Service Providers, and Price and Revenue Regulation of Gas Services, 29 November 2012, Sydney, p. vi.

adjustment that increases the value of that regulatory asset base is capital expenditure that reasonably reflects the capital expenditure criteria.⁸

1.3 Scope of the guideline

To give effect to the new rules on capex incentives, we are required to develop and publish Capital Expenditure Incentive Guideline⁹ for electricity NSPs covering:

- the details of any CESS we develop
- details of how we will determine whether to use depreciation based on actual or forecast capex to roll forward the RAB at the commencement of a regulatory control period
- our ex post capex review, including our process for:
- reviewing the efficiency and prudency of capex and for assessing whether to disallow inefficient capex overspends from entering the RAB
- assessing whether related party margins are efficient and prudent and whether these should be included in the RAB
- assessing whether a NSP's capex includes expenditure that was treated as opex at the time
 of the AER's determination and whether this should be excluded from the RAB.
- how the above schemes and proposals, both individually and taken together, are consistent with the capital expenditure incentive objective.¹⁰

The guideline will have full effect from 2016. Before then transitional arrangements apply as outlined in Attachment A.

1.4 Consultation process

Our consultation process included releasing an issues paper, a draft guideline, holding a public forum and numerous bilateral meetings.

We released an Issues Paper on the Expenditure Incentives Guidelines on 20 March 2013 and received 21 written submissions in response (submissions closed on 10 May 2013).¹¹ We released our Draft Capex Incentive Guideline on 9 August 2013 and received 23 written submissions in response (submissions closed on 20 September 2013). A summary of these submission are at Attachment E.

We held a joint stakeholder forum on 29 April 2013 to discuss expenditure incentives and interactions between expenditure incentives and expenditure assessments. We also attended a number of sessions with the Consumer Reference Group (CRG) to explain our proposals and discuss the key issues for the CRG in relation to expenditure incentives.

In addition, we held a number of bilateral meetings with key stakeholders including:

- 11 April: meeting with SP AusNet.
- 17 April: meeting with CitiPower, Powercor and SA Power Networks.

⁸ NER, Cl. 6.4A(a) and 6A.5A(a).

⁹ NER, Cl. 6.2.8(a)(1) and 6A.2.3(a)(1).

¹⁰ NER, Cl. 6.4A(a) and 6A.5A(a).

¹ Our Issues Paper and submissions to the Issues Paper are available on our website: <u>http://www.aer.gov.au/node/18869</u>

- 22 April: meeting with TransGrid, Essential Energy, Endeavour Energy and Ausgrid.
- 23 April: meeting with Ergon Energy, Energex and Powerlink.
- 10 May: meeting with Jemena.
- 14 May: meeting with Electranet.
- 15 May: meeting with SP AusNet.
- 5 June: meeting with Carbon + Energy Markets (CEM) on behalf of Energy Users Association of Australia (EUAA).
- 13 August: meeting with Carbon + Energy Markets (CEM) on behalf of Energy Users Association of Australia (EUAA).
- 4 September: meeting with United Energy.
- 5 September: meeting with SP AusNet.
- 11 September: meeting with Ergon Energy and Energex.
- 12 September: meeting with Networks NSW.
- 13 September: meeting with CitiPower, Powercor and SA Power Networks.
- 16 September: meeting with Jemena.
- 17 September: meeting with Aurora Energy.
- 17 September: meeting with Transend.
- 18 September: meeting with Grid Australia.

Key dates for the development of the guideline are included in Table 2 below.

Date	Milestone	Description
20 March	Issues paper released	Explained issues and preliminary thoughts on approach to the expenditure incentives guidelines. Invited written submissions.
April to May	Stakeholder meetings	Meetings with NSPs and the Consumer Reference Group.
29 April	Stakeholder forum	Public forum on the issues paper and interactions with Expenditure Forecast Assessment Guideline.
10 May	Submission on issues paper due	Formal responses by stakeholders to the issues paper.
9 August	Draft guideline and explanatory statement published	Sets out AER's draft positions on incentives for efficient capital expenditure. Invites written submissions by 20 September.
August to September	Stakeholder consultation	Further discussions with stakeholders.
20 September	Submissions on draft guideline due	Formal responses by stakeholders to the draft guideline.
29 November	Publish final guideline	Publication of final capex incentive guideline.

2 Capital Expenditure Sharing Scheme

A CESS is a mechanism that rewards NSPs for capex efficiency gains and penalises NSPs for capex efficiency losses. In this way it incentivises NSPs to pursue efficient capex. This chapter outlines our final decision on the form of CESS.

Requirements for the CESS are contained in clauses 6.5.8A and 6A.6.5A of the NER. These provide that any CESS must be consistent with the capital expenditure incentive objective.¹² In addition, in developing any CESS the AER must take into account¹³:

- the following capital expenditure sharing scheme principles:
- NSPs should be rewarded or penalised for improvements or declines in capex efficiency
- rewards and penalties should be commensurate with efficiencies or inefficiencies, but rewards and penalties do not have to be symmetric.
- interaction of the CESS with any other schemes for efficient opex or capex
- the capital expenditure objectives and, if relevant, the operating expenditure objectives.

In deciding whether to apply a CESS to a NSP, and the nature and details of any CESS that is to apply to a NSP, we must:

- make the decision in a manner that contributes to the achievement of the capital expenditure incentive objective
- take into account the capital expenditure sharing scheme principles, the capital expenditure objectives, other incentive schemes, and where relevant the operating expenditure objectives, as they apply to the particular NSP, and the circumstances of the NSP.

2.1 Issue

Under the building block model we use to set regulated revenues, at the start of every regulatory control period we forecast the efficient and prudent capex that a NSP requires in that period. We add the forecast capex to the NSP's RAB. In each year of the regulatory control period, regulated network prices are set based on a return on the undepreciated value of the RAB (return on capital building block), and the depreciated value of the RAB (return of capital building block).

Prior to the start of the next regulatory control period we then adjust the RAB to account for any difference between forecast and actual capex during the current regulatory control period and depreciation. This is known as rolling forward the RAB. The new rolled forward RAB is then used as the basis for setting the return on capital and depreciation building blocks in the next regulatory control period. This process is repeated in each regulatory control period.

Under this approach, if a NSP has underspent during a regulatory control period, a NSP will retain benefits of financing the forecast capex during the regulatory control period. This is the NSP's reward for making efficiency improvements. Consumers will then benefit after the end of the period when the RAB is rolled forward to a lower amount than if the full amount of the capex allowance had been spent. This leads to lower regulated network prices into the future.

¹² NER, Cl. 6.4A and 6A.5A.

¹³ NER, Cl. 6.5.8A and 6A.6.5A.

However, under this approach, the benefits to a NSP of underspending a given amount of capex are progressively less in each year during a regulatory control period. For instance, if a NSP underspends in the first year of a five year regulatory control period, it will not lead to a lower RAB until four and a half years later when we roll forward the RAB.¹⁴ If, on the other hand, the NSP underspends in the middle of the final year of a five regulatory control period, it will lead to a lower RAB half a year later when we roll forward the RAB. As the benefits of underspending to a NSP are smaller as the regulatory control period progresses, we say a NSP's incentives for efficient capex decline over the regulatory control period.

There are three main reasons why declining incentives for efficient capex may be a problem:

1. There is a lack of discipline on capex towards the end of the regulatory control period

There is little reward for underspending towards the end of the regulatory control period. Conversely, there is little penalty for overspending towards the end of the regulatory control period. This may mean NSPs are not as disciplined with their capex towards the end of a regulatory control period.

2. It could distort decisions about whether to undertake capex or opex:

A NSP's incentives to pursue efficient opex are the same in each year. As the incentives for efficient capex differ significantly from the incentives for efficient opex - particularly towards the end of a regulatory control period - this could distort decisions on whether to undertake opex or capex. It could also lead a NSP to change its capitalisation policy to reclassify costs between capex and opex.

3. Capex might be less efficient if NSPs skew their capex towards the end of the regulatory control period:

Unnecessary peaks and troughs in a NSP's investment programs can result in higher costs than a more stable work program. For example, if a large number of projects are undertaken during the final years of the regulatory control period, NSPs may rely more on external contractors for projects that could have been undertaken more efficiently by in-house staff. NSPs may also enter into less cost-effective contracts with external contractors if they are contracting at shorter notice and for a smaller scope of work rather than if they were offering a steady stream of work.

To address the issues identified above, regulators can apply a capex incentive mechanism to complement the rewards or penalties the NSP already receives for beating its capex forecasts.¹⁵ After such a mechanism is applied, the reward a NSP receives for an underspend, or the penalty it would face for an overspend, would be the same in each year. The additional reward or penalty is generally added to or subtracted from regulated revenues as an additional building block in the next regulatory control period.

In our draft guideline we proposed a capex incentive mechanism, known as a Capital Expenditure Sharing Scheme (CESS). The CESS, in conjunction with using forecast depreciation to roll forward

¹⁴ We assume capex is incurred on average in the middle of each year.

⁵ There are broadly two types of capex incentive schemes. Both lead to similar outcomes. An incremental rolling incentive scheme carries forward marginal underspends and overspends in expenditure for a fixed period. The benefits to a NSP will depend on the discount rate. The EBSS for opex is an incremental rolling mechanism. The Essential Services Commission of Victoria previously implemented this type of scheme for capex. The other type of mechanism is a fixed sharing scheme. Under this approach, the NSP receives a fixed share of the benefits of an underspend or overspend. Our CESS is a fixed sharing scheme. OFGEM previously used a fixed sharing scheme for capex. The OFGEM fixed sharing scheme would lead to identical incentives as the ESCV incremental rolling incentive scheme with a fixed share of 32.62 per cent and a real discount rate of 7.5 per cent. See PWC, Gilbert+Tobin, NERA, *Design of capital expenditure incentive arrangements*, December 2011.

the RAB, would provide a NSP with the same reward for underspending and overspending during each year of a regulatory control period. We proposed a reward and penalty equal to 30 per cent of the underspend or overspend during a regulatory control period. A reward of 30 per cent matches the reward or penalty a NSP receives for reductions or increases in opex.

The CESS we proposed would also have no exclusions from the scheme. This means all capex incurred by a NSP would be subject to a potential CESS reward or penalty.

Box A explains how the CESS would work. Several detailed examples are outlined in Attachment B.

Box A – Capital Expenditure Sharing Scheme

The CESS we proposed would work as follows:

- We calculate the cumulative underspend or overspend for the current regulatory control period (period n) in net present value (NPV) terms. We calculate the actual underspend or overspend in the first four years of the regulatory control period and an estimate of the underspend or overspend in the final year of the regulatory control period.
- 2. We apply the sharing ratio of 30 per cent to the cumulative underspend or overspend to work out what the NSP's share of the underspend or overspend should be.
- 3. To work out the CESS payments, we calculate the financing benefit or cost to the NSP from using forecast depreciation to roll forward the RAB. We subtract this financing benefit or cost from the NSP's share of underspend or overspend. The financing benefit or cost received by the NSP declines over the regulatory control period. This means an underspend in year 1 of the regulatory control period will deliver a higher financing benefit to the NSP than an underspend in year 5 of the regulatory control period.
- 4. The CESS payments that relate to underspending or overspending in the current regulatory period will be added or subtracted to the NSP's regulated revenue as a separate building block in the next regulatory control period (period n+1).
- 5. Further adjustments to the CESS payments may need to be made where actual underspending or overspending in the final year of the regulatory control period differs from the estimate provided at the time of the initial calculation. These adjustments will be made when undertaking a revenue determination for the subsequent regulatory control period (period n+2).

Figure 4 illustrates how the combination of the financing benefit and CESS payment provides a reward of exactly 30 per cent of an underspend or overspend in each regulatory year.



Figure 4 Source of benefits to NSP¹⁶

¹⁶ Assumes forecast depreciation is used to roll forward the RAB and an 8 per cent WACC.

2.2 Approach

After consideration of submissions to our draft guideline, we still consider that one CESS should apply to all NSPs. The CESS, in combination with our approach to rolling forward the RAB, will provide a symmetric reward and penalty of 30 per cent on cumulative underspends or overspends over the regulatory control period.

We have made two changes to the CESS proposed in the draft guideline:

- We have allowed for adjustments to CESS payments where a material proportion of capex is deferred. This is to help ensure that consumers will share in the benefits where material amounts of capex are deferred from one regulatory control period to the next. It will also help to deter NSPs from deferring capex between regulatory control periods where such deferral is inefficient.
- 2. Network capability capex funded through the STPIS for TNSPs will be excluded from the CESS.

The reasons for all our positions on the CESS are outlined below. Depreciation is discussed in chapter 3.

2.3 Reasons for approach

2.3.1 Continuity

We consider that NSPs should face continuous incentives for NSPs to pursue efficient capex. This position is consistent with our position in the draft guideline.

Continuity refers to whether the incentives for efficient capex are the same in each year of a regulatory control period. In the draft guideline we noted that the current incentives for efficient capex decline over the regulatory control period. As outlined above, this could lead to perverse outcomes including:

- Overspending in year 5: since there is currently a limited incentive for efficient capex in year 5, NSPs do not face a large penalty if they overspend.
- Distorted decisions on whether to undertake capex or opex: since the incentives for capex decline while the incentives for opex are constant, this could distort NSPs' decision making on whether to undertake capex or opex.
- Less efficient capex since a NSP's work program would be less stable: unnecessary peaks and troughs in a NSP's capex can result in higher costs than a more stable work program.

Submissions we received from both NSPs and consumer and industry groups generally supported continuous incentives.¹⁷ This was consistent with the widespread support for continuous incentives in response to the issues paper.¹⁸ As we consider continuous incentives to be preferable to declining

¹⁷ Council of Small Business of Australia (COSBOA), Submission on Draft Capex Incentive Guidelines, p. 2; Public Interest Advocacy Centre (PIAC), Submission on Draft Capex Incentive Guidelines, p. 7.; SP AusNet, Submission on Draft Capex Incentive Guidelines, p. 1; Victorian Distribution Network Service Providers (Victorian DNSPs), Submission on Draft Capex Incentive Guidelines, p. 1;

⁸ CitiPower, Powercor and SA Power Networks, Submission on AER Expenditure Incentives Issues Paper, May 2013, p. 15; Energy Networks Association (ENA), Submission on AER Expenditure Incentives Issues Paper, May 2013, p. 18; Energex Limited (Energex), Submission on AER Expenditure Incentives Issues Paper, May 2013, p. 2; EnerNOC, Submission on AER Expenditure Incentives Issues Paper, May 2013, p. 2; EnerNOC, Submission on AER Expenditure Incentives Issues Paper, May 2013, p. 2; EnerNOC, Submission on AER Expenditure Incentives Issues Paper, May 2013, p. 2; EnerNOC, Submission on AER Expenditure Incentives Issues Paper, May 2013, p. 2; EnerNOC, Submission on AER Expenditure Incentives Issues Paper, May 2013, p. 2; EnerNOC, Submission on AER Expenditure Incentives Issues Paper, May 2013, p. 2; EnerNOC, Submission on AER Expenditure Incentives Issues Paper, May 2013, p. 2; EnerNOC, Submission on AER Expenditure Incentives Issues Paper, May 2013, p. 2; EnerNOC, Submission on AER Expenditure Incentives Issues Paper, May 2013, p. 2; EnerNOC, Submission on AER Expenditure Incentives Issues Paper, April 2013, p. 2; SP AusNet, Submission on AER Expenditure Incentives Issues Paper, May 2013, p. 1; Total Environment Centre (TEC), Response to Expenditure Incentives Guidelines Issues Paper, May 2013, p. 3.

incentives, and there appears to be widespread support for such incentives, we propose to maintain our position from the draft guideline.

2.3.2 Symmetry

The CESS will be symmetric. This means the reward for underspending will be the same as the penalty for overspending.

We consider a symmetric CESS, in combination with additional protection for consumers through an ex post review of capex, and the ability to adjust the CESS where capex is deferred between regulatory periods will best ensure that future capex incurred by NSPs is consistent with the capital expenditure incentive objective.¹⁹

In our explanatory statement for the draft guideline, we considered that a symmetric CESS, in combination with ex post review, should be sufficient to contain inefficient capex overspends. To apply an asymmetric CESS in these circumstances could lead to perverse outcomes. In particular, we considered NSPs would be greatly penalised for overspending whether or not their capex overspend is efficient. The revised NER allows us to exclude inefficient overspends from a NSP's RAB through an ex post review. Through this mechanism we can consider the efficiency and prudency of the capex overspend explicitly. This, alongside a symmetric CESS, can better address the issue of less responsive or inefficient NSPs in a more targeted way than would an asymmetric CESS. Consumers will still be protected from capex overspends since all overspends whether or not efficient will be subject to a 30 per cent penalty, and inefficient overspends will be borne entirely by NSPs.

We also noted that that our forecasting approach for capex will improve through new measures and techniques we develop through the Expenditure Forecast Assessment Guideline. For this reason we considered that concerns about generous allowances are likely to decline in the future, so it would be more appropriate to apply a symmetric rather than an asymmetric CESS.

In addition, we considered a symmetric scheme would better achieve efficient substitution between capex and opex. In particular, we considered it would be difficult to balance the incentives for opex and capex with an asymmetric CESS and symmetric EBSS.

In response to our draft guideline, most NSPs supported a symmetrical scheme.²⁰

Many consumer and industry groups advocated an asymmetric scheme.²¹ Stakeholders' reasons for supporting an asymmetric scheme included:

- To overcome or correct for other biases in the regulatory regime. For instance:
- Capex forecasts are likely to be biased upwards because of information asymmetry²² and conservatism when setting forecasts²³

¹⁹ NER, Cl. 6.4A and Cl. 6A.5A(a).

²⁰ Ausgrid, Endeavour Energy and Essential Energy, Submission on Draft Capex Incentive Guidelines, p. 1; CitiPower, Powercor and SA Power Networks, Submission on Draft Capex Incentive Guidelines, p. 1; Energex, Submission on Draft Capex Incentive Guidelines, p. 1; Grid Australia, Submission on Draft Capex Incentive Guidelines, p. 3; SP AusNet, Submission on Draft Capex Incentive Guidelines; Victorian DNSPs, Submission on Draft Capex Incentive Guidelines, p. 1;

²¹ Australian Chamber of Commerce and Industry (ACCI), Submission on Draft Capex Incentive Guidelines, p. 1; Choice, Submission on Draft Capex Incentive Guidelines, p. 6; Energy Users Association of Australia (EUAA), Submission on Draft Capex Incentive Guidelines, p. 2–3; Ethnic Communities' Council of NSW (ECC), Submission on Draft Capex Incentive Guidelines, p. 2; MEU, Submission on Draft Capex Incentive Guidelines, p. 23; PIAC, Submission on Draft Capex Incentive Guidelines, p. 14; Uniting Care Australia, Submission on Draft Capex Incentive Guidelines, pp. 3-4.

 ²² ACCI, Submission on Draft Capex Incentive Guidelines, p. 2; Choice, Submission on Draft Capex Incentive Guidelines, p. 4; COSBOA, Submission on Draft Capex Incentive Guidelines, p. 4; EUAA, Submission on Draft Capex Incentive

- An upwardly biased WACC for government owned NSPs will weaken their incentive to reduce their capex.²⁴
- The regime is already biased towards NSPs after we take into account pass-throughs, reopeners and contingent projects.²⁵
- an asymmetric scheme is more effective at curbing overspends that relying on ex post assessment.

We address the first three main concerns raised by consumer and industry groups below. Concerns about the potential effectiveness of the ex post review are addressed in chapter 4.

Forecasting bias

We reaffirm our position in our draft decision that a number of improvements to our forecasting approach will help to reduce the risk of over-forecasting.

Through the development of the Expenditure Forecast Assessment Guideline we have outlined a range of different techniques that will assist in assessing and setting capex forecasts. Some of these techniques were not available to us when assessing forecast capex for current determinations (e.g. augmentation capex (augex) models). Other techniques such as our replacement capex (repex) model were only used in our assessment of capex in the most recent of our regulatory determinations for DNSPs.²⁶ The range of different techniques we propose to use in assessing capex are outlined below in Table 3.

Guidelines, p. 2; PIAC, *Submission on Draft Capex Incentive Guidelines*, p. 19; Victorian Government Department of State Development and Business Innovation, p. 2.

²³ COSBOA, Submission on Draft Capex Incentive Guidelines, p. 4; EUAA, Submission on Draft Capex Incentive Guidelines, p. 2; MEU, Submission on Draft Capex Incentive Guidelines, p. 19;

ACCI, Submission on Draft Capex Incentive Guidelines, p.2; EUAA, Submission on Draft Capex Incentive Guidelines, p. 3–4; MEU, Submission on Draft Capex Incentive Guidelines, p. 18; PIAC, Submission on Draft Capex Incentive Guidelines, p. 19.

²⁵ Choice, Submission on Draft Capex Incentive Guidelines, p. 4; EUAA, Submission on Draft Capex Incentive Guidelines, p. 2; MEU, Submission on Draft Capex Incentive Guidelines, p. 17; Uniting Care Australia, Submission on Draft Capex Incentive Guidelines, p. 3.

 ²⁶ AER, Final decision: Aurora Energy Pty Ltd, 2012–13 to 2016–17, 30 April 2012 and AER, Final decision: Victorian distribution determination, 2011–15, 29 October 2010.

Table 3 Summary of capex forecasting techniques

Use of technique before Better Regulation	Description	Technique
Not used.	Statistical model that combines maximum demand, asset utilisation and cost data to predict future augmentation costs.	Augex modelling
Used in the distribution determinations for Victoria and Tasmania with non- standardised data.	Statistical model that uses asset age information, replacement costs and recent trends in replacement volumes to predict future replacement volumes and costs	Repex modelling
Used extensively	Reviews of specific NSP practices around the prudent development, approvals and management of expenditures, and of justifications for proposed larger projects/ programs.	Governance and detailed project reviews
Limited application and data not standardised across NSPs or over time.	Disaggregation of NSP expenditure data into standardised activities and asset categories to compare volumes and cost of capex over time and across NSPs.	Benchmarking and trend assessments
Requested and relied upon however this is now included in the Expenditure Forecast Assessment Guideline as an element of expenditure assessments, and in associated information requirements.	Consideration of the economic costs and benefits, over an appropriate time horizon, of a proposed project or activity that gives rise to proposed capital or operating expenditure.	Cost benefit assessment
Used extensively however without clearly defined framework or expectations of NSPs on best practice demand forecasting approaches.	Consideration of the methods, data and assumptions underlying forecasts of maximum demand.	Demand forecast assessment

Information asymmetry is always a challenge when assessing regulatory proposals. In developing our guideline as part of the Better Regulation program we have carefully considered what additional measures are required to address this challenge. We consider the developments we have made to our forecasting toolkit, along with the AEMC's rule changes²⁷ and development of greater internal expertise will reduce the risks that forecasts will be systematically biased upwards in the future.

There are several new mechanisms we have implemented through this guideline which will reduce the incentive for NSPs to overspend on capex relative to our current approach.

Through the CESS, NSPs will face penalty of 30 per cent of the NPV of any capex overspend. This introduces greater penalties on capex overspends than what NSPs previously faced. Figure 5 illustrates the financial penalty the NSP faces with additional capex on a 50 year asset under our previous approach (blue line) and in the future with the CESS (orange line). Table 4 calculates the incremental financial penalty of our new approach.

²⁷ Under cl. 6.12.3(f) of previous version of the NER, the AER could only amend a NSP's proposal to the extent necessary to enable it to be approved under the NER. This clause has since been removed.

Figure 5 Estimated marginal cost of increase in capex on 50 year asset – previous approach and new approach



Table 4Estimated incremental marginal cost to NSP of capex from introduction of the
CESS - 50 year asset

Year	1	2	3	4	5
Previous marginal cost of additional capex - 50 year asset ²⁸	32%	25%	18%	9%	0%
Future marginal cost of additional capex - 50 year asset	30%	30%	30%	30%	30%
Incremental marginal cost to NSP of capex	-2%	5%	12%	21%	30%

Long lived assets typically represent the majority of capex carried out by NSPs. If one assumes capex is spread evenly throughout the regulatory control period, after the introduction of the CESS, the marginal cost to the NSP of additional capex is higher for 80 per cent of its investment (i.e. it is higher from Years 2 to 5), and the additional cost to the NSP is significantly higher towards the end of the regulatory control period. The introduction of the CESS clearly provides a stronger financial penalty than NSPs currently face for capex overspends.

In addition, we will undertake an ex post review of capex. Where there is material overspending over the review period, NSPs potentially face a more intrusive review of their capex. We will exclude overspent capex from the RAB where we find it to be inefficient or imprudent. NSPs therefore face additional risks if they are unable to manage their capex within their allowance than they faced previously. While consumer and industry groups have expressed doubts about the potential effectiveness of such a mechanism, we consider the threat of ex post review will be a useful deterrent against excessive overspending. The ex post review is discussed in further detail in chapter 4.

²⁸ Assuming NSP's cost of capital = regulatory WACC = 8%.

Some stakeholders have also suggested that another reason for forecasting bias is because regulators have the tendency to set conservative forecasts. For instance, the EUAA considers that concerns about under-investment which would threaten reliability encourage regulators to err on the side of caution.²⁹

It is unclear why we would introduce a higher CESS penalty to address any apparent bias towards conservatism. If there is evidence that, on average, our capex forecasts have been too conservative, this is something we should take into account when setting our capex forecasts. Introducing a higher CESS penalty to address the apparent bias would seem to be an indirect and inferior mechanism for addressing any such imbalance.

In assessing the risks associated with forecasting bias we have also taken into account PIAC's submission there is likely to be compounding forecasting errors. For instance, PIAC suggests that an over-forecast of peak demand growth by a NSP may lead to an over-forecast in network augmentation.³⁰ While this may be true, this would also be true for under-forecasting of peak demand growth. That is, if we under-forecast peak demand growth, we would also under-forecast the likely growth in network augmentation. Therefore, the risk identified by PIAC is symmetric in nature and does not suggest an asymmetric scheme is necessary.

Differences between the WACC and a NSP's actual cost of capital

We do not consider that the proposed CESS needs to be amended to address any potential differences between the regulated WACC and a NSP's actual cost of capital.

Several stakeholders considered there is a persistent difference between the regulatory WACC and the true cost of capital for government-owned NSPs. For this reason they considered there needs to be a higher penalty to incentivise these NSPs not to overspend.³¹ To support its submission on this issue, the EUAA provided a model developed by Carbon and Energy Markets (CME) that estimated the return earned by a NSP on a 35 year asset given an assumption about the difference between government-owned NSPs' actual cost of capital and the regulatory WACC over the life of the asset.³² The model illustrated that where the WACC was higher than a NSP's actual cost of capital, the return earned by a NSP would increase.³³

We disagree that CME's model provides any persuasive evidence that we should increase the penalty on capex overspends:

 The model illustrates that a NSP will receive a marginal financial benefit from additional capex but only if there is a much greater WACC differential than assumed by CME.³⁴ Based on CME's assumptions about the current estimated WACC differential for government-owned NSPs, the model does not demonstrate those NSPs would receive a financial benefit from incurring additional capex.

²⁹ EUAA, Submission on Draft Capex Incentive Guidelines, p. 2.

³⁰ PIAC, Submission on Draft Capex Incentive Guidelines, p. 21.

ACCI, Submission on Draft Capex Incentive Guidelines, p. 2; EUAA, Submission on Draft Capex Incentive Guidelines, p. 3–4; MEU, Submission on Draft Capex Incentive Guidelines, p. 18.
 LIAA, Submission on Draft Capex Incentive Guidelines, p. 18.

³² EUAA, Submission on Draft Capex Incentive Guidelines, p. 3.

³³ Choice and PIAC also considered that where there was a WACC differential it would have an asymmetric effect. See Choice, *Submission on Draft Capex Incentive Guidelines*, pp. 3–4; PIAC, *Submission on Draft Capex Incentive Guidelines*, p. 19. We do not agree. A WACC differential would have the same effect on the incentive to overspend as the incentive to underspend.

³⁴ CME assumed a real WACC of 5.5 per cent and an actual cost of capital of 4.3 per cent. If the NSP expects this difference to be maintained for the life of a 35 year investment, then the model predicts its incentive power to reduce its capex is 18 per cent. That is for a dollar increase in capex, then the NSP's expected return will fall by 18 cents. With an expected real WACC of 5.5 per cent over the life of a 35 year asset, a NSP's actual cost of capital would have to be 264 basis points lower (2.86 per cent), before a NSP would receive a marginal benefit from increasing its capex.

- 2. The model does not factor in the risk that an overspend may be excluded from the RAB after an ex post review. It is reasonable to expect that a NSP would factor in these considerations if it was likely to materially overspend its forecast capex allowance. If so, a NSP would need a larger WACC differential to compensate it for this risk.
- 3. The model assumes the WACC differential is fixed and maintained for the life of the investment. The majority of capex incurred by NSPs is on long lived assets (40+ years). Even where there was a WACC differential, it is not certain that the differential would be maintained for the life of such long lived assets.

Notwithstanding these observations, we note that the regulated WACC will be based on a benchmark efficient firm.³⁵ Setting the WACC based on a benchmark efficient firm now, and into the future, reduces the risks that some NSPs will face a regulated WACC which is substantially and persistently above the true cost of capital over the life of the investment.

Consideration of pass-throughs, re-openers and contingent projects

We have also taken into account submissions from stakeholders that a higher CESS penalty is needed to counter the bias in the regime because NSPs can increase their allowance through pass-throughs, re-openers and contingent projects.

The pass-throughs, contingent projects and re-openers provisions under the NER have been formulated to address specific risks under the regulatory regime, consistent with meeting the NEO. While these provisions provide a mechanism for NSPs to revise capex forecasts upwards, these additional expenditures are subject to a materiality threshold and certain conditions being met. The materiality thresholds for these events are set out below in Table 5. If there is considered to be a bias in how these mechanisms have been designed or implemented, we do not consider that building in a counter bias into the CESS is the appropriate response.

Table 5Materiality thresholds of pass-through events, contingent projects and
reopeners

Materiality threshold	
We specify a materiality threshold for each pass-through event in a revenue determination. Typically we set the threshold at 1 per cent of maximum allowable revenue in a year.	Pass-through event
Forecast capex on the contingent project must exceed \$30 million or 5 per cent of the annual revenue requirement for the DNSP for the first year of the relevant regulatory control period, whichever is the larger amount.	Contingent projects
Total capex required during the regulatory control period to rectify the adverse consequences of the event exceeds 5 per cent of the value of the RAB for the first year of the relevant regulatory control period.	Reopeners

2.3.3 Level of the reward or penalty

We have set the total reward and penalty for NSPs at 30 per cent of the NPV of any underspend or overspend. This is consistent with our proposal in our draft guideline.

In our explanatory statement to the draft guideline, we considered there to be two key issues in setting the level of reward or penalty.

³⁵ AER, Better Regulation—Explanatory Statement, Draft Rate of Return Guideline, August, 2013.

- 1. The reward should not be so high that it incentivises inefficient capex deferral. This could result in consumers paying too much for the capex (since they might fund the same capex in multiple regulatory control periods). Alternatively, consumers could experience a decline in service levels.
- 2. The power of the incentive should be set so as to achieve balance between the incentives for capex, opex and service.

In response to our draft decision, few stakeholders commented on the level of reward or penalty. The submissions we received on this issue are outlined below in Table 6.

Penalty	Reward	
30 per cent	30 per cent	Ausgrid, Endeavour Energy, Essential Energy
100 per cent	None specified	Canegrowers
70 per cent	30 per cent	Choice
70 per cent	30 per cent	Energy Users Association of Australia
50 per cent	30 per cent	Ethnic Communities' Council of NSW (ECC)
50 per cent	20-30 per cent	Public Interest Advocacy Centre (PIAC)
>50 per cent	None specified	Uniting Care Australia

Table 6 - Submission on the level of reward or penalty

As noted above in Section 2.3.2 we consider that incentives in the scheme should be symmetric rather than asymmetric. As we are implementing a symmetric scheme, we have aligned the penalty for overspends with the proposed reward for underspends.

In choosing a reward and penalty of 30 per cent we have sought to balance a number of relevant considerations:

- We want to achieve a balance between the incentives for capex and opex. The incentives for opex are approximately 30 per cent. A reward and penalty which is relatively balanced between opex and capex will help to ensure a NSP makes efficient decisions when choosing whether to incur opex or capex.³⁶ Our opex forecasting approach in combination with the EBSS provides a NSP with a reward or penalty for efficiency improvements of about 30 per cent of the value of any improvement.³⁷
- We want to ensure that the penalty is sufficient to limit inefficient overspending. Where a NSP responds to financial incentives and its cost of capital is similar to the regulated WACC, even a small penalty should incentivise NSPs to spend efficiently. To the extent that the regulated WACC and true WACC for a NSP might differ, a higher penalty might be warranted. As discussed in section 2.2.2, we consider that a 30 per cent penalty will incentivise efficient capex, even if there was a difference between a NSP's actual cost of capital and its regulated WACC.
- We want to ensure that the reward is not too high as this could incentivise capex deferral that may not benefit consumers or be inefficient. If a NSP consistently defers capex from one

³⁶ PIAC and Choice queried why we consider balance between opex and capex to be important. An example that addresses this query is illustrated in Attachment C.

³⁷ AER, *Efficiency Benefit Sharing Scheme*, November 2013.

period to the next, this could result in consumers paying too much for the capex. Alternatively, inefficient capex deferral could lead to a decline in service levels to the detriment of consumers. For this reason, we want to limit the power of the reward.

2.3.4 Number of schemes

One CESS will apply to all NSPs. This is consistent with our draft decision.

In our draft decision we noted we had considered developing different schemes based on ownership and NSP types. While there may be differences in incentives faced by NSPs that are privately-owned and government-owned, we did not think that this warranted different types of schemes. Similarly, we did not consider there was any compelling evidence to apply a different form of CESS for DNSPs and TNSPs.

We only received one submission that disagreed with our proposed approach to apply one form of CESS to all NSPs. COSBOA disagreed with our decision not to distinguish between privately-owned and government-owned NSPs.³⁸ COSBOA considered that differentiation was necessary in order to address systemic overspending by government-owned NSPs.

As outlined above in sections 2.3.1 and 2.3.2 we consider a 30 per cent reward and penalty, in combination with a limited ex post review, will incentivise efficient capex, regardless of ownership type.

2.3.5 Reward for capex deferred between regulatory control periods

We will have the flexibility to adjust the CESS payments where we identify a material amount of capex that is deferred between regulatory control periods. This is a change in position from our draft guideline.

With the introduction of the CESS, a NSP will receive a greater financial reward from reducing capex in the final years of a regulatory control period than it does currently. This means a NSP has a greater incentive to make efficiency improvements in capex in these years. It will also have a greater incentive to defer capex from one regulatory control period to the next.

Inter-period deferral of capex is not a problem of itself. Where a NSP defers capex either within or across regulatory control periods, it may be an indication of efficiency gains. For instance, if current assets can be used productively for longer, deferral reduces the need for additional investment today.

Without any adjustment to the CESS payments, all capex underspends would be treated identically. A NSP would receive the same reward through the CESS for a permanent efficiency improvement as it would for a short-term deferral of capex. Where the deferred capex has no impact on a NSP's forecast of capex for the next regulatory control period, all else being equal, consumers will be better off from such deferral. However, if a NSP's capex forecast materially increases in the next regulatory control period because the capex was deferred, a NSP's reward from deferring capex is likely to exceed the benefit to consumers from the short-term deferral. If this is the case, consumers will, perversely, face higher prices after short-term deferral of capex.

In our draft Expenditure Forecast Assessment Guideline, we noted some of the risks of deferral. We outlined that we would consider the following when assessing forecast capex:

• the amount and type of capex deferred in the prior regulatory control period

³⁸ COSBOA, Submission on Draft Capex Incentive Guidelines, p. 5.

- the expenditure incurred relative to what was funded for in previous regulatory control periods and the rewards or penalties under the CESS
- various indicators of workload (for example, replacement and maintenance volumes) as well as network performance (including capacity and risk or "health" measures), including what NSPs were expected to deliver, and what they actually delivered over time.³⁹

In response to our draft guideline we received the following submissions:

- The Victorian Government Department of State Development, Business and Innovation (DSDBI), PIAC and COSBOA were concerned that stronger powered incentives within a regulatory control period would increase the risk of inter-period deferral.⁴⁰
- Grid Australia did not agree that we should address deferred capex through our capex forecasts.⁴¹ It considered this would not deal with capex which is brought forward. It also considered it may reduce transparency and would lead to the capex allowance being overly focussed on projects rather than an overall allowance. Grid Australia instead recommended a formulaic adjustment to the CESS payments where capex had been deferred and then accepted again as forecast capex in the next regulatory control period.
- CitiPower, Powercor and SA Power Networks considered that we should not be able to reduce the CESS on the basis of efficient deferral of capex.⁴²

We have reconsidered our approach to addressing short-term capex deferrals since releasing the draft guideline including the suggestions from stakeholders. We now consider we should have the flexibility to deal with deferrals through adjustments to the CESS payments.

As outlined above, short-term capex deferrals will be detrimental to consumers where a NSP is able to defer a material amount of capex and the deferral leads to higher forecasts of capex in the next regulatory control period. We are also mindful that the Essential Services Commission of Victoria (ESCV) removed the capital expenditure efficiency scheme applied to Victorian DNSPs between 2001 and 2006 because it considered that capex underspends may have resulted from capital investment deferral and that these deferrals may not have been efficient.⁴³ The ESCV's scheme was similar to our proposed CESS.

We want to ensure that the CESS is applied in a sustainable way that is in the long term interests of consumers. Ultimately we must approve a forecast of total capex that reasonably reflects the capex criteria.⁴⁴ In some circumstances, forecast capex may meet the capex criteria even if it had been deferred in the previous regulatory control period. If this is the case, and forecast capex is materially higher, consumers will not benefit from the deferred capex. They will face higher prices after short term deferral. This will be as a result of the higher forecast capex in the next regulatory control period, and any CESS reward the NSP would receive for underspending in the previous period. We consider adjustments to the CESS payments where there is material capex deferral between regulatory control periods will minimise this risk.

³⁹ AER, Draft Expenditure Forecast Assessment Guideline—Explanatory Statement, p. 65.

⁴⁰ COSBOA, Submission on Draft Capex Incentive Guidelines, pp. 2-3; PIAC, Submission on Draft Capex Incentive Guidelines, p. 26; DSDBI, Submission on Draft Capex Incentive Guidelines, p. 2.

⁴¹ Grid Australia, Submission on Draft Capex Incentive Guidelines, pp. 4–6.

⁴² CitiPower, Powercor and SA Power Networks, Submission on Draft Capex Incentive Guidelines, p. 7.

⁴³ Essential Services Commission Victoria, Electricity Price Review 2006–10 October 2005 Price Determination as amended in accordance with a decision of the Appeal Panel dated 17 February 2006 Final Decision Volume 1 Statement of Purpose and Reasons, p. 431.

⁴⁴ NER, Cl. 6.5.7(c), Cl, 6A.6.7.

As outlined above, some stakeholders also considered it would be more transparent to address shortterm deferrals through an adjustment to the CESS payments rather than through the capex forecast. We agree that where the deferred capex is particularly significant it could be preferable to make an adjustment to the CESS payments. This provides for greater transparency and is further reason why we have allowed for an adjustment to the CESS payments in this guideline.

When we will adjust the CESS payments for deferral

We consider that such an adjustment will help to ensure that where material amounts of capex are deferred between regulatory control periods, consumers receive a commensurate benefit from such deferral.

At the same time, we also recognise that short-term deferral of capex will often be efficient. If we were to apply an adjustment to the CESS payments for all deferrals, or the adjustment did not provide NSPs with any benefits where it deferred capex between regulatory periods, NSPs may be discouraged from efficiently deferring capex between regulatory control periods.

We have considered these factors in designing the form of adjustment that will apply. This is explained below.

1. Adjustment factors

We will only apply an adjustment to the CESS payments where a NSP has deferred capex in the current regulatory control period and:

- a. the amount of the deferred capex in the current regulatory control period is material, and
- b. the amount of the estimated underspend in capex in the current regulatory control period is material, and
- c. total approved forecast capex in the next regulatory control period is materially higher than it is likely to have been if a material amount of capex was not deferred in the current regulatory control period.

Clause (a) is designed to ensure that the benefits of making such an adjustment are not outweighed by the administrative cost.

Clause (b) is designed to ensure that NSPs still face incentives to re-prioritise their capex budgets in response to changing circumstances during a regulatory control period. Our approach to forecasting capex is to forecast the total amount of efficient capex a NSP needs over the regulatory control period. While our forecast of capex for a regulatory control period is partly informed by our forecast of the prudent and efficient capex the NSP will need to complete discrete projects or programs, this is only to inform our total forecast of capex for the regulatory control period. We consider most of the time, a NSP is best placed to decide the projects and programs it needs to carry out once it knows its forecast capex allowance. This means, from time to time, a NSP may choose to defer some discrete projects that we initially considered to be prudent and efficient when forming our forecast of total capex for the regulatory control period. Conversely, it may also choose to bring forward other discrete projects that we had not previously assessed when setting our forecast of capex for the regulatory control period. By only applying an adjustment where the total estimated underspend in capex in the current regulatory control period is material, we will help ensure that a NSP still faces incentives to efficiently defer some capex yet

also bring forward other efficient capex as circumstances change during the regulatory control period.

Clause (c) is designed to ensure that a NSP would only face an adjustment to the CESS where the deferral of capex in the current regulatory control period has led to materially higher capex forecasts in the next regulatory control period. Where this is not the case, it is unlikely a NSP would receive a windfall gain from deferring capex between regulatory control periods. Correspondingly, consumers are likely to face lower prices in the next regulatory control period because of a NSP's decision to defer the capex.

2. Calculation of adjustment to CESS payments

Where we do make such an adjustment for deferrals we will do so by:

- estimating the present value of the increase in forecast capex in the next regulatory control
 period attributable to capex deferred in the current regulatory control period, and
- subtracting the above from the underspend in the current regulatory control period.

The total benefit to the NSP will be 30 per cent of this adjusted amount.

As with all benefits of underspending, part of this benefit will flow to the NSP through the CESS payments. Part of this benefit will flow through to the NSP through the financing benefit it receives during the regulatory control period. The calculation of the CESS payments in these circumstances is outlined below.

CESS payments = 30 per cent × (NPV of underspend in period n - NPV of forecast marginal increase in capex in period n+1 from capex deferred in period n) — financing benefits received in period n

This approach means a NSP will still retain 30 per cent of the estimated value of the short-term deferral. How the adjustment will work in practice is explained in further detail below in Box B. The example in Attachment D further illustrates that a NSP would still receive 30 per cent of the estimated benefit of an inter-period deferral after an adjustment to the CESS payments and this is:

- the same benefit it would receive if the capex had been deferred for the same length of time within a regulatory control period, and
- the same benefit it would receive if no adjustment was applied to the CESS payments but the deferred capex had been excluded from our forecast of capex for the next regulatory control period.

Consideration of capex advancements

We have also considered Grid Australia's suggestions to account for capex advancements when we make an adjustment to the CESS payments. A capex advancement is where capex is undertaken in the current regulatory period that was not anticipated at the time of a regulatory determination.

As outlined above, we agree that a NSP should still face some incentives to rearrange its capex budget to meet changing priorities that emerge during a regulatory control period. For this reason, for an adjustment to the CESS payment to apply, a NSP would have to materially underspend over the regulatory control period. This means we would not make an adjustment for the CESS payment if it has deferred a material amount of capex in the regulatory control period to the next regulatory control period, but has also brought forward a similar amount of capex into the current regulatory control period that was not previously accounted for at the time forecast capex was set.

However, we will not take into account any capex that has been advanced when we calculate the adjustment to the CESS payments. We consider NSPs already have several other mechanisms to help them manage the risks associated with material amounts of capex that needs to be advanced that was not expected at the time of the initial regulatory determination. For instance, we consider the risk of material cost increases from uncontrollable or unforeseen capex are already addressed through contingent projects and pass-throughs events.

Box B - Illustrating how an adjustment for deferred capex will change the CESS payments

This example illustrates how the CESS payments will differ for a NSP depending on whether or not there is an adjustment for deferred capex.

A.1. CESS payments before adjustment for deferred capex

First we assume no adjustment to the CESS payments.

Assume that a NSP's capex allowance and actual expenditure are that shown in Table 7. The resulting underspend is given by subtracting the actual capex from the allowance.

Table 7 NSP capital expenditure allowance and actual capital expenditure (\$ million)

	Year 1	Year 2	Year 3	Year 4	Year 5
Capex allowance	300	300	300	300	300
Actual capex	290	280	200	200	300
Underspend	10	20	100	100	0

We then need to convert the underspends into their net present value (NPV) at the end of year 5. This is done by multiplying the underspend by the relevant discount rate. In this example, the discount rate is calculated on the basis of a real WACC of 6 per cent. Since capex is assumed to occur mid-year, we use a mid-year discount rate.⁴⁵ The resulting discount rates and the NPV of the underspend is given in Table 8.

Table 8 Discount rate and net present value of the underspend

	Year 1	Year 2	Year 3	Year 4	Year 5
Discount rate (mid-year)	1.30	1.23	1.16	1.09	1.03
NPV underspend (\$ million)	13.00	24.52	115.68	109.13	0

The total underspend in NPV terms is given by summing the NPV of the underspends in years 1 to 5.

Total NPV underspend = \$13 million + \$24.52 million + \$115.68 million + \$109.13 million = \$262.34 million

To work out the NSP's share of the total NPV of the underspend, the sharing ratio is applied to the total NPV underspend.

Sharing ratio = 30 per cent × NPV of underspend in period n

NSP share = 30 per cent x \$262.34 million = \$78.70 million

⁴⁵ This is calculated as $1/(1 + WACC)^{n-5.5}$ where n is the relevant year of the regulatory control period (so, 1 in year one, for example).

So now we know that the NSP should recover \$78.70 million in total. We then need to account for the return on the underspend that the NSP has already recovered during the regulatory control period. This is the financing benefit. We need to account for this to ensure that the NSP faces constant incentives. That is, so that the benefit/penalty of an underspend/overspend is equal in each year of the regulatory control period.

The NSP's financing benefit is \$32.34 million.⁴⁶ Therefore, with no adjustment for deferrals, the NSP's CESS payments in the next regulatory control period will be the NSP's share less the financing benefits. This is equal to \$46.36 million.

CESS payments = NSP share – financing benefits = \$78.70 million – \$32.34 million = \$46.36 million

A.2 - CESS payments after adjustment for deferred capex

Assume that we find that the NSP has deferred a material amount of capex from the current regulatory period. We conclude that the NSP's forecast capex is \$40 million higher (\$real year 5) in each year of the next regulatory control period than it is likely to have been if the NSP had not deferred capex in the current regulatory control period.

To estimate the present value of the increase in capex attributable to deferred capex we need to discount the forecast capex attributable to deferrals back to end of year 5 dollars. Assume we use a discount rate of 6 per cent. As with example A.1, since capex is assumed to occur mid-year we use a mid-year discount rate. The resulting discount rates and NPV of the deferred capex is included in Table 9.

	Year 6	Year 7	Year 8	Year 9	Year 10
Increase in forecast capex attributable to inter-period deferral	\$40m	\$40m	\$40m	\$40m	\$40m
Discount rate (mid-year)	0.97	0.92	0.86	0.82	0.77
NPV of increase in forecast capex attributable to inter- period deferral (\$ million)	38.85	36.65	34.58	32.62	30.77

Table 9 Discount rate and net present value of deferred capex

⁴⁶ For simplicity we do not demonstrate how the financing benefit is calculated in this example. A detailed example illustrating how financing benefits are calculated is provided in Attachment A. The model released with this explanatory statement illustrates how financing benefits are calculated with this particular example.
The total present value of the increase in forecast capex attributable to capex deferred between regulatory periods is given by summing the NPV of the increase in each year of the following regulatory control period.

Total NPV of capex deferred between periods = \$38.85 million + \$36.65 million + \$34.58 million + \$32.62 million + \$30.77 million

To work out the NSP's share of CESS payments after the adjustment for deferrals is made, the sharing ratio is applied to the total NPV of the underspend in the period less the increase in capex attributable to capex deferred between periods.

NSP share = 30 per cent \times (NPV of underspend in period n — NPV of forecast marginal increase in capex in period n+1 from capex deferred in period n)

NSP share = 30 per cent x (\$262.34 million - \$173.48 million)

NSP share = \$26.66 million

So after the adjustment is applied we know that the NSP should recover \$26.66 million in total. We then need to account for the financing benefit that the NSP has already received during the regulatory control period.

From example A.1 we know that the NSP's financing benefit from underspending is \$32.34 million.⁴⁷ With the adjustment for deferrals, the NSP's CESS payments in the next regulatory control period will be the NSP's share less the financing benefits it has already received from underspending. After this adjustment is made, the NSP would face a CESS penalty of \$5.68 million.

CESS payments = NSP share – financing benefits = 26.66 million - 32.34 million = -55.68 million

2.3.6 Exclusions

We have made one exclusion from the CESS - network capability capex incurred by TNSPs. This is a change in position from our draft decision.

Where we exclude capex from the CESS, we would not take it into account when calculate the CESS rewards or penalties. Other exclusions raised by NSPs included for nominated uncontrollable events and investments to improve reliability made by DNSPs. We do not propose having exclusions for this type of expenditure, although we intend to consider DNSPs incentives to invest in improved reliability when we review the STPIS for DNSPs.

The reasons for our positions are outlined below.

⁴⁷ For simplicity we do not demonstrate how the financing benefit is calculated in this example. A detailed example illustrating how financing benefits are calculated is provided in Attachment B. The model released with this explanatory statement illustrates how financing benefits are calculated in this particular example.

Exclusions for nominated uncontrollable events

In our draft decision, we considered there was no convincing reason why we should allow exclusions for nominated uncontrollable events. By including such costs in the CESS, the cost of any uncontrollable cost increase or decrease is shared between NSPs and consumers in the same way as any efficiency gain (i.e. 30:70). If we were to exclude such costs, the sharing of uncontrollable costs would decline over the regulatory period.⁴⁸ We considered there was no reason why uncontrollable cost increases or decreases needed to be shared differently between NSPs and consumers in each regulatory year.

Table 10 Sharing of uncontrollable cost increases or decreases - where capex is excluded from the CESS

Year	1	2	3	4	5
Sharing ratio	29:71	23:77	18:82	11:89	4:96

Some NSPs considered we should allow exclusions for nominated uncontrollable events.⁴⁹

- Ausgrid, Endeavour Energy and Essential Energy considered that exclusions for uncontrollable events would reduce the risk of windfall gains and losses.⁵⁰
- APA Group considered that large customer driven augmentations should be excluded.⁵¹ APA considered that these types of augmentations can arise very quickly, potentially in response to market pressures.
- Energex and Ergon Energy considered that we should allow exclusions for uncontrollable costs, which would qualify for a pass-through if the NSP applied.⁵² We understand that some NSPs have not applied for pass-through events in the past because they did not wish to pass on the costs of the event to their customers.
- Energex and Ergon Energy also requested an exclusion where a pass-through would be permitted but for the materiality threshold.⁵³

We acknowledge that the CESS will reward or penalise NSPs for some uncontrollable events. However, on the whole, the risk of uncontrollable events presents both upside and downside risk to NSPs and this risk can already be managed somewhat through pass-through events and contingent projects. We do not think that there is a compelling argument as to why uncontrollable costs should be shared differently to all other costs facing NSPs.

While we accept that some events may be uncontrollable, in most cases, a NSP also still has the ability to control the costs associated with such events. Allowing exclusions would increase the risk that we would dilute a NSP's incentives to improve its efficiency.

⁴⁸ Where there was an uncontrollable cost increase in the first year of the regulatory control period, a NSP would bear up to five years of financing costs from the cost increase. Where there was an uncontrollable cost increase in the final year of the regulatory control period, a NSP would only bear up to one year of financing costs from the cost increase.

⁴⁹ ActewAGL, Submission on Draft Capex Incentive Guidelines, p. 1; APA Group, Submission on Draft Capex Incentive Guidelines, p. 3; Ausgrid, Endeavour Energy and Essential Energy, Submission on Draft Capex Incentive Guidelines, p. 2-3; Energex, Submission on Draft Capex Incentive Guidelines, p. 2; ENA, Submission on Draft Capex Incentive Guidelines, p. 4; Ergon Energy, Submission on Draft Capex Incentive Guidelines, p. 4.

⁵⁰ Ausgrid, Endeavour Energy and Essential Energy, *Submission on Draft Capex Incentive Guidelines*, pp. 2-3.

⁵¹ APA Group, Submission on Draft Capex Incentive Guidelines, p. 3.

⁵² Energex, Submission on Draft Capex Incentive Guidelines, p. 2; Ergon Energy, Submission on Draft Capex Incentive Guidelines, p. 4.

⁵³ Energex, Submission on Draft Capex Incentive Guidelines, p. 2; Ergon Energy, Submission on Draft Capex Incentive Guidelines, p. 4.

In relation to the specific concerns raised by stakeholders we conclude the following:

- We are not satisfied that large augmentations which are driven by customers warrant different treatment under the CESS to other capex incurred by a NSP. We consider the contingent projects and pass-through mechanisms in the NER are the mechanisms to ensure a NSP has sufficient funds to be able deliver material capex not approved as part of forecast capex in an initial regulatory determination.
- 2. A NSP would avoid an automatic CESS penalty for increased capex if we approved the capex as part of a pass-through event. If a NSP wishes to avoid a CESS penalty it should submit a pass-through application. If we approve an increase in regulated revenue after assessing the pass-through application, then it is a business decision for the NSP as to whether it increases its tariffs to recover the additional revenue.
- 3. We consider the risk borne by NSPs for costs which would have qualified for a pass-through if not for the materiality threshold to be relatively immaterial. We see no reason why relatively immaterial costs should be excluded from the CESS.

Exclusions for STPIS related expenditure - DNSPs

In our draft decision, we did not propose exclusions in either the CESS or EBSS for reliability improving investments. We had previously considered that the STPIS for DNSPs and EBSS incentives were balanced.⁵⁴ As the CESS is balanced with the EBSS we concluded that the CESS and STPIS for DNSPs are also likely to be relatively balanced.

In response, the Victorian DNSPs considered there was no evidence that Victorian DNSPs are over investing in reliability or quality.⁵⁵ The Victorian DNSPs, the ENA and SP AusNet noted that the inclusion of this expenditure in the CESS diminishes the incentives to pursue reliability improvements.⁵⁶

To address the change in incentives they would face with the introduction of the CESS, the Victorian DNSPs proposed that either we:

- exclude STPIS related expenditure from the CESS and roll this capex into the RAB using forecast depreciation, or
- include STPIS related expenditure in the CESS but apply a lower sharing ratio.

Rather than lock in a specific approach to address this issue, they suggested that this be treated on a case by case basis during the F&A stage of a determination.

We have further examined the incentives offered by the STPIS for DNSPs and we acknowledge that a change in the incentives facing NSPs will have some impact on a DNSP's incentives to invest in reliability. However, we propose not to adopt the suggestions offered by Victorian DNSPs for a number of reasons:

 It is unclear whether applying a lower sharing ratio for investments in reliability would lead to better outcomes for consumers.

 ⁵⁴ AER, Electricity Distribution Network Service Providers—Service Target Performance Incentive Scheme, June 2008, p. 22.
 ⁵⁵ Victorian Distribution Network Service Providers Submission on Dreft Canada Incentive Cuidelines p. 2, 4

⁵⁵ Victorian Distribution Network Service Providers, Submission on Draft Capex Incentive Guidelines, p. 3–4.

⁵⁶ ENA, Submission on Draft Capex Incentive Guidelines, p. 4; SP AusNet, Submission on Draft Capex Incentive Guidelines, p. 1; Victorian Distribution Network Service Providers, Submission on Draft Capex Incentive Guidelines, p. 3–4.

- Excluding reliability capex from the CESS does not mean that a NSP's incentives to achieve efficiencies in capex will be balanced with its incentives to invest in reliability. If capex is not included in the CESS it will mean that NSPs face a declining penalty from undertaking such expenditure within a regulatory control period (29 per cent⁵⁷ if incurred in Year 1 declining to 4 per cent if incurred in Year 5). As there is only a small penalty if a DNSP undertakes capex at the end of the regulatory control period, DNSPs would still be strongly incentivised to undertake reliability improving investments towards the end of a period rather than at the start. This may lead to investments in reliability not valued by consumers.
- It would be difficult to identify and verify the discrete capex projects designed to improve reliability.

We have noted in our submissions to the AEMC's review of the national framework for distribution reliability that we anticipate we will review the STPIS for DNSPs following the Better Regulation program.⁵⁸ We consider that the interactions between the CESS and STPIS for DNSPs are best dealt with through this process rather than through changes to the CESS. We will determine at this time whether any changes to the STPIS would be required to address any such imbalances between the CESS and the STPIS for DNSPs.

Exclusions for STPIS related expenditure - TNSPs

TNSPs also raised the interaction between the CESS and the STPIS for TNSPs for one component of this scheme – the network capability component.

Under this component, TNSPs receive an allowance for opex and minor capex which results in improved capability of those elements of the transmission system most important in determining spot prices, or improved capability at times when users place the greatest value on the reliability of the transmission system. We introduced it to provide an additional incentive for TNSPs to improve the capability of their existing transmission assets to resolve limitations or emerging network constraints. We considered that TNSPs are typically biased towards major capex in addressing these constraints.

Under this component, the allowance is up to 1.5 per cent of maximum allowable revenue over the period. The forecast cost of undertaking the works is up to 1 per cent of maximum allowable revenue over the period and is not included in forecast opex or capex. The approved works are a discrete, identifiable list of works, approved based on advice from the Australian Energy Market Operator (AEMO).

With the introduction of the CESS, TNSPs would be facing a constant CESS penalty of 30 per cent on any capex it undertakes on network capability. Grid Australia considered that we should exclude such expenditure from the CESS on this basis.⁵⁹

As outlined above, we think it is preferable to deal with potential interactions between the CESS and the STPIS for DNSPs through a review of the latter scheme. If a review of the STPIS for TNSPs was also likely in the short term we think it would also be preferable to deal with this potential interaction through a review of this scheme rather than an explicit exclusion. However, we only completed our review of the previous STPIS for TNSPs in December 2012. Given the current STPIS for TNSPs is a relatively new scheme, a review of this scheme is unlikely in the short term. On the basis that the network capability component has only been in place a short time, and is a specific component

⁵⁷ Assuming we use forecast depreciation and the WACC is equal to 8 per cent.

⁵⁸ AER, Submission on AEMC consultation paper—review of national frameworks for transmission and distribution reliability, 13 August 2013, p. 5.

⁵⁹ Grid Australia, *Submission on Draft Capex Incentive Guidelines*, p. 5.

intended to promote investments that TNSPs historically have not carried out, on balance, we think it is preferable not to substantially alter the incentives that were in place when we completed the recent review. Therefore we propose to exclude this component from the CESS. We also note that any opex carried out on priority projects approved under the network capability component of the STPIS may be excluded from the EBSS.⁶⁰

2.3.7 Taxation impacts

CitiPower, Powercor and SA Power Networks and the Victorian DNSPs considered we should adjust the CESS to recognise the taxation implications of CESS rewards and penalties.⁶¹ CitiPower, Powercor and SA Power Networks submitted analysis demonstrating that underspending on capex, by improving their profitability, increases their likely taxation obligations. They recommended we adjust the CESS so that where NSPs underspend their reward is 30 per cent on a post-tax basis, rather than on a pre-tax basis which we proposed in the draft.

We consider there is not a strong rationale to amend the CESS to a post-tax scheme. We consider a 30 per cent pre-tax return already provides a sufficient reward to make efficiency improvements. We note that all our incentive schemes reward NSPs on a pre-tax basis.

In reviewing this issue, we also have considered whether pre-tax rewards and penalties would lead to any material distortionary effects in relation to when a NSP would undertake its capex. However, the incentive effects appear minor - particularly for long-lived assets, which represent the bulk of NSPs' capex. We consider that correcting such minor distortionary impacts would not be beneficial given the significant additional complexity of implementing a post-tax scheme.

2.3.8 Revenue and price impacts

In our draft decision we specified that the reward (or penalty) would be applied as an additional building block adjustment to the NSP's revenue over the upcoming regulatory control period. It was our intention that the CESS payments would be recovered equally over the regulatory control period - subject to any smoothing of revenues over the period. We considered that a relatively short period is the most transparent means for recovering the payments and the best way to incentivise managers and directors to pursue efficiency gains.

Ausgrid, Endeavour Energy and Essential Energy queried whether the timing of the CESS reward or penalty would lead to unintended cash flow issues or price shocks for its customers.⁶² At the same time they also acknowledged that smoothing the reward or penalty over longer periods may add complexity.

Whether there are cash flow issues or prices shocks in a regulatory control period will depend on the direction of cost increases or decreases in all building blocks. This is difficult to predict in advance.

To assess whether material price shocks are reasonably likely, we have considered the CESS payments that would have been payable had the CESS applied in prior regulatory control periods. While such analysis is only indicative, and the incentives facing NSPs will change in the future when the CESS is implemented, it does not suggest price or revenue shocks would have been significant

⁶⁰ This is because under the EBSS we can exclude any categories of opex not forecast using a single year revealed cost approach where it would better achieve the requirements of cl. 6A.6.5 of the NER. Opex incurred in delivering network priority projects is excluded from forecast opex so is not considered to be forecast using a single year revealed cost approach.

⁶¹ CitiPower, Powercor and SA Power Networks, *Submission on Draft Capex Incentive Guidelines*, pp. 3–6; Victorian DNSPs, *Submission on Draft Capex Incentive Guidelines*, p. 6.

⁶² NSW DNSPs, Submission on Draft Capex Incentive Guidelines, p. 2.

had the CESS applied in the past. As there are also several other reasons why we prefer a short-term period for recovering the CESS payments, we maintain our draft position that the CESS reward (or penalty) will be applied as an additional building block adjustment to the NSP's revenue in the next regulatory control period.

2.3.9 Application of the CESS

Stakeholders also queried the circumstances in which the CESS would or would not apply, when we would change the scheme within a regulatory control period and how we would apply the CESS if the regulatory control period is longer than five years.⁶³

At this stage we expect we will apply the CESS as currently drafted to all NSPs in the forthcoming regulatory control period regardless of the length of the regulatory control period.

However, our decision on whether to apply the CESS are subject to the requirements set out under cl. 6.5.8A and 6A.6.5.A of the NER. Consistent with our decisions to apply all our incentive schemes our proposed approach to apply a CESS will be set out in the framework and approach paper.⁶⁴ We will then set out in the revenue determination how the CESS is to apply in the forthcoming regulatory control period.⁶⁵

⁶³ APA Group, Submission on Draft Capex Incentive Guidelines, p. 3; ENA, Submission on Draft Capex Incentive Guidelines, p. 9-10; Energex, Submission on Draft Capex Incentive Guidelines, p. 1; Victorian Department of State Development, Business and Innovation (DSDBI), Submission on Draft Capex Incentive Guidelines, p. 2; Victorian DNSPs, Submission on Draft Capex Incentive Guidelines, pp. 7–8.

⁶⁴ NER, Cl. 6.8.1(b)(2)(v) and 6A.10.1A(b)(3).

⁶⁵ NER, Cl. 6.3.2(3) and 6A.4.2(a)(6A).

3 Depreciation

The incentives for efficient capex depend on the form of depreciation used to roll forward the RAB. Under the NER we have the flexibility to roll forward the RAB based on either actual or forecast depreciation.⁶⁶

Forecast depreciation is when we roll forward the RAB based on actual capex less the depreciation on the forecast capex approved for the regulatory control period.

Actual depreciation is when we roll forward the RAB based on actual capex less the depreciation on the actual capex the NSP incurred in the current regulatory control period.

We are required to set out our approach to making this decision in the guideline.⁶⁷ In making this decision we are required to consider:

- the capital expenditure incentive objective
- other incentives the NSP has to undertake efficient capex
- substitution possibilities between assets with different lives
- the extent of overspending and inefficient overspending relative to the allowed forecast.⁶⁸

3.1 Issue

The choice of depreciation approach is one part of the overall capex incentive framework and needs to be considered in that context. Where a CESS is applied, a NSP will already have incentives to pursue capex efficiencies which are continuous over the regulatory control period. Forecast depreciation would maintain these incentives whereas actual depreciation would increase these incentives.⁶⁹

- If there is a capex overspend, actual depreciation will be higher than forecast depreciation. This means that the RAB will increase by a lesser amount than if forecast depreciation were used. Hence, the NSP will earn less revenue into the future (i.e. it will bear more of the cost of the overspend into the future) than if forecast depreciation had been used to roll forward the RAB.
- If there is a capex underspend, actual depreciation will be lower than forecast depreciation. This means that the RAB will increase by a greater amount than if forecast depreciation were used. Hence, the NSP will earn greater revenue into the future (i.e. it will retain more of the benefit of an underspend into the future) than if forecast depreciation had been used to roll forward the RAB.

The incentive from using actual depreciation to roll forward the RAB also varies with the life of the asset. Using actual depreciation will provide a stronger incentive for shorter lived assets compared to longer lived assets. Forecast depreciation, on the other hand, leads to the same incentive regardless of asset life.

⁶⁶ NER, Cl. S6A.2.2B(a) and S6.2.2B(a).

⁶⁷ NER, CI.6A.5A(b)(3) and 6.4A(b)(3).

⁶⁸ NER, Cl. S6A.2.2B(b)(c) and S6.2.2B(b)(c).

⁶⁹ Actual depreciation also leads to a relatively stronger incentive for assets with shorter lives.

3.2 Approach

Forecast depreciation will be the default approach for rolling forward the RAB except where:

- a NSP is not subject to a CESS, or
- a NSP has persistently overspent on capex or persistently incurred inefficient capex.

In making our decision on whether to use actual depreciation in either of these circumstances we will consider:

- the substitutability between capex and opex and the balance of incentives between these
- the balance of incentives with service
- the substitutability of assets of different asset lives.

This position is consistent with our draft decision.

3.3 Reasons for approach

We have chosen forecast depreciation as our default approach because, in combination with the CESS, it will provide a 30 per cent reward to NSPs for underspending, which is consistent for all asset classes. In most circumstances we consider this to be a sufficient incentive for a NSP to achieve efficiency gains over the regulatory control period. Our reasons for preferring a 30 per cent incentive power are outlined in Section 2.3.3.

Generally, stakeholders supported our position in the draft guideline to use forecast depreciation as the default approach.⁷⁰ This was consistent with submissions we received in response to our issues paper.⁷¹ The only submission we received in response to our draft guideline which advocated actual depreciation was from the MEU. It considered we had failed to take into account the long term detriments to consumers from using forecast depreciation.⁷²

The only circumstances in which we would consider using actual depreciation is if a NSP is not subject to a CESS or a NSP has persistently overspent or persistently incurred inefficient capex.

For instance if a NSP is for some reason not subject to a CESS, we may want to implement other measures to incentivise a NSP. As a NSP is better off from underspending when we use actual depreciation rather than forecast depreciation to roll forward the RAB, actual depreciation can be used instead of a CESS to encourage a NSP to deliver more efficient capex.

If, on the other hand, a NSP has persistently incurred inefficient capex, actual depreciation would lead to a lower RAB than it would if we used forecast depreciation to roll forward the RAB. Using actual depreciation would therefore increase the penalty to a NSP where it incurred capex above its forecasts. This would reduce the costs borne by consumers in the case of persistent overspending.

⁷⁰ COSBOA, Submission on Draft Capex Incentive Guidelines, p. 6; EUAA, Submission on Draft Capex Incentive Guidelines, p. 2; Grid Australia, Submission on Draft Capex Incentive Guidelines, p. 1; PIAC, Submission on Draft Capex Incentive Guidelines, p. 7;

⁷¹ COSBOA, Submission on Issues Paper, p. 13; DSDBI, Submission on Issues Paper, p. 4; ENA, Submission on Issues Paper, pp. 24–25; Energex, Submission on Issues Paper, p. 6; Ergon Energy, Submission on Issues Paper, pp. 7–8; Jemena, Submission on Issues Paper, p. 5; PIAC, Submission on Issues Paper, p. 24; SP AusNet, Submission on Issues Paper, p. 5.

 ⁷² MEU, Submission on Draft Capex Incentive Guidelines, pp. 23–25.

However, when we use actual depreciation in conjunction with the CESS, the reward (or penalty) to NSPs declines over the regulatory control period. As discussed in Section 2.3.1 we consider continuous incentives to be preferable to declining incentives for a number of reasons. This is a key reason why we will use forecast depreciation in most cases.

We also consider that if we use actual depreciation the incentive facing NSPs is higher than what we consider is necessary to incentivise NSPs to deliver efficient capex on short lived assets. For instance, for an asset with a life of 10 years, if we use actual depreciation in combination with the CESS, a NSP's marginal benefit from reducing its capex is around 60 per cent in the first year of the regulatory control period declining to around 30 per cent in Year 5 of the period. Where a NSP is relatively responsive to financial incentives, we do not consider these incentives to be necessary to incentivise efficient capex.

4 Ex post measures

This chapter considers our process for implementing the new ex post measures for incentivising efficient capex. These include:

- Our process for making a statement on the efficiency and prudency of capex being rolled into the RAB
- Our process for determining whether to exclude from the RAB:
 - inefficient or imprudent capex overspends
 - inefficient or imprudent related party margins
 - opex that has been capitalised due to a change in a NSP's capitalisation policy.

4.1 Issue

We must make a statement as part of any draft and final determination decision on whether the roll forward of the RAB meets the capital expenditure incentive objective.⁷³ The relevant period for this statement is the regulatory control period.

We may exclude capex from being rolled into the RAB in the following circumstances:⁷⁴

- where a NSP has spent more than its capex allowance,⁷⁵ we may exclude capex above the allowance from the RAB if it does not reasonably reflect the capital expenditure criteria
- where a NSP has incurred capex that represents a margin paid by the NSP, we may exclude that capex from the RAB where the margin refers to arrangements that do not reflect arm's length terms
- where a NSP's capex includes expenditure that should have been classified as opex as part of a NSP's capitalisation policy submitted to us as part of a regulatory proposal, we may exclude this from the RAB.

The relevant period for such exclusions is the first three years of the current regulatory control period and the last two years of the preceding regulatory control period.

4.2 Approach

We will retain the two stage approach to the ex post review set out in our draft guideline, shown in Figure 6. In our final guideline the only changes we have made are to clarify how the ex post review process aligns with the determination process and to clarify the stakeholder consultation we will undertake when carrying out our review.

⁷³ NER, Cl. 6.12.2(b) and 6A.14.2(b).

⁷⁴ NER, Cl. 6.2.2A and S6A.2.2A.

 ⁷⁵ Plus (or minus) any adjustments provided for under the reopening provisions, as a pass through or as a contingent project.

Figure 6 Staged process for ex post review



Our approach to assessing capitalisation policy changes and the ex post assessment of related party margins are also consistent with our draft guideline.

Our processes to assessing capitalisation policy changes and ex post assessment of related party margins in our final guideline are shown in Figure 7 and Figure 8.

Figure 7 Process for assessing capitalisation policy changes



Figure 8 Process for assessing related party margins



4.3 Reasons for approach

There are three main elements to our ex post measures:

- ex post review, to inform our efficiency statement and the exclusion of inefficient or imprudent capex overspends from the RAB
- ex post assessment of changes to a NSP's capitalisation policies
- ex post assessment of related party margins.

We discuss the reasons for our decision on each of these elements below.

4.3.1 Ex post review

In our draft decision we proposed to apply a two stage process to the ex post assessment of the efficiency and prudency of capex as follows:

- In the first stage we would consider several factors including whether the NSP had overspent over the period, the size of any overspend, the NSP's capex history and how the NSP had performed relative to similar NSPs.
- In the second stage we would consider the NSP's processes for asset and project management alongside a detailed review of the NSP's capex.

Our intention was to use this process to inform both our decision on whether to exclude inefficient or imprudent overspends from the RAB and our statement on the efficiency and prudency of capex being included in the RAB. To exclude overspends that are inefficient or imprudent we must 'only take

into account information and analysis that the NSP could reasonably be expected to have considered or undertaken at the time that it undertook the relevant capital expenditure'.⁷⁶

We remain of the view that the ex post review alongside a symmetric CESS will incentivise NSPs to spend capex efficiently and minimise inefficient and imprudent capex overspends. We consider that both these mechanisms are appropriate to deal with the risk of inefficient and imprudent overspends rather than relying on a particular mechanism. We also still consider a staged approach to an ex post review to be an effective way of targeting relative material overspending.

Stakeholders generally supported the two stage approach to ex post reviews in our draft guideline.⁷⁷ Stakeholders also supported our proposal to adjust the CESS to account for excluded capex when calculating rewards and penalties. We proposed this so NSPs would not bear more than 100 per cent of the cost of inefficient or imprudent capex.⁷⁸

Stakeholders raised concerns and queries about the following aspects of the ex post review:

- The effectiveness of the ex post review. Concerns were raised about the relative complexity, and time and resource-intensity of such reviews, and whether they would be a sufficient threat to minimise capex overspends.⁷⁹ Several stakeholders considered that stronger ex ante mechanisms would be more effective than ex post reviews given these issues.⁸⁰ Other stakeholders raised concerns around the time lag between when the expenditure would be carried out and when the review would be undertaken and how this would affect the review.⁸¹ In particular, consumer and industry groups were concerned about the restriction that we only take into account information the NSP could have been reasonably expected to consider at the time.⁸²
- How the ex post assessment would correspond with the determination process and stakeholder consultation, including whether there would be formal consultation outside the determination process.⁸³ For example, stakeholders requested further detail about how we would collect and analyse information in preparation for the formal ex post review.⁸⁴
- The thresholds for advancing an ex post review. Several stakeholders considered that we should specify or at least clarify our thresholds.⁸⁵

⁷⁶ NER, Cl. 6.2.2A(h) and 6A.2.2A(h).

⁷⁷ Ausgrid, Endeavour Energy and Essential Energy, Submission on Draft Capex Incentive Guidelines, p. 2; CitiPower, Powercor and SA Power Networks, Submission on Draft Capex Incentive Guidelines, p. 8; COSBOA, Submission on Draft Capex Incentive Guidelines, p. 7; ENA, Submission on Draft Capex Incentive Guidelines, p. 8; Grid Australia, Submission on Draft Capex Incentive Guidelines, p. 7; Victorian DNSPs, Submission on Draft Capex Incentive Guidelines, p. 1.

⁷⁸ APA, Submission on Draft Capex Incentive Guidelines, p. 3; Ausgrid, Endeavour Energy and Essential Energy, *Submission on Draft Capex Incentive Guidelines*, p. 2; CitiPower, Powercor, and SA Power Networks, p. 8; Grid Australia, p. 6;

 ⁷⁹ ACCI, Submission on Draft Capex Incentive Guidelines, p. 3; COSBOA, Submission on Draft Capex Incentive Guidelines, p. 4, 6; CRG; EUAA, Submission on Draft Capex Incentive Guidelines, p. 5;
 ⁸⁰ ACCI, Submission on Draft Capex Incentive Guidelines, p. 5;

⁸⁰ ACCI, Submission on Draft Capex Incentive Guidelines, pp. 1–3; COSBOA, Submission on Draft Capex Incentive Guidelines, p. 4; CRG; Grid Australia, Submission on Draft Capex Incentive Guidelines, Submission on Draft Capex Incentive Guidelines, p. 4, 7; PIAC, Submission on Draft Capex Incentive Guidelines, pp. 27–28; Uniting Care, Submission on Draft Capex Incentive Guidelines, pp. 6.

⁸¹ Choice, Submission on Draft Capex Incentive Guidelines, p. 5; MEU, Submission on Draft Capex Incentive Guidelines, p. 26; PIAC, Submission on Draft Capex Incentive Guidelines, p. 26; Uniting Care, Submission on Draft Capex Incentive Guidelines, p. 6.

 ⁸² Choice, Submission on Draft Capex Incentive Guidelines, p. 5; PIAC, Submission on Draft Capex Incentive Guidelines, p. 28;

⁸³ Grid Australia, Submission on Draft Capex Incentive Guidelines, p. 11.

⁸⁴ MEU, Submission on Draft Capex Incentive Guidelines, p. 26.

⁸⁵ ENA, Submission on Draft Capex Incentive Guidelines, p. 8; Ergon Energy, Submission on Draft Capex Incentive Guidelines, p. 5; Grid Australia, Submission on Draft Capex Incentive Guidelines, p. 9; MEU, Submission on Draft Capex Incentive Guidelines, pp. 25–26.

- Various details around our application of the ex post review process and our findings.
- Transitional arrangements.

We address each of these aspects below.

Effectiveness of the ex post review

Our position remains that ex ante measures are the primary means of incentivising efficient expenditure and encouraging NSPs to reveal their efficient costs over time. Under the CESS, if a NSP overspends relative to its allowance in any regulatory year it receives a 30 per cent penalty on that overspend regardless of its efficiency (and similarly receives a 30 per cent reward for an underspend regardless of efficiency). All NSPs will be penalised under the CESS for overspends. We consider this to be a relatively strong incentive for NSPs to pursue efficiency improvements.

The ex post review is not a mechanism for us to consider the efficiency and prudency of all expenditure. Rather it complements the ex ante incentives by targeting specific projects and practices. This will be particularly useful where a NSP is relatively unresponsive to financial incentives or where there is a significant project the NSP has undertaken which has not previously been subject to regulatory scrutiny. As we can exclude up to 100 per cent of the cost of any inefficient or imprudent overspend from the RAB, this is potentially a very powerful deterrent against overspending.

While we also recognise that ex post reviews can be complex, there are several examples from other jurisdictions where regulators have excluded capex on an ex post basis including:

- The Independent Pricing and Regulatory Tribunal (IPART) in NSW excluded \$61 million incurred by Sydney Water Corporation for a discontinued customer billing system project it concluded was imprudent.⁸⁶
- The Economic Regulation Authority of Western Australia (ERA) excluded a total of \$261 million of capex (approximately 10 per cent of the value of the projects) incurred by Western Power for new facilities investments in one period. The ERA considered aspects of the investments were imprudent, that the NSP had not provided sufficient information to support the efficiency of the projects, and that there were systematic inefficiencies in the design and governance of projects.⁸⁷
- The Office of Gas and Electricity Markets (OFGEM) in the United Kingdom conducted an expost review of gas distribution businesses that had collectively overspent by 66 per cent of their capex allowances in one regulatory control period (over £800 million). OFGEM's decision resulted in around 37 per cent of the overspend being disallowed (on average for each business).⁸⁸

In light of these real world examples where ex post review has been effective, we disagree that the threat of ex post review would not incentivise NSPs to minimise inefficient and imprudent overspending. Despite differences in jurisdictional arrangements which impact a regulator's decision to exclude expenditure, these examples demonstrate the ability of regulators to review capex ex post and identify inefficient or imprudent conduct.

⁸⁶ The Independent Pricing and Regulatory Authority (IPART), *Sydney Water Corporation—Prices of water supply, wastewater and stormwater Services—From 1 July 2003 to 30 June 2005, Determination 4*, May 2003, p. 19; IPART has also excluded capex ex post on other occasions.

⁸⁷ Economic Regulation Authority of Western Australia, *Final Decision on Proposed Revisions to the Access Arrangement* for the South West Interconnected Network, 4 December 2009, pp. 187–201.

⁸⁸ The Office of Gas and Electricity Markets (OFGEM), *Gas Distribution Price Control Review, One year control final proposals*, December 2006, pp. 1, 12–29; OFGEM has also excluded capex ex post on other occasions.

In relation to the timing of the ex post review, we agree it does present some challenges. However, we do not expect the information we require to undertake an ex post review will be substantially different to the information we require to undertake an ex ante assessment. To support our analysis we can also monitor information collected as part of annual RINs and our annual benchmarking reports on an ongoing basis. This may assist us in identifying areas relevant to future ex post reviews. We can also request additional information from NSPs at earlier stages to clarify areas of concern.

While there will naturally be a lag in the implementation of ex post reviews, this should not negatively impact consumers in the longer term. Under the NER, we can exclude inefficient or imprudent capex overspends from the RAB if it was incurred in years 1, 2 and 3 of the current regulatory control period, or years 4 and 5 of the previous regulatory control period. This means that inefficient or imprudent capex in years 1, 2 and 3 will not be rolled into the RAB at the end of a regulatory control period. Consumers will not have funded any of this capex. There will however be a lag for when we assess the efficiency and prudency of capex undertaken in years 4 and 5 of the current regulatory control period. Where there is an inefficient or imprudent capex overspend in year 4 or 5, consumers will fund this overspend through higher prices until we conduct our ex post review (at the end of the following regulatory control period).⁸⁹ Nevertheless, consumers will be compensated for this delay through an adjustment to the RAB such that they will not be worse off in NPV terms.

Process

In the final guideline we have clarified our process for undertaking the ex post review as shown in Figure 9.

⁸⁹ Year 5 capex is an estimate. If the estimate does not include the inefficient capex in year 5 then consumers will not fund this in the interim either.

Figure 9 How the ex post process will align with the determination process



As outlined in Figure 9 above we may consult with NSPs and assess data collected in RINs/RIOs during the period prior to the formal determination process to gather information for the ex post review. Following the NSP's submission of its regulatory proposal, we will outline our preliminary views on the ex post review in the issues paper published as part of the determination process. We will undertake the ex post review process and set out our decision in the draft determination. NSPs and stakeholders may respond to the issues paper and draft decision. Our final decision on the ex post review will be in the final determination. This process for the ex post review aligns with our process for assessing all elements of a NSP's proposal.

As outlined in our draft guideline, where we exclude capex from the RAB after an ex post review, we may also need to make a corresponding adjustment to the CESS so that NSPs do not incur a penalty of more than 100 per cent of an overspend. This may need to occur where we undertake an ex post review several years after we have calculated the CESS rewards. The reasons why this adjustment may be required is outlined in further detail below in Box C.

Box C - Interaction between timing of calculating CESS payments and timing of undertaking ex post review

For years 1, 2 and 3 of a regulatory control period, we will carry out the ex post review and calculate the CESS payments at the same time. This will be prior to the start of the next regulatory control period.

For years 4 and 5, the ex post review will be undertaken later, at the end of the next regulatory control period. In this case the CESS will have already have been calculated and the RAB rolled forward at the end of the previous regulatory control period. The CESS and the RAB may need to be amended for actual capex and the outcomes of the ex post review at the end of the following regulatory control period (i.e. five years later).

Figure 10 illustrates the different timing for calculating the CESS payments and undertaking the ex post review. Examples 3 and 4 in Attachment B demonstrate how the CESS payments could change after such an adjustment is made.

Ex post period 1 ⁹⁰		Ex p	ost peri	od 2		Ex post period 3						
Regulatory per	iod 1			Regula	atory pe	riod 2			Regula	atory pe	riod 3	
1 2 3	4	5	1	2	3	4	5	1	2	3	4	5
		•					•				-	
Determination for regula	atory pe	riod 2				etermin	nation fo	or regu	latory pe	eriod 3		
Ex post review for ex po	ost perio	od 1			E	x post	review f	or ex p	ost perio	od 2		
Capex from <i>ex post period 1</i> potentially excluded from RAB in <i>regulatory period 2.</i>			F	Capex fro CAB in <i>re</i>	om <i>ex p</i> egulatory	ost peri v period	iod 2 pote 3	entially e	xcluded	from		
CESS for regulatory per	riod 1				c	ESS fo	r <i>regula</i>	tory pe	riod 1			
Penalty/reward based on:					F	e-calcu	late pen	alty/rev	vard from	n actual	perform	ance
 forecast capex less actual capex in years 1 to 4 of regulatory period 1 forecast capex less estimated capex in year 5 of regulatory period 1. Adjustment may be made where a material amount of capex is deferred from regulatory period 1 into regulatory period 2. Any capex excluded from RAB after ex post review for example. 				 in years 4 and 5 of <i>regulatory period 1</i> for: any capex excluded from RAB after ex post review for ex post period 2 from years 4 and 5 of <i>regulatory period 1</i>, or where actual capex in year 5 of <i>regulatory period 1</i> differs from estimate approved prior to determination for <i>regulatory period 2</i>. 					5 of eriod			
post period 1 not conside	red in ca	lculating			0	ESS fo	r <i>regula</i>	tory pe	riod 2			
penallies/rewards.					_ F	enalty/r	eward ba	ased or	1:			
					-	forec in yea forec <i>regul</i>	ast cape ars 1 to ast cape atory pe	x less a 4 of <i>reg</i> x less e <i>riod</i> 2.	adjustmen ulatory p estimated	nt for def eriod 2 I capex ir	erred ca n year 5	apex of
					A c r	djustme apex is egulator	ent may l deferred y period	be made from re 3.	e where a egulatory	a materia period 2	al amour into	nt of
					ې و ب	ny cape ex post p enalties	ex excluc period 2 r /rewards	led from not cons s.	n RAB aff sidered ir	er ex po n calculat	st reviev ing	v for

Figure 10 – Timing of ex post reviews and calculation of CESS payments

⁹⁰ For some NSPs, the first ex post review will apply from the start of the next regulatory control period (as shown in this figure). For other NSPs the first ex post review will apply during the current regulatory control period. Attachment A outlines the relevant timing for all NSPs.

Threshold

We maintain our position in the draft guideline not to specify thresholds for advancing to stage 2 of the ex post review.

A threshold would specify the amount a NSP could overspend by before we would carry out an ex post review. While a threshold could provide greater transparency and consistency in assessing different NSPs' capex overspends, it could incentivise NSP's to spend up to the threshold. There may also be perverse outcomes if we do not undertake a detailed review of inefficient or imprudent overspends below the threshold, or if we undertake a detailed review of all overspends above the threshold. It is also difficult to derive and justify an appropriate threshold that works for all NSPs. For these reasons, we still do not consider it is appropriate to specify a particular threshold.

Application

Stakeholders also requested clarification on particular aspects of how we would apply the ex post review process and our findings. Concerns raised were around:

- Extrapolating our findings for specific projects to an entire capex program. Grid Australia was
 concerned this would discourage efficient investment and that we may penalise NSPs where
 there is no clear evidence of material inefficiency. Grid Australia noted extrapolating findings
 was particularly unnecessary for transmission networks where there were relatively few major
 projects.⁹¹
- Clarification of the assessment techniques we would use.⁹²
- Further detail on how we will assess whether assets deemed inefficient may become efficient in future, and how this might influence whether we disallow some or all of the expenditure relating to that asset.⁹³
- How we take into account the difference in timing between the regulatory control period and the ex post review period.⁹⁴

In relation to the first of these concerns, as outlined in our draft explanatory statement, if systematic problems are exposed in a NSP's asset management processes this could have led to widespread inefficiencies in all areas of asset management. To the extent that a NSP's unit costs are inflated, for example, an adjustment to a number of projects may be appropriate. For this reason we consider it appropriate to retain discretion on how we determine how much of a NSP's overspend is inefficient.

The techniques we use to assess capex on an ex post basis will be similar to those we use to assess forecast capex on an ex ante basis.⁹⁵ We outline these techniques in our Expenditure Forecast Assessment Guideline.

We note that we cannot include in the RAB capex we disallowed in a previous ex post review, even if we find it has become efficient at some later time.⁹⁶ The previous RAB must be increased by the amount of all capex incurred during the previous control period. If we exclude capex from a previous RAB roll forward we cannot add that capex to the RAB in a subsequent period because that capex

⁹¹ Grid Australia, *Submission on Draft Capex Incentive Guidelines*, pp. 8–9.

⁹² ENA, Submission on Draft Capex Incentive Guidelines, p. 8.

⁹³ Grid Australia, Submission on Draft Capex Incentive Guidelines, pp. 7–8.

 ⁹⁴ Grid Australia, Submission on Draft Capex Incentive Guidelines, pp. 9–10; PIAC, Submission on Draft Capex Incentive Guidelines, p. 28.
 ⁹⁵ Difference State Stat

⁹⁵ NER, Cl. S.6.2.2A(h)(2) and S.6A.2.2A.

⁹⁶ NER, S6.2.1(e) and S6A.2.1(f)

was not incurred during the immediately preceding period. However, when assessing the amount of capex to exclude from the RAB, we may take into account (among other things) the extent to which that capex may become efficient in the future.⁹⁷ In assessing whether to include a capex overspend in the RAB, our overarching consideration is whether the capex complies with the capital expenditure criteria. Given this, we will likely adopt the same assessment techniques as those we use to assess forecast capex on an ex ante basis. As noted above, we outline these techniques in our Expenditure Forecast Assessment Guideline.

The differences in the timing of the regulatory control period and the ex post review period are prescribed in the NER. As outlined above, our ex post assessment of capex will cover years 1, 2 and 3 of the current regulatory control period, and years 4 and 5 of the previous regulatory control period. In considering whether to exclude any inefficient or imprudent capex overspend from the RAB, this is the relevant period for which we are required to make our assessment. In making this assessment we are likely to take into account the differences between timing in regulatory control periods and the ex post review period when we look at a NSP's history of capex during stage 1 of our ex post review process. In particular, we will have regard to the available information on how a NSP has spent against its regulatory allowance for the regulatory control period.

Transitional arrangements

Grid Australia requested we clarify our approach to ex post reviews for NSPs whose determinations were finalised prior to commencement of the capex incentive guideline and rule out retrospective application.⁹⁸

The transitional arrangements for the guideline are set out in the rules, and summarised at Attachment A.

For certain NSPs we cannot exclude any inefficient or imprudent overspent capex incurred during a transitional year.⁹⁹ However, in accordance with the transitional rules, we can and will consider excluding capitalised opex and inefficient or imprudent related party margins from regulatory years following publication of the guideline for those NSPs.

For all other NSPs our ex post measures will apply to capex incurred in all regulatory years following publication of the guideline.

4.3.2 Capitalisation policy changes

In our draft guideline we proposed a process for adjusting the RAB where there are changes to a NSP's capitalisation policy:

- We proposed to firstly consider whether the NSP is subject to a CESS and EBSS that provide relatively balanced incentives for capex and opex. If so, no adjustments would need to be made to the RAB. The NSP's actual capex would be included in the RAB, subject to it passing the ex post review.
- Where incentives are not balanced we proposed to consider whether the NSP changed its capitalisation policy during the period, whether this resulted in opex being treated as capex and if so, whether this should be excluded from the RAB.

⁹⁷ AEMC, Economic Regulation of Network Service Providers - Final Rule Determination, 29 November 2012, p. 136.

⁹⁸ Grid Australia, Submission on Draft Capex Incentive Guidelines, pp. 10–11.

⁹⁹ This is for TNSPs in NSW and Tasmania, and DNSPs in NSW and ACT. These NSPs are subject to a one year placeholder determination, followed by a determination for years 2 to 5 with a true-up for year 1. Attachment A outlines the transitional arrangements for the guideline.

We have maintained this approach in the final guideline.

CitiPower, Powercor and SA Power Networks agreed with our approach to excluding capitalised opex, and to adjust the CESS and EBSS where we do not roll capitalised opex into the RAB.¹⁰⁰ However the ENA and Ergon considered the approach in our draft guideline did not recognise there may be legitimate reasons a NSP may change its capitalisation policy. These stakeholders were concerned that NSPs may be unfairly penalised for changing capitalisation policies when they were obliged to do so in order to comply with commercial or accounting system requirements, or accounting standards.¹⁰¹ The ENA proposed the AER only exclude capitalised opex if there were no legitimate reasons for the change and the NSP's intention was purely to gain from capex-opex substitution.¹⁰²

To the extent that the incentives for capex and opex are balanced, a NSP will be no worse off from capitalising opex. This is because the EBSS reward for underspending will be offset by the CESS penalty for overspending.

Where the incentives for capex and opex are not balanced and we excluded capitalised opex from the RAB, a NSP would only be worse off if the penalty it faced through the EBSS for overspending was significantly greater than what it would have received through the CESS. As we consider it would be rare that the EBSS penalty would be significantly greater than the CESS penalty, we consider that our approach is unlikely to unreasonably penalise NSPs which face mandatory accounting changes.

In our draft guideline we stated that we may also require details of expenditure capitalisation as part of the annual RIN/RIO process, including a statement of a NSP's capitalisation policy with auditor's sign-off. The ENA was concerned we might seek unnecessary audit requirements on the details of capitalisation policy changes that are inconsistent with or additional to the regulatory framework governing the provision of audit and assurance reports.¹⁰³ Any audit requirements we seek will be commensurate with the extent of the capitalisation policy change and potential materiality of capitalised opex.

4.3.3 Related party margins

In our draft guideline we proposed to assess related party margins to ensure inflated margins were not included in the RAB:

- If contractual arrangements had not changed since the determination, we proposed the approved margin would be rolled into the RAB. If arrangements had changed we would reconsider the margin using the same process that was used during the determination.
- We would consider whether there was an incentive to agree to an inflated margin. If so, we would consider whether a competitive tender was held to award the contract. If the NSP had no incentive to agree to an inflated margin or if a competitive tender was used to award the contract, the full contract charge would be included in the RAB. If neither of these conditions were met, we would only allow a 'margin' where the service provider could establish the efficiency and prudency of such a margin.

We have maintained our approach for excluding related party margins as outlined in the draft guideline.

¹⁰⁰ CitiPower, Powercor, and SA Power Networks, Submission on Draft Capex Incentive Guidelines, p. 8.

¹⁰¹ ENA, Submission on Draft Capex Incentive Guidelines, p. 5; Ergon Energy, Submission on Draft Capex Incentive Guidelines, p. 3.

¹⁰² ENA, Submission on Draft Capex Incentive Guidelines, p. 5.

¹⁰³ ENA, Submission on Draft Capex Incentive Guidelines, p. 6.

Stakeholders requested we commit to using the same two-stage approach to assessing related party margins outlined in the Expenditure Forecast Assessment Guideline (used for the 2013–17 Victorian gas access arrangement reviews) in the capex incentive guideline to avoid inconsistencies.¹⁰⁴

Our proposed approach in the draft guideline was to use the same approach set out in our Expenditure Forecast Assessment Guideline. We have clarified this in the final guideline, and used language consistent with that used in the Expenditure Forecast Assessment Guideline to describe aspects of the assessment process.

¹⁰⁴ ActewAGL, Submission on Draft Capex Incentive Guidelines, p. 1; CitiPower, Powercor and SA Power Networks, Submission on Draft Capex Incentive Guidelines, p. 8; ENA, Submission on Draft Capex Incentive Guidelines, pp. 6–8; Ergon Energy, Submission on Draft Capex Incentive Guidelines, p. 4; Grid Australia, Submission on Draft Capex Incentive Guidelines, p. 7; Victorian Distribution Network Service Providers, Submission on Draft Capex Incentive Guidelines, p 8.

Attachment A — Transitional arrangements for the guideline

This attachment outlines how the guideline will apply over the various transitional periods.¹⁰⁵

Transitional groups

The AEMC has grouped NSPs and transitional arrangements based on when the AER will consider their proposals. In summary:

- SP AusNet (transmission), which is due to commence its next regulatory control period on 1 April 2014, will be subject to the old Chapter 6A rules for three years before moving to the new rules on 1 April 2017.
- 2014 group: NSPs with their next regulatory control period commencing on 1 July 2014 (TNSPs in NSW and Tasmania and DNSPs in NSW and ACT)¹⁰⁶ will have a one year placeholder determination with a determination for years 2 to 5 to be undertaken during that first year with a true-up.¹⁰⁷
- Directlink, which is due to commence its next regulatory control period on 1 July 2014, will have a shorter determination process (11 months instead of 15). Directlink is not subject to transitional arrangements because of its relatively small size.
- 2015-16 group: NSPs with their next regulatory control period commencing on 1 July 2015 or 1 January 2016 (DNSPs in Queensland, South Australia and Victoria) will be subject to a preliminary determination with a mandatory re-opener.
- We will make a placeholder determination two months before the start of the period (equivalent to a draft determination) which will then actually apply for the first four months of the period.¹⁰⁸
- We will revoke the preliminary determination no later than four months into the first regulatory year of the period, and replace it with a substitute determination (equivalent to a final determination) with an adjustment mechanism to account for differences between the preliminary and substitute determinations.
- Post 2016 there will be no transitional arrangements. This applies to Aurora, Powerlink, Electranet and Murraylink.

Application of the Capital Expenditure Sharing Scheme

For the 2014 group, the CESS will not operate in the transitional period (1 July 2014 to 30 June 2015) as it has not been applied before. The CESS may commence for years 2 to 5. We must set out how the CESS will apply in years 2 to 5 in our Framework and Approach (F&A) stage 2 paper. We will publish this by 31 January 2014.

¹⁰⁵ NER, transitional rules, Chapter 11.

ActewAGL will submit its next gas access arrangement 1 year later to avoid overlap with the delayed electricity process.
 The true up will account for differences between the placeholder revenue for the transitional year and the revenue

requirement for the transitional year established in the full determination.
 The preliminary determination will apply to DNSP pricing proposals for the first year of the regulatory control period.

For the 2015-16 group, the CESS may apply normally over the period. We must set out our proposed application of incentive schemes in the F&A stage. Where relevant, we may apply schemes differently in year one.

For all subsequent determinations the CESS may apply normally over the period.

Depreciation

For the 2014 group, the use of actual or forecast depreciation to calculate the opening value of the RAB at the start of the transitional period and subsequent period will be as set out in the current regulatory determination for the relevant business. We can determine the depreciation method used to roll forward the RAB at the end of the subsequent regulatory control period when we make the subsequent regulatory determination. Hence, we can decide on the form of depreciation at the same time that we decide whether to apply the CESS for the first time. We must set out the method we intend to use in the F&A stage.

For the 2015-16 group, we have discretion to decide whether to use actual or forecast depreciation to establish the opening value of the RAB for the following regulatory control period. This will also be the case for subsequent determinations.

Ex post review

For the 2014 group, we cannot exclude from the RAB any inefficient or imprudent capex overspend incurred during or before the transitional period.¹⁰⁹ That is, ex post exclusions from the RAB for inefficient capex overspends can only be in relation to capex incurred after 30 June 2015. The AEMC's reason for this was because these NSPs will not know what their capex allowance is for the transitional period (1 July 2014 to 30 June 2015) until towards the end of the period.

Hence, the first full ex post capex review for the 2014 group will be undertaken at the time we undertake the regulatory determination for the regulatory control period commencing 1 July 2019 (assuming a five year regulatory control period). At this time, capex will be reviewed for the period 1 July 2015 to 30 June 2017.

For related party margins and capitalised opex, we cannot exclude from the RAB any capex incurred in a regulatory year commencing before we publish the guideline for the 2014 group.¹¹⁰ That is, this assessment will only consider capex in regulatory years following 29 November 2013.

For the 2015-16 group, we can only exclude from the RAB capex incurred in regulatory years following our publication of the guideline (where there is an inefficient overspend, inflated margin or capitalised opex).¹¹¹ That is, we can only consider capex in regulatory years following 29 November 2013. Assuming a five year regulatory control period, the first ex post review for this group will be undertaken before the commencement of the 2020-21 regulatory control period. At this time capex from 30 November 2013 until mid or late 2018 will be reviewed (depending on the NSP).

For all subsequent determinations, we may exclude from the RAB capex incurred any time after we have released our guideline (where there is an inefficient overspend, inflated margin or capitalised opex).¹¹²

¹⁰⁹ NER, Cl. 11.56.5 and 11.58.5

¹¹⁰ NER, Cl.11.56.5 and 11.58.5.

¹¹¹ NER, Cl. 11.60.5. ¹¹² NER, Cl. 11.62.

Attachment B — Worked examples

This section works through four examples to illustrate how the CESS will work in practice. These examples can also be found in in the CESS excel model we have released.¹¹³ These examples were first provided in the explanatory statement accompanying our draft guideline.

Example 1: Cumulative underspend over the period

Assume that a NSP's capex allowance and actual expenditure are that shown in Table 11. The resulting underspend is given by subtracting the actual capex from the allowance.

	Year 1	Year 2	Year 3	Year 4	Year 5
Capex allowance	300	330	270	300	330
Actual capex	280	310	300	290	320
Underspend	20	20	-30	10	10

 Table 11
 NSP capital expenditure allowance and actual capital expenditure (\$ million)

We then need to convert the underspends into their net present value (NPV) at the end of year 5. This is done by multiplying the underspend by the relevant discount rate. In this example, the discount rate is calculated on the basis of a weighted average cost of capital (WACC) of 6 per cent. Since capex is assumed to occur mid-year, we use a mid-year discount rate.¹¹⁴ The resulting discount rates and the NPV of the underspend is given in Table 12.

Table 12	Discount rate and net present value of the underspend
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	Year 1	Year 2	Year 3	Year 4	Year 5
Discount rate (mid-year)	1.30	1.23	1.16	1.09	1.03
NPV underspend (\$ million)	26.00	24.52	-34.70	10.91	10.30

The total underspend in NPV terms is given by summing the NPV of the underspends in years 1 to 5.

Total NPV underspend = \$26 million + \$24.52 million - 34.7 million + \$10.91 million + \$10.3 million = \$37.03 million

To work out the NSP's share of the total NPV underspend, the sharing ratio is applied to the total NPV underspend.

Sharing ratio = 30 per cent

NSP share = 30 per cent x \$37.03 million = \$11.11 million

So now we know that the NSP should recover \$11.11 million in total. We then need to account for the financing benefit that the NSP has already recovered during the regulatory control period. We need to

¹¹³ Available on our website: <u>http://www.aer.gov.au/node/18869</u>.

¹¹⁴ This is calculated as $1/(1 + WACC)^{n-5.5}$ where n is the relevant year of the regulatory control period (so, 1 in year one, for example).

account for this to ensure that the CESS provides constant incentives. That is, so that the benefit/penalty of an underspend/overspend is equal in each year of the regulatory control period.

For each underspend the NSP will get a half year of retained return on capital in the same year. In following years the NSP will gain a full year of retained return on capital.

- To calculate the financing benefits in the first year the underspend is multiplied by $[(1 + WACC)^{0.5} 1)]$.
- To calculate the financing benefits in all other years, the underspend is simply multiplied by the WACC.

This is shown in Table 13. The benefit for each year is shown in one row with the equations for calculating that benefit shown in the following row for reference. To get the final benefit for each year, the columns are summed together. To express this in NPV terms, we then apply a discount rate. Since these values accrue at the end of the year, we need a different discount rate from that applied in Table 12.¹¹⁵

	Year 1	Year 2	Year 3	Year 4	Year 5
Year 1 benefit	0.59	1.20	1.20	1.20	1.20
Year 1 calculation	20 x [(1.06) ^{0.5} - 1]	20 x 0.06	20 x 0.06	20 x 0.06	20 x 0.06
Year 2 benefit		0.59	1.20	1.20	1.20
Year 2 calculation		20 x [(1.06) ^{0.5} – 1]	20 x 0.06	20 x 0.06	20 x 0.06
Year 3 benefit			-0.89	-1.80	-1.80
Year 3 calculation			-30 x [(1.06) ^{0.5} – 1]	-30 x 0.06	-30 x 0.06
Year 4 benefit				0.30	0.60
Year 4 calculation				10 x [(1.06) ^{0.5} – 1]	10 x 0.06
Year 5 benefit					0.3
Year 5 calculation					10 x [(1.06) ^{0.5} – 1]
Annual benefit	0.59	1.79	1.51	0.90	1.50
Discount rate (end of year)	1.26	1.19	1.12	1.06	1.00
NPV annual benefit	0.75	2.13	1.70	0.95	1.50

Table 13 Financing benefits (\$ millions)

To get the total financing benefits, the NPV annual benefits are summed together (\$0.75 million + \$2.13 million + \$1.70 million + \$0.95 million + \$1.50 million). This gives \$7.03 million.

¹¹⁵ This is calculated as $1/(1 + WACC)^{n-5}$ where n is the relevant year of the regulatory control period (so, 1 in year one, for example).

To calculate the resulting CESS payment to go to the NSP, the benefit already retained by the NSP is subtracted from the NSP's share of the underspend.

CESS payment = \$11.11 million - \$7.03 million = \$4.08 million

Hence, the NSP will receive \$4.08 million under the CESS in the next regulatory control period to reward it for the net efficiency gain made during the previous regulatory control period.

Example 2: Overspend in year 3

Another example is provided below. In this example there is a \$20 million overspend in year 3. Table 14 shows the capex allowance, actual capex, overspend and the cost of the return on the overspend. In particular, the overspend in year 3 leads to a financing cost for a half year in year 3 and a full year in years 4 and 5 (see row called 'Year 3 overspend cost'). The half year cost is calculated as \$20 million x $[(1 + WACC)^{0.5} - 1]$ (equalling \$0.59 million). The cost in years 4 and 5 is calculated as \$20 million x WACC (equalling \$1.20 million).

	Year 1	Year 2	Year 3	Year 4	Year 5
Capex allowance	100	100	100	100	100
Actual capex	100	100	120	100	100
Overspend	0	0	20	0	0
Year 3 overspend cost	0	0	0.59	1.20	1.20
Discount rate (mid-year)	1.30	1.23	1.16	1.09	1.03
Discount rate (end of year)	1.26	1.19	1.12	1.06	1.00
NPV overspend	0	0	23.14	0	0
NPV year 3 cost	0	0	0.66	1.27	1.20

Table 14Example with a single overspend in year 3 (\$ million)

Table 15 shows the calculations for the CESS payment:

- The total overspend is simply the NPV of the overspend in year 3, \$23.14 million.
- The NSP share of the overspend is then calculated. This is given by multiplying the total overspend by the sharing ratio (\$23.14 million x 30 per cent = \$6.94 million).
- The total cost of financing the overspend is then calculated as the sum of all benefits recovered/costs borne in years 1 to 5 (\$0.66 million + \$1.27 million + \$1.2 million = \$3.14 million).
- The CESS payment is then calculated as the NSP's share of the overspend minus the financing costs already borne by the NSP (\$6.94 million - \$3.14 million = \$3.80 million).

Table 15 CESS calculations

	Calculation	Result
Total NPV overspend	NPV overspend in year 4	\$23.14 million
NSP share of overspend	\$23.14 million x 30 %	\$6.94 million
Total cost of financing the overspend	\$0.66 million + \$1.27 million + \$1.20 million	\$3.14 million
CESS penalty	\$6.94 million - \$3.14 million	\$3.80 million

A \$3.80 million penalty will apply to the NSP in the next regulatory control period due to it overspending by \$20 million in year 3.

Example 3: CESS in conjunction with ex post exclusion

Consider example 2 above (a \$20 million overspend in year 3). Now, consider that in undertaking our ex post review we find that \$10 million of the overspend in year 3 was inefficient and decide not to roll this amount into the RAB. The NSP will bear the full costs of this as it has not yet been funded and it will not be included in the RAB. We will need to calculate the CESS differently to ensure we don't also penalise the NSP through the CESS.

We do this by excluding the inefficient \$10 million from the CESS calculation. We subtract \$10 million from the original \$120 million of actual capex in year 3. This gives actual capex of \$110 in year 3 and the rest of the calculations are made on the basis of this updated figure. Table 16 and Table 17 show the recalculation of the CESS. The previous values from example 2 are shown in parenthesis for reference. However, in practice, the CESS would only be calculated once for this example (after the ex post exclusion is taken out) since the results of the ex post review will already be known for year 3.

	Year 1	Year 2	Year 3	Year 4	Year 5
Capex allowance	100	100	100	100	100
Actual capex	100	100	110 (120)	100	100
Overspend	0	0	10 (20)	0	0
Year 3 financing cost	0	0	0.30 (0.59)	0.60 (1.20)	0.60 (1.20)
Discount rate (mid-year)	1.30	1.23	1.16	1.09	1.03
NPV overspend	0	0	11.57 (23.14)	0	0
Discount rate (end of year)	1.26	1.19	1.12	1.06	1.00
NPV annual cost of overspend	0	0	0.33 (0.66)	0.64 (1.27)	0.60 (1.20)

Table 16 Example with a \$15 million ex post exclusion in year 3 (\$ million)

Table 17 shows the CESS calculations. In particular:

- The NPV of the total overspend is the NPV of the overspend in year 3 (\$11.57 million).
- The NSP share of this is calculated by multiplying this by 30 per cent (\$11.57 million x 30 per cent = \$3.47 million).
- The financing benefit already accrued is calculated by summing the annual cost of the overspend for each year in NPV terms (\$0.33 million + \$0.64 million + \$0.60 million = \$1.57 million).
- The CESS payment is given by subtracting the NPV financing costs already borne, from the NSP's share of the overspend (\$3.47 million - \$1.57 million = \$1.90 million).

Table 17 CESS calculations

	This example	Example 1
Total NPV overspend	\$11.57 million	(\$23.14 million)
NSP share of underspend	\$3.47 million	(\$6.94 million)
Financing benefit already accrued	\$1.57 million	(\$3.14 million)
CESS payment	\$1.90 million	(\$3.80 million)

This gives a penalty of \$1.90 million. This is lower than the CESS penalty calculated in example 2 (\$3.80 million) since it does not include any penalty for the inefficient \$10 million overspend. Instead the NSP is penalised through the \$10 million not being included in the RAB.

The net difference between this example and example 2 is that the NSP bears the full cost of the inefficient overspend in this example, rather than the 30 per cent borne in example 2. Table 18 shows that the change in the NSP's financing benefit and the CESS is exactly equal to the NSP's share of the overspend (both are equal to \$3.47 million). Hence, the net impact for the NSP is the \$10 million overspend. Since this amount was not funded up front or through the RAB, consumers will bear none of the costs associated with this \$10 million.

Table 18 Net effect on NSP

	Calculation	Result
Impact on RAB	-\$10 million	-\$10 million
Difference in financing cost	\$3.14 million - \$1.57 million	\$1.57 million
Difference in CESS penalty	\$3.80 million - \$1.90 million	\$1.90 million
Net difference in financing benefit and CESS	\$1.57 million + \$1.90 million	\$3.47 million
Difference in NSP's share of the overspend	\$6.94 million - \$3.47 million = 30 % x \$11.57 million	\$3.47 million
Net impact on NSP	-\$10 million + \$3.47 million - \$3.47 million	-\$10 million

Example 4 Ex post exclusion from year 4 of the regulatory control period

There are two reasons why we might need to adjust the CESS in a following regulatory determination:

- Where the forecast amounts of capex in years 4 and 5 that were used to calculate the CESS differ from the actual amounts of capex incurred in years 4 or 5.
- Where we exclude capex from the RAB for an inefficient overspend in years 4 or 5.

These two events could occur individually or at the same time and will require an adjustment to the RAB and the CESS.

This example illustrates how we will adjust the CESS where there is an inefficient overspend in year 4 (though the CESS adjustment will be much the same whether the change is due to a difference between actual and forecast capex or due to an ex post exclusion). The adjustment to the RAB will occur as per our usual method for accounting for year 5 differences in the existing roll forward model.

In this example we decide as part of the ex post review to exclude \$5 million of capex in year 4 of a regulatory control period from the RAB. Assume we have the pattern of expenditure shown in Table 19. For simplicity, assume that no ex post adjustments were made in years 1, 2 and 3 for the first regulatory control period.

	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
Allowance	100	100	100	100	100	100	100	100	100	100
Actual	100	100	120	110	100	100	100	100	100	100
Underspend	0	0	-20	-10	0	0	0	0	0	0
Y1 benefit	0	0	0	0	0	0	0	0	0	0
Y2 benefit		0	0	0	0		0	0	0	0
Y3 benefit			-0.59	-1.20	-1.20			0	0	0
Y4 benefit				-0.30	-0.60				0	0
Y5 benefit					0					0
Total benefit	0	0	-0.59	-1.50	-1.80	0	0	0	0	0
Discount (mid-year)	1.30	1.23	1.16	1.09	1.03	0.97	0.92	0.86	0.82	0.77
Discount (end year)	1.26	1.19	1.12	1.06	1.00	0.94	0.89	0.84	0.79	0.75
NPV underspend	0	0	-23.14	-10.91	0	0	0	0	0	0
NPV benefit	0	0	-0.66	-1.59	-1.80	0	0	0	0	0

Table 19Capex over two periods (\$ million)

The CESS for both regulatory control periods would be calculated as usual. Since the NSP spent

exactly its allowance in period 2, no CESS payment would apply in period 2. The CESS calculations for period 1 are shown in Table 20.

Table 20 CESS for period 1

	Calculation	Amount
Total overspend (NPV)	\$23.41 million + \$10.91 million	\$34.05 million
NSP share	30 per cent x \$34.05 million	\$10.21 million
Total financing cost (NPV)	\$0.66 million + \$1.59 million +\$1.80 million	\$4.05 million
CESS penalty	\$10.21 million - \$4.05 million	\$6.17 million

Assume when we undertake the ex post review at the end of period 2, we find that the efficient amount of capex in year 4 should have been \$105 million. Put differently, we have found that \$5 million of the NSP's overspend is inefficient. We will then exclude \$5 million from the RAB and make an adjustment to the RAB to account for the time value of money. We will also have to adjust the CESS for period 2. The new cash flows for this adjustment are in Table 21. The exclusion can simply be counted as an additional underspend for the purposes of the CESS (which is why it is positive).

	Y1	Y2	Y3	Y4	Y5
Ex post exclusion	0	0	0	5	0
Y1 benefit	0	0	0	0	0
Y2 benefit		0	0	0	0
Y3 benefit			0	0	0
Y4 benefit				0.15	0.30
Y5 benefit					0
Total benefit	0	0	0	0.15	0.30
Discount (mid-year)	1.30	1.23	1.16	1.09	1.03
Discount (end year)	1.26	1.19	1.12	1.06	1.00
NPV underspend	0	0	0	5.46	0
NPV benefit	0	0	0	0.16	0.30

Table 21Ex post exclusions for years 4 and 5

We now have to recalculate the CESS for the expost exclusion. This is done in Table 22.

Table 22CESS for period 2 once \$5 million has been excluded from year 4

	Calculation	Amount
Ex post exclusions (NPV)	\$5 million x 1.09	\$5.46 million
NSP share	30 per cent x \$5.46 million	\$1.64 million
Total financing cost (NPV)	\$0.16 million + \$0.30 million	\$0.46 million

CESS at end of year 5	\$1.64 million - \$0.46 million	\$1.18 million
CESS in end of year 10 dollars	\$1.18 x (1/0.75)	\$1.58 million

In summary, the NSP will be given a CESS payment of \$1.58 million in the third regulatory control period to adjust for the extra CESS penalty incurred in the second regulatory control period. The NSP's RAB will also be adjusted; the NPV of the inefficient \$5 million will be taken out of the RAB. Consumers will bear none of the inefficient \$5 million in NPV terms.

Attachment C — Illustrating balance between opex and capex incentives

By promoting balance between opex and capex incentives, we want to provide NSPs with an incentive to seek the most cost-efficient solution to a problem.

For instance, consider a DNSP which is considering either maintaining a number of poles in its distribution network, or replacing them.

Assume that the cost of replacing the poles is \$4 million. This is recorded as capex. Assume that the cost of maintaining the poles was \$5 million. This is recorded as opex. The most cost-effective solution for society would be if the NSP replaced the poles rather than maintained them.

We typically assume a NSP is, at least in part, motivated by financial considerations. If the marginal cost of spending on either opex or capex is the same, then the NSP's interests are balanced with society's interests. For instance where the NSP only pays for 30 per cent of the increase in either capex or opex, its incentives will be balanced. The NSP, motivated by the financial benefits, will choose to replace rather than maintain the poles.

However, assume that the NSP's incentives are not balanced and the NSP is facing a marginal cost of 50 per cent if it spends another dollar on capex, and a marginal cost of 30 per cent if it spends another dollar on opex.

In this case, the marginal cost to the NSP of replacing the poles is \$2 million (50 per cent of \$4 million, the cost of replacing the poles), while the marginal cost to the NSP of maintaining the poles would be \$1.5 million (30 per cent of \$5 million, the cost of maintaining the poles). If a NSP was motivated by financial incentives it would be better off by maintaining rather than replacing the poles. This would not be the most cost-effective solution.

Attachment D — Examining the distribution of the benefits of deferred capex

As outlined in section 2.3.5, we will have the flexibility to adjust the CESS payments where we identify a material amount of capex that has been deferred from one regulatory control period to the next regulatory control period.

This example illustrates how, after such an adjustment is made, the benefits of the deferred capex are shared between NSPs and consumers in the same way as if:

- a. An equivalent amount of capex had been deferred within a regulatory control period, and
- b. We did not adjust the CESS payments but we excluded the deferred capex from the forecast of capex for the next regulatory control period.

It also demonstrates that if such an adjustment is not made, and the capex is included in forecast capex in the next regulatory control period, consumers would be worse off after such a deferral.

To illustrate this, we examine how the benefits of capex are shared between NSP's and consumers under four different scenarios.

- 1. \$30 million of capex is deferred from Year 1 to Year 4 of a regulatory control period.
- \$30 million of capex is deferred from Year 4 of one regulatory control period to Year 2 of the next regulatory control period, and the deferred capex is not included in forecast capex in Year 2 of the next regulatory control period.
- \$30 million of capex is deferred from Year 4 of one regulatory control period to Year 2 of the next regulatory control period, and the deferred capex is included in forecast capex in Year 2 of the next regulatory control period.
- 4. \$30 million of capex is deferred from Year 4 of one regulatory control period to Year 2 of the next regulatory control period, the deferred capex is included in forecast capex in Year 2 of the next regulatory control period and the CESS payments are adjusted to ensure the NSP receives a commensurate benefit from the short-term deferral.

A) Benefits of intra-period deferral

Assume a NSP forecasts \$30 million of capex in Year 1 but instead delivered \$30m in capex in Year 4.

A.1. Total benefit of deferral

The total benefit from deferring capex for three years is the cost savings in the period between Year 1 and Year 4. Assuming a discount rate of 6 per cent this is equal to \$4.81 million (\$real, year 1).

(1) NPV of deferral

= NPV of underspend in Year 1 - NPV of overspend in Year 4

 $= \$30m - \frac{\$30m}{(1+0.06)^3}$

= \$4.81*m*

The calculation of the total benefit of the deferral is also outlined below in Table 23.

	1	2	3	4	Total
Forecast capex	\$30m	-	-	-	
Actual capex	-	-	-	\$30m	
Underspend	\$30m	-	-	-\$30m	
Discount rate	1	0.943	0.890	0.840	
NPV of underspend	\$30m	-	-	-\$25.19m	\$4.81m

Table 23:\$30m of capex deferred from Year 1 to Year 4 (\$real, Year 1)

A.2. Benefit to NSP and consumers of deferral

With the introduction of the CESS, in NPV terms the NSP will receive a 30 per cent reward for underspending in Year 1 and a 30 per cent penalty for overspending in Year 4. In net terms the benefit to the NSP of deferring \$30 million of investment from Year 1 to Year 4 will be \$1.44 million (\$real, year 4). This is 30 per cent of the total benefit of the deferral estimated above (i.e. 30 per cent of \$4.81 million).

(2) NPV of deferral to NSP

= 30 per cent of NPV of underspend in Year 1 - 30 per cent of NPV of overspend in Year 4

$$= 30\% * [\$30m - \frac{\$30m}{(1+0.06)^3}]$$

= \$1.44*m*

As we have worked out the total benefit of the deferral (\$4.81 million) and the benefit to the NSP (\$1.44 million), the difference is the benefit to consumers. As outlined in Table 24 this is equal to \$3.37 million.

Table 24Share of benefits of \$30m of capex deferred from Year 1 to Year 4

	Benefits of deferral \$(real, year1)	Share of benefits
Benefit to NSP	\$1.44m	30%
Benefit to consumers	\$3.37m	70%
Total benefit of deferral	\$4.81m	100%

B) Benefits of inter-period deferral — deferred capex is excluded from forecast capex in next regulatory control period

Now assume a NSP forecasts \$30 million of capex in Year 4 but instead delivered \$30m in capex in Year 2 of the next regulatory control period. As the NSP is regulated under five year regulatory control periods, for simplicity, we'll call Year 2 of the next regulatory control period Year 7.

B.1. Total benefit of deferral

The estimated benefit from deferring capex for three years is the difference in cost between if capex was incurred in Year 4 compared to if it was incurred in Year 7. Assuming a discount rate of 6 per cent this is also equal to \$4.81 million (\$real, year 4).

(3) NPV of deferral

= NPV of underspend in Year 4 – NPV of overspend in Year 7

$$= \$30m - \frac{\$30m}{(1+0.06)^3}$$

= \$4.81*m*

The total benefit of the deferral is also outlined below in Table 25.

Table 25\$30m of capex deferred from Year 4 to Year 7 - deferred capex excluded from
subsequent forecast of capex (\$real, Year 4)

	4	5	6	7	Total
Forecast capex	\$30m	-	-	-	
Actual capex	-	-	-	\$30m	
Underspend	\$30m	-	-	-\$30m	
Discount rate	1	0.943	0.890	0.840	
NPV of underspend	\$30m	-	-	-\$25.19m	\$4.81m

B.2. Benefit to NSP and consumers of deferral

Under the CESS, the NSP will receive 30 per cent of the NPV of the benefits of underspending in Year 4. Because the deferred capex is not included in forecast capex in the next regulatory control period, the NSP will also pay for 30 per cent of the NPV of the cost of overspending in Year 7. The NSP's benefit from deferring capex three years is \$1.44 million. This is 30 per cent of the total benefit of the deferral outlined above. This is the same benefit the NSP would have received for an equivalent intra-period deferral outlined in Example A.

(4) NPV of deferral to NSP

= 30 per cent of underspend in Year 4 - 30 per cent of NPV of overspend in Year 7

$$= 30\% * [\$30m - \frac{\$30m}{(1+0.06)^3}]$$

= \$1.44*m*

As the total benefits of deferral and the benefit to consumers is the same in Example B as in Example A, the benefit to consumers of deferral is also \$3.37 million.

Table 26Share of benefits of \$30m of capex deferred from Year 4 to Year 7- deferred
capex excluded from next forecast of capex (\$real, Year 4)

	Benefits of deferral \$(real, year 1)	Share of benefits
Benefit to NSP	\$1.44m	30%
Benefit to consumers	\$3.37m	70%
Total benefit of deferral	\$4.81m	100%

C) Benefits of inter-period deferral — deferred capex is included in forecast capex in next regulatory control period

Now assume an identical situation to example B except the deferred capex is included in our forecast of capex in the next regulatory control period.

C.1. Total benefit of deferral

As this is an identical situation to Example B, the total benefit of deferral is also \$4.81 million.

C.2. Benefit to NSP and consumers of deferral

The NSP will receive 30 per cent of the NPV of the underspend in Year 4. Therefore, with an underspend of \$30 million the NSP's benefit from the short-term deferral is \$9 million. However, unlike example B, the deferred capex is included in the new forecast of capex. The NSP will not incur a penalty in the next regulatory control period.

(5) NPV of deferral to NSP

= 30 per cent of underspend in Year 4 - 30 per cent of NPV of overspend in Year 7

= 30% * (\$30m - 0)

= \$9m

As the total benefit of deferring capex from Year 4 to Year 7 is \$4.81 million but the benefit to the NSP is \$9 million, consumers are \$4.19 million worse off after the deferral.
Table 27Share of benefits of \$30m of capex deferred from Year 4 to Year 7 - deferred
capex included in next forecast of capex (\$real, Year 4)

	Benefits of deferral \$(real, year1)	Share of benefits
Benefit to NSP	\$9.00m	187%
Benefit to consumers	-\$4.19m	-87%
Total benefit of deferral	\$4.81m	100%

D) Benefits of inter-period deferral — deferred capex is included in forecast in next regulatory control period, CESS payments are adjusted.

As outlined in Example B, one way to ensure consumers receive a benefit from deferred capex is to exclude any capex from a forecast where it has already been proposed and deferred.

In this guideline we have given ourselves the option to adjust the CESS payments where capex is proposed, deferred and then accepted again as forecast capex. As noted by Grid Australia, in its submission to the draft guideline, this is mathematically equivalent to if we had excluded the deferred capex from the subsequent forecast of capex.¹¹⁶

For instance, as outlined in Example C without an adjustment to the CESS payments, if the deferred capex is included in the new forecast of capex, the reward to the NSP is \$9 million.

If we instead adjusted the CESS payments, when calculating the CESS rewards, we would estimate the total underspend less the present value of the estimated increase in the new capex forecast attributable to deferred capex. The NSP would receive 30 per cent of the benefits of any adjusted underspend.

(6) Total reward to NSP after adjustment for deferral

= 30 per cent * (NPV of underspend in Year 4 - NPV of increase in capex in Year 7 from deferral)

 $= 30\% \times \left(\$30 \ million - \frac{\$30 \ million}{(1+6\%)^3} \right)$

= \$1.44*m*

This is equivalent to if we had excluded the deferred capex from the subsequent forecast of capex (See Example 2) or if the same amount of capex had been deferred within the regulatory period. (Example 1).

A summary of each of the four examples is provided below in Table 28.

¹¹⁶ Grid Australia, Submission on Draft Capex Incentive Guidelines, p. 5.

	Period of deferral	Deferred capex included in forecast of capex in second regulatory	Adjustment to CESS payments	Benefit to NSP	Benefit to consumers	Total benefit
		period				
Example 1	Deferred from Year 1 to Year 4	No	No	\$1.44m	\$3.37m	\$4.81m
Example 2	Deferred from Year 4 to Year 7	No	No	\$1.44m	\$3.37m	\$4.81m
Example 3	Deferred from Year 4 to Year 7	Yes	No	\$9m	-\$4.19m	\$4.81m
Example 4	Deferred from Year 4 to Year 7	Yes	Yes	\$1.44m	\$3.37m	\$4.81m

Table 28 Summary of examples of deferral of \$30m of capex

Attachment E — Summary of submissions

Issue	Respondent	Comments
Application of CESS	CitiPower/Powercor/SA Power Networks	Seeks clarity on the circumstances or criteria we will use to determine whether or not the CESS will apply.
		Requests clarity of the circumstances in which the AER foresees the CESS may not apply.
	ENA	The AER should make a clear statement that any changes to incentive schemes will be made on an ex ante basis and not during the course of a regulatory control period.
	Energex	Requests further certainty about when the AER will apply a CESS.
	Ergon	Seeks clarification about when a CESS may not apply to a NSP.
	Victorian DNSPs	Seeks clarification when the AER may decide not to apply the CESS.
	Victorian Department of State Development, Business and Innovation	The explanatory statement does not set out the circumstances in which the AER would not apply the CESS.
Balance between ex ante and ex post incentives	COSBOA	Considers the ex post review is not an acceptable substitute for an asymmetric scheme.
	Grid Australia	Requests that the AER reaffirm that ex-ante incentive will be the primary means of promoting efficient investment by NSPs
	PIAC	Considers the AER has placed too much reliance on the ex post review which is only a limited measure. Rather, a strong asymmetric CESS should be supported by the ex post review.
Balance between opex and capex	COSBOA	The issue of NSPs substituting between capex and opex seems to be a less significant problem than capex overspending.
	Ausgrid, Endeavour Energy and Essential Energy	Seeks clarity that the DNSP would gain the same relative reward from a reduction in capex and opex.
	Choice	A higher penalty on overspends will further discourage NSPs from capitalising opex.
	PIAC	Seeks clarification on how a symmetric scheme is necessary to promote efficient allocation between capex and opex (why an asymmetric scheme does not).
	Choice	It is not clear why a symmetric CESS balances incentives across capex/opex/service. It is also unclear why 'balance' would incentivise NSPs to engage in efficient expenditure.
Capitalisation policy changes	CitiPower/Powercor/SA Power Networks	Considers the AER should be mindful of the impacts of tax, or changes to the opex base year on the relative level of incentives.
	ENA	The AER should not presume capitalisation policy changes are illegitimate. NSP's should be allowed to explain changes to

Table 29

Summary of submission to draft capex incentive guideline

		their capitalisation policy, and the AER should clarify it will only exclude capex from the RAB is there is no legitimate reason for the change and a NSP's intention was purely to gain from a capex-opex substitution.
	Ergon	Has concerns that a NSP could be unreasonably penalised for a capitalisation policy change which is made to comply with other requirements such as Accounting Standards.
Continuous incentives	COSBOA	There is some merit in having declining incentives to reduce the incentive for NSPs to defer capex between periods. Accepts that the AER must balance this consideration with other matters.
	EUAA	Supports. Considers that declining incentives would lead to additional complexity, which may not sufficiently compensate for the benefit of possible reductions in windfall gains or losses from declining incentives.
	PIAC	Supports.
	Uniting Care	Supports the notion of continuous incentives but recognises there may be a need to review this in future as part of reviewing actual and allowed capex in each regulatory year.
Deferrals	CitiPower/Powercor/SA Power	Considers that the AER should not be able to reduce CESS payments on the basis of the efficient deferral of capex.
Delerrais	Networks	The AER must clarify whether or not it intends to review the benefit or penalty accrued to DNSPs under the CESS.
	EUAA	Considers there is no compelling evidence of inefficient intra- period or inter-period capex shifting.
		Considers that the AER has recognised deferrals but has not recognised advancements in projects from one period to the next.
		Considers that deferrals or advancements between regulatory periods should be addressed through an adjustment to the carry-over amount rather than to forecast of expenditure.
		Considers that excluding capex from the forecast:
	Grid Australia	 Will diminish the transparency of the expenditure requirements of the businesses over the period, and complicate reporting requirements
		 May inappropriately lead to the capex forecast being overly focused on projects rather than an overall allowance
		 May be inconsistent with the requirements of the Rules and the Revenue and Pricing Principles
	PIAC	Considers flexibility in the reward for underspending will help the AER address deferral issues (by having a lower reward for underspending in some circumstances).
	Victorian Department of State Development, Business and Innovation	The CESS would strongly incentivise NSPs to defer any capex.
Depreciation	COSBOA	Supports the AER's position to use forecast depreciation but has a strong preference for the AER to normally apply the

		CESS (with asymmetric incentives) such that applying actual depreciation in the absence of a CESS is an exceptional case.
	ENA	Requests clarity on if the CESS did not apply to an NSP in some circumstances, how this would affect the AER's decision to use actual or forecast depreciation.
	EUAA	On balance, prefers the use of forecast depreciation in combination with a CESS.
	Grid Australia	Supports the use of forecast depreciation
	MEU	Considers that using actual depreciation when there is an overspend provides a long term benefit to consumers while using forecast depreciation imposes a long term penalty
	PIAC	Accepts there are benefits in using forecast depreciation by default, with the option to use actual depreciation for NSPs in the circumstances outlined by the AER.
Ex post review	ACCI	Fears the AER will always tend to take conservative approaches to any ex post review and this will bias them against inefficient spending.
		Is concerned about the time, information and resources advantage the business have over the AER.
	APA Group	Supports the decision to shield capex that is excluded from the RAB as part of the ex post review from the operation of the CESS.
	Choice	Identifying inefficient capex using the ex post review is likely to be extremely difficult. In other jurisdictions where ex post reviews are used such as the United States, the regulatory system involves a far higher degree to asset-specificity and controls making it straightforward to identify inefficient areas— this is not the case in Australia. These issues are exacerbated by the time lag between when the expenditure occurs and when the review is. The threat of the ex post review is also diminished because of these limitations.
	CitiPower/Powercor/SA Power Networks	Broadly support the two stage assessment process. Considers the methodology appears sound to ensure DNSPs are not subject to a double penalty when capex is excluded from the RAB roll forward.
	COSBOA	No ex post review will perfectly identify all aspects of an inefficient overspend as the AER faces an information asymmetry. Ex post review are resource intensive and likely to be limited in their effectiveness. Supports the AER's proposed ex post process.
	ENA	Requests more detail about the process and nature of the ex post review. The criteria for the AER entering stage two of the review (what constitutes a significant overspend), timing and how the AER will engage with the NSP during the process, and what techniques the AER will use.
	Ergon	Would appreciate additional clarification in relation to how and when the AER will make decisions to progress to the application of Stage 2 of the process.
	EUAA	Is not convinced that ex post assessments will ever be a meaningful or effective constraint on expenditure.

		Considers that uncontrollable events should be able to be
Exclusions	ActewAGL	Considers it reasonable for NSPs to have the opportunity to propose uncontrollable events to be excluded from the scheme that might occur during a regulatory period.
	Victorian DNSPs	Broadly supportive
	Uniting Care	Recognises the disincentive ex post reviews have on overspending, but questions the weight placed on these in the short to medium term. The amount of time between the expenditure occurring and the ex post assessments allows NSPs more time to portray that expenditure as efficient. The time delay and difficulties in obtaining information limits the scope of ex post reviews considerably. Ex post assessments need to carefully consider what proportion of any overspend is rolled into the RAB.
	PIAC	The AER should place greater weight on the practical limitations of the ex post review. The ex post review is not a practical alternative to higher CESS penalties. There will be a significant lag between the excess expenditure occurring and the ex post assessment. There will also be difficulties in forming a view based on the information available at the time to NSPs, and in gathering the necessary information. The capex objective requires the AER to 'ensure' the RAB only contains efficient expenditure. PIAC does not accept that the ex post review can provide this assurance.
	MEU	Considers the AER should investigate all capex for inefficiencies. The trigger should be set based on the allowed capex exclusive of re-openers, pass throughs and contingent projects.
	Grid Australia	Requests the AER should more clearly explain how it anticipates that its ex post review of capex will interact with the formal stages of the revenue determination process.
	Grid Australia	Requests the AER set out the circumstances under which capex could be assessed on a year by year basis in its ex post review.
	Grid Australia	Requests the AER clarify applicable transition arrangements for affected businesses.
	Grid Australia	Requests the AER clearly set out how it will take into account the fact that a review period for an ex post review is not aligned with the revenue determination period and therefore not aligned with the period over which the capex allowance is provided.
	Grid Australia	Extrapolating the findings of an ex post review of a limited number of projects to exclude other project expenditure would see a penalty imposed on NSPs without clear evidence of inefficiency, and should be ruled out by the AER.
	Grid Australia	change that would capex excluded from the RAB to re-enter the RAB when it is deemed to be efficient. In the meantime, the AER should clearly set out its likely approach to making adjustments to the amount disallowed where the relevant assets are expected to be deemed to be efficient in the future.
	Proposes that NSPs and the AER could co-sponsor a rule	

		excluded from the CESS if they do not qualify for the materiality threshold for a pass-through event.
		Is concerned that it would be rewarded or penalised for changes in costs which are not within its control. For instance customer driven augmentations can arise quickly
	APA Group	or be delayed at short notice and may not have been contemplated in existing contingent projects. Considers this to be an issue for transmission businesses because of the potential for a small number of projects that represent a significant proportion of expenditure.
	CitiPower/Powercor/SA Power Networks	Broadly support our position to not allow any exclusions from the CESS.
		Maintains that NSP's should have the ability to nominate categories for exclusion on an individual basis, prior to the commencement of the CESS.
	Energex	Believes the guideline should allow for adjustments to allowances for uncontrollable costs, which would qualify for a pass-through if the NSP applied, or where a pass-through would be permitted but for the materiality threshold.
	ENA	Considers the AER should allow exclusions from the CESS for uncontrollable costs, and that the AER should allow NSPs to apply for pass-through events to be added to the AER allowance, even if it chooses not to recover such costs from end consumers.
		Believes that NSPs should be able to propose exclusions for:
		 'neutral incentive' costs such as demand management expenditure,
	Ergon	 costs incurred which may otherwise qualify for pass- throughs, but the NSP decides not to pursue it, or thy fail to pass the materiality threshold, and
		 other exclusions where a failure to do so would otherwise undermine the operation of other incentives schemes.
	Ausgrid, Endeavour Energy and Essential Energy	Considers that DNSPs should be able nominate uncontrollable cost categories as this would avoid windfall gains or losses arising from factors outside the control of the DNSP. Also believes that excluding these items would limit customers' exposure to price shocks
Forecasting limitations	Choice	The ability to address upward bias in capex forecasts is limited in the near to mid-term future. The AER still faces information barriers, a limited ability to reject NSP proposals, and reliable benchmarking data will not be available for some time. It is unrealistic to rely on improved forecasting to ensure allowances are limited to efficient costs.
	COSBOA	Concerned about the reliance on improved capex forecasting to address deferrals because of limitations in the AER's techniques at this stage. Further, improved forecasting can never solve the issue of the regulator facing asymmetric information. Requests clarification of what perverse incentives a symmetric scheme would overcome in comparison to an asymmetric scheme, and how this outweighs the perverse

		incentives that may result from NSPs facing a lower symmetric penalty.
	PIAC	Considers the AER should place greater weight on consideration of real data and methodological limitations of the current expenditure forecast assessment processes. The AER should not overly rely on the forecasting process to address upward bias in forecasts at this stage to create efficient expenditure incentives in the near to mid-term future.
	Uniting Care	Improved forecasting does not remove the need for an asymmetric CESS, particularly since the benefits of improved forecasting will not be realised for some time.
Incentive power	Canegrowers	Considers the 30:70 scheme is too generous and requires network businesses to carry too little risk for their investment decisions. Requests a 100:0 incentive power which would replicate the incentive power faced by firms operating in a competitive market.
	COSBOA	Considers the AER should reserve its right to adjust the incentive powers ex post. For example, to reduce the penalty on an NSP who can prove it has overspent efficiently. Introducing a higher penalty on overspending is unlikely to disadvantage privately owned NSPs. Competitive markets often result in an at or near 100 per cent penalty on overspending. Supports a 30 per cent reward as a suitable starting point.
	Cotton Australia	Supports the Canegrowers submission.
		The proposed 30 per cent penalty is too low to curb incentives to overspend, particularly the state-owned businesses.
	ACCI	State-owned businesses have an easier access to finance, particularly since the GFC. As such, they face a lower WACC than the regulated WACC. This weakens the penalty of overspending. The best way to overcome this would be to apply a penalty which matches the WACC differential.
		Moreover, are concerned there is no evidence or studies that have shown that the proposed 30 per cent penalty would encourage behavioural change.
	Choice	It is unclear that a penalty of 30 per cent provides a sufficiently strong counterbalance to the benefits of a larger regulated RAB, and is strong enough to change the behaviour of NSPs to encourage an efficient and commercial approach.
		Considers 30 per cent on over and underspends does not create symmetric incentives because it does not take into account the long term benefits to the NSP from RAB growth by overspending on capex. Requests the AER consider the impact of these long term benefits on the effective incentive power.
	PIAC	A 50 per cent penalty for overspending better represents a fair share of forecast risks while providing a strong incentive for efficient capex.
		Considers a 30 per cent or lower reward for underspending can also address the risk of under-investment. Having flexible rewards (and penalties) allows the AER to address over or under investment concerns dynamically and independently of one another (rather than always having a symmetric scheme).

		Requests the AER investigate the effect of difference between actual and allowed WACC on capex incentives, and recognise any effect in the CESS design.
		Requests the AER consider the incremental impact on NSPs of the CESS. Considers the incremental penalty is 15 per cent higher compared to the incentives NSPs face now. This may not be sufficient to change the behaviour of NSPs that are less responsive to financial incentives.
	Uniting Care	Accepts the power on underspends but believes a 50:50 sharing between NSPs and consumers is appropriate for efficient overspends, with inefficient overspends borne entirely by the business.
Operation of CESS under longer regulatory period	APA Group	Requests the AER clarify how the schemes would work under longer regulatory periods.
	ENA	The application of the CESS and EBSS should align when regulatory control periods are longer than five years.
Other	National Irrigators' Council	 Cheaper electricity can be achieved if: A food and fibre tariff on which producers pay no network charges is supported by the AER and introduced across the nation. The Government abolishes the carbon tax Renewable energy schemes and targets are streamlined or abolished.
	Victorian Department of State Development, Business and Innovation	The CESS rewards or penalises underspends and overspends rather than efficeincy gains and losses. As the relevant requirements of the rules require NSP's to be rewarded or penalised for efficiency gains and losses it is not clear that the proposed CESS is consistent with the relevant provisions of the NER.
Pass-throughs, contingent projects, re-openers	CitiPower/Powercor/SA Power Networks	Support the AER's position to add these components to the forecast capex amount
Related party contractor costs	Ergon	Believes NSPs should not be required to provide information on behalf of other parties.
Related party margins	ActewAGL	Strongly supports the ENA's views and recommendation to extend the two-staged approach to assessing the efficiency of related party margins to its ex post assessment under the capex incentive guideline.
	CitiPower/Powercor/SA Power Networks	Considers there is some inconsistency between the Expenditure Forecast Assessment Guideline and Incentives Guideline. In the former guideline the AER outlines it will investigate in detail any outsourcing arrangements that fail the presumption threshold, but that it will not carry out this step in the latter guideline.
	ENA	The AER should clarify that it will apply the same two stage approach to assessing related party expenditure as in the 2013–17 VIC GAAR, which it is also committed to in the expenditure assessment guideline.

		NSPs will only be able to provide information about 'contractor's actual costs' where they can reasonably assess that information given their legal relationship with the contractor.
	Ergon	Requests the AER clarify that it will apply the same two-stage approach for assessing related party expenditure under both the Expenditure Forecasting Guideline and the Incentives Guideline. There is currently a difference between how the two treat an outsourced arrangement that is not competitively tendered (and so fails the presumption threshold).
Relationship with PTRM and/or RFM	CitiPower/Powercor/SA Power Networks	The CESS reward or penalty should be included as taxable income and not included as a tax deduction in the building block. This would be to mirror how a benchmark DNSP would be taxed by the ATO.
	ENA	The capex incentives guideline should align with the RFM to ensure overspends are treated in a consistent manner. The CESS penalty should start applying at the same time as the NSP starts to earn a return on and of the assets that relate to the overspend. No return of assets should apply to the assets relating to the overspend before the start of the period.
	Ergon	Has concerns that the CESS and RFM may not be aligned. Considers the RFM should include any overspend in the RAB at the start of the next regulatory control period. This will ensure that where any CESS penalty is to apply, it will start to apply at the same time the NSP begins to earn a return on, and of the assets which are subject to the overspend, and that no return of assets will apply to the assets that relate to the overspend before the start of the next regulatory period.
Relationship with STPIS	CitiPower/Powercor/SA Power Networks	 Considers the inclusion of STPIS related expenditure in the CESS diminishes the incentives to pursue reliability improvements. Propose that either we: Exclude STPIS related expenditure from the CESS and roll this capex into the RAB using forecast depreciation, or Include STPIS related expenditure in the CESS but apply a lower sharing ratio. Rather than lock in a specific approach to address this issue, suggest we consider how this be treated on a case by case basis during the F&A stage.
	ENA	Including STPIS-related expenditure in the CESS diminishes the incentive for NSPs to pursue reliability improvements.
	Grid Australia	To preserve fair sharing of efficiency improvements, capex incurred on approved initiatives under the Network Capability Component of the STPIS for TNSPs should be excluded from the CESS. This is because this expenditure and the associated allowance is separate to the approved ex-ante allowances.
	PIAC	Requests the AER further consider the interaction of the STIPIS with capex and opex incentives, and how this influences NSP expenditure decisions.
	SP AusNet	The inclusion of STPIS related expenditure in the CESS weakens the incentive DNSPs have to invest in reliability.

		Considers there is no case that this incentive should be weakened.
	Victorian DNSPs	Considers there is no evidence that Victorian DNSPs are over investing in reliability/quality improvements, or that the current incentive rate is too high. Propose the same options as Citipower et al to address this issue.
Single CESS for all NSPs	PIAC	Supports.
	COSBOA	Considers the AER should apply stronger penalties for overspending on government owned NSPs.
Smoothing	Ausgrid, Endeavour Energy and Essential Energy	Seeks clarity of the calculation mechanism including whether the CESS reward/penalty may inadvertently result in price shocks.
Symmetry of CESS	Australian Chamber of Commerce and Industry (ACCI)	Prefers an asymmetric CESS. Believes that asymmetric incentive mechanism is likely to be more effective in curbing capex overspends than reliance on an ex post assessment.
	Choice	Prefers an asymmetric CESS. The regulatory regime as a whole means a symmetric CESS is not symmetric in practice. The CESS penalty is reduced by the long-term benefits to the NSP of increasing its RAB. Where overspends are efficient, NSPs also recover financing costs within the period further diminishing the incremental penalty of overspends. NSPs have pass-throughs, re-openers and contingent projects available to them while consumers do not. Capex forecasts are likely to be biased upwards because of information asymmetry. The level of the penalty is irrelevant to NSPs who do not overspend. Finally, ex post measures will be limited in their ability to identify inefficient capex.
	CitiPower/Powercor/SA Power Networks	Supports a symmetric CESS
	COSBOA	Prefers an asymmetric CESS. Although an asymmetric CESS has issues, considers it would complement our new assessment techniques. It is also appropriate to address the immediate nature of the overspending issue, which it considers will persist into the foreseeable future. Considers inefficient overspending is more common than efficient overspending. To the extent there are perverse outcomes the AER could recognise these on a case by case basis. Doubts that the proposed CESS is actually symmetric when taking the other parts of the regulatory regime into account. For example, pass throughs, re-openers and the setting of capex conservatively to avoid reliability risks.
	Energex	Supports the intention to apply a symmetrical CESS, in the event a CESS is to apply.
	Ethnic Communities' Council of NSW	Recommends that the penalty for overspending would be more effective if there was a penalty of 50 per cent for overspending.
	EUAA	Considers that as a whole the regulatory regime provides asymmetric incentives. A higher penalty on overspends is needed to compensate for other asymmetries in the regime. Supports a 70 per cent penalty on overspends.
	Grid Australia	Supports

	MEU	There is already a bias in the regulatory approach which means that underspending should occur more than overspending. To compensate for this bias, the CESS needs to have an asymmetric sharing approach with a greater share of overspends carried by NSPs. This reflects the reality experienced in competitive markets where firms carry all of the risk for over-runs in capex but share a proportion of under-runs with consumers through lower prices.
	Ausgrid, Endeavour Energy and Essential Energy	Supports
		Strongly prefers an asymmetric CESS considering this will deliver more efficient and prudent capex in accordance with the capex objectives. An asymmetric scheme places risks with the NSP who is best placed to manage those risks, rather than consumer, and will encourage NSPs to use other regulatory mechanisms to manage overspends (that also provides greater transparency). Further, forecasting errors will not be treated equally under a symmetric scheme as the errors are not unbiased.
	PIAC	The fact that many NSPs do have a history of overspending is not a justification for a symmetric scheme. Penalties should be aimed at inefficient NSPs as efficient NSPs are not likely to be subject to any penalties.
		The initial CESS should not be symmetric simply because it is the first time it is being introduced. The design of the scheme should respond to the overspending concerns that resulted in it being introduced.
		A symmetric scheme offers the AER little ability to respond to changing circumstances with different incentive mixes (between capex opex and the STPIS).
		Considers an asymmetric CESS is also needed to address the declining productivity of the industry, evident by the large capital investments combined with declining demand.
	SP AusNet	Welcomes the adoption of a capex incentive that is symmetrical and continuous.
	Uniting Care	Does not accept that consumers should bear the majority of the risk for capex overspending. This is because of imperfect forecasting and the ability of NSPs to access pass throughs etc. Considers the AER has not taken in to account the two- fold impacts on consumers of overspending within the period and then the ongoing impact of excessive capex being rolled into the RAB. Does not accept the argument that there is little evidence of over forecasting. Does not believe the efficiency frontier for NSPs is known and that all NSPs are operating somewhere behind the efficiency frontier.
	Victorian DNSPs	Broadly supportive
Tax impacts	CitiPower/Powercor/SA Power Networks	Considers the AER should adjust the CESS to recognise tax cost implications of an underspend or overspend so that the incentive rate is 30 per cent on a post-tax basis.
	Victorian DNSPs	Recommends that AER adjust the incentive levels under both schemes to account for the effect of tax.
Timing of changes to incentive	Ergon	To ensure certainty of process for NSPs requests the AER does not make changes to incentive schemes during the

schemes		course of a regulatory control period.
Timing of ex post review	ACCI	Notes that the first ex post review can only be conducted when the AER undertakes the determination starting on 1 July 2019. The review will be for the period 1 July 2015 to 30 July 2017. Considers the delay unacceptable.
	MEU	Considers that the AER needs to implement some processes that allow it to capture inefficient overspends earlier in the time scale so that the information is readily available when the ex post review is undertaken.

Table 30 Consumer Reference Group verbal input

Issue	AER response
There is a difficulty in obtaining information to conduct ex post reviews, particularly obtaining information over a 5 year regulatory period.	This is discussed in section 4.3.1
Ex post reviews are not likely to curb overspending because it is difficult to demonstrate that expenditure was unjustified based on the information available to a network at the time expenditure was made.	This is discussed in section 4.3.1
Ex post reviews will only be effective in cases of very clear over-spending and have not had a significant disciplining effect in the past.	This is discussed in section 4.3.1
It is appropriate to have an asymmetric incentive arrangement with higher penalties than rewards because penalties can be diluted for government-owned networks who have a lower WACC because of lower lending costs and tax payments.	This is discussed in section 2.3.2
The apparent symmetry of a 30% reward/penalty is based on an assumption that expenditure forecasts are accurate and unbiased. Forecasts are likely to be biased by informational advantage of networks and conservatism of regulator.	This is discussed in section 2.3.2
Revisions on capex and opex through pass-throughs, contingent projects, re-openers are likely to convert symmetrical arrangements into asymmetrical arrangements favouring the networks.	This is discussed in section 2.3.2
Consumers advocate for a 50-70% penalty rate.	This is discussed in section 2.3.3