Better Regulation

Explanatory Statement

Efficiency Benefit Sharing Scheme

for Electricity Network Service Providers

November 2013

Inquiries about this document should be addressed to:

Shortened forms

Shortened term	Full title
AER	Australian Energy Regulator
AEMC	Australian Energy Market Commission
capex	Capital expenditure
CESS	Capital Expenditure Sharing Scheme
COSBOA	Council of Small Business Australia
CP PC SAPN	CitiPower, Powercor and SA Power Networks
CRG	Consumer Reference Group
DNSP	Distribution Network Service Provider
EBSS	Efficiency Benefit Sharing Scheme
ENA	Energy Networks Australia
Capex incentive guidelines	Capital Expenditure Incentive Guidelines
Forecasting guidelines	Expenditure Forecast Assessment Guidelines
MEU	Major Energy Users Inc.
National Electricity Rules (NER)	The rules as defined in the National Electricity Law.
NPV	Net Present Value
NSP	Network Service Provider
opex	Operating expenditure
PIAC	Public Interest Advocacy Centre Ltd.
STPIS	Service Target Performance Incentive Scheme
TNSP	Transmission Network Service Provider

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Summary

This explanatory statement accompanies the Efficiency Benefit Sharing Scheme (EBSS) which outlines the Australian Energy Regulator's (AER) approach to incentivising electricity network service providers (NSPs) to pursue efficient operating expenditure (opex). We already have an EBSS for opex in place for NSPs.[1] We have reviewed our EBSS as part of our Better Regulation program of work, which delivers an improved regulatory framework focused on the long term interests of consumers.

The EBSS aims to provide a continuous incentive for NSPs to pursue efficiency improvements in opex and to share efficiency gains between NSPs and network users. It is intrinsically linked to our forecasting approach for opex. In our Expenditure Forecast Assessment Guidelines, we have stated our preference is to continue with the revealed cost base-step-trend forecasting approach for assessing opex.[2] If a NSP has operated under an effective incentive framework, and sought to maximise its profits, the actual opex incurred in a base year should be a good indicator of the efficient opex required. However, we must test this, and if we determine a NSP's revealed costs are not efficient, we will adjust them to remove inefficient costs. We then add additional opex not reflected in the base year ('step changes') and trend it forward to reflect forecast changes in input costs, productivity and output growth.

There are two potential incentive problems with this forecasting approach when an EBSS is not in place:

1. A NSP has an incentive to increase opex in the expected 'base year' to increase its forecast opex allowance for the following regulatory control period.

2. A NSP's incentive to make sustainable change to its practices, and reduce its recurrent opex, declines as the regulatory control period progresses. It then increases again after the base year used to forecast opex for the following regulatory control period. By deferring these ongoing efficiency gains until after the base year the NSP can retain the benefits of doing so for longer because they won't be reflected in the opex forecasts for the following period.

We address these issues by applying an EBSS in combination with a revealed cost base-step-trend forecasting approach. This provides NSPs the same reward for an underspend and the same penalty for an overspend in each year of the regulatory control period.

The EBSS works as follows:

- The regulatory regime provides for ex ante opex forecasts. The NSP keeps the benefit (or incurs the cost) of delivering actual opex lower (higher) than forecast opex in each year of a regulatory control period.

- Prior to the start of the next regulatory control period, we calculate carryover amounts for opex efficiency gains or losses made in the regulatory control period. The NSP receives a carryover amount in each year so it retains incremental efficiency gains or losses for the length of the carryover period (usually five years) after it makes the gain or loss.

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[1]   AER, *Efficiency Benefit Sharing Scheme—Distribution Network Service Providers*, June 2008; AER, *Efficiency Benefit Sharing Scheme—Transmission Network Service Providers*, September 2007.
[2]   AER, *Expenditure Forecasting Assessment Guidelines*, 29 November 2013.

- We add the carryover amounts as an additional 'building block' when setting the NSP's regulated revenue for the next regulatory control period.

- The actual opex incurred in the base year is used as the starting point for forecasting opex in the next regulatory control period.

Under this approach, any increase or decrease in opex, relative to the allowance, is shared approximately 30:70 between NSPs and consumers.

Two of the new guidelines we have produced under the Better Regulation program will influence the opex incentives facing NSPs. Specifically:

1. the Expenditure Forecast Assessment Guidelines (Forecasting Guidelines)

2. the Capital Expenditure Incentive Guidelines (Capex Incentive Guidelines).

Given these interactions, we considered it timely to also review the EBSS.

Having undertaken this review, the EBSS remains largely unchanged. The only changes that will affect how the EBSS operates are changes to the allowed adjustments and exclusions, and accounting for adjustments for one-off factors in the base year when forecasting opex. We have also clarified how we will determine the carryover period.

We have revised the criteria for adjustments and exclusions based on our experience of implementing the EBSS. The revised criteria align with the matters that the AER must take into account when designing and implementing the EBSS under the NER.[3]

Where one-off factors affect opex in the base year, the opex forecast by itself may not reflect the ongoing level of efficient opex. We have amended the EBSS to provide flexibility to account for any adjustments made to base opex to remove the impacts of one-off factors.

As previously discussed in the draft version of the Explanatory Statement, we have merged the two schemes for DNSPs and TNSPs into a single EBSS. The merging of the schemes will have no impact on the operation of the EBSS as it applies to individual DNSPs and TNSPs.

The changes discussed in this Explanatory Statement will only affect how we calculate carryover amounts for regulatory control periods after these guidelines take effect. These changes will not affect the calculation of carryovers accrued in any preceding regulatory control periods. The calculation of carryover amounts in any preceding regulatory control periods is subject to the previous EBSS for DNSPs and TNSPs as applied in a NSP's revenue determination.

This EBSS has been developed under clauses 6.5.8 and 6A.6.5 of the NER and applies to electricity DNSPs and TNSPs.

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[3]   NER, cl. 6.5.8 and 6A.6.5.

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:

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.

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

- 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 explanatory statement is the final part of our consultation on the revision of the EBSS for TNSPs and DNSPs. It follows from an issues paper on expenditure incentives guidelines released in March 2013 and a draft EBSS, with explanatory statement, released in August 2013.[4]

We have made some changes to the way the EBSS operates. This explanatory statement explains the reason for these changes.

1.1   Current arrangements

We apply incentive-based regulation to encourage NSPs to pursue efficiency improvements in the way they operate and maintain their networks.

At the start of a regulatory control period we set a NSP's revenue allowance using the building block approach. This provides the NSP with revenue to cover its efficient capital costs (in the form of depreciation and a return on investment), operating costs and tax liabilities.

If a NSP can provide the required service at a lower cost than that funded under our approved revenue allowance, it benefits by keeping the difference. In particular, it will continue to earn revenue equal to the allowance but, since its costs are lower, its profit will be greater. Conversely, if a NSP exceeds its allowance it will have to incur the costs of this.

When forecasting opex we typically start with a single year of actual opex to forecast future opex (the base year). We then make changes for factors such as forecast regulatory changes, input cost

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[4]   AER, *Issues paper: Expenditure incentives guidelines for electricity network service providers*, March 2013; AER, *Explanatory statement: Proposed Efficiency Benefit Sharing Scheme*, August 213; AER, *Proposed Efficiency Benefit Sharing Scheme*, August 213.

changes, output growth and productivity changes. This is the revealed cost base-step-trend forecasting approach.

There are two potential incentive problems with this forecasting approach when an EBSS is not in place:

1. A NSP has an incentive to increase opex in the expected 'base year' to increase its forecast opex allowance for the following regulatory control period.

2. A NSP's incentive to make sustainable change to its practices, and reduce its recurrent opex, declines as the regulatory control period progresses. It then increases again after the base year used to forecast opex for the following regulatory control period. By deferring these ongoing efficiency gains until after the base year the NSP can retain the benefits of doing so for longer because they won't be reflected in the opex forecasts for the following period.

We address these issues by applying an EBSS in combination with a revealed cost base-step-trend forecasting approach. This provides NSPs the same reward for an underspend and the same penalty for an overspend in each year of the regulatory control period.

The EBSS works as follows:

- The regulatory regime provides for ex ante opex forecasts. The NSP keeps the benefit (or incurs the cost) of delivering actual opex lower (higher) than forecast opex in each year of regulatory control period one.

- We calculate EBSS carryover amounts for opex efficiency gains or losses made in regulatory control period one prior to the start of regulatory control period two. The carryover amounts allow the NSP to retain incremental efficiency gains or losses for the length of the carryover period (usually five years) after it makes the gain or loss.

- We add the carryover amounts as an additional 'building block' when setting the NSP's regulated revenue for regulatory control period two.

- The actual opex incurred in the base year is used as the starting point for forecasting opex for regulatory control period two. This passes the efficiency gains made on to consumers.

Under this approach, the benefits of any increase or decrease in opex is shared approximately 30:70 between NSPs and consumers. Attachment A illustrates how the EBSS shares the benefits of a permanent efficiency improvement between a NSP and its consumers.

1.2   Reasons for reviewing the EBSS

We have reviewed our approach to opex forecasting through the development of the Forecasting Guideline. As outlined above, the form of the EBSS is closely related to our approach to opex forecasting. For this reason we considered a review of the EBSS was required.

We have developed the Capex Incentive Guideline. Our approach to incentivising efficient capex could affect the relative balance in incentives between opex and capex. This was another reason why we considered a review of the EBSS was necessary.

1.3   Consultation process

Our consultation process included releasing an Issues Paper, draft EBSS, holding a public forum and bilateral meetings.

We released an Issues Paper on the Expenditure Incentives Guidelines and the EBSS on 20 March 2013. We received 21 written submissions in response. We released the draft EBSS on 9 August 2013 and received 19 written submissions in response.[5] A summary of these submissions is at Attachment D.

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 bilateral meetings with stakeholders including:

- 11 April and 15 May: meeting with SP AusNet.

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

- 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.

- 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 guidelines are included in Table 1 below.

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[5]   Our draft EBSS and Issues Paper, and submissions to these, are available on our website: http://www.aer.gov.au/node/18869

Table 1   Timeline for the review of the EBSS

Date	Milestone	Description
20 March	Issues paper released	Explained issues and preliminary thoughts on approach to the EBSS. 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 guidelines.
10 May	Submission on issues paper closed	Formal responses by stakeholders to the issues paper.
9 August	Draft guidelines and explanatory statement published	Sets out AER's draft positions on the EBSS. Invites written submissions by 20 September.
August to October	Stakeholder consultation	Further discussions with stakeholders.
20 September	Submissions on draft guidelines closed	Formal responses by stakeholders to the draft EBSS.
29 November	Publish final EBSS	Publication of final EBSS.

2   Efficiency benefit sharing scheme

The EBSS aims to provide an incentive for NSPs to pursue efficiency improvements in opex and to share efficiency gains between NSPs and network users. The scheme achieves this by rewarding NSPs that make incremental efficiency gains and penalising NSPs that make incremental efficiency losses.

Clauses 6.5.8 and 6A.6.5 of the NER outline the requirements for an EBSS. In developing and implementing any EBSS the AER must have regard to:

- the need to provide NSPs with a continuous incentive to reduce opex

- the desirability of both rewarding NSPs for efficiency gains and penalising NSPs for efficiency losses

- any incentives that NSPs may have to capitalise expenditure; and

- the possible effects of the scheme on incentives for the implementation of non-network alternatives.

In addition, for DNSPs, the AER must ensure that benefits to electricity consumers likely to result from the scheme are sufficient to warrant any reward or penalty under the scheme for DNSPs.

Our Explanatory Statement to the draft EBSS noted that when we use a single year revealed cost forecasting method NSPs face strong incentives to overspend in the expected base year. The EBSS is designed to counter this incentive. Although the EBSS has only been in place a short time, there is not strong evidence to suggest spending in the base year has been high compared to other years. As we are likely to continue to use a single year revealed cost forecasting method for forecasting opex, we considered that a mechanism is required to mitigate a NSP's incentive to increase opex in the expected base year. A NSP may still have this incentive even if it expects we may adjust the base year to remove identified inefficiencies (we will test the efficiency of base year expenditure and adjust it if we find it to be inefficient). Our draft position was that the EBSS is an effective mechanism for constraining this incentive.

Having considered the submissions we received on our draft EBSS, we consider the EBSS should continue as per its previous form. This is consistent with the draft EBSS. However, there are some details of the scheme that we consider would benefit from some modifications, including:

- ex post exclusions from the EBSS

- the treatment of one-off factors in the base year

- the length of the carryover period.

We consider changes in these areas would help the EBSS better achieve the objectives under the NER. Stakeholders raised further issues in response to the draft EBSS including:

- the treatment of uncontrollable costs

- lumpy costs and the form of the EBSS

- the impact of opex base year adjustments on opex incentives

- the impact of tax on opex incentives.

We do not consider the draft EBSS requires amendment to address these further issues. We outline our consideration of all of these issues below.

2.1 Ex post exclusions from the EBSS

The draft EBSS allowed us to exclude ex post any category of opex where the exclusion of these costs would better achieve the requirements of clauses 6.5.8 and 6A.6.5 of the NER. This included specific categories of opex where a single year revealed cost approach was not used to forecast opex in the following regulatory control period. It also allowed the exclusion of any costs incurred in period one to be excluded from the scheme if those costs were for services that would not be standard control services in period two.

NSPs submitted that the inclusion of such a broad discretion in the EBSS would adversely impact the incentives provided by the scheme. We have reconsidered the scope of the discretion in the EBSS for us to exclude certain cost categories ex post.

2.1.1 Approach

We have amended the draft EBSS to limit the discretion to exclude categories of opex from the EBSS ex post. This discretion is now limited to those categories of opex not forecast using a single year revealed cost approach in the following period. We will exclude such cost categories if doing so better achieves the requirements of clauses 6.5.8 and 6A.6.5 of the NER.

2.1.2 Reasons for approach

NSPs may not forecast opex using a single year revealed cost forecasting method. This could be at an overall level or category level. For example, a NSP may use a bottom up forecasting approach or use industry benchmarks.[6] NSPs may have a number of reasons to propose alternative forecasting approaches. However, the EBSS may not share efficiency gains 30:70 between NSPs and consumers when a single year revealed cost approach is not used to forecast opex. If such an approach is not used, a different sharing ratio may result. There is a risk the EBSS may provide windfall gains or losses to a NSP.

To address this, the draft EBSS proposed we be allowed to exclude ex post any category of opex where doing so would better achieve the requirements of the NER. Excluding a cost category from the EBSS will provide the same incentive to reduce those costs in that category as if no scheme is in place. When no scheme is in place the sharing of efficiency gains depends on how subsequent opex allowances will be set.[7] If they are set using an exogenous approach the NSP retains 100 per cent of efficiency gains since its actual expenditure does not influence subsequent opex allowances.

The draft EBSS cited two specific examples where we might exclude a cost category to better achieve the requirements of the NER:

1. where we do not use a single year revealed cost approach to forecast opex in the following period

2. any costs for services that will not be standard control services in the following period.

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6   An example of a bottom up forecasting approach is to forecast the volume of all tasks to be undertaken in the forecast period and multiplying this by a forecast unit rate for each task.
7   If forecast opex is set using a single year revealed cost approach the incentive to reduce recurrent opex declines as the regulatory control period progresses. It then increases again after the base year used to forecast opex for the following regulatory control period. NSPs retain 100 per cent of non-recurrent efficiency gains in years other than the base year. In the base year NSPs have an incentive to increase opex since this will increase their allowance for the following regulatory control period.

Because this provision in the EBSS is potentially quite broad, NSPs raised concerns with the proposed approach. SP AusNet stated the proposed discretion would weaken the operation of the incentive by introducing uncertainty over what the scale of benefits or penalties will be for expenditure decisions.[8] APA and Grid Australia considered detail on adjustments and exclusions should be established ex ante in a NSP's revenue determination.[9]

CitiPower, Powercor and SA Power Networks sought greater certainty that we will only exclude cost categories ex post in a limited and appropriate manner.[10] Similarly the Victorian DNSPs considered our discretion to make ex post exclusions and adjustments should be limited.[11]

We have reconsidered whether it is necessary to have a broad discretion to make ex post exclusions and adjustments under the scheme. Previous versions of the EBSS developed and published by the AER did not provide this discretion.

On further consideration we consider it desirable to limit the discretion to make ex post exclusions to where the opex forecast accepted or substituted by the AER for the following regulatory control period is not set using a single year revealed cost forecasting approach. We could use this discretion where a NSP significantly underspends in the base year and then forecasts opex for the next period using a method other than a single year revealed cost approach. This could be at the total opex level or at a category level. The EBSS will reward the NSP as if the efficiency gains were ongoing. However, the opex forecast could treat the efficiency gain as non-recurrent. In this scenario the NSP could retain more than 100 per cent of the non-recurrent efficiency gain. For this reason, we should exclude the expenditure categories not forecast using a single year revealed cost forecasting method from the EBSS to prevent network users being worse off from a non-recurrent efficiency gain (see Box 2.1).

The requirement for the EBSS to provide for a fair sharing of efficiency gains and losses between NSPs and their network users will be fundamental to our consideration of whether to exclude particular costs from the EBSS.

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[8]   SP AusNet, *Draft Capital Expenditure Incentive Guidelines and Proposed Efficiency Benefit Sharing Scheme*, 20 September 2013, pp. 1–2.

[9]   APA Group, *AER Draft Expenditure Incentives Guidelines and Explanatory Statements*, 20 September 2013, p. 4; Grid Australia, *Proposed Efficiency Benefit Sharing Scheme*, 20 September 2013, p. 3.

[10]   CitiPower, Powercor Australia and SA Power Networks, *Response to the draft Capital Expenditure Incentives Guidelines and proposed Efficiency Benefit Sharing Scheme*, 20 September 2013, pp. 10–11.

[11]   Victorian DNSPs, *Draft Capital Expenditure Incentives Guidelines and Proposed EBSS, 20 September 2013*, pp. 5–6.

Box 2.1   Exclusion of costs not forecast using a single year revealed cost approach

> Take the example of a NSP with an opex allowance of 100 dollars for each year of a five year regulatory control period. It is able to reduce its opex to 90 dollars for years three and four. For simplicity assume there is no output, real price or productivity growth. It proposes opex of 100 dollars for each year of the next regulatory control period, based on a bottom-up forecast, because this is reflective of its efficient recurrent costs.
>
> Under the EBSS the NSP registers an incremental efficiency gain of 10 dollars in year three. The scheme assumes an incremental efficiency gain of zero in year five. Thus the NSP would receive a 10 dollar carryover payment in each of the first three years of the next regulatory control period. Using the bottom-up forecast, total opex revenue would be 500 dollars plus 30 dollars in EBSS carryovers. Thus the NSP would retain more than 100 per cent of the non-recurrent efficiency gain. That is, it would retain the 20 dollar underspend (100 per cent of the efficiency gain) at the time of the gain plus 30 dollars in carryover payments.
>
> However, if the costs forecast on a bottom-up basis were excluded from the EBSS it would not receive a carryover payment in the next period. Thus total opex revenue would be 500 dollars for the next regulatory control period and it would retain 100 per cent of the non-recurrent efficiency gain.

We have also reconsidered whether it is necessary to exclude cost categories for services that will not be standard control services in the following period. For example, if a NSP expects a service will be unregulated in the next period, it has an incentive to reduce the costs relating to this service at the end of the regulatory control period. This would maximise the carryover payments it receives in the next period but, since the service will no longer be regulated, it would not impact its revenue. In this way it could retain more the 100 per cent of a non-recurrent efficiency gain.

The Victorian DNSPs noted two reasons why they did not consider it necessary to exclude these costs:

1. A DNSP cannot readily anticipate a service would become unregulated in the next period.

2. A service is only likely to become unregulated if it is subject to some form of competitive constraint. A DNSP is therefore unlikely to be in a position to be able to raise prices once it becomes unregulated.[12]

Costs that will not be standard control services in the following period are unlikely be forecast using a single year revealed cost forecasting approach. Consistent with other categories of opex not forecast using a single year revealed cost approach in the following period, we will exclude these costs if doing so better achieves the requirements of clauses 6.5.8 and 6A.6.5 of the NER.

2.2   One-off factors in the base year

Where there are non-recurrent efficiency gains in the base year used to set the opex forecast, the opex forecast may not reflect the ongoing level of efficient opex by itself. However, the non-recurrent efficiency gains will lead to a positive EBSS carryover that will, in effect, compensate the NSP for the

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12   Victorian DNSP, *Draft Capital Expenditure Incentives Guidelines and Proposed EBSS, 20 September 2013,* p. 5.

lower forecast. We have previously considered the revealed cost opex forecast, in combination with the EBSS carryover, will give NSPs their efficient opex requirement plus their share of efficiency gains or losses.

NSPs raised concerns that comparing their subsequent expenditure with their opex allowance could make them appear inefficient.

2.2.1 Approach

We consider there should be flexibility in the EBSS to enable revenue to be shifted from the EBSS carryover to the opex allowance to account for non-recurrent efficiency gains in the base year.

As a result, we have amended the EBSS to account for any adjustments made to base opex to remove the impacts of one-off factors.

This is given effect through an amendment to the equation we will use to calculate the incremental efficiency gain in the final year:

$$I_{f,n} = \left(F_{f,n} - A_{f,n}^*\right) - \left(F_{f-1,n} - A_{f-1,n}\right)$$

Where:

$I_{f,n}$ is the marginal efficiency gain in the final year of period n

$F_{f,n}$ is forecast opex (subject to adjustments) in the final year of period n

$A_{f,n}^*$ is estimated actual opex in the final year of period n

$F_{f-1,n}$ is forecast opex (subject to adjustments) in the penultimate year of period n

$A_{f-1,n}$ is actual opex (subject to adjustments) in the penultimate year of period n.

The estimated actual opex for the final regulatory year will be calculated as:

$$A_{f,n}^* = F_{f,n} - \left(F_{b,n} - A_{b,n}\right) + non\text{-}recurrent\ efficiency\ gain_{b,n}$$

Where:

b is the year of actual opex in period n used as the basis to set forecast opex for period $n + 1$

$non\text{-}recurrent\ efficiency\ gain_{b,n}$ is the adjustment made to base year opex used to forecast opex for period $n + 1$ to account for opex associated with one-off factors.

This also requires the following amendment to the calculation of the incremental efficiency gain for the first year of the following period:

$$I_{1,n} = \left(F_{1,n} - A_{1,n}\right) - \left[\left(F_{f,n-1} - A_{f,n-1}\right) - \left(F_{b,n-1} - A_{b,n-1}\right)\right] - non\text{-}recurrent\ efficiency\ gain_{b,n-1}$$

2.2.2 Reasons for approach

We have adopted this approach as a relatively simple and transparent method of taking account of efficiency gains occurring in the base year that will not persist into the future. It will minimise the

rewards (penalties) for efficiency gains (losses) being carried forward by the opex forecast rather than the EBSS carryover payments.

Incenta Economic Consulting commented that, when testing the efficiency of a NSP's base year opex, it is important to ensure one-off factors do not impact the expenditure in the base year (and that adjustments are made if such one-off factors exist).[13] If base year expenditure is significantly lower than ongoing efficient opex, due to a one-off factor, then the opex forecast for the next period would be artificially low. In this case a NSP would be sufficiently compensated through the EBSS carryover, but the 'optics' could be misleading. That is, a NSP's actual expenditure could appear high compared against its regulatory allowance (not factoring in the EBSS carryover).

We note that there are alternative approaches to dealing with the issue of one-off factors in the base year. The forecasting approach in the Expenditure Assessment Forecast Guideline allows some discretion in choosing the base year. Where the base year is not reflective of ongoing costs we can choose another, more reflective base year, if one is available. In the event one-off factors do impact expenditure in the proposed base year, this would be our preferred approach.[14]

However, in the event a reflective base year is not available, we will adjust the base year to remove the impact of the one-off factor.[15] We will make the commensurate adjustment to the EBSS carryover amounts by calculating the incremental gain in the final year in accordance with the final year equation above. This would provide a similar revenue outcome to that which would be achieved if the actual base year (with the one-off factor) was used to set the opex forecast in combination with the unadjusted EBSS carryover amounts. This is highlighted in Box 2.2.

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[13]   Incenta Economic Consulting, *Advice on certain issues in relation to the Draft Expenditure Forecast Assessment and Efficiency Benefit Sharing Scheme Guidelines*, 20 September 2013, p. 13.

[14]   AER, *Expenditure Forecast Assessment Guideline for Electricity Distribution*, November 2013, pp. 22–23; AER, *Expenditure Forecast Assessment Guideline for Electricity Transmission*, November 2013, pp. 22–23.

[15]   AER, *Expenditure Forecast Assessment Guideline for Electricity Distribution*, November 2013, pp. 22–23; AER, *Expenditure Forecast Assessment Guideline for Electricity Transmission*, November 2013, pp. 22–23.

Box 2.2   Revenue impact of a base year one-off factor adjustment

Take the example of a NSP with an opex allowance of 100 dollars for each year of a five year regulatory control period. Its actual opex is as forecast in every year except the fourth year, when it spends 90 dollars due to a one-off factor. For simplicity assume there is no output, real price or productivity growth.

If we use the fourth year as the base year to forecast opex for the next regulatory control period, the forecast would be 90 dollars for each year of the next regulatory control period. Under the EBSS the NSP registers an incremental efficiency gain of 10 dollars in year four. The EBSS assumes the final or fifth year underspend is equal to the base year underspend. As a result, it registers no incremental gain/loss in year five. Thus the NSP would receive a 10 dollar carryover payment in the first four years of the next regulatory control period. Total opex revenue would be 450 dollars plus 40 dollars in EBSS carryovers.

However, say the one-off factor is identified and base opex is adjusted accordingly. Forecast opex would be 100 dollars for each year of the next regulatory control period. The EBSS registers an incremental efficiency gain of 10 dollars in year four. However, as with the adjustment to the base opex, we would also subtract the one-off factor adjustment from the year five incremental gain, which is now an incremental loss of 10 dollars. When the incremental gains/losses are carried forward the NSPs receives a single 10 dollar EBSS penalty in the final year of the next regulatory control period. Thus total opex revenue would be 500 dollars minus 10 dollars in EBSS carryovers. Total revenue is 490 dollars in both scenarios.

2.3   The length of the carryover period

The share of efficiency gains the NSP retains is determined by the length of the carryover period. A five year carryover period allows the NSP to retain approximately 30 per cent of efficiency gains. The remaining 70 per cent is retained by network users.

Some NSPs stated it was not clear how the draft EBSS would operate with regulatory periods other than five years. They stated that, for regulatory periods longer than five years, the carryover period should match the duration of the regulatory control period.[16]

2.3.1   Approach

The length of the carryover period will generally be five years, consistent with the length of most regulatory control periods under the NER.

We have amended the draft EBSS to allow greater flexibility in the length of the carryover period, where the regulatory control period is not five years. In these cases, the carryover period length will be determined at the final determination prior to the commencement of the regulatory control period. In determining the carryover period length we will have regard to matters we are required to under the NEL and the NER including, but not limited to:

▪   the length of the regulatory control period, which will influence the continuity of the incentive

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16   Ergon Energy, *Draft Revised Efficiency Benefit Sharing Scheme*, 20 September 2013, pp. 1–2; Grid Australia, *Proposed Efficiency Benefit Sharing Scheme*, 20 September 2013, p. 3; SP AusNet, *Draft Capital Expenditure Incentive Guidelines and Proposed Efficiency Benefit Sharing Scheme*, 20 September 2013, p. 2.

- the balance of incentives provided by the EBSS, CESS and STPIS, which will influence the promotion of economic efficiency.

2.3.2 Reasons for approach

Some NSPs stated it was not clear how the draft EBSS would operate with regulatory periods other than five years. They stated for regulatory periods longer than five years the carryover period should match the duration of the regulatory control period.[17] Although not explicitly stated, the draft EBSS did match the length of the carryover period with the length of the regulatory control period. This was implicit in the equation for calculating carryover amounts.

We recognise, however, that it may not always be appropriate to match the length of the carryover period with the length of the regulatory control period. SP AusNet stated NSPs should retain opex efficiencies for at least the six years that would occur under the 'default' scheme (that is, the year of the gain plus five years carryover).[18] We agree it may be inappropriate to have a carryover length less than five years (if the regulatory control period was shorter) since this may lead to the EBSS and CESS being out of balance. If the EBSS and CESS are not balanced then NSPs may have an incentive to make inefficient expenditure decisions.

We consider there should be flexibility in the EBSS to set the length of the carryover period, where the regulatory control period is not five years. This is similar to the approach under the previous EBSSs for DNSPs and TNSPs which set a carryover period of five years except where we approve a longer regulatory control period. To provide guidance to NSPs on how we will determine the length of the carryover period we have added a set of criteria to guide this decision.

Clauses 6.5.8 and 6A.6.5 of the NER set out the matters we must have regard to when implementing the EBSS. Two of these are of particular relevance when considering the length of the carryover period:

1. the need to provide NSPs with a continuous incentive to reduce opex[19]

2. any incentives that NSPs may have to capitalise expenditure.[20]

The incentive to reduce opex will not be continuous if the length of the carryover period is less than the length of the regulatory control period. This is because NSPs would be able to retain recurrent efficiency gains for longer if the gain is made at the start of the regulatory control period than at the end.

The incentives that NSPs may have to capitalise expenditure are also important. If they are not balanced then NSPs may have an incentive to substitute opex with capex even if it is not efficient to do so. Ideally NSPs should be indifferent between spending a dollar of opex instead of a dollar of capex. This is consistent with the revenue and pricing principles, which require that NSPs should be provided with effective incentives to promote economic efficiency.[21] For similar reasons it is also important the opex incentive balances the incentive to improve reliability provided by the STPIS.

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[17] Ergon Energy, *Draft Revised Efficiency Benefit Sharing Scheme*, 20 September 2013, pp. 1–2; Grid Australia, *Proposed Efficiency Benefit Sharing Scheme*, 20 September 2013, p. 3; SP AusNet, *Draft Capital Expenditure Incentive Guidelines and Proposed Efficiency Benefit Sharing Scheme*, 20 September 2013, p. 2.
[18] SP AusNet, *Draft Capital Expenditure Incentive Guidelines and Proposed Efficiency Benefit Sharing Scheme*, 20 September 2013, p. 2.
[19] NER, clauses 6.5.8(c)(2) and 6A.6.5(b)(1).
[20] NER, clauses 6.5.8(c)(4) and 6A.6.5(b)(3).
[21] NEL, clause 7A(3).

2.4   Treatment of uncontrollable costs

In our draft EBSS, we considered there was no strong reason why we should exclude nominated 'uncontrollable' cost categories from the EBSS. By including such costs in the EBSS, uncontrollable cost decreases or increases are shared between NSPs and consumers in the same way as any efficiency gain or loss (that is, approximately 30:70 with a five year carryover period). If we excluded such costs, uncontrollable cost increases would be shared in the same way as an efficiency loss would be without an EBSS. Without an EBSS, NSPs' share of cost increases differs across the regulatory control period. We saw no reason why uncontrollable cost increases should be shared differently between NSPs and consumers in different regulatory years.

2.4.1   Approach

Consistent with the draft EBSS, we will not exclude costs from the EBSS on the grounds of uncontrollability. The reasons for this approach are detailed below.

2.4.2   Reasons for approach

User groups were generally supportive of the inclusion of uncontrollable costs in the EBSS.[22] The MEU considered there should be minimal adjustment made to the opex allowances and actuals when operating the EBSS. It considered adjustments should only be made to maintain equivalence between forecast and actual opex.[23] PIAC agreed there was no reason why forecasting risk associated with uncontrollable opex or growth should be shared differently than the forecasting risk associated with controllable opex.[24] NSPs, however, did not support the inclusion of uncontrollable costs in the EBSS.[25]

We acknowledge the EBSS will reward or penalise NSPs for some forecasting error associated with uncontrollable events. However, on the whole, the risk of uncontrollable events presents both upside and downside risk to NSPs. Relevantly, any material risks can be managed through pass-through events and contingent projects. We do not think there is a compelling argument to share the cost of uncontrollable events differently to all other costs facing NSPs.

While some events may be uncontrollable, NSPs usually have some control over the costs associated with such events. Allowing exclusions would reduce the incentive to respond to such events efficiently. In line with this, COSBOA supported including all opex items in the EBSS on the basis that excluding them would blunt any incentive for NSPs to ensure these costs are efficient.[26]

The ENA stated NSPs should be able to apply for pass through events to be added to the allowance for the purpose of calculating carryover amounts. It considered a NSP should be able to do this even

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22   Public Interest Advocacy Centre, *Having the desired effect: submission to the AER's Draft Expenditure Incentive Guideline*, 20 September 2013, pp. 30–31.

23   Major Energy Users, *Proposed Guidelines for Incentives for Opex and Capex: MEU Comments on the draft guidelines*, September 2013, p. 14.

24   Public Interest Advocacy Centre, *Having the desired effect: submission to the AER's Draft Expenditure Incentive Guideline*, 20 September 2013, p. 30.

25   APA Group, *AER Draft Expenditure Incentives Guidelines and Explanatory Statements*, 20 September 2013, pp. 2–3; Energy Networks Association, *AER 'Better Regulation': Capital Expenditure Incentive Guidelines and Efficiency Benefit Sharing Scheme: Submission on Draft Guidelines and associated Explanatory Statements*, 20 September 2013, p. 4; Energex, *Energex response to AER's Draft Capital Expenditure Incentive Guideline and proposed Efficiency Benefit Sharing Scheme for Electricity Distributors*, 20 September 2013, pp. 1–2; Networks NSW, *Response to draft capex incentives guidelines and proposed changes to the EBSS*, 20 September 2013, pp. 2–3.

26   Council of Small Business Australia, *Comments on AER Draft Capital Expenditure Incentive & EBSS Guidelines, September 2013*, p. 9.

if it chooses not to recover the pass through costs from network users.[27] We note the EBSS and pass through arrangements allow this. NSPs are not obligated to pass on the costs of approved pass though events. Whether the NSP wishes to pass on the additional costs of the event to its consumers is a business decision for the NSP.

Energex also stated the EBSS should allow for the exclusion of uncontrollable costs that would qualify for a pass through event but for the materiality threshold.[28] As above, we see no compelling argument to share forecasting error associated with uncontrollable events differently to all other costs facing NSPs. Further, NSPs nominating costs to be excluded from the scheme on an ex post basis would risk biased outcomes. NSPs would have no incentive to nominate the costs from uncontrollable events to be excluded where doing so would reduce their EBSS carryover. We note the nature of the uncontrollable event will determine whether the EBSS impact is positive or negative. For example, recurrent cost increases will result in a lower EBSS carryover but a one-off cost increase will result in a higher EBSS carryover (see Box 2.3 and Box 2.4). Thus NSPs would only have an incentive to identify uncontrollable events that increase their recurrent costs.

Box 2.3   Impacts of a recurrent uncontrollable event

> Take the example of a NSP with an opex allowance of 100 dollars for each year of a five year regulatory control period. An uncontrollable event occurs in year 3 that increases its actual opex to 110 dollars from that year on. For simplicity assume there is no output, real price or productivity growth.
>
> If we use the fourth year as the base year to forecast opex for the next regulatory control period, the forecast would be 110 dollars for each year of the next regulatory control period. If the costs associated with the uncontrollable event are included in the EBSS the NSP registers an incremental efficiency loss of 10 dollars in year three. Thus the NSP would pay a 10 dollar carryover penalty in the first three years of the next regulatory control period. Total opex revenue would be 550 dollars minus 30 dollars in EBSS carryovers. In NPV terms the NSP would bear approximately 30 per cent of the cost of the uncontrollable event in perpetuity.
>
> If the costs associated with the uncontrollable event are not included in the EBSS the NSP would not register an incremental efficiency gain or loss in any year. The NSP would only bear the costs of the uncontrollable event until the end of the regulatory control period. For an uncontrollable event that occurs in year 3 this equates to about 16 per cent of the cost of uncontrollable event in perpetuity. Total opex revenue would be 550 dollars with no EBSS carryovers. Consequently the NSP would be better off if the costs of the recurrent uncontrollable event were excluded from the EBSS.

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[27]   Energy Networks Association, *AER 'Better Regulation': Capital Expenditure Incentive Guidelines and Efficiency Benefit Sharing Scheme: Submission on Draft Guidelines and associated Explanatory Statements*, 20 September 2013, pp. 4–5.
[28]   Energex, *Energex response to AER's Draft Capital Expenditure Incentive Guideline and proposed Efficiency Benefit Sharing Scheme for Electricity Distributors*, 20 September 2013, pp. 1–2.

Box 2.4   Impacts of a non-recurrent uncontrollable event

Take the example of a NSP with an opex allowance of 100 dollars for each year of a five year regulatory control period. An uncontrollable event occurs in year 3 that increases its actual opex to 110 dollars for that year only. For simplicity assume there is no output, real price or productivity growth.

If we use the fourth year as the base year to forecast opex for the next regulatory control period, the forecast would be 100 dollars for each year of the next regulatory control period. If the costs associated with the uncontrollable event are included in the EBSS the NSP registers an incremental efficiency loss of 10 dollars in year three. It then registers an incremental gain of 10 dollars in the following year as its opex returns to the recurrent level. These cancel each other out until six years later. Thus the NSP receives a single 10 dollar EBSS reward in year 4 of the following regulatory control period. Total opex revenue would be 500 dollars plus 10 dollars in EBSS carryovers. In NPV terms the NSP would bear approximately 30 per cent of the cost of the uncontrollable event. It pays 100 per cent of the costs of the uncontrollable event when it occurs and then receives the money back six years later.

If the costs associated with the uncontrollable event are excluded from the EBSS the NSP would not register an incremental efficiency gain or loss in any year. The NSP would bear 100 per cent of the costs of the uncontrollable event. Total opex revenue would be 500 dollars with no EBSS carryovers. Consequently the NSP would be better off if the costs of the non-recurrent uncontrollable event were included in the EBSS.

2.5   Lumpy expenditure forecasts and the EBSS

Grid Australia (based on advice from Incenta Economic Consulting) proposed opex categories not well suited to the revealed cost forecasting technique should be subject to a different forecasting approach and a different EBSS (possibly similar to the CESS).[29] This is a greater issue for TNSPs since the asset works and refurbishment opex category (which are similar in nature to capex) are often not forecast using a revealed cost approach. Rather than excluding these costs, Grid Australia considered a different form of the EBSS should apply to them.

2.5.1   Approach

We do not consider a different form of the EBSS is required for cost categories that are not forecast using a single year revealed cost forecasting approach. The reasons for this position are detailed below.

2.5.2   Reasons for approach

We have further considered the interactions between the forecasting approach and the form of the EBSS. We consider the increased complexity of multiple scheme forms is unnecessary for two reasons.

First, using a single year revealed cost forecasting approach for overall opex provides a robust forecast consistent with the opex criteria, such that few categories would need exclusion from the

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[29]   Grid Australia, *Proposed Efficiency Benefit Sharing Scheme*, 20 September 2013, p. 5.

EBSS. We agree with Incenta Economic Consulting that caution is required where there are significant lumpy costs. However, the question is not whether individual cost categories are lumpy but whether total opex is lumpy. Forecasting some categories bottom up, for example, but others using revealed cost risks upwardly biased forecasts. NSPs would have an incentive to only use an alternative forecasting approach for those lumpy cost categories where expenditure is atypically low in the base year. For categories where expenditure is higher than usual in the base year they have an incentive to forecast using revealed costs. Further, NSPs will have a greater incentive to only propose deviating from revealed costs for those cost categories where volumes are forecast to increase but not for those categories where volumes are forecast to decrease. Consequently there is a risk that a 'hybrid' forecasting approach will give upwardly biased total opex forecasts. If total opex is not materially lumpy then a revealed cost forecast is appropriate regardless of whether individual categories are lumpy or not.

Second, the extra complexity is unnecessary since it is possible to make the current, incremental, form of the EBSS work with bottom up forecasts. This is because it is possible to use bottom up forecasts as part of a single year revealed cost forecast. In this context, a revealed cost forecast simply means taking actual expenditure in the base year, and then adding the incremental change in forecast expenditure over the forecast period. A bottom up forecast could be used to forecast this incremental change. The key is that a revealed cost forecasting approach is adopted and the bottom up forecast is used to set the incremental change in opex rather than the absolute amount.

2.6 Impacts of opex base year adjustments on opex incentives

Energex and Grid Australia stated that adjusting base opex due to evidence of material inefficiency impacts the sharing ratio. The NSP could incur a penalty greater than 100 per cent of the deemed inefficiency. NSPs considered a share greater than 100 per cent would not be a fair share nor would it allow a NSP an opportunity to recover at least its efficient costs.[30] Incenta Economic Consulting suggested reducing the penalty to no more than 100 per cent by adjusting either the EBSS, or by applying a correction to the base year adjustment.

2.6.1 Approach

We do not consider the draft EBSS requires amendment to address this issue. In the unlikely event a NSP's revealed costs have no bearing on its opex allowance for a subsequent period we will consider not applying the EBSS reward (penalty) accrued in the first period to ensure the NSP does not retain more than 100 per cent of the efficiency gain (loss).

2.6.2 Reasons for approach

A NSP's expectations about how its opex forecast will be determined in period two is a significant driver of the incentive it faces to make efficiency gains in period one. Where we use the actual expenditure under a single year revealed cost forecast approach to set opex and apply the EBSS the incentive power is approximately 30 per cent. That is, a NSP retains 30 per cent of any efficiency gain/loss. We demonstrate this in Attachment A.

If a NSP expects its actual expenditure in period one will have no bearing on its opex allowance in period two it will have a strong incentive to make efficiency gains in period one. It will retain

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[30] Energex, *Energex response to AER's Draft Capital Expenditure Incentive Guideline and proposed Efficiency Benefit Sharing Scheme for Electricity Distributors*, 20 September 2013, p. 2; Grid Australia, *Proposed Efficiency Benefit Sharing Scheme*, 20 September 2013, pp. 5–6; Incenta Economic Consulting, *Advice on certain issues in relation to the Draft Expenditure Forecast Assessment and Efficiency Benefit Sharing Scheme Guidelines*, 20 September 2013, pp. 15–21.

100 per cent of any efficiency gains or losses it makes in period one without the EBSS in place. If the EBSS is in place its share could be greater than 100 per cent since it will also receive a reward (penalty) for efficiency gains (losses). This could occur if a NSP does not respond to financial incentive. We demonstrate this in Attachment B.

However, in practice we do not expect NSPs will incur more than 100 per cent of any efficiency loss. Our preferred approach to assessing opex is to use a single year revealed cost forecasting method.[31] Although we will adjust base opex where we find it to be inefficient it is unlikely a NSP's actual expenditure will have no influence on its allowance for the following period. We will not substitute an opex forecast with a benchmark amount without also considering the historic expenditure of the NSP and all the other opex factors under the NER. The more weighting given to the revealed cost the closer the NSP's share will be to 30 per cent. We demonstrate this in Attachment C where equal weighting is given to the revealed cost and the benchmark cost.

We also note the EBSS allows us to exclude categories of opex not forecast using a single year revealed cost approach for the following regulatory control period where doing so better achieves the requirements of clauses 6.5.8 and 6A.6.5 of the NER. In the event we find a NSP to be inefficient and we adjust its base year expenditure we will likely still consider this a single year revealed cost forecast. In this case the opex will be subject to the EBSS. However, if we only use an exogenous forecasting approach to forecast opex, such as a benchmark amount, we will consider whether or not applying the opex carryover (that is, excluding all opex categories from the EBSS) will better meet the requirements of the NER. This will limit the share of efficiency losses/gains incurred by the NSP to 100 per cent.

Irrespective of the incentive power, NSPs will always have an opportunity to recover at least their efficient costs if the opex forecast meets the opex criteria. If the NSP reduces its opex to the annual opex allowance before the end of the forecast period it will accrue an EBSS reward. Therefore, if a NSP reaches its efficient opex allowance, it always has an opportunity to recover its efficient costs unless we substitute an opex allowance that does not meet the opex criteria.

2.7 The impact of tax on opex incentives

CitiPower, Powercor and SA Power Networks and the Victorian DNSPs noted the incentives provided by the EBSS are generally stated on a pre-tax basis, but the actual reward is reduced by the impact of tax. This reduces the share of efficiency gains retained by NSPs from approximately 30 per cent to around 23 per cent.[32]

2.7.1 Approach

We do not consider the draft EBSS requires amendment to address this issue. We are satisfied the share of efficiency gains (losses) the EBSS allows NSPs to retain is appropriate such that there is not a strong rationale to amend the EBSS to a post-tax scheme.

2.7.2 Reasons for approach

CitiPower, Powercor and SA Power Networks and the Victorian DNSPs considered we should adjust the EBSS to recognise the tax implications of EBSS rewards and penalties. They submitted analysis

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[31] AER, *Expenditure Forecast Assessment Guideline for Electricity Distribution*, November 2013, pp. 22–23; AER, *Expenditure Forecast Assessment Guideline for Electricity Transmission*, November 2013, pp. 22–23.

[32] CitiPower, Powercor Australia and SA Power Networks, *Response to the draft Capital Expenditure Incentives Guidelines and proposed Efficiency Benefit Sharing Scheme*, 20 September 2013, pp. 11–12; Victorian DNSPs, *Draft Capital Expenditure Incentives Guidelines and Proposed EBSS*, 20 September 2013, p. 6.

demonstrating underspending opex, and thus improving their profitability, increases their likely taxation obligations. They considered we should adjust the EBSS for the impact of tax incurred during the regulatory control period, as well as the tax incurred by the DNSP on the carryover received in the subsequent regulatory control period.[33]

We consider there is not a strong rationale to amend the EBSS to a post-tax scheme. When a NSP underspends opex, with or without an EBSS, it is not funded for the additional tax incurred resulting from the additional profit. We see no reason why EBSS carryovers, which allow the NSP to keep those underspends for longer, should be treated any differently. Further, all our incentive schemes reward NSP's on a pre-tax basis. We see no reason to increase the complexity of the EBSS to simply increase the share of efficiency gains retained by NSPs. The scheme, as it is, increases the share of efficiency gains NSPs will retain for improving opex efficiency.

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[33]   CitiPower, Powercor Australia and SA Power Networks, *Response to the draft Capital Expenditure Incentives Guidelines and proposed Efficiency Benefit Sharing Scheme*, 20 September 2013, pp. 11–12; Victorian DNSPs, *Draft Capital Expenditure Incentives Guidelines and Proposed EBSS*, 20 September 2013, p. 6.

A   How the EBSS works with a revealed cost forecasting approach

Assume a NSP's forecast opex is $100 million each year in the first regulatory period. During this period the NSP delivers opex equal to the forecast for the first three years. Then, in the fourth year, it implements a more efficient maintenance approach. As a result, it is able to deliver opex at $95 million each year for the foreseeable future (for simplicity we are assuming no changes to scale, real prices or productivity).

This efficiency improvement affects regulated revenues in two ways:

1. Through the opex allowance: under a revealed cost forecasting approach we use the penultimate year of the regulatory period to forecast opex in the second regulatory period. For simplicity we'll assume there are no forecast incremental changes (for example due to increased scale or real price changes). The new forecast will be $95 million each year. This assumes the efficiency gain made in the base year is recurrent.

2. Through EBSS carryover amounts: the NSP receives additional carryover amounts so it receives exactly six years of benefits from an efficiency improvement (the year of the gain plus five years). Because the NSP has made an efficiency improvement of $5 million in year 4 it will receive annual EBSS carryover amounts of $5 million in the first four years (years 6 to 9) of the second regulatory period. It automatically retains the $5 million incremental gain in year 5 because the year 5 opex allowance is an ex ante allowance.

As result of these effects, the NSP will benefit from the efficiency improvement in years 4 to 9. This is because the annual amount the NSP receives through the forecast opex and EBSS building blocks combined ($100 million) is more than its opex ($95 million) in each of these years.

Consumers benefit from year 10 onwards after the EBSS carryover period has expired. This is because what consumers pay through the forecast opex and EBSS building blocks ($95 million) is lower from year 10 onwards.

Figure A.1 provides a more detailed illustration of how the benefits are shared between NSPs and consumers over time.

Figure A.1   Example of how the EBSS operates

	Regulatory period 1					Regulatory period 2					Future
Year	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	
Forecast (F_t)	100	100	100	100	100	95	95	95	95	95	95 p.a.
Actual (A_t)	100	100	100	95	95	95	95	95	95	95	95 p.a.
Underspend ($F_t - A_t = U_t$)	0	0	0	5	5	0	0	0	0	0	0 p.a.
Incremental efficiency gain ($I_t = U_t - U_{t-1}$)	0	0	0	5	0	0*	0	0	0	0	0 p.a.
Carryover (I_1)		0	0	0	0	0					
Carryover (I_2)			0	0	0	0	0				
Carryover (I_3)				0	0	0	0	0			
Carryover (I_4)					5	5	5	5	5		
Carryover (I_5)						0	0	0	0	0	
Carryover amount (C_t)						5	5	5	5	0	0 p.a.
Benefits to NSP ($F_t - A_t + C_t$)	0	0	0	5	5	5	5	5	5	0	0 p.a.
Benefits to consumers ($F_1 - (F_t + C_t)$)	0	0	0	0	0	0	0	0	0	5	5 p.a.
Discounted benefits to NSP**	0	0	0	5	4.7	4.5	4.2	4.0	3.7	0	0
Discounted benefits to consumers**	0	0	0	0	0	0	0	0	0	3.5	58.8***

Notes: * At the time of forecasting opex for the second regulatory period we don't know actual opex for year 5. Consequently this is not reflected in forecast opex for the second period. That means an underspend in year 6 will reflect any efficiency gains made in both year 5 and year 6. To ensure the carryover rewards for year 6 only reflect incremental efficiency gains for that year we subtract the incremental efficiency gain in year 5 from the total underspend. In the example above, $I_6 = U_6 - (U_5 - U_4)$.
** Assumes a real discount rate of 6 per cent.
*** As a result of the efficiency improvement, forecast opex is $5 million p.a. lower in nominal terms. The estimate of $58.7m is the net present value of $5 million p.a. delivered to consumers annually from year 11 onwards.

Through the operation of the EBSS with a revealed cost forecasting approach the NSP is able to retain $26.1 million (the sum of the 'Discounted benefits to the NSP' row) of the total $88.3 million efficiency gain. This represents 30 per cent of the efficiency gain. Network users retain $62.3 million, or 70 per cent, of the efficiency gain.

B How the EBSS interacts with an exogenous forecasting approach

Assume a NSP's forecast opex is $100 million each year in the first regulatory period. During this period the NSP is inefficient and overspends by $10 million in each year. As a result, it delivers opex at $110 million each year for the foreseeable future (for simplicity we are assuming no changes to scale, real prices or productivity).

An exogenous forecasting approach is used to determine forecast opex in subsequent periods so the NSPs actual expenditure does not influence its allowance in the future. The efficient level of opex remains $100 million.

Figure B.1   Example of how the EBSS interacts with an exogenous forecast

	Regulatory period 1						Regulatory period 2				Future
Year	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	
Forecast (F_t)	100	100	100	100	100	100	100	100	100	100	100 p.a.
Actual (A_t)	110	110	110	110	110	110	110	110	110	110	110 p.a.
Underspend ($F_t - A_t = U_t$)	−10	−10	−10	−10	−10	−10	−10	−10	−10	−10	−10 p.a.
Incremental efficiency gain ($I_t = U_t - U_{t-1}$)	−10	0	0	0	0	−10	0	0	0	0	−2.2 p.a.*
Carryover (I_1)		−10	−10	−10	−10	−10					
Carryover (I_2)			0	0	0	0	0				
Carryover (I_3)				0	0	0	0	0			
Carryover (I_4)					0	0	0	0	0		
Carryover (I_5)						0	0	0	0	0	
Carryover amount (C_t)						−10	0	0	0	0	−39.6**
Benefits to NSP ($F_t - A_t + C_t$)	−10	−10	−10	−10	−10	−20	−10	−10	−10	−10	−216.2
Benefits to consumers ($F_1 - (F_t + C_t)$)	0	0	0	0	0	10	0	0	0	0	39.6
Discounted benefits to NSP***	−10	−9.4	−8.9	−8.4	−7.9	−14.9	−7.0	−6.7	−6.3	−5.9	−120.7
Discounted benefits to consumers***	0	0	0	0	0	7.5	0	0	0	0	22.1

Notes: * This is the per annum equivalent of a −$10m incremental loss in the first year of each subsequent period.
** This is the value, in year 11 dollar terms, of a −$10m carryover in the first year of every subsequent regulatory control period.
*** Assumes a real discount rate of 6 per cent.

As result of these effects, the NSP will incur the efficiency loss in every year since the opex allowance is set at the efficient level (see row 'Underspend ($F_t - A_t = U_t$)' in Figure B.1).

It will also incur an EBSS penalty of $10 million in the first year of each subsequent regulatory control period (see row 'Incremental efficiency gain ($I_t = U_t - U_{t-1}$)' in Figure B.1).

Figure A.2 provides a more detailed illustration of how the EBSS shares the loss between the NSP and consumers over time.

Under this scenario, the total efficiency loss is $176.7 (the total sum of the 'Discounted benefits to the NSP' row and 'Discounted benefits to the consumers' row).

Through the operation of the EBSS with an exogenous forecasting approach the NSP incurs $206.2 million (the sum of the 'Discounted benefits to the NSP' row). This represents 117 per cent of the efficiency loss.

Network users benefit by $29.6 million (the sum of the 'Discounted benefits to the consumers' row), or –17 per cent, of the efficiency loss.

C How the EBSS interacts with an adjusted revealed cost forecasting approach

Assume a NSP's forecast opex is $100 million each year in the first regulatory period. During this period the NSP is inefficient and overspends by $10 million in each year. As a result, it delivers opex at $110 million each year for the foreseeable future (for simplicity we are assuming no changes to scale, real prices or productivity).

Equal weighting is given to the revealed cost and the exogenous forecasting approach. The efficient benchmark level of opex remains $100 million. Thus the NSP's forecast opex is $105 million for each year in subsequent regulatory control periods and the NSP will overspend its allowance by $5 million each year (see row 'Underspend $(F_t - A_t = U_t)$' from year 6 in Figure C.1).

Figure C.1   Example of how the EBSS interacts with an adjusted revealed cost forecast

	Regulatory period 1						Regulatory period 2				Future
Year	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	
Forecast (F_t)	100	100	100	100	100	105	105	105	105	105	105 p.a.
Actual (A_t)	110	110	110	110	110	110	110	110	110	110	110 p.a.
Underspend $(F_t - A_t = U_t)$	−10	−10	−10	−10	−10	−5	−5	−5	−5	−5	−5 p.a.
Incremental efficiency gain $(I_t = U_t - U_{t-1})$	−10	0	0	0	0	−5	0	0	0	0	−1.1 p.a.*
Carryover (I_1)		−10	−10	−10	−10	−10					
Carryover (I_2)			0	0	0	0	0				
Carryover (I_3)				0	0	0	0	0			
Carryover (I_4)					0	0	0	0	0		
Carryover (I_5)						0	0	0	0	0	
Carryover amount (C_t)						−10	0	0	0	0	−19.8**
Benefits to NSP $(F_t - A_t + C_t)$	−10	−10	−10	−10	−10	−15	−5	−5	−5	−5	−108.1
Benefits to consumers $(F_1 - (F_t + C_t))$	0	0	0	0	0	10	0	0	0	0	−68.6
Discounted benefits to NSP***	−10	−9.4	−8.9	−8.4	−7.9	−11.2	−3.5	−3.3	−3.1	−3.0	−60.4
Discounted benefits to consumers***	0	0	0	0	0	3.7	−3.5	−3.3	−3.1	−3.0	−38.3

Notes: * This is the per annum equivalent of a −$5m incremental loss in the first year of each subsequent period.
** This is the value, in year 11 dollar terms, of a −$5m carryover in the first year of every subsequent regulatory control period.
*** Assumes a real discount rate of 6 per cent.

It will also receive an EBSS penalty of $10 million in the first year of the second regulatory control period and $5 million in the first year of the third and subsequent regulatory control periods (see row

'Carryover amount (C_t)' for year 6 in Figure A.3).[34] Figure C.1 provides a more detailed illustration of how the losses are shared between NSPs and consumers over time.

Under this scenario, the total efficiency loss is again $176.7 (the total sum of the 'Discounted benefits to the NSP' row and 'Discounted benefits to the consumers' row).

Through the operation of the EBSS with the adjusted revealed cost forecasting approach the NSP retains $129.2 million (the sum of the 'Discounted benefits to the NSP' row). This represents 73 per cent of the efficiency loss.

Network users retain $47.5 million (the sum of the 'Discounted benefits to the consumers' row), or 27 per cent, of the efficiency loss.

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[34]   The $5 million EBSS penalty will take effect from year 11, five years after the incremental efficiency loss in year 6.

D   Summary of submissions

Table D.1   Summary of submissions on the EBSS

Issue	Stakeholder	Summary
Carryover period	Ergon	Consideration should be given to aligning the application of the EBSS with the regulatory control period in circumstances where that period extends beyond five years.
Carryover period	Grid Australia	The EBSS should accommodate regulatory control periods longer than five years
Carryover period	SP AusNet	The proposed EBSS does not make clear how it would operate where a regulatory period is not five years. NSPs should retain the opex efficiencies they generate for at least the six years that would occur under the 'default' scheme. For regulatory periods of longer than five years it would be appropriate to match the EBSS to the duration of the regulatory period.
Carryover period	ENA	The EBSS should align the regulatory control period with the application of the schemes if the regulatory control period is longer than five years.
Exclusions/adjustments	PIAC	Welcomed the removal of specific exclusions and adjustments.
Exclusions/adjustments	APA	Did not support the inclusion of uncontrollable costs in the EBSS.
Exclusions/adjustments	APA	Considered all exclusions should be specified up front.
Exclusions/adjustments	CP PAL SAPN	Sought greater certainty that the AER will only exclude cost categories ex post in a limited and appropriate manner.
Exclusions/adjustments	ENA	Uncontrollable costs should be excluded from the EBSS.
Exclusions/adjustments	ENA	NSPs should be able to apply for pass through events to be added to the allowance for the purpose of calculating carryover amounts, even if the NSP chooses not to recover the pass through costs from network users.
Exclusions/adjustments	Energex	NSPs should be able to nominate cost categories to be excluded from the EBSS prior to the commencement of the regulatory control period.
Exclusions/adjustments	Energex	The EBSS should allow for adjustments to allowances for uncontrollable costs. These should include costs that would qualify for a pass through if the NSP applied and costs that would qualify for a pass through but for the materiality threshold.
Exclusions/adjustments	Ergon	NSPs should be able to propose exclusions for consideration by the AER in certain circumstances.
Exclusions/adjustments	Grid Australia	NSPs should be able to propose amendments to the scheme or adjustments and exclusions.
Exclusions/adjustments	Grid Australia	Detail on adjustments and exclusions should be established ex ante in a revenue determination.
Exclusions/adjustments	Jemena	The exclusions allowed by the current EBSS are appropriate and should be maintained going forward.
Exclusions/adjustments	MEU	There should be minimal adjustment made to the opex allowances and actuals. Adjustments should only be made to maintain equivalence between forecast and actual opex.
Exclusions/adjustments	Networks NSW	The EBSS should allow NSPs to nominate uncontrollable cost categories to be excluded from the EBSS.

Exclusions/adjustments	Networks NSW	Sought clarity on excluding cost from the EBSS not forecast using a revealed cost approach. Considered only uncontrollable costs should be excluded from the EBSS.
Exclusions/adjustments	PIAC	The AER correctly recognises that there is no reason why forecasting risk associated with uncontrollable opex or growth should be shared differently than how the forecasting risk associated with controllable opex is shared.
Exclusions/adjustments	SP AusNet	The proposed discretion for the AER to exclude costs from the EBSS ex post will weaken the operation of the incentive by introducing uncertainty over what the scale of benefits or penalties will be for expenditure decisions.
Exclusions/adjustments	SP AusNet	The expenditure incentive schemes could be improved by allowing greater flexibility to make ex ante exclusions or to treat certain categories on a different basis.
Exclusions/adjustments	VIC NSPs	The AER's discretion to make ex post exclusions and adjustments should be limited.
Exclusions/adjustments	COSBOA	Generally support including all opex items in the EBSS on the basis that excluding them would blunt any incentive for NSPs to ensure these costs are efficient.
General	Cotton Australia	Supported CANEGROWERS submission.
General	National Irrigators' Council	Supported CANEGROWERS submission.
General	Uniting Care Australia	Supported 'the thrust' of the EBSS. Considered there needs to be close monitoring and review of the performance of the EBSS.
General	Ethnic Communities' Council of NSW	Supported the symmetrical carryover with 30 per cent sharing but believed it will need close monitoring.
General	PIAC	The AER should continue to assess the effectiveness of the EBSS in driving down opex.
General	APA	Considered the EBSS asymmetrical because, at the efficiency frontier, efficiency losses are more likely than efficiency gains.
General	APA	The proposed EBSS only contemplates 5 year regulatory periods.
General	PIAC	PIAC recommended that the AER undertake further quantitative and qualitative assessment of the effectiveness of the EBSS in driving more efficient opex by the NSPs, and adapt the EBSS in the future accordingly.
Incentive power	CANEGROWERS	A 30:70 symmetrical sharing scheme is too generous for NSPs and requires them to carry too little risk for their investment decisions. The incentive power should be no less than 100:0.
Incentive power	PIAC	Agreed with the proposed 30:70 sharing of gains and losses and had no objection to a symmetric EBSS.
Incentive power	CP PAL SAPN	Encouraged the AER to consider higher rewards for efficient firms to drive efficiency improvements for relatively inefficient firms.
Incentive power	CP PAL SAPN	Considered adjusting opex for expected productivity growth will reduce the EBSS incentives. Further, such an approach would not be consistent with the symmetric incentive properties of the EBSS.
Incentive power	Energex	To the extent the base year opex used to forecast opex for the subsequent regulatory control period is adjusted the sharing ratio will be impacted.

Incentive power	Grid Australia	The productivity factor in opex forecast could compromise the integrity of the EBSS.
Incentive power	Grid Australia	Adjustments to base year opex where it has evidence of material inefficiency can lead to a NSP incurring a penalty greater than 100 per cent of the deemed inefficiency under the EBSS.
Incentive power	Incenta Economic Consulting	Applying the standard EBSS while also imposing an efficiency-adjustment to the base year will potentially result in the NSP bearing more than 100 per cent of the deemed inefficiency. The penalty could be reduced to no more than 100 per cent by adjusting either the EBSS, or by applying a correction to the base year adjustment.
Incentive power	MEU	The use of a revealed cost forecasting approach, even with the EBSS, provides an incentive to inflate costs in the base year.
Incentive power	MEU	Increasing the incentive power could be considered if there is clear evidence that doing so would increase the benefit to consumers. If the power was increased there would need to be equivalent changes to other incentive schemes.
Incentive power	VIC NSPs	The AER's proposal to incorporate a productivity factor in opex forecasts would inappropriately impact the symmetry of the EBSS and the balance of incentives across other schemes.
Incentive power	VIC NSPs	Both the EBSS and CESS should provide an option to apply a higher incentive rate to NSPs approaching the efficiency frontier.
Opex forecast	CP PAL SAPN	Sought clarity on the AER's use of benchmarking to determine opex.
Other	Incenta Economic Consulting	A 'fit for purpose' forecasting method should be considered for lumpy opex categories and an adjusted EBSS, consistent with the forecasting method (e.g. a scheme like the CESS), should be applied.
Other	MEU	NSPs' debt financing costs should be subject to an incentive sharing scheme. A revealed cost approach and EBSS should apply to the cost of debt.
Other	Grid Australia	Opex categories not well suited to the revealed cost forecasting technique should be subject to a different forecasting approach and a different EBSS (possibly similar to the CESS).
Other	MEU	NSPs have, at times, transferred costs from one period to another, reducing costs in the earlier period in order to earn a bonus from the EBSS. The costs transferred to the next period effectively allow the NSP to be paid twice for the same work and gain a bonus at the same time
Other	MEU	Consumers have a greater potential to pay more for a service due to the asymmetry of forecasting risk, as well as paying a benefit through the EBSS. This opex forecasting asymmetry should be reflected in the sharing scheme.
Tax	CP PAL SAPN	The AER should correct the EBSS for the impact of tax.
Tax	VIC NSPs	The incentive levels under both the EBSS and CESS should be adjusted to account for the effect of tax.