



Proposed

**Electricity distribution network service providers
Efficiency benefit sharing scheme**

April 2008

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Inquiries concerning the currency of this scheme should be addressed to:

Australian Energy Regulator
GPO Box 520
Melbourne VIC 3001
Ph: (03) 9290 1444
Fax: (03) 9290 1457
Email: AERInquiry@aer.gov.au

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Shortened forms

AER	Australian Energy Regulator
capex	capital expenditure
CPI	consumer price index
DNSP	distribution network service provider
NEM	National Electricity Market
NER	National Electricity Rules
NPV	net present value
opex	operating expenditure
PV	present value
WACC	weighted average cost of capital

1 Nature and authority

1.1 Introduction

This scheme sets out the Australian Energy Regulator's (AER) proposed efficiency benefit sharing scheme (EBSS) for electricity distribution network service providers (DNSPs).

The EBSS has been developed in accordance with the requirements of clause 6.5.8 and the distribution consultation procedures under part G of Chapter 6 of the National Electricity Rules (NER).

1.2 Authority

Clause 6.5.8(a) of Chapter 6 requires the AER to develop and publish this scheme.

1.3 Role of the scheme

The purpose of the EBSS is to share efficiency gains and losses between DNSPs and distribution network users. In the absence of an EBSS, the share of efficiency gains and losses received by a DNSPs declines as the regulatory control period progresses and, consequently, the incentive for the DNSP to improve the efficiency of its operating expenditure (opex) declines also.

The EBSS allows a DNSP to retain the benefits of an efficiency gain for the length of the carryover period regardless of the year of the regulatory control period in which the gain was initiated. After the carryover period the benefits of an efficiency gain are 'shared' with distribution network users. By doing so the EBSS provides a DNSP with a constant incentive to improve the efficiency of its opex and thus reveal its efficient level of opex.

1.4 Confidentiality

The AER's obligations regarding confidentiality and the disclosure of information provided to it by a DNSP are governed by the *Trade Practices Act 1974*, the National Electricity Law and the NER.

1.5 Processes for revision

The AER may amend or replace the EBSS from time to time in accordance with clause 6.5.8(d) of the NER and the distribution consultation procedures. A subsequent version of this scheme will accompany each new version of the EBSS.

1.6 Version history and effective date

A version number and an effective date of issue will identify each version of this handbook.

2 Efficiency benefit sharing scheme for operating expenditure

This chapter sets out the AER's approach to providing incentives for a DNSP to improve the efficiency of its opex and share any resulting efficiency gains or losses with distribution network users.

The incentive for a DNSP to reduce its opex is derived from three different factors:

1. The fact that the AER will not claw back any differences between forecast and actual opex that arise during the regulatory control period.
2. The manner in which the AER uses information on past opex when determining whether the forecast expenditure proposed by a DNSP for the next regulatory control period is efficient.
3. The EBSS.

2.1 Objectives

In accordance with Chapter 6 of the NER, the AER has developed and published an EBSS that provides for a fair sharing between DNSPs and distribution network users of both opex efficiency gains and losses.

Clause 6.5.8(c) of the NER requires that the AER, in developing and implementing an EBSS, must have regard to:

- the need to ensure that benefits to consumers likely to result from the scheme are sufficient to warrant any reward or penalty under the scheme for DNSPs
- the need to provide DNSPs with a continuous incentive, so far as is consistent with economic efficiency, to reduce opex and, if the scheme extends to capital expenditure, capital expenditure
- the desirability to both reward DNSPs for efficiency gains and penalising DNSPs for efficiency losses
- any incentives that DNSPs may have to capitalise expenditure
- the possible effects of the scheme on incentives for the implementation of non network alternatives.

The EBSS rewards sustained efficiency gains through the operation of a symmetrical carryover mechanism that allows a DNSP to retain the benefits of an efficiency gain for the length of the carryover period regardless of the year of the regulatory control period in which the gain was initiated.

A DNSP facing a potential efficiency gain should not perceive a material advantage in either deferring or advancing an efficiency gain or loss. The DNSP should, instead, face an essentially constant benefit or cost from implementing a gain or loss as it arises. The measurement of gains and losses should not be affected by artificial means such as the shifting of costs between years, but should represent genuine business outcomes that have arisen in the ordinary course of conducting the business in a prudent and diligent manner.

2.2 The expenditure allowance for the following regulatory control

The AER considers that it is not appropriate, when determining the efficient opex allowance for future regulatory control periods, to relate future targets to past outcomes on a purely mechanistic basis. That is, the AER will not require forecast opex for the following regulatory control period to be equal to actual opex in the penultimate year of the regulatory control period during which the EBSS is applied.

Chapter 6 of the NER sets out the matters that must be addressed when a DNSP proposes to the AER the level of efficient opex to apply in a regulatory control period. When assessing the forecasts proposed by DNSPs for a regulatory control period following the application of the EBSS, the AER will consider all of the objectives, criteria and factors required by the NER.

In assessing the forecasts the AER will place significant weight on the actual expenditure in the penultimate year of the regulatory control period during which the EBSS has been applied. Since the EBSS provides incentives for DNSPs to reveal their efficient level of opex, the AER considers it reasonable to expect the actual opex in the penultimate year of a regulatory control period to be the best indicator of the efficient level of opex available when determining forecast opex for the following regulatory control period.

2.3 The efficiency benefit sharing scheme

This section describes how the AER will calculate efficiency gains or losses using the EBSS, and the method by which gains or losses are shared between DNSPs and distribution network users.

The AER will calculate an efficiency gain or loss in the first year of the regulatory control period as follows:

$$E_1 = (F_1 - A_1)$$

where the parameter A_1 is the actual opex incurred by the DNSP for year one of the regulatory control period and the parameter F_1 is the forecast opex accepted or substituted by the AER for that year in the relevant revenue determination.

Gains or losses that arise in the second and subsequent years of the regulatory control period will be calculated as:

$$E_t = (F_t - A_t) - (F_{t-1} - A_{t-1})$$

E_t is the efficiency benefit/loss in year t

A_t, A_{t-1} are the actual, or adjusted actual, opex incurred in years t and $t-1$ respectively,

F_t, F_{t-1} are the forecast, or adjusted forecast, opex accepted or substituted for the years t and $t-1$ respectively.

The sample calculations contained in appendix A illustrate the calculation process that underpins the EBSS and is based on unadjusted amounts. The adjusted efficiency benefit/loss for each year will be retained by the DNSP for the length of the carryover period following the year in which it was incurred, after which the total value of the gain or loss is removed from the DNSP’s expenditure forecast and notionally ‘shared’ with distribution network users. Because of the forward-looking nature of the EBSS, the sharing of efficiency gains or losses will not occur until the regulatory control period immediately following the implementation of the EBSS.

The efficiency benefit sharing calculation will be undertaken in such a way as to ensure inflation does not erode the value of any benefit/loss to be retained by the DNSP. Price indices used in the calculation must be consistent with those used in the revenue determination applicable to the same regulatory control period.

2.3.1 Final year adjustment

As the distribution determination for the following regulatory control period will be made prior to the completion of the regulatory control period during which the EBSS is applied, the AER will estimate the actual opex required to calculate gains or losses for the final year of the regulatory control period during which the EBSS is applied. The estimate, A_5^* , will be calculated as follows:

$$A_5^* = F_5 - (F_4 - A_4)$$

Where differences arise between the estimate, A_5^* , and the actual expenditure amount of the final year, A_5 , the efficiency gain or loss in the first year of the following regulatory control period will be adjusted as follows:

$$E_6 = (F_6 - A_6) - (F_5 - A_5) + (F_4 - A_4)$$

2.3.2 Adjustments to forecast operating expenditure allowances for the purposes of calculating carryover amounts

In calculating the benefits or losses to be carried over, the measurement of actual expenditure over the regulatory control period must be done using the same cost categories and methodology used to calculate the forecast expenditure for that period. Adjustments will be made where necessary to correct for variances in cost categories and methodologies, and errors.

If capitalisation policies during the regulatory control period have changed, the DNSP must adjust the forecast opex used to calculate the carryover amounts so that the forecast expenditures are consistent with the capitalisation changes. A DNSP must provide a detailed description of the changes in capitalisation policies and a calculation of the impact of those changes in capitalisation policy.

For the purposes of calculating the carryover amounts, the forecast opex must be adjusted for the cost consequences of the difference between forecast and actual demand growth over the regulatory control period. These adjustments must be made using the same relationship between growth and expenditure used in establishing the forecast opex. Adjustments must only be applied to those components of opex that have a direct relationship to growth.

The AER considers it is appropriate for the EBSS to focus on controllable costs but notes that it is a difficult exercise to adequately define in advance all costs that may, or may not, be included in the EBSS. The AER will, therefore, permit a DNSP to propose a range of additional cost categories to be excluded from the operation of the EBSS. These categories must be specific to the business, involve an identifiable reason for being excluded and should not involve an ongoing business activity. A DNSP must propose cost categories to be excluded from the scheme in their regulatory proposal prior to the commencement of the regulatory control period during which the EBSS will be applied.

A proposal to exclude cost categories must be reasonable and must not seek to exclude categories of costs that could otherwise be regarded as controllable costs including, for example, labour and materials costs and service provider costs. Proposed adjustments to the forecast opex will only be accepted if they are for changes in costs that the AER deems to be uncontrollable and will not adversely impact the operation of the EBSS. Cost categories accepted as uncontrollable by the AER will be excluded from the calculation of carryover amounts at the end of the regulatory control period during which the EBSS was applied.

Allowed increases or decreases in actual expenditures associated with recognised pass through events will be excluded from the actual and forecast expenditure amounts used to calculate carryover gains or losses under the EBSS.

The opex forecast must include any necessary adjustments for changes in responsibilities that result from compliance with a new or amended law or licence, or other statutory or regulatory requirement. This may include requirements that can be demonstrated to arise directly from a recognised policy, practice or policy generally applicable to similar firms participating in the National Electricity Market.

In calculating carryover gains or losses, the AER must be satisfied that the actual and forecast opex accurately reflects the costs faced by the DNSP in the regulatory control period.

2.3.3 Carryover period

The length of the carryover period, in conjunction with the weighted average cost of capital, influence the sharing ratio of gains and losses between transmission network users and the TNSP. A five-year carryover period results in a benefit-sharing ratio of approximately 30:70 between the TNSP and transmission network users respectively. A ten-year carryover period results in a ratio of approximately 50:50.

The AER will adopt a nominal carryover period of five years to calculate the carryover amounts except where the AER has approved a longer regulatory control period. Where the AER approves a longer regulatory control period for a business, the AER will also consider permitting a longer carryover period, not exceeding ten years.

2.3.4 Application of carryovers

Subject to the adjustments noted, the AER will apply all carryovers, both positive and negative. Carryover amounts will be included as a building block element in the calculation of allowed revenue for the regulatory control period following the regulatory control period during which the EBSS was applied.

3 Capital expenditure and distribution losses

The EBSS does not cover efficiency gains and losses related to capex or distribution losses.

Appendix A: Example of the efficiency benefit sharing scheme calculation

Year	1	2	3	4	5	6	7	8	9	10
Forecast expenditure	101	100	103	100	101	93	93	93	93	93
Actual	100	99	94	93	94 ^(a)					
Incremental gain/loss	1	0	8 ^(b)	-2	0	(c)				
Efficiency carryover										
Year 1		1	1	1	1	1				
Year 2			0	0	0	0	0			
Year 3				8	8	8	8	8		
Year 4						-2	-2	-2	-2	-2
Year 5						0	0	0	0	0
Carry forward amounts						7	6	6	-2	0
Expenditure used for pricing purposes	101	100	103	100	101	100	99	99	91	93

Note: All figures are in real terms.

- (a) This figure is an estimate only because the actual opex amount is not known at the time of the regulatory determination. This estimate has been calculated using the equation:

$$\begin{aligned}
 A_5^* &= F_5 - (F_4 - A_4) \\
 &= 101 - (100 - 93) \\
 &= 94
 \end{aligned}$$

The correction for this estimate, which has been omitted for simplicity, will impact the incremental gain/loss for year 6 and thus the carryover amount for year 11.

- (b)
$$\begin{aligned}
 E_3 &= (F_3 - A_3) - (F_2 - A_2) \\
 &= (103 - 94) - (100 - 99) \\
 &= 8
 \end{aligned}$$

- (c) The incremental gain/loss for year 6 will be calculated using the following formula:

$$E_6 = (F_6 - A_6) - (F_5 - A_5) + (F_4 - A_4)$$