Better Regulation

Efficiency Benefit Sharing Scheme for Electricity Network Service Providers

November 2013

AUSTRALIAN ENERGY REGULATOR

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AER reference: 50390

Amendment record

Version	Date
01—EBSS for TNSPs	30 September 2007
01—EBSS for DNSPs	26 June 2008
02	29 November 2013

Contents

1 Efficiency benefit sharing scheme

We are required to develop an Efficiency Benefit Sharing Scheme (EBSS) for Distribution Network Service Providers (DNSPs) and Transmission Network Providers (TNSPs). The EBSS should provide for a fair sharing between NSPs and network users of efficiency gains and efficiency losses.

1.1 Objective

The EBSS must provide for a fair sharing between NSPs and network users of efficiency gains and losses made during a regulatory control period.

In accordance with clauses 6.5.8(a) and 6A.6.5(a) of the NER, an efficiency gain is where actual operating expenditure (opex) incurred by a NSP in a regulatory control period is less than the forecast opex set by the AER for that period. An efficiency loss is where a NSP's actual opex in a regulatory control period is more than the forecast opex set by the AER for that period.

1.2 Rule requirements

Clauses 6.5.8(c) and 6A.6.5(b) of the NER apply to DNSPs and TNSPs respectively. They require that the AER, in developing and implementing an EBSS for NSPs, 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
- the possible effects of the scheme on incentives for the implementation of non-network alternatives.

In addition, clause 6.5.8(c)(1) of the NER requires that in developing an EBSS for DNSPs the AER must have regard to the need to 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.

1.3 Application of the EBSS

The EBSS is intrinsically linked to the forecasting approach for opex. When forecasting opex we typically use one year of actual opex to forecast future opex (typically the penultimate year of the current regulatory control period). We then make changes for factors such as output growth, real price changes, productivity growth and any other efficient cost changes. This is known as 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 changes 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.

These issues are addressed 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.
- The EBSS carries forward a NSP's incremental efficiency gains for the length of the carryover period. This carryover period length will typically be five years for a five year regulatory control period.
- The carryover amounts accrued in year i of period n + 1 will be the summation of the incremental efficiency gains in period n that are carried forward into year i.
- We add the carryover amounts as an additional 'building block' when setting the NSP's regulated revenue for the period n + 1.
- The actual opex incurred in the base year is used as the starting point for forecasting opex for period n + 1.
- Under this approach, the benefits of any increase or decrease in opex is shared approximately 30:70 between NSPs and consumers.

Section 1.3.1 sets out how the carryover period length will be determined. Sections 1.3.2 to 1.3.4 explain how the AER will calculate incremental efficiency gains in each year.

1.3.1 Carryover period length

The carryover period length to apply for regulatory control period n will be determined at the final determination prior to the commencement of regulatory control period n. The carryover period length will be five years unless the length of regulatory period n, or regulatory control period n+1, is not five years. If the length of regulatory period n, or regulatory control period n+1, is not five years we may determine a different carryover period length. In determining the carryover period length, we will have regard to the matters we are required to under the NEL and the NER including, but not limited to:

- the length of regulatory control periods n and n+1
- the balance of incentives provided by the EBSS, capital expenditure sharing scheme and the service target performance incentive scheme.

1.3.2 Incremental efficiency gains in the first regulatory year

Forecast opex reflects our forecast of efficient opex at the time of a regulatory determination. For the purposes of the EBSS, the difference between actual opex and forecast opex at any time reflects an efficiency gain relative to forecast opex.[1] Therefore, the difference between forecast opex and actual

[1] NER, Cl. 6.5.8 and 6A.6.5.

opex in the first year of a regulatory control period reflects incremental efficiency gains made by the NSP since the base year plus any non-recurrent efficiency gains removed from base opex when forecasting opex.

To ensure the carryover amount in the first year of a regulatory control period is only for incremental efficiency gains made in that year, we will subtract any incremental efficiency gain made in the previous regulatory control period after the base year from the difference between actual opex and forecast opex in the first year of the new period, Similarly, we will subtract any non-recurrent efficiency gain that was added back to base year opex when forecasting opex:

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

Where:

$I_{i,n}$ is the incremental efficiency gain in year i of period n

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

$A_{1,n}$ is actual opex (subject to adjustments) in year 1 of period n

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

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

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

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

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

f is the length of period n in years

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

1.3.3 Incremental efficiency gains in the second regulatory year to the penultimate regulatory year

For each year of a regulatory control period from the second regulatory year to the penultimate regulatory year, the incremental efficiency gain is the underspend in the relevant year less the underspend in the previous year:

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

1.3.4 Estimated incremental efficiency gain in the final regulatory year

At the time of a regulatory determination we typically do not know actual opex in the final regulatory year. Therefore, for the purposes of calculating the estimated incremental efficiency gain in that year, we must estimate final year opex. This estimate should be consistent with the estimate made when forecasting opex for the following period.

This means for the final regulatory year, we will calculate the estimated incremental efficiency gain as:

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

Where A^*_f is the estimated actual opex for the final regulatory year, which will be calculated as:

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

1.4 Adjustments to forecast or actual opex when calculating carryover amounts

To calculate the carryover amounts accrued in regulatory control period n, and applied in regulatory control period n + 1, we will:

- Adjust forecast opex to add any approved revenue increments or subtract any approved revenue decrements made after the initial regulatory determination for regulatory control period n. This may include approved pass through amounts or opex for contingent projects.
- Adjust actual opex incurred in regulatory control period n to add capitalised opex that has been excluded from the Regulatory Asset Base.
- Exclude categories of opex not forecast using a single year revealed cost approach for the regulatory control period n + 1 where doing so better achieves the requirements of clauses 6.5.8 and 6A.6.5 of the NER.
- Adjust forecast opex and/or actual opex in regulatory control period n for inflation so that the real value of the carryover amounts is consistent with the real value of the other components of the NSP's regulated revenue in regulatory control period n + 1

If we determine that any of the above adjustments or exclusions will be required prior to the commencement of period n we will list the relevant cost categories in our final determination for period n.

Glossary

This scheme uses the following definitions

Term	Definition
AER	Australian Energy Regulator
EBSS	Efficiency Benefit Sharing Scheme
National Electricity Rules (NER)	The rules as defined in the National Electricity Law.
DNSP	Distribution Network Service Provider
TNSP	Transmission Network Service Provider
NSP	Network Service Provider
opex	Operating expenditure

A Example EBSS calculation

	Period 0					Period 1						Period 2
Year	**–1**	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Forecast opex	100	102	100	102	104	106	108					
Actual opex	96	97	99	102	97	97	99[(c)]					
Underspend	4	5	1[(a)]	0	7	9	9					
Incremental efficiency gain/loss		1	0	–1[(b)]	7[(b)]	2[(b)]	0					
Carryover in Year 1								0				
Carryover in Year 2								–1	–1			
Carryover in Year 3								7	7	7		
Carryover in Year 4								2	2	2	2	
Carryover in Year 5								0	0	0	0	0
Total carryover								**8**	**8**	**9**	**2**	**0**

Note: All figures are in real terms
(a) Assumes year –1 has been used to forecast opex for regulatory period 1. See section 1.3.2 for further details.
(b) Equal to the difference between the underspend in this year less the underspend in the previous year. See section 1.3.3 for further details.
(c) This is the estimated opex amount since we do not typically know actual opex in the final year. See section 1.3.4 for further details. Assumes year 4 is used as the base year for forecasting opex for regulatory period 2, and there are no non-recurrent efficiency gains in year 4.