FINAL DECISION
Powerlink transmission determination 2017–22

Attachment 9 – Efficiency benefit sharing scheme

April 2017

AUSTRALIAN ENERGY REGULATOR

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Note

This attachment forms part of the AER's final decision on Powerlink's transmission determination for 2017–22. It should be read with all other parts of the final decision.

This final decision consists of an Overview and 11 attachments. As many issues were settled at the draft decision stage or required only minor updates we have not prepared final decision attachments for:

- Regulatory depreciation
- Operating expenditure; and
- Corporate income tax.

The AER's final decision on these matters is set out in the Overview. For ease of reference the remaining attachments have been numbered consistently with the attachment numbering in our draft decision.

The final decision includes the following documents:

Overview

Attachment 1 – Maximum allowed revenue

Attachment 2 – Regulatory asset base

Attachment 3 – Rate of return

Attachment 4 – Value of imputation credits

Attachment 6 – Capital expenditure

Attachment 9 – Efficiency benefit sharing scheme

Attachment 10 – Capital expenditure sharing scheme

Attachment 11 – Service target performance incentive scheme

Attachment 12 – Pricing methodology

Attachment 13 – Pass through events

Attachment 14 – Negotiated services

Contents

Shortened forms

Shortened form	Extended form
AARR	aggregate annual revenue requirement
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
ASRR	annual service revenue requirement
augex	augmentation expenditure
capex	capital expenditure
CCP	Consumer Challenge Panel
CESS	capital expenditure sharing scheme
CPI	consumer price index
DMIA	demand management innovation allowance
DRP	debt risk premium
EBSS	efficiency benefit sharing scheme
ERP	equity risk premium
MAR	maximum allowed revenue
MRP	market risk premium
NEL	national electricity law
NEM	national electricity market
NEO	national electricity objective
NER	national electricity rules
NSP	network service provider
NTSC	negotiated transmission service criteria
opex	operating expenditure
PPI	partial performance indicators
PTRM	post-tax revenue model
RAB	regulatory asset base
RBA	Reserve Bank of Australia
repex	replacement expenditure
RFM	roll forward model
RIN	regulatory information notice

Shortened form	Extended form
RPP	revenue and pricing principles
SLCAPM	Sharpe-Lintner capital asset pricing model
STPIS	service target performance incentive scheme
TNSP	transmission network service provider
TUoS	transmission use of system
WACC	weighted average cost of capital

9 Efficiency benefit sharing scheme

The efficiency benefit sharing scheme (EBSS) provides an additional incentive for service providers to pursue efficiency improvements in operating expenditure (opex). It is often used in incentive regulation.

To encourage a service provider to become more efficient, it is allowed to keep any difference between its approved opex forecast and its actual opex in a regulatory control period. This is supplemented by the EBSS, which allows the service provider to retain efficiency savings and efficiency losses for a longer period of time. In total these rewards and penalties work together to provide a continuous incentive for a service provider to pursue efficiency gains over the regulatory control period. The EBSS also discourages a service provider from inflating its opex in the expected base year in order to receive a higher opex allowance in the following regulatory control period.

Consumers benefit from any efficiency gains made by the service provider as we base our next opex forecast (for the next regulatory control period) on the service provider's lower revealed opex. This is how efficiency improvements are shared between consumers and the business.

During the 2012–17 regulatory control period, Powerlink operated under version one of the electricity transmission network service providers' EBSS, released in September 2007.[1]

9.1 Final decision

Our final decision, consistent with Powerlink's initial proposal and our draft decision, is to approve the EBSS carryover amount of –$7.8 million ($2016–17) from the application of the EBSS in the 2012–17 regulatory control period.

Our final decision for the EBSS carryover amounts from the 2012–17 regulatory control period is outlined in Table 9.1.

Table 9.1 Final decision on Powerlink's EBSS carryover amounts ($ million, 2016–17)

	2017–18	2018–19	2019–20	2020–21	2021–22	Total
Powerlink's initial and revised proposal	–0.8	–6.8	–3.0	2.8	–	**–7.8**
AER draft and final decision	–0.8	–6.8	–3.0	2.8	–	**–7.8**

Source: Powerlink, *Revenue proposal PTRM*, January 2016. Powerlink, *Revised revenue proposal PTRM*, December 2016.

[1] AER, *Electricity transmission network service providers—Efficiency benefit sharing scheme*, September 2007.

We will apply version two of the EBSS[2] to Powerlink in the 2017–22 regulatory control period consistent with our draft decision. When we apply version two of the EBSS, we will exclude the following cost categories from the scheme:[3]

- debt raising costs
- network supports costs.

We discuss the reasons for our decision in section 9.4.2.

Table 9.2 sets out our final decision on the target opex for the EBSS we will use to calculate efficiency gains in the 2017–22 regulatory control period, subject to further adjustments allowed by the EBSS.

Table 9.2 Forecast opex for the EBSS ($ million, 2016–17)

	2017–18	2018–19	2019–20	2020–21	2021–22	Total
Forecast opex	196.9	196.0	195.1	194.4	194.3	**976.7**
Less debt raising costs	–3.6	–3.6	–3.5	–3.5	–3.4	**–17.6**
Less network support costs	–	–	–	–	–	**–**
Total opex for the EBSS target	**193.3**	**192.5**	**191.6**	**190.9**	**190.8**	**959.1**

Source: Powerlink, *Revised revenue proposal*, December 2016. Numbers may not add up to total due to rounding.

9.2 Powerlink's revised proposal

9.2.1 Carryover amounts from the 2012–17 regulatory control period

In our draft decision, we accepted Powerlink's proposed carryover amount for the 2012–17 regulatory control period of –$7.8 million ($2016–17). In its revised proposal, Powerlink accepted our draft decision.[4]

9.2.2 Application of the EBSS in the 2017–22 regulatory control period

Powerlink accepted that it will be subject to version two of the EBSS during the 2017–22 regulatory period, based on the forecast operating expenditure targets established in our draft decision.[5]

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2 AER, *Efficiency benefit sharing scheme for electricity network service providers*, November 2013.
3 AER, *Efficiency benefit sharing scheme for electricity network service providers*, November 2013, Section 1.4, p. 7.
4 Powerlink, *2018-22 Revised revenue proposal*, December 2016, p. 14.
5 Powerlink, *2018-22 Revised revenue proposal*, December 2016, p. 14.

Excluded cost categories

Powerlink did not accept our draft decision on the cost categories that would be subject to the EBSS in the 2017–22 regulatory control period.

Powerlink did not accept our draft decision to subject insurance, self-insurance and the AEMC levy to the EBSS.[6] In its revised proposal, Powerlink reproposed these categories be excluded from the EBSS. It considered they are non-controllable costs that can be reasonably forecast using a bottom up approach.[7] It was also concerned about the impact of forecasting errors on Powerlink and consumers.

Powerlink did not accept our draft decision that redundancy costs should be subject to the EBSS.[8] It stated that if the timing of redundancy costs during the 2017–22 regulatory period results in a net negative EBSS carryover amount into the 2022–27 regulatory period, it will be penalised for excluding these costs from base opex.

9.3 Assessment approach

Under the National Electricity Rules (NER) we must decide:

1. the revenue increments or decrements for each year of the 2017–22 regulatory control period arising from the application of the EBSS during the 2012–17 regulatory control period[9]
2. how the EBSS will apply to Powerlink in the 2017–22 regulatory control period.[10]

The EBSS must provide for a fair sharing between service providers and network users of opex efficiency gains and efficiency losses.[11] We must also have regard to the following matters when implementing the EBSS:[12]

- the need to provide the network service provider with continuous incentives to reduce opex
- the desirability of both rewarding the service providers for efficiency gains and penalising them for efficiency losses
- any incentives that service providers may have to inappropriately capitalise expenditure
- the possible effects of the scheme on incentives for the implementation of non-network alternatives.

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6 Powerlink, *2018-22 Revised revenue proposal*, December 2016, pp. 14–15.
7 Powerlink, *2018-22 Revised revenue proposal*, December 2016, p.15.
8 Powerlink, *2018-22 Revised revenue proposal*, December 2016, pp. 15–16.
9 NER, cl. 6A.5.4(a)(5).
10 NER, cll. 6A.14.1(1)(iv), cl. 6A.14.3(d)(2).
11 NER, cl. 6A.6.5(a).
12 NER, cl. 6A.6.5(b).

9.3.1 Interrelationships

The EBSS is intrinsically linked to our opex revealed cost forecasting approach. When we develop our opex forecast, the rules require us to have regard to whether the opex forecast is consistent with any incentive schemes.[13]

Our opex forecasting method relies on identifying an efficient opex amount in the base year (the 'revealed costs' of the service provider), which we use to develop a total opex forecast. Under this approach, a service provider has an incentive to spend more opex in the expected base year. Also, a service provider has less incentive to reduce opex towards the end of the regulatory control period, where the benefit of any efficiency gains is retained for less time.

The application of the EBSS serves two important functions:

- it reduces the incentive for a service provider to inflate opex in the expected base year in order to gain a higher opex forecast for the next regulatory control period
- it provides a continuous incentive for a service provider to pursue efficiency improvements across the regulatory control period. This is because the EBSS allows a service provider to retain efficiency gains for a total of six years, regardless of the year in which it was made.

Where we do not propose to rely on the revealed costs of a service provider in forecasting opex, this has consequences for the service provider's incentives and our decision on how we apply the EBSS.

When a business makes an incremental efficiency gain, it receives a reward through the EBSS, and consumers benefit through a lower revealed cost forecast for the subsequent period. This is how efficiency improvements are shared between consumers and the business. If we subject costs to the EBSS that are not forecast using a revealed cost approach, a business would in theory receive a reward for efficiency gains through the EBSS (at a cost to consumers), but consumers would not benefit through a lower revealed cost forecast in the subsequent period.

Therefore, we typically exclude costs where we do not rely on a revealed cost forecasting approach to forecast those costs.

9.4 Reasons for final decision

This section provides the reasons for the carryover amounts that arise from applying the EBSS during the 2012–17 regulatory control period, and how we will apply the EBSS in the 2017–22 regulatory control period.

[13] NER, cl. 6A.6.6(e)(8).

9.4.1 Carryover amounts from the 2012–17 regulatory control period

Consistent with our draft decision, we accept Powerlink's proposal that it receives an EBSS carryover amount of –$7.8 million ($2016–17) from the application of the EBSS during the 2012–17 regulatory control period. Our reasons for accepting Powerlink's initial proposal are set out in the draft decision.[14]

9.4.2 Application of the EBSS in the 2017–22 regulatory control period

We will apply version two of the EBSS to Powerlink during the 2017–22 regulatory control period, consistent with our draft decision. Version two of the EBSS specifies our approach to determining the length of the carryover period, calculating the incremental efficiency gains and adjusting forecast or actual opex when calculating carryover amounts. These are detailed below.

Length of carryover period

The length of the carryover period for the 2017–22 regulatory control period will be the same as the length of the regulatory control period commencing 1 July 2022. This aligns the EBSS carryover period with the total length of Powerlink's regulatory control period and ensures continuous incentives.[15]

Incremental efficiency gains

We will calculate incremental efficiency gains differently depending on whether they are in:

- the first regulatory year (2017–18)
- the second regulatory year to the penultimate regulatory year (2018–19 to 2020–21).

We will estimate actual opex for the final regulatory year (2021–22) using the formulas set out in version two of the EBSS.[16]

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[14] AER, *Draft decision - Powerlink transmission determination - Attachment 9 - Efficiency benefit sharing scheme*, September 2016, pp.9-10 to 9-13.

[15] NER, cl. 6A.6.5(b)(1).

[16] AER, *Efficiency benefit sharing scheme for electricity network service providers*, November 2013, sections 1.3.2–1.3.4, pp. 5–7.

Adjustments to forecast or actual opex when calculating carryover amounts

The EBSS allows us to exclude categories of costs that we do not forecast using a single year revealed cost forecasting approach. This is designed to fairly share efficiency gains and losses. For instance, where a service provider achieves efficiency improvements, it receives a benefit through the EBSS and consumers receive a benefit through lower forecast opex in the next period. This is the way consumers and the service provider share in the benefits of an efficiency improvement.

If we do not use a single year revealed cost forecasting approach, lower actual opex will not necessarily be passed through to consumers. Consumers should not pay for EBSS benefits where they do not receive the benefits of a lower opex forecast.

Consistent with our draft decision and Powerlink's proposal, we will exclude the following categories of costs from the EBSS:

- debt raising costs
- network support costs.

This is because we typically do not forecast these costs based on revealed expenditure in a single year.

Consistent with our draft decision,[17] we will not exclude the following categories of opex from the EBSS as proposed by Powerlink:

- insurance
- self-insurance
- AEMC levy
- redundancy related costs.

Because we expect to include insurance, self-insurance and the AEMC levy in our forecast of total opex for the regulatory control period commencing in 2022–23 using a single year revealed cost approach, there is no reason to exclude them from the EBSS.

In our draft decision we stated that by including costs such as redundancy related costs, the AEMC levy, insurance and self-insurance in the EBSS; uncontrollable cost decreases or increases are shared between service providers and network users in the same way as for any efficiency gain or loss (that is, approximately 30:70 with a five year carryover period).

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[17] AER, *Draft decision - Powerlink transmission determination - Attachment 9 - Efficiency benefit sharing scheme*, September 2016, p.9-14.

In its revised proposal, Powerlink did not accept our draft decision that insurance, self-insurance and the AEMC levy should be subject to the EBSS. It stated these costs should be excluded because they were 'uncontrollable' costs that can be reasonably forecast using a bottom up approach.[18]

When we developed version two of the EBSS, we considered there was no strong reason why we should exclude nominated 'uncontrollable' cost categories from the EBSS.[19]

We expect the business benefits from applying an EBSS to uncontrollable costs. For example, if Powerlink incurs a significant self-insurance loss exceeding the revealed cost forecast, the EBSS allocates the cost between Powerlink and its customers in the proportion of 30:70, thereby reducing Powerlink's risk of a substantial loss.

If a category specific forecast is adopted, Powerlink cannot mitigate its forecasting risk in this way, and will therefore have to bear the full costs of any self-insurance loss that exceeds its forecast. In a similar sense, a business will be incentivised to apply a category-specific forecast if it expects to underspend against the forecast amount, with the result that the EBSS does not apply and the business therefore ends up retaining the entirety of any underspend for that category, rather than having to share the underspend with consumers through the EBSS.

We acknowledge the EBSS will reward or penalise network service providers for some forecasting error associated with uncontrollable events. However, on the whole, the risk of uncontrollable events presents both upside and downside risk to network service providers. Further, any material risks associated with insurance and self-insurance may be able to be managed through the pass-through mechanism. We do not think there is a compelling argument to share the cost of uncontrollable events differently to all other costs facing network service providers.

While some events may be uncontrollable, network service providers usually have some control over the costs associated with such events. Allowing exclusions would reduce the incentive to respond to such events efficiently.

Additionally, we consider relying on the business' revealed costs allows us to maintain our preferred top-down forecasting approach—thereby avoiding the need for us to undertake numerous bottom-up type assessments of discrete opex sub-categories, projects or items. We are forecasting the *total* amount of opex we consider Powerlink would need to meet the opex criteria.

Moreover, including specific cost categories identified by a business—rather than relying solely on the business' revealed costs, in the base year opex forecast—creates an incentive for the business to adopt an alternative forecasting method when its

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[18] Powerlink, *2018-22 Revised revenue proposal*, December 2016, pp. 15–16.

[19] AER, *Explanatory statement - Efficiency benefit sharing scheme for electricity network service providers*, November 2013, section 2.4, pp. 19-21.

expenditure for a particular opex category was atypically low; but follow the revealed cost approach in relation for those categories where expenditure was atypically high in the base year. We are therefore concerned that this would allow the business to 'pick' which categories of opex it expects will increase and seek a category specific forecast for those categories. Conversely, the business has no such incentive to identify costs that are going down, or projects or programs that it will discontinue in the upcoming period. These asymmetric incentives therefore potentially introduce an upward bias into our total opex forecast.[20]

Redundancy Costs

In its revised proposal, Powerlink stated redundancy costs should be excluded from the EBSS.[21]

Powerlink made an adjustment to its 2014–15 base year opex related to a workforce efficiency review in its forecast total opex for the 2017–22 regulatory control period. Powerlink stated the adjustment removed redundancy costs from the base year and as a consequence, its forecast opex does not include non-recurrent redundancy costs.[22] Nevertheless, Powerlink stated it expects to incur redundancy costs during the 2017–22 regulatory control period due to forecast reductions in the demand for prescribed transmission services. Powerlink considers it would be unduly penalised for excluding these costs from its opex forecast.

We disagree. Powerlink will not be penalised if we subject redundancy costs to the EBSS compared to excluding them. This is because if we exclude redundancy costs, Powerlink will incur 100 per cent of any redundancy costs it incurs in the 2017–22 regulatory control period. However, if we subject redundancy costs to the EBSS it will incur around 30 per cent of those costs, while around 70 per cent will be shared with consumers. We provide an example below, to illustrate the impact of non-recurrent costs on network service providers when those costs are subject to the EBSS and when they are not subject to the EBSS.

Further, not applying the EBSS to redundancy costs will distort the incentive to adopt efficient staffing levels. If we exclude redundancy costs from the EBSS the business will incur 100 per cent of its redundancy costs. However, it will only retain 30 per cent of its reduced labour costs. Not applying the EBSS to redundancy costs would not provide the business with effective incentives to promote economic efficiency.[23]

Finally, version two of the EBSS sets out the conditions under which we will make adjustments to forecast or actual opex when calculating carryover amounts.[24] These conditions were designed to achieve the requirements of the electricity rules. The only

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[20] AER, *Explanatory statement - Expenditure forecast assessment guideline* , November 2013, section 5.3.2, p. 75.

[21] Powerlink, *2018-22 Revised revenue proposal*, December 2016, pp. 15-16.

[22] Powerlink, *2018-22 Revised revenue proposal*, December 2016, p. 16.

[23] NEL, s. 7A(3).

[24] AER, *Efficiency benefit sharing scheme for electricity network service providers*, November 2013, section 1.4, p. 7.

reason provided in the EBSS to exclude a category of opex from the EBSS is when that category is not forecast using a single year revealed cost approach for the following regulatory control period.

Example: Impacts of a non-recurrent uncontrollable event when the EBSS does and does not apply

Take the example of a network business with an opex forecast of $10 million for each year of a five year regulatory control period. For simplicity assume there is no output, real price or productivity growth. And let's assume we will use the fourth year as the base year to forecast opex for the next regulatory control period, which means the forecast would be $10 million for each year of the next regulatory control period.

Now, let's say an uncontrollable event occurs in year 3 that increases its actual opex to $11 million for that year only. How does this impact the business under scenarios with and without an EBSS?

If the costs associated with the uncontrollable event are included in the EBSS, the business registers an incremental efficiency loss of $1 million in year three. It then registers an incremental gain of $1 million in the following year as its opex returns to the recurrent level. The business would receive an EBSS penalty of –$1 million for the five years following the incremental efficiency loss, and it would receive an EBSS reward of $1 million for the five years following the incremental efficiency gain. These rewards and penalties cancel each other out until six years later when the business receives the final $1 million reward. Consequently, the $1 million loss the business experienced in year 3 is paid back to the business as an EBSS carryover six years later. In net present value terms (NPV) terms, the business would bear approximately 30 per cent of the cost of the uncontrollable event in year 3. In other words, it pays 100 per cent of the costs of the uncontrollable event when it occurs and then receives the full $1 million back six years later, but is not compensated for the 'time value of money'.

On the other hand, if the costs associated with the uncontrollable event are excluded from the EBSS, the business would not register an incremental efficiency gain or loss in any year. It would bear 100 per cent of the costs of the uncontrollable event in year 3. It would not be compensated for this loss in any other way.

Consequently, if a business experiences a non-recurrent uncontrollable event, it is better off under the first scenario where an EBSS is applied, than under the second scenario where an EBSS is not applied.