DRAFT DECISION
TransGrid transmission determination
2018 to 2023

Attachment 9 – Efficiency benefit sharing scheme

September 2017

AUSTRALIAN ENERGY REGULATOR

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Note

This attachment forms part of the AER's draft decision on TransGrid's transmission determination for 2018–23. It should be read with all other parts of the draft decision.

The draft 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 5 – Regulatory depreciation

Attachment 6 – Capital expenditure

Attachment 7 – Operating expenditure

Attachment 8 – Corporate income tax

Attachment 9 – Efficiency benefit sharing scheme

Attachment 10 – Capital expenditure sharing scheme

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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).

To encourage a service provider to become more efficient, it is allowed to keep any difference between its approved total opex forecast and its actual opex in a regulatory control period. This is supplemented by the EBSS, which rewards efficiency gains and penalises efficiency losses by carrying them forward 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. This continuous incentive also discourages a service provider from inflating its opex in the expected base year for the following regulatory control period in order to increase its forecast opex for that period.

Consumers benefit from any efficiency gains made by the service provider through lower forecast opex for the following regulatory control period, which is based on the lower revealed opex. This is how efficiency improvements are shared between consumers and the business.

During the 2014–18 regulatory control period, TransGrid operated under version two of the electricity transmission network service providers' EBSS.[1]

9.1 Draft decision

Carryover amounts from the 2014–18 regulatory control period

Our draft decision is to approve EBSS carryover amounts totalling $15.3 million ($2017–18) from the application of the EBSS in the 2014–18 regulatory control period. This is $47.1 million ($2017–18) less than the carryover amounts TransGrid proposed, which totalled $62.4 million ($2017–18). There are five reasons for the material difference between our calculations:

1. TransGrid proposed a carryover period of five years rather than the four years we determined for the 2014–18 regulatory control period. Due to the current period being only four years, TransGrid's proposal to change the carryover length to five years would reward it for the higher opex it incurred in 2013–14. To avoid rewarding TransGrid for an efficiency loss, we have carried forward the incremental efficiency loss it made in 2013–14 for an additional year. This reduces its proposed carryover by $13.1 million ($2017–18).
2. We identified and corrected an error in the EBSS template we sent TransGrid. The template incorrectly used inflation lagged by 12 months to calculate TransGrid's

[1] AER, *Efficiency benefit sharing scheme for electricity network service providers*, November 2013.

proposed EBSS carryovers. Correcting this error reduced TransGrid's carryover amounts by $10.8 million ($2017–18).

3. We corrected the forecast opex amounts to match the determined forecast opex amounts for the 2009–14 and 2014–18 regulatory control periods. We also used further information TransGrid provided to adjust its reported movements in provisions and defined benefits superannuation contributions. The combined impact of these changes is to reduce TransGrid's carryover amounts by $9.0 million ($2017–18).
4. We have used consistent estimates of 2017–18 opex in both our EBSS carryover calculation and our alternative opex estimate. This reduced the carryover by $8.4 million ($2017–18).TransGrid used a lower estimate of 2017–18 opex to calculate its EBSS carryover than it used to forecast opex. This rewarded it for efficiency gains that it did not pass on to networks users through its opex.
5. When calculating the incremental efficiency gain for 2014–15, TransGrid removed opex in 2012–13 and 2013–14 relating to categories of opex we did not exclude from the operation of the EBSS in the current period. We did not remove this expenditure from TransGrid's total opex for 2012–13 and 2013–14 when we calculated the incremental efficiency gain for 2014–15. This reduced the carryover by $5.9 million ($2017–18).

We set out our draft decision on the EBSS carryover amounts TransGrid accrued during the 2014–18 regulatory control period in table 9.1.

Table 9.1 Draft decision on carryover amounts ($ million, 2017–18)

	2018–19	2019–20	2020–21	2021–22	2022–23	Total
TransGrid's proposal	25.4	25.4	3.4	8.3	–	**62.4**
AER draft decision	–0.9	12.2	–0.5	6.1	–1.7	**15.3**

Source: TransGrid, *Revenue proposal*, PTRM, 31 January 2017; AER analysis.

Application of the EBSS in the 2018–23 regulatory control period

We will apply version two of the EBSS[2] to TransGrid in the 2018–23 regulatory control period. We will exclude the following cost categories from the scheme:[3]

- debt raising costs
- network support costs
- network capability projects.

[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. 9.

The opex forecasts we will use to calculate efficiency gains in the 2018–23 regulatory control period, subject to further adjustments permitted by the EBSS, are set out in table 9.2.

Table 9.2 Forecast opex for the EBSS ($ million, 2017–18)

	2016–17	2017–18	2018–19	2019–20	2020–21	2021–22	2022–23
Total forecast opex	186.8	179.8	172.9	173.9	174.6	175.4	176.3
Less debt raising costs	–3.4	–3.4	–3.2	–3.2	–3.2	–3.1	–3.1
Less network support costs	–	–	–	–	–	–	–
Forecast opex for the EBSS	**183.4**	**176.4**	**169.6**	**170.7**	**171.4**	**172.2**	**173.2**

Source: AER analysis.

Note: Numbers may not add up to total due to rounding. Forecast opex does not include the opex costs of network capability projects. These costs are funded through the network capability component of the transmission STPIS.

9.2 TransGrid's proposal

9.2.1 Carryover amounts from the 2014–18 control period

TransGrid proposed we add carryover amounts totalling $62.4 million ($2017–18) to its revenue in the 2018–23 regulatory control period.[4] TransGrid calculated these carryover amounts based on a proposed carryover period of five years rather than the four years we determined for the 2014–18 regulatory control period.[5]

9.2.2 Application in the 2018–23 control period

TransGrid proposed that we apply version two of the EBSS in the 2018–23 regulatory control period. It proposed that we exclude only debt raising costs from the scheme.[6]

9.3 Assessment approach

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

- the revenue increments or decrements for each year of the 2018–23 regulatory control period arising from the application of the EBSS during the 2014–18 regulatory control period[7]
- how the EBSS will apply to TransGrid in the 2018–23 regulatory control period.[8]

4 TransGrid, *Revenue proposal*, 31 January 2017, p. 205.
5 TransGrid, *Revenue proposal*, 31 January 2017, p. 203.
6 TransGrid, *Revenue proposal*, 31 January 2017, p. 205.
7 NER, cl. 6A.5.4(a)(5).
8 NER, cll. 6A.14.1(1)(iv), cl. 6A.14.3(d)(2).

The EBSS must provide for a fair sharing between service providers and network users of opex efficiency gains and efficiency losses.[9] We must also have regard to the following matters when implementing the EBSS:[10]

- 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.

9.3.1 Interrelationships

The EBSS is closely 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.[11]

Our opex forecasting method relies on using the 'revealed costs' of the service provider in a chosen base year 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:

1. it removes 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
2. it provides a continuous incentive for a service provider to pursue efficiency improvements across the regulatory control period.

The EBSS does this by allowing a service provider to retain efficiency gains (or losses) for a total of six years, regardless of the year in which the service provider makes them.

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

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9 NER, cl. 6A.6.5(a).
10 NER, cl. 6A.6.5(b).
11 NER, cl. 6A.6.6(e)(8).

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 that we do not forecast using a revealed cost forecasting approach.

9.4 Reasons for draft decision

9.4.1 Carryover amounts from the 2014–18 control period

Our draft decision is to approve EBSS carryover amounts totalling $15.3 million ($2017–18) from the application of the EBSS during the 2014–18 regulatory control period. This is $47.1 million ($2017–18) less than the carryover amounts TransGrid proposed, which totalled $62.4 million ($2017–18). There are five reasons for the material difference between our calculations:

1. TransGrid proposed a carryover period of five years rather than the four years we determined for the 2014–18 regulatory control period. Due to the current period being only four years TransGrid's proposal to change the carryover length to five years would reward it for the higher opex it incurred in 2013–14. To avoid rewarding TransGrid for an efficiency loss, we have carried forward the incremental efficiency loss it made in 2013–14 for an additional year. This reduces its proposed carryover by $13.1 million ($2017–18).
2. We identified and corrected an error in the EBSS template we sent TransGrid. The template incorrectly used inflation lagged by 12 months to calculate TransGrid's proposed EBSS carryovers. Correcting this error reduced TransGrid's carryover amounts by $10.8 million ($2017–18).
3. We corrected the forecast opex amounts to match the determined forecast opex amounts for the 2009–14 and 2014–18 regulatory control periods. We also used further information TransGrid provided to adjust its reported movements in provisions and defined benefits superannuation contributions. The combined impact of these changes is to reduce TransGrid's carryover amounts by $9.0 million ($2017–18).
4. We have used consistent estimates of 2017–18 opex in both our EBSS carryover calculation and our alternative opex estimate. This reduced the carryover by $8.4 million ($2017–18).TransGrid used a lower estimate of 2017–18 opex to calculate its EBSS carryover than it used to forecast opex. This rewarded it for efficiency gains that it did not pass on to networks users through its opex.
5. When calculating the incremental efficiency gain for 2014–15, TransGrid removed opex in 2012–13 and 2013–14 relating to categories of opex we did not exclude from the operation of the EBSS in the current period. We did not remove this expenditure from TransGrid's total opex for 2012–13 and 2013–14 when we calculated the incremental efficiency gain for 2014–15. This reduced the carryover by $5.9 million ($2017–18).

In our final decision, we will update our calculation of the carryover amounts using actual audited opex for 2016–17, rather than the estimate we have used for this draft decision. We will also update inflation to reflect the most recent CPI values reported by the Australian Bureau of Statistics and the most recent CPI forecasts from the Reserve Bank of Australia.

Length of the carryover period

TransGrid proposed we use a five year carryover period to calculate the EBSS carryovers it accrued in the current period (2014–18). In our last decision we determined that the carryover period would be four years because at that time we expected the length of the following regulatory control period would be four years.[12] However, we now know that the period commencing in July 2018 will be five years. We have assessed the impact of a five year carryover period and found that, due to the current period being only four years, TransGrid's proposal would *reward* it for the higher opex it incurred in 2013–14.

The NER requires that the EBSS provides continuous incentives.[13] We generally consider this occurs when the length of the carryover period is the same as the length of the regulatory control period. However, when the lengths of the current and following regulatory control periods are different, the carryover period cannot be consistent with both. In this case, the EBSS will not provide continuous incentives. Consequently it may reward efficiency losses or penalise efficiency gains.[14] This would not be a fair sharing of efficiency gains and losses.[15]

To test TransGrid's proposal, we considered the impact of the carryover period against the requirements of the NER. Specifically we examined whether it:

- fairly shared opex efficiency gains and efficiency losses between TransGrid and network users[16]
- provided TransGrid with continuous incentives to reduce opex[17]
- rewarded TransGrid for efficiency gains and penalised it for efficiency losses.[18]

It is important to recognise that service providers retain efficiency gains and losses through a combination of three mechanisms:

1. the ex-ante opex allowance in the current regulatory control period
2. EBSS carryovers

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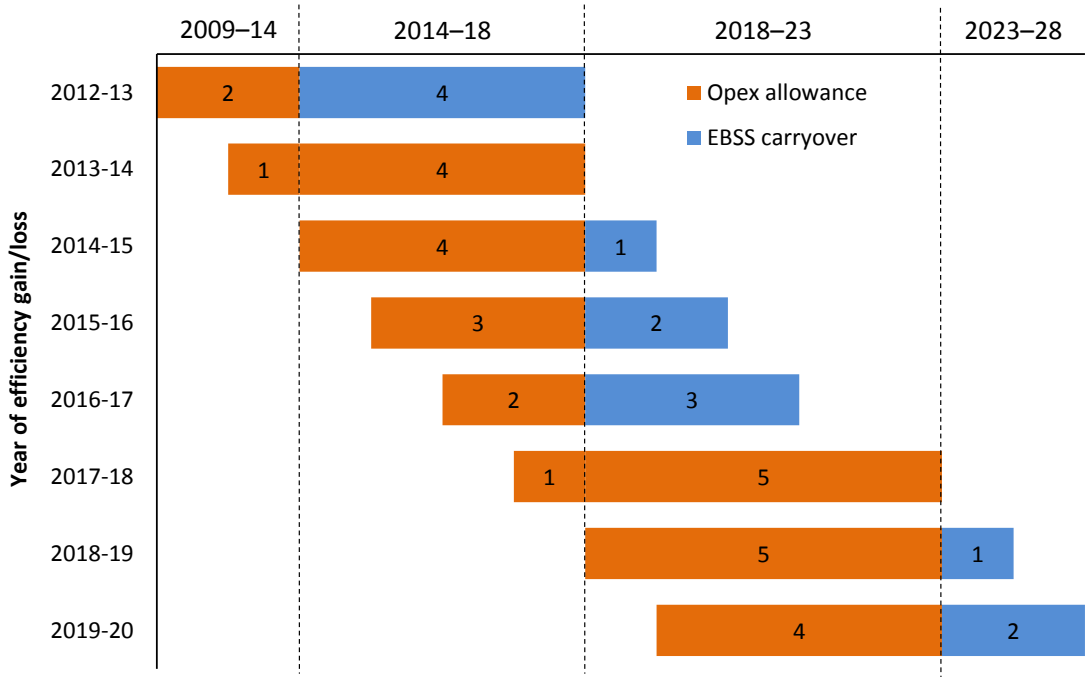
12 AER, *TransGrid transmission determination 2014−15 to 2017−18*, Final decision, Attachment 9, April 2015, p. 10.
13 NER, cl. 6A.6.5(b)(1).
14 NER, cl. 6A.6.5(b)(2).
15 NER, cl. 6A.6.5(a).
16 NER, cl. 6A.6.5(a).
17 NER, cl. 6A.6.5(b)(1).
18 NER, cl. 6A.6.5(b)(2).

3. how revealed costs are used to forecast opex for the following regulatory control period.

We show in figure 9.1 how a four year carryover would share the efficiency gains and losses TransGrid has made in the 2014–18 regulatory control period. It assumes that 2012–13 was used as the base year to forecast opex for the current regulatory control period and that 2016–17 is used as the base year to forecast opex for the 2018–23 period.

Figure 9.1 How many years TransGrid retains incremental efficiency gains and losses for with a four year carryover period



In this scenario, TransGrid would retain efficiency gains or losses it made in 2012–13 for a total of six years (the year of the gain/loss plus an additional five years). However, from 2013–14 to 2016–17 it would retain gains and losses for a total of only five years, due to the four year carryover period in the 2014–18 period. Then from 2017–18 onwards it would again retain gains and loss for a total of six years. This discontinuity affects the sharing of gains and losses, particularly at the margins, and particularly for non-recurrent efficiency gains and losses.

When a service provider makes a non-recurrent, or one-off, efficiency gain (loss) its opex reduces (increases) in a single year only. A non-recurrent efficiency gain (loss) can be thought of as a recurrent gain (loss) made in one year followed by an equal but opposite recurrent loss (gain) in the immediately following year. When a network business makes a non-recurrent gain (loss) in the base year the EBSS carryover carries forward the recurrent saving (loss) but the opex forecast for the next period carries forward the recurrent loss (saving). If the length of the next regulatory control period is longer than the carryover period the network business will be penalised (rewarded) for the non-recurrent efficiency gain (loss).

Consequently, if we apply a four year carryover period to TransGrid in the 2014–18 regulatory control period it would be penalised (rewarded) for any non-recurrent efficiency gains (losses) it has made in 2016–17. It would receive a dollar in both 2021–22 and 2022–23 for every extra dollar of opex it spent in 2016–17. This is because the incremental loss in 2016–17 would be carried forward for an additional four years (until 2020–21) by the EBSS carryovers but the incremental loss in 2017–18 would be carried forward for an additional five years (until 2022–23) through the opex forecast for the 2018–23 control period.

This result is inconsistent with how the EBSS would typically share a non-recurrent efficiency loss (or gain). Typically, if TransGrid spent an extra dollar it would only get an extra dollar six years later, not five and six years later. In this way the EBSS would share the non-recurrent efficiency loss with network users. Analysis demonstrating these outcomes is available on our website.[19] Our calculation of EBSS carryovers found that applying a four year carryover would result in carryover amounts totalling $16.2 million ($2017–18).

Consequently, we agree with TransGrid that applying a four year carryover period for the 2014–18 period would:[20]

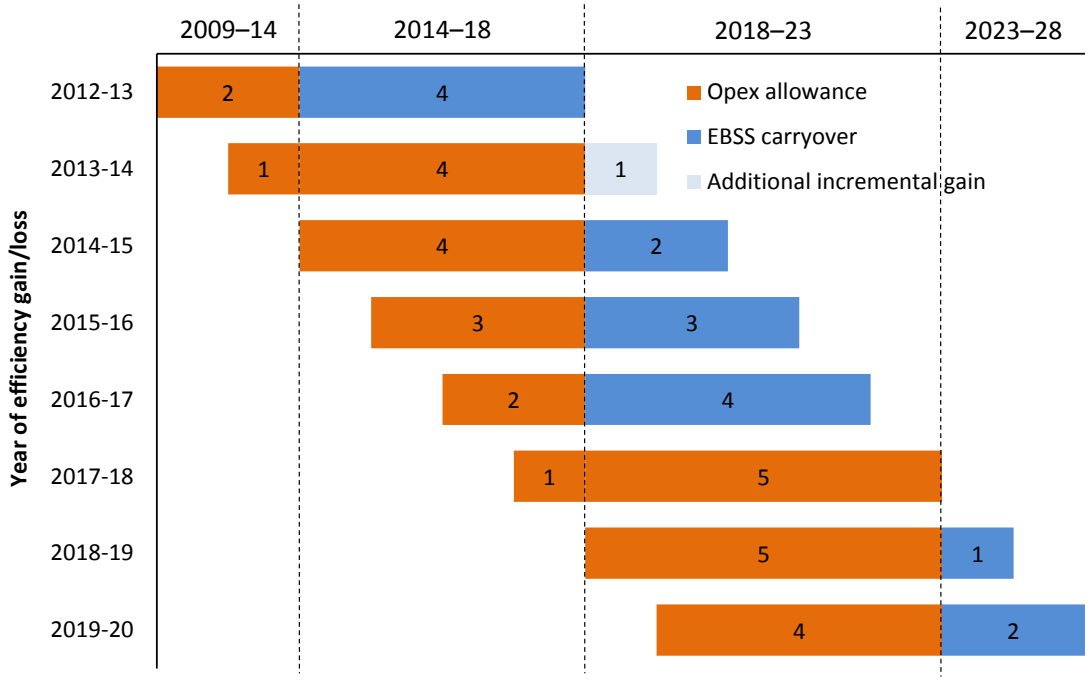
- not fairly share efficiency gains between TransGrid and its network users
- create an incentive for TransGrid to increase opex in the expected base-year, 2016–17
- reward TransGrid for efficiency losses and penalise it for efficiency gains
- not provide a continuous incentive for TransGrid to pursue efficiency gains.

However, we consider that TransGrid's proposal to use a five year carryover period does not solve these problems. It only changes the timing of them. We show in figure 9.2 how a five year carryover would share the efficiency gains and losses TransGrid has made. Again, it assumes 2012–13 was used as the base year to forecast opex for the 2014–18 regulatory control period and that 2016–17 is used to forecast opex for the 2018–23 period.

[19] https://www.aer.gov.au/networks-pipelines/determinations-access-arrangements/transgrid-determination-2018-23

[20] TransGrid, *Revenue proposal*, 31 January 2017, p. 203.

Figure 9.2 How many years TransGrid retains incremental efficiency gains and losses for with a five year carryover period



With a five year carryover period, TransGrid retains efficiency gains and losses for a total of six years (the years of the gain or loss plus an additional five years) for all years except 2013–14. Again, this discontinuity affects the sharing of gains and losses.

Instead of rewarding (penalising) non-recurrent efficiency losses (gains) made in 2016–17, as would be the case with a four year carryover, a five year carryover would reward non-recurrent efficiency losses made in 2013–14. For every extra dollar it spent in 2013–14 it would receive a dollar in both 2018–19 and 2019–20. This is because the incremental loss in 2013–14 would be carried forward for an additional four years by the opex forecast (until 2017–18), but the incremental gain in 2014–15 would be carried forward for an additional five years through the EBSS carryovers (until 2019–20). Analysis demonstrating these outcomes is also available on our website.[21]

This result is inconsistent with how a non-recurrent efficiency loss (or gain) made in any other year would be penalised (or rewarded). In any other year, if TransGrid spent an extra dollar it would only get an extra dollar six years later, not five and six years later. In this way the EBSS would share the non-recurrent efficiency loss with network users.

Consequently, simply applying a five year carryover period for the 2014–18 control period would not fairly share efficiency gains between TransGrid and its network users.

[21] https://www.aer.gov.au/networks-pipelines/determinations-access-arrangements/transgrid-determination-2018-23

An unadjusted five year carryover would reward TransGrid for efficiency losses or penalise it for efficiency gains.

We found that TransGrid made an incremental efficiency *loss* of $13.1 million ($2017–18) in 2013–14, which it would retain for only five years. This was followed by an incremental efficiency *gain* of $12.7 million ($2017–18) in 2014–15, which it would retain for six years. This indicates that it made a significant non-recurrent efficiency loss in 2013–14, which would be rewarded under its proposal. This would lead to carryover amounts totalling $28.4 million ($2017–18) with a five year carryover period. Given the significant non-recurrent efficiency loss in 2013–14, we consider a four year carryover would share efficiency gains and losses more fairly than a five year carryover.

However, given neither of these two options is consistent with the requirements of the NER, we have applied an alternative approach which we consider provides a continuous incentive and a fair sharing of efficiency gains and losses. Specifically, we found that carrying forward the incremental efficiency loss TransGrid incurred in 2013–14 for an additional year provides it with a consistent share of efficiency gains and losses in every year. This is because it would retain incremental efficiency gains and losses made in all years for a total of six years, including the incremental efficiency loss made in 2013–14 (see figure 9.2). This approach rewards efficiency gains and penalises efficiency losses, thus sharing gains and losses fairly. We have applied this approach in our draft decision because it is the only approach that is consistent with the objectives we must have regard to when we implement the EBSS.[22] This reduced TransGrid's total carryover amount by $13.1 million ($2017–18), giving carryover amounts totalling $15.3 million ($2017–18).

Consumer Price Index (CPI)

TransGrid used the EBSS template included in the reset RIN templates we sent it to calculate its proposed EBSS carryover amounts. However, we had inadvertently lagged the CPI values 12 months in that EBSS template. Consequently TransGrid used lagged CPI when it adjusted forecast and actual opex into June 2018 dollars.

We have not lagged CPI when we calculated TransGrid's EBSS carryovers. This is consistent with our decision on the operation of the EBSS in TransGrid's 2009–14 regulatory control period.[23] In that decision we changed our approach from using lagged inflation (which is the approach taken in our roll forward model), to using unlagged inflation. This was consistent with TransGrid's own proposal for the current regulatory control period. We changed to using unlagged inflation based on advice from Houston Kemp that TransGrid provided with its revised revenue proposal for the

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22 NER, cl. 6A.6.5(b).

23 AER, *TransGrid transmission determination 2014−15 to 2017−18*, Final decision, Attachment 9, April 2015, p. 16.

2014–18 regulatory control period.[24] Our view on this issue remains the same as it was in that decision.

Forecast and reported opex amounts

We found that the forecast opex amounts TransGrid used to calculate its proposed EBSS carryovers did not reconcile with the amounts in the PTRMs for our decisions for the 2009–14 and 2014–18 regulatory control periods. We have used the opex forecasts in the PTRMs for those decisions to calculate the EBSS carryover amounts.

We also sought clarification from TransGrid about how it reported defined benefits superannuation contributions and movements in provisions. We used the information TransGrid provided to adjust its reported movements in provisions and defined benefits superannuation contributions.[25]

The combined impact of these changes to forecast and actual opex was to reduce TransGrid's carryover amount by $9.0 million ($2018–18).

Estimate of opex for 2017–18

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.[26]

If the estimate of final year expenditure in the EBSS is not the same as the estimate used to forecast opex, TransGrid may receive a reward (penalty) for efficiency gains (losses) that the opex forecast does not passed on to network users. This is inconsistent with the NER which requires that the EBSS provides for fair sharing of opex efficiency gains and losses between network service providers and network users.[27] It is also inconsistent with our *Expenditure forecast assessment guideline* and the EBSS.[28]

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[24] Houston Kemp, *Inflation Adjustment to the Opex Model*, 12 January 2015.

[25] TransGrid, *Response to information request IR#037, 12 July 2017* and *Response to information request IR#038*, 28 July and 1 August 2017. We took a different approach to TransGrid when reporting defined benefits superannuation contributions and movements in provisions. However, both approaches yield the same outcome. We excluded superannuation contributions on a cash basis and removed total movements in provisions. TransGrid excluded superannuation contributions on an accrual basis and did not remove the superannuation movement in provisions. Both approaches give the same result.

[26] AER, *Efficiency benefit sharing scheme for electricity network service providers*, November 2013, p. 9.

[27] NER, cl. 6A.6.5(a).

[28] AER, *Expenditure forecast assessment guideline for electricity transmission*, November 2013, pp. 22–23; AER, *Expenditure forecast assessment guideline for electricity transmission*, *Explanatory statement*, November 2013, p. 96; AER, *Efficiency benefit sharing scheme for electricity network service providers*, November 2013, p. 9.

When calculating its proposed carryover amounts, TransGrid used a lower estimate of opex for 2017–18 than it used to forecast opex. Consequently we consider its proposed EBSS carryovers would reward it for efficiency gains that its opex forecast would not pass on to network users.

When we calculated TransGrid's carryover amounts, we used the same estimate of opex for 2017–18 as TransGrid used to forecast opex. We did this to share efficiency gains fairly. This reduced TransGrid's total carryover amount by $8.4 million

($2017–18). Our approach to estimating final year expenditure is consistent with both the EBSS and the *Expenditure forecast assessment guideline*.

In both the EBSS and the *Expenditure forecast assessment guideline* we set out the formula we will use to estimate final year expenditure:[29]

$$A_f^* = F_f - (F_b - A_b) + \ non\text{-}recurrent\ efficiency\ gain_b$$

where:

- A_f^* is the best estimate of actual opex for the final year of the preceding regulatory control period, in this case 2017–18
- F_f is the determined opex allowance for the final year of the preceding regulatory control period (2017–18)
- F_b is the determined opex allowance for the base year, in this case 2016–17
- A_b is the amount of actual opex in the base year (2016–17)
- *non-recurrent efficiency gain*$_b$ is the non-recurrent efficiency gain in the base year (2016–17).

Expressing estimated final year expenditure in this way allows the service provider to retain expected incremental efficiency gains made after the base year through the EBSS carryover. To the extent the assumption is incorrect the service provider will still retain the incremental efficiency gains it makes but they will be retained through the opex forecast rather than through the EBSS carryovers.

When we consulted on the design of version two of the EBSS, some service providers raised concerns that if base year expenditure was significantly lower (higher) than ongoing efficient opex, then the opex forecast would be artificially low (high).[30] We considered that the EBSS carryovers would compensate the service provider appropriately, however we accepted the 'optics' could be misleading. As a result, version two of the EBSS allows a service provider to adjust its estimated final year opex to ensure it reflects efficient expenditure. This effectively shifts revenue from the

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[29] AER, *Efficiency benefit sharing scheme for electricity network service providers*, November 2013, p. 9; AER, *Expenditure forecast assessment guideline for electricity transmission*, November 2013, p. 23.

[30] AER, *Expenditure forecast assessment guideline for electricity transmission*, *Explanatory statement*, November 2013, pp. 95–96.

opex forecast to the EBSS carryover or vice versa. The estimated final year equation allows this adjustment by adding a *non-recurrent efficiency gain* to the estimate of final year opex.

For the purposes of the EBSS, TransGrid used the equation above to estimate opex for 2017–18 and assumed no base year non-recurrent efficiency gains. However, as discussed above, TransGrid used a higher estimate for 2017–18 to forecast opex.

TransGrid's estimate of 2017–18 opex in its opex model is $168.4 million ($2017–18). We have recalculated this amount to be $167.3 million ($2017–18) using the inflation for 2017–18 that we have used to forecast opex. This is $1.7 million ($2017–18) higher than if it had used the above equation and assumed no base year non-recurrent efficiency gains. This equates to a *non-recurrent efficiency gain* in the base year of $1.7 million ($2017–18).[31] In other words, TransGrid's opex estimate for 2017–18 assumes it makes an incremental efficiency loss of $1.7 million ($2017–18) in 2017–18. This increases its total opex forecast for the 2018–23 regulatory control period by $8.4 million ($2017–18).

To ensure that we fairly share the estimated efficiency loss in 2017–18 between TransGrid and its network users we have assumed an incremental efficiency loss of $1.7 million ($2017–18) in 2017–18 when we calculated the EBSS carryover amounts. This is consistent with the requirements of both the EBSS and the *Expenditure forecast assessment guideline*.

This approach ensures TransGrid receives EBSS rewards for the efficiency gains it has forecast for 2017–18.[32] We also note that the forecast opex for the current regulatory control period included a step change for major operating projects that provided capex/opex trade-offs.[33] TransGrid chose not to undertake most of these major operating projects and chose capex options instead.[34] Our approach to estimating 2017–18 opex also ensures that TransGrid receives a fair share of the opex efficiency gains associated with these major operating projects. The estimate of 2017–18 opex that TransGrid used to calculate EBSS carryovers would result in it receiving rewards for these efficiency gains larger than the efficiency gain itself. This would not be a fair sharing of efficiency gains.

Incremental efficiency gain in 2014–15

When TransGrid calculated the incremental efficiency gain for 2014–15, it excluded categories of opex from its reported opex for 2012–13 and 2013–14 that we did not exclude from the EBSS in the 2014–18 regulatory control period.

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[31] $$non\text{-}recurrent\ efficiency\ gain = A_f^* - F_f + \left(F_b - A_b\right) = 167.3 - 175.1 + \left(182.1 - 172.6\right) = \$1.7\ \text{million}\ (\$2017-18)$$

[32] TransGrid, *Revenue proposal*, 31 January 2017, p. 145.

[33] AER, *TransGrid transmission determination 2015−16 to 2017−18*, Final decision, Attachment 7, April 2015, pp. 65–66.

[34] TransGrid, *Response to information request #037*, 12 July 2017.

To calculate the incremental gain made in the first year of a regulatory control period we start with the underspend in that year. Since the forecast for that year will reflect the level of efficiency revealed in the base year, this underspend will reflect all efficiency gains or losses made after the base year. So we then subtract any incremental gains or losses made after the base year in the previous period. When we do this, we subtract efficiency gains made in all categories of opex subject to the EBSS in the new period. This includes categories of opex that we excluded from the EBSS in the previous period. This is because we are calculating the incremental efficiency gain in 2014–15 for those categories of expenditure subject to the EBSS in the 2014–18 period.

Both we and TransGrid calculated the incremental efficiency gain in 2014–15 by applying the first year formula set out in the EBSS.[35] However, TransGrid excluded self-insurance and insurance costs, even though these cost categories are not excluded from the operation of the EBSS in the 2014–18 regulatory control period. This means TransGrid's calculation of its incremental efficiency gain for 2014–15 includes gains it made in 2013–14 related to its self–insurance and insurance costs.

When we calculated the incremental efficiency gain in 2014–15, we did not exclude self-insurance and insurance from TransGrid's reported opex for 2012–13 and 2013–14. We subtracted efficiency gains made in the previous period for these categories to calculate the incremental efficiency gain in 2014–15. In this way we only included efficiency gains made in 2014–15. This reduced TransGrid's carryover amounts by $5.9 million ($2017–18).

9.4.2 Application in the 2018–23 control period

We will apply version two of the EBSS to TransGrid during the 2018–23 regulatory control period. 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. We have provided details on these below.

Length of carryover period

The length of the carryover period for the 2018–23 regulatory control period will be the same as the length of the regulatory control period commencing 1 July 2023. This aligns the EBSS carryover period with the length of TransGrid's next regulatory control period and ensures continuous incentives.[36] As we expect TransGrid's next regulatory control period will be five years, this is consistent with TransGrid's proposal for a five year carryover period.[37]

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35 AER, *Efficiency benefit sharing scheme for electricity network service providers*, November 2013, p. 8.

36 NER, cl. 6A.6.5(b)(1).

37 TransGrid, *Revenue proposal*, 31 January 2017, p. 205.

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. We do this 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, we may not pass the revealed efficiency gains through to consumers. Consumers should not pay for EBSS benefits where they do not receive the benefits of a lower opex forecast.

Consistent with TransGrid's proposal, we will exclude debt raising costs from the EBSS. We exclude debt raising costs because we typically do not forecast them based on revealed expenditure in a single year.

We will also exclude network support costs and the opex costs of network capability projects. We will exclude network support costs because they are passed through to network users via an annual pass through mechanism. We also forecast them on a category specific basis to facilitate the pass through.

The opex costs of network capability projects are funded through the network capability component of the transmission STPIS, not through forecast opex. We will also exclude these costs from the EBSS so that TransGrid does not receive EBSS rewards or penalties for undertaking these projects. Including these costs in the EBSS would distort the incentive to undertake network capability projects provided by the STPIS.