Draft decision

TransGrid transmission determination

2015–16 to 2017–18

Attachment 5: Regulatory depreciation

November 2014

AUSTRALIAN ENERGY REGULATOR

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Note

This attachment forms part of the AER's draft decision on TransGrid's revenue proposal 2015–18. It should be read with 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

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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	aggregate service revenue requirement
augex	augmentation expenditure
capex	capital expenditure
CCP	Consumer Challenge Panel
CESS	capital expenditure sharing scheme
CPI	consumer price index
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

Shortened form	Extended form
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
RPP	revenue 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

5 Regulatory depreciation

The AER is required to decide on the indexation of the regulatory asset base (RAB) and depreciation building blocks for TransGrid's 2014–18 period.[1] The regulatory depreciation allowance (or return of capital) is the net total of the straight-line depreciation (negative) and the indexation of the RAB (positive).

This attachment sets out our draft decision on TransGrid's regulatory depreciation allowance. It also presents our draft decision on the proposed depreciation schedules, including an assessment of the proposed standard and remaining asset lives to be used for forecasting depreciation allowances.

5.1 Draft decision

We do not accept TransGrid's proposed regulatory depreciation allowance of $427.6 million ($ nominal) for the 2014–18 period. Instead, we determine a regulatory depreciation allowance of $440.9 million ($ nominal) for TransGrid, an increase of $13.3 (or 3.1 per cent) from the proposal, made for the following reasons:

- We accept TransGrid's proposed straight-line method, and standard asset lives used to calculate the regulatory depreciation allowance. We consider that TransGrid's proposed standard asset lives are consistent with those approved at the 2009–14 transmission determination and reflect the nature and economic lives of the assets.2
- We accept TransGrid's proposed weighted average method to calculate the remaining asset lives as at 1 July 2014. This because the proposed method applies the approach as set out in the roll forward model (RFM).
- Our determinations on other components of TransGrid's proposal also affect the forecast regulatory depreciation allowance—for example, the forecast inflation rate (attachment 3) and forecast capital expenditure (capex) (attachment 6).

Table 5-1 sets out our draft decision on the annual regulatory depreciation allowance for TransGrid's 2014–18 period.

Table 5-1 AER's draft decision on TransGrid's depreciation allowance for the 2014–18 period ($ million, nominal)

	2014–15	2015–16	2016–17	2017–18	Total
Straight-line depreciation	246.9	267.4	287.3	275.8	1077.4
Less: inflation indexation on opening RAB	153.7	157.6	161.2	164.1	636.5
Regulatory depreciation	**93.2**	**109.9**	**126.1**	**111.7**	**440.9**

Source: AER analysis.

1 NER, cll. 6A.5.4(a)(1) and (3).
2 NER, cl. 6A.6.3(b).

5.2 TransGrid's proposal

TransGrid proposed a forecast regulatory depreciation allowance of $427.6 million ($ nominal) over the 2014–18 period as shown in Table 5-2. To calculate the depreciation allowance, TransGrid proposed to use:[3]

- the straight-line depreciation method employed in the AER's post-tax revenue model (PTRM)
- the closing RAB value as at 30 June 2014 derived from the AER's RFM
- the weighted average remaining asset lives of assets in existence as at 30 June 2014 derived from the RFM
- the proposed forecast capex for the 2014–18 period
- the standard asset lives for depreciating new assets associated with forecast capex for the 2014–18 period. TransGrid proposed to reduce the standard asset lives for its existing 'Underground cables 2014–18' (to 45 years from 50 years), 'Secondary systems 2014–18' (to 15 years from 35 years) and 'Communications 2014–18' (to 10 years from 35 years) asset classes. It also proposed a new 'Transmission line life extension' asset class with a standard asset life of 25 years.

Table 5-2 sets out TransGrid's proposed depreciation allowance for the 2014–18 period.

Table 5-2 TransGrid's proposed depreciation allowance for the 2014–18 period ($ million, nominal)

	2014–15	2015–16	2016–17	2017–18	Total
Straight-line depreciation	246.9	268.9	292.0	283.6	1091.5
Less: inflation indexation on opening RAB	155.2	162.2	170.4	176.0	663.9
Regulatory depreciation	**91.7**	**106.7**	**121.6**	**107.5**	**427.6**

Source: TransGrid, *Revenue proposal*, p. 203.

5.3 AER's assessment approach

We are required to determine the regulatory depreciation allowance as part of a TNSP's annual building block revenue requirement.[4] Our calculation of a TNSP's regulatory depreciation building block is made in the PTRM and depends on several components. The calculation of depreciation in each year is governed by the value of assets included in the RAB at the beginning of the regulatory year and the depreciation schedules.

Our standard approach to calculating depreciation is to employ the straight-line method as set out in the PTRM. We consider that the straight-line method of depreciation satisfies the National Electricity Rules (NER) requirements in clause 6A.6.3(b). It provides an expenditure profile that reflects the nature of the assets over their economic life.[5] Regulatory practice has been to assign a standard asset life to each category of assets that represents the economic or technical life of the asset or

3 TransGrid, *Revenue proposal*, pp. 200–203.
4 NER, cl. 6A.5.4(a)(3).
5 NER, cl. 6A.6.3(b)(1).

asset class. We must consider whether the proposed depreciation schedules conform to the following requirements:

- The schedules depreciate using a profile that reflects the nature of the assets or category of assets over the economic life of that asset or category of assets.[6]
- The sum of the real value of the depreciation attributable to any asset or category of assets must be equivalent to the value at which that asset or category of assets was first included in the RAB for the relevant transmission system.[7]

To the extent that a TNSP's revenue proposal does not comply with the above requirements, we must determine the depreciation schedules for calculating the depreciation for each regulatory year.[8]

The regulatory depreciation allowance is an output of the PTRM. We therefore have assessed the TNSP's proposed regulatory depreciation allowance by analysing the proposed inputs to the PTRM for calculating the regulatory depreciation allowance. These inputs include:

- the opening RAB as at 1 July 2014
- the forecast net capex in the 2014–18 period
- the forecast inflation rate for the above period
- the standard asset life for each asset class—used for calculating the depreciation of new assets associated with forecast net capex in the above period
- the remaining asset life for each asset class—used for calculating the depreciation of existing assets associated with the opening RAB as at 1 July 2014.

Our draft decision on a TNSP's regulatory depreciation allowance reflects our determinations on the forecast capex, forecast inflation and opening RAB as at 1 July 2014 building block components (the first three inputs in the above list). Our determinations on these components of the TNSP's proposal are discussed in attachments 6, 3 and 2 respectively.

In this attachment, we assessed TransGrid's proposed standard asset lives against:

- the approved standard asset lives in the transmission determination for the current regulatory control period
- the standard asset lives of comparable asset classes approved in our recent transmission determinations for other TNSPs.

Our standard approach for depreciating a TNSP's existing assets in the PTRM is to use the remaining asset lives at the start of a regulatory control period as determined in the RFM. Our RFM uses the weighted average method to establish a remaining asset life for each asset class. The weighted average method rolls forward the remaining asset life for an asset class from the beginning of the current regulatory control period. We consider this method better reflects the mix of assets within that asset class, when they were acquired over that period (or if they were existing assets), and the remaining value of those assets (used as a weight) at the end of the period. We will assess the outcomes of other approaches against the outcomes of this standard method in the RFM.

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6 NER, cl. 6A.6.3(b)(1).
7 NER, cl. 6A.6.3(b)(2).
8 NER, cl. 6A.6.3(a)(2)(ii).

5.3.1 Interrelationships

The regulatory depreciation allowance is a building block component of the annual building block revenue requirement.[9] Higher (or quicker) depreciation leads to higher revenues over the regulatory control period. It also causes the RAB to reduce more quickly (assuming no further capex). This reduces the return on capital allowance, although this impact is usually secondary to the increased depreciation allowance.

Ultimately, however, a TNSP can only recover the capex it has incurred on assets once. The depreciation allowance therefore reflects how quickly the RAB is being recovered and is based on the remaining and standard asset lives used in the depreciation calculation.

The depreciation allowance also depends on the level of the opening RAB and the forecast capex. Any increase in these factors also increases the depreciation allowance.

To prevent double counting of inflation through the WACC and RAB, the regulatory depreciation allowance also has an offsetting reduction for indexation of the RAB.[10] Factors that affect forecast inflation and/or the size of the RAB will therefore affect the size of this indexation adjustment.

Figure 2-1 (in attachment 2) shows the relative size of the inflation and straight-line depreciation and their impact on the RAB based on TransGrid's proposal. A ten per cent increase in the straight-line depreciation causes revenues to increase by about 2.8 per cent.

5.4 Reasons for draft decision

We accept TransGrid's proposed straight-line depreciation method for calculating the regulatory depreciation allowance as set out in the PTRM. However, we increased TransGrid's proposed forecast regulatory depreciation allowance by $13.3 million (or 3.1 per cent) to $440.9 million. Our amendment is mainly driven by our determination on other components of TransGrid's revenue proposal—for example, the forecast inflation rate (attachment 3) and forecast capex (attachment 6)—affecting the forecast regulatory depreciation allowance. In particular, the lower forecast inflation rate used in this draft decision means the resulting regulatory depreciation allowance (which nets out the inflation indexation on the opening RAB) is higher than proposed.

5.4.1 Standard asset lives

We accept TransGrid's proposed standard asset lives for its existing asset classes because they are consistent with the approved standard asset lives in our determination for the 2009–14 regulatory control period. We are satisfied these proposed standard asset lives reflect the nature of the assets over the economic lives of the asset classes.[11]

We also accept TransGrid's proposed changes to the standard asset lives for the 'Underground cables 2014–18' (to 45 years from 50 years) and 'Secondary systems 2014–18' (to 15 years from 35

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9 In the PTRM, the distinction is made between straight-line depreciation and regulatory depreciation. The difference being that regulatory depreciation is the straight-line depreciation minus the indexation adjustment.

10 If the asset lives are extremely long, such that the straight-line depreciation rate is lower than the inflation rate, then negative regulatory depreciation can emerge. The indexation adjustment is greater than the straight-line depreciation in such circumstances.

11 NER, cl. 6A.6.3(b)(1).

years) asset classes. This is because TransGrid's proposed standard asset lives are comparable with those approved in our recent transmission determinations for other TNSPs.[12]

Further, we accept TransGrid's proposal to change the standard asset life to 10 years from 35 years for the 'Communications 2014–18' asset class. However, we renamed this proposed asset class to 'Communications (short life) 2014–18' to clarify the types of assets that will be allocated to that asset class. The assets allocated to this asset class are the electronic devices that form part of the communications systems in TransGrid's network. We consider the proposed standard asset life of 10 years reflects the expected economic lives of these assets.

However, this communications asset class should not be used for large communication assets associated with civil works at substations, or radio repeater sites and optical fibre ground wire on transmission lines. These large communications assets have a much longer asset lives than the electronic communications devices. We understand that TransGrid will maintain its current approach of allocating expenditure associated with large communication assets to other existing asset classes that have longer standard asset lives such as 'Substations' asset class (40 years) or the 'Transmission lines' asset class (50 years).[13] We have therefore renamed the proposed communications asset class to better represent the nature of the communications assets that are allocated to it.[14]

We accept TransGrid's proposed standard asset life of 25 years for the new 'Transmission line life extension' asset class. This is because we consider the proposed 25 years reflects the expected economic life of the assets allocated to this asset class.[15] TransGrid's forecast capex for the 'Transmission line life extension 2014–18' asset class is about $40.3 million. Around 90 per cent of the forecast capex is for zinc coating and 10 per cent is for replacement of corroded nuts, bolts and fittings. The weighted average of the technical lives for zinc coating and nuts, bolts and fittings is between 20 and 34 years.[16] The proposed standard asset life of 25 years is close to the middle of this range. Further, we note that we have approved a standard asset life of 27 to 30 years for similar asset classes in recent transmission determinations for other TNSPs. Therefore, we consider TransGrid's proposed standard asset life of 25 years is reasonable.

We note the Energy Markets Reform Forum's submission which stated that more explanation is required to support the proposed changes for some of the standard asset lives.[17] We have sought additional information as noted above from TransGrid and have given careful consideration of the material in reaching our conclusion.

Table 5-3 sets out our draft decision on TransGrid's standard asset lives for the 2014–18 period.

5.4.2 Remaining asset lives

We accept TransGrid's proposed weighted average method to calculate the remaining asset lives as at 1 July 2014. The proposed method applies the approach as set out in the RFM. In accepting the weighted average method, we note we will have to update the remaining asset lives for the final

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12 AER, *Final decision: Powerlink transmission determination 2012–13 to 2016–17, April 2012,* p. 209; AER, *Final decision: ElectraNet transmission determination 2013–14 to 2017–18*, April 2013, p. 149; AER, *Draft decision: SP AusNet transmission determination 2014–15 to 2016–17*, August 2013, p. 146.

13 TransGrid, *Email response to information request AER TransGrid—Depreciation 01*, 3 July 2014, pp. 3–6.

14 NER, cl. 6A.6.3(b)(1).

15 NER, cl. 6A.6.3(b)(1).

16 TransGrid, *Email response to information request AER TransGrid—Depreciation 01*, 3 July 2014, pp. 1–2.

17 EMRF, *TransGrid application, A response by the EMRF*, July 2014, pp. 40–41.

decision.[18] This is because of required updates to the actual capex values in the RFM, which are inputs for calculating the weighted average remaining asset lives.

Table 5-3 sets out our draft decision on the remaining asset lives as at 1 July 2014 for TransGrid.

Table 5-3 AER's draft decision on TransGrid's standard and remaining asset lives as at 1 July 2014 (years)

Asset class	Standard asset life	Remaining asset life as at 1 July 2014
Transmission lines (pre 2004-05)	n/a	18.1
Underground cables (pre 2004-05)	n/a	30.3
Substations including buildings (pre 2004-05)	n/a	16.5
SCADA and communications (pre 2004-05)	n/a	1.8
Non-network assets (pre 2004-05)	n/a	1.0
SMHEA assets (pre 2004-05)	n/a	3.0
Transmission lines (2004-09)	n/a	44.1
Underground cables (2004-09)	n/a	36.4
Substations including buildings (2004-09)	n/a	33.8
SCADA and communications (2004-09)	n/a	8.8
Non-network assets (2004-09)	n/a	3.4
Transmission lines & cables (2009-14)	n/a	48.7
Substations (2009-14)	n/a	38.2
Secondary systems (2009-14)	n/a	33.5
Communications (2009-14)	n/a	33.5
Business IT (2009-14)	n/a	3.2
Minor plant, motor vehicles & mobile plant (2009-14)	n/a	6.5
Equity raising costs (2009-14)	n/a	36.6
Transmission lines (2014-18)*	50.0	n/a
Underground cables (2014-18)*	45.0	n/a
Substations (2014-18)*	40.0	n/a
Secondary systems (2014-18)*	15.0	n/a
Communications (short life) (2014-18)*	10.0	n/a

[18] At the time of this draft decision, the roll forward of TransGrid's RAB includes estimated capex values for 2013–14. We will update the 2013–14 estimated capex values with the actual values for the final decision. The 2013–14 capex values are used to calculate the weighted average remaining asset lives in the RFM. Therefore, for the final decision we will recalculate TransGrid's remaining asset lives as at 1 July 2014 using the method approved in this draft decision.

Asset class	Standard asset life	Remaining asset life as at 1 July 2014
Business IT (2014-18)*	4.0	n/a
Minor plant, motor vehicles & mobile plant (2014-18)*	8.0	n/a
Transmission line life extension (2014-18)*	25.0	n/a
Equity raising costs (2014-18)[a]	n/a	n/a
Land and easements	n/a	n/a

Source: AER analysis.
n/a: not applicable. The asset classes ending with '(pre 2004-05)'; '(2004-09)'; and '(2009-14)' do not have assigned standard asset lives because forecast capex is no longer allocated to them.
* We changed the regulatory control period label from '2014-19' to '2014-18' in the PTRM.
(a) For this draft decision, TransGrid does not satisfy the requirements to incur benchmark equity raising costs associated with its forecast capex for the 2014–18 regulatory control period. Therefore, a standard asset life for equity raising costs (2014–18) is not required.