



**Draft decision**

**TasNetworks transmission determination**

**2015-16 to 2018-19**

**Attachment 5: Regulatory depreciation**

November 2014

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## Note

This attachment forms part of the AER's draft decision on the transmission determination for TasNetworks' 2015–18 regulatory control period. It should be read in conjunction 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

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

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## Shortened forms

Shortened form	Extended form
AARR	aggregate annual revenue requirement
AASB	Australian Accounting Standards Board
ABS	Australian Bureau of Statistics
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
ARPC	Australian Reinsurance Pool Corporation
ASRR	aggregate service revenue requirement
ASX	Australian Stock Exchange
ATO	Australian Tax Office
augex	augmentation expenditure
Benchmarking report	AER, <i>Electricity transmission network service providers annual benchmarking report</i> , November 2014
capex	capital expenditure
capex incentive guideline	AER, <i>Capital Expenditure Incentive Guideline for Electricity Network Service Providers</i> , November 2013
CCP	Consumer Challenge Panel
CEG	Competition Economics Group
CESS	capital expenditure sharing scheme
CPI	consumer price index
DAE	Deloitte Access Economic
DRP	debt risk premium
EBA	enterprise bargaining agreement

Shortened form	Extended form
EBSS	efficiency benefit sharing scheme
EGWWS	electricity, gas, water and waste services
EMCa	Energy Market Consulting associates
ERA	Economic Regulation Authority of Western Australia
ERP	equity risk premium
EUAA	Energy Users Association of Australia
Guideline	AER, <i>Expenditure forecast assessment guideline for electricity transmission</i> , November 2013
JGN	Jemena Gas Networks
MAR	maximum allowed revenue
MEU	Major Energy Users
MJA	Marsden Jacob Associates
MRP	market risk premium
MTFP	multilateral total factor productivity
MW	megawatts
NEL	national electricity law
NEM	national electricity market
NEO	national electricity objective
NER	national electricity rules
NERA	NERA Economic Consulting
NSP	network service provider
NTNDP	National Transmission Network Development Plan
NTSC	negotiated transmission service criteria

Shortened form	Extended form
NSW	New South Wales
opex	operating expenditure
PFP	partial factor productivity
PPI	partial performance indicators
PPI	producer price index
PTRM	post-tax revenue model
QCA	Queensland Competition Authority
RAB	regulatory asset base
RBA	Reserve Bank of Australia
repex	replacement expenditure
RFM	roll forward model
RIN	regulatory information notice
RPP	revenue and pricing principles
SFG	SFG Consulting
SLCAPM	Sharpe-Lintner capital asset pricing model
STPIS	service target performance incentive scheme
TFP	total factor productivity
TNSP	transmission network service provider
TSBC	Tasmanian Small Business Council
TUoS	transmission use of system
version one of the EBSS	AER, <i>Electricity transmission network service providers: Efficiency benefit sharing scheme</i> , September 2007
version two of the EBSS	AER, <i>Efficiency benefit sharing scheme for electricity network service providers</i> , November 2013

Shortened form	Extended form
WACC	weighted average cost of capital
WPI	wage price index

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## 5 Regulatory depreciation

The AER is required to decide on the indexation of the regulatory asset base (RAB) and depreciation building blocks for TasNetworks' 2014–19 period.<sup>1</sup> 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 TasNetworks' 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 TasNetworks' proposed regulatory depreciation allowance of \$113.1 million (\$ nominal) for the 2014–19 period. Instead, we determine a regulatory depreciation allowance of \$115.0 million (\$ nominal) for TasNetworks, an increase of \$1.9 million (or 1.7 per cent) from the proposal, made for the following reasons:

- We accept TasNetworks' proposed straight-line method, and standard asset lives used to calculate the regulatory depreciation allowance. We consider that TasNetworks' 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.<sup>2</sup>
- We accept TasNetworks' proposed weighted average method to calculate the remaining asset lives as at 1 July 2014. In accepting the weighted average method, we have updated TasNetworks' remaining asset lives as at 1 July 2014 to reflect our adjustments to the RAB in the roll forward model (RFM), as discussed in attachment 2.
- Our determinations on other components of TasNetworks' proposal also affect the forecast regulatory depreciation allowance—for example, the forecast inflation rate (attachment 3), forecast capital expenditure (capex) (attachment 6) and the opening RAB value (attachment 2).

Table 5-1 sets out our draft decision on the annual regulatory depreciation allowance for TasNetworks' 2014–19 regulatory control period.

**Table 5-1 AER's draft decision on TasNetworks' depreciation allowance for the 2014–19 period (\$ million, nominal)**

	2014–15	2015–16	2016–17	2017–18	2018–19	Total
Straight-line depreciation	53.2	57.6	62.0	63.1	65.0	300.9
Less: inflation indexation on opening RAB	35.3	36.2	37.4	38.2	38.8	185.9
<b>Regulatory depreciation</b>	<b>17.9</b>	<b>21.4</b>	<b>24.6</b>	<b>24.9</b>	<b>26.1</b>	<b>115.0</b>

Source: AER analysis.

<sup>1</sup> NER, clauses 6A.5.4(a)(1) and (3).

<sup>2</sup> NER, clause 6A.6.3(b).

## 5.2 TasNetworks' proposal

TasNetworks proposed a forecast regulatory depreciation allowance of \$113.1 million (\$ nominal) over the 2014–19 period as shown in Table 5-2. To calculate the depreciation allowance, TasNetworks proposed to use:<sup>3</sup>

- 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 for the majority of its asset classes. However, TasNetworks proposed to increase the remaining asset lives of the 'Transmission lines and cables' and 'Transmission substations' asset classes to 34 years and 32 years from the RFM derived lives of 16 years and 23 years, respectively
- the proposed forecast capex for the 2014–19 period
- the standard asset lives for depreciating new assets associated with forecast capex for the 2014–19 period. TasNetworks did not propose any changes to its standard asset lives approved in its 2009 transmission determination. However, it proposed three new 'Communications assets' asset classes with standard asset lives of 45 years (medium life), 10 years (short life) and 5 years (very short life).

Table 5-2 sets out TasNetworks' proposed depreciation allowance for the 2014–19 period.

**Table 5-2 TasNetworks' proposed depreciation allowance for the 2014–19 period (\$ million, nominal)**

	2014–15	2015–16	2016–17	2017–18	2018–19	Total
Straight-line depreciation	53.3	57.7	62.0	63.6	65.5	302.0
Less: inflation indexation on opening RAB	35.7	36.6	37.8	38.9	39.8	188.8
<b>Regulatory depreciation</b>	<b>17.6</b>	<b>21.1</b>	<b>24.2</b>	<b>24.6</b>	<b>25.6</b>	<b>113.1</b>

Source: Transend, *Revenue proposal*, p. 104.

## 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.<sup>4</sup> 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

<sup>3</sup> Transend, *Revenue proposal*, pp. 102–104.

<sup>4</sup> NER, clause 6A.5.4(a)(3).

nature of the assets over their economic life.<sup>5</sup> 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 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.<sup>6</sup>
- 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.<sup>7</sup>

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.<sup>8</sup>

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 2014–19 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 opening RAB as at 1 July 2014, forecast capex, and forecast inflation 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 2, 6 and 3 respectively.

In this attachment, we assessed the TNSP'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

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<sup>5</sup> NER, clause 6A.6.3(b)(1).

<sup>6</sup> NER, clause 6A.6.3(b)(1).

<sup>7</sup> NER, clause 6A.6.3(b)(2).

<sup>8</sup> NER, clause 6A.6.3(a)(2)(ii).

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.

### 5.3.1 Interrelationships

The regulatory depreciation allowance is a building block component of the annual building block revenue requirement.<sup>9</sup> 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 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.<sup>10</sup> 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 TasNetworks' proposal. A ten per cent increase in the straight-line depreciation causes revenues to increase by about 3.1 per cent.

## 5.4 Reasons for draft decision

We accept TasNetworks' proposed straight-line depreciation method for calculating the regulatory depreciation allowance as set out in the PTRM. However, we increase TasNetworks' proposed forecast regulatory depreciation allowance by \$1.9 million (or 1.7 per cent) to \$115.0 million. Our amendment is mainly driven by our determination on other components of TasNetworks' revenue proposal—for example, the forecast inflation rate (attachment 3), forecast capex (attachment 6) and the opening RAB as at 1 July 2014 (attachment 2)—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 TasNetworks' 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.<sup>11</sup>

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<sup>9</sup> 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.

<sup>10</sup> 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.

<sup>11</sup> NER, clause 6A.6.3(b)(1).

We also accept TasNetworks' proposed standard asset lives for the new 'Communication assets' asset classes. This is because we consider the proposed standard asset life for each asset class reflects the expected economic life of the assets allocated to it.<sup>12</sup> TasNetworks proposed three new asset classes for its communications assets with standard asset lives of:<sup>13</sup>

- 45 years (medium life)—main assets included are towers, buildings, access tracks, poles, optical fibre cables, fall arrest system, AC connection and earthing system
- 10 years (short life)—main assets included are transportable buildings, fences and gates, bearer equipment, voice network end equipment, DC supply system, security and fire protection
- 5 years (very short life)—main assets included are Ethernet switches, routers, wireless equipment, voice network core equipment and test equipment.

We consider that the proposed standard asset lives are comparable with those approved in our recent transmission determinations for similar asset classes.<sup>14</sup> We also note that TasNetworks engaged SKM to review the proposed standard asset lives. SKM considered that TasNetworks' proposed standard asset lives for the communications asset classes were reasonable.<sup>15</sup> We have taken into account the detailed assessment provided by SKM in making our decision on the proposed asset lives.

Table 5-3 sets out our draft decision on TasNetworks' standard asset lives for the 2014–19 period.

#### 5.4.2 Remaining asset lives

We accept TasNetworks' 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 have updated its remaining asset lives to reflect our adjustments to the actual capex in the RAB roll forward in the RFM, as discussed in attachment 2.<sup>16</sup> This is because the actual capex values are inputs for calculating the weighted average remaining asset lives in the RFM.

We also accept TasNetworks' proposal to increase the remaining asset life of the 'Transmission lines and cables' and 'Transmission substations' asset classes to 34 years and 32 years from the RFM derived lives of 16 years and 23 years, respectively. We are satisfied that TasNetworks' proposed increases to these remaining asset lives are reasonable as they better reflect the expected economic lives of the transmission lines, cables and substations assets.<sup>17</sup> Submissions from the Energy Users Association of Australia, Major Energy Users and Tasmanian Small Business Council supported TasNetworks' proposal to extend some of its remaining asset lives.<sup>18</sup> We also note that the effect of the proposed increase to the remaining asset lives is that depreciation of these assets will be

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<sup>12</sup> NER, clause 6A.6.3(b)(1).

<sup>13</sup> Transend, *Revenue proposal attachment 19—SKM: Assessment of proposed regulatory asset lives*, May 2014, pp. 38–44.

<sup>14</sup> 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.

<sup>15</sup> Transend, *Revenue proposal attachment 19—SKM: Assessment of proposed regulatory asset lives*, May 2014, pp. 38–44.

<sup>16</sup> At the time of this draft decision, the roll forward of TasNetworks' 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 TasNetworks' remaining asset lives as at 1 July 2014 using the method approved in this draft decision.

<sup>17</sup> NER, clause 6A.6.3(b)(1).

<sup>18</sup> EUAA, *EUAA submission on Transend's revenue proposal 2014–19*, 8 August 2014, p. 11; MEU, *TasNetworks application, A response by the MEU Inc*, August 2014, p. 41; TSBS, *TasNetworks transmission revenue proposal 2014/15 to 2018/19 submission*, August 2014, p. 41.

recovered over a longer period, resulting in a reduction to the total forecast revenue requirement over the 2014–19 period by about \$64 million.

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

**Table 5-3 AER's draft decision on TasNetworks' 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 and cables*	n/a	33.9
Transmission substations*	n/a	32.1
Protection and control*	n/a	3.6
Refurbishment*	n/a	5.0
Other*	n/a	0.3
Other - IT*	n/a	5.0
Other - general*	n/a	5.0
Other - buildings*	n/a	31.2
Land and easements	n/a	n/a
Transmission line assets - long life (60)	60.0	57.9
Transmission line assets - medium life (45)	45.0	43.7
Transmission line assets - short life (10)	10.0	9.4
Substation assets - long life (60)	60.0	58.2
Substation assets - medium life (45)	45.0	43.2
Substation assets - short life (15)	15.0	12.7
Protection and control - short life (15)	15.0	13.4
Protection and control - short life (4)	4.0	2.2
Transmission operations - short life (10)	10.0	8.2
Transmission operations - short life (4)	4.0	2.8
Other - medium life (40)	40.0	37.1
Other - short life (9)	9.0	6.8
Other - short life (4)	4.0	2.8
Land and easements	n/a	n/a
Equity raising costs <sup>a</sup>	n/a	37.7
Communication assets - long life (45)	45.0	n/a

Asset class	Standard asset life	Remaining asset life as at 1 July 2014
Communication assets - medium life (10)	10.0	n/a
Communication assets - short life (5)	5.0	n/a

Source: AER analysis.

n/a: not applicable.

\* We have changed the standard asset lives to 'n/a' for these asset classes because they do not need to have standard asset lives assigned as a result of forecast capex no longer being allocated to them.

(a) For this draft decision, TasNetworks do not satisfy the requirements to incur benchmark equity raising costs associated with its forecast capex for the 2014–19 regulatory control period. Therefore, a standard asset life for equity raising costs is not required.