PRELIMINARY DECISION
Energex determination 2015−16 to 2019−20

Attachment 5 − Regulatory depreciation

April 2015

AUSTRALIAN ENERGY REGULATOR

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Note

This attachment forms part of the AER's preliminary decision on Energex's 2015–20 distribution determination. It should be read with all other parts of the preliminary decision.

The preliminary decision includes the following documents:

Overview

Attachment 1 – Annual revenue requirement

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 11 – Service target performance incentive scheme

Attachment 12 – Demand management incentive scheme

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Shortened forms

Shortened form	Extended form
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
augex	augmentation expenditure
capex	capital expenditure
CCP	Consumer Challenge Panel
CESS	capital expenditure sharing scheme
CPI	consumer price index
DRP	debt risk premium
DMIA	demand management innovation allowance
DMIS	demand management incentive scheme
distributor	distribution network service provider
DUoS	distribution use of system
EBSS	efficiency benefit sharing scheme
ERP	equity risk premium
Expenditure Assessment Guideline	expenditure forecast assessment Guideline for electricity distribution
F&A	framework and approach
MRP	market risk premium
NEL	national electricity law
NEM	national electricity market
NEO	national electricity objective
NER	national electricity rules
NSP	network service provider
opex	operating expenditure
PPI	partial performance indicators

Shortened form	Extended form
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 and pricing principles
SAIDI	system average interruption duration index
SAIFI	system average interruption frequency index
SLCAPM	Sharpe-Lintner capital asset pricing model
STPIS	service target performance incentive scheme
WACC	weighted average cost of capital
WARL	weighted average remaining life

5 Regulatory depreciation

Depreciation is the allowance provided so capital investors recover their investment over the economic life of the asset (return of capital). We are required to decide on whether to approve the depreciation schedules submitted by Energex.[1] In doing so, we make determinations on the indexation of the regulatory asset base (RAB) and depreciation building blocks for Energex's 2015–20 regulatory control period.[2] The regulatory depreciation allowance is the net total of the straight-line depreciation (negative) and the indexation (positive) of the RAB.

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

5.1 Preliminary decision

We do not accept Energex's proposed regulatory depreciation allowance of $501.7 million ($ nominal) for the 2015–20 regulatory control period.[3] Instead, we determine a regulatory depreciation allowance of $455.4 million ($ nominal) for Energex. This amount represents a decrease of $46.3 million (or 9.2 per cent) on the proposed amount. In coming to this decision:

- We accept Energex's proposed asset classes, its straight-line depreciation method, and the standard asset lives used to calculate the regulatory depreciation allowance. We consider Energex's proposed asset classes and standard asset lives are consistent with those approved at the 2010-15 distribution determination, and reflect the nature and economic lives of the assets.[4]
- We accept Energex's proposed weighted average method to calculate remaining asset lives at 1 July 2015. However, we have updated these lives to reflect our adjustments to the RAB in the roll forward model (RFM), as discussed in attachment 2.
- We accept the reallocation of the residual value of the old 'Metering' asset class to be replaced by a new 'Load control & network metering devices' asset class. We also accept the proposed standard asset life for this asset class. However, we have revised the remaining asset life for past assets allocated to this asset class.
- We revised the remaining asset life of the 'Low voltage services' asset class to account for the effect of the proposed shifting of assets to the 'Metering' asset class in 2013–14.

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1 NER, cl. 6.12.1(8).
2 NER, cll. 6.43(a)(1) and (3).
3 Energex, *Regulatory proposal*, October 2014, pp. 141–146.
4 NER, cl. 6.5.5(b)(1).

- We made determinations on other components of Energex's proposal that also affect the forecast regulatory depreciation allowance—for example, the forecast capex (attachment 6), and the opening RAB value (attachment 2).[5]

Table 5.1 sets out our preliminary decision on the annual regulatory depreciation allowance for Energex's 2015–20 regulatory control period.

Table 5.1 AER's preliminary decision on Energex's depreciation allowance for the 2015–20 regulatory control period ($ million, nominal)

	2015–16	2016–17	2017–18	2018–19	2019–20	Total
Straight-line depreciation	354.6	378.4	404.3	423.6	446.1	2006.9
Less: inflation indexation on opening RAB	289.0	300.1	311.1	320.9	330.4	1551.5
Regulatory depreciation	**65.6**	**78.3**	**93.1**	**102.6**	**115.7**	**455.4**

Source: AER analysis.

5.2 Energex's proposal

For the 2015–20 regulatory control period, Energex proposed a total forecast regulatory depreciation allowance of $501.7 million ($ nominal). To calculate the depreciation allowance, Energex proposed to use:[6]

- the straight-line depreciation method employed in our post-tax revenue model (PTRM)
- the closing RAB value at 30 June 2015 derived from our RFM, adjusted for the removal of metering assets and the expiration of transitional arrangements
- proposed forecast capex for the 2015–20 regulatory control period[7]
- weighted average remaining asset lives of existing assets at 30 June 2015 derived from the RFM, the exception being for the 'Load control & network metering devices'[8] asset class which was assigned a remaining life of 15 years consistent with the revised standard life[9]
- standard asset lives for depreciating new assets associated with forecast capex for the 2015–20 regulatory control period consistent with those approved in the

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5 NER, cl. 6.5.5(a)(1).

6 Energex, *Regulatory proposal*, October 2014, pp. 141–146.

7 This capex also includes some asset reallocation from 'Low voltage services' to 'Metering' in 2013–14 capex which impacts on the remaining asset lives used to calculate the depreciation forecast.

8 The 'Load control & network metering devices' asset class was previously named 'Metering'. Due to the reclassification of metering services at 1 July 2015 Energex has reclassified a large proportion of assets from this standard control services asset class to alternative control services and revised the remaining and standard asset lives.

9 Energex, *Regulatory proposal*, October 2014, Appendix 38.

2010–15 distribution determination, the exception being for the 'Load control & network metering devices' asset class which was assigned a standard life of 15 years.[10]

Table 5.2 sets out Energex's proposed depreciation allowance for the 2015–20 regulatory control period.

Table 5.2 Energex's proposed depreciation allowance for the 2015–20 regulatory control period ($ million, nominal)

	2015–16	2016–17	2017–18	2018–19	2019–20	Total
Straight-line depreciation	358.7	386.6	417.7	443.6	471.0	2077.7
Less: inflation indexation on opening RAB	285.1	300.5	316.1	330.2	344.1	1576.0
Regulatory depreciation	**73.6**	**86.2**	**101.6**	**113.4**	**126.9**	**501.7**

Source: Energex, *Regulatory proposal*, 31 October 2014, Attachment 4-6.

5.3 AER's assessment approach

We are required to determine the regulatory depreciation allowance as a part of a service provider's annual revenue requirement.[11] We make that calculation in the PTRM, relying 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 by the depreciation schedules.[12]

Our standard approach to calculating depreciation is to employ the straight-line method set out in the PTRM. We consider the straight-line method satisfies the NER requirements in clause 6.5.5(b). It provides an expenditure profile that reflects the nature of assets over their economic life.[13] 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 key requirements:

- the schedules depreciate using a profile that reflects the nature of the assets of category of assets over the economic life of that asset or category of assets[14]
- the sum of the real value of the depreciation that is attributable to any asset or category of assets must be equivalent to the value at which that asset of category of assets was first included in the RAB for the relevant distribution system.[15]

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10 Energex, *Regulatory proposal*, October 2014, Appendix 38.
11 NER, cll. 6.4.3(a)(3) and (b)(3).
12 NER, cl. 6.5.5(a).
13 NER, cl. 6.5.5(b)(1).
14 NER, cl. 6.5.5(b)(1).
15 NER, cl. 6.5.5(b)(2).

If a service provider's building block proposal does not comply with the above requirements, then we must determine the depreciation schedules for the purpose of calculating the depreciation for each regulatory year.[16]

The regulatory depreciation allowance is an output of the PTRM. We therefore assessed the service provider's proposed regulatory depreciation allowance by analysing the proposed inputs to the PTRM for calculating that allowance. The key inputs include:

- the opening RAB at 1 July 2015
- the forecast net capex in the 2015–20 regulatory control period
- the forecast inflation rate for that period
- the standard asset life for each asset class—used for calculating the depreciation of new assets associated with forecast net capex in the regulatory control period
- the remaining asset life for each asset class—used for calculating the depreciation of existing assets included in the opening RAB at 1 July 2015.

Our preliminary decision on a service provider's regulatory depreciation allowance reflects our determinations on the forecast capex, forecast inflation and opening RAB at 1 July 2015 (the first three building block components in the above list). Our determinations on these components of the service provider's proposal are discussed in attachments 6, 3 and 2 respectively.

In this attachment, we assess Energex's proposed standard asset lives against:

- the approved standard asset lives in the distribution determination for the 2010–15 regulatory control period
- the standard asset lives of comparable asset classes approved in our recent distribution determinations for other service providers.

We use our standard approach to depreciating a service provider's existing assets in the PTRM by using the remaining asset lives at the start of a regulatory control period. Our preferred method to establish a remaining asset life for each asset class is the weighted average method. This method rolls forward the remaining asset life for an asset class from the beginning of the 2010–15 regulatory control period. We consider this method better reflects the mix of assets within an 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.

5.3.1 Interrelationships

The regulatory depreciation allowance is a building block component of the annual revenue requirement.[17] Higher (or quicker) depreciation leads to higher revenues over

[16] NER, cl. 6.5.5(a)(ii).

the regulatory control period. It also causes the RAB to reduce more quickly (assuming no further capex). This outcome reduces the return on capital allowance, although this impact is usually secondary to the increased depreciation allowance.

Ultimately, however, a service provider can recover only once the capex that it incurred on assets. The depreciation allowance reflects how quickly the RAB is being recovered, and it is based on the remaining and standard asset lives used in the depreciation calculation. It 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 the RAB, the regulatory depreciation allowance also has an offsetting reduction for indexation of the RAB.[18] Factors that affect forecast inflation and/or the size of the RAB will affect the size of this indexation adjustment. A number of submissions raised concerns with indexation of the RAB[19], but did not acknowledge the impact it also has on the depreciation building block. Even if allowed under the NER, moving to an unindexed RAB would also require the removal of the offsetting reduction to the depreciation. This would lead to a price increase over the short to medium term and when new lumpy assets are added to the RAB.[20]

Figure 2.1 (in attachment 2) shows the relative size of the inflation and straight-line depreciation and their impact on the RAB. A 10 per cent increase in the straight-line depreciation causes revenues to increase by about 3 per cent.

5.4 Reasons for preliminary decision

We accept Energex's proposed straight-line depreciation method for calculating the regulatory depreciation allowance as set out in the PTRM. We also accept the proposed standard asset lives, and the weighted average method to calculate the remaining asset lives at 1 July 2015. However, we decreased Energex's proposed forecast regulatory depreciation allowance by $46.3 million (or 9.2 per cent) to $455.4 million. This amendment mainly reflects our determination on other components of

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17 The PTRM distinguishes between straight-line depreciation and regulatory depreciation, the difference being that regulatory depreciation is the straight-line depreciation minus the indexation adjustment.

18 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. In this case the indexation adjustment is greater than the straight-line depreciation.

19 Central Highlands Cotton Growers and Irrigators Association & Darling Downs Cotton Growers, *Submission to Energex's regulatory proposal*, January 2015, p.1. EUAA, *Submission to Energex's regulatory proposal*, January 2015, p.31.

20 The indexation of the RAB was a matter discussed extensively in the AER's final decision on APA GasNet's access arrangement. This matter also went before the Australian Competition Tribunal, who found in favour of the AER's reasoning in that final decision. See AER, *Access arrangement final decision, APA GasNet Australia (Operations) Pty Ltd, 2013–17, Part 2: Attachments*, 15 March 2013, pp.102-116; and Australian Competition Tribunal, *Application by APA GasNet Australia (Operations) Pty Limited (No 2) [2013] ACompT 8*, September 2013, para 226.

Energex's regulatory proposal—for example, the forecast capex (attachment 6), the forecast inflation rate (attachment 3) and the opening RAB as at 1 July 2015 (attachment 2)—that affect the forecast regulatory depreciation allowance.

5.4.1 Standard asset lives

We accept Energex's proposed standard asset lives for its existing asset classes. These lives are consistent with our approved standard asset lives for the 2010–15 regulatory control period and comparable with the standard asset lives approved in our recent determinations for other electricity distribution service providers. We also accept Energex's proposed standard asset life for the new 'Load control & network metering devices' asset class. This asset class replaces the previous 'Metering' asset class. We are satisfied these proposed standard asset lives reflect the nature of the assets over the economic lives of the asset classes.[21]

The new 'Load control & network metering devices' asset class consists of assets that are currently allocated to the old 'Metering' asset class, but are used only for standard control services (SCS), including load control relays, signal receivers and other SCS metering assets. In the previous determination a standard asset life of 25 years was approved for the old 'Metering' asset class. However, at 1 July 2015, some metering services are to be reclassified as alternative control services (ACS) and the accompanying assets removed from the SCS RAB. We have reviewed Energex's supporting material and accept that 15 years is an appropriate standard asset life for the new 'Load control & network metering' assets due to the electronic nature of the assets.[22]

5.4.2 Remaining asset lives

We accept Energex's proposed weighted average method to calculate the remaining asset lives as at 1 July 2015. The proposed method is consistent with our preferred approach. In accepting the weighted average method, we have updated Energex's remaining asset lives to reflect our adjustments to the remaining asset lives as at 1 July 2010 and actual net capex in the RAB roll forward, as discussed in attachment 2.[23] This is because these values are inputs for calculating the weighted average remaining life (WARL) of assets at 1 July 2015 in the RFM.

As noted in attachment 2, Energex has shifted assets in 2013–14 from its 'Low voltage services' asset class to 'Metering'. This was done so that when metering assets were removed from the SCS RAB at 1 July 2015, the value would be removed from a single

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21 NER, cl 6.5.5(b)(1).

22 Energex, *Regulatory proposal*, October 2014, Appendix 38.

23 At the time of this preliminary decision, the roll forward of Energex's RAB includes estimated capex values for 2014–15. We will update the 2014–15 estimated capex values for the substitute decision. The 2014–15 capex values are used to calculate the weighted average remaining tax asset lives in the RFM. Therefore, for the substitute decision we will recalculate Energex's remaining tax asset lives as at 1 July 2015 using the method approved in this preliminary decision.

asset class. Our preferred approach to reallocating across asset classes or removing assets is to do so at the end of a regulatory control period. To do otherwise risks the roll forward depreciation method being different to that approved at the last determination and impacts on the WARL calculated in the RFM. Using negative capex to shift assets within-period means these assets are effectively removed from the asset class at the standard asset life—in this case, 35 years—in the WARL calculation. This significantly understates the remaining asset life for this asset class at 1 July 2015. The opposite is true for the asset class that the asset value is moved to—in this case, 'Metering'. After raising these concerns with Energex, it proposed to instead apply a remaining asset life to the 'Low voltage services' asset class as if the reallocation of assets had not occurred.[24] Therefore, we have determined a remaining asset life for the 'Low voltage services' asset class of 28.3 years, compared to the 20.7 years proposed.[25] This is consistent with the WARL for the 'Low voltage services' asset class after removing the effect of the within-period asset shifting.

We do not accept Energex's proposal to align the remaining asset life for its 'Load control & network metering devices' asset class (formerly 'Metering') in line with the revised standard asset life of 15 years discussed in section 5.4.1.[26] We do not accept that the remaining asset life must be equal or lower than the standard asset life in this case. The remaining asset life represents the economic life of past assets added to the asset class. We do not consider a revision to the standard asset life (the economic life of future assets) automatically means the remaining economic life of past assets is inappropriate. Our preliminary decision is to apply a remaining asset life of 15.2 years for the 'Load control & network metering devices' asset class. This is consistent with the WARL approach as set out in the RFM for the 'Metering' asset class once the impact of the 2013–14 asset shifting is removed. This is consistent with our approach for the 'Low voltage services' asset class.

Table 5.3 sets out our preliminary decision on Energex's remaining asset lives for the 2015–20 regulatory control period.

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[24] Energex, *Response to Information Request 'AER Energex 20'*, 4 February 2015.

[25] This revised remaining asset life also takes into account the changes to remaining asset lives as at 1 July 2010 and actual net capex discussed in attachment 2.

[26] Energex, *Regulatory proposal*, October 2014, Appendix 38, p. 4.

Table 5.3 AER's preliminary decision on Energex's standard and remaining asset lives at 1 July 2015 (years)

Asset class	Standard asset life	Remaining asset life at 1 July 2015
OH Sub-transmission lines	50.5	37.6
UG Sub-transmission cables	45.0	33.3
OH Distribution lines	45.0	32.1
UG Distribution cables	60.0	47.0
Distribution equipment	35.0	29.5
Substation bays	45.0	30.9
Substation establishment	57.6	35.8
Distribution substation switchgear	45.0	38.7
Zone transformers	50.0	40.9
Distribution transformers	40.6	28.2
Low voltage services	35.0	28.3
Load control & network metering devices	15.0	15.2
Communications - pilot wires	29.3	23.0
Street lighting	20.0	5.8
Systems buildings	60.0	56.5
Systems easements	n/a	n/a
System land	n/a	n/a
Communications	7.0	n/a
Control centre - SCADA	12.0	8.6
IT systems	5.0	3.3
Office equipment & furniture	7.0	2.8
Motor vehicles	9.0	6.3
Plant & equipment	6.8	5.0
Research & development	5.0	n/a
Buildings	40.0	34.0
Easements	n/a	n/a
Land	n/a	n/a
Equity raising costs	46.1	42.1

Source: AER analysis.