



FINAL DECISION
Jemena distribution
determination
2016 to 2020

Attachment 5 – Regulatory
depreciation

May 2016

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Note

This attachment forms part of the AER's final decision on Jemena's distribution determination for 2016–20. It should be read with all other parts of the final decision.

The final 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

Attachment 9 – Efficiency benefit sharing scheme

Attachment 10 – Capital expenditure sharing scheme

Attachment 11 – Service target performance incentive scheme

Attachment 12 – Demand management incentive scheme

Attachment 13 – Classification of services

Attachment 14 – Control mechanisms

Attachment 15 – Pass through events

Attachment 16 – Alternative control services

Attachment 17 – Negotiated services framework and criteria

Attachment 18 – f-factor 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
AMI	Advanced metering infrastructure
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
PTRM	post-tax revenue model
RAB	regulatory asset base
RBA	Reserve Bank of Australia
repex	replacement expenditure

Shortened form	Extended form
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

5 Regulatory depreciation

Depreciation is the allowance provided so capital investors recover their investment over the economic life of the asset (return of capital). In deciding whether to approve the depreciation schedules submitted by Jemena, we make determinations on the indexation of the regulatory asset base (RAB) and depreciation building blocks for Jemena's 2016–20 regulatory control period.¹ 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 final decision on Jemena's regulatory depreciation allowance. It also presents our final decision on the revised proposed depreciation schedules, including an assessment of the revised proposed standard asset lives for depreciating forecast capex and the revised proposed depreciation approach for existing assets.

5.1 Final decision

We do not accept Jemena's revised proposed regulatory depreciation allowance of \$282.5 million (\$ nominal) for the 2016–20 regulatory control period.² Instead, we determine a regulatory depreciation allowance of \$262.9 million (\$ nominal). This amount represents a decrease of \$19.7 million (or 7.0 per cent) on Jemena's revised proposed amount. In coming to this decision:

- We accept Jemena's revised proposed asset classes and straight-line depreciation method used to calculate the regulatory depreciation allowance (section 5.4.1).
- We accept Jemena's approach to determining standard asset lives used to calculate depreciation of forecast capex. However, we corrected a number of input errors in the revised proposal.
- We accept Jemena's revised proposed approach to depreciation associated with existing assets. The revised proposed approach is consistent with the preliminary decision (section 5.4.2).
- We made determinations on other components of Jemena's revised proposal which affect the forecast regulatory depreciation allowance—for example, the opening RAB at 1 January 2016 (attachment 2) and expected inflation (attachment 3).³

Table 5.1 sets out our final decision on the annual regulatory depreciation allowance for Jemena's 2016–20 regulatory control period.

¹ NER, cl. 6.12.1, 6.4.3.

² Jemena, *Revised regulatory proposal, Attachment 05-02*, January 2016.

³ NER, cl. 6.5.5(a)(1).

Table 5.1 AER's final decision on Jemena's depreciation allowance for the 2016–20 regulatory control period (\$ million, nominal)

	2016	2017	2018	2019	2020	Total
Straight-line depreciation	83.1	74.5	82.2	89.1	96.9	425.9
Less: inflation indexation on opening RAB	27.6	29.7	32.9	35.3	37.6	163.0
Regulatory depreciation	55.5	44.9	49.3	53.8	59.3	262.9

Source: AER analysis.

5.2 Jemena's revised proposal

Jemena's revised proposal for the 2016–20 regulatory control period forecasts a total regulatory depreciation allowance of \$282.5 million (\$ nominal).⁴ Jemena adopted the methodology approved in the preliminary decision for depreciating existing assets. To calculate the depreciation allowance, Jemena's revised proposal used:⁵

- the straight-line depreciation method, consistent with that employed in our post-tax revenue model (PTRM)
- a revised closing RAB value at 31 December 2015 derived from the revised proposal roll forward model (RFM)
- the year-by-year tracking approach approved in the preliminary decision to calculate depreciation on the opening RAB. Under this approach:
 - assets in existence at 1 January 2011 are depreciated by asset class using straight-line depreciation with the remaining lives determined in the 2010 final decision; and
 - capex in each year of the 2011 to 2015 period is grouped by asset class and separately depreciated over their standard lives as approved in the 2010 final decision.
- standard asset lives for depreciating new assets calculated using the approach approved in the preliminary decision to reflect the mix of capex proposed for the 2016–20 regulatory control period
- a revised expected inflation rate
- the revised proposed forecast capex for the 2016–20 regulatory control period.

Table 5.2 sets out Jemena's revised proposed depreciation allowance for the 2016–20 regulatory control period.

⁴ Jemena, *Revised regulatory proposal, Attachment 05-02*, January 2016.

⁵ Jemena, *Revised regulatory proposal, Attachment 05-04*, January 2016, pp. 9–13.

Table 5.2 Jemena's revised proposed depreciation allowance for the 2016–20 regulatory control period (\$ million, nominal)

	2016	2017	2018	2019	2020	Total
Straight-line depreciation	85.3	75.3	87.5	90.4	98.3	436.8
Less: inflation indexation on opening RAB	26.2	28.2	31.2	33.3	35.4	154.3
Regulatory depreciation	59.0	47.2	56.4	57.1	62.9	282.5

Source: Jemena, *Revised regulatory proposal, Attachment 05-02*, January 2016.

5.3 Assessment approach

We have not changed our assessment approach for the regulatory depreciation allowance from our preliminary decision. Section 5.3 of our preliminary decision details that approach.⁶

5.4 Reasons for final decision

We determine a regulatory depreciation allowance of \$262.9 million (\$ nominal) for Jemena over the 2016–20 regulatory control period. In determining this allowance we accept Jemena's use of the year-by-year tracking approach to determine its straight-line depreciation of assets.

However, we reduced Jemena's revised proposed regulatory depreciation allowance by \$19.7 million (or 7.0 per cent). This amendment reflects our:

- changes to two of its standard asset lives (section 5.4.1) to correct a number of input errors.
- determinations regarding other components of Jemena's revised proposal—for example, the opening RAB at 1 January 2016 (attachment 2) and expected inflation (attachment 3)⁷—affecting the forecast regulatory depreciation allowance.

5.4.1 Standard asset lives

We accept Jemena's revised proposed approach to determining standard asset lives for its existing asset classes. This is consistent with our preliminary decision. However, we have amended two of the revised proposal standard asset lives to correct a number of input errors identified. Consistent with our preliminary decision, we accept Jemena's revised proposal for the 'Land' asset class to not be assigned a standard asset life.

⁶ AER, *Preliminary decision – Jemena determination 2016 to 2020, Attachment 5 – Regulatory depreciation*, October 2015, pp. 8–10.

⁷ Our final decision approves a higher expected inflation rate compared to Jemena's revised proposal. This results in a larger inflation on opening RAB component being removed from straight-line depreciation, and therefore lower regulatory depreciation over the 2016–20 regulatory control period, all things being equal.

In the preliminary decision we accepted Jemena's proposed approach to determine standard asset lives that reflect the mix of capex forecast for the 2016–20 regulatory control period, except for the 'SCADA/Network control' asset class. We did not consider the calculated standard asset life from this approach adequately accounted for the specialised nature of SCADA related IT assets.

Jemena's revised proposal adopted our preliminary decision amendment to the 'SCADA/Network control' standard asset life and maintained its approach to determining standard asset lives for other asset classes. Its revised proposal also adopted our preliminary decision to create a new 'Land' asset class with no standard life assigned to it as land assets do not depreciate.

In our review of Jemena's revised proposal calculation of standard asset lives, we identified a number of the materials that were assigned a standard asset life of 'zero'. This has the effect of reducing the overall standard asset life for two asset classes, as Jemena's approach calculates a standard asset life based on the weighted average life of required materials. We raised this issue with Jemena and were provided a list of corrected asset lives for the relevant materials, which had been omitted.⁸ Correcting the error in the standard asset life calculation results in a longer standard asset life assigned to the 'Subtransmission' and 'Distribution system assets' asset classes than Jemena's revised proposal.⁹ Our final decision is to accept the approach to determining standard asset lives that reflect the mix of capex forecast for the 2016–20 regulatory control period.

We received one submission from the CCP on the preliminary decision raising concerns about the variation in standard asset lives applied to similar asset classes across the Victorian service providers. The CCP submitted the variation is greater than that needed to reflect the specific nature of each network.¹⁰ It also noted that there are elements of the assets that are not impacted by any different environments—such as office costs, IT, SCADA and vehicles—and therefore are not exposed to different standard asset lives.

We agree that the same asset types should have the same standard asset life applied barring any environmental factors that may impact on the useful life of the asset. However, each asset class used in the PTRM is not for a single asset type, but covers a group of assets. For example, the 'Distribution system assets' asset class may include assets such as concrete, wooden, and steel poles, surge diverters and zone substation batteries. Likewise, the 'Non-network general – IT' asset class may encompass short lived standard IT assets (e.g. office computers and general word processing software), as well as more specialised IT assets (e.g. data servers and

⁸ Jemena, *RE: AER information request – Jemena - #040 – Standard asset lives* [email to AER], 24 February 2016.

⁹ The standard asset lives increased from 43.8 years to 53.4 years for 'Subtransmission', and 47.7 years to 49.5 years for 'Distribution system assets'.

¹⁰ CCP3, *Response to AER Preliminary Decisions made by the AER in response to proposals from Victorian electricity distribution network service providers for a revenue reset for the 2016–2020 regulatory period*, 25 February 2016, pp. 68–70.

storage systems). We consider it is reasonable that these assets may have different useful lives. The standard asset life of each asset class should represent the average standard asset life of the capex allocated to that asset class. As the overall make-up of assets entering a certain asset class may differ by business, we consider it reasonable for there to be variation in the average standard asset life applied across businesses. For this reason, we note that this is particularly the case for broader asset classes such as 'Non-network – other' which the CCP submitted has significant variation in standard asset life across Victorian service providers.¹¹

We also note that Jemena's approach to determining standard asset lives adjusts the life of each asset class for the material makeup of its proposed capex. We are satisfied that the standard asset lives reflect the nature of the assets over the economic lives of the asset classes.¹²

Table 5.3 sets out our final decision on Jemena's standard asset lives for the 2016–20 regulatory control period.

Table 5.3 AER's final decision on Jemena's standard asset lives at 1 January 2016 (years)

Asset class	Standard asset life
Subtransmission	53.4
Distribution system assets	49.5
Metering	n/a ^a
Public lighting	n/a ^a
SCADA/Network control	10.0
Non network - IT	5.2
Non network - other	24.2
Land	n/a
Equity raising costs	46.5

Source: AER analysis.

n/a: not applicable.

(a) This asset class is no longer used as no further capex in this category is being added over the 2016–20 regulatory control period.

¹¹ The 'Non-network – other' asset class may include any non-network assets that do not fit in the IT category. This may include vehicles (heavy or light), furniture, general office equipment, as well as property assets.

¹² NER, cl. 6.5.5(b)(1).

5.4.2 Remaining asset lives

We accept Jemena's revised proposal to use the year-by-year tracking approach to determine depreciation on the opening RAB as at 1 January 2016. This approach is consistent with our preliminary decision.

Our preliminary decision used the year-by-year tracking approach to determine depreciation of existing assets in place of remaining asset lives calculated using an 'average depreciation' approach initially proposed by Jemena. The year-by-year tracking approach is also consistent with Jemena's consultant report submitted subsequent to its initial proposal.¹³ Under this approach:

- assets in existence at 1 January 2011 are depreciated by asset class using straight-line depreciation with the remaining lives determined in the 2010 final decision; and
- capex in each year of the 2011 to 2015 period is grouped by asset classes and separately depreciated over their standard lives as approved in the 2010 final decision.

Each asset class will have an expanding list of sub-classes to reflect every regulatory year in which capital expenditure on those assets was incurred.¹⁴ This extra data helps track remaining asset values, lives and associated depreciation. The year-by-year tracking approach is more disaggregated, compared with other approaches, and involves multiple depreciation calculations within each asset class, separately tracking capex by the regulatory year it was incurred. For this reason, it does not combine capex incurred during 2011 to 2015 with existing assets in 2011, and so does not require average remaining asset lives to be estimated at 1 January 2016.

We consider that this approach meets the requirements of the NER in that it produces depreciation schedules that align with the economic life of the assets.¹⁵ However, we maintain our preference for the weighted average approach to determining remaining asset lives. We consider the use of weighted average remaining lives also meets the requirements of the NER and avoids the additional complexity inherent in year-by-year tracking, which brings with it additional administration costs and increased risk of error.¹⁶ It also promotes smoother revenues where revenues depend less on when individual capex occurs.

¹³ Jemena, *Response to AER information request #017* [email to AER], 5 August 2015, and Incenta, *Calculation of depreciation – review of the AER's approximate calculation: CitiPower, Powercor and Jemena Electricity Networks*, July 2015.

¹⁴ There is a separate model used for the calculations of depreciation occur. The output from this model is used as an input to the PTRM depreciation calculations. Jemena integrated the sheets of this model into the PTRM in its revised proposal.

¹⁵ NER, cl. 6.5.5(b)(1).

¹⁶ AER, *Preliminary decision – Jemena determination 2016 to 2020, Attachment 5 – Regulatory depreciation*, October 2015, pp. 16–17.

In its submission to the preliminary decision, the CCP raised concerns about the increased depreciation resulting from the move to a year-by-year tracking approach. The CCP submitted that this is due to the year-by-year tracking approach being 'backdated' to 2011 and reflects the under-recovery of depreciation over the 2011–15 regulatory control period where depreciation was based on a different approach. It recommended that the change to year-by-year tracking should only be implemented for future capex.

We are satisfied that beginning the year-by-year tracking of depreciation from 2011 is a continuation of the approach applied in the PTRM to forecast depreciation at the 2010 determination. Therefore, we do not consider it results in an under-recovery in depreciation over that period which will be recovered from future customers. At the 2010 determination the depreciation allowance was calculated using remaining asset lives at 1 January 2011 to depreciate the opening RAB, and standard asset lives to depreciate forecast capex over the 2011–15 regulatory control period. This is the standard approach to calculating depreciation. The year-by-year tracking approach uses the remaining and standard asset lives determined at the 2010 determination to calculate depreciation over the 2011–15 regulatory control period, but updates for actual capex—as is done in the RFM—and continues the tracking into the 2016–20 regulatory control period.¹⁷

The advantage of the year-by-year tracking approach is that it preserves the annual capex information over multiple regulatory control periods rather than combining it together with existing assets at each reset for depreciation purposes. This means that estimating the average remaining life of the combined assets is not required at each reset. This is because the asset lives determined in previous decisions are maintained and applied to the relevant year of capex. The only determination is on the standard asset lives to apply to forecast capex for subsequent regulatory control periods.

In the preliminary decision for Jemena we rejected its proposal to use the average depreciation approach to determine remaining asset lives. In the short run, year-by-year tracking will lead to a depreciation allowance that is roughly comparable in aggregate to that initially proposed by Jemena. In the long run, however, the depreciation allowance will be lower under the year-by-year tracking approach. The average depreciation approach would have locked in relatively lower remaining asset lives for all existing (pre 2011) and new assets (capex 2011–15).¹⁸ The year-by-year tracking approach will result in new assets (capex from 2011 onwards) being depreciated over their standard asset lives without adjustment. The assets in existence in 2011 will be depreciated by the remaining asset life approved in the last determination. Each year the accuracy of the remaining asset lives in total will improve under year-by-year tracking as the assets acquired prior to 2011 make up a smaller

¹⁷ Our expectation is that once the year-by-year tracking approach is adopted, it will need to be maintained into the future to prevent any further issues associated with switching depreciation approaches.

¹⁸ There is also a ratcheting effect at each reset where the opening RAB and capex are combined and depreciated using a single remaining life at each reset.

proportion of the RAB. Delaying the start of year-by-year tracking delays the benefits of such an approach being realised and does not reduce the amount of depreciation recovered in the short run if the depreciation is still calculated using the average depreciation approach as Jemena initially proposed.