FINAL DECISION
Ergon Energy determination 2015−16 to 2019−20

Attachment 5 − Regulatory depreciation

October 2015

AUSTRALIAN ENERGY REGULATOR

Inquiries about this publication should be addressed to:

Australian Energy Regulator
GPO Box 520
Melbourne Vic 3001

Tel: (03) 9290 1444
Fax: (03) 9290 1457

Email: AERInquiry@aer.gov.au

Note

This attachment forms part of the AER's final decision on Ergon Energy's 2015–20 distribution determination. 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 mechanism

Attachment 15 – Pass through events

Attachment 16 – Alternative control services

Attachment 17 – Negotiated services framework and criteria

Attachment 18 – Connection policy

Contents

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
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). In deciding whether to approve the depreciation schedules submitted by Ergon Energy, we make determinations on the indexation of the regulatory asset base (RAB) and depreciation building blocks for Ergon Energy's 2015–20 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 Ergon Energy's regulatory depreciation allowance. It also presents our final decision on the revised proposed depreciation schedules, including the revised proposed standard asset lives and remaining asset lives to be used for forecasting the depreciation allowance.

5.1 Final decision

We do not accept Ergon Energy's revised proposed regulatory depreciation allowance of $829.1 million ($ nominal) for the 2015–20 regulatory control period.[2] Instead, we determine a regulatory depreciation allowance of $751.2 million ($ nominal). This amount represents a decrease of $77.9 million (or 9.4 per cent) on Ergon Energy's revised proposed amount. In coming to this decision:

- we accept Ergon Energy's revised proposed asset classes, its straight-line depreciation method, and the standard asset lives used to calculate the regulatory depreciation allowance (section 5.4.1).
- we accept Ergon Energy's revised proposal approach to determining remaining asset lives and depreciation associated with existing assets compared to its initial proposal. However, we have made some changes to the implementation of the approach to correct errors (section 5.4.2).
- we made determinations on other components of Ergon Energy's revised proposal which affect the forecast regulatory depreciation allowance—for example, the opening RAB at 1 July 2015 (attachment 2), forecast inflation rate (attachment 3) and forecast capex (attachment 6).[3]

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

---

1 NER, cls. 6.12.1 and 6.4.3.

2 Ergon Energy, *Revised regulatory proposal*, July 2015, p. 29.

3 NER, cl. 6.5.5(a)(1). Our final decision approves a lower forecast capex allowance compared to Ergon Energy's revised proposal. This means lower regulatory depreciation for the assets forecast to be added to the RAB over the 2015–20 regulatory control period, all things being equal.

Table 5.1 AER's final decision on Ergon Energy'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	439.1	395.4	405.4	424.5	441.9	2106.3
Less: inflation indexation on opening RAB	246.8	259.2	271.7	283.3	294.0	1355.1
Regulatory depreciation	**192.3**	**136.1**	**133.7**	**141.2**	**147.9**	**751.2**

Source: AER analysis.

5.2 Ergon Energy's revised proposal

Ergon Energy's revised proposal for the 2015–20 regulatory control period forecasts a total regulatory depreciation allowance of $829.1 million ($ nominal). To calculate the depreciation allowance, Ergon Energy's revised proposal used:[4]

- the straight-line depreciation method employed in our post-tax revenue model (PTRM)
- an alternative approach to determining remaining asset lives and depreciation associated with existing assets compared to its initial proposal. The revised approach, which we label the period-by-period approach, results in capex of each asset class for separate regulatory control periods being tracked over time. This means sub-asset classes are created for each regulatory control period with remaining asset lives for these sub-asset classes determined using the weighted average remaining life (WARL) approach. This is discussed in more detail in section 5.4.2
- its revised proposed forecast capex for the 2015–20 regulatory control period
- the standard asset lives accepted in the preliminary decision for depreciating new assets associated with forecast capex for the 2015–20 regulatory control period.

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

Table 5.2 Ergon Energy's revised 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	418.7	451.4	454.3	470.8	461.0	2256.1
Less: inflation indexation on opening RAB	256.4	272.2	286.3	299.6	312.4	1426.9
Regulatory depreciation	**162.3**	**179.2**	**168.0**	**171.1**	**148.5**	**829.1**

Source: Ergon Energy, *Revised regulatory proposal*, July 2015, Attachment 03.01.04 (PTRM).

[4] Ergon Energy, *Revised regulatory proposal – Attachment 3.1.1*, July 2015, pp. 23–32.

5.3 AER's assessment approach

Many aspects of our assessment approach for regulatory depreciation from our preliminary decision remain unchanged. Section 5.3 of our preliminary decision details the general approach.[5] However, we have accepted a change to the approach for the depreciation of existing assets for Ergon Energy. Section 5.4.2 discusses this change as it affects remaining asset lives for Ergon Energy.

5.4 Reasons for final decision

We determine a regulatory depreciation allowance of $751.2 million ($ nominal) for Ergon Energy for the 2015–20 regulatory control period. In determining this allowance we accept Ergon Energy's revised proposed standard asset lives and its approach for depreciating existing assets. However, we reduced Ergon Energy's revised proposed regulatory depreciation allowance by $77.9 million (or 9.4 per cent). This amendment reflects our:

- updates to the remaining asset lives (section 5.4.2)
- determinations regarding other components of Ergon Energy's revised proposal—for example, the opening RAB at 1 July 2015 (attachment 2), forecast inflation rate (attachment 3) and forecast capex (attachment 6)—affecting the forecast regulatory depreciation allowance.[6]

5.4.1 Standard asset lives

Consistent with our preliminary decision, we accept Ergon Energy's proposed standard asset lives for its existing asset classes. This is because they are consistent with our approved standard asset lives for the 2010–15 regulatory control period.[7]

In the preliminary decision, we also updated Ergon Energy's proposed standard asset life for the 'Equity raising costs' asset class to reflect changes to the opening RAB. We used the same weighted average approach to determining the standard asset life as approved for the 2010–15 regulatory control period.[8] Our final decision on the standard asset life for the 'Equity raising costs' asset class of 47.9 years reflects the same approach, updated for the changes to the opening RAB as discussed in attachment 2.

We received one submission from the CCP stating that the standard asset lives for Ergon Energy differed from the actual lives, and from the standard asset lives for

---

5 AER, *Preliminary decision – Ergon Energy determination 2015–16 to 2019–20, Attachment 5 – Regulatory depreciation*, April 2015, pp. 8–10.

6 Our final decision approves a lower forecast capex allowance compared to Ergon Energy's revised proposal. This means lower regulatory depreciation for the assets forecast to be added to the RAB over the 2015–20 regulatory control period, all things being equal.

7 AER, *Preliminary decision – Ergon Energy determination 2015–16 to 2019–20, Attachment 5 – Regulatory depreciation*, April 2015, p. 11.

8 AER, *Preliminary decision – Ergon Energy determination 2015–16 to 2019–20, Attachment 5 – Regulatory depreciation*, April 2015, p. 11.

equivalent assets used by other distributors.[9] It submitted that these variations have major implications for depreciation and allowed distributors to choose asset lives that optimise their returns for each revenue reset.

We note that the asset lives referenced by the CCP are from disaggregated categories used to model replacement capital expenditure (repex), rather than the higher-level categories used when calculating the regulatory depreciation allowance.[10] Although individual distributors may have higher or lower standard asset lives for specific repex asset categories, there is less variation in the standard asset lives of the aggregated categories.[11] We consider that the standard asset lives approved for Ergon Energy to calculate the regulatory depreciation allowance are comparable to the equivalent categories used in other regulatory determinations.[12]

Table 5.3 sets out our final decision on Ergon Energy's standard asset lives for the 2015–20 regulatory control period. We are satisfied the standard asset lives reflect the nature of the assets over the economic lives of the asset classes.[13]

---

9 CCP2 (Hugh Grant), *Submission on the AER's Preliminary Determinations for the Queensland Distributors*, September 2015, pp. 32–33.

10 The different levels of disaggregation/aggregation are each appropriate for the relevant purpose.

11 In general, each distributor has some repex asset classes with below average standard asset lives, and some with above average asset lives. When these repex asset classes are aggregated into the higher level asset classes used in the RFM and PTRM, the two offset each other. Further, we must allow for some variation in standard asset lives even for disaggregated categories reflecting the specific nature of each distributor's network.

12 This includes the April 2015 final determinations for the NSW electricity distributors, as well as the Victorian preliminary distribution determinations made contemporaneously with this final decision. See also AER, *Preliminary decision Ergon Energy - Attachment 5 - Regulatory depreciation*, April 2015, p. 9.

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

Table 5.3 AER's final decision on Ergon Energy's standard asset lives at 1 July 2015 (years)

Asset class	Standard asset life (years)
Overhead sub-transmission lines (2010–15)	55.0
Underground sub-transmission cables (2010–15)	45.0
Overhead distribution lines (2010–15)	50.0
Underground distribution cables (2010–15)	60.0
Distribution equipment (2010–15)	35.0
Substation bays (2010–15)	45.0
Substation establishment (2010–15)	60.0
Distribution substation switchgear (2010–15)	45.0
Zone transformers (2010–15)	50.0
Distribution transformers (2010–15)	45.0
Low voltage services (2010–15)	35.0
Metering (2010–15)	25.0
Communications – pilot wires (2010–15)	35.0
Generation assets (2010–15)	30.0
Other equipment (2010–15)	40.0
Control centre - SCADA (2010–15)	7.0
Land & easements (system) - combined	n/a
Communications (2010–15)	30.0
IT systems (2010–15)	5.0
Office equipment & furniture (2010–15)	7.0
Motor vehicles (2010–15)	10.0
Plant & equipment (2010–15)	10.0
Buildings (2010–15)	40.0
Land & easements - combined	n/a
Land improvements (2010–15)	40.0
Equity raising costs (2010–15)	47.9

Source: AER analysis.
n/a: not applicable.

5.4.2 Remaining asset lives

Ergon Energy has proposed a different approach to determining remaining asset lives and depreciation associated with existing assets than the approach set out in its initial

proposal.[14] Under this approach, the capex for each regulatory control period will be depreciated separately using a weighted average life approach.[15] We label the new approach the period-by-period tracking approach. Each asset class will now have an expanding list of sub-classes to reflect every regulatory control period in which capital expenditure on those assets was incurred.[16] This extra data helps track remaining asset values, lives and associated depreciation.[17]

In summary, we consider that period-by-period tracking:[18]

- produces depreciation schedules that reflect the nature of the assets and their economic life[19]
- ensures that total depreciation (in real terms) equals the initial value of the assets.[20]

We therefore accept the period-by-period tracking approach proposed by Ergon Energy because it is consistent with the legislative requirements in the NER.[21]

This is a departure from our preliminary decision, where we adopted our standard approach, known as weighted average remaining life (WARL). We consider that WARL is also consistent with the NER.[22] However, under the NER, we must use the depreciation schedules proposed by Ergon Energy to the extent they satisfy the requirements of the NER.[23]

We have made some changes to Ergon Energy's implementation of the period-by-period approach to correct errors. The method and implementation issues are discussed in turn below.

---

14 Ergon Energy, *Revised regulatory proposal – Attachment 03.01.01*, July 2015 pp. 23–32.

15 For example, the 'Substations' asset class will now have sub-classes for substation assets acquired prior to 1 July 2010 and those acquired for the 2010–15 regulatory control period.

16 To implement its approach, Ergon Energy used two RFMs, one for legacy assets acquired prior to 1 July 2010 and another for assets acquired during the 2010–15 regulatory control period.

17 Period-by-period tracking is very similar to the year-by-year tracking approach we adopt in our contemporaneous final decision for SA Power Networks. Both approaches involve tracking disaggregated categories of capex across multiple regulatory control periods. The difference is whether the disaggregated categories are for capex from an entire regulatory control period (generally five years, in period-by-period tracking) or for specific years of capex (year-by-year tracking). See AER, *Final decision, SA Power Networks determination, 2015–16 to 2019–20*, October 2015, Attachment 5: Regulatory depreciation (section 5.4.2), pp. 5-10 to 5-17.

18 Our detailed reasoning is set out later in this section.

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

20 NER, cl. 6.5.5(b)(2).

21 We discuss below how period-by-period tracking is implemented such that the economic lives of existing assets are consistent with previous decisions, and thereby also meets cl. 6.5.5(b)(3) of the NER.

22 Our detailed reasoning on why we consider that the WARL approach meets clause 6.5.5(b) of the NER is set out later in this section. We also set out below why we consider that the 'average depreciation' approach put forward in Ergon Energy's initial proposal does not meet the NER requirements. AER, *Preliminary decision, Ergon Energy determination 2015−16 to 2019−20: Attachment 5 − Regulatory depreciation,* April 2015, pp. 11-19.

23 NER, cl. 6.5.5(a)(2).

Method

The period-by-period tracking approach is a more complex approach than WARL of the average depreciation approach.[24] In particular, the capex of each asset class for separate regulatory control periods will need to be tracked as disaggregated categories over time, preserving these discrete categories across multiple regulatory control periods. Sub-classes for asset categories are created for each regulatory control period with remaining asset lives for these sub-classes determined using the WARL approach.[25] The data therefore expands over time and models such as the AER's PTRM and RFM may need to be expanded to accommodate the increasing number of asset sub-classes.[26] The benefit of this approach is the increased granularity and transparency of associating asset lives directly related to the regulatory control period in which the assets were acquired. However, it is more complex and costly to administer.

Adopting Ergon Energy's revised approach now does not deal with the legacy issue of previous remaining asset life determinations. The approved remaining lives for existing assets as at 1 July 2010 were calculated using an average depreciation approach (which was the method proposed in Ergon Energy's initial proposal). For the same reasons as discussed in the preliminary decision, these lives are shorter than if the revised period-by-period tracking approach now proposed had been used in the past. We do not consider that such decisions on remaining asset lives can be revisited.[27] Therefore, we consider that Ergon Energy's remaining asset lives for existing assets as at 1 July 2010 as approved at the last determination must be used. Our expectation is that the period-by-period approach will now be maintained into the future to prevent any further issues associated with switching depreciation approaches.

Depreciating capital expenditures as disaggregated regulatory control period categories is also likely to result in more variable depreciation profiles over time, as depreciation becomes more dependent on the timing of particular capital expenditure programs. In contrast, a single weighted average remaining asset life for an asset class smooths the recovery profile across all assets within that class. The impact on the revenue profile will depend largely on the depreciation allowance's share of total revenues. A report by Houston Kemp, on behalf of Ergon Energy, stated that the our objective of smoothing depreciation schedules was misplaced and noted other factors that can influence smoothing.[28] We recognise that depreciation is only one component

---

[24] Period-by-period tracking is roughly comparable in complexity to the year-by-year tracking approach we adopt in our contemporaneous final decision for SA Power Networks. The implementation of period-by-period tracking in this decision leads to greater complexity in the PTRM, in particular because of the expansion in the number of asset classes. See AER, *Final decision, SA Power Networks determination, 2015–16 to 2019–20*, October 2015, Attachment 5: Regulatory depreciation (section 5.4.2), pp. 5-10 to 5-17.

[25] For example, under the Communications asset class, there would be asset sub-classes for Communications (2010-15), Communications (2015-20), Communications (2020-25), etc.

[26] Making amendments to these standardised models risks introducing potential errors, so the depreciation schedules will have to be checked in greater detail in future.

[27] NER, cl. 6.5.5(b)(3).

[28] Houston Kemp, *Analysis of different approaches to calculating remaining lives, Report of Brendan Quach for Ergon Energy*, June 2015, p. 6.

of total revenue and we can smooth revenues to some extent through the X-factors. However, smoothing of revenues has been raised in other AER decisions as a significant issue and we have encountered fluctuations even under the averaging approaches. In switching the depreciation approach from that previously adopted, it will take some time for the implications for the variability of depreciation schedules to become apparent.[29] Nonetheless we still consider that adding asset sub- classes under the period-by-period tracking has the potential to increase the variability in depreciation. This is in contrast to the WARL approach, which has been our standard approach across numerous regulatory decisions. It therefore has a demonstrated track record of being able to accommodate a range of circumstances without causing adverse variability.

In the preliminary decision, we produced the example set out in figure 5.1 to illustrate the impact of the different depreciation approaches for the 'Distribution transformers' asset class.[30] Reports by Houston Kemp and Incenta (attached as part of submissions by CitiPower, Powercor and Jemena) supported the outcomes illustrated in this example. [31] They stated that the average depreciation approach (red line) and the WARL approach (blue line) are both subject to error as they do not track the depreciation of individual assets over their entire life (stacked columns, with each bar representing a different asset that will expire at a different time).[32] Houston Kemp and Incenta recommended the year-by-year tracking approach be used, with the outcome as illustrated by the columns in the figure.[33] These reports also supported to a lesser extent the approach Ergon Energy has adopted, period-by-period tracking. Instead of depreciating capex each year separately (year-by-year tracking), Ergon Energy's proposed approach groups the capex for each regulatory control period into asset sub-classes for each period and depreciates these asset sub-classes using their WARLs. This approach produces depreciation outcomes very similar to the year-by-year tracking approach.

---

29 In terms of Figure 5.1 there is only a single 'kink' in the total of the individually tracked asset values due to assets previously being grouped together. In the long run, there will be many kinks depending on the timing of individual capital expenditures.

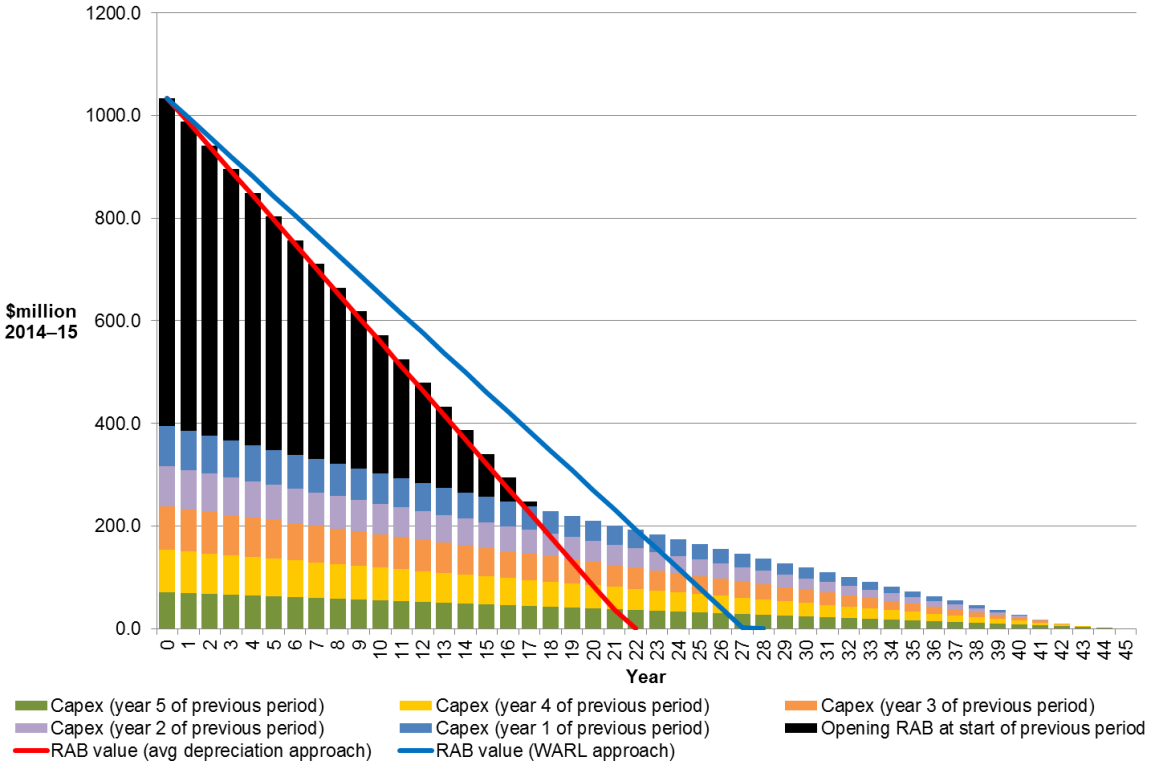
30 The example assumes the asset class incurs no further capex. AER, *Preliminary decision – Ergon Energy determination 2015–16 to 2019–20, Attachment 5 – Regulatory depreciation*, April 2015, Figure 5.1.

31 Houston Kemp, *Analysis of different approaches to calculating remaining lives, Report of Brendan Quach for Ergon Energy*, June 2015; CitiPower and Powercor, *Response on SA Power Networks' revised proposal: depreciation*, July 2015; Jemena Electricity Networks, *Submission on recent proposals made by SAPN, AGN, AAD, Energex and Ergon Energy*, 24 July 2015; and Incenta, *Calculation of depreciation – review of the AER's approximate calculation*, July 2015.

32 Incenta, *Calculation of depreciation – review of the AER's approximate calculation*, July 2015, pp. 11–12; Houston Kemp, *Analysis of different approaches to calculating remaining lives, Report of Brendan Quach for Ergon Energy*, June 2015, p. 23.

33 The individual tracking approach was also referred to as the 'baseline' approach.

Figure 5.1 Projection of the value of assets for 'Distribution transformers' asset class over time ($million, 2015)



Source: AER, *Preliminary decision*, Attachment 5, Figure 5.1.

Ergon Energy's revised approach will mean that the value of the distribution transformers in the RAB as at 1 July 2015 will not be fully depreciated until 43 years into the future (the WARL of the 2010–15 regulatory control period capex). Under Ergon Energy's initial proposal these would have been fully depreciated in 22 years,[34] while under our preferred WARL approach they would have been fully depreciated in 28 years. In the preliminary decision, we adopted the 28 years given the administrative simplicity and depreciation smoothing benefits noted above. The WARL is a reasonable approximation approach when using a single remaining asset life for an asset class. As discussed in the preliminary decision (and illustrated in the figure above), the WARL approach leads to under-recovery and over-recovery of depreciation being balanced out through time—over the lives of all the assets in the group.[35] The average depreciation approach does not achieve this balancing, as there is no recognition of when older assets expire. However, with the NER requirements limiting assessment of depreciation to the nature of the assets and their expected

[34] Based on figures in Ergon Energy's initial proposal.

[35] Compared to the period-by-period tracking approach (or year-by-year tracking approach), the WARL approach under returns depreciation in some years and over returns depreciation in others. However, the under and over recovery balances out so there is no net difference in the timing of depreciation between the approaches, over the life of the assets.

economic lives we accept Ergon Energy's revised period-by-period tracking approach as being superior in this regard.

As is shown in Figure 5.1, all three approaches result in total depreciation equalling (in real terms) the initial value of the assets, and so all three approaches conform with clause 6.5.5(b)(2) of the NER.[36] However, the three approaches differ with regard to the fulfilment of clause 6.5.5(b)(1) of the NER:

- Average depreciation does not meet this requirement, because it brings forward a proportion of the assets' depreciation so that it is received earlier than the underlying economic life of the assets. The resulting depreciation schedules will reflect asset lives that are shorter than the standard asset lives assigned to the assets when capex is incurred.
- Period-by-period tracking meets this requirement, because the depreciation received each year will reflect the underlying economic life of the assets. The resulting depreciation schedules will broadly reflect the standard asset lives assigned to the assets when capex is incurred.
- WARL meets this requirement, because the depreciation received over the life of the assets will reflect the underlying economic life of the assets. Like the average depreciation approach, there will be some years where depreciation is received earlier than the underlying economic life of the assets. However, there will also be some years where depreciation is received later than the underlying economic life of the assets. These two effects will exactly offset each other. In aggregate, across the life of the assets, the resulting depreciation schedules will reflect the standard asset lives assigned to the assets when capex is incurred.

Overall, the outcome of Ergon Energy's revised proposal (that is, the adoption of period-by-period tracking) means it will receive roughly the same amount of depreciation as it originally proposed over the 2015–20 regulatory control period (subject to revised capex forecasts). However, in future regulatory control periods (when existing legacy assets expire) it will face lower depreciation, other things being equal. We received a submission from the Energy Users Association of Australia supporting our preliminary decision to apply the WARL approach.[37] However, we note that period-by-period tracking is consistent with the NER and will lead to lower depreciation (and therefore prices) in the future reflecting the remaining usefulness of the assets.

Although we accept Ergon Energy's period-by-period tracking approach, we maintain our preference for the WARL approach, which is our standard approach used in other decisions. We hold this preference because the WARL:

- meets the requirements of the NER, in that it produces depreciation schedules that align with the economic life of the assets

---

[36] Graphically, this means the blue line, red line and stacked columns all drop to zero (and do not drop below zero).

[37] EUAA, *Submission to AER draft determination and Ergon Energy's revised proposal*, 24 July 2015, p. 13.

- avoids the additional complexity inherent in period-by-period tracking, which brings with it additional administration costs and increased risk of error
- reduces the variability in depreciation schedules that may arise under period-by-period tracking.

We also note that with the adoption of forecast depreciation, we are proposing to extend the WARL to be calculated based on year-by year tracking of remaining asset lives.[38] This approach will still provide an average remaining asset life and therefore can still lead to different outcomes than under Ergon Energy's revised period-by-period tracking approach. However, it will improve the precision of the remaining asset lives over time as more asset sub-classes are added. It also controls for the distortion caused by forecast depreciation, which differs from actual depreciation, as it is based on actual capex. This issue has implications for the implementation of Ergon Energy's revised approach as discussed below.

Implementation

Ergon Energy used two RFMs for its revised proposal, one for existing (legacy) assets acquired before 1 July 2010 and another for capex incurred during the 2010–15 regulatory control period.[39] In doing so, it has created two asset sub-classes reflecting the two periods during which assets were acquired—before 1 July 2010, and between 1 July 2010 and 30 June 2015. Each asset sub-class has a different remaining asset life at 1 July 2015 that is recorded in the PTRM. Table 5.4 shows the expanded asset sub-classes and their remaining asset lives for the 2015–20 regulatory control period that we approve for Ergon Energy.

We consider there has been an error made by Ergon Energy in including the true-up for 2009–10 capex in the capex RFM, as the adjustment relates to the previous regulatory control period and hence the opening RAB as at 1 July 2010. We would also expect that the true-up for 2014–15 capex should relate to the 2010–15 regulatory control period. Accordingly, we moved the 2009–10 capex true-up from Ergon Energy's capex RFM to the legacy RFM.

Ergon Energy has also made an error in the use of remaining asset lives applying to existing assets as at 1 July 2010. This repeats an error in its initial proposal and discussed in the preliminary decision. We have therefore amended the remaining asset lives in the legacy RFM to reflect those approved at the last reset, for the reasons discussed at attachment 2. This has the effect of increasing Ergon Energy's RAB value as at 1 July 2015.

The preliminary decision provides that forecast depreciation, rather than actual depreciation, will be used to roll forward the RAB over the 2015–20 regulatory control period. The adoption of a forecast depreciation approach in the RAB roll forward will

---

[38] AER, *Explanatory statement: Proposed amendment Electricity transmission network service providers roll forward model (version 3),* July 2015, section 4.3.

[39] Its revised proposal also included 2009–10 capex (final year of previous regulatory control period) in the capex RFM.

create some distortion in the depreciation of asset sub-classes disaggregated by regulatory control periods, which can reduce the benefit of expanding sub-classes classes (particularly for short lived assets). For example, a particular regulatory control period's forecast capex may prove to be much greater than actual capex.[40] In this case, the asset sub-class will have its value depreciated by more than the asset sub-class' forecast depreciation would have suggested had actual capex been known at the time. The depreciation amount of the asset sub-class in future years will then be relatively lower to offset this over-depreciation early in the asset's life.[41]

Forecast depreciation, coupled with the greater disaggregation of capital expenditures under period-by-period tracking, will also slightly increase the prospect of negative asset sub-classes at the end of the regulatory control period. This would occur where actual capex was much lower than forecast across the entire regulatory control period so that actual capex was less than the forecast depreciation allowance. When negative asset classes emerge at the end of the regulatory control period, we consider these amounts should be returned to customers over the next regulatory control period.[42] This matter will be included in our assessment of Ergon Energy's proposed depreciation schedules at the next regulatory determination.

---

40 For example, expenditure on IT systems may have been forecast to be $100 in 2016–17, with no forecast or actual IT systems capex within the 2015-20 regulatory control period. This would mean with an expected life of 5 years, the forecast depreciation for this asset would be $20 a year. This asset would be expected to have a value at the end of the regulatory control period (2019–20, after 3 years of depreciation) of $40 ($100 – 3x($100/5)). However, if actual expenditure on IT systems in 2016–17 was only $70 the asset would have a value of only $10 ($70 – 3x($100/5)) at the end of the regulatory control period if forecast depreciation is used to roll forward the value. If the expenditure on IT systems in 2016–17 was only $40, the asset value would be –$20 ($40 – 3x($100/5)) at the end of the regulatory control period. If there was no offsetting positive asset value from IT capex in other years within the 2015-20 regulatory control period, the value of the asset sub-class 'IT systems (2015-20)' would be negative at the start of the next regulatory control period.

41 In terms of the example above, where expenditure on IT systems in 2016–17 was only $70 (and assuming no other forecast or actual IT systems capex in other years within the regulatory control period), the end of period value is $10 instead of $40. Over the 2020–25 regulatory control period this value would be depreciated at about $5 per annum ($10/(5-3)). This asset sub-class over its 5 years of life will therefore be depreciated as follows: $20, $20, $20, $5, $5. In this case the number of years over which the asset is fully depreciated is unaffected and equal to the standard asset life of 5 years, except for the case where a negative sub-class develops, as discussed below.

42 In terms of the example above, where expenditure on IT systems in 2016–17 was only $40 and there was no other forecast or actual IT systems capex within the 2015–20 regulatory control period, the depreciation profile for th is asset sub-class (IT systems 2015-20) would be as follows: $20, $20, 20, –$20.

Table 5.4 AER's final decision on Ergon Energy's remaining asset lives at 1 July 2015 (years)

Asset class	Remaining asset lives approved by AER (years)	Remaining asset lives as proposed (years)	Difference (per cent)
Overhead sub-transmission lines (pre July 2010)	30.1	29.4	2.5%
Underground sub-transmission cables (pre July 2010)	18.2	14.5	25.8%
Overhead distribution lines (pre July 2010)	29.9	29.2	2.2%
Underground distribution cables (pre July 2010)	42.1	40.4	4.2%
Distribution equipment (pre July 2010)	14.1	11.5	22.7%
Substation bays (pre July 2010)	27.7	26.6	4.1%
Substation establishment (pre July 2010)	26.2	24.7	6.3%
Distribution substation switchgear (pre July 2010)	30.4	29.8	1.7%
Zone transformers (pre July 2010)	22.5	21.3	6.1%
Distribution transformers (pre July 2010)	17.3	15.9	8.8%
Low voltage services (pre July 2010)[a]	1.0	0.0	n/a
Communications – pilot wires (pre July 2010)	15.0	9.4	58.5%
Generation assets (pre July 2010)	0.6	0.5	17.5%
Other equipment (pre July 2010)	31.8	31.8	0.0%
Control centre - SCADA (pre July 2010)[a]	1.0	0.0	n/a
Land & easements (system) - combined[b]	n/a	n/a	n/a
IT systems (pre July 2010)[a]	1.0	0.0	n/a
Office equipment & furniture (pre July 2010)	0.2	0.2	0.0%
Motor vehicles (pre July 2010)	2.0	2.0	0.0%
Plant & equipment (pre July 2010)	2.4	2.4	0.0%
Buildings (pre July 2010)	3.9	3.9	0.0%
Land & easements - combined[b]	n/a	n/a	n/a
Land improvements (pre July 2010)	32.3	32.3	0.0%
Overhead sub-transmission lines (2010–15)	53.1	52.2	1.7%
Underground sub-transmission cables (2010–15)	43.1	43.0	0.2%
Overhead distribution lines (2010–15)	48.0	47.8	0.4%
Underground distribution cables (2010–15)	58.0	57.5	0.8%
Distribution equipment (2010–15)	34.3	34.1	0.5%
Substation bays (2010–15)	43.0	42.3	1.7%
Substation establishment (2010–15)	57.8	57.1	1.1%

Asset class	Remaining asset lives approved by AER (years)	Remaining asset lives as proposed (years)	Difference (per cent)
Distribution substation switchgear (2010–15)	42.8	42.5	0.8%
Zone transformers (2010–15)	48.4	47.6	1.8%
Distribution transformers (2010–15)	43.0	42.5	1.1%
Low voltage services (2010–15)	33.4	33.1	1.0%
Metering (2010–15)	22.3	21.5	3.6%
Communications – pilot wires (2010–15)	31.6	31.5	0.4%
Generation assets (2010–15)	29.9	29.9	0.0%
Other equipment (2010–15)	40.0	39.6	1.0%
Control centre - SCADA (2010–15)	4.7	4.4	6.7%
Communications (2010–15)	27.9	27.9	0.1%
IT systems (2010–15)	3.7	3.7	–0.1%
Office equipment & furniture (2010–15)	5.0	4.9	1.7%
Motor vehicles (2010–15)	8.4	8.1	3.9%
Plant & equipment (2010–15)	7.7	7.4	5.2%
Buildings (2010–15)	37.8	37.5	0.8%
Land improvements (2010–15)	37.9	37.5	1.1%
Equity raising costs (2010–15)	44.0	44.0	0.0%

Source: AER analysis.

n/a: not applicable.

(a) Under the weighted average method, the remaining asset life is calculated as ‘n/a’. However, the RAB roll forward produces a residual value at 30 June 2015 due to end of period adjustments, and so assigning a remaining asset life of 1 year to fully depreciate (by way of writing off) the residual value is appropriate in this case. Applying ‘n/a’ means the residual value remains in the RAB and does not depreciate.

(b) The ‘legacy’ (pre July 2010) and ‘capex 2010–15’ (2010–15) values have been combined for these asset classes as they have a standard asset life of ‘n/a’. There is no added benefit in separating non-depreciating asset classes by regulatory control period as they have no impact on the depreciation allowance.