

Attachment 7: Regulatory asset base

Regulatory proposal for the ACT electricity distribution network 2019–24
January 2018

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Key points

Evoenergy has calculated its regulatory asset base (RAB) using the Australian Energy Regulator's (AER's) roll-forward model and post-tax revenue model (PTRM), adopting the AER's methodology for calculating forecast depreciation, forecast inflation and asset lives. Consistent with the AER's Framework and Approach decision, the RAB is split between distribution and transmission (dual function assets).

Over the 2019–24 regulatory period, the nominal RAB is forecast to grow by an average of 2.2 per cent per year, below the level of forecast inflation. The opening RAB for each year of the 2019–24 regulatory period is presented in the table below.

Opening RAB, \$ million nominal

	2019/20	2020/21	2021/22	2022/23	2023/24
Distribution opening RAB	791.43	815.39	843.39	870.19	892.50
Transmission opening RAB	174.24	174.16	170.90	178.43	175.83
Total opening RAB	965.67	989.54	1014.30	1048.62	1068.32

7.1. Introduction

The regulatory asset base (RAB) reflects the value of those assets that are used by Evoenergy in providing Standard Control Services. The RAB provides the basis for calculating both the return on capital and the return of capital (regulatory depreciation), two of the key building blocks that comprise Evoenergy's annual revenue requirement.

There are three steps involved in calculating the RAB:

- first, determining whether a separate RAB is required for Evoenergy's dual function assets;
- second, determining the opening RAB for the 2019–24 regulatory control period, commencing 1 July 2019; and
- third, determining the value of the RAB in each year of the 2019–24 regulatory control period from 2019–20 to 2023–24.

This attachment sets out Evoenergy's approach to implementing each of these steps and the resulting value of the RAB.

7.2. Dual function assets

Evoenergy owns and operates both a distribution system and dual function assets. Dual function assets are high voltage transmission assets forming part of the distribution network. The National Electricity Rules (Rules) require the AER to determine the applicable pricing regime for dual function assets (clause 6.25). The AER's decision is binding and must be included in its framework and approach paper.

For the 2019–24 regulatory period, the AER's decision is that transmission pricing will apply to Evoenergy's dual function assets.¹ In its framework and approach paper (AER 2017), the AER stated that it was satisfied that the proportion of Evoenergy's submitted dual function asset value attributable to the revised assessment approach does conform to the dual function asset definition in the Rules.

Therefore, Evoenergy has prepared two RABs for Standard Control Services: one for distribution and one for transmission (dual function assets). For the current regulatory period, the allocation of indirect capital expenditure (capex), disposals and contributions between distribution and transmission is based on the value of the opening RAB for directly allocated asset classes. For the 2019–24 regulatory period, the allocation is based on the final year of the current regulatory period, 2018/19. For zone substations, the allocation between distribution and transmission is based on the direct split of project costs up to 2016/17. For the last two years of the current regulatory period, and all years of the 2019–24 regulatory period, capex, disposals and contributions for zone substations is based on the split of the 2017/18 opening RAB for zone substations. Evoenergy's allocation methodology is provided in the modelling appendix.

7.3. Opening RAB for 2019/20

The opening RAB for 2019/20 is calculated using the AER's roll-forward model (RFM).² The Rules set out details in relation to the preparation, publication, amendment and contents of the RFM by the AER (clause 6.5.1). Following the process set out in the Rules for establishing the opening RAB (schedule 6.2.1), Evoenergy has started with the opening asset base from the previous regulatory period, added actual net capex, deducted forecast depreciation and added actual inflation.³ Each of these inputs is discussed below and the resulting RAB roll-forward results are presented.

7.3.1 Opening asset base for 2013/14

The opening asset values for 2013/14 are taken from the AER 2015 Final Decision RFMs. The opening asset base for 2013/14 in nominal terms is \$662 million for distribution and \$136 million for transmission.

¹ AER 2017: 72–76.

² Evoenergy has used the most recently available version of the AER's RFM (version 2, December 2016) to calculate the opening RAB for 2019/20.

³ In addition, an adjustment for the last year of the previous regulatory period is usually made in the roll-forward to account for the difference between forecast and actual capex (as only forecasts are usually available at the time). However, given the timing of the revised regulatory proposal for the 2014–19 regulatory control period, actual capital expenditure for 2013/14 was known and hence no adjustment is necessary.

7.3.2 Net actual capex

Net actual capex is calculated as actual capex less actual disposals and actual customer contributions. Table 7.1 and Table 7.2 present these values for distribution and transmission, respectively. Actual net capex is discussed in detail in Attachment 5 (Capital Expenditure).

Table 7.1 Actual capex, disposals and customer contributions: distribution

\$ million nominal	2014/15	2015/16	2016/17	2017/18	2018/19
Actual capex	67.33	58.16	54.06	66.33	58.66
Actual disposals	0.00	0.06	0.22	0.27	0.42
Actual customer contributions	6.23	7.90	9.10	7.48	6.14
Actual net capex¹	63.08	51.55	45.89	60.28	53.60

¹ The RFM adds a half-year return to net capex. See AER 2016b:15.

Table 7.2 Actual capex, disposals and customer contributions: transmission

\$ million nominal	2014/15	2015/16	2016/17	2017/18	2018/19
Actual capex	11.78	9.81	8.99	7.87	14.16
Actual disposals	0.00	0.01	0.05	0.06	0.10
Actual customer contributions	0.96	0.28	0.07	0.03	0.03
Actual net capex¹	11.13	9.79	9.11	8.00	14.44

¹ The RFM adds a half-year return to net capex.

7.3.3 Forecast depreciation

One of the requirements of the Rules is for the AER to make a constituent decision on whether depreciation for establishing the RAB as at the commencement of the following regulatory control period is to be based on actual or forecast capex (clause 6.12.1(18)). Schedule 6.2.2B of the Rules require this decision to be consistent with the capex incentive objective and require the AER (in clause S6.2.2B (c)) to have regard to:

- (1) *the incentives that the Distribution Network Service Provider has in relation to undertaking efficient capital expenditure, including as a result of the application of any incentive scheme or any other incentives under the Rules;*
- (2) *the substitution possibilities between assets with relatively short economic lives and assets with relatively long economic lives and the relative benefits of such asset types;*
- (3) *the extent to which any capital expenditure incurred by the Distribution Network Service Provider has exceeded the corresponding amount of forecast capital expenditure accepted or substituted by the AER and the amount of that excess expenditure which is not efficient;*
- (4) *the Capital Expenditure Incentive Guidelines; and*
- (5) *the capital expenditure factors.*

The AER considered the approach to calculating depreciation for the RAB roll-forward to the commencement of the 2019–24 regulatory period in its Framework and Approach paper for the 2014–19 period. Taking into account the requirements of the Rules, the

AER proposed to use the forecast depreciation approach to establish the RAB at the commencement of the 2019–24 regulatory period.⁴

Therefore, Evoenergy has implemented the forecast depreciation approach to rolling forward the RAB. Forecast depreciation is taken directly from the post-tax revenue models (PTRMs) in the AER’s 2015 Final Decision, and these values are presented in Table 7.3.

Table 7.3 Forecast depreciation

\$ million nominal	2014/15	2015/16	2016/17	2017/18	2018/19
Distribution	-44.11	-48.89	-49.52	-50.95	-51.22
Transmission	-8.03	-8.96	-9.32	-9.97	-10.36

7.3.4 Inflation

The RFM inflates the RAB annually by the actual Consumer Price Index (CPI). The RFM requires CPI to be the rate used for annual expected revenue adjustments in the control mechanism. For distribution, this is the CPI weighted average of eight capital cities for all groups calculated as the sum of the four quarters to December divided by the sum of the previous four quarters to December. For transmission, this is the CPI weighted average of eight capital cities for all groups calculated as the December quarter divided by the previous December quarter. As CPI for the final two years of the regulatory period are not yet known, a placeholder of two per cent per year has been adopted and will be updated when the relevant CPI data are available.

Table 7.4 presents the inflation values used to roll forward the RAB.

Table 7.4 Inflation on the RAB

\$ million nominal	2014/15	2015/16	2016/17	2017/18	2018/19
Distribution	17.25	11.01	9.49	14.99	15.47
Transmission	2.65	2.70	2.41	3.31	3.34

7.3.5 RAB roll-forward

Based on the inputs set out above, the RAB is rolled forward each year in the RFM to get a closing value for 2018/19, which becomes the opening value of the RAB for the first year of the 2019–24 regulatory period. The individual elements of the RAB roll-forward are summarised in Table 7.5 for distribution and Table 7.6 for transmission.

⁴ AER, 2014a: 51-54.

Table 7.5 RAB roll-forward: distribution

\$ million nominal	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
Opening RAB	661.99	693.51	729.73	743.40	749.26	773.58
Actual net capex ¹	64.49	63.08	51.55	45.89	60.28	53.60
Forecast depreciation	-38.59	-44.11	-48.89	-49.52	-50.95	-51.22
Actual inflation	16.22	17.25	11.01	9.49	14.99	15.47
Difference between actual and forecast capex (last year of regulatory period)	-6.97					0.00
Return on difference between actual and forecast capex (last year of regulatory period)	-3.64					0.00
Closing RAB	693.51	729.73	743.40	749.26	773.58	791.43

1. For 2013/14 and 2018/19 this is forecast net capex. For 2017/18, this is actual capex to October 2017 and then forecast for the remainder of the year.

Table 7.6 RAB roll-forward: transmission

\$ million nominal	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
Opening RAB	136.28	154.01	159.76	163.29	165.49	166.83
Actual net capex ¹	20.78	11.13	9.79	9.11	8.00	14.44
Forecast depreciation	-6.76	-8.03	-8.96	-9.32	-9.97	-10.36
Actual inflation	3.34	2.65	2.70	2.41	3.31	3.34
Difference between actual and forecast capex (last year of regulatory period)	0.24					0.00
Return on difference between actual and forecast capex (last year of regulatory period)	0.13					0.00
Closing RAB	154.01	159.76	163.29	165.49	166.83	174.24

1. For 2013/14 and 2018/19 this is forecast net capex. For 2017/18, this is actual capex to October 2017 and then forecast for the remainder of the year.

7.4. RAB for 2019–24

The RAB for 2019–24 is calculated using the AER's PTRM.⁵ The Rules set out requirements in terms of the preparation, publication, amendment and contents of the PTRM (schedule 6.4) prepared by the AER. The starting point for calculating the RAB for each year of the 2019–24 regulatory period is the opening RAB from the roll-forward

⁵ Evoenergy has used the latest available version of the AER's PTRM (Version 3, January 2015) to calculate the RAB for each year of the 2019–24 regulatory period.

discussed above. Within the PTRM, the process to calculate the RAB for each year of the 2019–24 regulatory period is to take the opening value of the RAB and add forecast net capex, deduct forecast depreciation and add forecast inflation. Each element of the RAB calculation is discussed below and the RAB results for the 2019–24 period are presented.

7.4.1 Opening value of the RAB

The opening value of the RAB for 2019/20 is taken directly from the RFM. As presented above, the opening value of the RAB in nominal terms is \$791 million for distribution and \$174 for transmission.

7.4.2 Forecast net capex

Forecast net capex is calculated as forecast capex less forecast disposals and forecast customer contributions. These values are presented in Table 7.7 for distribution and Table 7.8 for transmission, and discussed in detail in Attachment 5.

Table 7.7 Forecast capex, disposals and customer contributions: distribution

\$ million nominal	2019/20	2020/21	2021/22	2022/23	2023/24
Forecast capex	64.67	72.26	74.35	74.48	69.44
Forecast disposals	0.13	0.22	0.14	0.21	0.24
Forecast customer contributions	6.62	7.20	7.43	7.79	7.66
Forecast net capex¹	59.01	66.07	68.05	67.74	62.70

1. The PTRM adds a half-year return to net capex.⁶

Table 7.8 Forecast capex, disposals and customer contributions: transmission

\$ million nominal	2019/20	2020/21	2021/22	2022/23	2023/24
Forecast capex	6.26	3.81	15.05	5.98	7.12
Forecast disposals	0.03	0.05	0.03	0.05	0.05
Forecast customer contributions	0.03	0.03	0.03	0.03	0.03
Forecast net capex¹	6.32	3.80	15.27	6.02	7.17

1. The PTRM adds a half-year return to net capex.

⁶ The PTRM calculates the return on the capital based on the opening RAB for each regulatory year even though it is assumed capex is incurred evenly throughout the year. To address this timing difference, a half-real vanilla WACC is provided to compensate for the six-month period before capex is included in the RAB. See AER 2015:19.

7.4.3 Forecast depreciation

The Rules set out details in relation to how depreciation must be calculated for each regulatory year including requirements that the depreciation schedules used must conform to the following requirements (clause 6.5.5(b)):

- (1) *the schedules must depreciate using a profile that reflects the nature of the assets ... over the economic life of that asset ... ;*
- (2) *the sum of the real value of the depreciation that is attributable to any asset ... over the economic life of that asset ... must be equivalent to the value at which that asset ... was first included in the regulatory asset base ... ;*
- (3) *the economic life of the relevant assets and the depreciation methods and rates underpinning the calculation of depreciation for a given regulatory control period must be consistent with those determined for the same assets on a prospective basis in the distribution determination for that period.*

The profile of depreciation is set within the PTRM using the straight-line depreciation methodology. The AER considers that the straight-line method of depreciation satisfies the Rules requirements in clause 6.5.5(b) because it provides an expenditure profile that reflects the nature of the assets over their economic life.⁷

Evoenergy also notes that the AER has argued in favour of the straight-line approach (as opposed to front-loaded profiles) on the basis that:

- the regulatory framework addresses stranding risk. The Rules provide that if prudently acquired, an asset will be included in a service provider's RAB and the cost of that asset will be recovered by the service provider. The residual funds of any assets that are no longer used can be recovered from the remaining customers;⁸ and
- shorter asset lives may be used for assets that will cease to be used during the regulatory control period. Specifically, the AER has allowed the introduction of a new 'accelerated depreciation' asset class to be created for assets expected to be removed from service and that the remaining value of these assets be subject to accelerated depreciation, to be fully depreciated in five years.⁹

To the extent that the AER maintains this approach, Evoenergy agrees that the straight-line approach satisfies the Rules and on this basis has adopted the straight-line methodology in the PTRM.

The standard asset lives used in the PTRM to calculate depreciation are the same as those used in the AER's 2015 Final Decision. The remaining asset lives used to calculate depreciation come directly from the output of the RFM. These asset lives are also consistent with the AER's 2015 Final Decision as the remaining lives that are input into the RFM are taken directly from the AER's 2015 Final Decision PTRM. The standard asset lives and remaining asset lives used in the RFM and PTRM are presented in Table 7.9.

⁷ AER 2014b: 5-14.

⁸ See, for example, AER 2016a: 5-22.

⁹ AER 2016a: 5-32.

Table 7.9 Asset lives

	Distribution & Transmission	Distribution		Transmission	
	Standard lives	Remaining lives		Remaining lives	
	RFM & PTRM	RFM 2014-15	PTRM 2018-19	RFM 2014-15	PTRM 2018-19
Opening distribution assets	40.00	14.71	9.71	14.71	9.71
Sub-transmission overhead	40.00	n/a	n/a	37.51	35.17
Sub-transmission underground	60.00	n/a	n/a	n/a	59.80
Zone substation	40.00	37.64	36.30	38.59	35.14
Distribution substations	40.00	37.88	35.17		
Distribution overhead lines	50.00	47.87	45.45		
Distribution underground lines	60.00	57.79	55.66		
IT & communication systems (Networks)	10.00	9.35	7.22	9.35	7.46
Motor vehicles	7.00	6.19	4.39	6.19	4.60
Other non-system assets (Networks)	5.00	2.83	3.81	2.83	3.81
IT systems (Corporate)	5.00	4.07	3.72	4.07	3.72
Telecommunications (Corporate)	5.00	1.91	5.00	1.91	5.00
Other non-system assets (Corporate)	5.00	2.11	3.94	2.11	3.94
Land	n/a	n/a	n/a	n/a	n/a
Buildings	60.00	57.01	55.20	57.01	56.03
Equity-raising costs	44.55	40.55	38.28	40.55	38.59

The resulting forecast depreciation used to calculate the RAB is presented in Table 7.10.

Table 7.10 Forecast depreciation

\$ million nominal	2019/20	2020/21	2021/22	2022/23	2023/24
Distribution	-54.84	-58.45	-62.34	-67.19	-71.17
Transmission	-10.76	-11.41	-12.02	-13.08	-13.78

Forecast depreciation for the 2019–24 regulatory period is \$40 million (\$2018/19) higher than the AER's 2015 final decision for the 2014–19 regulatory period. This is driven by relatively higher capex on short-lived assets than was forecast in the AER's 2015 decision. While depreciation expenses are higher, the value of the RAB is correspondingly lower.

Consistent with Evoenergy’s response to the AER’s Framework and Approach,¹⁰ Evoenergy proposes to use forecast depreciation to establish the RAB at the commencement of the 2024–24 regulatory control period. Under most circumstances, this approach provides sufficient incentives to achieve efficiency gains over the regulatory control period.

7.4.4 Forecast inflation

Forecast inflation is estimated using the AER’s methodology based on RBA forecasts (see Attachment 8 Rate of return, imputation credits and forecast inflation).¹¹ Table 7.11 presents forecast inflation on the RAB for distribution and transmission.

Table 7.11 Forecast inflation on the RAB

\$ million nominal	2019/20	2020/21	2021/22	2022/23	2023/24
Distribution	19.79	20.38	21.08	21.75	22.31
Transmission	4.36	4.35	4.27	4.46	4.40

7.4.5 RAB for 2019–24

Based on the elements of the RAB discussed above, the RAB for each year of the 2019–24 regulatory period is presented in Table 7.12 for distribution and Table 7.13 for transmission.

Table 7.12 Distribution RAB

\$ million nominal	2019/20	2020/21	2021/22	2022/23	2023/24
Opening RAB	791.43	815.39	843.39	870.19	892.50
Forecast net capex	59.01	66.07	68.05	67.74	62.70
Forecast straight-line depreciation	-54.84	-58.45	-62.34	-67.19	-71.17
Forecast inflation on RAB	19.79	20.38	21.08	21.75	22.31
Closing RAB	815.39	843.39	870.19	892.50	906.34

Table 7.13 Transmission RAB

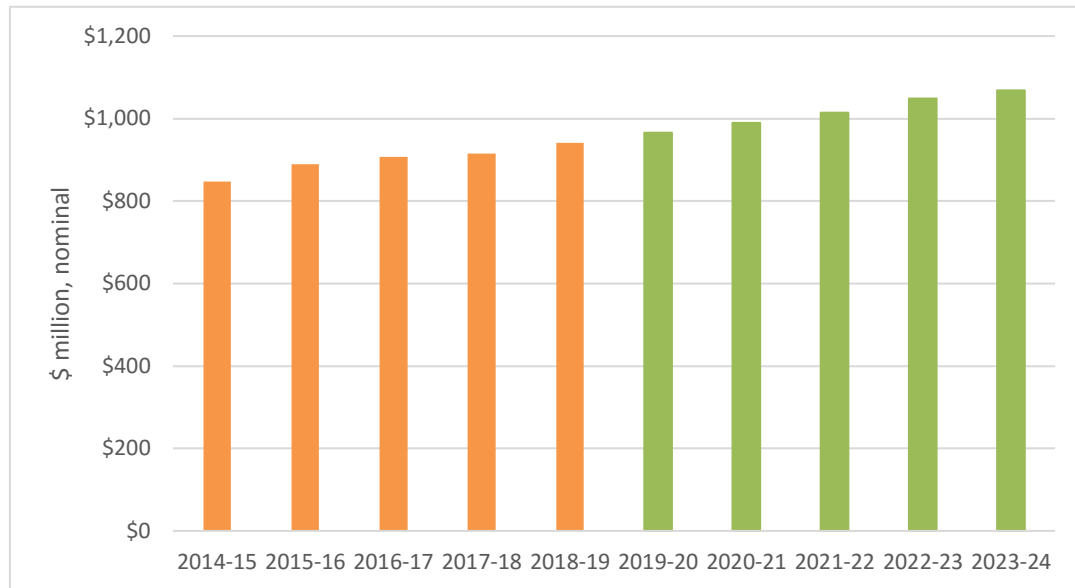
\$ million nominal	2019/20	2020/21	2021/22	2022/23	2023/24
Opening RAB	174.24	174.16	170.90	178.43	175.83
Forecast net capex	6.32	3.80	15.27	6.02	7.17
Forecast straight-line depreciation	-10.76	-11.41	-12.02	-13.08	-13.78
Forecast inflation on RAB	4.36	4.35	4.27	4.46	4.40
Closing RAB	174.16	170.90	178.43	175.83	173.61

¹⁰ AAD 2017: 24.

¹¹ AER 2015: 15 (footnote 14).

Figure 7.1 compares the total RAB (distribution and transmission) for the 2019–24 regulatory period with the RAB for the 2014–19 regulatory period.¹² Over the 2014–19 period, the nominal RAB increased in total by 13.9 per cent¹³ or an average of 2.8 per cent per year. Over the 2019–24 period, the nominal RAB is forecast to increase by a total of 11.8 per cent¹⁴ or an average 2.4 per cent per year, slightly below forecast inflation (2.5 per cent).

Figure 7.1 Opening nominal RAB for each year (2014/15 to 2023/24)



¹² The RAB for the 2014–19 regulatory control period is calculated based on actual capex and actual inflation. The AER’s forecast RAB over the same period was higher with the difference largely due to the difference between actual and forecast inflation.

¹³ Calculated as the difference between the opening RAB in 2014/15 and the closing RAB in 2018/19.

¹⁴ Calculated as the difference between the opening RAB in 2019/20 and the closing RAB in 2023/24.

Shortened forms

Term	Meaning
AER	Australian Energy Regulator
capex	capital expenditure
CPI	Consumer Price Index
PTRM	post-tax revenue model
RAB	regulatory asset base
RFM	roll-forward model
Rules	National Electricity Rules
WACC	weighted average cost of capital

References

Author	Title	Date
AAD	ActewAGL Distribution Response to Preliminary Framework and Approach	2017
AER	Stage 2 Framework and Approach ActewAGL	2014a
AER	Attachment 5 – Regulatory Depreciation, ActewAGL Draft Decision	2014b
AER	Amendment: Electricity distribution network service providers post-tax revenue model handbook	2015
AER	Draft Decision AusNet Service Transmission Determination 2017-18 to 2021-22, Attachment 5 - Regulatory Depreciation	2016a
AER	Final Decision, Amendment: Electricity distribution network service providers roll forward model handbook	2016b
AER	Framework and Approach: ActewAGL electricity distribution 2019-24	2017