

PRELIMINARY DECISION SA Power Networks determination 2015–16 to 2019–20

Attachment 2 – Regulatory asset base

April 2015



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Note

This attachment forms part of the AER's preliminary decision on SA Power Networks' 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
- 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
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Shortened forms

Shortened form	Extended form				
ABS	Australian Bureau of Statistics				
AEMC	Australian Energy Market Commission				
AEMO	Australian Energy Market Operator				
AER	Australian Energy Regulator				
augex	augmentation expenditure				
capex	capital expenditure				
ССР	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				

Shortened form	Extended form
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

2 Regulatory asset base

We are required to make a decision on SA Power Networks' opening regulatory asset base (RAB) as at 1 July 2015.¹ We use the RAB at the start of each regulatory year to determine the return of capital (regulatory depreciation) and return on capital building block allowances. This attachment presents our preliminary decision on the opening RAB value as at 1 July 2015 for SA Power Networks and roll forward of the forecast RAB over the 2015–20 regulatory control period.

2.1 Preliminary decision

We accept SA Power Networks' proposed opening RAB of \$3829.4 million (\$ nominal) as at 1 July 2015.²

To determine the opening RAB as at 1 July 2015, we have rolled forward the RAB over the 2010–15 regulatory control period to determine a closing RAB value at 30 June 2015. This roll forward includes an adjustment at the end of the 2010–15 regulatory control period to account for the difference between actual 2009–10 capex and the estimate approved at the 2010 determination.³

Table 2.1 sets out our preliminary decision on the roll forward of the RAB values for the 2010–15 regulatory control period.

Table 2.1AER's preliminary decision on SA Power Networks' RAB forthe 2010–15 regulatory control period (\$ million, nominal)

	2010–11	2011–12	2012–13	2013–14	2014–15ª
Opening RAB	2900.0	3096.8	3287.9	3502.0	3674.4
Capital expenditure ^b	271.0	325.7	335.2	291.3	362.0
Inflation indexation on opening RAB	96.6	48.9	82.2	102.6	73.5
Less: straight-line depreciation	170.7	183.6	203.3	221.5	242.0
Closing RAB	3096.8	3287.9	3502.0	3674.4	3867.9
Difference between estimated and actual capex (1 July 2009 to 30 June 2010)					-24.3
Return on difference for 2009–10 capex					-14.3
Closing RAB as at 30 June 2015					3829.4

Source: AER analysis.

¹ NER, cl 6.12.1(6).

² SA Power Networks, *Regulatory proposal*, October 2014, p.301, Table 25.3.

³ The end of period adjustment will be positive (negative) if actual capex is higher (lower) than the estimate approved at the 2010–15 determination.

(a): Based on estimated capex. We will update the RAB roll forward in the substitute decision.

(b): Net of disposals and capital contributions, and adjusted for CPI.

We determine a forecast closing RAB value at 30 June 2020 of \$5132.5 million (\$ nominal). This is \$490.6 million (or 8.72 per cent) lower than the amount of \$5623.1 million (\$ nominal) proposed by SA Power Networks. Our preliminary decision on the forecast closing RAB reflects our preliminary decisions on forecast capex (attachment 6) and forecast regulatory depreciation (attachment 5).

Table 2.2 sets out our preliminary decision on the forecast RAB values for SA Power Networks over the 2015–20 regulatory control period

Table 2.2AER's preliminary decision on SA Power Networks' RAB forthe 2015–20 period (\$ million, nominal)

	2015–16	2016–17	2017–18	2018–19	2019–20
Opening RAB	3829.4	4080.2	4345.9	4611.4	4866.9
Capital expenditure ^a	329.7	361.3	378.4	384.0	383.5
Inflation indexation on opening RAB	97.6	104.0	110.8	117.6	124.1
Less: straight-line depreciation	176.4	199.7	223.7	246.1	242.0
Closing RAB	4080.2	4345.9	4611.4	4866.9	5132.5

Source: AER analysis.

(a): Net of forecast disposals and capital contributions.

We determine that the forecast depreciation approach is to be used to establish the opening RAB at the commencement of the 2020–25 regulatory control period for SA Power Networks.⁴ We consider this approach will provide sufficient incentives for SA Power Networks to achieve capex efficiency gains over the regulatory control period. SA Power Networks is not currently subject to a CESS but we will apply the CESS to SA Power Networks over the 2015–20 regulatory control period. SA Power Networks over the 2015–20 regulatory control period.

SA Power Networks used our RFM to establish an opening RAB as at 1 July 2015 and our PTRM to roll forward the RAB over the 2015–20 regulatory control period.

SA Power Networks proposed an opening RAB value as at 1 July 2010 of \$2900.0 million (\$ nominal).⁵ Rolling forward this RAB and using depreciation based on actual capex, SA Power Networks proposed a closing RAB as at 30 June 2015 of \$3829.4

⁴ NER, cl 6.12.1(18).

⁵ SA Power Networks, *Regulatory proposal*, October 2014, p. 300, Table 25.1.

million (\$ nominal). Table 2.3 presents SA Power Networks' proposed roll forward of its RAB during the 2010–15 regulatory control period.

Table 2.3SA Power Networks' proposed RAB for the 2010–15regulatory control period (\$million, nominal)

	2010–11	2011–12	2012–13	2013–14	2014–15ª
Opening RAB	2900.0	3096.8	3287.9	3502.0	3674.4
Capital expenditure ^b	271.0	325.7	335.2	291.3	362.0
Inflation indexation on opening RAB	96.6	48.9	82.2	102.6	73.5
Less: straight-line depreciation	170.7	183.6	203.3	221.5	242.0
Closing RAB	3096.8	3287.9	3502.0	3674.4	3867.9
Difference between estimated and actual capex (1 July 2009 to 30 June 2010)					-24.3
Return on difference for 2009–10 capex					-14.3
Closing RAB as at 30 June 2015					3829.4

Source: SA Power Networks, *Regulatory proposal*, October 2014, p. 300, Table 25.1.

(a): Based on estimated capex.

(b): Net of disposals and capital contributions, and adjusted for CPI.

SA Power Networks proposed a closing forecast RAB as at 30 June 2020 of \$5623.1 million (\$ nominal). This value reflects its proposed opening RAB, forecast capex, forecast inflation and depreciation (based on forecast capex) over the 2015–20 regulatory control period. Its projected RAB over the 2015–20 regulatory control period is shown in Table 2.4.

Table 2.4SA Power Networks' proposed RAB for the 2015–20 period(\$million, nominal)

	2015–16	2016–17	2017–18	2018–19	2019–20
Opening RAB	3829.4	4178.3	4561.4	4934.1	5302.4
Capital expenditure ^a	481.2	544.4	561.3	583.8	559.0
Inflation indexation on opening RAB	97.6	106.5	116.3	125.8	135.2
Less: straight-line depreciation	229.9	267.8	304.9	341.3	373.5
Closing RAB	4178.3	4561.4	4934.1	5302.4	5623.1

Source: SA Power Networks, Regulatory proposal, October 2014, p. 301, Table 25.3.

(a): Net of disposals and capital contributions.

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SA Power Networks proposed to apply a forecast depreciation approach to establish the RAB at the commencement of 2020–25 regulatory control period, consistent with the approach set out in our Final framework and approach paper.⁶

2.2 AER's assessment approach

We are required to roll forward the service provider's RAB during the 2010–15 regulatory control period to establish the opening RAB at 1 July 2015. This value can be adjusted for any differences in the forecast and actual capex, disposals and capital contributions. It may also be adjusted to reflect any changes in the use of the assets, with only assets used in the provision of standard control services to be included in the RAB.⁷

To determine the opening RAB, we developed an asset base RFM in accordance with the requirements of the NER.⁸ A service provider must use the RFM in preparing its regulatory proposal.⁹ The RFM rolls forward the RAB from the beginning of the final year of the 2005–10 regulatory control period, through the 2010–15 regulatory control period, to the beginning of the next period. The roll forward occurs for each year by:

- Adding an inflation (indexation) adjustment to the opening RAB for the relevant year. This adjustment must be consistent with the inflation factor used in the control mechanism.¹⁰
- Adding capex to the RAB for the relevant year.¹¹ In future determinations, the NER allows us to review a service provider's past capex and exclude inefficient past capex from being rolled into the RAB where total capex exceeds the regulatory allowance.¹² The details of our assessment approach for inefficient capex are set out in the *Capital expenditure incentive guideline*.¹³ We note that under the transitional rules, the review of past capex does not apply to SA Power Networks prior to 1 July 2015.¹⁴ Therefore, for the purposes of this preliminary decision, we will add SA Power Network's actual or estimated capex in the 2010–15 regulatory control period to the RAB. We check actual capex amounts against audited annual

 ⁶ SA Power Networks, *Regulatory proposal*, October 2014, p. 279.
AER, *Final framework and approach for SA Power Networks Regulatory control period commencing 1 July 2015*, April 2015, p. 75.
SA Power Networks confirmed this approach in its response to Information request from the AER_AER_SAPN 016

SA Power Networks confirmed this approach in its response to Information request from the AER, AER SAPN 016, 21 January 2015.

⁷ NER, cl S6.2.1.

⁸ NER, cl 6.5.1.

⁹ NER, cl S6.1.3(7).

¹⁰ NER, cl 6.5.1(e)(3).

¹¹ NER, cl S6.2.1(e)(4).

¹² NER, cl S6.2.2A.

¹³ AER, *Capital expenditure incentive guideline*, November 2013, pp. 12–20. Under the NER, cl S6.2.2A(b), the exclusion of inefficient capex could only come from three areas including overspend in capex, margin paid to third party and capitalisation of opex as defined in cl S6.2.2A (c), (d) and (e) of the NER.

¹⁴ NER, cls 11.60.5 and 11.62.

reporting regulatory information notice (RIN) data and generally accept the capex reported in those RINs in rolling forward the RAB. However, there may be instances where adjustments are required to the annual reporting RIN data. This would include where it is not fit for purpose.

- Subtracting depreciation from the RAB for the relevant year, calculated in accordance with the relevant distribution determination for that year.¹⁵ Depreciation based on forecast or actual capex can be used to roll forward the RAB.¹⁶ By default the RFM applies the depreciation approach based on actual capex, although this can be modified to apply a depreciation approach based on forecast capex if necessary. For this preliminary decision, we use depreciation based on actual capex for rolling forward SA Power Network's RAB values over the 2010–15 regulatory control period.¹⁷ However, depreciation based on forecast capex will be used for the 2015–20 regulatory control period at the next reset.¹⁸
- Subtracting any disposals and capital contributions from the RAB for the relevant year.¹⁹ We check these amounts against audited annual reporting RIN data.

These annual adjustments give the closing RAB for any particular year, which then becomes the opening RAB for the following year. Through this process the RFM rolls forward the RAB to the end of the 2010–15 regulatory control period. The PTRM used to calculate the annual revenue requirement for the 2015–20 period generally adopts the same RAB roll forward approach as the RFM, although the annual adjustments to the RAB are based on forecasts, rather than actual amounts.

We are required to decide whether depreciation for establishing the service provider's RAB as at the commencement of the 2020–25 regulatory control period is to be based on actual or forecast capex.²⁰

The opening RAB for the 2020–25 regulatory control period can be determined using depreciation based either on forecast or actual capex incurred during the 2015–20 period. To roll forward the RAB using depreciation based on forecast capex, we would use the forecast depreciation contained in the PTRM for the 2015–20 regulatory control period, adjusted for actual inflation. If the approach to roll forward the RAB using depreciation based on actual capex was adopted, we would recalculate the depreciation based on actual capex incurred during the 2015–20 regulatory control period.

Our decision on whether to use actual or forecast depreciation must be consistent with the capex incentive objective. We must have regard to:²¹

¹⁵ NER, cl S6.2.1(e)(5).

¹⁶ NER, cl 6.12.1(18).

¹⁷ The use of actual depreciation is consistent with the depreciation approach established in the 2010 distribution determination for SA Power Networks (formerly ETSA Utilities).

¹⁸ Refer to section 2.4.3 for the reasons.

¹⁹ NER, cl S6.2.1(e)(6).

²⁰ NER, cl S6.2.2B.

- the incentives the service provider has to undertake efficient capex
- substitution possibilities between assets with different lives and the relative benefit of each
- the extent of overspending and inefficient overspending relative to the allowed forecast
- the capex incentive guideline
- the capital expenditure factors.

2.2.1 Interrelationships

The RAB is an input into the determination of the return on capital and depreciation (return of capital) building block allowances.²² Factors that influence the RAB will therefore flow through to these building block components and the annual revenue requirement. Other things being equal, a higher RAB increases both the return on capital and depreciation allowances.

The RAB is determined by various factors, including:

- the opening RAB (meaning the value of existing assets at the beginning of the regulatory control period)
- net capex²³
- depreciation
- indexation adjustment so the RAB is presented in nominal terms, consistent with the rate of return.

The opening RAB depends on the value of existing assets and will depend on actual net capex, actual inflation outcomes and depreciation in the past.

The RAB when projected to the end of the regulatory control period increases due to both forecast new capex and the indexation adjustment. The size of the indexation adjustment depends on expected inflation (which also affects the nominal rate of return) and the size of the RAB at the start of each year.

Depreciation reduces the RAB. The depreciation allowance depends on the size of the opening RAB and the forecast net capex. By convention, the indexation adjustment is also offset against depreciation to prevent double counting of inflation in the RAB and

²¹ NER, cl S6.2.2B(c).

²² The size of the RAB also impacts the benchmark debt raising cost allowance. However, this amount is usually relatively small and therefore not a significant determinant of revenues overall.

²³ Net capex is gross capex less disposals and capital contributions. The rate of return or WACC also influences the size of the capex. This is because the capex is not depreciated in the year it is first incurred, but added to the RAB at the end of the year. Instead, the capex amount is escalated by half a WACC to arrive at an end of year value. It then begins depreciating the following year.

rate of return, which are both presented in nominal terms. This reduces the apparent depreciation building block that feeds into the annual revenue requirement.

Figure 2.1 shows the key drivers of the change in the RAB over the 2015–20 regulatory control period as proposed by SA Power Networks. Overall, the closing RAB at the end of the 2015–20 regulatory control period would be 47 per cent higher than the opening RAB at the start of that period based on the proposal, in nominal terms. The proposed forecast net capex increases the RAB by about 49 per cent, while inflation increases it by about 10 per cent. Forecast depreciation, on the other hand, reduces the RAB by about 27 per cent.

The RAB would rise in real terms over the 2015–20 regulatory control period based on SA Power Networks' proposal. We consider the depreciation amount to be overstated because of concerns with the remaining asset lives as at 1 July 2015 proposed by SA Power Networks.²⁴ We also have concerns with the size of the forecast net capex. Figure 2.1 shows forecast net capex is the largest driver of the increase in the RAB. We have considered whether it is appropriate that the forecast net capex exceeds the (overstated) depreciation as SA Power Network has proposed. Refer to attachment 6 for the discussion on forecast capex.

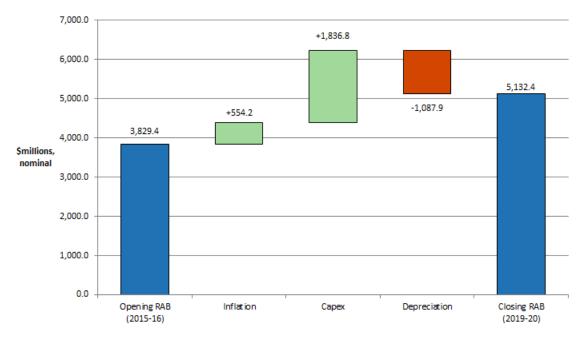


Figure 2.1 Key drivers of changes in the RAB (\$ million, nominal)

Source: SA Power Networks, Regulatory proposal, October 2014, p. 301, Table 25.3.

A ten per cent increase in the opening RAB causes revenues to increase by about 5.3 per cent. However, the impact on revenues of the annual change in RAB depends on

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²⁴ Refer to attachment 5 for discussion on remaining asset lives.

the source of the RAB change, as some drivers affect more than one building block cost.25

2.3 Reasons for preliminary decision

We have determined an opening RAB value for SA Power Networks of \$3829.4 million (\$ nominal) as at 1 July 2015, consistent with its proposal. We forecast a closing RAB value of \$5132.5 million by 30 June 2020. This represents a reduction of 490.6 million, or 8.7 per cent compared to the proposal. The reasons for our decision are discussed below.

2.3.1 Opening RAB as at 1 July 2015

To determine the opening RAB as at 1 July 2015 we have rolled forward the RAB over the 2010–15 regulatory control period to determine a closing RAB value at 30 June 2015.

We accept SA Power Networks' proposed opening RAB value as at 1 July 2015 of \$3829.4 million. We have reviewed the key inputs of SA Power Networks' proposed RFM, such as CPI, rate of return, asset lives and net capex values. We found these were broadly consistent with relevant data sources such as ABS data, annual reporting RIN data and the 2010–15 decision models.²⁶

For this preliminary decision, the roll forward of SA Power Networks' RAB includes estimated capex values for 2014-15. As part of the substitute decision, we expect to update the 2014–15 estimated capex values with more up-to-date estimates or actuals.

We also note a number of submissions had concerns with the size of the opening RAB.²⁷ The opening RAB reflects the capex incurred during the previous regulatory control periods. In the previous two regulatory control periods there was a significant increase in capex that only began to tail off in more recent years. As discussed in section 2.2 we have no ability to adjust for past capex or to optimise/write down the opening RAB. However, with NER changes in 2012, we will have the ability to exclude

If capex causes the RAB increase, return on capital, depreciation, and debt raising costs all increase too. If a reduction in depreciation causes the RAB increase, revenue could increase or decrease. In this case, the higher return on capital is offset (perhaps more than offset) by the reduction in depreciation allowance. Inflation naturally increases the RAB in nominal terms.

²⁶ We accept the proposed opening RAB as at 1 July 2015, but have made some minor adjustments to allocation of these values to different asset classes to correct for a data entry error. See response from SA Power Networks to AER information request, AER SAPN 041 - Modelling - Response, 27 March 2015.

²⁷ AGL, SA Power Networks - Regulatory Proposal July 2015 to June 2020 AGL submission to the Australian Energy Regulator, January 2015, pp.9-10. Uniting Care, Australia, Response to Electricity Distribution Business Regulatory proposals for 2015-20, from South Australian Power Networks, February 2015, pp.23-24. South Australian Financial Counsellors Association, Submission to the South Australian Power Networks Proposal 2015 - 2020, February 2015, pp.12-14.

Business SA, Submission to the South Australian Power Networks Proposal 2015 - 2020, January 2015, p.14.

inefficient capex incurred during the 2015–20 regulatory control period in future resets if it exceeds the approved forecast and if we consider it does not reasonably reflect the capital expenditure criteria.²⁸ The details of our assessment approach for inefficient capex are set out in the *Capital expenditure incentive guideline*.²⁹

2.3.2 Forecast closing RAB as at 30 June 2020

We forecast a closing RAB value of \$5132.5 million by 30 June 2020 for SA Power Networks. This represents a reduction of 490.6 million, or 8.7 per cent to SA Power Networks' proposal. This reduction reflects our preliminary decision on the required inputs for determining the forecast RAB in the PTRM. To determine the forecast RAB value, we amended the following PTRM inputs:

- We reduced SA Power Networks' proposed forecast capex for the 2015–20 regulatory control period by \$892.9 million or 32.7 per cent (attachment 6).
- We reduced SA Power Networks' proposed forecast regulatory depreciation allowance by \$402.3 million or 43.0 per cent (attachment 5).

2.3.3 Application of depreciation approach in RAB roll forward for next reset

Consistent with our *Final framework and approach* paper and SA Power Networks' proposal, we determine that the depreciation approach based on forecast capex (updated for actual inflation) is to be used to establish the RAB at the commencement of SA Power Networks' 2020–25 regulatory control period.³⁰

As discussed in attachment 10, SA Power Networks is not currently subject to a CESS but we will apply the CESS to SA Power Networks over the 2015–20 regulatory control period. We consider this scheme will provide sufficient incentives for SA Power Networks to achieve capex efficiency gains over that period. We are satisfied that the use of a forecast depreciation approach in combination with the application of the CESS and our other ex post capex measures are sufficient to achieve the capex incentive objective. ³¹

²⁸ Under the NER, cl S6.2.2A(b), the exclusion of inefficient capex could only come from three areas including overspend in capex, margin paid to third party and capitalisation of opex as defined in cl S6.2.2A (c), (d) and (e) of the NER.

²⁹ AER, *Capital expenditure incentive guideline*, November 2013, pp. 12–20.

³⁰ AER, Final framework and approach paper for SA Power Networks, April 2014, pp. 73–77.

³¹ Our ex post capex measures are set out in the capex incentives guideline, AER, *Capital expenditure incentive guideline for electricity network service providers*, November 2013, pp. 13–19, 20–21. The guideline also sets out how all our capex incentive measures are consistent with the capex incentive objective.