SA Power Networks

Attachment 4

Regulatory Depreciation

2020-25 Regulatory Proposal

31 January 2019

This section outlines:

› SA Power Networks' forecast of regulatory depreciation for the 2015-20 and 2020-25 Regulatory Control Periods.

Company information

SA Power Networks is the registered Distribution Network Service Provider (**DNSP**) for South Australia. For information about SA Power Networks visit www.sapowernetworks.com.au

Contact

For enquiries about this Revenue Proposal please contact:
Richard Sibly
Head of Regulation
SA Power Networks
GPO Box 77
Adelaide SA 5001
sapn2020proposal@sapowernetworks.com.au

Disclaimer

This document forms part of SA Power Networks' Regulatory Proposal (**the Proposal**) to the Australian Energy Regulator (**AER**) for the 1 July 2020 to 30 June 2025 regulatory control period (2020-25 **RCP**). The Proposal and its attachments were prepared solely for the current regulatory process and are current as at the time of lodgment.

This document contains certain predictions, estimates and statements that reflect various assumptions concerning, amongst other things, economic growth and load growth forecasts. The Proposal includes documents and data that are part of SA Power Networks' normal business processes, and are therefore subject to ongoing change and development.

Whilst care was taken in the preparation of the information in this Regulatory Proposal, and it is provided in good faith, SA Power Networks, its officers and shareholders accept no responsibility or liability for any loss or damage that may be incurred by any person acting in reliance on this information or assumptions drawn from it for a different purpose or in a different context.

Copyright

Note

This attachment forms part of our Proposal for the 2020-25 RCP. It should be read in conjunction with the other parts of the Proposal.

Our Proposal comprises the overview and attachments listed below, and the supporting documents that are listed in Attachment 18:

Document	Description
	Regulatory Proposal overview
	Customer and stakeholder engagement report
! ű ű I · Ő K Y Ŝ y ű M	! y ÿ ż z I · f N Ŝ Ø Ŝ y ż z Ŝ N Ŝ I j d z N Ŝ Y Ŝ y ű I · y Ř Ő 2 y ű N 2 f Y Ŝ Ő K I · y ñ ă Y
! ű ű I · Ő K Y Ŝ y ű H	w Ŝ Ǝ d z f I · ű 2 N è I · ă ă Ŝ ű Ō I · ă Ŝ
! ű ű I · Ő K Y Ŝ y ű O	w I · ű Ŝ 2 ŧ w Ŝ ű d z N y
! ű ű I · Ő K Y Ŝ y ű Π	***w Ŝ Ǝ d z f I · ű 2 N è Ř Ŝ L J N Ŝ Ő ƛ I · ű ƛ 2 y***
Attachment 5	Capital expenditure
Attachment 6	Operating expenditure
Attachment 7	Corporate income tax
Attachment 8	Efficiency benefit sharing scheme
Attachment 9	Capital expenditure sharing scheme
Attachment 10	Service target performance incentive scheme
Attachment 11	Demand management incentives and allowance
Attachment 12	Classification of services
Attachment 13	Pass through events
Attachment 14	Alternative Control Services
Attachment 15	Negotiated services framework and criteria
Attachment 16	Connection policy
Attachment 17	Tariff Structure Statement
Attachment 18	List of Proposal documentation

Contents

List of tables

4 Regulatory Depreciation

4.1. Overview

Depreciation is the allowance provided so capital investors recover their investment over the economic life of the asset (ie the return of capital). The regulatory depreciation allowance is the net total of the depreciation (negative) and the indexation (positive) of the regulatory asset base (**RAB**).

The regulatory depreciation allowance reflects how quickly the RAB is being recovered, based on the remaining and standard asset lives used in the depreciation calculation. It also depends on the opening RAB and the forecast capital expenditure (**capex**). Any increase to these factors also increases the regulatory depreciation allowance. However, a Distribution Network Service Provider (**DNSP**) can only recover once the capex that it incurs for its assets.

4.2. Rule requirements

Clause 6.4.3 of the National Electricity Rules (**NER**) provides that the annual revenue requirement for each regulatory year of the relevant regulatory control period (**RCP**) must be determined using a building block approach, which includes a component for depreciation for that regulatory year calculated pursuant to clause 6.5.5 of the NER.

Clause 6.5.5 of the NER states that:

- depreciation for each regulatory year must be calculated based on the value of the assets included in the RAB at the beginning of that regulatory year;
- depreciation must be calculated using depreciation schedules for each asset or category of assets that are nominated by the DNSP in its building block proposal, provided that those schedules conform with the following requirements:
    - the depreciation schedules must depreciate using a profile that reflects the nature of the assets or category of assets over the economic life of the asset or category of assets;
    - the sum of the real value of the depreciation that is attributable to any asset or category of assets over the economic life of that asset or category of assets must be equivalent to the value at which that asset or category of assets was first included in the DNSPs' RAB (i.e. the recovery of depreciation must maintain net present value neutrality over the economic life of the asset or category of assets); and
    - the economic life of the relevant assets, and the depreciation rates and methods underpinning the calculation of depreciation for a given RCP must be consistent with those determined for the same assets on a prospective basis in the distribution determination for that RCP.

The AER is not free to simply determine its own depreciation schedules. If the depreciation schedules nominated by a DNSP satisfy the requirements in clause 6.5.5(b) of the NER, they must be used in calculating regulatory depreciation allowances, even if the AER has a preferred method for determining depreciation schedules.

In addition, clause S6.1.3(12) of the NER requires the depreciation schedules nominated by the DNSP to be categorised by asset class or category driver, together with details of the amounts, values and other inputs used to compile the depreciation schedules, a demonstration that the depreciation schedules conform with

the requirements set out in clause 6.5.5(b) of the NER and an explanation of the calculation of the amounts, values and other inputs used to compile the depreciation schedules.

4.3. Regulatory depreciation methodology

The NER provide general guidance for the determination of regulatory depreciation. A specific depreciation methodology is not provided in the NER but the post-tax revenue model (**PTRM**) issued by the AER in accordance with clause 6.4.1 of the NER contains a specific depreciation methodology.

In its distribution determination for SA Power Networks for the 2015–20 RCP (**2015 Determination**), the AER accepted our proposal to use:[1]

- the straight-line method for depreciating new assets according to standard asset lives for each asset class; and
- the year-by-year tracking method for depreciating existing assets.

We propose to continue to apply these methods in the 2020–25 RCP.

The year-by-year tracking method for depreciating existing assets captures the timing of new additions for each asset class in the relevant regulatory year, which provides more granular and accurate information on the remaining economic asset lives. These calculations are made in a separate depreciation model, and the depreciation amounts are substituted directly into the PTRM.

Both the PTRM and SA Power Networks' separate depreciation model are supplied as supporting documents to this regulatory proposal for the 2020–25 RCP (**Proposal**).[2]

4.4. Asset classes

In December 2018, the AER issued its final report in relation to its review of the regulatory tax approach (**Final Tax Report**)[3]. The Final Tax Report included a number of recommendations and findings which impact upon regulatory depreciation.

In particular, the Final Tax Report recognised that the recommended changes might give rise to material adverse consequences such as inter-generational inequity (eg a short term benefit to current customers at the expense of future customers) and cash-flow concerns for NSPs[4]. For this reason, the AER recognised that other aspects of an NSP's proposal might need to be reviewed and changed to ensure a balanced outcome is reached for the benefit of both customers and NSPs in the long term. In particular, the AER stated that:

- the recommended approach to immediate expensing of capex did not exclude the option available to NSPs to propose new asset classes (and shorter regulatory asset lives) for 'refurbishment' capex that is immediately deductible for tax purposes;

- the decision concerning whether to include new asset classes is considered during each revenue determination process taking into account the information provided by the NSP concerning the type of capex that will be allocated to each asset class; and

[1] AER, *Final decision – SA Power Networks determination 2015-16 to 2019-20, Attachment 5 – Regulatory depreciation*, October 2015, p 6.
[2] Refer Supporting Document 1.1 PTRM Model and Supporting Document 4.1 RAB Depreciation Model
[3] AER, *Final report – Review of regulatory tax approach*, 17 December 2018.
[4] Ibid, p 65 to 78.

- reviewing the economic life of refurbishment capex will go some way to addressing the major inter-generational equity and cash-flow concerns raised in submissions to the review[5].

As a consequence, we have reviewed the current asset classes covering refurbished and short life assets to ensure that a balanced outcome is reached for the long term benefit of both customers and our regulated network business. That review has identified a number of issues that may have material adverse consequences for both our customers and regulated network business over the long term.

As a result, SA Power Networks is proposing to adopt 3 new asset classes covering assets that have an effective economic life that is less than the standard asset lives applying to new network assets. These new asset classes (and their economic lives) are detailed below and will apply for the purposes of calculating regulatory depreciation for the 2020–25 RCP. No other changes to the existing asset class categorisations are proposed.

To be clear, SA Power Networks is not proposing to adjust the remaining economic lives of any existing RAB assets. The proposed changes are prospective only, applying from 1 July 2020 to new expenditure.

4.5. Subtransmission and distribution lines – short life

SA Power Networks currently allocates all new and refurbished assets associated with lines and cables to one of the following three asset classes:

- Sub-transmission lines and cables;
- Distribution lines; or
- Low voltage supply.

Each of these classes currently has a weighted average standard asset life of 55 years.

Network assets included in these asset classes include (amongst other things) overhead powerlines, underground cables, stobie poles, pole top structures, pole-mounted reclosers and sectionalisers and kiosk switching cubicles (not located within zone substations).

SA Power Networks is proposing to retain these asset classes and create a new asset class, namely:

- 'Sub-transmission and distribution lines – short life' – to include refurbished line and cable assets and other shorter life line and cable assets with a standard asset life for regulatory purposes of 25 years.

These assets typically have an average economic life of around half the standard life of 55 years that they are currently being depreciated. We expect to increase the amount of refurbished and short life line assets on our network going forward. Therefore a new asset class is appropriate to better reflect the economic life of these assets. Transferring these assets into a separate asset class will not materially alter the weighted average standard life of the assets remaining in the current classes.

By way of example, the life of reclosers may be extended by refurbishing (overhauling, greasing) mechanical components within the unit and addressing any exterior casing wear and tear or corrosion and then returning them to service. As the refurbishment is still returning original componentry into service, the life of these refurbished items is much shorter than an entirely new recloser.

[5] AER, *Final report – Review of regulatory tax approach*, 17 December 2018, p 65.

Similarly, many modern assets within the lines asset classes now include electronic controllers that have shorter lives than their previous equivalent assets which had no electronic componentry. Assets in this category include assets such as reclosers and sectionalisers.

Applying the current standard life of 55 years to refurbished and shorter life line assets (as currently applies during the 2015–20 RCP) creates an inter-generational equity issue whereby future customers bear the costs of assets that they will not get the benefit from.

We engaged GHD Advisory to provide an independent expert opinion on the economic life (for regulatory depreciation purposes) of refurbished lines and cables assets and shorter life lines and cables assets associated with our capital program.

The GHD Advisory report[6] confirmed that the economic life for regulatory depreciation purposes of refurbished and other short life lines and cables asset components is much shorter than the current standard life of 55 years. GHD Advisory advised that the economic life for regulatory depreciation purposes of these refurbished assets is typically around half of the economic life of a new asset. In particular, GHD Advisory advised that a remaining economic life of 25 years should apply to refurbished and short life line and cable assets previously included in the three asset classes listed above. A copy of GHD Advisory's report is included as Supporting Document 4.2 – GHD Regulatory Depreciation Approach.

4.5.1. Substations and transformers – short life

SA Power Networks currently allocates all assets associated with substations to one asset class, the 'Substations' asset class, which has a standard asset life of 45 years. Assets included in the 'Substation' asset class include (amongst other things) transformers, circuit breakers, secondary cabling, AC/DC supplies, control rooms, bus works, earth mats, and switchgear.

Depending on the type of works involved, pole-top and ground-mounted transformers may be allocated to either the ‘Distribution lines’ asset class, which has a standard asset life of 55 years, or the 'Substations' asset class which has a standard asset life of 45 years, or “Distribution transformers” asset class which has a standard asset life of 45 years.

SA Power Networks is proposing to create a new asset class, namely:

- 'Substations and transformers – short life' - for refurbished and other short life substation assets and refurbished transformers, with a standard asset life for regulatory purposes of 20 years.

The economic life of refurbished and other short life substation assets and refurbished transformers will be much shorter than for new assets.

Again, applying the same economic lives that apply currently to new assets to refurbished and shorter life substation assets (45 years) and transformers (45 years/55 years) creates an inter-generational equity issue whereby future customers bear the costs of assets that they will not get the benefit from.

GHD Advisory's report confirms that the economic life for regulatory depreciation purposes of refurbished substation assets and transformers and other short life substation assets is shorter than the current standard life, and is typically around half of the current standard life. GHD Advisory confirmed a remaining economic life of 20 years should apply to refurbished and shorter life substation assets and refurbished transformers.

[6] GHD, *Regulatory depreciation approach for electricity distribution assets, SA Power Networks*, 25 January 2019.

4.5.2. Electronic network assets

A new asset class is proposed for electronic network assets, with a standard asset life for regulatory purposes of 15 years.

This class of assets includes equipment such as low voltage monitors, protection relays and DC auxiliary supplies.

The weighted average economic life of assets in this class is much lower than other assets in the lines and cables and the substations classes. Therefore, a different profile is required to reflect the nature of these types of assets over their economic life.

The GHD Advisory report confirms that these types of assets have a much lower economic life for regulatory depreciation purposes than the standard AER life for distribution lines. The GHD Advisory Report recommended that these types of assets have a standard asset life of 15 years.

4.6. Standard asset lives

Clause 6.5.5(b)(1) of the NER states that depreciation must be based on the economic life of the assets or category of assets. This allows the DNSP to have its capital returned at a rate which is consistent with the decline in economic value of the assets.

The economic life of an asset is the estimated period that the asset will be able to be used in its current, or intended, function in the business.

With the exception of the 3 new asset classes noted above, SA Power Networks proposes to apply the same standard asset lives for the 2020–25 RCP as applied in the 2015–20 RCP. There have been no other factors identified that would suggest that the expected life of the other assets utilised by SA Power Networks has changed materially since the 2015 Determination.

Table 4.1 below provides the standard asset lives (for assets held at 1 July 2015) for each asset class.

Table 4-1: Proposed standard asset lives for the 2020-25 RCP

Asset Class	Standard Asset Life (Years)
System assets:	
Sub-transmission lines	55
Distribution lines	55
Subtransmission and distribution lines – short life *(NEW)*	25
Distribution transformers	45
Substations	45
Substations and transformers – short life *(NEW)*	20
Low Voltage Supply	55
Communications	15
Electronic network assets *(NEW)*	15
Land[a]	N/A
Easements[a]	N/A

Customer Contributions[b]	N/A
Non-system assets:	
Information systems	5
Plant and tools/Furniture & fittings	10
Vehicles—15 Years	15
Vehicles—10 Years	10
Vehicles—light fleet	5
Buildings	40
Land	N/A
Equity Raising Costs	52.3
Alternative Control Services	
Metering	15
Equity Raising Cost – Metering	15
Public Lighting	28
Equity Raising Cost – Public Lighting	28

(a) These assets are not depreciated and therefore do not have standard asset lives.
(b) From 1 July 2015, new customer contributions are allocated against the asset class to which they relate, so there is no need for a standard asset live for this asset class. The existing balance of the 'Customer Contributions' asset class is depreciated under the year-by-year tracking approach.

4.7. Regulatory depreciation for the 2015–20 RCP

In accordance with the National Electricity Rules (**NER**), the Australian Energy Regulator (**AER**) has released a roll forward model (**RFM**) to be used to roll forward the RAB for the 2015–20 RCP. SA Power Networks has utilised the RFM to determine the forecast RAB balance at 30 June 2020.

The RAB roll forward methodology in the RFM requires regulatory depreciation to be recalculated on the actual capex incurred plus forecast capex (where actual is not available) over the 2015–20 RCP. In accordance with clause 6.5.5(b)(3) of the NER, the actual depreciation has been calculated using the forecast straight line depreciation in the 2015 Determination adjusted for the actual inflation incurred over the 2015–20 RCP. The recalculated depreciation is shown in Table 4.2 below.

Table 4-2: Regulatory straight-line depreciation for the 2015–20 RCP (nominal, $ million) 2005/06

	2015/16	2016/17	2017/18	2018/19	2019/20
Regulatory Depreciation – Standard Control Services	208.9	284.8	292.3	303.7	319.0

4.8. Forecast regulatory depreciation for the 2020–25 RCP

SA Power Networks has prepared its depreciation forecast for the 2020–25 RCP, applying forecast asset additions, forecast asset disposals and the standard asset lives listed in Table 4.1. The opening asset balances were determined using the AER's RFM. The AER's Post Tax Revenue Model (PTRM) has been used to calculate the forecast depreciation on a straight line basis for forecast capex consistent with the requirements in clauses 6.5.5 and S6.1.3 of the NER. A separate depreciation model has been used to calculate depreciation on a straight line basis for existing assets as at 30 June 2020 using the year-by-year tracking approach.

The total of the resulting regulatory depreciation allowance is shown in Table 4.3 below.

Table 4-3: Forecast regulatory straight-line depreciation for the 2020-25 RCP (nominal $ million)

	2020/21	2021/22	2022/23	2023/24	2024/25
Regulatory Depreciation – Standard Control Services	326.1	346.4	368.7	384.1	388.9

4.9. Tax depreciation for the 2015–20 and 2020–25 RCPs

For the purposes of calculating the estimated cost of corporate income tax pursuant to clause 6.5.4 of the NER, SA Power Networks is required to calculate tax depreciation. Different asset lives apply for taxation purposes under Australian tax law. The AER's PTRM has historically been used to calculate the tax depreciation on a straight line basis, using applicable straight line tax depreciation rates.

Tax depreciation for the 2015-20 RCP is discussed in Attachment 7 - Corporate income tax, section 7.4.

As a result of the Final Tax Report, changes are proposed to be made to the AER models (including the PTRM and RFM) following a consultation process scheduled to commence in late January 2019. Those changes will apply:

- the AER's approach to immediate expensing of refurbishment capex set out in the Final Tax Report when determining the estimated cost of corporate income tax; and
- the AER's benchmark DV depreciation approach for all new assets/capex with the exception of assets qualified under section 40.72 of *Income Tax Assessment Act 1997* (Cth) for both tax purposes.

SA Power Networks proposes to apply these approaches for the 2020–25 RCP in accordance with the outcomes from the Final Tax Report and the resulting changes to the PTRM and RFM. However, as new AER models are not currently available to properly calculate tax deprecation, SA Power Networks is not able to prepare a tax depreciation schedule for the 2020–25 RCP, which will be used to calculate SA Power Networks' allowance for corporate income tax.

We propose to revisit this calculation and our response to any issues arising out of the implementation of the recommendations of the Final Tax Report in our submissions during the consultation process for our Proposal and/or in our revised regulatory proposal for the 2020–25 RCP once we have had an opportunity to fully consider the implications of the new AER models to our Proposal.

Further details in relation to the Final Tax Report and these changes are set out in Attachment 7 - Corporate income tax.

Shortened Forms

AER ..... *Australian Energy Regulator*
capex ..... *capital expenditure*
DNSP ..... *Distribution Network Service Provider*
NER ..... *National Electricity Rules*, *National Electricity Rules*
PTRM ..... *Post Tax Revenue Model*, *Post-Tax Revenue Model*
RAB ..... *Regulatory Asset Base*
RCP ..... *Regulatory Control Period*
RFM ..... *Roll Forward Model*