Methodology - Fleet Expenditure Forecasting Approach

2025-30 Regulatory Proposal

Supporting Document 5.10.5

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SA Power Networks

Empowering South Australia

Contents

Glossary

Acronym / term	Definition
AER	Australian Energy Regulator
BEV	Battery Electric Vehicles
Capex	Capital expenditure
CPI	Consumer Price Index
EWP	Elevated Work Platform
ICE	internal combustion engine
NER	National Electricity Rules
NPV	Net Present Value
Repex	Replacement Expenditure
RCP	Regulatory Control Period
SA	South Australia
SCS	Standard Control Services
TCO	total cost of ownership
ZEV	Zero Emission vehicles

1. Introduction

1.1. Purpose

The purpose of this document is to outline SA Power Networks' methods for forecasting capital expenditure (**capex**) associated with Non-Network Fleet assets for the regulatory control period (**RCP**) from 1 July 2025 to 30 June 2030 (2025-30 RCP).

1.2. Principles used in developing a forecast

SA Power Networks has sought to align its approach to forecasting fleet capex with:

- the objectives, factors, and criteria in sections 6.5.6 and 6.5.7 of the National Electricity Rules (**NER**);
- the Australian Energy Regulator (**AER**) Better Resets Handbook[1];
- the AER Expenditure Forecast Assessment Guideline for Electricity Distribution[2];
- the SA Power Networks Asset Management Policy and specifically the Fleet Strategy; and
- industry good practice.

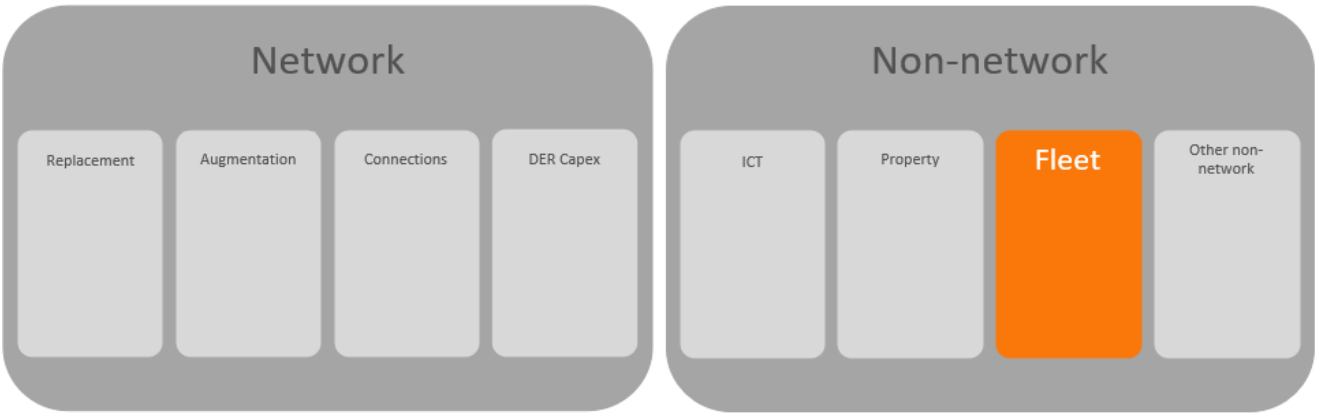
When forecasting the expenditure, the optimal decision influencing the selection of assets and options will also derive from the following factors:

- Safety and ergonomic considerations; and
- the environmental impact of the assets and associated infrastructure; and
- the specific consideration to the requirements of fleet assets when operating the South Australian (**SA**) distribution network.

1.3. Scope

This document covers the methodology used to establish the capex forecasts for fleet used to support the delivery of SA Power Networks' Standard Control Services (**SCS**)[3].

Figure 1 – Standardised AER expenditure model



We maintain a fleet of specialised vehicles that provide a safe and efficient work environment for our field crews. With over 90,000 kilometres of powerlines and a service area of 178,000 square kilometres, we require a fleet that supports the delivery of a safe and reliable service to our customers. Our fleet enable our

[1] AER: Better Resets Handbook - Towards Consumer Centric Network Proposals, December 2021
[2] AER: Expenditure Forecast Assessment Guideline for Electricity Distribution, November 2013
[3] All the expenditure forecast in this methodology document is in response to 'identified needs' pertaining to how fleet can effectively and efficiently support SA Power Networks' delivery of SCS.

field crews to access the network, to work at height and on live components, reducing customer power outages and restoring power quickly and safely.

Our fleet is comprised of Elevated Work Platforms (**EWPs**), Crane Borers, Heavy Commercial Trucks, Passenger and Light Commercial vehicles, as detailed in Table 1 below.

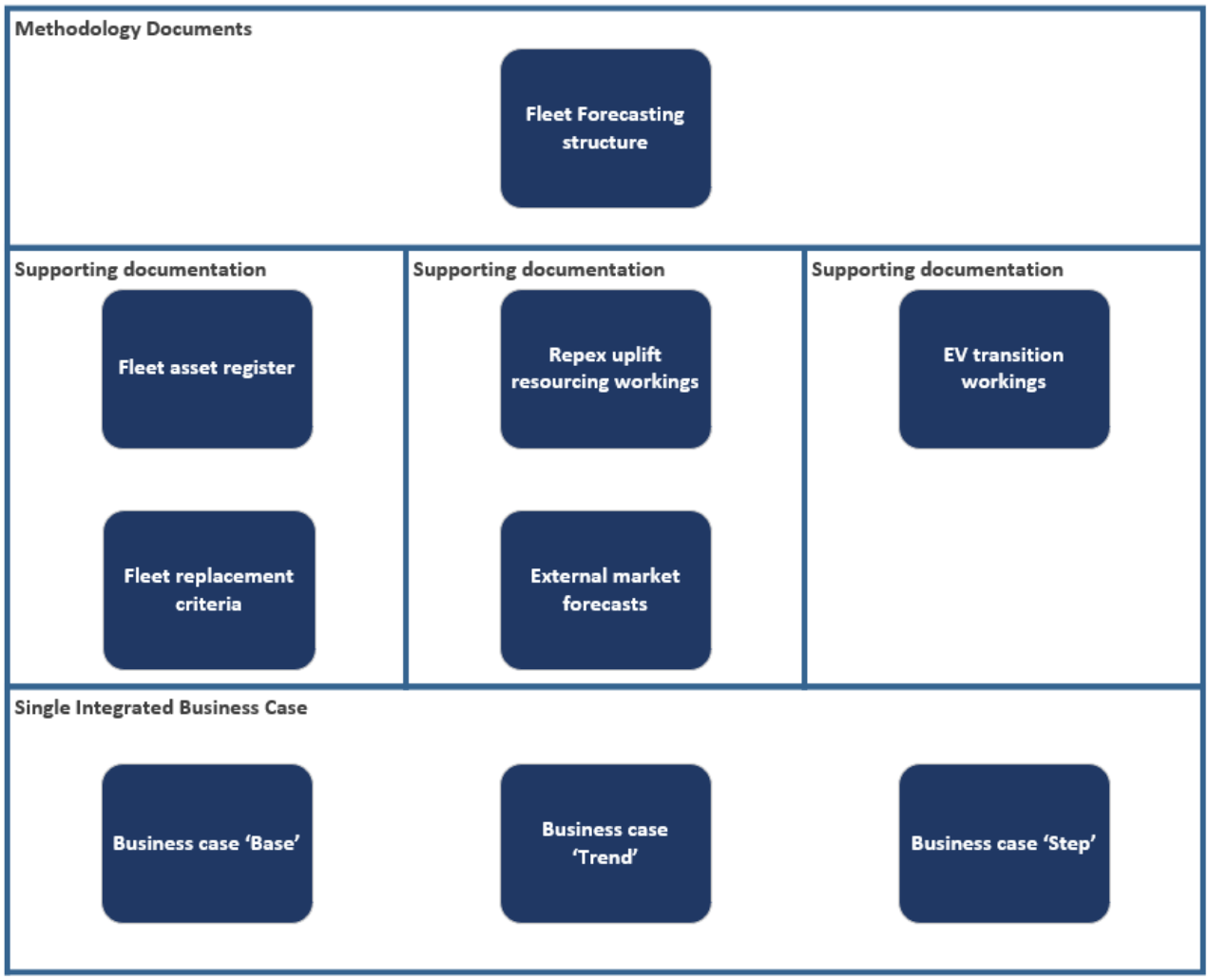
Table 1 - Fleet asset classes

Fleet Asset Class	Subclass
Commercial Vans	Commercial Vans - Small
	Commercial Vans - Large
Commercial Trucks	Commercial Truck-Tipper/Tray-tops
	Commercial Truck - Substation/Line Trucks
Cranes	Cranes - Small
	Cranes - Large
Elevated Work Platforms	EWP - < 14 metre
	EWP - > 14 metre
Forklifts	Forklifts - Small
	Forklifts - Large
Light Commercial	Light Commercial 4x2 - Light
	Light Commercial 4x2 - Medium
	Light Commercial 4x4 - Light
	Light Commercial 4x4 - Medium
	Light Commercial 4x4 - Heavy
Passenger	Passenger
	Passenger Wagon
	Total Employment Contract (TEC) Vehicles
Trailers	Trailer - Small (2.5T and below)
	Trailer - Medium (3.0T to 8.0T)
	Trailer - Large (8T plus)
	Small Trailer with Equipment
	Large Trailer with Equipment
	Trailer-Cable Carrier/Hauling Equipment - Small
	Trailer-Cable Carrier/Hauling Equipment - Large

1.4. Business case

SA Power Networks intends to submit one, integrated, business case to cover our proposed expenditure on fleet assets in the 2025-30 RCP. This business case will mirror our proposed 'base-trend-step' forecasting structure, as detailed within this document. A number of documents will be used to support the development of our proposal, examples of these are detailed in Figure 2 below.

Figure 2 - Supporting documentation



2. Forecasting approach

2.1. Drivers of fleet expenditure

Fleet assets perform a supporting function for SA Power Networks in its delivery of distribution services to its customers. Fleet capex is incurred to:

1. maintain existing capability, through replacement or refurbishment of existing fleet based on age, use (e.g. kilometres travelled) and condition; and
2. enable increased capability, through the addition of new fleet to support workload increases and the provision of new services.

For the 2025-30 RCP, we are also considering our strategy for the transition to electric vehicles. We are currently consulting with our customers on the extent they would support us accelerating the transition towards zero or low emission vehicles.

2.2. Forecasting approach

To forecast the prudent and efficient level of fleet capex that we expect to incur over the 2025-30 RCP, we apply a 'base-trend-step' method, consistent with the AER's general expectations for forecasting of fleet expenditure.[4]

Our forecasting method involves:

1. Forming a 'base' that reflects maintaining our current fleet, based on current practices and replacement criteria for the current 2020-25 RCP;
2. The base is then 'trended' forward to the 2025-30 RCP by considering reasonably expected changes in input costs and workload volumes over the 2025-30 RCP; and
3. 'Step changes' are then applied to consider the changes to our business-as-usual fleet operating model over the 2025-30 RCP.

The sections below further explain how we apply our forecasting method.

2.2.1. Base – Current operating model

To establish the 'base' level of expenditure that reflects our business-as-usual state / current operating model, we apply a bottom-up volumetric analysis. Fleet capex is not consistent year on year, with some assets subject to a 20-year replacement cycle. Our bottom-up volumetric analysis derives the 'base' expenditure by considering:

1. Asset quantity - the number of fleet assets that require replacement during the 2025-30 RCP based on current established asset replacement criteria; and
2. Unit rates - the appropriate unit rates for the fleet assets in each asset case.

2.2.1.1. Asset Quantity

The fleet asset quantity will be obtained from the combination of two sources:

1. the number of assets determined from our current Fleet asset base showing the fleet type and the purchase date; and

[4] AER: Position paper - Review of incentive schemes: Options for the Capital Expenditure Sharing Scheme, August 2022

2. SA Power Networks current replacement cycle for each asset class, as provided in Table 2 below. Applying these replacement cycles to the assets will determine the quantity of assets which will require replacement during the 2025-30 RCP.

Table 2 - Replacement criteria by fleet asset class

Fleet Asset Class	Replacement criteria	Notes
Commercial Vans	5 years or 150,000km	
Commercial Trucks	15 years	
Cranes	15 years	
Elevated Work Platforms (EWP)	10 years	for EWPs <14 metres
	15 years (rebuild after 10 years)	for EWPs >14 metres
Forklifts	20 years	
Light Commercial	5 years or 150,000km	
Other	Miscellaneous - 20 years	
Passenger	5 years or 150,000km	
Trailers	15 years	

These replacement cycles have been chosen based on historic performance and consideration of the optimal time to replace the asset. This maximises the resale value, minimises the operating costs to maintain the service functionality of the assets, and allows us to make use of improvements in functionality and safety as newer models are integrated into the fleet.

SA Power Networks' fleet asset replacement cycles were reviewed by the AER in assessing our 2020-25 Regulatory Proposal. In its draft decision[5], the AER considered all the 2015-20 RCP replacement cycles to be appropriate apart from the 10-year replacement cycle for all EWPs. The AER considered that it was less costly and more prudent for EWPs to be inspected and refurbished at 10 years before replacement after 15 years. In our Revised Regulatory Proposal[6], we revised our replacement cycle to maintain the 10-year replacement cycle for EWPs of 14m or less and maintained the AER's decision for EWPs of greater than 14m.[7] Our 'base' expenditure assumes replacement cycles consistent with the AER's 2020-25 decision.

2.2.1.2. Unit Rates

SA Power Networks will determine the unit rates based on a hierarchy of considerations. Where it is available, we will use the most recent procurement data for each asset class to determine an appropriate unit rate, recognising the recent significant increases in some component costs. We consider this methodology appropriate for forecasting future expenditure as it utilises actual data to forecast the future costs.

Recent procurement data may not be available for all asset classes, due to the low volume, historical procurement patterns, and long service life[8]. Where this is the case, we will instead utilise supplier or manufacturer quotations to establish the present-day rates for these vehicles.

2.2.2. Trend – Anticipated changes

Once the base level of expenditure is determined, this expenditure is then escalated to account for forecast changes in unit rates and fleet asset quantities / volume expected over the 2025-30 RCP.

[5] AER: SA Power Networks 2020-25 - Draft decision - Attachment 5 - Capital expenditure, October 2019
[6] AER: SAPN - Revised regulatory proposal - Attachment 5 - Capital expenditure, December 2019
[7] AER: Final decision - SA Power Networks distribution determination 2020-25 - Attachment 5 - Capital expenditure - June 2020
[8] As an example, SA Power Networks has not purchased any 8T Trailers since 2012, but expects to procure replacements in the 2025-30 RCP when these reach end of life in 2027 in accordance with their 15-year life

2.2.2.1. Unit rate escalations

Noting the global nature of vehicle procurement, this is a volatile environment and costs are rising due the constraints within global supply chains, the war in Ukraine, semi-conductor, and other material shortages. This is combined with increased domestic demand during and post the Covid-19 pandemic.

Other factors could affect the unit rates, including potential changes to vehicle emissions standards, as flagged by the federal Minister for Climate Change and Energy. We do not know if this will eventuate and if it does, whether this will result in a reduction in cost for low emission (Battery Electric Vehicles (**BEV**) or other) or an increase to the costs for internal combustion engine (**ICE**) vehicles.

Growth in unit rates expected during the 2025-30 RCP will be considered as part of our Regulatory Proposal. We will obtain market forecasts from our external fleet management vendor, SG Fleet. This will take the form of a whole of market forecast for the 2025-30 period and identify expected price movements which are out of step with the Consumer Price Index (**CPI**).

2.2.2.2. Asset quantity escalations

Fleet assets provide a supporting function to SA Power Networks in its delivery of distribution services to customers. The 'base' expenditure reflects our current work practices and work volumes. Incremental changes in the volume of work that occur over time are reflected in this base expenditure.

As changes occur in the volume of work to deliver services to customers, this changes the demand on our fleet assets.

For the 2025-30 RCP, we are currently forecasting a significant uplift in the volume of network asset replacement. This will increase the volume of fleet required to support this work. Our forecasting method identifies these as specific volume escalations to provide transparency when assessing this expenditure together with our network asset replacement expenditure (**repex**). Forecast volumes and costs of fleet assets required to deliver on an uplift in repex, together with other resourcing costs, will be detailed within our Regulatory Proposal. Additional requirements for fleet have been determined by examining the fleet required to deliver our current rate of network asset replacement in this RCP versus an uplift scenario in the next RCP.[9]

2.2.3. Step – Future operating model

We are considering one potential change to our fleet operating model for the 2025-30 RCP with the transition from ICE vehicles to Low or Zero Emission vehicles (**ZEV**)

2.2.3.1. Low or Zero Emission Vehicles

The motor vehicle industry is forecast to undergo a period of rapid change with the move away from ICE vehicles and towards low and ZEV. This is in line with the global shift away from fossil fuels and to a decarbonised economy.

In accordance with our corporate strategy, SA Power Networks is looking to take a proactive position and accelerate this transition and actively reduce our emissions across all areas of the business. Our most significant opportunity to do so comes through the choice of vehicle when procuring new fleet.

SA Power Networks engaged a consultant, to identify the options for each different asset class and the possible transition path. The consultant assessed this on the basis of the following criteria:

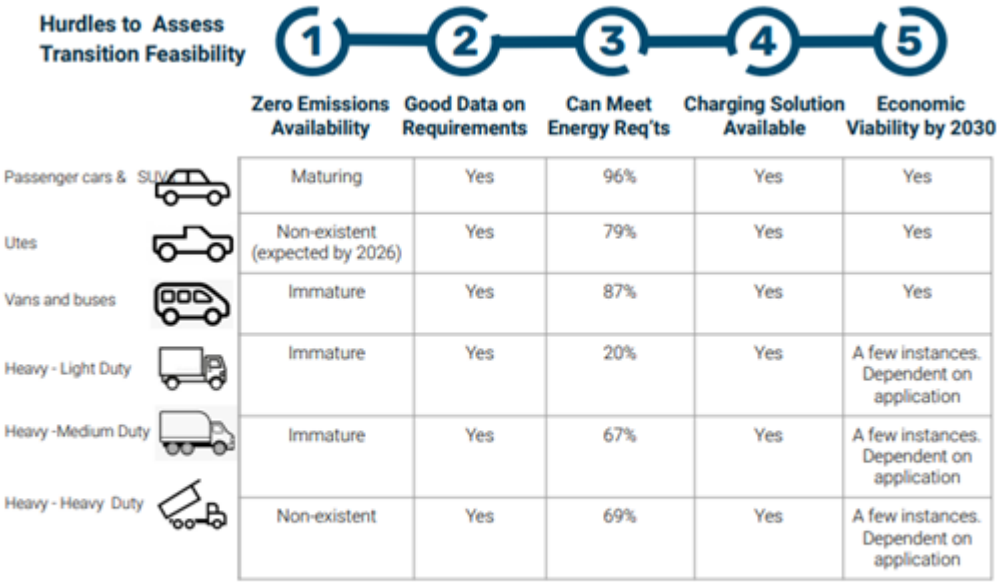
- Is there a ZEV option for this class?

[9] At this stage we expect that the network repex implications for fleet will mainly affect the Light Commercial and EWP categories.

- Do we possess good data on requirements for this class of vehicle[10]?
- Can the ZEV meet the energy requirements?
- Is there a suitable charging solution?
- What is the economic viability of the option?

Initial research has made the following assessment (figure 3).

Figure 3: Asset class assessment



	Zero Emissions Availability	Good Data on Requirements	Can Meet Energy Req'ts	Charging Solution Available	Economic Viability by 2030
Passenger cars & SUVs	Maturing	Yes	96%	Yes	Yes
Utes	Non-existent (expected by 2026)	Yes	79%	Yes	Yes
Vans and buses	Immature	Yes	87%	Yes	Yes
Heavy - Light Duty	Immature	Yes	20%	Yes	A few instances. Dependent on application
Heavy -Medium Duty	Immature	Yes	67%	Yes	A few instances. Dependent on application
Heavy - Heavy Duty	Non-existent	Yes	69%	Yes	A few instances. Dependent on application

It is clear from this assessment that, even by the end of the period, it is unlikely to be possible to transition the entirety of the SA Power Networks fleet to ZEVs by the end of the 2025-30 period regardless of the level of expenditure. As such, this determination will need to be made on an asset class basis.

We intend to forecast the expenditure as follows:

1. We will perform a Net Present Value (**NPV**) analysis to assess if the total cost of ownership (**TCO**) for the ZEV achieves parity with the ICE. In this case, we will proactively choose to procure the ZEV option. It is important to note that this is an assessment on both capex and opex. The high upfront capital cost to purchase ZEVs, is expected to be offset by lower operating costs across the working life of the asset[11].

   This NPV analysis will be set out in our business case, submitted as part of our Regulatory Proposal. The quantity of vehicles required will already be established as part of our calculations of 'base' expenditure. Any premium, above ICE, to transition to ZEVs, particularly the up-front capex, will be captured as part of this 'step' change.

2. For fleet asset types where the assessment of the TCO does not result in a cost viable option, we intend to assess (through engagement) the extent to which our customers support and would be willing to pay to accelerate the transition of our fleet to low or zero emission vehicles. We are also monitoring the nature of the expected changes to the National Electricity Objective in the National Electricity Law which are likely to embed an environmental objective, such that an emissions reduction 'benefit' could then be quantified as part of a cost benefit analysis. The costs in this

[10] This assessment approach has been used by the consultants across multiple organisations. SA Power Networks possesses good data on the requirements for our entire vehicle fleet.

[11] The expenditure on EV charging solutions at SA Power Networks' sites will be incorporated into the Property section of our proposal.

category will be forecast as a step increase / premium against the unit rates established in section 2.2.2.

2.3. Supporting Documentation

2.3.1. Base

- Asset Replacement Criteria
- Current expenditure
- Fleet model
- Forecast fleet costs – makes/models and their price changes
- Fleet Strategy 2025-30

2.3.2. Trend

- Network uplift resourcing and deliverability workings

2.3.3. Step

- EV strategy document