

Attachment 7.5

**SA Power Networks:
Expenditure Forecasting
Methodology**

November 2013





Expenditure Forecasting Methodology

2015 Reset Project

Document ID: PR1238-EXPENDITURE FORECASTING METHODOLOGY-METHOD-V1.0

Version: 1.0

Issue Date: 29 November 2013

Document Owner: Trevor Gusling

Extension: 4 5455

SA Power Networks

www.sapowernetworks.com.au

Document Control

Approved by		
Name	Role	Date
Sean Kelly	General Manager Corporate Strategy	20 Nov 2013

Reviewers		
Name	Role	Date
Helen Edmonds	Strategic Asset Management Manager	22 Oct 2013
Steve Fraser	Transmission & Generation Planning Manager	30 Oct 2013
Stephen Jolly	Manager Customer Solutions	31 Oct 2013
Wayne Lissner	Head of Regulation	8 Nov 2013
Eric Lindner	Strategic Regulatory Consultant	13 Nov 2013

Distribution List			
Name	Role	Version	Date
Adam Petersen	Director AER	1.0	26 Nov 2013
Sean Kelly	General Manager Corporate Strategy	1.0	26 Nov 2013
Wayne Lissner	Head of Regulation	1.0	26 Nov 2013
Dana Rankine	Project Manager Price Reset Project	1.0	26 Nov 2013
Richard Sibly	Regulatory Development Manager	1.0	26 Nov 2013

Revision History			
Date	Version	Author	Description of Change/Revision
29 Nov 2013	1.0	Trevor Gusling	Combined operating and capital expenditure forecasting methodologies

Reference documents	
Title of document	Document number
Draft Expenditure Forecast Assessment Guideline	Issued August 2013
Draft Expenditure Incentive Guidelines	Issued August 2013
Draft Economic Benchmarking RIN	Issued September 2013

TABLE OF CONTENTS

Document Control	2
1. Introduction	5
2. Background	5
3. Definitions	6
4. Rule Requirements	7
4.1 National Electricity Objective.....	7
4.2 National Electricity Rules	7
4.2.1 Operating expenditure objectives	7
4.2.2 Operating expenditure criteria	8
4.2.3 Operating expenditure factors.....	8
4.2.4 Capital expenditure objectives	9
4.2.5 Capital expenditure criteria	9
4.2.6 Capital expenditure factors.....	10
4.2.7 Demonstrating how the forecast reflects criteria.....	10
5. Key inputs to the Expenditure Development Process	12
5.1 Overview	12
5.2 Consumer and Stakeholder Engagement	12
Figure 5.1: SA Power Networks’ consumer and stakeholder engagement strategy	14
5.3 Regulatory obligations	14
5.4 Unit costs	15
5.5 Input costs – labour, materials, services and land.....	16
5.6 Corporate governance and asset management framework.....	17
5.6.1 Corporate governance	17
Figure 5.2: SA Power Networks’ Corporate Governance Model	18
5.6.2 Asset management framework.....	18
6. Operating Expenditure Development Process	20
6.1 Overview	20
Figure 6.1: SA Power Networks’ process for forecasting operating expenditure	20
6.2 Efficiency of the base year	21
6.3 Adjusting the base year for 2014/15 incremental efficient expenditure	21
6.4 Process for identifying and quantifying expenditure relating to changes in scope.....	21
Figure 6.2: Approach adopted by SA Power Networks for its environmental scan	22
6.4.1 Changes to regulatory/legal obligations	23
6.5 Scale escalation.....	23
Figure 6.3: Drivers of scale escalation.....	24
6.6 Input cost escalation rates	24

6.7	Non-Revealed Year Expenditures	24
6.7.1	Debt raising costs	24
6.7.2	Superannuation costs	25
7.	Capital Expenditure Development Process	26
7.1	Overview	26
	Figure 7.1: SA Power Networks' capital expenditure development and forecast process	26
7.2	Demand Driven Capital Expenditure.....	27
7.2.1	Spatial demand forecast	27
7.2.2	Network planning criteria	28
7.2.3	Capacity expenditure	29
7.2.4	Customer connection expenditure	30
7.3	Network expenditure associated with quality, reliability and security of supply.....	31
7.3.1	Asset replacement	31
7.3.2	Security of supply expenditure	32
7.3.3	Reliability expenditure	32
7.4	Expenditure associated with addressing safety and environmental risks.....	32
7.4.1	Safety expenditure.....	33
7.4.2	Environmental expenditure	33
7.4.3	Other expenditure	33
7.5	Non-Network expenditure.....	34
7.5.1	Customer Service	34
7.5.2	Information & Communication Technology (ICT)	34
7.5.3	Property	35
7.5.4	Fleet	35
7.5.5	Regulatory.....	35
7.5.6	Plant and Tools.....	36
7.6	Other expenditure	36
7.6.1	Equity raising costs.....	36
7.6.2	Superannuation costs	36
8.	Interaction Between the Capital and Operating Expenditure Forecasts	37
Appendix A	38
	Figure A.1: Overview of SA Power Networks' network planning process	38

1. Introduction

This document describes the methodology which SA Power Networks is proposing to use when developing its operating and capital expenditure forecasts for the 2015-2020 *regulatory control period*¹.

The methodologies outlined in this document will:

- be used to prepare a forecast of expenditure which reflects the efficient and prudent costs required to achieve the *operating expenditure objectives* and *capital expenditure objectives*; and
- include (amongst other things) the methodologies that will be employed by SA Power Networks to forecast demand and the cost of inputs.

2. Background

Clause 6.8.1A of the Rules entitled “Notification of approach to forecasting expenditure” provides that a *Distribution Network Service Provider* (or DNSP):

“...must inform the AER of the methodology it proposes to use to prepare the forecasts of operating expenditure and capital expenditure that form part of its regulatory proposal.”

Under the usual distribution determination process this information would be required to be provided to the AER, 2 years before the end of the current *regulatory control period*. However, as SA Power Networks is operating under the transitional arrangements set out in Part ZW of Chapter 11 of the Rules for the purposes of its 2015-2020 *regulatory control period*, this forecast methodology is required to be submitted 19 months before the end of the current *regulatory control period*; that is by 2 December 2013².

The purpose of early notification of the proposed expenditure forecast method is:

- to expedite the AER’s understanding of the approach and methodology that SA Power Networks intends to adopt when developing operating and capital expenditure forecasts for its 2015-2020 *regulatory proposal*;
- to facilitate engagement on the additional information requirements the AER may have as part of its forecast expenditure assessment; and
- where necessary, to allow the AER sufficient time to understand any additional information it may need to support its forecast expenditure assessment.

Whilst this document sets out the proposed methodology which SA Power Networks is currently intending to use to develop its operating and capital expenditure forecasts for the 2015-2020 *regulatory control period*, some aspects of that methodology may need to be amended or further refined in the lead up to the submission of our 2015-2020 *regulatory proposal* (including, for example, to take account of the AER’s final *Expenditure Forecast Assessment Guideline* and *Expenditure Incentive Guidelines* to be issued contemporaneously with this document and to reflect the co-operative and iterative nature of the *framework and approach paper* process). Any deviations from the proposed methodologies described in this document will be explained in our 2015-2020 *regulatory proposal*.

¹ Words printed in italics will have the meaning given in Chapter 10 of the Rules.

² The due date would have been 30 November 2013 but, as that is not a business day, the information must be submitted (in accordance with Rule 1.7.1(l)) on or by the next business day, being 2 December 2013.

3. Definitions

Definitions of terms used in this document:

Term	Definition
ABS	Australian Bureau of Statistics
ACMA	Australian Communications & Media Authority
ADMD	After Diversity Maximum Demand
AER	Australian Energy Regulator
CAM	Cost Allocation Method
DAPR	Distribution Annual Planning Report
DNSP	Distribution Network Service Provider
CPI	Consumer Price Index
EDC	Electricity Distribution Code
Electricity Act	Electricity Act 1996
EISS	Electricity Industry Superannuation Scheme
EPA	Environment Protection Agency
ESCoSA	Essential Services Commission of South Australia
ETC	Electricity Transmission Code
ICT	Information & Communication Technology
NEL	National Electricity Law
NEO	National Electricity Objective
NER or 'Rules'	National Electricity Rules
NECF	National Energy Consumer Framework
PLEC	Power Line Environment Committee
PoE	Probability of Exceedance (demand)
PV	Photo-Voltaic
RIT-D	Regulatory Investment Test – Distribution
STPIS	Service Target Performance Incentive Scheme

4. Rule Requirements

4.1 National Electricity Objective

The National Electricity Objective, as stated in the NEL is:

“...to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to –

- a. price, quality, safety, reliability, and security of supply of electricity; and*
- b. the reliability, safety and security of the national electricity system.”*

As noted in section 5.2 below, SA Power Networks has established a comprehensive consumer engagement process to assist in the identification of consumer interests and preferences.

4.2 National Electricity Rules

4.2.1 Operating expenditure objectives

Clause 6.5.6(a) of the Rules requires that SA Power Networks must include within its *building block proposal* for the 2015-2020 *regulatory control period*, a forecast of the operating expenditure for the *regulatory control period* which SA Power Networks considers is required in order to achieve each of the following *operating expenditure objectives*:

1. meet or manage the expected demand for *standard control services* over that period;
2. comply with all applicable *regulatory obligations or requirements* associated with the provision of *standard control services*;
3. to the extent that there is no applicable *regulatory obligation or requirement* in relation to:
 - (i) the quality, reliability or security of supply of *standard control services*; or
 - (ii) the reliability or security of the *distribution system* through the supply of *standard control services*,to the relevant extent:
 - (iii) maintain the quality, reliability and security of supply of *standard control services*; and
 - (iv) maintain the reliability and security of the *distribution system* through the supply of *standard control services*; and
4. maintain the safety of the *distribution system* through the supply of *standard control services*.

In addition, clause 6.5.6(b) of the Rules states that the forecast of required operating expenditure that is included in our *building block proposal* must:

1. comply with the requirements of any relevant *regulatory information instrument*;
2. be for expenditure that is properly allocated to *standard control services* in accordance with the principles and policies set out in the *Cost Allocation Method* for the *Distribution Network Service Provider*; and
3. include both:
 - (i) the total of the forecast operating expenditure for the relevant *regulatory control period*; and
 - (ii) the forecast operating expenditure for each *regulatory year* of the relevant *regulatory control period*.

4.2.2 Operating expenditure criteria

Further, clause 6.5.6(c) of the Rules states that the AER must accept SA Power Networks' proposed operating expenditure forecast if the AER is satisfied that the total of the forecast operating expenditure for the *regulatory control period* reasonably reflects:

1. the efficient costs of achieving the *operating expenditure objectives*; and
2. the costs that a prudent operator would require to achieve the *operating expenditure objectives*; and
3. a realistic expectation of the demand forecast and cost inputs required to achieve the *operating expenditure objectives*.

These are referred to as the *operating expenditure criteria*.

4.2.3 Operating expenditure factors

Finally, clause 6.5.6 (e) of the Rules requires that, in deciding whether or not the AER is satisfied that the total of the forecast operating expenditure reasonably reflects to the *operating expenditure criteria*, the AER must have regard to the following (the *operating expenditure factors*):

- the most recent *annual benchmarking report* that has been *published* under rule 6.27 and the benchmark operating expenditure that would be incurred by an efficient *Distribution Network Service Provider* over the relevant *regulatory control period*;
- the actual and expected operating expenditure of the *Distribution Network Service Provider* during any preceding *regulatory control periods*;
- the extent to which the operating expenditure forecast includes expenditure to address the concerns of electricity consumers as identified by the *Distribution Network Service Provider* in the course of its engagement with electricity consumers;
- the relative prices of operating and capital inputs;
- the substitution possibilities between operating and capital expenditure;
- whether the operating expenditure forecast is consistent with any incentive scheme or schemes that apply to the *Distribution Network Service Provider* under clauses 6.5.8 or 6.6.2 to 6.6.4;
- the extent the operating expenditure forecast is referable to arrangements with a person other than the *Distribution Network Service Provider* that, in the opinion of the AER, do not reflect arm's length terms;
- whether the operating expenditure forecast includes an amount relating to a project that should more appropriately be included as a *contingent project* under clause 6.6A.1(b);
- the extent the *Distribution Network Service Provider* has considered, and made provision for, efficient and prudent non-*network* alternatives; and
- any other factor the AER considers relevant and which the AER has notified the *Distribution Network Service Provider* in writing, prior to the submission of its revised *regulatory proposal* under clause 6.10.3, is an *operating expenditure factor*.

4.2.4 Capital expenditure objectives

Clause 6.5.7(a) of the Rules requires that SA Power Networks must include within its *building block proposal* for the 2015-2020 *regulatory control period* the total forecast capital expenditure for the *regulatory control period* which SA Power Networks considers is required in order to achieve each of the following *capital expenditure objectives*:

1. meet or manage the expected demand for *standard control services* over that period;
2. comply with all applicable *regulatory obligations or requirements* associated with the provision of *standard control services*;
3. to the extent that there is no applicable *regulatory obligation or requirement* in relation to:
 - (i) the quality, reliability or security of supply of *standard control services*; or
 - (ii) the reliability or security of the *distribution system* through the supply of *standard control services*,to the relevant extent:
 - (iii) maintain the quality, reliability and security of supply of *standard control services*; and
 - (iv) maintain the reliability and security of the *distribution system* through the supply of *standard control services*; and
4. maintain the safety of the *distribution system* through the supply of *standard control services*.

In addition, clause 6.5.7(b) of the Rules states that the forecast of required capital expenditure that is included in our *building block proposal* must:

1. comply with the requirements of any relevant *regulatory information instrument*;
2. be for expenditure that is properly allocated to *standard control services* in accordance with the principles and policies set out in the Cost Allocation Method for the *Distribution Network Service Provider*; and
3. include both:
 - (i) the total of the forecast capital expenditure for the relevant *regulatory control period*; and
 - (ii) the forecast capital expenditure for each *regulatory year* of the relevant *regulatory control period*.

4.2.5 Capital expenditure criteria

Further, clause 6.5.7(c) of the Rules states that the AER must accept SA Power Networks' proposed capital expenditure if the AER is satisfied that the total of the forecast capital expenditure for the *regulatory control period* reasonably reflects:

1. the efficient costs of achieving the *capital expenditure objectives*; and
2. the costs that a prudent operator would require to achieve the *capital expenditure objectives*; and
3. a realistic expectation of the demand forecast and cost inputs required to achieve the *capital expenditure objectives*.

These are referred to as the *capital expenditure criteria*.

4.2.6 Capital expenditure factors

Finally, clause 6.5.7 (e) of the Rules requires that, in deciding whether or not the AER is satisfied that the total of the forecast capital expenditure reasonably reflects the *capital expenditure criteria*, the AER must have regard to the following (the *capital expenditure factors*):

- the most recent *annual benchmarking report* that has been published under rule 6.27 and the benchmark capital expenditure that would be incurred by an efficient *Distribution Network Service Provider* over the relevant regulatory control period;
- the actual and expected capital expenditure of the *Distribution Network Service Provider* during any preceding *regulatory control periods*;
- the extent to which the capital expenditure forecast includes expenditure to address the concerns of electricity consumers as identified by the *Distribution Network Service Provider* in the course of its engagement with electricity consumers;
- the relative prices of operating and capital inputs;
- the substitution possibilities between operating and capital expenditure;
- whether the capital expenditure forecast is consistent with any incentive scheme or schemes that apply to the *Distribution Network Service Provider* under clauses 6.5.8A or 6.6.2 to 6.6.4;
- the extent the capital expenditure forecast is referable to arrangements with a person other than the *Distribution Network Service Provider* that, in the opinion of the AER, do not reflect arm's length terms;
- whether the capital expenditure forecast includes an amount relating to a project that should more appropriately be included as a *contingent project* under clause 6.6A.1(b);
- the extent the *Distribution Network Service Provider* has considered, and made provision for, efficient and prudent non-*network* alternatives; and
- any other factor the AER considers relevant and which the AER has notified the *Distribution Network Service Provider* in writing, prior to the submission of its revised *regulatory proposal* under clause 6.10.3, is a *capital expenditure factor*.

4.2.7 Demonstrating how the forecast reflects criteria

In its 2015-2020 *regulatory proposal*, SA Power Networks will demonstrate that its forecast of required operating and capital expenditure reasonably reflect each of the *operating expenditure criteria* and *capital expenditure criteria* by demonstrating that:

- the scope of each expenditure forecast is consistent with SA Power Networks' applicable *regulatory obligations or requirements*, *good electricity industry practice* and with consumer and stakeholder expectations relating to the achievement of the *operating expenditure objectives* and *capital expenditure objectives*;
- strong governance processes have been employed to manage the life cycle of assets prudently and efficiently, and to ensure long term sustainable performance and condition of the assets, in line with the Asset Management Policy;
- the scoping processes are robust, fit for purpose and utilise realistic demand inputs, resulting in prudent operating and capital expenditure forecasts;
- the costing processes are robust, fit for purpose and incorporate realistic cost inputs, resulting in an efficient expenditure forecast;

- the demand and cost inputs will be either forecast or reviewed by independent expert third parties and determined to be sound; and
- the identified scope can be delivered by SA Power Networks.

Further, where forecast expenditure for the 2015-2020 *regulatory control period* differs significantly from the actual and [forecast] expenditure for the 2010-2015 *regulatory control period*, such differences will be explained in our 2015-2020 *regulatory proposal*.

The costs incorporated within SA Power Networks' forecast operating and capital expenditure for the 2015-2020 *regulatory control period* will also be consistent with the incentives provided within the *Service Target Performance Incentive Scheme* (STPIS) applicable to SA Power Networks for the *regulatory control period* and with SA Power Networks' service obligations specified in the clause 1 of the South Australian Electricity Distribution Code.

Finally, key assumptions underpinning the development of SA Power Networks' expenditure forecasts will be reviewed and endorsed by SA Power Networks' Board through a formal sign-off to be attached to the 2015-2020 *regulatory proposal*.

5. Key inputs to the Expenditure Development Process

5.1 Overview

There are a number of key inputs that underpin SA Power Networks' expenditure forecasts, including:

- consumer and stakeholder insights gained from the consumer and stakeholder engagement program;
- applicable *regulatory obligations or requirements*, including jurisdictional service standards;
- unit costs;
- escalation in the cost of labour, materials and services; and
- corporate governance processes.

These key inputs are described in detail in the following sections.

5.2 Consumer and Stakeholder Engagement

SA Power Networks has continuously pursued effective consumer and stakeholder engagement, as this is a critical input into the development of its long term business plans.

As part of the preparations for the 2015-2020 *regulatory proposal*, SA Power Networks has further developed and implemented an enhanced comprehensive stakeholder and consumer engagement program. The program has been designed to enable SA Power Networks to:

- understand the concerns, issues and needs of South Australian electricity consumers and stakeholders; and
- take those concerns, issues and needs into account when developing and (where appropriate) address those concerns, issues and needs in its work programs and expenditure forecasts for the 2015-2020 *regulatory proposal*.

The program has been designed to deliver a comprehensive and inclusive stakeholder and consumer engagement process that meets or exceeds all NER and AER requirements and:

- provides relevant information to consumers and stakeholders via an open and clear communication channel;
- ensures the business is positioned to listen early to consumer and stakeholder views and concerns;
- drives the methodical assessment of those views and concerns and the business' potential to address them;
- provides prompt and clear feedback to consumers and stakeholders on conclusions reached and actions taken;
- demonstrates an auditable evidence based process has been followed;
- aligns with best practice principles; and
- provides a template for ongoing consumer and stakeholder engagement in a broader business context (i.e. beyond the distribution determination process).

It should be noted that preliminary research and detailed planning for the consumer and stakeholder engagement program commenced well before the finalisation of the changes to Chapter 6 of the NER (in November 2012) and the subsequent launch of the AER's Better Regulation program and release of the AER's Consumer Engagement Guideline (on 6 November 2013). This early start was essential to allow for:

- meaningful engagement with consumers and stakeholders; and
- timely and appropriate integration of consumer and stakeholder insights into SA Power Networks' work programs and expenditure forecasts.

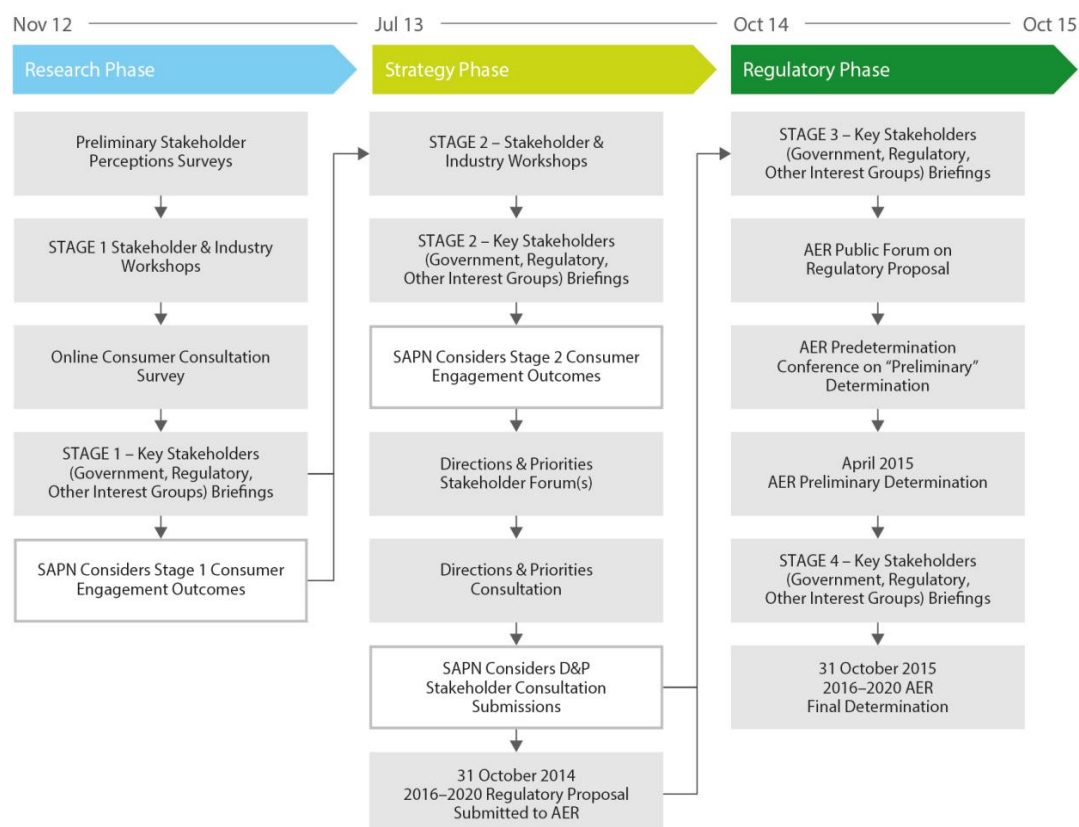
Even though we commenced our consumer and stakeholder engagement program more than a year in advance of the release of the AER's Consumer Engagement Guideline, there is demonstrably good alignment between the features of our program and those suggested in the Guideline.

In particular, our consumer and stakeholder engagement program:

- implements robust and transparent processes which are consistent with the AER's Consumer Engagement Guideline (for example, by engaging with a representative cross section of electricity consumers and stakeholders, including those from the residential and business segments, State Government and Local Government, regulatory agencies and various other interest groups, from across the State of South Australia);
- has led to SA Power Networks identifying, and gaining a comprehensive understanding of, electricity consumers' and stakeholders' issues and concerns; and
- will allow us to develop proposed capital and operating expenditure forecasts designed to address relevant consumer and stakeholder issues and concerns identified during the consumer and stakeholder engagement process.

Figure 1 below provides an overview of the key stages and the sequence of the consumer and stakeholder engagement program.

Figure 5.1: SA Power Networks' consumer and stakeholder engagement strategy



5.3 Regulatory obligations

To a significant extent, SA Power Networks' expenditure is driven by the requirement to comply with applicable *regulatory obligations or requirements* associated with the provision of *standard control services*, and in particular, service standards defined by the jurisdictional regulator.

ESCoSA prescribes the levels of reliability and customer service performance that SA Power Networks is required to meet. SA Power Networks will develop its 2015-2020 *regulatory proposal* based on compliance with these service standards. These service standards are detailed in the following:

- The South Australian Electricity Distribution Code; and
- The South Australian Electricity Transmission Code.

Other key *regulatory obligations or requirements* applicable to SA Power Networks include requirements to comply with:

- The National Electricity Law and associated Regulations;
- The National Energy Retail Law and associated Regulations;
- The National Electricity Rules;
- The National Energy Retail Rules;
- NEM Metrology Procedures;
- ESCoSA's Guidelines, and in particular, Guideline 1;

- The Electricity Act and associated Regulations;
- Electricity Distribution Licence;
- Distribution Network Lease;
- Distribution Network Land Lease;
- Retailer Credit Support Obligations under the NER;
- Privacy Law;
- Work, Health and Safety Legislation;
- Environment Protection Agency (EPA) requirements;
- Development approval processes; and
- Australian Communications & Media Authority (ACMA).

Transitional provisions granted as part of the National Energy Customer Framework (NECF) implementation will cease to operate from 1 July 2015. From that date, SA Power Networks will be required to comply with the AER's *connection charge guidelines* issued under chapter 5A of the Rules when determining the capital contribution for customers' additions or alterations to the *distribution network* (refer section 7.2.4.1).

5.4 Unit costs

Whilst SA Power Networks' forecast operating expenditure will be based on a base-step-trend approach, a 'unit cost' based build-up will be utilised for the majority of its capital expenditure. Under this 'unit cost' based build-up approach, repetitive capital expenditure tasks or 'building blocks' (i.e. aggregate sections of newly installed plant or equipment) are multiplied by the anticipated number of tasks in a particular project to determine the total unit cost or capital expenditure forecast.

The unit costs utilised in SA Power Networks' unit cost build-up will be based on the costs historically achieved on similar projects and estimates of these 'building blocks' values assembled using a standard estimating tool that consolidates the major project items required to construct the relevant type of project.

SA Power Networks is expected to deliver appropriate financial returns to its owners, which in conjunction with incentive-based regulation provides an environment to drive unit cost efficiency.

5.5 Input costs – labour, materials, services and land

Although CPI-X type regulation provides *Distribution Network Service Providers* with some level of compensation for increases in the costs of its inputs, from a practical perspective, the costs of electricity utilities do not always increase in ways that are reflective of the basket of goods and services used by the ABS to calculate CPI.

This being the case, SA Power Networks will develop individual forecasts of the likely real growth of its key cost inputs. As noted in section 4.2.2 and 4.2.5 above, the AER is required to accept these expenditure forecasts if it is satisfied that they reasonably reflect:

“... a realistic expectation of the ... cost inputs required to achieve the [operating and capital] expenditure objectives.”³

In order to undertake these forecasts, SA Power Networks will consider the broad categories of cost by which its expenditure forecasts have been characterised, being:

- **Labour:** the costs associated with SA Power Networks’ employees and supplementary labour contractors in delivering *standard control services*;
- **Contracted construction and labour services:** services acquired by SA Power Networks in order to deliver *standard control services*, for example, electrical construction, civil works, traffic management and vegetation management;
- **Materials:** the costs of distribution equipment such as conductors, cables, insulators, circuit breakers, transformers, SCADA equipment, communications equipment and so on, as well as materials for the production of poles, and other items of equipment such as vehicles, plant and tools; and
- **Land:** the costs associated with the purchase and management of land and easements used in operating the *distribution system*.

These categorisations are explained in more detail in SA Power Networks’ *Cost Allocation Method (CAM)*.

SA Power Networks will utilise a range of price indices to create a weighted average real labour escalation rate forecast. This will include salary and wage increases under the applicable enterprise bargaining agreement and forecasts provided by economic forecasting consultants. Appropriate weightings will be applied based on an estimated use of internal and contracted labour services to deliver work programs.

Similarly SA Power Networks will utilise economic forecasting consultants to assist in the development of forecasts of materials and land real cost escalation rates.

³ Clauses 6.5.6(c)(3) and 6.5.7(c)(3) of the National Electricity Rules.

5.6 Corporate governance and asset management framework

5.6.1 Corporate governance

SA Power Networks is committed to the highest standards of Corporate Governance. To demonstrate this commitment, the Board of SA Power Networks has previously approved a Board Governance Policy and, in particular, a Corporate Governance Model.

The underlying theme of the Corporate Governance Model is that, on behalf of the SA Power Networks Partnership, the Board has been delegated responsibility for the overall corporate governance of the SA Power Networks electricity distribution business including the critical responsibilities of strategy setting, policy definition, compliance and monitoring business performance.

SA Power Networks operates within a structured governance framework to ensure:

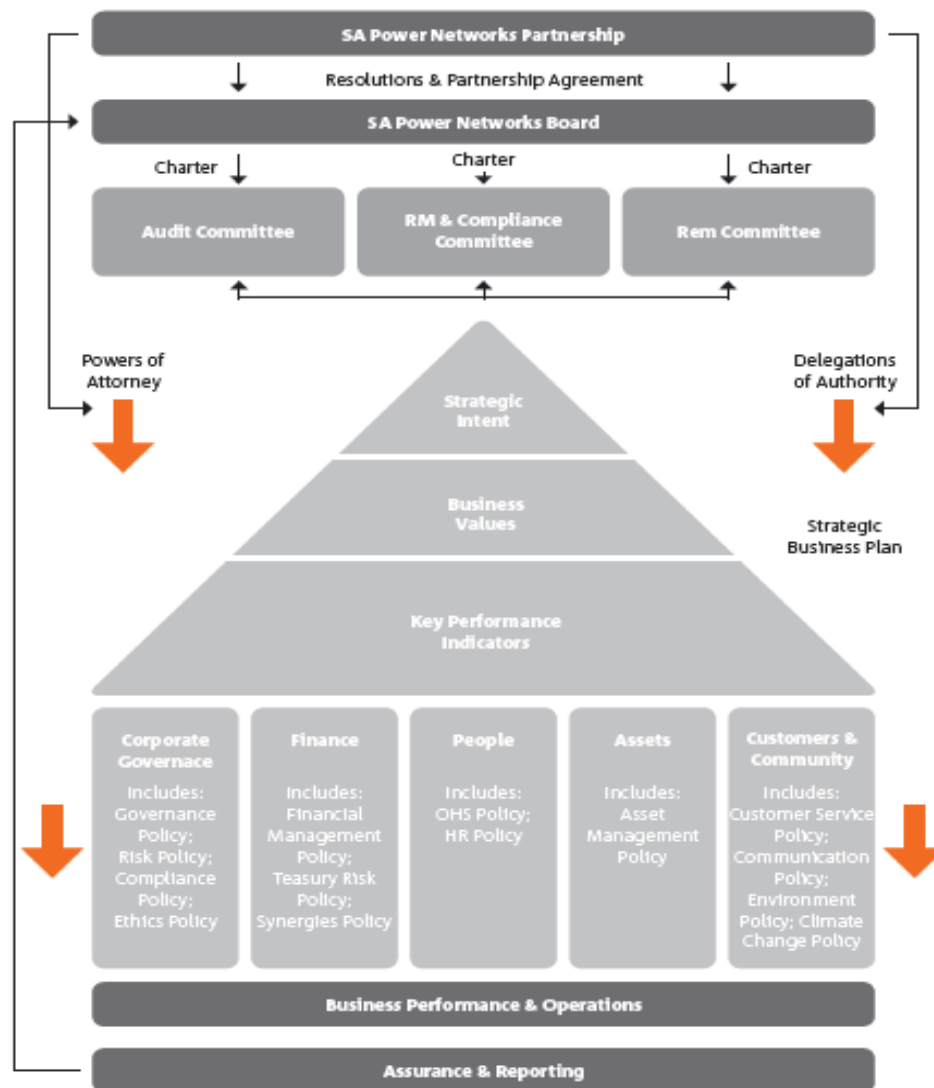
- compliance with all applicable legal and *regulatory obligations or requirements* associated with the provision of *standard control services*;
- the delivery of its organisational strategy; and
- that it meets the requirements of its key stakeholders.

The key elements of corporate governance that apply to SA Power Networks as defined by the Corporate Governance Model are:

- SA Power Networks Partnership – SA Power Networks is a business owned and operated by a partnership of companies. All decisions that are made in the business are made on behalf of the members of the partnership;
- Partnership Agreement – the instrument of delegation that sets the primary requirements for corporate governance on behalf of the members of the partnership;
- SA Power Networks' Board – the body representing the members of the partnership which is responsible for the conduct of the SA Power Networks business and strategic direction;
- Board Sub-Committees – bodies established under the Partnership Agreement to assist the Board;
- Business Plan – what SA Power Networks is aiming to achieve;
- Policies – the manner by which SA Power Networks will achieve the Business Plan;
- Delegations of Authority – authorities delegated by the Board to SA Power Networks officers to enable day to day conduct of the business;
- Performance Management – the process of monitoring by the Board to ensure the Business Plan is achieved; and
- Assurance – providing assurance to the Board that SA Power Networks is achieving its objectives, as per the Business Plan, in the manner intended.

SA Power Networks Corporate Governance Model is shown in figure 5.2 below.

Figure 5.2: SA Power Networks’ Corporate Governance Model



SA Power Networks has a hierarchy of capital and asset management governance being:

- Board approved policies;
- Management directives;
- Asset Management Plans; and
- Processes (as described in operating procedures).

5.6.2 Asset management framework

The SA Power Networks Board approved Asset Management Policy states that:

‘SA Power Networks will manage its assets to:

- *provide a safe environment for employees, contractors and the community;*
- *satisfy customer service needs;*
- *meet Licence and Regulatory obligations; and*
- *deliver optimal returns to shareholders.*

SA Power Networks will employ good industry asset management practice to manage the life cycle of assets prudently and efficiently, and to ensure long term sustainable performance and condition of the assets.

SA Power Networks will prepare an asset management plan which is reviewed on an annual basis.'

SA Power Networks' overall Asset Management framework is currently being reviewed to ensure that asset management practices are aligned with PAS 55, and with ISO 5500. This framework will facilitate prudent, consistent and repeatable decision making across the SA Power Networks' business with regard to asset management, in line with international good practice and taking a risk based approach to asset replacement and upgrade.

The current Asset Management Plan governs the development and annual review of the asset class based asset management plans in compliance with the Asset Management Policy. These asset management plans will form the primary basis for the development of SA Power Networks' capital expenditure forecast.

The governance framework also incorporates directives and procedures for the following key activities:

- identification of the need for investment;
- consideration of options and project justification;
- development and approval of projects;
- project execution; and
- operation and evaluation of outcomes.

6. Operating Expenditure Development Process

6.1 Overview

Over the 2005–2010 *regulatory control period*, SA Power Networks operated under an ex ante incentive regime. In the current *regulatory control period* of 2010-2015, SA Power Networks is continuing to operate under an ex-ante incentive scheme. These incentive schemes have and are providing effective incentives for SA Power Networks to continuously seek efficiencies in its operations. As a consequence, SA Power Networks’ expenditures in the ‘base year’ will reflect efficient expenditures.

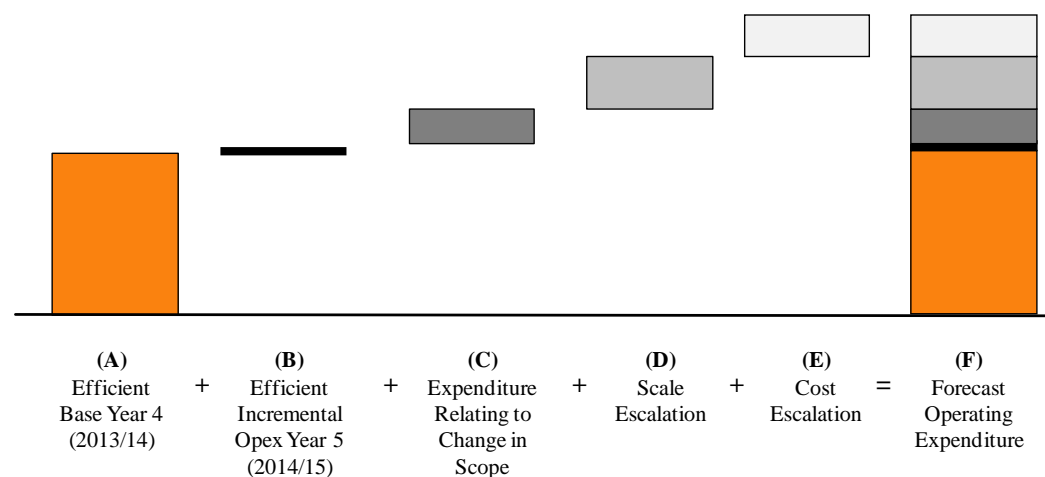
Accordingly, SA Power Networks will develop its operating expenditure forecast for the 2015–2020 *regulatory control period* employing the base-step-trend approach to forecasting as shown diagrammatically in Figure 6.1. This involves:

1. nominating the efficient revealed base year;
2. adjusting the base year for the efficient incremental operating expenditure in the final *regulatory year* of the 2010-2015 *regulatory control period* (i.e. 2014/15);
3. where applicable, adjusting the operating expenditure incurred during the base year to account for changes in scope (for example, a change in an applicable *regulatory obligation or requirement*);
4. applying scale escalation to each category of operating expenditure, depending on the drivers that impact upon each category; and
5. applying input cost escalators, reflecting real increases in the cost of labour, materials, services and land to each category of operating expenditure, as appropriate.

In broad terms, expenditure relating to step changes in scope will be defined by SA Power Networks to represent either an increase or a decrease in the range of activities carried out in delivery of *standard control services*, whereas ‘scale escalation’ will be defined to represent a change in the volume of existing activities carried out by SA Power Networks (i.e. either more or less of the same activity). ‘Input cost escalation’ will be defined as the real change in the unit cost of an activity, driven generally by economic and market factors.

SA Power Networks’ base year costs will be calculated in accordance with the approved CAM.

Figure 6.1: SA Power Networks’ process for forecasting operating expenditure



6.2 Efficiency of the base year

SA Power Networks will nominate the fourth year of the 2010–2015 *regulatory control period*, being 2013/14, as its efficient (revealed) base year. SA Power Networks considers that 2013/14 is best suited as the base year, insofar as it will:

- be the most recent full *regulatory year* of actual reported performance, with audited regulatory accounts to be available before the AER is required to make its distribution determination; and
- be representative of a normal year in terms of operating and economic conditions, that can reasonably be expected to prevail during the 2015–2020 *regulatory control period*.

SA Power Networks considers that its operating expenditure in the 2013/14 *regulatory year* will provide an efficient base from which to forecast the operating expenditure required to fulfil its obligations with respect to *standard control services* during the 2015–2020 *regulatory control period*.

The base year will be adjusted for any one-off events or where base year costs are not representative of future costs.

6.3 Adjusting the base year for 2014/15 incremental efficient expenditure

The efficient base year costs must be adjusted for efficient incremental final *regulatory year* expenditure in the current *regulatory control period* to provide an appropriate base level of costs for the commencement of the 2015-20 *regulatory control period*.

6.4 Process for identifying and quantifying expenditure relating to changes in scope

Having defined an efficient base year for its forecast operating expenditure, the next step in SA Power Networks' forecasting process will involve identification of specific changes in scope that will impact the ability of SA Power Networks to:

- achieve the *operating expenditure objectives* during the 2015-2020 *regulatory control period*; and
- satisfy the AER that the total forecast operating expenditure for the 2015-2020 *regulatory control period* reasonably reflects each of the *operating expenditure criteria* having regard to the *operating expenditure factors*.

Such changes in scope may arise, for example, from changes in the applicable *regulatory obligations or requirements* or as a result of issues and service improvements identified by customers or stakeholders through the consumer and stakeholder engagement process.

SA Power Networks operates in an ever changing environment and is impacted by diverse cost drivers, some of which are beyond its control, that can have a profound impact on the required levels of operating expenditure. Some of these cost drivers include changes in:

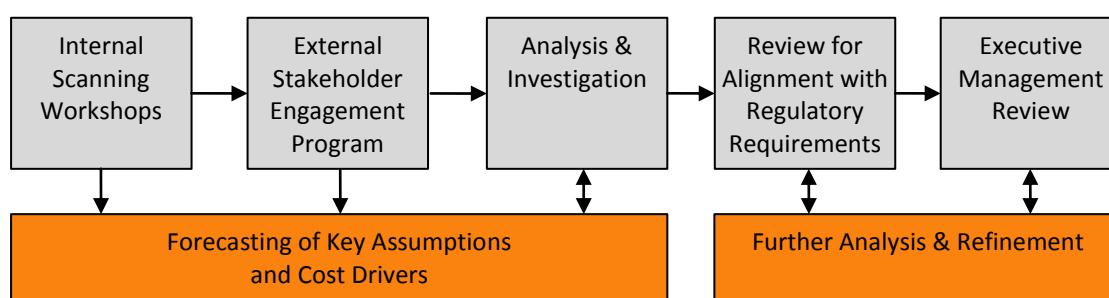
- customer and community expectations;
- the condition of the *distribution network*;
- legal and regulatory obligations;
- government policy;
- the natural environment, including climate and climate change;
- the size and profile of SA Power Networks’ workforce;
- new and developing technologies; and
- prevailing economic conditions.

In developing expenditure forecasts that extend into the future, SA Power Networks can, at best, undertake thorough environmental scans to seek to identify events that are foreseeable, and to forecast their impact by relying on the best information at-hand — the natural consequence of these factors is that accuracy of forecasting diminishes rapidly beyond a 2-3 year planning horizon.

This represents a significant risk to SA Power Networks, as it will doubtless face a profile of scope changes in the latter part of the 2015–2020 *regulatory control period* that cannot be identified at this time. The cost pass-through provisions contained in Rule 6.6 of the Rules will provide some means to cater for such unforeseen changes in scope.

In identifying changes in scope that will impact its operating expenditure for the 2015–2020 *regulatory control period*, SA Power Networks will rely upon its long-term planning process, which incorporates scanning of the environment as illustrated in Figure 6.2.

Figure 6.2: Approach adopted by SA Power Networks for its environmental scan



The process shown in Figure 6.2 began with a series of initial workshops involving management and staff from each major workgroup in SA Power Networks, the key outcome of which is a list of potential issues requiring further investigation and analysis. Simultaneously, workshops aimed at discovering consumer sentiments and opinions have been held with consumers and stakeholders on a range of topics through the consumer and stakeholder engagement process. This process is described in section 5.2 of this Expenditure Forecasting Methodology.

The changes in scope will be refined and substantiated through analysis, investigation and rigorous review to ensure alignment with the Rules, and consistency with key assumptions and cost drivers. Careful attention will be given to ensuring that no scale escalation is incorporated into the changes in scope, and that the scope changes therefore reflect genuine new requirements or activities and do not in any way constitute 'more of the same'.

6.4.1 Changes to regulatory/legal obligations

The expenditure forecasting methodology will also examine and estimate step changes in expenditure due to changes in applicable *regulatory obligations or requirements*, for example, additional costs of notifying all customers of planned interruptions under the NECF (for which interruptions were previously exempt from notification if less than 15 minutes in duration).

6.5 Scale escalation

The expenditure levels of *Network Service Providers* are highly influenced by the scale of their operations. For example, it is reasonable to expect, all other things being equal, that a *Distribution Network Service Provider* with a *distribution network* twice as large would incur almost twice the maintenance costs.

In forecasting the scale escalation that will apply to SA Power Networks' operating expenditure during the 2015–2020 *regulatory control period*, SA Power Networks will demonstrate links to certain high-level factors that drive the volume of its operating and maintenance activities (after taking into account the effects of economies of scale).

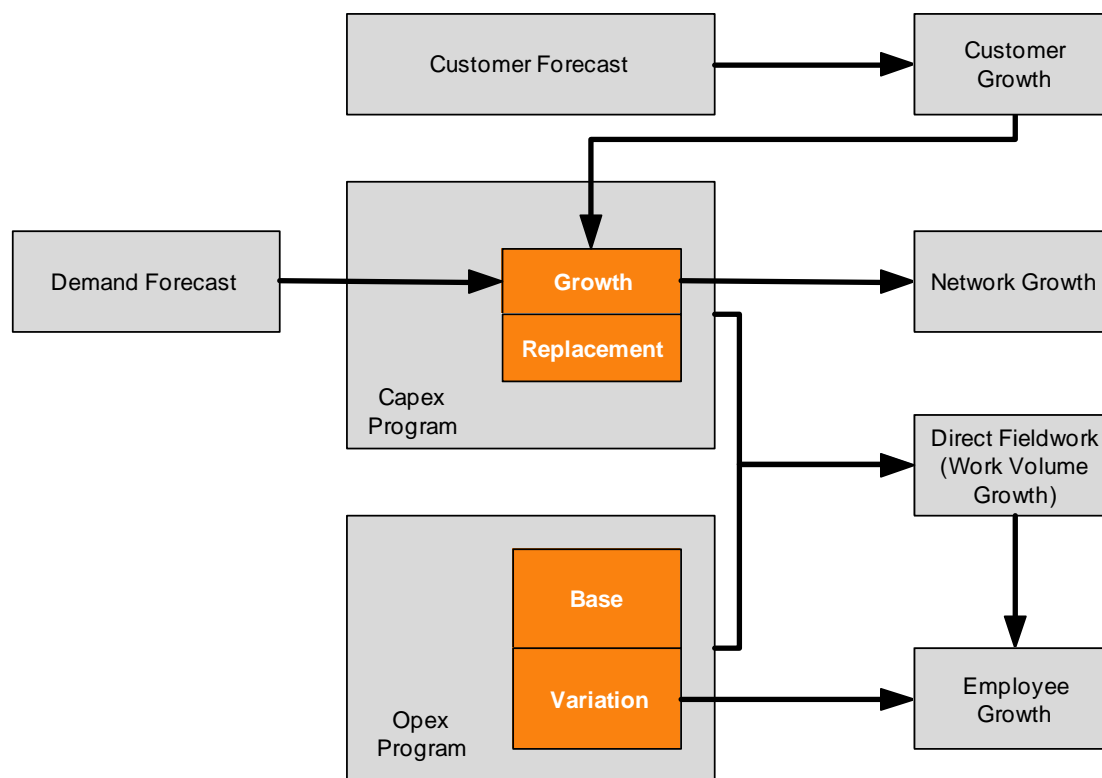
SA Power Networks considers that there are four key factors that will drive its scale escalation, and therefore its operating expenses, during the 2015–2020 *regulatory control period*, being:

1. *Customer growth*: growth in customer numbers.
2. *Network growth*: growth in the size of the *distribution network*;
3. *Work volume*: changes in the volume of capital and maintenance work taking place on the *distribution network*; and
4. *Workforce size*: changes in the size of the workforce.

For example, those workgroups that provide corporate support services within SA Power Networks (such as training and information & communication technology services), have workloads that are primarily influenced by changes in the size of SA Power Networks' workforce. Similarly, those workgroups that provide direct services to residential customers (such as meter reading and call centre services), have workloads that are primarily influenced by growth in the number of SA Power Networks' customers. Figure 6.3 illustrates the drivers of each scale escalator.

Of course, these escalators are closely related, and SA Power Networks will take care to ensure that double counting is eliminated. Economies of scale will also be considered in forecasting scale escalation.

Figure 6.3: Drivers of scale escalation



6.6 Input cost escalation rates

The final step in the process by which SA Power Networks will develop its operating expenditure forecast for the 2015–2020 *regulatory control period* will involve escalation for real changes in input costs—specifically labour, materials, services and land.

The forecast of input cost escalation rates that will be used to escalate SA Power Networks' operating expenditure is described in section 5.5 above.

6.7 Non-Revealed Year Expenditures

This expenditure is related to impacts not directly attributable to the revealed cost year. Examples are:

- Debt Raising costs; and
- Superannuation costs.

6.7.1 Debt raising costs

Debt raising expenditure relates to costs associated with raising debt to fund SA Power Networks' expenditure programs.

SA Power Networks includes debt raising costs as a component of its operating expenditure forecast. The forecast of debt raising costs will reflect the profile of raising additional debt and the refinancing of existing debt.

6.7.2 Superannuation costs

Superannuation expenditure relates to the operating allocation of the superannuation contributions that SA Power Networks is required to make to the Electricity Industry Superannuation Scheme (EISS) and other superannuation schemes in the 2015-2020 *regulatory control period*.

Superannuation costs will be forecast on a cash (rather than accounting) basis, consistent with the approved CAM, as assessed by the EISS independent actuary.

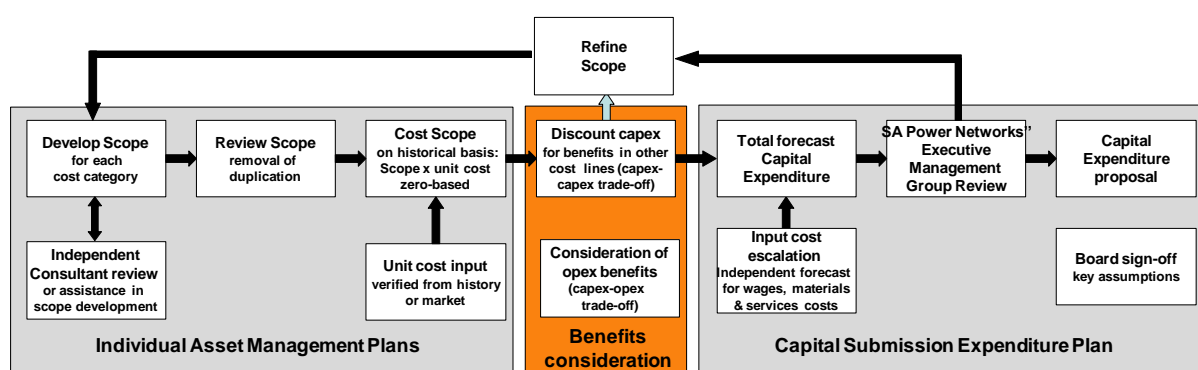
7. Capital Expenditure Development Process

7.1 Overview

SA Power Networks' capital expenditure plan will be developed by aggregating a large number of generally bottom-up build asset management and/or expenditure plans across a range of expenditure categories. Where prudent, SA Power Networks will engage independent, expert advice to review and support its plans, processes and expenditure forecasts.

The process that will be utilised to undertake the capital expenditure forecast is illustrated in Figure 7.1 below. The specific processes associated with each individual capital expenditure category are described in more detail in sections 7.2 through 7.6 below.

Figure 7.1: SA Power Networks' capital expenditure development and forecast process



In general, the scope of each capital expenditure plan, and in many cases the corresponding asset management plan, will be determined using a risk based approach that aligns with SA Power Networks' capital governance procedures. Such an approach ensures that SA Power Networks can:

- meet forecast demand over the 2015-2020 *regulatory control period*;
- comply with all applicable *regulatory obligations or requirements* associated with the provision of *standard control services*;
- maintain levels of customer service, thus meeting its jurisdictional service standard obligations;
- maintain acceptable levels of business risk; and
- maintain acceptable levels of safety risk to the public and employees.

The capital expenditure plans, strategies and practices for the 2010-2015 *regulatory control period* are considered as a key input into the development of the forecast scope. In addition, SA Power Networks' consumer and stakeholder engagement program (refer section 5.2) has led to the identification and understanding of various stakeholder and consumer issues and concerns. This information and standard practice in relation to identified issues and concerns will be given appropriate weight in developing capital expenditure plans.

Once the scope of a capital expenditure plan has been determined, it will be costed, generally utilising unit costs based on historical 'building block' estimates for similar projects and assembled in SA Power Networks' standard estimating system.

In developing its capital expenditure forecasts, SA Power Networks will also consider the substitution possibilities between operating and capital expenditure. The interaction between individual capital expenditure categories will also be considered by performing a 'trade-off' or benefits review. This review will be conducted prior to aggregation of the capital expenditure categories, whereby each proposed expenditure scope will be examined for potential benefits in other expenditure lines and, where trade-off possibilities are considered prudent and efficient, corresponding adjustments will be made.

Finally, after the aggregation of the forecast capital expenditures, escalation for forecast changes in the real costs of materials, labour, contract services and land anticipated over the 2015-2020 *regulatory control period* will be applied.

The expenditure build-up will be undertaken in compliance with SA Power Networks' CAM, as approved by the AER.

7.2 Demand Driven Capital Expenditure

Demand driven capital expenditure relates to capital expenditure required to achieve the capital expenditure objective to meet or manage the expected demand for *standard control services* over the 2015-2020 *regulatory control period*.

Key inputs that underpin SA Power Networks' demand driven capital expenditure forecasts will include:

- Spatial peak demand growth; and
- Network planning criteria: defining the level of redundancy required (at SA Power Networks' *connection points*, *zone substations* and *transmission lines*) to meet EDC and ETC standards, and reliability standards and standards related to the maintenance of security of supply.

7.2.1 Spatial demand forecast

Demand refers to the maximum power that must be delivered by the *distribution network*, and grows in response to both the increased demand of existing customers as they add or upgrade appliances and equipment, and the connection of new customers to the *distribution network*.

For the purpose of developing capital expenditure forecasts, spatial demand growth forecasts are utilised. This approach is required because demand in a particular region, and therefore the capacity requirements of the electricity infrastructure in that region, does not necessarily correlate to overall system demand growth.

SA Power Networks has developed a statistically based spatial demand forecasting methodology to produce spatial demand forecasts at 10% and 50% Probability of Exceedance (PoE) forecast levels of demand. For each PoE forecast demand level, the rate of demand growth is calculated from temperature corrected historic demands for a particular asset over a period of time. Essentially, the trend between recently measured demands for each specific network element is extrapolated to forecast future demand, taking into account specific local customer driven changes, spot loads and embedded generation (including Photo-Voltaic (PV) systems). The aggregated impact of customer PV is considered in the forecasts based on measured performance of typical PV installations, installed PV capacity, time of peak demand, and forecasted PV growth rate.

SA Power Networks develops three independent types of demand forecasts, approximately being:

- ElectraNet *connection points*—comprising 48 points, some of which are aggregated (due to the meshed nature of the underlying sub-transmission *network*);
- Zone *substations*—comprising 426 points; and
- *High voltage* feeders—comprising 1200 zone substation exit points.

These spatial demand forecasts are reconciled (using diversity/coincidence factors) to each other and the overall statewide demand forecast to ensure their consistency and integrity. Once the spatial demand forecasts have been verified, these are then used to develop the 66kV and 33kV sub-transmission line forecasts using loadflow applications (e.g. PSS/E).

7.2.2 Network planning criteria

SA Power Networks' Network Planning Criteria are a key driver of future demand related capital expenditure because they define when a *network 'constraint'* exists that must be addressed by means of a suitable *network* or non-*network* solution. Generally, such *constraints* occur when forecast load demand exceeds the capacity of a particular *distribution system* element (e.g. *substation transformers* or sub-*transmission lines*).

The Planning Criteria also define the level of redundancy required in particular parts of the *distribution network*. For example, *substations* in the Adelaide CBD have 'N-1' redundancy on major plant items, meaning that if a *transformer* in the zone *substation* or a sub-*transmission line* were to fail, supply to customers would not have to be interrupted, even under peak loads. Zone *substations* outside the Adelaide CBD have a lower level of redundancy and in some cases no redundancy.

SA Power Networks' Network Planning Criteria has been developed to ensure compliance with its service obligations under the EDC and the conditions of its Distribution Licence. The criteria must also ensure that the requirements relating to power quality, short circuit capability, system stability clearing times, reliability and system security contained in Schedule 5.1 of the Rules are met. SA Power Networks is also obliged to comply with the ETC, even though this code is mainly of relevance to ElectraNet. The ETC requirements are codified and therefore mandatory.

Key steps in the *network* planning process include:

- forecast load at key points in the *distribution network*;
- compare the forecast demand to the relevant capacity of the *distribution network* to identify any forecast *network constraints*; and
- identify the optimal method of resolving these identified needs taking into consideration cost, timing and the technical viability of the credible options explored.
- Where required, SA Power Networks will consult with third parties seeking alternative proposals to resolve the 'identified need' through the *Regulatory Investment Test for-Distribution* (RIT-D) process.

A summary of SA Power Networks' Network Planning Criteria are published in the *Distribution Annual Planning Report* (DAPR).

An overview of SA Power Networks' *network* planning process is contained in Appendix A.

Demand driven capital expenditure comprises:

- Capacity expenditure: to upgrade the capacity of the existing *distribution network*, in response to spatial peak demand growth; and
- Customer *connections* expenditure: required to *connect* or upgrade specific customers' *connections* to the *distribution network*.

7.2.3 Capacity expenditure

As described above, capacity related expenditure relates to requirements to upgrade the capacity of the *distribution network* in response to spatial demand growth. Capacity related expenditure is a significant component of SA Power Networks' capital expenditure program. It comprises two key components:

- low voltage capacity related works: relating to work to upgrade *distribution transformers* and low voltage mains; and
- feeder, sub-transmission, and substation related works: at *high voltage*.

7.2.3.1 Low voltage capacity program

Distribution transformers and low voltage *network constraints* are forecast based on measured demand from short term load and voltage recorders. These short term recorders are deployed to the sections of the *distribution network* where customer quality of supply enquiries have been received and where it is forecast that there may be overloaded assets (*transformers*, cables etc) based on the number of *connected* customers and their 'After Diversity Maximum Demand' (ADMD).

7.2.3.2 Feeder, sub-transmission, and substation capacity program

SA Power Networks' feeder, sub-transmission, and substation capacity program of works will be generated from:

- requirements to upgrade SA Power Networks' infrastructure resulting from changes to the ETC;
- works associated with changes caused by or required by ElectraNet at our *connection points* with the *transmission system*;
- the identification of a *network constraint* according to the Network Planning Criteria (refer section 7.2.2); or
- a *network extension* required to supply a new customer region (greenfield development areas), as summarised in Appendix A to this document.

The process considers when *network* and/or specific customer load growth breaches the Network Planning Criteria, triggering a *network constraint* that must be addressed by either a *network*, non-*network* solution or a combination thereof. It should also be noted that within SA Power Networks' annual planning process, as described in SA Power Networks' Asset Management Plan, capital projects greater than \$5 million in value (as varied in accordance with a cost threshold determination) are evaluated according to the RIT-D.

7.2.3.3 Consideration of non-network alternatives

SA Power Networks recognises that alternatives to *network* solutions may exist which deliver either a lower cost solution or provide greater benefits to the electricity market (including electricity consumers) as a whole. Non-*network* solutions may include (but are not limited to):

- the use of embedded generation to reduce demand on the *network*;
- shifting consumption to a period outside the peak period;
- increasing customer's energy efficiency; or
- curtailing demand at peak periods, with the agreement of the relevant customer(s).

Non-*network* alternatives are assessed for their viability, either by themselves or in combination with other non-*network* or *network* solutions, and must demonstrate that they:

- resolve all of the identified *network constraints*;
- are technically viable (eg sufficient load reduction can be achieved to remove or delay the identified need);
- are economically viable (ie the combination of costs and benefits exceed those of alternative solutions); and
- are achievable within the required timeframe to resolve the identified need.

All SA Power Networks' capacity related projects estimated to cost in excess of \$5 million (as varied in accordance with a cost threshold determination) are subject to the RIT-D. This test is aimed at determining instances where a non-*network* solution may be applicable in either fully or partially addressing a *network constraint*. Where a project meets certain assessment criteria, and it is deemed that non-*network* options may be viable, a Non-Network Options Report is created and issued seeking alternative solutions to remedy the identified *network constraint*.

7.2.4 Customer connection expenditure

Customer *connection* expenditure is associated with additions, upgrades or alterations resulting from the requirements and requests of specific customers. This expenditure will be divided into a number of categories, being:

- **Basic Connection Services and Minor Negotiated Connections (less than \$30,000)**—*connections* generally associated with new houses or additions and alterations to existing houses;
- **Real Estate Developments**—*connections* to the existing *distribution network* of new housing developments;
- **Rebates**—payments to customers for assets which have been gifted to SA Power Networks; and
- **Major Negotiated Connections (more than \$30,000)**—*connections* generally associated with business investment (for example mining, manufacturing, non-residential buildings, retail centres, agriculture), and government and private infrastructure investment (for example schools, railways and water supply).

SA Power Networks receives funding directly from some customers towards their *connection*, in accordance with the SA Power Networks Connection Policy and relevant AER guidelines. The Customer Contributions total is net of Rebates, which recognise the future income that will be generated through the construction of the customer asset.

7.2.4.1 Customer contribution forecast basis

From 1 July 2015, SA Power Networks' will commence to comply with the AER's *connection charge guidelines* published under clause 5A.E.3 of the Rules. These guidelines will set the method that must be followed by SA Power Networks in determining the capital contribution for customer's addition or alteration to the *distribution network*. SA Power Networks expects that the expenditure versus contribution ratios will change under the *connection charge guidelines*. SA Power Networks will amend its Connection Policy to comply with the *connection charge guidelines*.

In order to forecast Customer Contributions, SA Power Networks will utilise both historical ratios and forecasts reflective of the *connection charge guidelines* for contributions to expenditure within each specific category of customer *connection* expenditure.

7.3 Network expenditure associated with quality, reliability and security of supply

This category of expenditure relates to the requirement to achieve the *capital expenditure objectives* set out in clause 6.5.7(a)(2) and (3) of the Rules to comply with all applicable *regulatory obligations or requirements* associated with the provision of *standard control services* and to generally maintain the quality, reliability and security of supply of *standard control services* and the reliability and security of the *distribution system* through the supply of *standard control services*, and includes expenditure related to:

- **Asset replacement:** expenditure required to maintain an appropriate level of risk, taking into account the age and condition of *network* assets;
- **Security of supply:** to manage the risk of widespread power outages resulting from failures in individual *network elements*; and
- **Reliability expenditure:** being specific projects required to ensure compliance with defined reliability service standards.

7.3.1 Asset replacement

Asset replacement expenditure is associated with the replacement of assets either from failure (unplanned asset replacement) or on the basis of condition or risk (planned asset replacement).

SA Power Networks' forecast expenditure will be determined by:

- for unplanned asset replacement, applying a forecast based on historical failure rates; and
- for planned asset replacement, assessing a probability of failure and the consequence of failure.

For those units of unknown condition, consequence of failure will be considered in conjunction with age, to develop an age-based replacement forecast until such time as condition information becomes available through the asset inspection and/or monitoring program.

7.3.2 Security of supply expenditure

The security of supply expenditure category will include a number of one-off strategic projects, aimed at ensuring the future security of supply of the *distribution network*. Although these projects may reasonably be assigned to other cost categories, they will be separately identified for the purpose of SA Power Networks' expenditure forecasts to provide additional transparency and clarity.

Security of supply expenditure will include expenditure forecasts in relation to SCADA and *network control*, aimed at improving SA Power Networks' *network* management systems, expanding its *network* monitoring and increasing its *network* automation.

7.3.3 Reliability expenditure

Reliability capital expenditure is required to maintain SA Power Networks' compliance with reliability standards and maintain quality customer service as per the current jurisdictional service standards under the EDC.

In the absence of specifically targeted reliability expenditure, SA Power Networks' customers would experience deterioration in reliability performance, as the *network* is subject to being adversely impacted by the increasing age profile of assets, changing *network* configurations, changes to *network* standards and operational procedures and a changing and more uncertain climate. Reliability expenditure is generally targeted to prevent the causes of interruptions, reducing customers impacted or reducing supply restoration times. Whereas Asset Replacement expenditure is associated with 'one for one' replacement of assets, reliability expenditure is generally associated with the installation of new equipment at new locations, in order to maintain reliability performance. This expenditure is managed within an annual Reliability Plan.

In addition, SA Power Networks maintains a suite of emergency response plant including generators and equipment that assist with restoring supply to customers during outages and also to maintain supply during planned maintenance works. Capital expenditure for this equipment is included within the reliability expenditure category.

Reliability capital expenditure is required to maintain, not improve, the reliability of the *distribution network*.

7.4 Expenditure associated with addressing safety and environmental risks

Expenditure within this category is required substantively to achieve the *capital expenditure objective* in clause 6.5.7(a)(4) of the Rules to maintain the safety of the *distribution system* through the supply of *standard control services*. This capital expenditure is associated with:

- **Safety expenditure:** to maintain appropriate safety levels in relation to the *distribution system* for SA Power Networks' workforce and the general public;
- **Environmental expenditure:** to address environmental risks within the *distribution system* and comply with applicable EPA requirements; and
- **Other expenditure:** Power Line Environment Committee (PLEC) undergrounding and a number of other minor expenditure categories.

Similar to the remainder of the capital program, unit costs will be utilised to develop capital expenditure forecasts for safety and environmental projects, using historical building blocks assembled in the standard estimating tool.

7.4.1 Safety expenditure

Safety expenditure is the capital expenditure associated with maintaining appropriate levels of safety in relation to the *distribution system* for SA Power Networks' workforce and the general public. Safety related asset management plans are driven primarily by risk and legislative requirements, but will also consider expectations identified during SA Power Networks' consumer and stakeholder engagement process.

Safety projects will consider factors such as substation security, replacement of safety risk assets and bushfire risk management (e.g. supply arrangements for CFS Bushfire Safer Places).

7.4.2 Environmental expenditure

Environmental expenditure is undertaken to ensure appropriate management of environmental risks, community and social responsibilities, and compliance with EPA and legislative requirements. It will also consider expectations identified from SA Power Networks' consumer and stakeholder engagement process. SA Power Networks' environmental expenditure will contain ongoing programs related to:

- substation transformer oil containment; and
- testing for and phased removal of Polychlorinated Biphenyl contaminated substation assets in accordance with the Australian National Polychlorinated Biphenyl Management Plan.

SA Power Networks has developed asset management plans for each of these programs.

7.4.3 Other expenditure

The Other expenditure category includes expenditure on the following:

- **PLEC expenditure:** regulated expenditure associated with the undergrounding of selected sections of the *distribution network* throughout South Australia. This expenditure is governed by a legislated formula and will also consider expectations identified from SA Power Networks' consumer and stakeholder engagement process;
- **Easement expenditure:** associated with obtaining power line easements that cannot be allocated to specific capital projects; and
- **Other expenditure:** the purchase of *distribution system* assets for training purposes and specialist tools and equipment associated with condition monitoring.

Network Other expenditure forecasts will be based on legislative requirements and stakeholder expectations or past expenditure and scoped variations.

7.5 Non-Network expenditure

Non-*Network* expenditure is not directly referenced in any of the *capital expenditure objectives*, but supports delivery of all four *capital expenditure objectives*. SA Power Networks' categories of non-*network* capital expenditure are:

- Customer Service;
- Information & Communication Technology;
- Property;
- Fleet;
- Regulatory; and
- Plant and Tools.

7.5.1 Customer Service

Customer Service expenditure is associated with the development of capabilities to deliver on customer requirements and key deliverables identified within SA Power Networks' customer service strategies, and an expectation of additional capability identified through ongoing consumer and stakeholder engagement activities.

Customers' needs and behaviours are constantly changing and evolving as new communication devices and new energy technologies emerge, and as customers increasingly desire greater autonomy and control over their interactions with the *distribution system* and SA Power Networks and look for self-service options and multiple channels of communication.

Business cases, including option assessment, will be prepared for additional capabilities to deliver improved customer service.

7.5.2 Information & Communication Technology (ICT)

ICT expenditure is associated with the provision of ICT systems and services to support SA Power Networks' business operations.

The ICT capital expenditure comprises expenditure required to support and maintain the existing ICT applications and infrastructure, and any additional expenditure that may be required to support business operations (for example, to support customer communications).

Historical costs and cost drivers will be utilised to forecast base ICT expenditure, with business cases, including option assessment, prepared for specific initiatives.

7.5.3 Property

Property capital expenditure is associated with the provision of office and depot accommodation, buildings and property in line with operational and WHS requirements, noting that substation property and line easement expenditure forecasts are incorporated within the cost categories referred to in section 7.4.3 above.

Property costs will be categorised as relating to:

- depots and facilities based on:
 - capacity, maintenance requirements, and modification requirements to existing buildings on a location by location basis; and
 - new building generic depot designs costed by independent experts;
- asbestos removal progressively assessed on the basis of risk; and
- depot security fencing based on the 'public' or 'at risk' aspects of existing fence lines.

Historical costs and cost drivers will be utilised to forecast recurrent projects, with business cases prepared for any major new works.

7.5.4 Fleet

Fleet expenditure relates to the purchase, replacement or rebuild costs associated with SA Power Networks' significant commercial and passenger fleet.

The SA Power Networks fleet comprises heavy or commercial fleet, for example, cranes, elevated working platforms, trailers, wire winding equipment etc; and light or passenger fleet, for example cars and utility vehicles.

SA Power Networks' fleet capital expenditure forecast is mainly a zero based aggregate of the individual fleet plans, and incorporates the following:

- heavy and light fleet replacement or capital maintenance expenditure according to either legislative requirements or manufacturers recommendations;
- new fleet associated with forecast employee growth and operating crew structures; and
- compliance to legislation and standards as they apply to the varying categories of Fleet, for example Workplace Harmonisation Act, Compliance and Enforcement Legislation, AS 1418.10, AS2550.10.

Fleet management plans will be provided and expenditure forecasts will be either age, condition or kilometre based.

7.5.5 Regulatory

This category relates to expenditure that will be incurred to meet additional information requirements sought by regulatory and other stakeholder groups. Changes required to existing processes and systems will be assessed and business cases prepared to support expenditure proposals.

7.5.6 Plant and Tools

This expenditure is associated with the purchase of plant and tools, generally for SA Power Networks' field based personnel.

The main drivers for Plant and Tools expenditure are:

- workforce growth;
- new and replacement specialist tools in support of SA Power Networks' condition monitoring strategies; and
- standardisation of plant and tools for the existing workforce.

7.6 Other expenditure

This expenditure is related to abnormal impacts not directly attributable to the achievement of the *capital expenditure objectives*, and incorporates:

- Equity raising costs; and
- Superannuation costs.

7.6.1 Equity raising costs

Equity raising expenditure relates to costs associated with raising capital to enable SA Power Networks' proposed capital expenditure program to be undertaken.

Equity raising costs will be included in SA Power Networks' capital expenditure forecast rather than its operating expenditure forecast because the nature of equity raising is such that it exists in perpetuity until the assets being funded are realised.

Equity raising costs will be forecast consistent with the AER's specified methodology.

7.6.2 Superannuation costs

Superannuation expenditure relates to the capital allocation of the superannuation contributions that SA Power Networks is required to make to the EISS and other superannuation schemes in the next *regulatory control period*.

8. Interaction Between the Capital and Operating Expenditure Forecasts

SA Power Networks is required, as part of its *building block proposal*, to identify and explain any significant interaction between its forecast capital expenditure and forecast operating expenditure for the 2015–2020 *regulatory control period*. Further, in relation to clauses 6.5.6 (e) (6) and (7) and clause 6.5.7(e) (6) and (7) of the Rules, the AER must have regard to the following factors (amongst other factors) in considering whether SA Power Networks' expenditure forecasts reasonably reflect the *capital expenditure criteria* or the *operating expenditure criteria* (as applicable):

- the relative prices of operating and capital inputs; and
- the substitution possibilities between operating and capital expenditure.

These clauses, therefore, require that two key issues be addressed with respect to SA Power Networks' expenditure forecasts, being:

1. Whether a capital or operating expenditure alternative provides the most prudent and cost-effective solution to deliver the required services; and
2. The operating expenditure impact of proposed capital expenditure.

In developing its 2015-2020 *regulatory proposal*, SA Power Networks will give consideration to the relative costs, benefits, and risk characteristics of the options by which it can deliver *standard control services*. The options selected, be they capital or operating, will be those that are assessed as the most prudent and efficient of the alternatives available. Where capital expenditure solutions are selected, SA Power Networks will make off-setting adjustments to the operating expenditure forecast.

Appendix A

Figure A.1: Overview of SA Power Networks' network planning process

