



Supporting  
document 5.11

# Connections Management Plan 2020-2025

2020-2025  
Regulatory Proposal  
January 2019



SA Power Networks

# Connections Management Plan 2020 to 2025



Asset Plan 7.1.01

[www.sapowernetworks.com.au](http://www.sapowernetworks.com.au)

## Contents

<b>Document Control</b> .....	<b>1</b>
<b>Executive summary</b> .....	<b>2</b>
<b>1. Introduction</b> .....	<b>4</b>
1.1 Background and purpose.....	4
1.2 Scope .....	4
<b>2. Obligations &amp; requirements</b> .....	<b>5</b>
2.1 National Energy Customer Framework .....	5
2.2 National Electricity Rules.....	6
2.3 The Connection Policy requirements .....	7
<b>3. Regulatory treatment</b> .....	<b>9</b>
3.1 Service classification .....	9
3.2 Contestability.....	11
<b>4. Connection Policy</b> .....	<b>12</b>
4.1 Obligations to prepare a Connection Policy.....	12
<b>5. SA Power Networks operational management</b> .....	<b>13</b>
5.1 Customer Solutions team .....	13
5.2 Quality Management System & business processes .....	16
5.3 Performance measures .....	17
<b>6. 2020 to 2025 Capex forecast</b> .....	<b>19</b>
6.1 Capex forecasting methodology.....	19
6.2 Capex forecast .....	23
6.3 Our expenditure forecast and next regulatory proposal to the AER .....	24
<b>Definitions</b> .....	<b>26</b>
<b>Document references</b> .....	<b>27</b>
<b>Appendix</b> .....	<b>27</b>
Appendix A – Connections expenditure tables .....	28

## Document Control

Version	Date	Author	Notes
0.1	11/10/18	S.Jolly	Initial document
0.2	18/12/18	S.Jolly	Updated to reflect service classification, BISOE forecasts and other improvements
1.0	15/01/19	S.Jolly	Updated to reflect final Connection Policy & WACC

## Executive summary

Our forecast of the net capital expenditure (net **capex**) necessary to provide connection services over the next regulatory control period (1 July 2020 to 30 June 2025) is **\$239.8 million** (\$2017/18) to provide standard control services, which covers Basic and Negotiated connections services. This forecast allows for (in \$2017/18):

- **\$449.0 million of gross capital expenditure;** and
- **\$209.2 million of customer contribution.**

The net capex forecast of \$239.8 million represents an increase of 24.2% (average \$9.1 million per year) from the historical levels incurred over the last five years (ie, 1 July 2013 to 30 June 2018) compared to our seven-year forecast (ie, 1 July 2018 to 30 June 2025). This change is largely driven by a:

- 6.6% growth in forecast gross capex (average \$5.5 million per year), which is driven by forecast changes in related economic drivers and mixes of connection types (eg, increased Major projects).

This growth stems from a six-year anaemic growth to 2015/16 and then picked up over the last two years (ie, 1 July 2017 to 30 June 2018) due to surging investments and recovery of employment. This (increase investments) is forecast to continue over the next regulatory control period, particularly for the major connection types.

- 7.6% reduction in customer contributions (average \$3.6 million per year), which is mainly due to the:
  - aforementioned economic drivers and connection types;
  - impact of Australian Energy Market Commission's (AEMC) introduction of Metering Contestability<sup>1</sup>; and
  - impact of lower pre-tax WACC of 2.89% for the next regulatory control period.<sup>2</sup>

We have engaged a reputable economic forecaster and analyst, BIS Oxford Economics (formally, BIS Shrapnel), to assist us to prepare this forecast. Importantly, we engaged this expert in a similar role in assisting us prepare our previous proposal to the Australian Energy Regulatory (AER), which included expenditure forecasts to provide connection services for the current regulatory control period. The AER accepted this forecast in forming its decision on our revenue requirement for the current period.

We have fully adopted the National Energy Customer Framework (NECF) at the beginning of the current regulatory control period on 1 July 2015. The NECF is a national framework that was established in 2012, with the intention of providing consistent protections to customers. We are operating within this framework in the current regulatory period, and will continue to operate under it in the next period. This forecast should enable us to continue to comply with our legal obligations associated with providing the level of connection services forecast over the next regulatory period under the NECF.

We have summarised these obligations in this plan, and importantly, detailed our Connection Policy, which will apply over the next regulatory period (pursuant to approval by the AER). The preparation of this Connection Policy is a critical requirement of these obligations. Our policy has been prepared in accordance with the requirements of the National Electricity Rules (NER) and guidelines prepared by the AER<sup>3</sup>.

<sup>1</sup> From 1 December 2017, AEMC's metering contestability rule change transition responsibilities of meter related services from SA Power Networks to retailers for all new and altered connection services.

<sup>2</sup> For example, pre-tax real WACC in 2017/18 was approximately 4.36% - which is used for the Incremental Revenue calculations for residential (30 year NPV) and non-residential (15 year NPV) customers

<sup>3</sup> AER's Connection charge guidelines for electricity retail customers, June 2012

We have also summarised in this plan how we manage the provision of connection services to customers and developers to ensure that these services are compliant with our obligations and provided prudently and efficiently. We have a specialised group within our Network Management department, known as the Customer Solutions group, primarily responsible for the management of connections services in accordance with the Connection Policy and other business governance obligations. Key aspects of this management of customer services, which are covered in this plan, include:

- the structure of the Customer Solutions group;
- the quality management systems (and framework); and
- performance monitoring and reporting.

We believe that the AER should accept these expenditure forecasts as part of its decision on our next regulatory proposal because:

- **NER capex objectives** – this expenditure forecast is necessary for us to comply with our regulatory obligations based on a reasonable forecast of the future demand for connection services.
- **NER capex criteria** – the expenditure forecast should reflect the prudent and efficient costs to deliver these services, given the methodology we have used to prepare the forecast and our management practices and obligations.

## 1. Introduction

### 1.1 Background and purpose

The purpose of this Connection Management Plan (**Plan**) is to demonstrate that:

- we manage the provision of customer connection services appropriately and in accordance with relevant legal obligations; and
- our expenditure and contribution forecasts associated with providing connection services over the next regulatory control period (which will apply from 1 July 2020 to 30 June 2025) is reasonable, given these obligations, our management practices and forecasts of economic activity.

To achieve this purpose, this Plan includes:

- a summary of the legislative and regulatory obligations that underpin the provision of our connection services;
- an explanation of the regulatory treatment of our connection services over the next regulatory control period;
- an overview of our Connections Policy;
- the systems and processes we use to manage and deliver connection services;
- the performance measures and targets we use to monitor and report on the provision of connection services and ensure we are compliant with our obligations and requirements;
- the historical and forecast capital expenditure (**Capex**) and contributions associated with the provision of connection services to the end of the next regulatory period; and
- an explanation of the methodology we have used to prepare this forecast, and our view of why this is appropriate for our circumstances.

### 1.2 Scope

The Plan has scope across all connection services we provide, covering services relating to:

- providing a new connection to our network; and
- altering an existing connection to our network.

The plan covers all the activities that we undertake for connection applicants or retail customers who require these connection services, including the operational activities required for scoping, negotiation, estimating, charging, planning, design, construction and commissioning of the assets that provide these connections services.

Note, for the avoidance of doubt, this Plan does not cover:

- planned network augmentations (**Augex**), which are not specifically associated with providing a connection service; and
- replacement capital (**Repex**) works, which are not specifically associated with providing a connection service.

## 2. Obligations & requirements

### 2.1 National Energy Customer Framework

As part of recent national energy reforms, a framework was established across the National Electricity Market (**NEM**) to provide a consistent approach to the regulation of the connection, supply and sale of energy (electricity and gas) to grid-connected residential and small business energy customers<sup>4</sup>.

This framework is known as the National Energy Customer Framework (**NECF**) and was introduced on 1 July 2012. It provides provisions for:

- the retailer-customer relationship and associated rights, obligations and consumer protection measures;
- distributor interactions with customers and retailers, and associated rights, obligations and consumer protection measures;
- retailer authorisations; and
- compliance monitoring and reporting, enforcement and performance reporting.

We have fully adopted the NECF at the beginning of the current regulatory control period on 1 July 2015. We are operating within this framework and will continue to operate under it in the next period (1 July 2020 to 30 June 2025).

The provisions of the NECF are defined through various national and jurisdictional legal instruments associated with the retailing and distribution of electricity (and gas)<sup>5</sup>. The National Energy Retail Law, National Energy Retail Regulations, National Energy Retail Rules, and associated AER guidelines define many of the provisions that constitute the NECF.

However, in the context of connection services we provide and this Plan, the two most relevant instruments are the:

- National Electricity Rules (**NER**); and
- Connection charge guidelines for electricity retail customers, which is published on June 2012 by the AER, pursuant to requirements of the NER.

---

<sup>4</sup> Previously, each state, including South Australia, had its own jurisdictional arrangements.

<sup>5</sup> Refer to AEMC's website ([www.aemc.gov.au](http://www.aemc.gov.au)) for a more comprehensive listing of relevant legal instruments  
[www.sapowernetworks.com.au](http://www.sapowernetworks.com.au)

## 2.2 National Electricity Rules

The National Electricity Rules (**NER**) governs the operation of the NEM. The NER have the force of law, and are made under the National Electricity Law (**NEL**). The NER, among other things, requires us to provide access to our distribution network (**Network**) on fair and reasonable terms.

It prescribes various requirements and obligations on us associated with providing connections services to customers. It also defines how these services should be treated within the economic regulatory framework administered by the Australian Energy Regulator (**AER**).

More specifically:

- a) **Chapter 5A** prescribes the requirements and obligations associated with the connections of customers to our network. This chapter is an important element of the NECF and covers a range of matters, including the process and obligations associated with:
  - providing standardised offers to Customers in order to deliver basic and standard connection services (Part B);
  - providing a negotiated connection service to a Customer (Part C);
  - managing applications for new or altered connection services (Part D);
  - charging and paying for connection services (Part E);
  - formation and integration of contracts for connection services (Part F);
  - the resolution of disputes associated with the provision of connection services under 5A between Customers and distribution network service providers (Part F); and
  - minimum content requirements for a connection contract (Schedule 5A.1).
- b) **Chapter 6** prescribes the requirements and obligations associated with the economic regulation of distribution services. This covers those connections services that are approved by the AER to be classified as either a direct control service or a negotiated service.

This classification determines how revenue and/or prices associated with these services are regulated by the AER. Most notably with regard to the economic regulation of connection services, this chapter provides requirements and obligations associated with:

- providing access to the Customers connections services, which have been deemed as direct control or negotiated services, on the terms and conditions determined under the NER (Clause 6.1.3) – we will discuss the AER’s decision on the classification of our connection services in Section 3.1; and
- the preparation and approval of our Connection Policy, which we must prepare and the AER must approve, for those connection services covered by Chapter 6 (Part DA) – we will discuss our Connection Policy further in Section 4.

## 2.3 The Connection Policy requirements

Part DA of Chapter 6 of the NER provided the rules associated with the preparation and approval of our connection policies. An important aspect of these rules is that we prepare a document, called a Connection Policy, which sets out the circumstances that we may require a retail customer or real estate developer to pay a connection charge for the connection service provided under Chapter 5A<sup>6</sup>. These connection services are those that the AER decided should be classified as standard control services.

The Connections Policy must specify a range of matters, covering<sup>7</sup>:

- the categories of Customers that may be required to pay a connection charge;
- the circumstances in which such a requirement may be imposed;
- the aspects of a connection service for which a connection charge may be made;
- the basis on which connection charges are determined;
- the manner in which connection charges are to be paid (or equivalent consideration given); and
- a threshold below which a Customer will not be liable for a connection charge for an augmentation other than an extension.

Importantly, the arrangements and our charges for these types of connection service must be consistent with<sup>8</sup>:

- a series of principles set out in 5A.E.1 of the Rules (the connection charge principles); and
- a guideline prepared by the AER, under 5A.E.3 of the Rule (the AER Connection charge guideline for electricity retail customers)<sup>9</sup>.

### The connection charge principles

The connection charge principles define the requirements and limitations that our connection charges must adhere to, for those connection services covered by Chapter 5A. These principles broadly cover the following matters:

- circumstances when customers or developers can and cannot be required to make **capital contributions** associated with **augmentations** or **extensions** to our existing network necessary to provide the connection service; and
- circumstances when we will **refund** customers or developers portions of their charges for connections service when we may make use of the connection assets charged to them for subsequent customers and developers requesting connection services.

---

<sup>6</sup> Rules 6.7A.1

<sup>7</sup> Rules 6.7A.1 (b)(2)

<sup>8</sup> Rules 6.7A.1 (b)(1)

<sup>9</sup> AER's "Connection charge guidelines for electricity retail customers", June 2012

[www.sapowernetworks.com.au](http://www.sapowernetworks.com.au)

### **The connection charge guideline**

To help us develop a connection policy that is in accordance with Chapter 5A of the NER (and the intention of the NECF), the AER must publish the connection charge guidelines for electricity retail customers<sup>10</sup>. The purpose of this guideline is to ensure that our charges for connection services are in line with the connection charge principles, reflect efficient costs, limit cross subsidies between customer classes, and where contestability exists, this is provided on a competitively neutral basis.

To achieve this, the guideline covers various matters, including:

- the method we must use to determine charges;
- the circumstances when we can receive some form of financial contribution or guarantee and the method we must use to determine the amount; and
- the methods and principles we must apply to determine charges, contributions and refunds associated with any augmentations or extensions of the network that are necessary to provide the requested customer service, including thresholds when such charges, contributions or refunds will not apply.

---

<sup>10</sup> NER 5A.E.3

## 3. Regulatory treatment

### 3.1 Service classification

Pursuant to its obligations under Chapter 6 of the Rules, in July 2018, the AER published its final framework and approach (**F&A**) in preparation to making a decision of our next regulatory control period, which will operate from 1 July 2020 to 30 June 2025. This F&A document sets out the AER’s position on which of our services, including connection services, it will regulate and the broad nature of the regulatory arrangements it will apply to these services.

Importantly, the AER has decided that all of our existing services that are currently classified as negotiated distribution services (**NDS**) will be reclassified to be direct control services for our next regulatory control period. Most notably with regard to connection services, there are two service types; Standard connection services and Enhanced connections services.

#### 3.1.3 Standard connections services

Standard connection services will be classified as a standard control service (**SCS**), under the direct control service category for the next RCP.

The treatment for these services will fall under the (AER approved) Connection Policy<sup>11</sup>, and are provided by us on a least cost technically acceptable solution (**LCTAS**) basis – where the AER has described LCTAS as the cheapest connection method, including both material and labour costs that is consistent with industry practice and meets the requirements of any relevant legislation, guidelines or codes.<sup>12</sup>

Within Standard connection services, there are two distinct types, as summarised in Table 1 below:

**Table 1 Standard Connection Services**

Standard Connection Services			
Connection type	Description	AER Service classification	Contract type
<b>Basic connection service</b>	<p>Basic connection services are those connection services we provide on a routine basis. This type of connection service includes both new connections or alterations to existing connections, which generally involve minimal or no augmentation/extension of our network. These services are generally provided to the following customers:</p> <ul style="list-style-type: none"> <li>residential customers (requiring no extension or upgrade);</li> <li>small business customers up to a capacity of 100 amps per phase or less; and</li> <li>small embedded generators with a generating capacity of less than 5kW for a single-phase connection or 30kW for a three-phase connection (eg most customers who wish to install solar PV panels on their premises).</li> </ul>	<b>Standard Control Service (SCS)</b>	<p><b>Model Standing Offer (MSO)</b></p> <p>A MSO contains a default set of terms and conditions that are approved by the AER.<sup>13</sup></p> <p>However, a customer may seek to negotiate their individual connection contract. This will be provided as a Negotiated Offer<sup>14</sup></p>
<b>Negotiated connection service</b>	<p>Negotiated connection services are generally more complex and more likely to require us to augment or extend our network. Where the estimated costs of a new or altered connection exceed the estimated revenue, the connection applicant may be required to contribute toward the costs of the premises connection assets and any required network extensions.</p> <p>A shared network augmentation charge may also apply where the customer’s estimated maximum demand exceeds the threshold of:</p>	<p><b>Standard Control Service (SCS)</b> for extensions and network augmentation</p> <p><b>Alternative Control Service (ACS)</b> for premises connections</p>	<p><b>Negotiated Offer</b></p> <p>A Negotiated Offer is where a connection applicant is provided or elect to negotiate the terms and conditions on which the connection service is to be provided<sup>15</sup>. Typically, this is</p>

<sup>11</sup> Refer to Section 4. Connection Policy of this document

<sup>12</sup> AER’s “Connection charge guidelines for electricity retail customers”, June 2012. Refer to Section 2.4.2

<sup>13</sup> NER 5A part B

<sup>14</sup> NER 5A part C

<sup>15</sup> NER 5A part C

	<ul style="list-style-type: none"> <li>70kVA, or 25kVA where a connection applicant’s premises are supplied from a non three-phase network such as the 19kV SWER (Single Wire Earth Return) network; or</li> <li>0 kVA if connection applicant is a real estate developer.</li> </ul> <p>The connection related works may include:</p> <ul style="list-style-type: none"> <li><b>premises connections</b> – includes any additions or upgrades to the connection assets located on the customer’s premises (but excluding metering services);</li> <li><b>extensions</b> – includes any new additions required to connect a powerline from our network to the Customer’s connection assets; and/or</li> <li><b>network augmentation</b> – includes any enlargement/enhancement of our existing network, which is not an extension.</li> </ul>		provided on a quoted (offer) basis.
--	---	--	-------------------------------------

### 3.1.3 Enhanced connection services

Enhanced connection services will be classified as an alternative control service (**ACS**), under the direct control service category for the next RCP.

These connection services do not fall under the Connection Policy because they are provided at a standard that is above the LCTAS (at the request of the customer), and any incremental cost to provide these services will be fully recovered by the requested customer. This is summarised in Table 2 below.

**Table 2 Enhanced Connection Services**

Enhanced Connection Services			
Connection type	Description	AER Service classification	Contract type
<b>Enhanced connection service</b>	<p>These connection services are provided at a standard that is above the LCTAS, at the request of customers, where any incremental costs will be fully charged. This category also includes connections for large embedded generators.</p> <p>Examples would include requests for a connection service that has:</p> <ul style="list-style-type: none"> <li>increased (or decreased, where permissible) reliability, standards and/or regulatory requirements (eg duplicate supply, dedicated assets, upgrade from overhead to underground service etc);</li> <li>excess levels of capacity or service (eg upgrade of single-phase to three-phase, excess asset capacity, specialised/non-standard technical services etc); and/or</li> <li>large embedded generators with a generating capacity of equal to or more than 5kW for a single-phase connection or 30kW for a three-phase connection.</li> </ul>	<b>Alternative Control Service (ACS)</b>	<p><b>MSO and/or Negotiated Offer</b></p> <p>A Negotiated Offer is where a connection applicant is provided or elect to negotiate the terms and conditions on which the connection service is to be provided<sup>16</sup></p>
<p><b>Notes</b></p> <ul style="list-style-type: none"> <li>for <b>Enhanced connection services</b>, customers are typically required to make a capital contribution that is additional to any other requested services including a request for a Standard connection service (as per <b>Table 1</b> above); and</li> <li>this capital contribution will be determined on a quoted (offer) basis (ie Negotiated offer), and aligning to the AER’s ACS quoted service approach of its final F&amp;A.</li> </ul>			

<sup>16</sup> NER 5A part C

### 3.1.3 Contractual terms of Standard & Enhanced connection services

The contractual terms which govern SA Power Networks' and the customer's rights and obligations in respect of a new connection or connection alteration may be set out in a:

- **Model Standing Offer (MSO)**

These model standing offers are approved by the AER. SA Power Networks has two types of model standing offer – one for retail customers who do not have embedded generation and one for retail customers who have micro embedded generation (ie, small scale generation such as solar PV panels)

- **Negotiated connection contract (Negotiated Offer)**

This is a contract negotiated between SA Power Networks and a connection applicant in accordance with the procedures in Chapter 5A of the National Electricity Rules. This will be applicable either where:

- a) the connection applicant seeks a service which does not fall within a model standing offer; or
- b) the connection applicant seeks a service which does fall within a model standing offer but the applicant elects to negotiate the terms upon which the service is provided.

Under the Rules SA Power Networks may charge a connection applicant for a negotiated connection contract a reasonable fee to cover expenses directly and reasonably incurred in assessing the applicant's application and making a connection offer.

Note the above contracts govern the process of establishing or altering a connection. Separate provisions govern the maintenance of the ongoing customer connection (those terms of an ongoing customer connection can be negotiated as part of a negotiated connection contract).

## 3.2 Contestability

The AER's F&A decision on the regulatory treatment of connection services and its service classifications do not define what elements of the connection service are contestable. Our customers can elect to have part of the works associated with the connection services to be performed by an alternative service provider, if applicable.

However, we must determine the contestable parts of the connection service to ensure that the reliability and security of our existing network would not be compromised. Typically, contestable components of the connection services will be those parts that can be built in isolation of our existing Network. These parts are known as contestable network 'extensions' in our negotiated offers to customers.

## 4. Connection Policy

### 4.1 Obligations to prepare a Connection Policy

In accordance with the NER, we have prepared a Connection Policy that covers the Standard connection services we will provide over the next regulatory control period (1 July 2020 to 30 June 2025), which the AER has determined to be classified as standard control services (as discussed in Section 3.1). The AER will approve this policy as a constituent decision of the determination for that regulatory control period, and consequently, it will remain in force for the entirety of that period.

To view our (as yet, unapproved) Connection Policy for the next regulatory control see Attachment 16 - Connection Policy.

This Connection Policy provides a set of guidelines that defines the conditions of our negotiated offer and the circumstances where customers are required to contribute towards a new or upgraded electricity service connection from our distribution network to their premises. This include amounts we will charge for:

- the provision of the connection assets necessary to provide the agreed connection service;
- any augmentations to our existing Network and/or Network extensions that are necessary to provide the agreed connection service;
- ancillary costs necessary for the provision of the offer or for completion of the connection service (eg, scoping and planning, etc); and
- contributions towards a pioneer scheme, if applicable.

The Connection Policy also includes:

- rebates we will provide, including an amount associated with an Incremental Revenue Rebate (this rebate is included as part of the negotiated offer, which is then offset against any applicable charges);
- the methods used to calculate the separate components of the offer;
- the conditions associated with timeframes for the provision of the offer and payment terms required to complete construction of the assets necessary to provide the connection service; and
- security fees and a dispute resolution procedure.

## 5. SA Power Networks operational management

In this section, we discuss how we manage the provision of connection services within our business. There are three key elements of our management of these services that we believe will ensure that:

- the services are provided to our customers prudently and efficiently; and
- the services and charges comply with relevant obligations.

These three elements are:

- the structure of our team that manages the delivery of these services;
- the quality management systems (and framework) that this team must work within; and
- the measures that we use to monitor and track the performance of this team.

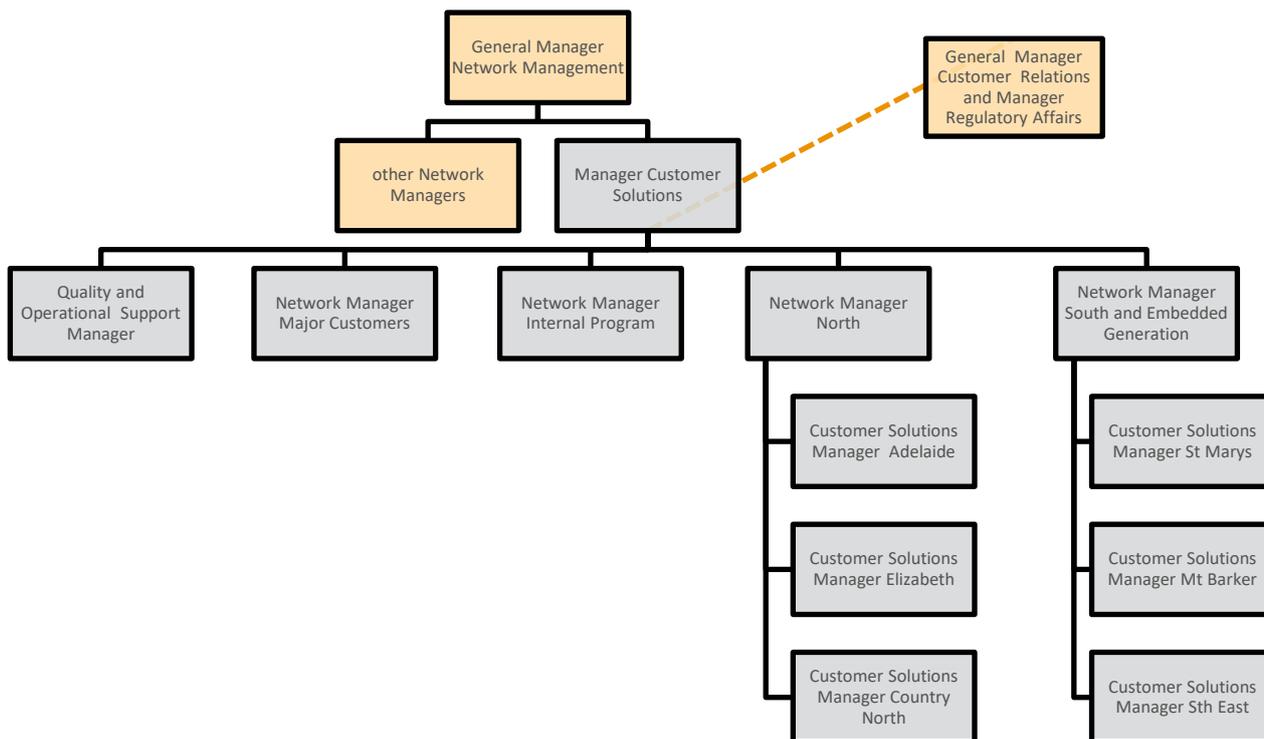
We discuss these elements below.

### 5.1 Customer Solutions team

We have a specific department within our Network Management group, called the Customer Solutions department, that is primarily responsible for customer management and the provision of connection services. This department manages the delivery of all the connection services covered by this Plan, including new and upgraded supplies and alterations to the distribution network.

This department is required to deliver these customer services within quality procedures that we have defined to achieve:

- the regulatory service standards;
- the requirements and objectives of the NER; and
- internal performance targets.



**Figure 1. Organisational structure of Customer Solutions**

Figure 1 provides an overview of the organisational structure of the Customer Solutions department. The manager of the Customer Solutions department (Manager Customer Solutions) reports directly to the General Manager of Network Management. The primary managers responsible for the delivery of connection services report directly to the Manager Customer Solutions. These managers are:

- **Network Manager Major Customers** who is responsible for strategic in nature works for retail and real estate development customers and various state and federal government identities.
- **Network Manager North** and **Network Manager South and Embedded Generation** are regional managers who are responsible for the non-major customer connections services.
- **Quality and Operational Support Manager** who is responsible for our management and support of our quality systems including our processes and reporting to ensure good governance over our customer management and works program delivery.

The two regional managers have teams responsible for specific areas within each region. These area teams can efficiently and effectively manage the local work in their area, including understanding local requirements and interacting with the local community, which in turn feeds into our consumer engagement processes.

Importantly, the Manager Customer Solutions and Manager Regulatory Affairs have a joint obligation to maintain our connections regulatory obligations, ensuring we are compliant with the obligations discussed in Section 2.

As our connection services are inherently customer centric, the Manager Customer Solutions also have joint operational responsibilities with the General Manager Customer Relations to ensure that our practices contribute to the long-term interest of customers and what they value. Figure 2 below provides an overview of our corporate business strategy focused on our customers.

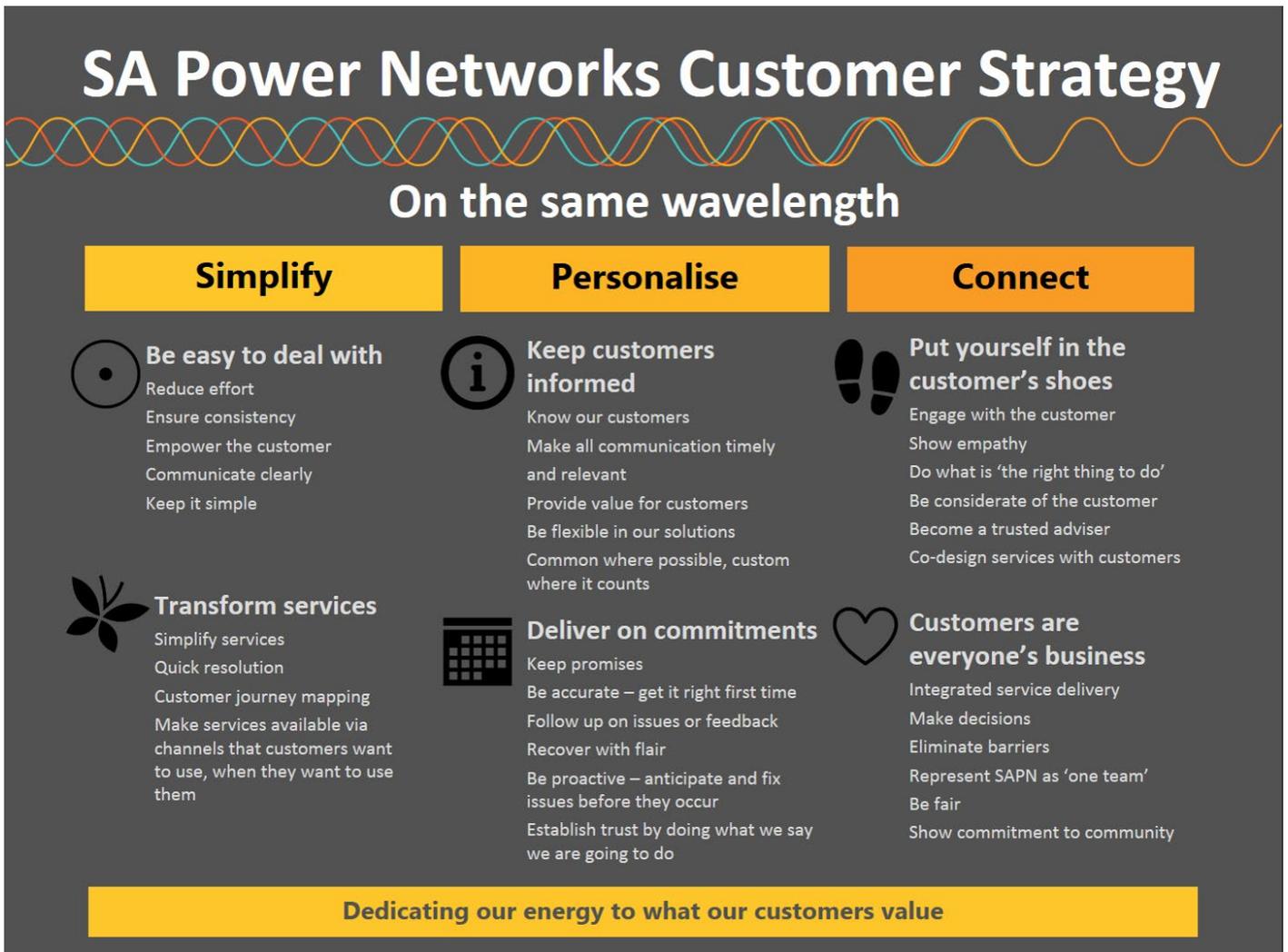


Figure 2. SA Power Networks Customer Strategy – “On the same wavelength”

To assist our customers, prospective customers and developers, we provide various process diagrams, forms and other general information on our website at:

[www.sapowernetworks.com.au](http://www.sapowernetworks.com.au)

In addition, a fact sheet explaining our connection charges titled 'Customer Connection Charges Explained', which includes an explanation of how to seek further assistance from us, can be found on our website at the following link:

[www.sapowernetworks.com.au/connections/](http://www.sapowernetworks.com.au/connections/)

## 5.2 Quality Management System & business processes

As noted above, our quality management system is an important part of our management process associated with providing connection services. This system helps ensure that services are provided that should be compliant with relevant obligations and requirements.

We are committed to providing customers with quality electricity infrastructure and associated services, which complies with regulatory requirements, technical standards, and appropriately balances costs and quality. To assist in achieving this goal, a Quality Management System that is externally accredited to AS/NZS ISO 9001:2015 has been adopted within the broader Network Management group. This system includes a comprehensive set of business procedures, work instructions and associated documentation that enable our staff to process our customer requests in a manner that benefits our customers, as well as our other major stakeholders.

Working within this Quality Management System ensures consistent governance of our obligations and our delivery of products and services that our customer value. To achieve this, we (among other things):

- commit to maintain the Quality Management System by addressing both risks and opportunities to ensure ongoing compliance with ISO 9001:2015;
- establish and drive quality assurance principles in our operational practices by adopting best practice process approach towards business management that drives consistency, efficiency and added value across the workplace;
- ensure compliance to our regulatory and legal obligations, standards and requirements in all what we do;
- seek customers' feedback to better align our strategic objectives and future plans for connection services and other services we provide;
- foster a customer driven and continuous improvement mindset amongst internal staff. We do this by committing and supporting our staff on all levels to take ownership and responsibility to solve problems, seek opportunities to make improvements, and enhance their competencies, knowledge and experience.

Our processes relating to connection service requests covers all new connection or alteration work tasks, including projects from a single residential dwelling (Basic connection services) to all sizes of commercial, industrial, and real estate developments (Negotiated connection services). The key milestones in the processes allow for accurate recording of regulatory performance standards, which is further discussed in the next section below.

### 5.3 Performance measures

Measuring and reporting on the performance of the Customer Solutions department and the delivery of connections services plays a critical role in ensuring compliance to our regulatory obligations and driving productivity improvements.

We measure and report on performance on a monthly basis (or more often, as needed). The measures we track cover a range of matters including compliance with regulatory service targets related to customer quoting and connections as well as general business performance and statistics.

Routine reporting on our compliance with service standards is important to ensure that regulatory standards associated with the NECF are monitored, reported appropriately and combined with other statistics can provide a picture of activity such that workloads can be balanced to achieve performance targets.

The key NECF service standards we monitor our compliance to for each connection service enquiry include:

- the timeframe to respond to a connection ‘enquiry’ (5 days)
- the timeframe to provide a **Model Standing Offer** (10 days)
- the timeframe to provide a **Negotiated Offer** (65 days)

We show how these standards relate to our internal processes for managing connection enquiries and offers in Figure 3 below.

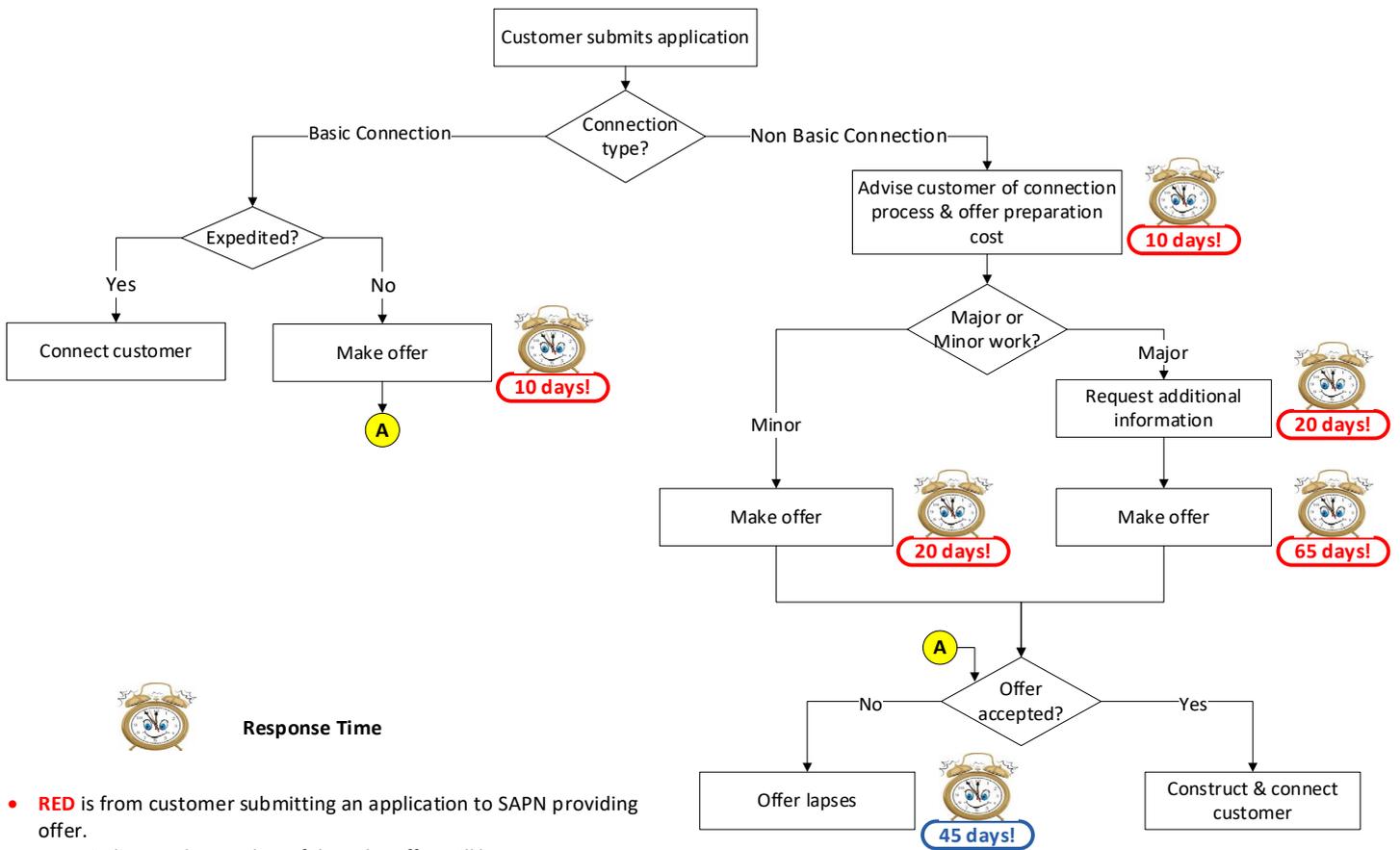


Figure 3. Diagram of Standard connection services

We also prepare statistical information of various measures in order to display various trends that we use to predict the changes due to local or general economic conditions. These measures include types of services requested (ie minor, major, real estate developments, etc) and the numbers of indicative quotations, formal offers and offers accepted.

We also monitor various financial KPIs associated with the delivery of connection services. These KPIs are an important part of our monthly performance report. These KPIs track other information that is important to the prudent and efficient delivery of connection services, including:

- construction lead times;
- response times from our other departments;
- information related to refurbishment/replacement projects; and
- summary information on other capital projects.

## 6. 2020 to 2025 Capex forecast

The levels of connection services we deliver and in turn the expenditure necessary to provide those services is dependent on the level of economic activity in South Australia. Therefore, we have engaged a reputable economic forecaster and analyst, BIS Oxford Economics (formally, BIS Shrapnel), to assist us prepare forecasts of the expenditure that we will require to provide connection services from 2018/19 to 2025/26, which covers our next regulatory control period.

Importantly, we engaged BIS Oxford Economics in a similar role in assisting us prepare our previous proposal to the AER, which included expenditure forecasts to provide connection services for the current regulatory control period. The AER accepted this forecast in forming its decision on our revenue requirement for the current period.

BIS Oxford Economics has used a similar method to prepare our forecast for the next regulatory control period. To view their report, detailing their method and forecasts, see Supporting Document 5.12- BIS Oxford Economic - Gross customer connection forecasts to 2025/26.

In this section we will provide:

- a summary of the forecasting methodology; and
- the expenditure forecasts.

### 6.1 Capex forecasting methodology

As a starting point for preparing the forecast, we have classified all connection services into four physical types, which reflect the broad scale and complexity of the connection works. Individual forecasts are developed for each of these connection types, which can then be aggregated to produce the overall connection service forecast.

The four connection types we have defined for this purpose are:

- Minor Customer Connections (projects less than \$30,000)
- Medium Customer Connections (projects between \$30,000 and \$100,000)
- Major Customer Connections (projects greater than \$100,000)
- Real estate developments (**RDs**), which will typically cover underground residential development projects

This classification was chosen as we consider it strikes an appropriate balance between:

- the data that can be readily extracted from our data systems;
- the various economic measures that drive levels of activity in these connection types; and
- cost differentials between the connection types.

With regard to service classifications (discussed in Section 3.1), the Minor Customer Connections classification primarily includes Basic connection services and minor Negotiated connection services. The other three physical types (ie Medium, Major and RDs), are typically of a complex and/or larger Negotiated type connection service.

The methodology used to prepare the connections expenditure and contributions forecast for each of these four categories is summarised in Table 3. These forecasts relied on:

- economic data sourced from the Australian Bureau of Statistics (**ABS**), in particular ABS catalogue numbers 8752.0 (Building Activity), 8762.0 (Engineering Construction) and 8731.0 (Building Approvals), and the Department of Planning, Transport and Infrastructure South Australia;
- BIS Oxford Economics forecast of the above economic indicators;
- our historical (actual) performances, including recent performances affected by AEMC’s Metering Contestability rule change; and
- other forecast data, including major projects that are likely to proceed (ie, having greater than 50% probability of proceeding).

For each of the four connection categories, we have assumed that the proportion of the customer contribution to the connection expenditure in that category reflects the:

- new Connection Policy (2020/21 to 2024/25 period);
- our recent historical average, including impacts of lower contributions due to Metering Contestability<sup>17</sup>; and
- our forecast of a lower pre-tax real WACC.<sup>18</sup>

The contribution basis is also summarised in Table 3.

The unit costs for each category are implied as constant because of the methodology utilised by BIS Oxford Economics in their forecast. It should be noted that most of these works, where applicable, are contestable up to the connection point under our framework. Competitive pressures can therefore be relied upon to drive efficient costs. The unit cost basis is summarised in Table 4.

---

<sup>17</sup> Following the introduction of the Power of Choice reforms on 1 December 2017, which introduced contestability to metering services, SA Power Networks no longer provides metering services for new connections or connection alteration requests. Connection applicants will be required to obtain metering services through their energy retailer

<sup>18</sup> In 2017/18 pre-tax WACC was approximately 4.6%. For the next regulatory control period, we are proposing a pre-tax real WACC of 2.89%. This impacts the Incremental Revenue calculation of a customer’s connection request, affecting their upfront contributions.

**Table 3 Summary of forecast developers & methodology**

Connection types	Forecast developer	Expenditure forecast basis	2020/21 to 2024/25 Contribution forecast basis
<b>Minor Customer Connections</b> (Projects <\$30,000)	BIS Oxford Economics  SA Power Networks	The minor connections expenditure model uses various economic drivers and historical data from ABS and SA Power Networks, as follows: <ul style="list-style-type: none"> <li>total residential building projects expenditure is assumed to be driven by forecasts of house commencements activity, and alterations and additions approval activity for South Australia;</li> <li>small commercial activity is assumed to be driven by the real value of non-residential commencements for buildings with an individual value below \$1 million; and</li> <li>URD connections expenditure model is assumed to be driven by total house commencements.</li> </ul> Underpinning the forecasts of residential building and non-residential building activity are BIS Oxford Economics’ forecasts of South Australian population growth.	Historical contribution levels, adjusted to reflect: <ul style="list-style-type: none"> <li>new Connection Policy 2020-25;</li> <li>recent impact of Metering Contestability rule change (Dec 2017) – where we are no longer responsible for metering services, including receipt of related contributions; and</li> <li>lower pre-tax WACC for the next regulatory control period</li> </ul> Our forecast contribution level is estimated to be <b>33%</b> of expenditures for Minor projects over the next 7-year, compared to recent 5-year historical average of 52%.
<b>Medium Customer Connections</b> (Projects \$30,000 to \$100,000)	BIS Oxford Economics  SA Power Networks	The medium connections expenditure model is based historical data from ABS, SA Power Networks, and on forecasts of the following drivers: <ul style="list-style-type: none"> <li>the real value of non-residential building commencements for projects below \$20 million; and</li> <li>the number of ‘other’ dwelling commencements, in particular, flats (Catalogue No. 8752.0).</li> </ul> These two drivers are weighted because it was found that changes in the value of non-residential building commencements had a greater impact on medium customer connections expenditure than changes in the commencement of flats.	Historical contribution levels, adjusted to reflect: <ul style="list-style-type: none"> <li>new Connection Policy 2020-25;</li> <li>recent impact of Metering Contestability rule change (Dec 2017) – where we are no longer responsible for metering services, including receipt of related contributions; and</li> <li>lower pre-tax WACC for the next regulatory control period</li> </ul> Our forecast contribution level is estimated to be <b>29%</b> of expenditures for Medium projects over the next 7-year, compared to recent 5-year historical average of 36%.
<b>Major Customer Connections</b> (Projects >\$100,000)	BIS Oxford Economics  SA Power Networks	The forecasts for major connections expenditure were developed from a “bottom-up” process, as follows: <ul style="list-style-type: none"> <li>SA Power Networks forecasts of major project developments where reconciled with BIS Oxford Economics’ list of major projects in the infrastructure (engineering construction) and non-residential</li> </ul>	Historical contribution levels, adjusted to reflect: <ul style="list-style-type: none"> <li>new Connection Policy 2020-25;</li> <li>recent impact of Metering Contestability rule change (Dec 2017) – where we are no longer responsible for metering services, including receipt of related contributions; and</li> </ul>

Connection types	Forecast developer	Expenditure forecast basis	2020/21 to 2024/25 Contribution forecast basis
		<p>building sectors. This was used to produce a list of possible major connection projects, covering their starting dates, load (ie kVA), estimated connection cost, and likelihood of proceeding;</p> <ul style="list-style-type: none"> <li>any projects below a 50% likelihood of proceeding were removed, but the timing, probability and value of removed projects were noted and taken into consideration; and</li> <li>the estimate connection cost of each included major project was summed, including an allowance for future projects yet to be requested by customers (based on historical data) to arrive at a grand total.</li> </ul>	<ul style="list-style-type: none"> <li>lower pre-tax WACC for the next regulatory control period</li> </ul> <p>Our forecast contribution level is estimated to be <b>53%</b> of expenditures for Major projects over the next 7-year, compared to recent 5-year historical average of 59%.</p>
<b>Real Estate Developments</b> (RDs)	BIS Oxford Economics  SA Power Networks	The RD forecast is based on the residential forecast, including an allowance for future projects yet to be requested by customers (based on historical data), as per Minor Connections, as URDs lead new housing commencements.	Our forecast contribution level is estimated to be <b>142%</b> of expenditures, compared to recent 5-year historical average of 153%.
<b>Contributions</b>	SA Power Networks	N/A	Historical contribution levels, adjusted to reflect impact of Metering Contestability (Dec 2017), lower pre-tax WACC, and new Connection Policy 2020-2025

Table 4 Summary of unit costs basis

Connection types	Associated unit cost basis
<b>Minor Customer Connections</b> (Projects <\$30,000)	Historical costs as per Minor connections.
<b>Medium Customer Connections</b> (Projects \$30,000 to \$100,000)	Historical costs as per Medium connections.
<b>Major Customer Connections</b> (Projects >\$100,000)	Based on capital building blocks (SA Power Networks Quality Management System ProEst), which are updated with historical costs. Where a project is not scoped, costs are based on “like” projects or a combination thereof.
<b>Real Estate Developments</b> (RDs)	Historical costs as per RD connections.

## 6.2 Capex forecast

The three figures below show the customer connections forecasts for the connection types discussed above. These figures show the forecast from **2018/19 to 2024/25** (\$2017/18) relative to the actual levels from **2010/11 to 2017/18**. For further details, please refer to Appendix C.

### Gross connection expenditure (year ended June, \$2017/18) - Jan 2019

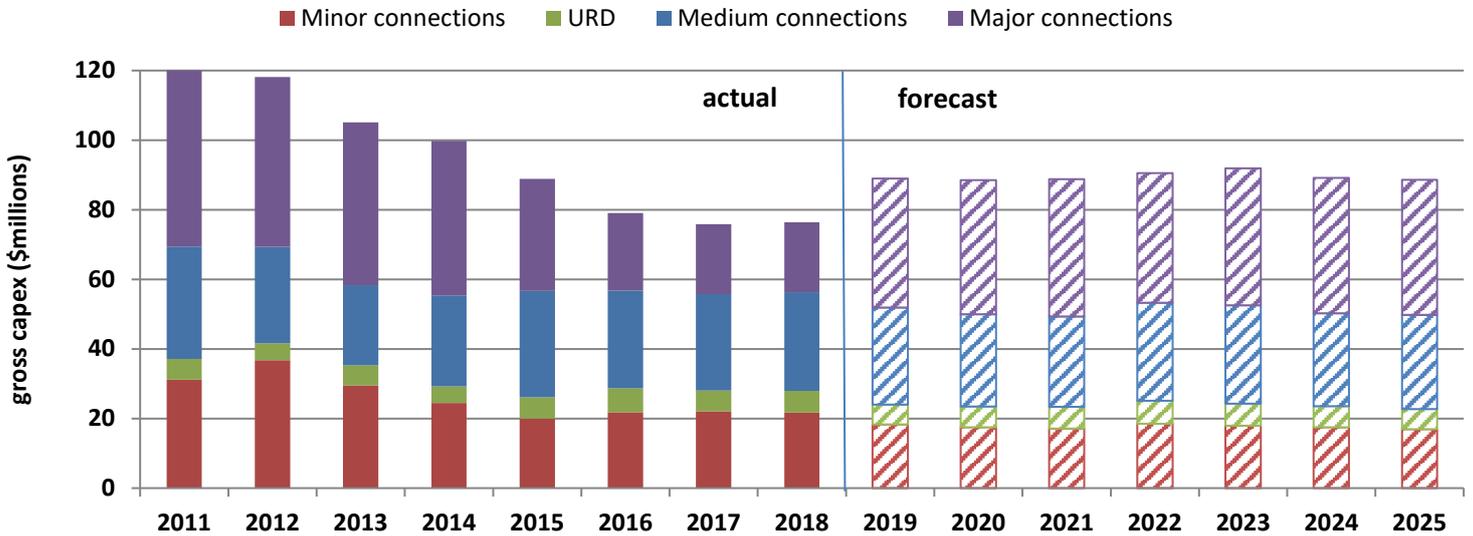


Figure 4. Gross connections expenditure

Figure 4. show that gross expenditure on customer connections is forecast to average \$89.5 million over the 7-year period to 2024/25, with only a small overall increasing trend over this period due mainly to an increase in the Major projects category. This average represents a modest increase of approximately 6.6% from the average expenditure on customer connections over the last 5-year period (\$84.0 million).

### Customer contribution (year ended June, \$2017/18) - Jan 2019

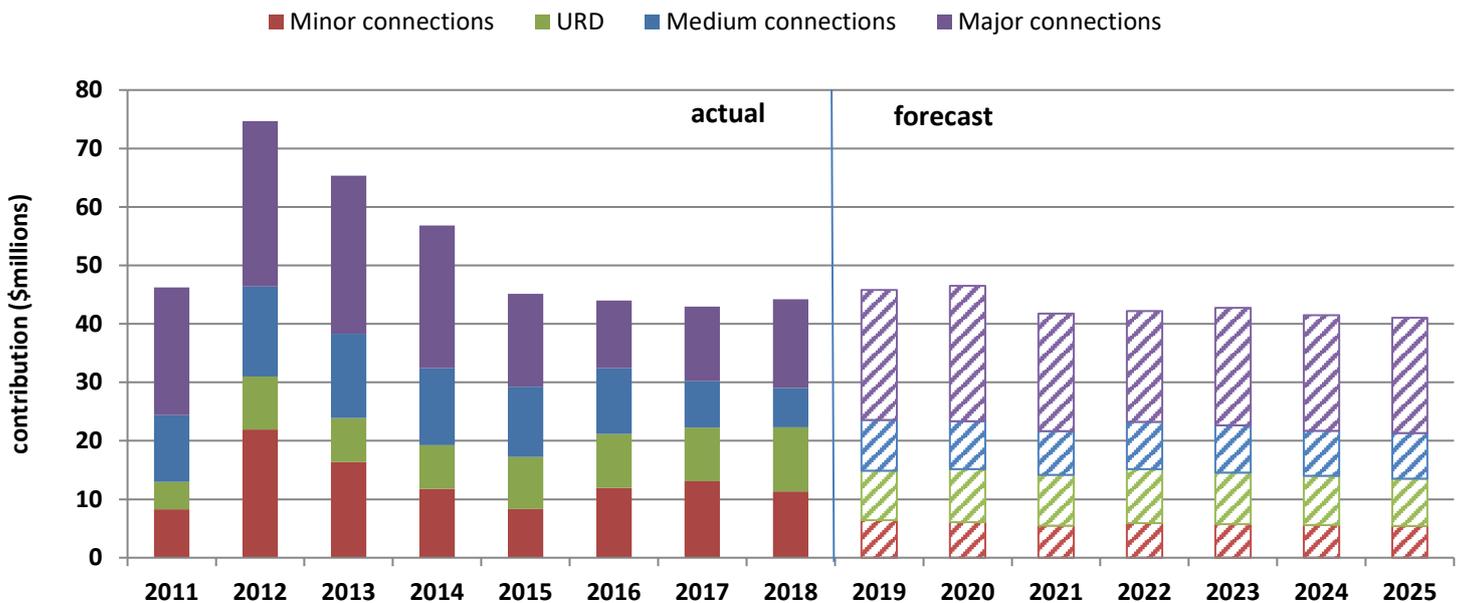


Figure 5. Customer contributions

Figure 5. shows that the customer contribution is forecast to average \$43.1 million over the 7-year period to 2024/25. This average represents a modest reduction of approximately 7.6% from the average customer contributions over the last 5-year period (\$46.6 million).

### Net capital expenditure (year ended June, \$2017/18) - Jan 2019

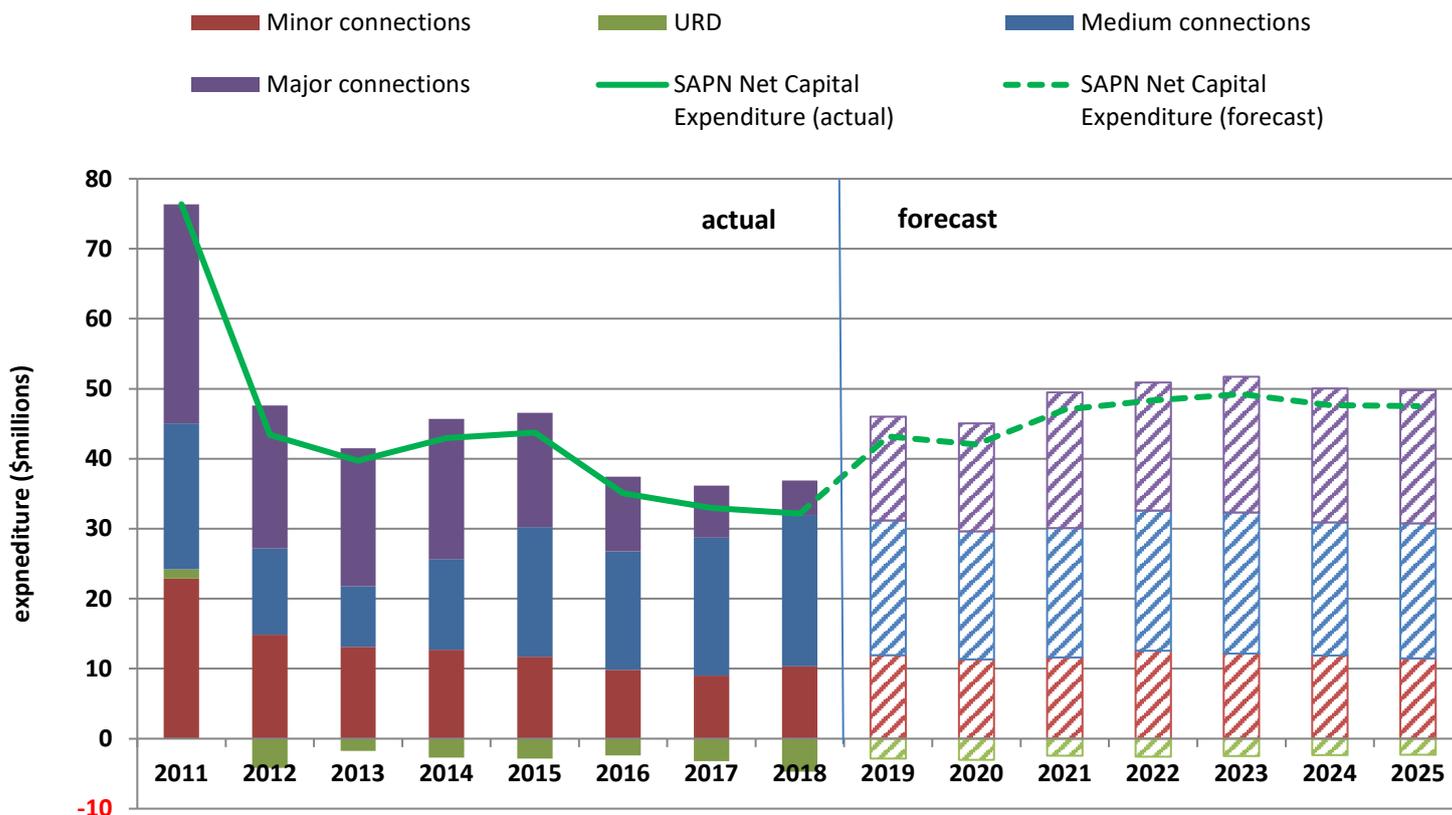


Figure 6. Net capital expenditure

Figure 6. shows that the net expenditure is forecast to average \$46.4 million over the 7-year period to 2024/25. This average represents a change of approximately 24.2% from the average net expenditure on customer connections over the last 5-year period (\$37.4 million).

### 6.3 Our expenditure forecast and next regulatory proposal to the AER

In this section, we have summarised our forecast of expenditure that will be necessary to deliver connection services over the next regulatory period. Based on this forecast, we have included **\$239.8 million** (\$2017/18) in our net capital expenditure forecast that is contained in our regulatory proposal to the AER to cover the next regulatory period.

This forecast allows for:

- **\$449.0 million of gross capital expenditure;** and
- **\$209.2 million of customer contribution.**

The net capex forecast of \$239.8 million represents an increase of 24.2% (average \$9.1 million per year) from the historical levels incurred over the last five years (ie, 1 July 2013 to 30 June 2018) compared to our seven-year forecast (ie, 1 July 2018 to 30 June 2025). This change is largely driven by a:

- 6.6% growth in forecast gross capex (average \$5.5 million per year), which is driven by forecast changes in related economic drivers and mixes of connection types (eg, increased Major projects).

This growth stems from a six-year anaemic growth to 2015/16 and then picked up over the last two years (ie, 1 July 2017 to 30 June 2018) due to surging investments and recovery of employment.

This (increase investment) is forecast to continue over the next regulatory control period, particularly for the Major connection types.

- 7.6% reduction in customer contributions (average \$3.6 million per year), which is mainly due to the:
  - aforementioned economic drivers and connection types;
  - impact of Australian Energy Market Commission’s (AEMC) introduction of Metering Contestability<sup>19</sup>; and
  - impact of lower pre-tax WACC of 2.89% for the next regulatory control period.<sup>20</sup>

We believe that the AER should accept these expenditure forecasts as part of its decision on our next regulatory proposal, because:

- **NER Capex objectives** – this expenditure forecast is necessary for us to comply with our regulatory obligations based on a reasonable forecast of the demand for connection services.
  - we have explained our regulatory obligations associated with providing connection services, and developed a Connection Policy that is in accordance with these obligations; and
  - we have used a reputable economic forecaster and analyst, BIS Oxford Economics, to assist in the preparation of our forecast, using a method accepted previously by the AER to provide a reasonable forecast of the future demand for these services.
- **NER Capex criteria** – the expenditure should reflect the prudent and efficient cost to deliver these services.
  - our expenditure forecasting methodology is based upon accepted econometric methods and assumptions, suitable for these purposes;
  - our methodology is based upon the relationship between our historical expenditure levels and economic explanatory variables that our forecaster, BIS Oxford Economics, has shown to be appropriate;
  - our obligations and Connection Policy for the next regulatory period will remain largely similar to those that drove expenditure in the historical period, and as such, historical expenditure is a suitable basis for producing the forecast;
  - our historical expenditure, which underpins this forecasting method, can be assumed to reflect efficient costs as we have shown that we have an appropriate management structure and processes that should reasonably reflect efficient costs; and
  - our customer contribution rates have been derived from historical rates, with adjustments to allow for changes to the Contribution Policy that we have included in the next regulatory period.

---

<sup>19</sup> From 1 December 2017, AEMC’s metering contestability rule change transition responsibilities of meter related services from SA Power Networks to retailers for all new and altered connection services.

<sup>20</sup> For example, pre-tax real WACC in 2017/18 was approximately 4.36% - which is used for the Incremental Revenue calculations for residential (30 year NPV) and non-residential (15 year NPV) customers

## Definitions

**Augmentation** means an enlargement or increase to the capacity of shared electricity distribution network.

**Capital contribution** means the amount a connection applicant contributes to the costs to provide the connection service.

**Connection Policy** means a document approved by the AER under Chapter 6, Part E, of the NER setting out the circumstances in which connection charges are payable and the basis for determining the amount of such charges.

**Embedded generator** means an embedded generating unit connected to the electricity distribution network.

**Extension** means an addition, typically new network infrastructure, outside the present boundaries of the existing electricity distribution network to a customer's premises.

**Least Cost Technically Acceptable Solution (LCTAS)** means the cheapest connection method, including both material and labour costs that is consistent with industry practice and meets the requirements of relevant legislation, guidelines or codes.

**Model standing offer** means a document approved by the AER to provide basic connection services (clause 5A Part B of the Rules)

**NER (the Rules)** means the National Electricity Rules.

**Network** means SA Power Networks' electricity distribution system.

**Plan** means SA Power Networks' Connection Management Plan

**Premises connections** means the components of the distribution system used to provide connection services

**Real estate development** means a commercial development of land where:

1. three or more property titles are created from one or more allotments. They may be classified in various forms, but typically, will be Torrens, Community or Strata titled; or
2. multi-tenanted sites with three or more metered retail customers.

## Document references

This Plan references the following documents:

- National Electricity Rules
- Australian Energy Regulator’s Connection charge guidelines for electricity retail customers
- Australian Energy Regulator’s Final framework and approach, SA Power Networks, Regulatory control period commencing 1 July 2020
- SA Power Networks Attachment 16 - Connections Policy 2020-25
- 5.12 - BIS Oxford Economics Gross customer connections expenditure forecasts to 2025/26

## Appendix

- Appendix A– Connections Expenditure tables

## Appendix A – Connections expenditure tables

	Year Ended June	Minor Customer Contribution	Minor Net Capital Expenditure	Minor Gross Expenditure	URD Customer Contribution	URD Net Capital Expenditure	URD Gross Expenditure	Medium Customer Contribution	Medium Net Capital Expenditure	Medium Gross Expenditure	Major Customer Contribution	Major Net Capital Expenditure	Major Gross Expenditure	Total Gross Expenditure All Projects	Total Customer Contribution All Projects	Total Net Capital Expenditure
		(\$'000)	(\$'000)	(\$'000)	(\$'000)	(\$'000)	(\$'000)	(\$'000)	(\$'000)	(\$'000)	(\$'000)	(\$'000)	(\$'000)	(\$'000)	(\$'000)	(\$'000)
<b>actuals</b>	2011	8,299	22,873	31,173	4,666	1,325	5,991	11,409	20,845	32,254	21,880	31,317	53,197	122,614	46,254	76,361
	2012	21,917	14,851	36,768	9,064	-4,181	4,883	15,400	12,320	27,720	28,306	20,425	48,731	118,102	74,688	43,414
	2013	16,346	13,137	29,484	7,540	-1,770	5,770	14,430	8,636	23,066	27,036	19,711	46,747	105,067	65,352	39,715
	2014	11,763	12,698	24,461	7,499	-2,723	4,776	13,165	12,986	26,151	24,423	19,990	44,413	99,801	56,849	42,951
	2015	8,326	11,694	20,020	8,924	-2,824	6,100	11,991	18,553	30,544	15,885	16,316	32,201	88,865	45,126	43,739
	2016	11,940	9,853	21,794	9,233	-2,372	6,861	11,226	16,927	28,153	11,576	10,664	22,240	79,048	43,975	35,073
	2017	13,091	9,008	22,098	9,147	-3,194	5,953	7,975	19,712	27,687	12,721	7,425	20,146	75,884	42,934	32,950
	2018	11,331	10,356	21,687	10,967	-4,734	6,233	6,759	21,624	28,383	15,150	4,917	20,067	76,370	44,207	32,163
<b>forecast</b>	2019	6,422	11,926	18,347	8,466	-2,822	5,644	8,658	19,271	27,929	22,238	14,826	37,064	88,984	45,784	43,200
	2020	6,119	11,364	17,483	9,034	-3,011	6,023	8,208	18,269	26,477	23,128	15,419	38,547	88,529	46,489	42,040
	2021	5,494	11,608	17,102	8,711	-2,448	6,264	7,453	18,477	25,929	20,077	19,393	39,470	88,765	41,735	47,030
	2022	5,941	12,553	18,494	9,214	-2,589	6,625	8,083	20,039	28,121	18,961	18,315	37,276	90,516	42,199	48,317
	2023	5,765	12,179	17,943	8,775	-2,465	6,309	8,129	20,153	28,282	20,046	19,363	39,409	91,944	42,714	49,230
	2024	5,620	11,873	17,492	8,393	-2,358	6,035	7,677	19,034	26,712	19,799	19,124	38,923	89,162	41,489	47,673
	2025	5,431	11,475	16,906	8,112	-2,279	5,833	7,778	19,284	27,062	19,718	19,046	38,763	88,565	41,039	47,526

Source: SA Power Networks, BIS Oxford Economics November 2018