DRAFT DECISION

SA Power Networks Distribution Determination 2020 to 2025

Attachment 17 Connection policy

October 2019

AUSTRALIAN ENERGY REGULATOR

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Note

This attachment forms part of the AER's draft decision on the distribution determination that will apply to SA Power Networks for the 2020–2025 regulatory control period. It should be read with all other parts of the draft decision.

The draft decision includes the following attachments:

Overview

Attachment 1 – Annual revenue requirement

Attachment 2 – Regulatory asset base

Attachment 3 – Rate of return

Attachment 4 – Regulatory depreciation

Attachment 5 – Capital expenditure

Attachment 6 – Operating expenditure

Attachment 7 – Corporate income tax

Attachment 8 – Efficiency benefit sharing scheme

Attachment 9 – Capital expenditure sharing scheme

Attachment 10 – Service target performance incentive scheme

Attachment 11 – Demand management incentive scheme

Attachment 12 – Classification of services

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Attachment 17 – Connection policy

Attachment 18 – Tariff structure statement

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Shortened forms

Shortened form	Extended form
AER	Australian Energy Regulator
distributor	distribution network service provider
NER or the rules	National Electricity Rules

17 Connection policy

Under the National Electricity Rules (NER), we are required to make a decision on a connection policy proposed by a distributor.[1]

A connection policy sets out the nature of connection services offered by a distributor, when connection charges may be payable by retail customers and how those charges are calculated. A connection policy:

- must be consistent with:[2]
    - the connection charge principles set out in chapter 5A of the NER
    - the connection policy requirements set out in part DA of chapter 6 of the NER
    - our connection charge guidelines published under chapter 5A[3], and
- must detail:[4]
    - the categories of persons that may be required to pay a connection charge and 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 is to be given)
    - a threshold (based on capacity or any other measure identified in the connection charge guidelines) below which a retail customer (not being a non-registered embedded generator or a real estate developer) will not be liable for a connection charge for an augmentation other than an extension.

The AER's connection charge guidelines for electricity retail customers

A connection policy must be consistent with our connection charge guidelines for electricity retail customers to ensure that connection charges:

- are reasonable and take into account the efficient costs of providing the connection services arising from the new connection or connection alteration
- provide, without undue administrative cost, a user-pays signal to reflect the efficient costs of providing the connection services

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1 NER, Part DA of chapter 6; Cl. 6.12.1(21).

2 NER, cl. 6.7A.1(b)(1)

3 AER, *Connection charge guideline for electricity retail customers, under chapter 5A of the National Electricity Rules Version 1.0*, June 2012.

4 NER, cl. 6.7A.1(b)(2)

- limit cross-subsidisation of connection costs between different classes (or subclasses) of retail customers
- are competitively neutral, if the connection services are contestable.

17.1 Draft decision

We approve SA Power Networks' amended proposed connection policy because it contains the necessary information as required by the NER, and is consistent with our connection charge guidelines.

We have amended the proposed connection policy to the extent necessary to enable it to be approved in accordance with the NER.[5]

17.2 SA Power Networks' proposal

SA Power Networks' connection policy provides an outline of its types of connection services, its methodology for determining connection charges, and the thresholds for shared network augmentation charges.[6]

17.3 Stakeholder submissions

We did not receive any stakeholder submissions in relation to SA Power Networks' proposed connection policy.

17.4 AER's assessment approach

We examined the proposed connection policy against the requirements of Part DA of chapter 6, and chapter 5A, as stated above—whether it:

- is consistent with the connection charge principles set out in chapter 5A of the NER, and our connection charge guidelines
- contains all the information for new customers as prescribed by the NER.

In addition, we also examined whether:

- other connection-related charges included in the connection policy are consistent with the service classification of this preliminary determination
- the connection policy contains terms that are not fair and reasonable.

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5 Rule 6.12.3(j)(2) provides that we may amend the proposed connection policy to the extent necessary to enable it to be approved in accordance with the Rules.

6 SA Power Networks, *Connection Policy for 2020–25*, 31 January 2019.

17.5 Reasons for draft decision

We issued an information request to SA Power Networks on 24 June 2019, asking SA Power Networks to improve the clarity of its connection policy.[7] It submitted a range of changes to its initial connection policy.[8]

The proposed changes:

- clarified that the connection contracts are the "ongoing relationship" contract between the connection applicant and the distributor, rather than the supply contract for the connection applicant
- replaced the generic term "contractual arrangement" with the term "connection agreement".

We have approved SA Power Networks' amended proposed connection policy because:

- it is consistent with the connection charge principles set out in chapter 5A of the NER, and our connection charge guidelines
- it contains all the information for new customers as prescribed by the NER
- other connection-related charges included in the connection policy are consistent with the service classification of this preliminary determination
- the connection policy does not contains terms that are unfair or unreasonable.

We therefore accept the proposed changes by SA Power Networks on 24 June 2019 and 17 July 2019, because the changes add clarity to the connection policy.

We also consider that SA Power Networks' proposed augmentation rates for the 2020–25[9] regulatory control period are acceptable. Appendix A of the proposed connection policy sets out augmentation rates in $ per kVA for classes of customers (residential and non-residential customers; metro and country) and of network elements. Compared to the previously approved rates for 2015–16,[10] the proposed rates for 2020–21[11] will increase by a range of 10.4 to 11.2 per cent.

As stated in our previous analysis of SA Power Networks' network costs,[12] we consider that the average undepreciated network capacity cost ($/kVA), adjusted for straight line depreciation of asset age, was about $1754 in 2015 dollar value. Hence, we consider the proposed charge rates are reasonable.

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7 AER, *Information Request #068 – Connection Policy*, 17 July 2019.

8 SA Power Networks, Response to AER information request, 24 June 2019 and 17 July 2019.

9 SA Power Networks, *Connection Policy for 2020–25*, *Appendix A – Augmentation Rates*, 31 January 2019.

10 Year 1 of the current regulatory control period 2015–20.

11 Year 1 of the next regulatory control period 2020–25.

12 AER *Preliminary Decision, SA Power Networks determination 2015−16 to 2019−20, Attachment 18 − Connection policy, April 2015*, p. 18-10.

17.6 AER-approved amended connection policy

Based on SA Power Networks' response to our information request and amendments to provide more clarity on its terms for embedded generator connection, we have amended SA Power Networks' proposed connection policy. The approved amended connection policy is appended to this attachment.[13]

[13] SA Power Networks, *AER approved amended Connection Policy for 2020–25*, September 2019.

A AER-approved amended connection policy

SA Power Networks

Connection Policy for 2020-25

Showing amendments by the AER

Contents

Document Control

Version	Date	Author	Notes
1.0	15/01/19	SAPN	Draft
1.1	24/06/19	SAPN	Draft
1.2	23/07/19	SAPN	Final

Overview

SA Power Networks operates the South Australian electricity distribution network. We build, maintain and upgrade the poles, wires and substations that deliver power to around 860,000 customers. The services we provide to customers include establishing new connections between a customer's premises and the network and altering existing connections.

This Connection Policy sets out the circumstances in which connection charges are payable for establishing new connections or making connection alterations and the basis for determining such charges[1]. The connections to which this Connection Policy applies range from basic connections (requiring minimal or no augmentation of the distribution network) for residential customers through to negotiated large commercial connections as well as real estate development and enhanced large embedded generation connections.

The connection charges payable by a connection applicant and the contractual terms which govern SA Power Networks' and a connection applicant's rights and obligations in respect of a new connection or connection alteration will depend on the type of connection and the connection assets and services involved.

There are three distinct types of connection services, basic, negotiated and enhanced as summarised in **Table 1** and **Table 2** below:

Table 1. Connection Services[2]

Connection Services			
Connection type	**Description**	**AER Service classification**	**Contract type**
Basic connection service	Basic connection services are those connection services we provide on a routine basis and generally at a fixed fee. Types of customers: • residential customers (requiring no extension or upgrade); • small business customers; and • small embedded generators.	**Standard Control Service** (SCS)	**Model Standing Offer** (MSO)
Negotiated connection service	Negotiated connection services are generally more complex and more likely to require us to augment or extend our network. A shared network augmentation charge may also apply where the customer's estimated maximum demand exceeds established thresholds. They may include two or more of the following components: • **premises connections**; • **extensions**; and/or • **network augmentation**	**Alternative Control Services (ACS) –** premises connections **Standard Control Service** (SCS) – extension and augmentation	**Negotiated Offer**

[1] The policy has been prepared in accordance with the requirements in Chapters 5A and 6 of the National Electricity Rules (Rules) and the Australian Energy Regulator's (AER's) *Connection charge guidelines for electricity retail customers, under Chapter 5A of the National Electricity Rules, version 1.0 (AER connection charge guidelines for electricity retail customers)*.

[2] This is only for least cost technically acceptable connections

Table 2. Enhanced Connection Services

Enhanced Connection Services			
Connection type	**Description**	**AER Service classification**	**Contract type**
Enhanced connection service	These connection services are provided at a standard that is above the least cost technically acceptable service (LCTAS), at the request of customers and charged at full additional cost of works. 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 Examples would include requests for a connection service that has: • increased reliability, standards, duplicate supply and upgrade from overhead to underground service; • excess levels of capacity or service; and/or • large embedded generators.	**Alternative Control Service** (ACS) – component in excess of LCTAS **SCS** – extension and augmentation up to LCTAS.	**MSO and or Negotiated Offer**

Note:
Pioneer Scheme charges may apply where a connection service involves the use of extension assets where another customer made a payment towards that extension (being the customer who originally paid SA Power Networks to build the assets) the subsequent customer may be required to contribute towards the cost of the extension assets if the subsequent customer will utilise those assets within 7 years of when they were constructed for the original customer. The original customer may be eligible for a refund.

Further information on connection contracts and the process by which they are entered into is set out on SA Power Network's website at www.sapowernetworks.com.au.

1. Purpose and scope

SA Power Networks has prepared this Connection Policy[3] in accordance with the requirements in Chapters 5A and 6 of the Rules and the AER's connection charge guidelines for electricity retail customers, under Chapter 5A of the Rules, version 1.0. This Connection Policy details the method of determining if a connection charge is payable and the basis for determining the amount of such charge.

Subject to the paragraphs below, this Connection Policy applies from 1 July 2020 to all demand and embedded generation connection applicants who request:

- New connections to the SA Power Networks distribution network; or
- Alterations to existing connections to SA Power Networks' distribution network.

A connection applicant means a SA Power Networks customer (or a retailer or other person acting on their behalf) or a real estate developer.

This Connection Policy does not apply to embedded generators who are registered participants, (that is registered by AEMO to participate in the National Electricity Market). SA Power Networks will assess connection applications from registered participants in accordance with Chapter 5 of the Rules.

In addition, embedded generators who are not registered participants may elect, in accordance with clause 5A.A.2 of Chapter 5A of the Rules, to make a connection application under Chapter 5 of the Rules (specifically under rule 5.3A).[4]

This Connection Policy has been approved by the AER in its distribution determination for the 2020-25 Regulatory Control Period being 1 July 2020 to 30 June 2025 inclusive[5]. This Connection Policy consequently remains in force for the entirety of the 2020-25 Regulatory Control Period.

[3] Connection policy is defined in chapter 5A of the Rules: "connection policy means a document approved as a connection policy by the AER under Chapter 6 (Part E), setting out the circumstances in which connection charges are payable and the basis for determining the amount of such charges".

[4] This right does not apply if the embedded generator is seeking a connection which falls within the scope of a standard connection service offered by SA Power Networks in a model standing offer.

[5] This is how the policy will read when approved by the AER.

2. SA Power Networks' Connections services

2.1 Connection Services

There are three distinct types of connection services, basic, negotiated and enhanced as detailed in **Table 3** and

Table 4 below:

Table 3. Connection Services

Connection Services			
Connection type	**Description**	**AER Service classification**	**Contract type**
Basic connection service	Basic connection services are those connection services we provide on a routine basis and generally at a fixed fee. 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: • residential customers (requiring no extension or upgrade); • small business customers up to a capacity of 100 amps per phase or less; and • small embedded generators with a generating capacity of 5kW or less for a single-phase connection or 30kW or less for a three-phase connection (eg most customers who wish to install solar PV panels on their premises).	**Standard Control Service** (SCS)	**Model Standing Offer** (MSO) A MSO contains a default set of terms and conditions that are approved by the AER.[6] However, a customer may seek to negotiate their individual connection contract. This will be provided as a Negotiated Offer[7]
Negotiated connection service	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. A shared network augmentation charge may also apply where the customer's estimated maximum demand exceeds the threshold of: • 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 • 0 kVA if connection applicant is a real estate developer. The connection related works may include: • **premises connections** – includes any additions or upgrades to the connection assets located on the customer's premises (but excluding metering services); • **extensions** – includes any new additions required to connect a powerline from our network to the Customer's connection assets; and/or	**Alternative Control Services (ACS) -** premises connection, **Standard Control Service** (SCS) – extension & augmentation	**Negotiated Offer** A Negotiated Offer is where a connection applicant negotiates the terms and conditions on which the connection service is to be provided[8]. Typically, this is provided on a quoted (offer) basis.

[6] NER 5A part B

[7] NER 5A part C

[8] NER 5A part C

	• **network augmentation** – includes any enlargement/enhancement of our existing network, which is not an extension.		

Table 4. Enhanced Connection Services

Enhanced Connection Services			
Connection type	**Description**	**AER Service classification**	**Contract type**
Enhanced connection service	These connection services are provided at a standard that is above (or below, where permissible) the LCTAS, at the request of customers and charged at full cost of works. This category also includes connections for large embedded generators. Examples would include requests for a connection service that has: • increased (or decreased, where permissible) reliability, standards and/or regulatory requirements (eg duplicate supply, dedicated assets, upgrade from overhead to underground service etc); • 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 • large embedded generators with a generating capacity of equal to or more than 5kW for a single-phase connection or more than 30kW for a three-phase connection.	**Alternative Control Service** (ACS) & **SCS** – extension & augmentation up to LCTAS	**MSO and/or Negotiated Offer** A Negotiated Offer is where a connection applicant negotiates the terms and conditions on which the connection service is to be provided[9]
Notes • for **Enhanced connection services**, customers are typically required to make a capital contribution that is additional to any other requested services including a request for a negotiated connection service; and • this capital contribution will be determined on a quoted (offer) basis (ie Negotiated offer)			

Charges payable under the pioneer scheme – Where a connection service involves the use of extension assets where another customer (being the customer who originally paid SA Power Networks to build the assets) has made a payment towards those extension assets, the subsequent customer may be required to contribute towards the cost of the extension assets if the subsequent customer will utilise those assets within 7 years of when they were constructed for the original customer. The original customer may be eligible for a refund.

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.

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

- a **model standing offer** for basic connection services.

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[10] (that is small scale generation such as solar PV panels)

- a **negotiated connection contract** for negotiated, ancillary or enhanced connection services.

[9] NER 5A part C

[10] Defined as a connection of the kind contemplated by Australian Standard AS 4777 (Grid connection of energy systems via inverters).

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 (1) the connection applicant seeks a service which does not fall within a model standing offer or (2) 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).

2.2 Embedded generation and energy storage

There are two categories of embedded generation:

a) **Small embedded generation**, these are classified as basic connections
Generating capacity of 5kW or less for a single-phase connection or 30kW or less for a three-phase connection

b) **Large embedded generation**, these are classified as enhanced connections
Generating capacity of more than 5kW for a single-phase connection or more than 30kW for a three-phase connection

Ongoing embedded generation connection ~~and supply~~ contract~~s~~[11] specific to the size of the generation capacity must be executed prior to connecting the embedded generator to the distribution network ~~are required~~ for embedded generation connections that do not fall within the terms of the basic connection service.

2.2.1 Energy storage

For the purposes of this Connection Policy, energy storage (eg batteries) which can both charge from the distribution network and discharge (generate) back into the distribution network, is considered as load when charging and embedded generation when discharging.

Where the predominant purpose of the site is as an embedded generator, and any load is incidental to that purpose, augmentation charges may be waived by SA Power Networks if battery charging is restricted to agreed timeframes documented in the ongoing embedded generation connection agreement[12] ~~contractual arrangements~~ between SA Power Networks and the customer.

2.2.2 Export limitations

The connection of a generator (whether with or without accompanying load) to the distribution network does not of itself guarantee the ability to export any given quantity of electricity into the distribution network or the ability to export electricity at any given time or address any other network constraint. The connection applicant may need to pay for upgrades of the distribution network ~~may~~ to be able to accept electricity at the times and in the quantities requested by the connection applicant at time of application.

[11] A Guide (NICC270 Connection of Large Embedded Generation) for connecting large embedded generators is available on our website.

[12] Penalties will apply where a battery is charged outside the agreed times, up to a maximum of the current augmentation charges applicable at the time and date that the battery was charged outside the agreed hours.

2.2.2.1 Generation and load connection

Where a customer proposes to connect a small embedded generator (SEG – capacity not exceeding 5kW single phase or 30kVA three phase), the customer would not be charged for augmenting the upstream distribution network. The customer would pay to upgrade their connections assets if the generator's export exceeds the capacity of the existing load connection.

Where a customer proposes to connect a large embedded generator (LEG – capacity greater than 30kW), the customer will be required to pay for the least cost technically acceptable works required to connect and augment the network to accept the full export capacity of the LEG. In these circumstances, the LEG would be provided with an offer (including terms and conditions) to connect. The LEG would have to accept the quote and those works would have to be completed prior to connecting the LEG.

2.2.2.2 Stand-alone generator

Similarly, where the SEG is stand-alone, the generator is charged the cost of connecting the generator to the network. They would not be charged to augment/upgrade the network. However, their export may be constrained at certain times.

Where the applicant is a LEG, then a quote (including terms and conditions) would be provided to the LEG. The quote would be for the cost of connection assets and the least cost technically acceptable works to upgrade the upstream network to enable the generator to export the full output of the LEG. The LEG would be charged for shallow augmentation (i.e. only upgrading those parts of the upstream network that were incapable of accepting the full export of the LEG). To avoid doubt, the LEG would not be charged to upgrade parts of the network that were capable of accepting the full export of the LEG.

2.2.3 Charging methodology for Large embedded generators

In determining charges for non-registered embedded generators:

- The capital contribution required from the connection applicant will be calculated based on the total cost of the works required to support both the generation and load components of the connection service including addressing immediate network constraints;
- It will be assumed no incremental revenue will be received by SA Power Networks from the generation component (e.g. no charges will be applied for export of ~~reactive~~ power); and
- The relevant load for the purposes of calculating the contribution for augmentation will be the gross peak demand of the load, regardless of the embedded generator's expected electricity output.

Works to support the generation export back into the distribution network are not considered augmentation and will be identified separately in the connection offer as upfront charges payable by the customer for the connection service.

2.3 Contestability

SA Power Networks will inform connection applicants where the design and construction of their connection contains a contestable component. An extension to the existing distribution network may be defined as contestable where the assets:

- can be constructed in isolation from the existing distribution network and this construction does not adversely impact the security, safety and reliability of the existing network and customers; and

- will initially be used only to supply the connection applicant.

The non-contestable portion of the extension is the works required to connect the contestable works to the existing distribution network. This work may only be undertaken by SA Power Networks.

If the connection applicant chooses to arrange for the undertaking of the contestable design and construction for their extension, then accredited tenders for this work must comply with SA Power Networks' technical specification. SA Power Networks will prepare the technical specification for the contestable works at the connection applicant's request. The applicant will be required to pay SA Power Networks a standard fee, or the actual cost if works are significant in nature, to prepare the technical specification. The rationale for having SA Power Networks prepare the technical specification is so that the contestable works:

- are compatible with the distribution network; and

- (if completed in accordance with the technical specification) do not adversely affect the distribution network or others connected to the distribution network.

The process for preparation of a technical specification by SA Power Networks and seeking accredited tenders for contestable works is set out in section 39A of the *Electricity (General) Regulations 2012*. Disputes as to the content of the technical specification or as to the contractors proposed to be used by the connection applicant may be referred to the South Australian Technical Regulator for resolution.

3. Methodology for determining Connection charges

Connection charges are built up from:

- Fixed fees for high volume simple type connections where it is possible to calculate an average charge for provision of the service; or
- Quoted services for low volume more complex connections where the cost of providing the service is estimated.

The fixed fees are generally calculated by reference to the amount by which the cost of works is likely to exceed the revenue to be derived from those works (as determined by averaging cost and revenue across similar services and expected usage characteristics). This is known as the incremental cost revenue test (ICRT). That is the fixed fees are only seeking to recover costs which will not be recouped in the future by incremental revenue.

Where the connection being sought as part of a quoted service is the least cost technically acceptable service (LCTAS), the connection applicant receives a rebate towards the cost of the extension and augmentation components of the service based on the future incremental revenue. The connection applicant will pay the full cost of any works above the LCTAS and for premises connection assets.

3.1 Cost components

The **Table 5** below shows the different components of a connection service and how the charges for that component are made up.

In section 3.2 we explain how the actual payment a customer must make for a specific connection is determined from these cost components

Table 5. Cost component of a connection service (where applicable)

Connection Services - Cost Components		
Cost Component	**Basis for connection charges**	**Reference in section 3.2**
Premises connection assets ie the assets specific to the premises being connected.	Charge calculated using the ICRT for a specific connection or a category of connections, except for where the premises connections assets are part of a negotiated connection service where the customer is charged the full cost	**ICCS**
Extensions	As above	**EA**
Design and administration	As above	**EA**
Shared network augmentation	Applies where a connection applicant with load above: • 70kVA; • 25kVA where a connection applicant's premises are supplied from the non three-phase network such as the 19kV SWER system ; or	**ICSN**

	• 0 kVA if connection applicant is a real estate developer The applicant may contribute towards the cost of augmentation of shared network assets. More details on the calculation of the shared network augmentation charge are provided in section 4. Shared network augmentation charges may apply to embedded generation connections in respect of any load being added to the distribution network as part of the connection (other than micro generators <30kW connected under the model standing offer for a basic micro embedded generation connection service). Where shared network augmentation charges apply to embedded generators, they are calculated using the ICRT methodology in respect of the additional load.	
Enhanced Connection Service Where customer requirements are above the least cost technically acceptable standard and/or special connection requirements	Full cost recovery charging methodology will be applied to the above standard and/or special connection requirement components of the connection (ie, no incremental revenue rebate is applied to this component of the costs). The charges will generally be on a quoted basis using rates approved by the AER.	**ECS**
Ancillary service – Asset relocation/removal	The charges for these ancillary services are on either a fixed fee or on a rates basis, as specified in the AER's distribution determination for SA Power Networks. Fixed fees will generally apply for services typical to the category of connection, where costs can be averaged across similar service characteristics. Where the service varies from the standard type, the service will be charged in accordance with rates approved by the AER	**OC**
Other ancillary services Other ancillary services relating to connections	The charges are levied either on a fixed fee or rates basis as specified in the AER's distribution determination for SA Power Networks.	**OC**
Pioneer scheme – Contribution	This is the amount payable by the customer where it utilise assets partially or fully paid for by a previous customer. This amount is determined in accordance with section 7 of this Connection Policy	**CAC**

3.2 Customer payment

The total amount (excluding payments on account of ECS, as referred to in section 3.1) that a connection applicant may be required to pay SA Power Networks for a new connection or connection alteration (including the cost of non-contestable connection works, connection assets[13], connection applicant's contribution towards pioneer scheme(s), augmentation and an extension) is the greater of zero and the amount calculated using the following formula:

CP = ICCS + ICSN – IRR

Where:

CP = Customer Payment
The connection applicant's payment to SA Power Networks

ICCS = Incremental Cost Customer Specific, where ICSS = (EA + OC + CAC)
The incremental costs incurred by SA Power Networks for connection services, which are solely used by the connection applicant.

EA = Extension Assets
The costs of the works required for the connection of a connection applicant's premises outside the boundaries of the distribution network that existed when the connection applicant's application was lodged. Where the works are undertaken by a third party, it includes the costs incurred by SA Power Networks for the non-contestable connection works in connecting the contestable extension works to the existing distribution network.

OC = Other Costs
Including but not limited to administration (including preparation of an offer for a negotiated connection service), project management, design, easements, certification and inspection, carrying out a tender process or assisting a connection applicant conduct a tender process.

CAC = Connection Applicant's Contribution
The total amount payable to SA Power Networks to contribute towards any pioneer scheme(s) asset utilised in supplying electricity to connection applicant's premises, as calculated in accordance with section 7

ICSN = Incremental Cost Shared Network
The connection applicant's augmentation charge, as calculated under section 5 and, where applicable, the equalisation cost for establishment of the high voltage distribution network for real estate developments

IRR = Incremental revenue rebate
As calculated under clause 5.1.1

Note:

1. The charges included in OC (other costs) which represent the costs of SA Power Networks preparing a connection offer will be payable upfront and prior to a SA Power Networks offer being provided. These charges are non-refundable but will be deducted from the total charges that form part of the offer.

2. Where the connection applicant elects to utilise an accredited third-party provider to build the contestable extension and connection assets and the above formula results in a net amount being payable to the connection applicant (because IRR is greater than the remaining costs) that net amount

[13] Where the connection is a negotiated connection the customer must in addition to the charge (CP) determined by the formula above contribute the full cost of the premises connection assets.

will be paid to the connection applicant after the time title to the assets constructed through the contestable works vests in SA Power Networks.

3. The above payment equation only applies to the least cost technically acceptable standard (LCTAS) works required to meet a connection applicant's/customer's demand requirements. For works above this standard and also for works involving special connection requirements there are additional payments (defined as EA in section 3.1).

4. The determined IRR will not exceed the sum of the value of ICCS and ICNS (ie customer will not receive a payment if the IRR exceeds the total cost of connection).

5. Installation of embedded generation may reduce the IRR.

4. Shared network asset augmentation charges for load

The connection applicant is required to pay an incremental cost shared networks (ICSN), also known as an augmentation charge, for the cost of increasing the distribution network's capacity so as to meet their electricity demand. The charge is only payable to the extent the amount of the augmentation is in excess of the applicable shared network augmentation charge threshold.

The augmentation charge is not intended to recover the full cost of shared network augmentation. The charge provides an incentive for customers to request only capacity sufficient to meet their requirements. The charge is levied in $/kVA where kVA refers to the estimated customer maximum demand. The charge partially covers the costs of future augmentation of the distribution and sub transmission networks.

Augmentation charges are calculated by first establishing an average (or benchmark) cost per kVA for augmenting low voltage networks, distribution transformers, high voltage feeders, distribution substations and sub transmission networks. The cost applicable to each asset is adjusted by the relevant diversity factor, because consumers' peak demand draws on the capacity of the network at different times.

Connection applicants will be charged for augmentation only on the portions of the shared network they are utilising. If the customer pays for a dedicated asset such as a transformer supplying only their connection, the associated component of the charge is not applied to ensure there is no double charging.

4.1 Determining if a customer demand is subject to an augmentation charge

4.1.1 New connections

A connection applicant's maximum demand (in kVA) subject to an augmentation charge is the value specified by the customer (which must reflect the maximum demand that would be expected to occur) minus the shared network augmentation charge threshold.

4.1.2 Altered/upgraded connections

A connection applicant's maximum demand (in kVA) subject to an augmentation charge is the lesser of the:

- total customer demand after the upgrade minus the shared network augmentation charge threshold; and
- full increase in demand arising from the upgrade.

4.1.3 Battery systems

Augmentation charges for batteries may be applicable, however, the augmentation charge may be waived by SA Power Networks if the charging of the battery is restricted to agreed time periods documented in the contractual arrangements[14] between SA Power Networks and the customer and the site does not have any other material loads.

4.1.4 Shared network augmentation charge threshold

The shared network augmentation charge threshold is:

a) 0kVA for a connection applicant who is real estate developer;

b) 25kVA where a connection applicant's premises are supplied from the non three-phase network such as the 19kV SWER system; and

[14] In the ongoing embedded generation connection contract between the applicant and SA Power Networks.

c) 70kVA for all other instances.

4.2 Calculation of an augmentation charge

A connection applicant's augmentation charge will be calculated by multiplying that part of a customer's demand subject to an augmentation charge (as calculated in section 4.1) and the sum of the applicable augmentation rates. More than one augmentation rate may be applicable to a new or altered connection. The augmentation rates are published annually by SA Power Networks and will increase in-line with the annual consumer price index increase as published by the Australian Bureau of Statistics (ABS) for All Groups, CPI, Australia, Weighted Average of Eight Capital Cities for the (March) quarter.

The schedule of rates displays amounts for both country and metro, with the boundary defined in accordance with the Metropolitan Adelaide Boundary (Development Act 1993) which can be found at the Location SA Map Viewer website:

http://location.sa.gov.au/viewer/

The augmentation rates applicable as at the commencement of this Connection Policy are set out in Appendix A of this Connection Policy.

For example, where a customer's applicable demand subject to an augmentation charge exceeds 10% of the zone substation capacity but not the sub-transmission line capacity, then the applicable augmentation rate will include both the zone substation and the applicable standard rates. Where a customer's applicable demand exceeds 10% of both the zone substation and sub-transmission line capacities, the augmentation rate will include the sub-transmission line, zone Substation and standard rates.

As another example, where a customer gains approval from SA Power Networks to connect directly to a zone substation and does not utilise any other part of the shared distribution network, the applicable augmentation rates will be only the sub-transmission line or zone substation charge and not incorporate the standard rate.

4.3 Augmentation when a supply is disconnected/reconnected

If an active retailer account has not been in place for a period of 24 months or more at a connection applicant's premises, the application will be treated as a new supply and augmentation charges will apply accordingly.

If the retailer account has been inactive for a period less than 24 month, and the following applies:

a) there is no major change in the electricity demand profile at the premises;

b) the existing connection assets are suitable to reconnect without modification; and

c) no significant upstream changes have occurred that would be a network constraint.

Then the premises may be reconnected without considering the upstream augmentation.

5. Rebate towards a customer's connection

5.1 Application of Incremental Revenue Rebate (IRR)

The rebate in this section 6 applies only to the costs associated with the connection assets (only applicable for basic connections and not negotiated connections), extension and augmentation that are the least cost technically acceptable standard to meet the connection applicant's electrical requirements and any expected increased load – generally in the next five-year period. The IRR represents the net present value of the calculated revenue share for the tariff that SA Power Networks is likely to receive over a period of time defined by the tariff class.

5.1.1 Incremental revenue rebate

The formula for calculation of the rebate resulting from incremental revenue (IR) is set out in the **Table 6** below:

Table 6. Basis of IR

Tariff Class	Net Present Value applied
Residential Customer	IRR = the NPV of **30 years** of **annual IR**
Non-residential Customer	IRR = the NPV of **15 years** of **annual IR**

Where:

IRR = Incremental revenue rebate

annual IR = Annual incremental revenue
The forecast annual incremental revenue SA Power Networks expects to receive from the new or altered connection, based on customer provided information and existing connections with similar characteristics.

NPV = Net present value
Net present value for the number of years specified (ie either 30 or 15 years) as calculated using the pre-tax real weighted average cost of capital (as specified in the SA Power Networks Distribution Determination for the 2020-25 regulatory control period).

Incremental revenue means the distribution use of system charges to be recoverable as a result of establishing the new connection or undertaking the connection alteration.

- Incremental revenue will be estimated using the price path set out in the AER's distribution determination for SA Power Networks applicable at the time of the connection offer (including a determination made but not yet commenced when the offer is made);

- after that determination has ended, using a flat real price path for the remaining life of the connection. This flat price path is the expected distribution use of system charges in the final year of the regulatory control period.

The incremental revenue excludes:

- the operations and maintenance component of the distribution use of system charges payable in respect of the premises to which the connection relates, (as the amounts payable by the connection applicant for connection do not include any future O&M costs); and

- any revenue from the connection applicant's future distribution use of system charges that is for any part of the shared distribution network that is not included in determining the augmentation charge (ie ICSN), payable by the connection applicant.

Note:

1. For non-residential connections SA Power Networks may use a period of less than 15 years if the 15 year period does not reflect a reasonable estimate of the time the connection service will be connected. In such case SA Power Networks may, in good faith, apply an alternative period. Examples include non-residential connections with a defined life (eg, supply to a quarry or for a temporary building supply).

2. For embedded generation connections, no incremental revenue will be received by SA Power Networks from the generation component (eg, no charges will be applied for export of reactive power), therefore no rebate will apply.

3. SA Power Networks may also consider actual consumption and demand information from existing connection services with similar characteristics.

4. If SA Power Networks and connection applicant cannot reach an agreement on consumption and demand for the premise connection a provisional estimate may be determined and as part of this agreement a refund or additional charge will be applied after 3 years. Alternatively, we can apply a security fee as outlined in clause 6.2.

5.2 Rebates for real estate developments

A real estate developer is treated as a single customer for the purposes of calculating the incremental revenue for a development.

Rebates for real estate developments will be determined by SA Power Networks and include the total amount of incremental revenue expected to be received from all of the sites/connection services within a real estate development.

In calculating the incremental revenue for a development, consideration will be given to the designed demand of the residential premises in the development[15], the use of alternative energy sources, the expected revenue from non-residential sites and the expected take-up rate for connection services within a development.

[15] Designed demand for each residence is the after diversity maximum demand (ADMD) as specified by SA Power Networks.

6. Payment terms and security fees

6.1 Payment terms

a) Customer contribution – $5,000 or less

Where the connection charges payable by a connection applicant are $5,000 or less, including for basic connection services provided under a model standing offer, then SA Power Networks may, at its discretion, require the connection applicant to pay the connection charges on the connection applicant's acceptance of SA Power Network's offer to provide connection services.

b) Customer contribution – greater than $5,000

Where the connection charges payable by a connection applicant are greater than $5,000, SA Power Networks will include a payment schedule in the offer letter indicating the amount and the due date for payments.

The payment schedule will be based on:

1. Full payment of the connection charge upon acceptance of the offer, if construction will commence within three months of acceptance and cannot be logically segmented into distinct stages of construction; or

2. Initial payment of 20% of the total connection charges on acceptance of offer to cover costs typically incurred to commence a connection plus the pre-payment for any specialised or non-standard assets that need to be ordered, followed by the remainder one month prior to construction.

Where the construction can be logically segmented into distinct stages of construction, then the costs of each stage must be paid one month prior to construction of that stage.

Note:

1. Energisation will not take place until all monies are paid.

2. All costs quoted in this policy are exclusive of Goods and Services Tax (GST).

6.2 Security fees

In accordance with Chapter 5A of the Rules and the AER Connection Charge Guidelines for electricity retail customers, SA Power Networks may require a customer to provide a guarantee of revenue (GoR) in the form of a financial guarantee. The GoR will be secured by a bank guarantee or other financial instrument acceptable to SA Power Networks.

A GoR will only be requested for connections arising from a connection offer where SA Power Networks fairly and reasonably assesses that there is a high risk of it not receiving the estimated incremental revenue calculated as part of the offer. If applicable, a GoR will be included as a condition of acceptance of the offer and must be provided prior to the works commencing.

The amount of the bank guarantee or other financial instrument required to be provided may not be greater than the amount of incremental revenue SA Power Networks assesses as having a high risk of not being recovered and also may not exceed the present value of the incremental costs SA Power Networks will incur in undertaking any relevant new works and augmentation. The present value will be calculated using the pre-tax real weighted average cost of capital (as specified in and annually varied in accordance with the SA Power Networks Distribution Determination for the 2020-25 regulatory control period).

The length of time for which the bank guarantee or other financial instrument must be provided will be set out in the connection offer made by SA Power Networks. This will normally be 5 years unless SA Power Networks assesses that a different period is required such as a development with staged connection works over an extended period of time. The connection offer will also set out the circumstances in which SA Power Networks may call upon the bank guarantee or other financial instrument which will be where, for a year, SA Power Networks has not received the incremental revenue forecast to be received during that year. If at any time SA Power Networks, due to calling upon the bank guarantee or other financial instrument, recovers more than the amount of incremental revenue secured by the bank guarantee or other financial instrument it will refund the excess amount to the connection applicant.

A bank guarantee or financial instrument must be an on-demand guarantee provided by an Australian bank with a Standard & Poor's credit rating of not less than A- (or equivalent from Fitch or Moodys) and must be on terms acceptable to SA Power Networks acting reasonably.

7. Pioneer scheme

Under Chapter 5A of the Rules, SA Power Networks is required to operate a pioneer scheme. Such a scheme requires SA Power Networks to refund a portion of a retail customer's connection charge contributed towards extension assets, which are subsequently used (or shared) by a new connection applicant(s).

Under a pioneer scheme, refunds will only be provided where another connection is supplied using those assets within seven (7) years of the construction and energisation of the assets. The cost of those pioneer scheme assets and, consequently, the applicable refund will be depreciated using a straight-line method over 20 years.

In addition, a retail customer's refund will take into account the portion of the shared pioneer scheme assets (or extension) and the respective electricity demand used by the initial and subsequent customer(s).

Note - As a customer's existing augmentation charge is based on an individual customer's demand, there will be no refund applicable to this component of the charge.

A refund will be provided by SA Power Networks to the current property owner(s) at the premises and this is incorporated into the total cost of connection for the new connection applicant. A refund is only provided to a retail customer(s) if it is $1,200 (GST exclusive) in total or more.

If an original customer requests a connection to be constructed to a higher standard or capacity than the least cost technically acceptable solution (or if SA Power Networks at its own cost established a connection above the least cost technically acceptable solution), then only the cost of constructing the connection to the least cost technically acceptable standard or capacity will be subject to the pioneer scheme.

The refundable amount will be limited to the value of the least cost technically acceptable solution option, in the event SA Power Networks determines that connecting the additional customer to the original extension is the best technical solution.

If an extension is constructed for a connection applicant by a third-party service provider, that extension is subject to a pioneer scheme using an estimate of the cost for SA Power Networks to construct the assets.

Real estate developers total cost for connection will include pioneer scheme upstream refunds. However, neither retail customers connected to the real estate developer's network nor real estate developers will be eligible to receive a refund towards future connections to the pioneer scheme, as real estate developers participate in an equalisation payment scheme (if applicable). The total electricity maximum demand expected for the real estate development will be used in calculating the rebate to upstream customers.

Details of the calculations that will be applied are detailed in Appendix B of this Connection Policy.

8. Real estate developments

A real estate development can be defined as a development where:

a) three or more property titles are created from one or more allotments. They may be classified in various forms but, typically, will be Torrens title, community title or strata title; or

b) multi- tenanted sites with three or more metered retail customers.

For the purposes of this Connection Policy:

- SA Power Networks will deal with a party ('the real estate developer') that is seeking to develop a site for future use by retail customers or real estate developers and that has made a connection enquiry in relation to that site, as if that party were a single customer for the purpose of calculating a capital contribution; and

- where a development is to proceed in stages, each stage will be considered as a separate project for augmentation purposes.

A real estate developer will make application for real estate developments as a negotiated connection service.

A real estate developer will only receive an incremental revenue rebate and be required to make a customer contribution to augmentation, where such real estate developer provides connections to individual customer connection points (ie serviced allotments – see clause 8.1 below). The calculation of charges and rebates will be based on the estimated combined maximum demand of the staged development and resulting incremental revenue for all of the relevant end-use customers.

Real estate developers will generally fall into three main categories, being serviced allotments (see clause 8.1), serviceable allotments (see clause 8.2) and multi-tenanted allotments (see clause 8.3).

8.1 Serviced allotments

Serviced allotments include residential, commercial and land re-development sites. These will generally be supplied via underground electricity infrastructure but could be supplied from overhead electricity infrastructure, subject to specific stakeholder requirements. Land re-development sites will be treated in the same manner as if for a new development.

In some developments, provision is made by a real estate developer for commercial tenancies such as shops, medical centres, schools, hotels and the like as well as some high medium/high density residential living. In most of these instances, the real estate developer will only provide a basic supply point, if any, and it will be the responsibility of individual customers to arrange for their own connection in accordance with this Connection Policy.

Electricity maximum demands for real estate developments will be in accordance with the SA Power Networks ADMD schedule (TS100) for each allotment (as published at www.sapowernetworks.com.au) plus any known spot-loads or embedded generation attributable to the development.

Rebates for serviced real estate developments will be the forecast incremental revenue based on the following factors:

- specified ADMD;
- known spot-loads;
- possibility of alternative energy sources (eg embedded generation or gas); and
- likely take-up rate of the development for the period used to determine the incremental revenue.

8.2 Serviceable allotments

In some instances, a real estate developer may choose to not provide connection services to each property title/customer, and will only provide a backbone electrical infrastructure. The backbone will typically comprise of high voltage cables or overhead lines, associated infrastructure and public lighting in accordance with local council requirements and any SA Power Networks specific requirements. In these instances, the developer will not pay any augmentation charges or receive any associated rebates. Each retail customer within the development will need to make an individual application to SA Power Networks for a connection service to satisfy the specific electrical demand required for the customer's connection as per the requirements under this Connection Policy.

8.3 Multi-tenanted allotments

These developments include apartment blocks, mixed use multi-levelled property, retirement villages and the like where a strata title corporation, community corporation or similar is created and will generally be responsible for the low voltage service mains from the service point(s) to the individual residences. In these instances, augmentation and incremental revenue rebates will be calculated in accordance with the total maximum demand for the site in the same manner as for an individual retail customer's connection offer.

8.4 Equalisation payment

Where SA Power Networks requests the infrastructure to be installed to a greater capacity than that required for an entire development or stage of a development, the real estate developer will only be required to fund the infrastructure required for their development. This will typically occur where future development is likely beyond the boundaries of the current development by another entity and SA Power Networks believes it to be prudent to install larger cables, switching cubicles or additional conduits in anticipation.

In such cases (ie where SA Power Networks requires works above the least cost technically acceptable standard), if SA Power Networks is to perform both contestable and non-contestable works, the real estate developer will be charged for least cost technically acceptable standard and the additional costs accommodated by SA Power Networks. Charges will be detailed in the connection offer.

To the extent the installation of infrastructure is completed as a contestable project, the developer will be requested to arrange for the design and installation of the specified infrastructure to the agreed standard. SA Power Networks will provide an equalisation payment to the real estate developer for the components of the infrastructure requested that exceeds the least cost technically acceptable standard. The equalisation payment amount will be detailed in the rebate section of the connection offer.

8.5 Upstream refunds for real estate developments

Real estate developments will not be eligible to participate in a pioneer scheme, as this has been replaced by the equalisation payment (if applicable) as outlined in section 8.4. However, for any real estate development that is to connect to an existing pioneer scheme, the real estate developer must contribute towards the upstream refund(s) to the original pioneer scheme customer. Upstream contributions to a Pioneer scheme will be calculated in accordance with section 7 of this Connection Policy.

9. Dispute resolution

As set out in Chapter 5A, Part G of the Rules a customer or real estate developer is entitled to seek to have a dispute relating to a connection determined by the AER.

SA Power Networks asks that a customer first attempt to resolve the dispute in accordance with its complaints resolution policy – details of which can be found on the SA Power Networks website at:

www.sapowernetworks.com.au

If a customer is not satisfied with the SA Power Networks response to their complaint then, prior to taking the matter to the AER, the customer has the option of contacting the Energy and Water Ombudsman SA:

Energy and Water Ombudsman SA
Level 11, 50 Pirie Street
ADELAIDE SA 5000

GPO Box 2947
ADELAIDE SA 5001

Telephone: 1800 665 565 (free call)
Facsimile: 1800 665 165 (free fax)

Email: contact@ewosa.com.au

10. Definitions

After Diversity Maximum Demand – the hypothetical electricity demand in kVA of a single customer in a large group.

augmentation – works to enlarge the capability of **a distribution network** to distribute electricity.

connection(s) – a physical link between a **distribution network** and a **retail customer's** premises to allow the flow of energy.

connection alteration – any kind of alteration to an existing **connection** including, but not limited to, an addition, upgrade, extension, expansion or **augmentation**.

connection applicant – any one of the following persons who applies for a connection service:

(1) a **retail customer**

(2) a **retailer** or other person acting on behalf of the customer

(3) a **real estate developer**.

connection assets – those assets that are used to provide connection services to a **connection applicant** at a **connection point**.

connection contract(s) – the contract formed if a connection applicant accepts a connection offer.

connection offer(s) – an offer by SA Power Networks to a connection applicant to enter into a contract to provide a connection service.

connection point – the point of connection between the distribution network and a premises.

connection service(s) – the service of establishing a new connection or undertaking a connection alteration.

distribution network – the South Australian distribution network operated by **SA Power Networks** pursuant to the distribution licence granted to it under the *Electricity Act 1996*.

embedded generator – the owner or operator of an embedded generating unit.

embedded generating unit – a generating unit connected to, or proposed to be connected to, the distribution network (and not connected to the transmission network).

extension or ***extended*** – works to extend the distribution network required to connect a customer's premises because those premises are outside the current boundaries of the distribution network.

GST – means any goods and services tax or similar value added tax levied or imposed by the Commonwealth of Australia, which is defined in the *A New Tax System (Goods and Services Tax) Act 1999 (Cth)*.

micro embedded generator – a retail customer who operates, or proposes to operate, an embedded generating unit for which a connection of the kind contemplated by Australian Standard AS 4777 (Grid connection of energy systems via inverters) is appropriate.

premises - the premises owned or occupied by a retail customer which receive, or are proposed to receive, a supply of electricity from the distribution network.

real estate developer – means a person who carries out or proposes to carry out a real estate development.

real estate development is defined as a development 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 title, community title or strata title; or

(2) multi- tenanted sites with three or more metered retail customers.

retail customer – means:

(a) an end-user of electricity;

(b) an embedded generator (including a micro embedded generator).

Rules means the National Electricity Rules made under the National Electricity Law.

Sub-transmission line – means a power line connecting a sub-transmission asset to either the transmission system or another sub-transmission asset which SA Power Networks operates at 66kV or 33kV.

Zone Substation – means a substation for the purpose of connecting the distribution network to a network.

11. Acronyms

ABS – Australian Bureau of Statistics

ADMD – After Diversity Maximum Demand (ie the hypothetical electricity demand in kVA of a single customer in a large group)

ACS – Alternative Control Services

AEMO – Australian Energy Market Operator

AER – Australian Energy Regulator

CAC – Connection applicant's contribution

CP – Customer payment (= ICCS + ICSN – IRR)

EA – Extension assets

ECS – Enhanced connection service

GoR – Guarantee of revenue

GST – Good and Services Tax

ICCS – Incremental cost customer specific (= EA + OC + CAC)

ICRT – Incremental cost revenue test

ICSN – Incremental cost shared network

IRR – incremental revenue rebate

kV – kilovolt

kVA – kilovolt-amp

LCTAS – Least cost technically acceptable service

MSO – Model standing offer

NER – National Electricity Rules

NEM – National Electricity Market

NPV – Net Present Value

OC – Other costs

SCS – Standard Control Services

SWER – single wire earth return

12. Appendix A – Augmentation rates

The augmentation rates applicable of this Connection Policy are shown in the **Table 7** below:

Table 7. Augmentation rates of network elements ($2020/21)

Augmentation Rates ($2020/21)					
Network Element	Residential		Non-Residential		Comments
	Country ($/kVA)	Metro ($/kVA)	Country ($/kVA)	Metro ($/kVA)	
Standard Rates					
Low Voltage	379	379	262	262	Applies if connection is via shared low voltage mains, e.g. connected to the terminals of a low voltage service pillar.
Distribution Transformer	374	374	258	258	Applies if connection is supplied via the low voltage transformer terminals of a shared transformer.
Feeder High Voltage	247	247	170	170	Applies if supplied via a connection to a shared high voltage feeder or via a dedicated transformer.
Additional applicable rates					
Zone substation	386	287	265	199	Additional to the above amounts and applies if the demand exceeds the Zone Substation capacity by >10%.
Sub-transmission line	603	199	416	137	Additional to the above amounts and applies if the demand exceeds the Sub-transmission line capacity by >10%.

Note:
The augmentation rates in **Table 7** will increase annually in-line with the annual consumer price index increase as published by the Australian Bureau of Statistics (ABS) for All Groups, CPI, Australia, Weighted Average of Eight Capital Cities for the (~~March~~December) quarter.

13. Appendix B – Pioneer calculation methodology

This appendix outlines the calculation methodology for participants in a Pioneer scheme.

13.1 Downstream customer contribution

13.1.1 Purpose of this appendix

The purpose of this appendix is to establish the procedures for calculating the customer contribution by a connection applicant towards amounts paid by upstream customers for their pioneer scheme extension. An upstream customer is a person who has previously paid SA Power Networks to undertake an extension, which extension will be used by the connection applicant.

13.1.2 Application of clauses

This clause 13.1 and clause 13.3 – Payment to upstream customers, apply only if each of the following is satisfied:

1) a connection applicant's premises is or will be supplied by that part of the distribution network that was extended for an upstream customer and is part of a pioneer scheme;

2) the connection of the connection applicant's premises occurs within seven (7) years after the pioneer scheme's extension was constructed; and

3) the upstream customer's extension component (as determined in clause 13.3, below) is greater than zero.

13.1.3 Customer's demand

Customer's demand for the purpose of determining the connection applicant's contribution is the greater of:

1) The following demand, which is

    a. 25 KVA for connection to a SWER network; and
    b. 70kVA for all other connections; or

2) The customer's agreed maximum demand.

13.1.4 Connection applicant's contribution – extension 'i'

The connection applicant's contribution to extension 'i' is the amount calculated as follows:

$$CACE_i = EA_i \times \frac{20 - Y_i}{20} \times \frac{L_a}{LE_i} \times \frac{D_a}{\sum_{j=1}^{n} D_j}$$

Where:

D_a = the demand as determined in accordance with clause 13.1.3 above

D_j = the demand as determined in accordance with clause 13.1.3 above for all customers 'j' supplied via extension 'I' including the connection applicant

EA_i = the extension asset cost for extension 'i'

L_a = the length (metres) of extension 'i' used to supply the connection applicant

LE_i = the length (metres) of extension 'i'**;** and

Y_i = number of completed years that have elapsed since extension 'i' was constructed (eg if 11 months have elapsed since extension 'i' was constructed**,** Y_i is zero)

13.1.5 Connection applicant's customer contribution

A connection applicant's contribution (refer CAC clause 3.2) comprises the connection applicant's contribution for each pioneer scheme 'i' extension assets and is calculated as follows:

$$CAC_c = \sum_{i=1}^{n} (\mathrm{CACE_i})$$

Where:

CAC = Connection applicant's contribution ($) used in clause 3.2

$CACE_i$ = Connection applicant's contribution towards pioneer scheme 'i' extension assets, as determined from clause 13.1.4

13.2 Connection applicant's customer contribution

The upstream refund included in the total cost for a new or upgraded customer connection for use of a pioneer scheme(s) will be the sum of the total rebates applicable to eligible upstream customers.

SA Power Networks will include the upstream customer refund(s) as part of the connection applicant's negotiated offer and, subsequently, will refund the upstream customer(s) after payment and connection and energisation of the connection applicant's premises.

13.3 Payment to upstream customers

Payments made to upstream customer 'j', once the connection applicant is taking supply, will be determined in accordance with the following formula, provided that the total upstream customer payments due from the connection applicant to all upstream customers already connected to the extension exceeds $1,200 (incl GST) in total:

$$P_j = \sum_{i=1}^{n} CACE_i * \frac{E_i P_j}{\sum_{j=1}^{n} E_i P_j}$$

Where:

P_j = payment to upstream customer 'j'

$CACE_i$ = connection applicant's contribution calculated in accordance with clause 13.1.4 for extension 'i'

$E_i P_j$ = the extension component for an upstream customer 'j' *for* extension 'i'

Note – If the total upstream customer payments due from the connection applicant to all upstream customers does not exceed $1,200 (incl GST) in total, then no payments will be made to the upstream customers and no charge will be due from the connection applicant on account of payments to those upstream customers.

13.4 Limits on payment

A customer is not entitled to receive payment from SA Power Networks, whether by way of rebate or by allocation of contribution from customers, if that payment will result in the customer receiving more than, in total, the depreciated amount the customer was required to pay under clause 3.2.

The sum of all payments received by customer 'j' as required by clause 13.3 and adjusted in accordance with the equation below cannot exceed that customer's payment CP for connection to the network as determined in accordance with clause 3.2.

$$C_jR = \sum_{i=1}^{n} P_i \times \frac{20}{20 - Y_{ki}} \leq CP_j$$

Where:

C_jR = total refunds for customer 'j' connection to the network

CP_j = customer payment that customer 'j' made for connection to the network

P_i = payments made to upstream customer 'j' from connection of customer 'i' to an extension subject to a pioneer scheme extension

Y_{ki} = the number of completed years since the pioneer scheme 'k' extension assets were constructed, which result in payment 'i' to upstream customer 'j'

Note – No refunds are made by SA Power Networks to customers who take supply from electricity infrastructure funded by a Real estate developer.