FINAL DECISION
Energex distribution determination 2015−16 to 2019−20

Attachment 18 – Connection policy

October 2015

AUSTRALIAN ENERGY REGULATOR

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Note

This attachment forms part of the AER's final decision on Energex's revenue proposal 2015–20. It should be read with all other parts of the final decision.

The final decision includes the following documents:

Overview

Attachment 1 - Annual revenue requirement

Attachment 2 - Regulatory asset base

Attachment 3 - Rate of return

Attachment 4 - Value of imputation credits

Attachment 5 - Regulatory depreciation

Attachment 6 - Capital expenditure

Attachment 7 - Operating expenditure

Attachment 8 - Corporate income tax

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Attachment 11 - Service target performance incentive scheme

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Attachment 17 - Negotiated services framework and criteria

Attachment 18 - Connection policy

Contents

Shortened forms

Shortened form	Extended form
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
augex	augmentation expenditure
capex	capital expenditure
CCP	Consumer Challenge Panel
CESS	capital expenditure sharing scheme
CPI	consumer price index
DRP	debt risk premium
DMIA	demand management innovation allowance
DMIS	demand management incentive scheme
distributor	distribution network service provider
DUoS	distribution use of system
EBSS	efficiency benefit sharing scheme
ERP	equity risk premium
Expenditure Assessment Guideline	Expenditure Forecast Assessment Guideline for electricity distribution
F&A	framework and approach
MRP	market risk premium
NEL	national electricity law
NEM	national electricity market
NEO	national electricity objective
NER	national electricity rules
NSP	network service provider
opex	operating expenditure
PPI	partial performance indicators
PTRM	post-tax revenue model

Shortened form	Extended form
RAB	regulatory asset base
RBA	Reserve Bank of Australia
repex	replacement expenditure
RFM	roll forward model
RIN	regulatory information notice
RPP	revenue and pricing principles
SAIDI	system average interruption duration index
SAIFI	system average interruption frequency index
SLCAPM	Sharpe-Lintner capital asset pricing model
STPIS	service target performance incentive scheme
WACC	weighted average cost of capital

18 Connection Policy

We are required to make a decision on the connection policy that is to apply to Energex for the 2015–20 regulatory control period. This may be the connection policy prepared by a distributor, some variant of it, or a policy substituted by us.[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. It also:

- 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 specify:[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 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. The purpose of our guideline is to ensure that connection charges:[5]

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1 NER, 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).

5 NER, cl. 5A.E.3(b); AER, *Connection charge guideline for electricity retail customers, Under chapter 5A of the National Electricity Rules Version 1.0*, June 2012, page 11.

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

18.1 Final decision

We have not approved Energex's proposed connection policy because we are concerned about how Energex proposes to define large customers in its revised connection policy. Because of that lack of clarity, there is insufficient information regarding what type of embedded generator will be treated as large customer connection. Specifically, we modified the proposed connection policy to:

- clarify that only embedded generators with installed capacity greater than or equal to 30 kW (or 30 kVA) are classified as large customer connections
- add clarification that “removal of network constraint charge for EG with installed capacity greater than or equal to 1 MW (or 1 MVA)” as alternative control services (as per the classification of this service)
- add other editorial changes to reflect the final service classifications.

18.2 Energex's revised proposal

Energex acknowledged our preliminary decision that approved its originally proposed connection policy. It proposed changes to the original connection policy, which include:[6]

- to align the definitions of small and large customer connection types to reflect how network tariffs are allocated in Energex’s current and future annual pricing proposals, which have been approved by us.
- to clarify that some unmetered supplies will need to pay capital contribution if the incremental revenue is less than the incremental cost, as per our connection charge guideline.

18.3 AER’s assessment approach

Consistent with our approach in assessing Energex's connection policy in the preliminary decision, we examined the proposed changes to the connection policy against the requirements of clause 6.7A.1 of the NER as stated above—whether it:

6 Energex, *Revised Regulatory* Proposal, July 2015, p.141; Energex, *Revised Regulatory Proposal, Appendix 11.2: Energex’s Connection Policy*.

- is consistent with the connection charge principles set out in chapter 5A of the NER, and our connection charge guidelines
- contains all the information that must be specified under clause 6.7A.1(b)(2) of the NER.

In addition, we also examined whether:

- other connection related charges included in the connection policy, such as metering installation charges, are consistent with the service classification of this draft determination
- the connection policy contains terms that are not fair and reasonable.

18.4 Reasons for final decision

While accepting our preliminary decision, Energex submitted minor amendments to its connection policy, with the following main changes, which sought to:

- align the definitions of small and large customer connection types to reflect how network tariffs are allocated in Energex's current approved pricing proposal.
- clarify that some customers receiving unmetered supplies will need to pay a capital contribution if the incremental revenue is less than the incremental cost, as per our connection charge guideline.

Except for one element of the way large customers are defined in the revised connection policy, we accept Energex's proposed changes, because:

- the changes will align the definitions used in the approved pricing proposal and the connection policy, hence, clarify how connection charges are determined.
- the changes do not have an impact on new customers' capital contribution for getting connected—as the rules on capital contribution under our connection charge guideline are based on whether a customer's demand level is above or below 100A, 3-phase, which remains unchanged.

We are concerned, however, about one element of how large customers are defined in the revised connection policy. In our view there is insufficient clarity regarding what type of embedded generator use will cause a customer to be treated as requiring a large customer connection.

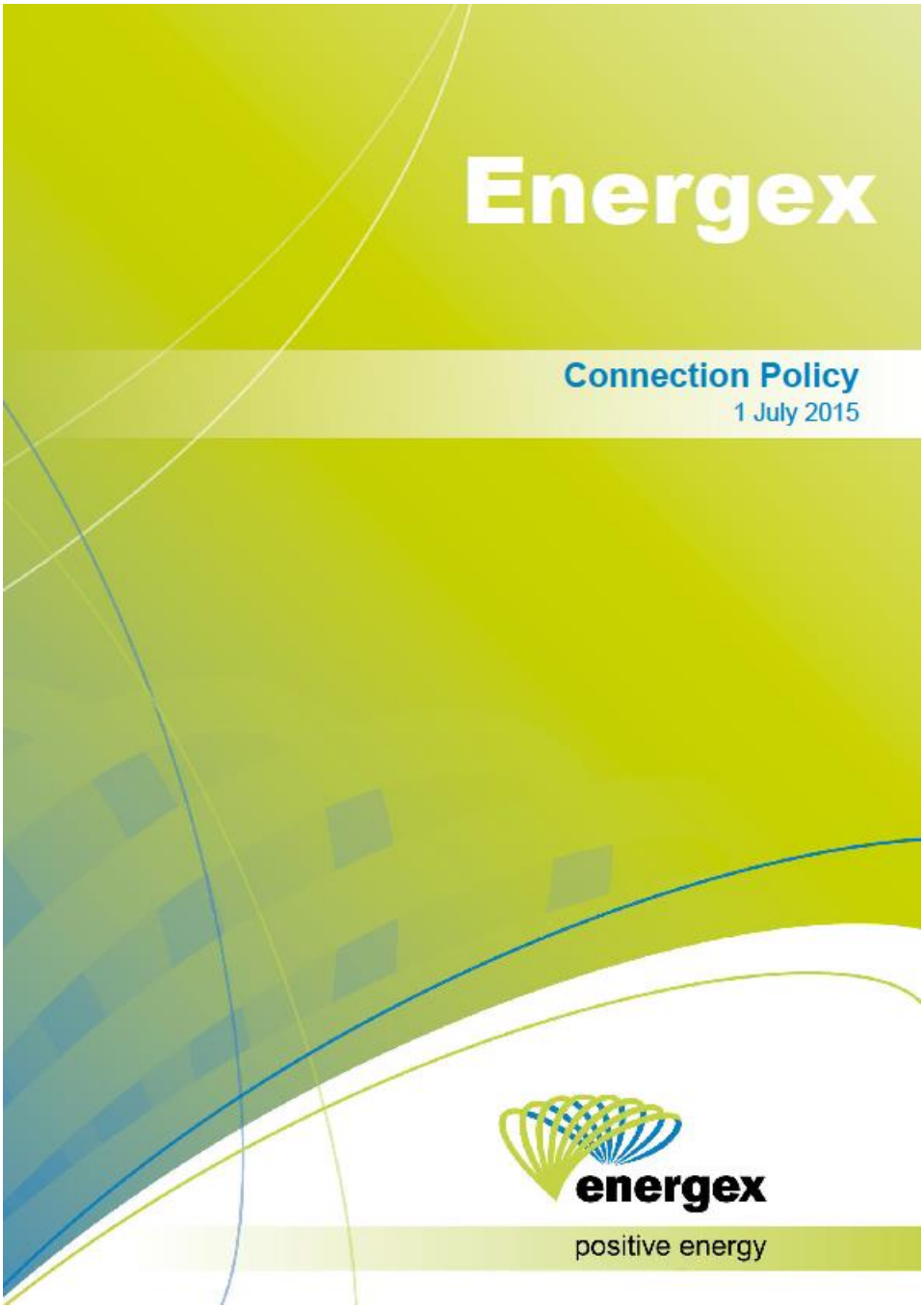
18.5 AER approved connection policy

We have modified Energex's proposed connection policy to reflect the above final decision on this matter.[7] This revised connection policy is appended to this attachment.

[7] NER, cl. 6.12.3(j) provides that we may amend the proposed connection policy to the extent necessary to enable it to be approved in accordance with the NER.

A AER approved connection policy for Energex

Double click image below to access the document.



Energex

Connection Policy

1 July 2015

energex

positive energy

Version Control

Version	Date	Description
1.0	31/10/14	Proposed Connection Policy submitted for AER approval
1.1	3/07/15	Minor edits to approved Connection Policy to align with Pricing Proposal
1.2	31/07/15	Further minor edits to approved Connection Policy on advice of AER
1.3	26/10/15	Further minor edits to approved Connection Policy on advice of AER

BRISBANE QLD 4001

Table of contents

1 Introduction

1.1 About Energex Limited

Energex Limited (Energex) is a Queensland Government Owned Corporation that builds, owns, operates and maintains the electricity distribution network in the growing region of South East Queensland, including the poles and wires and underground cables used to connect houses and businesses to the electricity network. We provide distribution services to almost 1.4 million domestic and business connections, delivering electricity to a population base of around 3.2 million people.

1.2 Purpose and scope of this document

This document is Energex's connection policy for the 2015-2020 regulatory control period. It provides an outline of our connection services, when connection charges may be payable by customers and how those charges are calculated.

This policy has been prepared to comply with Part DA of Chapter 6 of the National Electricity Rules (the Rules) which requires that distribution network service providers must prepare a connection policy setting out the circumstances in which a retail customer or real estate developer may be required to pay a connection charge for the provision of a connection service under Chapter 5A of the Rules. This document is also consistent with:

- The connection charge principles described in Part E of Chapter 5A of the Rules;
- The connection charge guidelines for electricity retail customers published by the Australian Energy Regulator (AER); and
- The AER's Framework and Approach decision for the proposed classification of services for the 2015-2020 regulatory control period.

This policy does not apply to Registered Participants or intending Registered Participants seeking to connect to Energex's distribution network under Chapter 5 of the Rules.

For definitions of terms and abbreviations used in this document, refer to section 14.

1.3 Connecting to the Energex distribution network

As the distribution network service provider for South East Queensland, Energex is responsible for providing the following connection services to customers:

- Connecting new premises to the distribution network (new connections);
- Making alterations to existing connections that are no longer able to meet customers' requirements, such as increasing the number of phases that supply a premises, relocating the incoming supply connection point at a premises or changing from an overhead to underground service (connection alterations); and
- Establishing solar, thermal or wind power connections (micro-embedded generators or embedded generators).

A customer's electrical installation is connected to the Energex distribution network by "connection assets" which are the components of the network used to provide connection services. Connection assets are dedicated to the exclusive use of a particular customer and are not used by other customers connected to the distribution network.

In some circumstances a new connection or connection alteration may also require "extension to the distribution network" or "augmentation of the distribution network":

- An extension to the distribution network generally requires the connection of a power line or facility outside the present boundaries of Energex's network, i.e. an extension of the distribution network to a location that is not previously served by Energex at the same voltage level; and
- An augmentation of the distribution network requires work to enlarge the existing network or increase its capacity to distribute electricity, e.g. installation of a larger transformer.

Chapter 5A of the Rules sets out the criteria Energex needs to take into consideration in setting a charge for connecting retail customers to the electricity network, including charges for connection assets, network extensions and network augmentations.

The Rules also require customers to enter into a network connection contract with Energex when connecting their premises to the network or altering their existing connection. To do so, customers will need to apply to Energex for a connection offer.

Energex provides three types of connection offers (basic, standard and negotiated) and will make an offer to enter into a connection contract based on the information provided in the customer's initial application request. Section 4 of this policy provides more detail on connection offers and section 12 outlines the process for establishing a connection.

1.4 Customer connection types

In discussing connection services, this policy refers to small and large customer connections. These customer connection types are defined as follows:

1.4.1 Small customer connections

"Small customer connections" are connections for those customers that fall within the Standard Asset Customer (SAC) tariff class in accordance with Energex's Annual Pricing Proposal (available on our website). Small customer connections are typically:

- Residential dwellings and small commercial premises, including single and multi-tenancy premises such as blocks of flats, small shopping complexes, apartment buildings and mixed use developments;
- Unmetered supply connections; and
- Micro-embedded generators, e.g. solar, thermal or wind generation systems (also known as inverter energy systems).

Most small customer connections will only require the standard connection assets, which Energex must provide. However, in some instances, augmentation of connection assets at the connection point, a network extension or augmentation of the shared distribution network may be needed to make the connection.

The majority of small customers seeking to connect to Energex's distribution network will require a basic, low voltage connection that will not involve any extension to or augmentation of the distribution network, i.e. no construction work other than providing a standard low voltage service. However, where the connection does not meet the criteria for a basic connection offer or where an extension or augmentation is needed to provide the connection service, a negotiated connection offer will be required.

Section 2 of this policy explains small customer connections in more detail and section 4 provides more information on the connection offers provided by Energex.

1.4.2 Large customer connections

"Large customer connections" are defined in Energex's Annual Pricing Proposal as those connections that fall within the tariff classes of Individually Calculated Customer (ICC) and~~,~~ Connection Asset Customer (CAC) including embedded generators with installed capacity greater than or equal to 30 kW (or 30 kVA). ~~or Embedded Generator (EG)~~.

Customers with a network coupling point at 110 kV or 33 kV are allocated to the ICC tariff class. Customers with a network coupling point at 11 kV may also be allocated to the ICC tariff class, but only if they meet the following criteria:

- The customer's electricity consumption is greater than 40 GWh per year at a single connection; and/or
- The customer's demand is greater than or equal to 10 MVA; and/or
- The customer's circumstances mean that the allocation of the average shared network charge becomes meaningless or distorted.

Customers with a network coupling point at 11 kV who are not allocated to the ICC tariff class (e.g. generators with installed capacity greater than or equal to 30 kW (or 30 kVA)) are allocated to the CAC tariff class.

Large customers are typically large high rise residential and commercial premises, commercial, industrial or public infrastructure developments or large embedded generators.

These connections may involve high voltage overhead or underground mains, low voltage overhead or underground mains and services, distribution transformers, high voltage metering units and protection systems.

Large customers will require a negotiated connection offer from Energex (see section 4).

Section 3 of this policy explains large customer connections in more detail.

1.5 Charges for connection services

Energex's connection services and connection charges are classified by the AER.

The connection charges payable by a customer to Energex may (where applicable) be comprised of the following components:

- Connection charges for services classified by the AER as alternative control services;
- Capital contributions for services classified by the AER as standard control services; and
- Connection charges for extension assets to which a pioneer scheme applies.

Under certain circumstances, large customers may also be required to pay a security fee.

These connection charges are briefly explained in the following sections.

1.5.1 Connection charges for alternative control services

Alternative control services are customer specific or customer-requested services and/or services that have potential for provision on a competitive basis. Where an alternative control service is provided by Energex, the full cost of the service can be recovered from customers using that service.

Connection services such as connection application services, pre-connection consultation services, temporary connections, connection alterations and large customer connections (including embedded generator connections and real estate developer connections) have been classified as alternative control services. Consequently, the customer will generally be required to pay a connection charge for each of these services.

Connection charges for alternative control services are discussed in more detail in section 6 of this policy.

1.5.2 Capital contributions for standard control services

Standard control services are services that are central to electricity supply and therefore relied on by most (if not all) customers who use the distribution network. Energex is able to recover the costs of providing a standard control connection service through Distribution Use of System (DUoS) charges, which are the annual charges paid by all customers who use Energex's distribution network.

General connection enquiry services, small customer connections and network services (such as building and maintaining the shared distribution network) have been classified as standard control services.

As noted above, the costs associated with standard control services will typically be recovered through the annual network charges paid by all customers who use the distribution network, i.e. through the customer's regular electricity bill. However, under certain circumstances, customers may be required to contribute towards costs associated with a standard control service. This contribution is referred to as a "capital contribution". A capital contribution will only be levied where there is a difference between the cost to provide the connection service and the revenue that will be earned by Energex from the connection service.

Further information on capital contributions for standard control services is provided in section 7 of this policy.

1.5.3 Pioneer scheme connection charges

Pioneer schemes apply to dedicated network extensions which have been funded by a customer. Under an Energex pioneer scheme, a customer may be entitled to a partial refund where a dedicated network extension ceases, within 7 years after its installation and energisation, to be dedicated to the exclusive use of the customer occupying the premises. Consequently, subsequent customers connecting to a network extension which is subject to a pioneer scheme will be required to contribute an amount determined by the scheme.

Further information on pioneer schemes is provided in section 8 of this policy.

1.5.4 Security fees

A security fee may be requested to manage the risk associated with Energex not receiving the incremental revenue that was estimated when the connection offer was prepared. A security fee will generally only be requested where Energex is required to install significant infrastructure to provide electricity supply.

Security fees are explained in more detail in section 11 of this policy.

The following table summarises the classification of Energex's connection services for the 2015-2020 regulatory control period.

Table 1.1 Classification of connection services

Connection Service Group	Connection Service	Classification
Pre-connection services	General connection enquiry services	Standard control service
	Connection application services	Alternative control service
	Pre-connection consultation services	Alternative control service
Connection services	Small customer connections, including unmetered supply and micro-embedded generators <30 KW (or 30 kVA)	Standard control service
	Large customer connections including embedded generators >30 kW (or 30 kVA)	Alternative control service
	Subdivision real estate development connection	Alternative control service
	Commissioning and energisation of large customer connections	Alternative control service
	Removal of a network constraint for an embedded generator > 1 MW (or 1 MVA)	Alternative control service
	Temporary connections	Alternative control service
Post connection services	Connection alterations	Alternative control service
Network services	Planning, designing, constructing, maintaining and operating the shared distribution network	Standard control service

A summary of connection charges customers may be required to pay is provided in Appendix 1.

1.6 Other fees and charges

Fees and charges for services that are not classified as connection services, such as metering services and post-connection services (other than those relating to connection alterations), have not been covered in this policy.

Metering services (other than for unmetered supply connections) have been classified by the AER as alternative control services. This means that customers will be required to pay upfront for their meter and any necessary metering services. These fees will be included in the offer to connect and will be charged separately.

Post-connection services, including services such as de-energisation and re-energisation, have also been classified as alternative control services and a fee will therefore apply.

A full list of all Energex fees and charges is available on our website.

1.7 Contact details for further information

Requests and inquiries concerning the Energex connection policy should be addressed to:

The Connections Manager
Energex Limited
26 Reddacliff Street
NEWSTEAD QLD 4006
Phone: 13 12 53

For further information about connections and to make a connection application, please visit http://www.energex.com.au.

2 Small customer connections

"Small customer connections" are connections for those customers that fall within the Standard Asset Customer (SAC) tariff class in accordance with Energex's Annual Pricing Proposal.

Small customer connections are typically:

- Residential dwellings and small commercial premises, including single and multi-tenancy premises such as blocks of flats, small shopping complexes, apartment buildings and mixed use developments;
- Unmetered supply connections; and
- Micro-embedded generators, e.g. solar, thermal or wind generation systems (also known as inverter energy systems).

Most small customer connections will only require the standard connection assets, which Energex must provide[1]. However, in some instances, augmentation of connection assets at the connection point, a network extension or augmentation of the shared distribution network may be needed to make the connection.

2.1 Residential and commercial premises

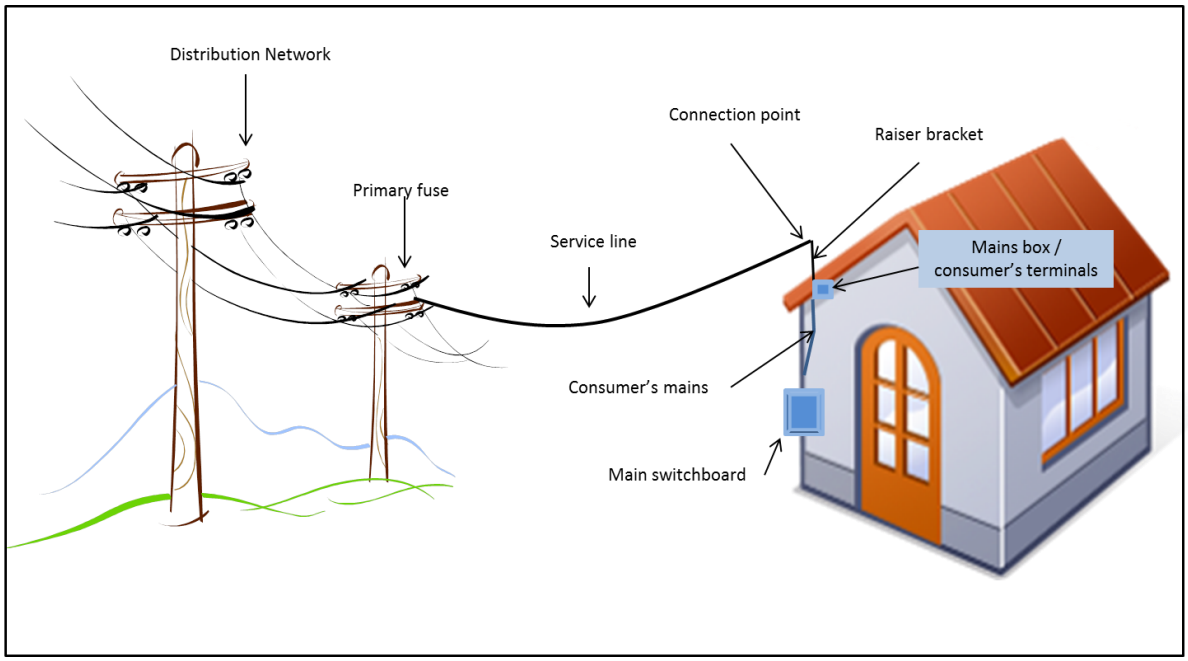
Most small customer connections are typically for residential customers and small commercial premises and the connection will involve either a low voltage overhead service connection or a low voltage underground service connection, depending on whether the distribution network in the customer's area is overhead or underground.

Underground and overhead service lines and associated equipment are "connection assets" and are the components used to connect a particular customer's electrical installation to the distribution network.

For premises located in an area with overhead power lines, the connection involves an overhead service wire and service fuses from an Energex-owned pole to a connection point on the customer's property. This is illustrated in the following diagram.

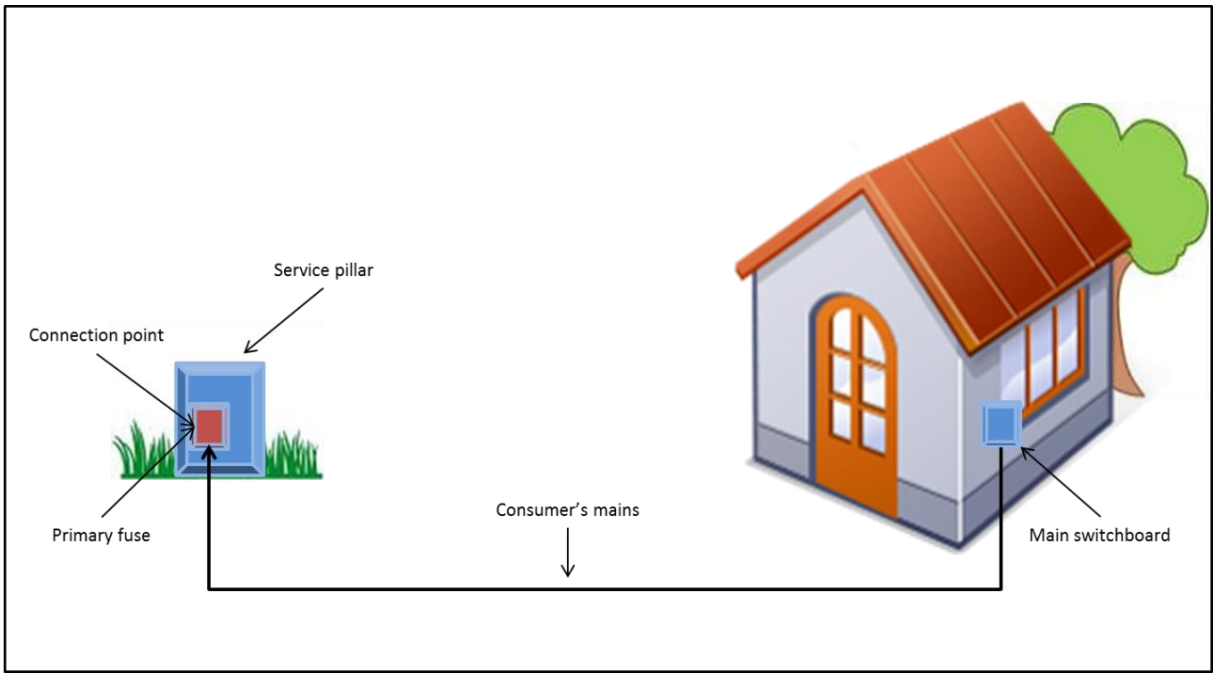
[1] Section 14(3) of the Electricity Regulation 2006 (Qld) provides that the maximum length of a service line required to be provided and installed within a customer's premises by an electricity entity at the electricity entity's cost is (a) 20m for an overhead service and (b) 7m for an underground service line.

Diagram 2.1: Typical overhead connection for residential or small commercial premises



For premises located where there is an underground service, it involves the connection of an underground service line from the service point on the customer's property to a connection point located in an Energex-owned distribution service pillar. The customer is then responsible for the consumer's mains. This is illustrated in the following diagram.

Diagram 2.2: Typical underground connection for residential or small commercial premises



2.2 Unmetered supply

Energex offers unmetered supply when it is considered impractical to read or maintain a meter or where metering equipment would be susceptible to damage. Connections eligible to be unmetered are typically small, but must have a steady and uniform load, i.e. where the energy consumption can be accurately assessed without the need for a meter. Unmetered supply connections are generally provided for facilities such as street lights, bus shelters and billboards.

2.3 Micro-embedded generation

An embedded generating unit is an electricity generator that is connected to the distribution network and which may export electricity back into the network. These include solar, thermal or wind powered systems.

Small scale renewable energy micro-generation systems (i.e. micro-embedded generators) are connected to the network via an inverter and have a capacity of no more than 30 kW (or 30 kVA).

Micro-embedded generators must comply with Energex's Connection Standard Small Scale Parallel Inverter Energy Systems up to 30 kVA which can be found on our website.

2.4 General approach to funding the cost of small customer connections

Following is the general approach to funding small customer connection services:

2.4.1 Funding new connection services

Small customer connections have been classified by the AER as a standard control service. Consequently, small customers who require a standard new connection service will not be required to pay an upfront fee for connection assets. The costs for connection assets will be recovered through the annual network charges paid by all customers who use the distribution network.

However, under certain circumstances, a small customer may need to contribute towards the cost of a standard control service, i.e. make a "capital contribution". A capital contribution may apply to a small customer where:

- Augmentation of connection assets at a small customer's connection point or network extension dedicated to the exclusive use of the small customer is needed to provide a connection service; or
- Augmentation of the shared distribution network is required to provide the connection service and the customer's maximum demand is greater than 100 amps per phase or the connection is for a micro-embedded generator with a capacity of greater than 5 kW (or 5 kVA).

A capital contribution will only be levied where there is a difference between the cost to provide the connection service and the revenue that will be earned by Energex from the connection service.

2.4.2 Funding connection alteration services

Connection alteration services have been classified by the AER as alternative control services. A fee will therefore be charged when a small customer requests a connection alteration, e.g. to increase the capacity of the connection, relocate the incoming supply connection point or change from an overhead to underground service.

The customer may also need to make a capital contribution towards any necessary standard control services such as augmentation of connection assets at the connection point, dedicated network extension or augmentation of the shared distribution network required to provide the connection alteration service.

2.4.3 Funding unmetered supply connections

Standard unmetered supply connections have been classified by the AER as a standard control service. A standard unmetered supply connection will not require extension to or augmentation of the distribution network and will typically involve a dropdown service, overhead service or supply from an existing pillar. Small customers who require a standard unmetered supply service will not be required to pay an upfront fee for standard connection assets. The costs for connection assets will be recovered through the annual network charges paid by all customers who use the distribution network.

Non-standard unmetered supply connections have been classified as an alternative control service. ~~However, c~~Customers may therefore be required to pay a fee for a non-standard unmetered supply service where augmentation of connection assets at a small customer's connection point or network extension dedicated to the exclusive use of the customer is needed to provide a connection service.

In addition, under certain circumstances, a small customer requesting an unmetered supply service may need to contribute towards the cost of a standard control service, i.e. make a "capital contribution". A capital contribution may apply where augmentation of the shared distribution network is required to provide the connection service and the customer's maximum demand is greater than 100 amps per phase. A capital contribution will only be levied where there is a difference between the cost to provide the connection service and the revenue that will be earned by Energex from the connection service.

2.4.4 Other connection charges

Small customers will be required to pay all other relevant connection charges for alternative control services associated with their connection. For example, where applicable, small customers may be required to pay a connection application services fee (e.g. for services associated with negotiating a connection offer) and/or a pre-consultation services fee (e.g. where a site inspection is required).

2.4.5 Pioneer scheme refunds and charges

Under an Energex pioneer scheme, a customer may be entitled to a partial refund where a dedicated network extension ceases, within 7 years after its installation and energisation, to be dedicated to the exclusive use of the customer occupying the premises. Subsequent customers

connecting to a network extension which is subject to a pioneer scheme will be required to contribute an amount determined by the scheme. A pioneer scheme will not be applied to shared network augmentations.

More detailed information on connection charges for alternative control services, capital contributions for standard control services and pioneer schemes is provided in subsequent sections of this policy.

A summary of connection charges customers may be required to pay is provided in Appendix 1.

3 Large customer connections

"Large customer connections" are defined in Energex's Annual Pricing Proposal as those connections that fall within the tariff classes of Individually Calculated Customer (ICC) and~~,~~ Connection Asset Customer (CAC) including embedded generators with installed capacity greater than or equal to 30 kW (or 30 kVA). ~~or Embedded Generator (EG).~~.

Customers with a network coupling point at 110 kV or 33 kV are allocated to the ICC tariff class. Customers with a network coupling point at 11 kV may also be allocated to the ICC tariff class, but only if they meet the following criteria:

- The customer's electricity consumption is greater than 40 GWh per year at a single connection; and/or
- The customer's demand is greater than or equal to 10 MVA; and/or
- The customer's circumstances mean that the allocation of the average shared network charge becomes meaningless or distorted.

Customers with a network coupling point at 11 kV who are not allocated to the ICC tariff class (e.g. generators with installed capacity greater than or equal to 30 kVA) are allocated to the CAC tariff class.

A new connection to Energex's network is required by large customers who are establishing a new site, e.g. large high rise residential and commercial premises, commercial, industrial or public infrastructure development or large embedded generator. Alternatively, a large customer may require a connection alteration when the capacity of the existing installation no longer meets demand requirements.

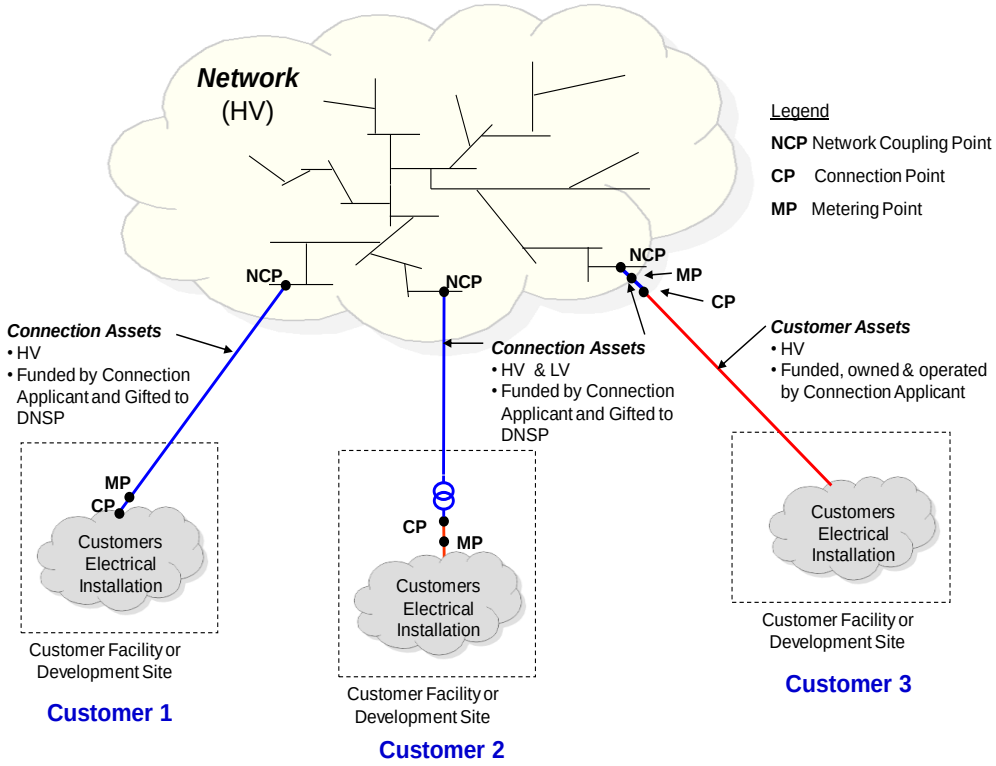
Large customer connection assets are the components used to connect a customer's electrical installation to the Energex distribution network. The connection assets required to connect a large customer to the network can include:

- High voltage overhead or underground mains;
- Low voltage overhead or underground mains and services;
- Distribution transformers;
- High voltage metering units; and
- Protection systems.

Connection assets are all components used to connect a particular customer's electrical installation to the distribution system and which are not used by other customers (including any dedicated extension and/or augmentation assets).

Where the connection is classified as a large customer connection, Energex will be responsible for determining the network coupling point between the existing or proposed network and the new connection assets required to connect the customer's electrical installation or development. The network coupling point defines the boundary between the network and the connection assets.

Diagram 2.3: Asset boundary principles



Energex's Large Customer Connection Manual (available on our website) provides further information on the technical aspects of large customer connections.

3.1 General approach to funding the cost of large customer connections

Following is a summary of the general approach to funding large customer connection services:

3.1.1 Funding new connection services

Large customer connections have been classified by the AER as an alternative control service. Consequently, large customers are required to fully fund all new connection assets up to the network coupling point necessary to facilitate the connection of the electrical installation to the Energex distribution network (including any dedicated extension and/or augmentation assets) and must pay connection charges associated with design and construction of connection assets (where this work is undertaken by Energex) and commissioning and energisation of the connection.

Works to augment the shared distribution network may also be triggered by the connection service. Large customers (including real estate developers) may be required to pay a capital contribution towards those costs.

The removal of a constraint faced by an embedded generator with installed capacity greater than or equal to 1 MW (or 1 MVA) has been classified as an alternative control service. Customers will therefore be required to pay for works associated with augmenting the shared network for an embedded generator connection where there is no demonstrable net benefit to other network users.

3.1.2 Funding connection alteration services

Large customers will be required to fund all connection assets associated with connection alterations (including dedicated extension and/or augmentation assets) and any associated connection charges.

Large customers may also be required to pay a capital contribution towards the costs of a standard control service associated with the connection alteration service, i.e. augmentation of the shared distribution network.

3.1.3 Other connection charges

Large customers will be required to pay all other relevant alternative control service connection charges associated with their connection. For example, where applicable, large customers may be charged a connection application services fee (e.g. for services associated with negotiating a connection offer, undertaking planning studies and analysis or performing a protection and power quality assessment) and/or a pre-connection consultation services fee (e.g. where a customised or site-specific response or preparation of preliminary designs and planning reports is required).

3.1.4 Pioneer scheme refunds and charges

Under an Energex pioneer scheme, a large customer may be entitled to a partial refund where a dedicated network extension ceases, within 7 years after its installation and energisation, to be dedicated to the exclusive use of the customer occupying the premises. Subsequent customers connecting to a network extension which is subject to a pioneer scheme will be required to contribute an amount determined by the scheme. A pioneer scheme will not be applied to shared network augmentations.

3.1.5 Security Fee

For some projects, particularly where installation of significant infrastructure is required, Energex may request a security fee. The security fee is applied to manage the risk associated with Energex not receiving the incremental revenue that was estimated when the connection offer was prepared.

More detailed information on connection charges for alternative control services, capital contributions for standard control services, pioneer schemes and security fees is provided in subsequent sections of this policy.

A summary of connection charges customers may be required to pay is provided in Appendix 1.

3.2 Contestability of large customer connection works

For connections defined as large customer connections, a customer may choose either Energex or an approved service provider to undertake the design and construction of new connection assets to be funded by the customer. However, the design and construction of connection assets by approved service providers is only permitted for certain asset types (refer to the Large Customer Connection Manual available on our website for more information).

The following works in relation to large customer connections may only be carried out by Energex:

- Augmentation of the distribution network;
- Design and construction of any part of the connection assets within an Energex bulk supply or zone substation (e.g. 132/33 kV, 33/11 kV substations);
- Design and construction of relay operated switchgear that will be part of Energex's direct network system;
- Network switching; and
- Testing, commissioning and energisation of works.

Energex may exclude certain categories of works required for the design and construction of connection assets from being undertaken by external providers based on safety, technical or environmental reasons. In these cases the works will be undertaken by Energex and funded by the customer. These exclusions will be subject to review from time to time.

Further information on contestability of services and the accreditation of third party service providers is provided in Energex's Large Customer Connection Manual which is available on our website.

3.3 Asset ownership

If the connection assets are designed and constructed to Energex's standard and are to be operated and maintained by Energex, then the assets will be "gifted" to Energex, regardless of whether or not Energex was engaged to construct the connection assets. Energex will therefore become the asset owner from the date of acceptance and the connection assets will be operated, maintained and replaced by Energex (excluding works initiated by a customer which is not required for the efficient management of the network or for Energex purposes, e.g. where a customer requests Energex to provide or maintain connection assets to a higher standard than required).

Customers have the right to retain ownership of the connection assets where the customer funds the assets. However, asset ownership brings with it certain statutory responsibilities, including ongoing maintenance, insurance and licence requirements.

Further information on asset ownership options for large customer connections is provided in Energex's Large Customer Connection Manual which is available on our website.

3.4 New real estate developments

Real estate developments (i.e. subdivisions) are designed and constructed by real estate developers using Energex approved design and construction service providers. The real estate developer is required to fully fund the electrical works needed to make supply available to the subdivided lots in accordance with the relevant council development application conditions and Energex standards. The connection assets are “gifted” to Energex following final product audit and acceptance of the installation.

Further information on real estate developments is provided in Energex’s Subdivision Standards – Developer Design and Construct Estates which is available on our website.

4 Connection offers

Energex provides three types of connection offers for new connections or connection alterations in accordance with Chapter 5A of the Rules: basic, standard and negotiated. The connection offers provided by Energex must be approved by the AER.

The type of connection offer required will depend on criteria such as connection type, the size and complexity of the connection and whether Energex will need to undertake work to extend or augment the distribution network. The following table summarises the most common connection offers based on the nature of the premises being connected.

Table 4.1 Connection offer types

I want to have a new connection or change an existing connection for …	With a demand[1] / capacity of…	This connection is typically a …
Single residential premises	Less than 100 amps per phase (or 70 kVA)	Basic Connection[2]
	Greater than 100 amps per phase (or 70 kVA)	Negotiated Connection
Small commercial property, e.g. small shops, other small commercial premises	Less than 100 amps per phase (or 70 kVA)	Basic Connection[2]
	Between 100 amps per phase (or 70 kVA) and 1 MVA	Negotiated Connection
Temporary supply, e.g. for carrying out building work, connecting a blood bank or holding a special event	Less than 100 amps per phase (or 70 kVA)	Basic Connection[2]
	Greater than 100 amps per phase (or 70 kVA)	Negotiated Connection
Unmetered supply, e.g. watchman lighting, lighting for public amenities, street lighting, bus shelters	N/A	Standard Connection[2]
Multi-tenancy residential and/or commercial premises, e.g. block of flats, small shopping complex, apartment building, mixed use developments	Greater than 100 amps per phase (or 70 kVA)	Negotiated Connection
Large commercial or industrial premises, e.g. shopping centre, manufacturer, hospital, university	Greater than 1 MVA	Negotiated Connection
Embedded generation, e.g. solar panels, thermal or wind generation systems	With an inverter capacity of less than 5 kW (or 5 kVA)	Basic Connection[2]
	With a capacity of 5 kW (or 5 kVA) or more	Negotiated Connection
New land subdivision / real estate development	N/A	Negotiated Connection

1. Electrical demand will depend on usage patterns and the types of electrical equipment and appliances to be used.
2. To be eligible for a basic or standard connection offer, the connection service must not require extension or augmentation of the distribution network and, in the case of micro-embedded generators, must comply with the requirements of Energex's Connection Standard Small Scale Parallel Inverter Energy Systems up to 30 kVA which is available on our website. Customers may elect to pursue a negotiated connection process for a basic or standard connection where the customer would prefer to negotiate the terms and conditions on which the connection service is to be provided.

4.1 Basic connection offers

Energex is required to provide model standing offers for the provision of basic connection services which have been approved by the AER.

The situations where Energex may make a basic connection offer include:

- For a customer whose maximum demand is equal to or less than 100 amps per phase (or 70 kVA);
- For a customer seeking a temporary supply with maximum demand equal to or less than 100 amps per phase (or 70 kVA); and
- For a customer wishing to connect an approved micro-embedded generator (also known as an inverter energy system) with a capacity of up to and including 5 kW (or 5 kVA)[2].

The majority of customers seeking to connect to Energex's distribution network or alter an existing connection will typically not require an extension to or augmentation of the distribution network and, as such, will receive a basic connection offer. In circumstances where extension or augmentation is needed to provide the connection service, the customer will require a negotiated connection offer (see section 4.3).

Customers eligible for a basic connection offer will generally not be required to pay an upfront fee for the installation of connection assets. Instead, Energex will recover the costs for the connection assets through the annual network charges paid by all customers who use the distribution network.

A basic connection contract is entered into when a customer accepts Energex's basic connection offer. A model basic connection offer is available on our website. However, a customer may elect to negotiate the terms and conditions of the basic connection offer (see section 4.3), and a connection application services fee will apply (see section 6.1).

From time to time, Energex may seek the AER's approval to offer other basic connection offer types in addition to those listed above. Current information on basic connection offers approved by the AER will be maintained on our website.

4.2 Standard connection offers

As with basic connection services, Energex may offer standard connection offers for a particular class of connection service for which a model standing offer has been approved by the AER.

Energex provides a standard connection offer for the connection of unmetered supply to installations such as street lights, bus stops and billboards that are not owned by Energex. As with a basic connection, a standard connection for unmetered supply relates to a new connection or connection alteration that does not involve extension to or augmentation of the distribution network.

[2] To be eligible for a basic connection offer, micro-embedded generators must comply with the requirements specified in Energex's Connection Standard Small Scale Parallel Inverter Energy Systems up to 30 kVA which is available on our website.

Connection of standard unmetered supply is classified as a standard control service, which means the costs for the connection service will be recovered through the annual network charges paid by all customers who use the distribution network. A standard connection contract is entered into when a customer accepts Energex's standard connection offer. A model standard connection offer for unmetered supply is available on our website. A customer may elect to negotiate the terms and conditions of the standard connection offer (see section 4.3), in which case a connection application services fee will apply (see section 6.1).

Connection of non-standard unmetered supply is classified as an alternative control service, which means the customer will be required to pay a fee where augmentation of connection assets at the small customer's connection point or network extension dedicated to the exclusive use of the customer is needed to provide a connection service, in which case a negotiated connection offer will be required (see section 4.3).

From time to time, Energex may seek the AER's approval to offer other standard connection offer types in addition to the standard connection offer for unmetered supply. Current information on standard connection offers approved by the AER will be maintained on our website.

4.3 Negotiated connection offers

Customers may elect to negotiate a basic or standard connection offer, with negotiated connection offers available for:

- Basic connections (including temporary connections);
- Basic micro-embedded generator connections; and
- Standard unmetered supply connections.

A negotiated connection offer will also apply where a connection service does not meet the criteria for a basic connection or a standard connection, including where the customer requires:

- A new connection or connection alteration for premises where the electricity demand is less than 100 amps per phase (or 70 kVA) and an extension and/or augmentation is required;
- A new connection or connection alteration for a premises where the electricity demand is greater than 100 amps per phase (or 70 kVA);
- Connection of a micro-embedded generator with a capacity of 5 kW (or 5 kVA) or less where an extension and/or augmentation is required;
- Connection of a micro-embedded generator with a capacity greater than 5 kW (or 5 kVA) and up to and including 30 kW (or 30 kVA);
- Connection of non-standard unmetered supply;
- Connection of an embedded generator where the connection of single or multiple inverters which in aggregate exceeds 30 kW (or 30 kVA); or
- Connection of new real estate developments and subdivisions.

The connection charges associated with negotiated connection offers will vary, depending on customer type and the specific requirements of the connection service. A negotiated connection contract is entered into when a customer accepts Energex's connection offer.

5 Estimating maximum demand and energy consumption

Energex will assess the customer's maximum demand and/or estimated energy consumption based on information supplied in the connection application. This assessment will determine the type of connection service the premises qualifies for (i.e. basic or negotiated), establishes the design parameters for network augmentation and connection assets and may be used in determining the amount of any capital contribution payable.

5.1 Residential and small commercial premises

For new connections with no previous load history, Energex will assess the likely consumption based on the information supplied in the connection application, including expected energy usage, supply voltage and meter type.

5.2 Commercial and industrial premises and real estate developments

Where required, Energex will assess the customer's maximum demand and estimated energy consumption based on information supplied by the customer and in accordance with standards provided in the Energex Supply and Planning Manual which is available on our website.

5.2.1 Estimating maximum demand

An estimate of demand (i.e. kW) may be arrived at by several methods, namely:

- By direct comparison with a similar facility or customer installation;
- As a total of the connected load of all equipment in the building or project;
- By using the method of estimating the maximum demand outlined in Australian Standard AS/NZS 3000 - Wiring Rules;
- By assessing the proposed usage pattern; or
- Using typical loading figures (VA/m2) from a similar building or project and scaling.

5.2.2 Estimating energy consumption

An estimate of energy consumption (i.e. kWH) may be arrived at by the following methods:

- By direct comparison with a similar customer installation; or
- Application of typical load factors for similar customer installations or industry types i.e. kWH in period = (Maximum demand in kW) x (Load Factor) x (No. of hours in period).

5.3 Provisional estimates

If agreement cannot be reached on appropriate estimates of consumption and/or demand, then a provisional estimate may be determined and applied by Energex. Where this occurs, the following will apply:

- No later than 3 years after the connection works occur, a refund or additional charge will be payable either to or by the customer based on the difference between the estimated and actual consumption or demand experienced over the period;
- The additional charge or refund will be calculated assuming that the actual consumption or demand experienced over the period will be experienced over the total connection period; and
- If the customer becomes insolvent, or ceases to utilise the property within 3 years, then Energex will not make a refund or require an additional charge based on the actual demand or consumption.

6 Connection charges for alternative control services

Alternative control services are customer specific or customer-requested services and/or services that have potential for provision on a competitive basis. Where an alternative control service is provided by Energex, the full cost of the service can be recovered from customers using that service.

Connection application services, pre-connection consultation services, temporary connections, connection alterations and large customer connections (including embedded generator connections and real estate developer connections) have been classified as alternative control services. Consequently, the customer will generally be required to pay a connection charge for each of these services. Alternative control services are described in the following sections.

6.1 Connection application services

A connection application services fee is associated with assessing a connection application, making a connection offer and negotiating offer acceptance and may include:

- Assessing a connection application and making a connection offer;
- Undertaking design for a small customer connection offer (excluding detailed design undertaken after a connection offer has been accepted);
- Carrying out planning studies and analysis relating to distribution (including sub-transmission and dual function assets) connection applications;
- Negotiating a connection agreement; and
- Assessing protection and power quality requirements prior to connection.

All customers who receive a negotiated offer from Energex will be charged a connection application services fee (for services relating to negotiating a connection offer). This fee does not apply to basic or standard connection offers.

6.2 Pre-connection consultation services

Pre-connection consultation services fees relate to additional support services provided by Energex (on request) during a connection enquiry and connection application other than general connection enquiry services and connection application services referred to above. These support services may include:

- A site inspection in order to determine the nature of the connection (small or large customer connection);
- Provision of site-specific connection information and advice for large customer connections; and
- Preparation of preliminary designs and planning reports for large customer connections.

These services generally relate to connection services that require a customised or site-specific response and/or are available contestably. This fee will not apply to basic or standard connection offers.

6.3 Large customer connections

Large customers are required to fund all new connection assets up to the network coupling point necessary to facilitate the connection of the electrical installation to the Energex distribution network (including any dedicated extension or augmentation assets).

Customers may choose either Energex or an approved service provider to undertake the design and construction of new connection assets (see section 3.2). A fee for designing and constructing connection assets will be payable to Energex when Energex has been engaged to undertake this work.

Commissioning and energisation charges are for costs associated with the following services:

- Connection and energisation of large customer connection assets to allow conveyance of electricity, including inspection and testing of connection assets; and
- Administration services involved in reconciling the financials of a connection project, processing and finalising network information and contracts in relation to a connection.

6.4 Real estate development connections

The real estate developer is required to fully fund the electrical works needed to make supply available to the subdivided lots in accordance with the relevant council development application conditions and Energex standards. The connection assets are “gifted” to Energex following final product audit and acceptance of the installation.

The fee for connection services associated with real estate development connections payable to Energex will cover design submission, contract negotiation, audit, commissioning and energisation of connection assets for real estate developments.

6.5 Removal of network constraint for an embedded generator

Customers will be required to pay for works associated with augmenting the shared network to remove a constraint faced by an embedded generator with installed capacity of greater than or equal to ~~>~~ 1 MW (or 1 MVA). However, Energex may fund such shared network augmentation if there is a demonstrable net benefit to other network users.

6.6 Temporary connections

A fee will be payable by a customer who requests a temporary connection, e.g. for temporary builder’s supply, blood bank vans or school fetes.

6.7 Connection alterations

Fees will apply for work initiated by a customer specific to an existing connection, including, but not limited to, the following:

- Supply abolishment, i.e. where the connection is no longer required;
- Relocation of the point of attachment;

- Re-arrangement of connection assets;
- Replacement of an overhead service line, e.g. as a result of a point of attachment relocation;
- Supply enhancement, e.g. upgrade from single phase to three phase; and
- Upgrade from overhead to underground service.

The charges for alternative control connection services are available on our website.

6.8 Unmetered supply connections

A fee will be payable by a customer who requests a non-standard unmetered supply connection, e.g. street light, bus shelter or billboard, where augmentation of connection assets or network extension is required.

7 Capital contributions for standard control services

A customer may be required to make a capital contribution towards a standard control connection service where Energex is unable to fully recover the costs of providing the connection service through standard Distribution Use of System (DUoS) charges, i.e. the annual charges paid by all customers who use Energex's distribution network.

A capital contribution will be levied when it is determined, through application of the cost-revenue-test described in section 7.4, that there is a difference between the cost to provide the connection service (i.e. the incremental cost) and the revenue that will be earned by Energex from the connection service through annual network charges (i.e. the incremental revenue).

The payment of a capital contribution means that those costs are paid for by that customer and not shared by all customers connected to the network and, in the case of shared network augmentation, acts as a pricing signal to discourage customers from requesting additional capacity in excess of their requirements. This process ensures the fair treatment of Energex's existing customers.

This section details how Energex determines when a capital contribution will apply and the method for calculating the customer's contribution.

7.1 Standard control services

Standard control services are services that are central to electricity supply and therefore relied on by most (if not all) customers who use the distribution network. General connection enquiry services, standard unmetered supply connections, small customer connections and network services have been classified as standard control services. The circumstances under which a capital contribution may apply to a standard control service are as follows:

7.1.1 General connection enquiry services

Energex will provide standard information and general advice to customers making a connection enquiry for all connection services. This advice will include general information relating to supply availability and services associated with assessing a customer's enquiry and providing a response. No capital contribution will be required for this service.

7.1.2 Small customer connections

Small customers (including micro-embedded generators and unmetered supply connections) will generally not be required to pay an upfront fee for a standard new connection. The costs for providing the new connection will be included in the annual charge for all customers who use Energex's distribution network. However, a small customer may need to pay a capital contribution towards any costs associated with augmentation of connection assets at the customer's connection point or network extension works dedicated to the exclusive use of the small customer.

In the case of non-standard unmetered supply connections requiring augmentation of connection assets or dedicated network extension works, an alternative control service fee will apply (see section 6.8). A capital contribution may also be required for any costs associated with shared network augmentation works where the threshold is exceeded (see section 7.3).

7.1.3 Network services

Network services include building and maintaining the shared network. A customer who exceeds the shared network augmentation threshold specified in section 7.3 may be required to pay a capital contribution where the existing shared distribution network is unable to supply the electrical load required for a new connection or connection alteration service and augmentation of the shared distribution network, e.g. installation of a larger transformer, is required.

Where a customer is required to make a capital contribution, a negotiated connection offer will be made and the offer will include the costs of the capital contribution.

7.2 Determining when a capital contribution is required

Energex will assess on a case by case basis whether the customer is required to make a capital contribution towards the costs associated with providing a connection service, taking into consideration whether:

- Augmentation of connection assets and/or network extension assets are required solely for the benefit of a small customer (i.e. dedicated to the exclusive use of the small customer), in which case the small customer may be required to make a capital contribution towards the costs (depending on the outcome of the cost-revenue-test outlined in section 7.4);
- Augmentation of the shared distribution network is required for either a small customer who exceeds the shared network augmentation threshold (see section 7.3) or a large customer, in which case a capital contribution may be required (depending on the outcome of the cost-revenue-test outlined in section 7.4).
- Augmentation of connection assets, network extension and/or augmentation is required solely for the benefit of a large customer (i.e. dedicated to the exclusive use of the large customer), in which case the large customer will be required to fully fund the assets and associated connection works through an alternative control connection service charge and/or individually calculated annual DUoS charges. A capital contribution will not be required.

Where Energex considers there is a reasonable likelihood that a network extension will be used to supply another customer or customers within 7 years, the assets will be considered to form part of the shared network and no capital contribution will be required. Otherwise, the extension assets will be regarded as dedicated to the exclusive use of the customer. The customer may be entitled to a partial refund of connection charges under an Energex pioneer scheme (as described in section 8).

7.3 Shared network augmentation threshold

The threshold below which customers (other than non-registered embedded generators and real estate developers) will not be required to make a capital contribution towards the cost of an augmentation of the

distribution network is a maximum demand of less than or equal to 100 amps per phase (or 70 kVA) or micro-embedded generators with a capacity of up to and including 5 kW (or 5 kVA). Consequently, customers eligible for a basic connection offer are exempt from the requirement to pay a capital contribution towards shared network augmentation.

7.4 Method of calculating capital contributions (the cost-revenue-test)

The amount of any capital contribution will be calculated as the difference between the incremental revenue and the incremental cost attributable to the connection services required by the customer. Where this difference is less than zero, no capital contribution is payable by the customer.

The cost-revenue-test, which is used to determine the capital contributions payable, is:

CC = ICCS + ICSN – IR(n=X)

Where:

CC	≥	0
CC	=	Capital contribution for standard control services.
ICCS	=	Incremental cost customer specific – the incremental costs incurred by Energex for standard control connection services, which are used solely by the customer. This may include extensions or augmentation of premises connection assets at the customer's connection point. ICCS is calculated in accordance with the method described in section 7.4.1.
ICSN	=	Incremental cost shared network – the costs incurred by Energex for standard control connection services which are not used solely by the customer. This may include any augmentation (insofar as it involves more than an extension) attributable to the new connection. ICSN will be calculated in accordance with the method described in section 7.4.2.
IR(n=X)	=	Incremental revenue expected to be received from the new connection, which is the present value of an X year revenue stream directly attributable to the new connection as described in section 7.4.3.

7.4.1 Calculation of the customer specific incremental costs (ICCS)

The customer specific incremental costs (ICCS) include the actual costs of the connection, and will be calculated as a sum of the following items:

- Augmentation of the connection assets at the customer's connection point;
- Extension costs;
- Administration costs (including any design and certification costs); and
- The cost of providing any other standard control connection services which are used solely by the customer.

Energex will determine the level of capital contribution with reference to the following over-arching principles:

- The costs of each component will be determined in a fair and reasonable manner and be reflective of the efficient costs of performing the service;
- The cost of each component will be calculated based on the least cost technically acceptable standard necessary for the connection service; and
- Where Energex elects to perform the work to a higher standard, then Energex will not charge the customer for any cost additional to the cost of providing the service to the least technically cost acceptable standard, unless the customer is a real estate developer and Energex has included the cost of providing efficiently for forecast load growth.

7.4.2 Calculation of the incremental cost shared network (ICSN)

The incremental cost shared network (ICSN) relates to the additional costs, both capital and operating, that will be incurred in the shared (upstream) network as a direct result of the new connection.

The ICSN charge is not intended to recover the full cost of any required shared network augmentation from a single customer. It is intended to provide a pricing signal to indicate the cost of upstream augmentation of the network and to discourage newly connecting customers and developers from requesting excessive capacity relative to their expected energy requirements.

Where a customer is required to make a capital contribution towards the cost of a shared network augmentation, the ICSN will be calculated as follows:

ICSN = Unit rate x Demand estimate

Where:

Unit rate	=	The average cost of augmentation per unit of added capacity. The applicable unit rates which have been approved by the AER are presented in Table 7.1 below and are available on Energex's website.
Demand estimate	=	An estimate of the maximum electrical energy flow that will be consumed by the customer at any one time. The demand estimate is calculated in accordance with section 5 of this policy.

The unit rate component of the ICSN charge will be based on an estimate of the long run marginal cost per kVA per year for augmenting upstream network assets at each of the LV, 11 kV and 110 kV levels of the shared distribution network. The long run marginal cost estimates approximate the average cost of adding a unit of shared network capacity at each voltage level.

The ICSN unit rates for the 2015-2016 financial year are shown in the table below. For subsequent years of the 2015-2020 regulatory control period will be escalated by the CPI.

Table 7.1: ICSN unit rates for 2015-16

Voltage level	$/kVA (excl. GST)	$/kVA (incl. GST)
110 kV / 33 kV	76.82	84.50
11 kV	157.46	173.21
LV	164.12	180.53

Note: Energex will set the proportion of recovery of shared network augmentation costs on a case-by-case basis based on the customer's expected demand and location of the connection on the distribution network.

For most small customers, identifying specific upstream network assets that need to be augmented directly as a result of each new connection is extremely difficult and the costs are generally expected to be immaterial. However, if a small customer connection exceeds the shared network augmentation threshold described in section 7.3 and the additional upstream network costs can be clearly identified and are considered material, they will be included in the ICSN calculation.

7.4.3 Estimating incremental revenue (IR)

The incremental revenue (IR) will be the net present value of all of the expected DUoS charges recoverable from the customer.

Energex will apply the following principles in estimating the IR:

- Forecast DUoS revenue will be based on the price path set out in the AER's determination for 1 July 2015 to 30 June 2020 for the relevant tariff class. For the period from 1 July 2020, Energex will assume a constant tariff in real terms;
- A discount rate based on Energex's approved regulatory weighted average cost of capital converted to pre-tax terms using the estimated average effective tax rate for the regulatory control period will be applied;
- A 30 year discount period will be applied for residential customers;
- If the customer is a business customer, then an assumed connection period of 15 years will be applied when calculating the expected DUoS charges recoverable from the customer. However, where a 15 year connection period does not reflect a reasonable estimate of the time that the connection service will be connected, Energex may apply an alternative assumed connection period for that connection service;
- For basic connection offers and where the connection falls below the 100 amps per phase (or 70 kVA) threshold, Energex will exclude from the IR the portion of DUoS charges attributable to augmentation of the shared network where it is estimated to be material; and
- Energex will ensure that operational and maintenance costs have no net impact on the capital contribution payable by the customer.

7.5 Application of capital contributions for specific types of connections

A capital contribution will only be required for specific types of connections if provision for the associated costs has not already been made through existing annual network charges or a tariff applicable to the connection.

7.5.1 Small customer connection services

Small customers who require a standard connection service will not be required to pay a capital contribution towards the connection service.

However, a small customer may be required to make a capital contribution in accordance with the cost-revenue-test in section 7.4 towards costs associated with any augmentation of connection assets and/or dedicated network extension required to provide the connection service.

Where the shared network augmentation threshold is exceeded (see section 7.3), a small customer may also be required to make a capital contribution towards any required augmentation of the shared network associated with provision of the connection service.

7.5.2 Small customer connection services - unmetered supply

Small customers who require a standard unmetered supply connection service will not be required to pay a capital contribution towards the connection service.

However, a small customer requiring a non-standard unmetered supply connection service may be required to make a capital contribution in accordance with the cost-revenue-test in section 7.4 towards costs associated with any shared network augmentation works associated with the connection where the threshold is exceeded (see section 7.3).

7.5.3 Large customer connection services

A large customer may be required to make a capital contribution in accordance with the cost-revenue-test in section 7.4 towards costs associated with any shared network augmentation required to provide the connection service. Large customers are required to fully fund all connection assets up to the network coupling point necessary to facilitate the connection (including any dedicated extension and/or augmentation assets)..

7.5.4 Embedded Generators

Large embedded generators with installed capacity greater than or equal to 1 MW (or 1 MVA) who seek the removal of a network constraint, i.e. a constraint that physically limits a generator's ability to send electricity into the shared network, will be required to pay for the cost of removing that constraint unless there is a demonstrable net benefit to other network users (see section 6.5).

7.5.5 Real Estate Developers

Real estate developers are required to fully fund the electrical works needed to make supply available to the subdivided lots.

Real estate developers may also be required to pay a capital contribution towards augmentation of the shared network which will be calculated in accordance with the cost-revenue-test in section 7.4, except as follows:

- A real estate developer's incremental revenue is the estimated revenue that Energex will receive from all the sites/connection services within a real estate development;
- The assumed connection period will be calculated having reference to the intended usage of the development site;
- A real estate developer will be treated as a single customer for the purposes of calculating a capital contribution; and
- A real estate developer's incremental cost for augmentation may include the costs of the connection services and the cost of providing efficiently for forecast load growth.

The real estate developer will not be required to contribute to the costs of the following works (unless associated with future load growth of the subdivision):

- Feeder and shared network augmentation outside of the development that has specifically been required by Energex that is above what is required to supply the development (for example, upgrade of an existing transformer which required augmentation before the connection of the new load); and/or
- Backbone network augmentation within the development requested by Energex that is above that required to supply the development.

Energex's contribution to a development will not exceed the total costs of the additional works requested by Energex.

7.6 Treatment of augmentation assets

The value of augmentation assets funded by customers or that are gifted to Energex will be excluded from the asset base. That is, the value of the asset contributed by the customer through the shared network augmentation charge will not earn a regulated return.

8 Pioneer scheme connection charges and refunds

If a network extension asset ceases, within 7 years after its installation and energisation, to be dedicated to the exclusive use of the customer occupying the premises, the customer may be entitled to a partial refund of connection charges under an Energex pioneer scheme.

A pioneer scheme will apply to all dedicated network extensions which have either been fully funded by a customer or towards which a customer has paid a capital contribution. Pioneer schemes will not be applied to shared network augmentations.

When a subsequent customer connects to a network extension which is subject to a pioneer scheme, Energex will provide each customer already connected to the extension with a partial refund and charge subsequent customers the amount determined by the pioneer scheme.

Energex will calculate the charge from a subsequent customer and refund to each customer already connected to an extension by:

- Taking into account the physical attributes (i.e. length) a subsequent customer uses of an extension asset relative to other customers already connected to the extension; or
- Taking into account the amount of electricity demand used by a subsequent customer relative to other customers already connected to the extension; and
- Depreciating extension assets over 20 years using a straight line depreciation method.

However, if Energex's pioneer scheme calculates a total refund to all customers already connected to the extension that is less than $1,300[3] Energex will not pay a refund to these customers and will not charge the customer connecting to the extension.

All customers who fund a dedicated network extension will be advised that they may be entitled to a partial refund under a pioneer scheme. Energex will also advise all new customers who apply for connection services that they may be required to contribute towards a pioneer scheme (where applicable).

Where a new customer contributes an amount towards a pioneer scheme, Energex will forward the refund to the current owner of the premises as soon as practicable.

8.1 Method for calculating a refund of connection charges

The contribution by a subsequent customer to network extension works previously funded by the original customer will either be based on the physical attributes of the extension assets or the demand of a subsequent customer.

[3] This figure has been based on the threshold of $1,000 ($, real 2012) established in clause 6.1.3 of the AER's Connection Charge Guidelines and indexed annually by actual and estimated CPI to 2015-16. This figure will be indexed by actual CPI for each subsequent year of the 2015-20 regulatory control period.

8.1.1 Calculation based on length of extension

Following is the method Energex will use when calculating refunds based on the length of the original customer's extension:

$$\frac{\text{Cost of original customer's extension x depreciation factor}}{\text{Number of new customers + original customer}} \times \frac{\text{Length of original customer's extension to be used by new customer}}{\text{Total length of original extension}} \times \frac{CPI(2)}{CPI(1)}$$

8.1.2 Calculation based on electricity demand

Energex may also take into account the amount of electricity demand to be used by a subsequent customer relative to other customers already connected to the extension. The method Energex will use when calculating refunds based on electricity demand will be as follows:

$$\text{Cost of original customer's extension x depreciation factor} \times \frac{\text{Demand required by new customer of original customer's extension}}{\text{Sum of the demand required by all customers already connected to the original customer's extension}} \times \frac{CPI(2)}{CPI(1)}$$

Where:

Cost of original customer's extension	=	Where the original network extension was funded by a large customer as an alternative control service, actual cost; or Where the original network extension was partially funded by a capital contribution, the amount of capital contribution paid by the original customer.
Number of new customers	=	The number of new customers seeking an offer to connect to the network extension.

Depreciation factor	=	Apply straight line depreciation, over a twenty year asset life.
CPI(1)	=	The average of the consumer price indices (All Groups, All Capital Cities), published by the Australian Bureau of Statistics, for the previous four quarters immediately prior to the date that the original customer's extension works are completed.
CPI(2)	=	The average of the consumer price indices (All Groups, All Capital Cities), published by the Australian Bureau of Statistics, for the previous four quarters immediately prior to the date of the new customer's application for customer connection services.

8.2 Subsequent refunds

For subsequent refunds, the extension assets subject to any pioneer scheme will be recorded according to the sharing arrangements prevailing at the time.

If a subsequent customer connects to the original customer's extension assets, the original customer will potentially hold:

- Assets not already shared with any other customers; and/or
- Assets already shared with one or more subsequent connecting customers.

When calculating any subsequent refunds, Energex will depreciate the value of assets to reflect their remaining life and appreciate the value in line with the CPI since the previous refund. The amount of the refunds in relation to each shared or non-shared component of the original customer's extension assets will then be calculated in accordance with section 8.1 above.

8.3 Application of pioneer schemes

Energex will take the following into consideration when establishing pioneer schemes and calculating a refund of connection charges:

- If an original customer requests a connection to be constructed to a higher standard or capacity than the least cost technically acceptable standard, then only the cost of constructing the connection to the least cost technically acceptable standard or capacity will be subject to the pioneer scheme;
- If Energex requires an extension to be built to a higher standard or capacity than required by an original customer, other than a real estate developer, the original customer will only pay for the extension to the standard required or capacity for its connection service and only the extension necessary for the original customer will be subject to a pioneer scheme;

- If Energex requires an extension to be built to a higher standard or capacity than required by a real estate developer and Energex charges a capital contribution for augmentation to the network to allow for forecast load growth, then the extension will be subject to a pioneer scheme, unless the real estate developer and Energex agree that Energex should only charge the real estate developer for the portion of the total cost attributable to the real estate developer; and

- Any pioneer scheme applied to real estate developments would only apply to customers connecting to the extension assets outside the pioneer developer's site boundary and not to premises connecting within the development.

9 Determining the total connection charge

The total connection charge that customers will be required to pay Energex may be comprised of charges for multiple connection services, including:

- Connection charges for services classified by the AER as alternative control services;
- Capital contributions for services classified by the AER as standard control services; and
- Connection charges for extension assets to which a pioneer scheme applies.

Under certain circumstances, large customers may also be required to pay a security fee. The security fee is applied to manage the risk associated with Energex not receiving the incremental revenue that was estimated when the connection offer was prepared. Security fees are discussed separately in section 11 of this policy.

9.1 Method for calculating the total connection charge

The total connection charge will be determined in accordance with the following formula:

Connection Charge = AS + CC + PS

Where:

AS	=	The total charge payable for all applicable alternative control connection services described in section 6.
CC	=	The total capital contribution payable for all standard control connection services. Capital contributions are calculated with reference to the cost-revenue-test set out in section 7.
PS	=	The total charge payable to account for any pioneer scheme applying to the assets to which the customer connects (see section 8).

A summary of connection charges customers may be required to pay is provided in Appendix 1.

9.2 Connection charge principles

Energex will apply the following principles in determining the connection charges payable by a customer:

- The charges for each component will be determined in a fair and reasonable manner;
- The charges for each component will be based on the least cost technically acceptable standard necessary for the connection service. Where the customer requests that a connection service, or part thereof, be performed to a higher standard, the customer will be required to pay the additional cost of providing the service to the standard requested;

- If Energex elects to perform the work to a higher standard or capacity, then Energex will not charge the customer for any cost additional to the cost of performing the connection service to the least cost technically acceptable standard or minimum required capacity, unless the customer is a real estate developer and Energex has included the cost of providing efficiently for forecast load growth; and
- If Energex prepares a technical specification to allow a connection service to be performed on a contestable basis, then the technical specification will not require the connection service to be performed to a higher than the least cost technically acceptable standard or a capacity greater than the customer's requirement, unless Energex makes arrangements to fund the additional cost of achieving the higher standard or capacity.

10 Payment of connection charges

Charges for connection services may be payable either through the customer's electricity account or directly to Energex, depending on the type of connection. Customers will be advised of connection charges and payment requirements in the connection offer.

10.1 Payment of small customer connection charges

Energex will generally not invoice customers directly for most connection charges for small customer connections but will pass these charges on to the customer's electricity retailer for inclusion in the customer's next electricity account.

Under certain circumstances, however, Energex may seek advance payment of connection charges for pre-connection services and connection services before commencement of construction work. When a small customer is required to pay a capital contribution for a standard control service, for example, the customer will be required to pay the contribution amount to Energex prior to commencement of construction.

10.2 Payment of large customer connection charges

Energex may seek advance payment of connection charges, including capital contributions, for large customer connections prior to commencement of construction work.

Payment for design and administration costs and costs of specialised or non-standard assets which need to be ordered in advance for the customer's connection will be required at the time of offer acceptance.

Where construction work can be logically segmented into distinct stages of construction, the connection charge exceeds $5,000 and construction will not commence for 3 months or more after the connection offer is accepted, staged payments by the customer over the construction stage of the project may be agreed with Energex.

Most large customer connection charges will be payable directly to Energex.

Large customers may also be required to provide a security fee. Security fees are discussed separately in section 11 of this policy.

11 Security fees

Some projects may require a security fee to be paid. The security fee is applied to manage the risk associated with Energex not receiving the incremental revenue that was estimated when the connection offer was prepared. (The incremental revenue is the revenue Energex expects to receive from the new connection through annual network charges.)

If the actual incremental revenue received from a new connection is below the estimated incremental revenue, then the security fee (or a portion of it) will be retained by Energex. However, if the estimated incremental revenue of the connection offer is achieved, then the security fee will be refunded to the customer.

A security fee will generally only be requested where Energex is required to install significant infrastructure to provide electricity supply and will be included in the offer to provide connection services.

In assessing whether Energex may be at risk of not receiving the estimated incremental revenue, various factors will be taken into consideration, including site location and intended usage.

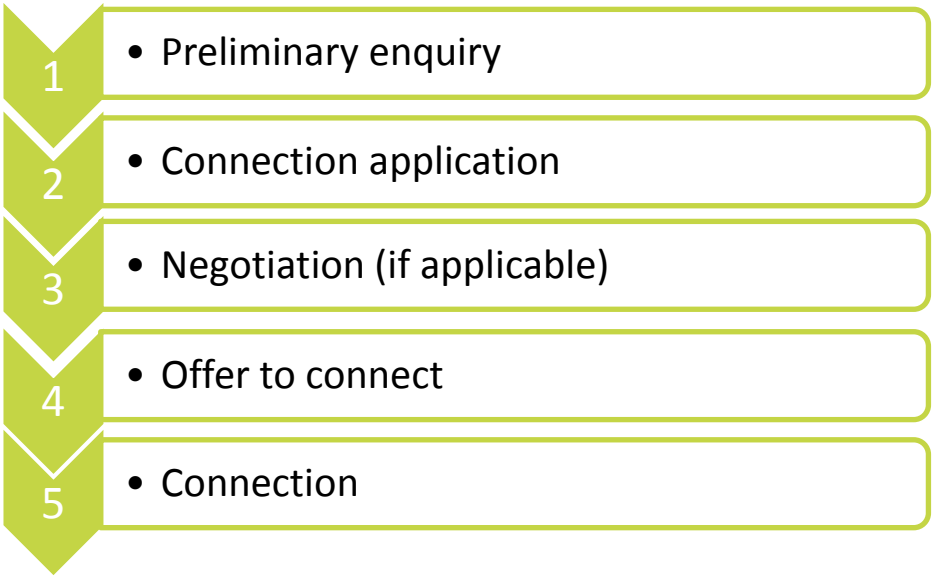
The amount of the security fee will be determined and applied in accordance with the following principles:

- The security fee will not be greater than the amount of the estimated incremental revenue;
- The security fee will not exceed the present value of the incremental costs Energex will incur in undertaking construction works;
- A security fee will be held in the form of a bank guarantee. The security fee may be reduced on an annual basis if the customer presents a new bank guarantee for the agreed amount. Interest is not payable on security held in the form of a bank guarantee; and
- The security fee scheme will not result in Energex recovering more than the total estimated incremental revenue, unless the actual incremental revenue realised over the period of the security fee scheme exceeds the estimated incremental revenue, and Energex refunds the security fee in full.

12 Establishing a connection

This section provides a general overview of the process for establishing a new connection to Energex's distribution network or modification of an existing connection. The connection process will vary depending upon the technical requirements of the connection and other factors such as expected maximum demand and availability of supply. More detailed information is provided on our website.

The connection process consists of five key steps as follows:



12.1 Preliminary enquiry

Information to assist customers in establishing a connection to Energex's network is provided on our website and includes:

- A facility for customers to determine whether Energex is the distribution network service provider for their area;
- The basic and standard connection services provided by Energex, the terms and conditions of the model standing offers to provide such services (including possible costs) and the types of customers to which they apply;
- A description of how an application for a new connection or a connection alteration is to be made (including information required and a facility to make a connection application);
- An explanation of the customer's right to negotiate with Energex for a negotiated connection contract (including the types of possible costs and expenses);
- The requirements for an expedited connection; and
- The basis for calculation of connection charges (i.e. this connection policy).

Customers can also contact Energex for more detailed information specific to their connection or where a written response is required. Unless otherwise agreed, Energex will provide the customer with the information required to make an informed connection application within 5 business days after receiving an enquiry about a connection service.

12.2 Connection application

Customers who need either a new connection to the distribution network or modification of an existing connection must submit a connection application to Energex. Due to the technical nature of the information required as part of the connection application process, it is recommended that the customer's electrical contractor should be engaged to make the connection application on the customer's behalf.

Within 10 business days of having received a complete application, Energex will:

- Advise the customer whether the proposed connection is a basic or standard connection service; or
- Advise the negotiated connection process (including possible costs) if the connection service is neither standard nor basic or the customer has elected to negotiate the connection contract.

Where the application is incomplete, Energex will advise the applicant of the deficiency and may request resubmission of a complete application.

12.3 Negotiation

For negotiated connection services, Energex will negotiate with the customer in good faith and will make reasonable endeavours to provide a connection offer that complies with the customer's reasonable requirements.

In assessing the connection application, Energex will determine the technical requirements for the proposed new connection or connection alteration and the extent and costs of any necessary network extension or network augmentation involved.

To enable Energex to negotiate on an informed basis, the customer will be requested to provide Energex with information, including estimates of maximum demand for electricity to be supplied through the connection. Energex will request any additional information required within 20 business days after receipt of the connection application.

Similarly, Energex will provide the customer with information reasonably required to negotiate on an informed basis, including an estimate of connection charges and how they are calculated, as soon as practicable after receipt of the connection application. Other information that may be provided includes technical and safety requirements, the types of connection that are technically feasible, network capacity at the proposed connection point and possible strategies to reduce the cost of the connection.

12.4 Offer to connect

Following receipt of a complete application and negotiations (if applicable), Energex will make a connection offer to the customer. The connection offer will include details of the customer's connection and Energex connection services as well as a schedule of connection charges (if applicable).

For basic and standard connections that are not expedited, Energex will make a connection offer within 10 business days from receipt of a complete application. The customer then has 45 business days from the date of issue to accept the offer made by Energex.

For negotiated connections, Energex has 65 business days from receipt of a complete application to make an offer to connect. The customer then has 45 business days to accept the offer made by Energex.

The connection offers provided by Energex are discussed in detail in section 4 of this policy. Copies of the model standing offers for basic and standard connections are also available on our website.

12.4.1 Expediting the connection

When applying for a basic or standard connection service it is possible for the customer (or their representative, e.g. electrical contractor) to elect to expedite the connection process. By doing so, the customer and Energex will not be required to go through the formal offer and acceptance process. Upon electing to proceed with an expedited basic or standard connection service, it will be deemed that Energex has offered and the customer has accepted and agreed to the model standing offer for the connection service.

12.4.2 Connection contract

A connection contract is entered into when the customer accepts Energex's connection offer. The terms and conditions of the connection offer become the terms and conditions of the connection contract formed between Energex and the customer.

12.5 Connection

Following acceptance of the connection offer and receipt of all other relevant documentation (e.g. B2B request from the customer's retailer), Energex will complete the connection service within the following timeframes[4]:

- New Connections – within 5 business days; and
- Alterations to existing connections - within 10 business days.

[4] The timeframes for completion of new connections and connection alterations are specified in clause 5.7.3 of the Queensland Electricity Industry Code.

Energex is not obliged to commence or continue with the connection work if the customer does not comply with the conditions of the connection contract, such as failure to:

- Pay connection charges;
- Comply with technical or safety requirements;
- Complete work that is to be carried out on the customer's premises; or
- Provide safe and unhindered access to the customer's premises.

13 Dispute Resolution

Disputes between Energex and customers will be managed in accordance with Energex's standard complaints and dispute resolution procedure, details of which are available on our website. Energex will make every endeavour to resolve connection disputes in a timely manner.

Where agreement on the terms and conditions of the connection offer cannot be reached, the AER may consider and make determinations regarding customer connection disputes between a customer and Energex. The AER is responsible for making determinations on customer connection disputes with electricity distribution businesses under Part 10 of the National Electricity Law. Information on the AER's customer connection dispute resolution process is available on the AER's website: www.aer.gov.au.

14 Definitions and abbreviations

Term	Definition
Australian Energy Regulator (AER)	The federal government body responsible for the economic regulation of electricity distribution services in the National Electricity Market.
Augmentation	Work to enlarge the system or to increase its capacity to transmit or distribute electricity.
Approved Service Provider	A person or organisation authorised by Energex to carry out design and/or construction of certain electrical works.
Basic connection service	A connection service related to a connection (or a proposed connection) between a distribution system and a retail customer's premises (excluding a non-registered embedded generator's premises) in the following circumstances: * For a customer whose maximum demand is equal to or less than 100 amps per phase (or 70 kVA); * For a customer seeking a temporary supply with maximum demand equal to or less than 100 amps per phase (or 70 kVA); and * For a customer wishing to connect an approved micro-embedded generator (also known as an inverter energy system) with a capacity of up to and including 5 kW (or 5 kVA). The provision of the service involves minimal or no augmentation of the distribution network and a model standing offer has been approved by the AER for providing that service as a basic connection service.
Basic micro embedded generator connection service	A basic connection service for a retail customer who is a micro-embedded generator.
Connection	A physical link between a distribution system and a retail customer's premises to allow the flow of electricity.
Connection alteration	An alteration to an existing connection including an addition, upgrade, extension, expansion, augmentation or any other kind of alteration.

Term	Definition
Connection application	An application made under clause 5A.D.3 of the National Electricity Rules.
Connection assets	The components of a distribution system used to provide connection services.
Connection charge	A charge imposed by a Distribution Network Service Provider for a connection service.
Connection charge guidelines	Clause 5A.E.3 of the Rules requires the AER to develop and publish guidelines for the development of connection policies by Distribution Network Service Providers. These guidelines are available on the AER's website.
Connection charge principles	Clause 5A.E.1 of the Rules.
Connection contract	A contract formed by the making and acceptance of a connection offer.
Connection offer	An offer by a Distribution Network Service Provider to enter into a connection contract with a retail customer or a real estate developer.
Connection point	The agreed point of supply established between Network Service Provider(s) and another Registered Participant, Non-Registered Customer or franchise customer.
Connection policy	A document, approved as a connection policy by the AER under Chapter 6, Part E of the National Electricity Rules, setting out the circumstances in which connection charges are payable and the basis for determining the amount of such charges.
Connection service	Means either or both of the following: (a) a service relating to a new connection for premises; (b) a service relating to a connection alteration for premises.
Contestable	A service is contestable if the laws of the participating jurisdiction in which the service is to be provided permit the service to be provided by more than one supplier as a contestable service or on a competitive basis.

Term	Definition
Customer	A person who: (1) engages in the activity of purchasing electricity supplied through a transmission or distribution system to a connection point; and (2) is registered by AEMO (the Australian Energy Market Operator) as a Customer under Chapter 2 of the National Electricity Rules.
Distribution network service provider	A person who engages in the activity of owning, controlling, or operating a distribution system.
Distribution system	A distribution network, together with the connection assets associated with the distribution network, which is connected to another transmission or distribution system. Connection assets on their own do not constitute a distribution system.
Electricity retailer	Means the entity with whom a customer has a retail contract for the purchase of electricity.
Embedded generator	A person that owns, controls or operates an embedded generating unit that is not classed as a micro-embedded generator (i.e. with an installed capacity of >30 kW or 30 kVA).~~,~~
Enquiry	A preliminary enquiry under clause 5A.D.2 of the National Electricity Rules.
Extension	An augmentation that requires the connection of a power line or facility outside the present boundaries of the transmission or distribution network owned, controlled or operated by a Network Service Provider.
Large customer connection	Large customer connections are defined in Energex's Annual Pricing Proposal as those connections that fall within the tariff classes of Individually Calculated Customer (ICC) and~~,~~ Connection Asset Customer (CAC) including embedded generators with installed capacity greater than or equal to 30 kW (or 30 kVA)~~, or Embedded Generator (EG)~~. Customers with a network coupling point at 110 kV or 33 kV are allocated to the ICC tariff class. Customers with a network coupling point at 11 kV may also be allocated to the ICC tariff class, but only if they meet the following criteria: • The customer's electricity consumption is greater than 40 GWh per year at a single connection; and/or • The customer's demand is greater than or equal to 10 MVA; and/or

Term	Definition
	• The customer's circumstances mean that the allocation of the average shared network charge becomes meaningless or distorted. Customers with a network coupling point at 11 kV who are not allocated to the ICC tariff class (e.g. generators with installed capacity greater than or equal to 30 kW (or 30 kVA)) are allocated to the CAC tariff class.
Micro embedded generator connection	A connection between an embedded generating unit and a distribution network of the kind contemplated by Australian Standard AS 4777, i.e. ~~(Grid connection of energy systems via inverters~~generators with an installation size of less than 10 kW (single phase) or 30 kW (three phase) connected to the LV network.
Micro-embedded generator	A retail customer who operates, or proposes to operate, an embedded generating unit for which a micro embedded generator connection is appropriate.
Model standing offer	A document approved by the AER as a model standing offer to provide basic connection services or as a model standing offer to provide standard connection services.
National Electricity Rules (the Rules)	The National Electricity Rules govern the operation of the National Electricity Market.
Network	The apparatus, equipment, plant and buildings used to convey, and control the conveyance of, electricity to customers (whether wholesale or retail) excluding any connection assets. In relation to a Network Service Provider, a network owned, operated or controlled by that Network Service Provider.
New connection	A connection established or to be established, in accordance with Chapter 5A of the National Electricity Rules and applicable energy laws, where there is no existing connection.
Network coupling point	The point at which connection assets join a distribution network, used to identify the distribution service price payable by a customer.
Non-registered embedded generator	An embedded generator that is neither a micro-embedded generator nor a Registered Participant.
Original customer	The connection applicant who triggered the requirement and paid for

Term	Definition
	the construction of an extension asset.
Real estate developer	A person who carries out a real estate development.
Real estate development	The commercial development of land for subdivision. ~~including its development in one or more of the following ways:~~ ~~(a) subdivision;~~ ~~(b) the construction of commercial or industrial premises (or both);~~ ~~(c) the construction of multiple new residential premises.~~
Registered participant	A person who is registered by AEMO in any one or more of the categories listed in rules 2.2 to 2.7 (in the case of a person who is registered by AEMO as a Trader, such a person is only a Registered Participant for the purposes referred to in rule 2.5A). However, as set out in clause 8.2.1(a1), for the purposes of some provisions of rule 8.2 only, AEMO, Connection Applicants, Metering Providers and Metering Data Providers who are not otherwise Registered Participants are also deemed to be Registered Participants.
Regulatory control period	A period of not less than 5 regulatory years for which the Distribution Network Service Provider is subject to a control mechanism imposed by a distribution determination.
Retail customer	Includes a non-registered embedded generator and a micro-embedded generator.
Rules	National Electricity Rules
Small customer connection	Connections for those customers that fall within the Standard Asset Customer (SAC) tariff class in accordance with Energex's Annual Pricing Proposal.
Standard connection service	A connection service (other than a basic connection service) for a particular class (or sub-class) of connection applicant and for which a model standing offer has been approved by the AER.
Subsequent customer	A connection applicant, other than the original customer, who connects to an extension subject to a pioneer scheme.
Standard service line lengths	Section 14(3) of the Queensland Electricity Regulation 2006 provides that the maximum length of a service line required to be

Term	Definition
	provided and installed within a customer's premises by an electricity entity at the electricity entity's cost is: a) 20m for an overhead service line; or b) 7m for an underground service line.

APPENDIX 1: Summary of connection charges that may apply

Connection Type	Demand / Capacity	Augmentation and/or extension works required?	Connection Offer Type	Alternative Control Connection Charges		Capital Contributions for Standard Control Services	Pioneer charge for existing network extension	Contestable Services
				New Connection	Connection Alteration			
Single residential premises	Less than 100 amps per phase (or 70 kVA)	No	Basic*	Nil	Connection charge for connection alteration service	N/A	N/A	No
	Less than 100 amps per phase (or 70 kVA)	Yes	Negotiated	Connection application services fee Pre-connection services fee (if required)	Connection application services fee Pre-connection services fee (if required) Connection charge for connection alteration service	Capital contribution towards augmentation of connection assets (if required) Capital contribution towards network extension (if required)	Potentially	No
	Greater than 100 amps per phase (or 70 kVA)	Potentially	Negotiated	Connection application services fee Pre-connection services fee (if required)	Connection application services fee Pre-connection services fee (if required) Connection charge for connection alteration service	Capital contribution towards augmentation of connection assets (if required) Capital contribution towards network extension (if required) Capital contribution towards shared network augmentation (if required)	Potentially	No
Small commercial property, e.g. small shops, other small commercial premises	Less than 100 amps per phase (or 70 kVA)	No	Basic*	Nil	Connection charge for connection alteration service	N/A	N/A	No

Connection Type	Demand / Capacity	Augmentation and/or extension works required?	Connection Offer Type	Alternative Control Connection Charges		Capital Contributions for Standard Control Services	Pioneer charge for existing network extension	Contestable Services
				New Connection	Connection Alteration			
	Less than 100 amps per phase (or 70 kVA)	Yes	Negotiated	Connection application services fee Pre-connection services fee (if required)	Connection application services fee Pre-connection services fee (if required) Connection charge for connection alteration service	Capital contribution towards augmentation of connection assets (if required) Capital contribution towards network extension (if required)	Potentially	No
	Between 100 amps per phase (or 70 kVA) and 1 MVA	Potentially	Negotiated	Connection application services fee Pre-connection services fee (if required)	Connection application services fee Pre-connection services fee (if required) Connection charge for connection alteration service	Capital contribution towards augmentation of connection assets (if required) Capital contribution towards network extension (if required) Capital contribution towards shared network augmentation (if required)	Potentially	No
Multi-tenancy residential and/or commercial premises, e.g. block of flats, small shopping complex, apartment building, mixed use developments	Between 100 amps per phase (or 70 kVA) and 1 MVA	Potentially	Negotiated	Connection application services fee Pre-connection services fee (if required)	Connection application services fee Pre-connection services fee (if required) Connection charge for connection alteration service	Capital contribution towards augmentation of connection assets (if required) Capital contribution towards network extension (if required) Capital contribution towards shared network augmentation (if required)	Potentially	No

Connection Type	Demand / Capacity	Augmentation and/or extension works required?	Connection Offer Type	Alternative Control Connection Charges		Capital Contributions for Standard Control Services	Pioneer charge for existing network extension	Contestable Services
				New Connection	Connection Alteration			
Large commercial or industrial premises, e.g. shopping centre, manufacturer, hospital, university	Greater than 1 MVA	Yes	Negotiated	Connection application services fee Pre-connection service fees (if required) Connection charges for design and construction of connection assets (where this work is undertaken by Energex) Connection charges for commissioning and energisation of connection assets (including inspection and testing)	Connection application services fee Pre-connection service fees (if required) Connection charges for design and construction of connection assets (where this work is undertaken by Energex) Connection charges for commissioning and energisation of connection assets (including inspection and testing)	Capital contribution towards shared network augmentation (if required)	Potentially	Yes - design and construction of connection assets
New land subdivision/ real estate development	N/A	Yes	Negotiated	Connection application services fee Pre-connection service fees (if required) Connection charges for switching, commissioning and energisation of connection assets (including inspection and testing)	N/A	Capital contribution towards shared network augmentation (if applicable)	Potentially	Yes - design and construction of connection assets
Embedded generation, e.g. solar panels, thermal or wind generation systems	With an inverter capacity of less than 5 kW (or 5 kVA)	No	Basic*	Nil	N/A	N/A	N/A	No

Connection Type	Demand / Capacity	Augmentation and/or extension works required?	Connection Offer Type	Alternative Control Connection Charges		Capital Contributions for Standard Control Services	Pioneer charge for existing network extension	Contestable Services
				New Connection	Connection Alteration			
	With an inverter capacity of between 5 kW (or 5 kVA) and 30 kW (or 30 kVA)	No	Negotiated	Connection application services fee Pre-connection service fees (if required)	Connection application services fee Pre-connection service fees (if required) Connection charge for connection alteration service	Capital contribution towards augmentation of connection assets (if required) Capital contribution towards network extension (if required) Capital contribution towards shared network augmentation (if required)	Potentially	No
	With a capacity of greater than 30 kW (or 30 kVA)	Potentially	Negotiated	Connection application services fee Pre-connection service fees (if required) Connection charge for design and construction of connection assets (where this work is undertaken by Energex) Connection charges for commissioning and energisation of connection assets Connection charge for removal of network constraint for embedded generators > 1MW (or 1 MVA) (if required)	Connection application services fee Pre-connection service fees (if required) Connection charge for design and construction of connection assets (where this work is undertaken by Energex) Connection charges for commissioning and energisation of connection assets Connection charge for removal of network constraint for embedded generators > 1MW (or 1 MVA) (if required)	Capital contribution towards shared network augmentation (if required)	Potentially	Yes - design and construction of connection assets

Connection Type	Demand / Capacity	Augmentation and/or extension works required?	Connection Offer Type	Alternative Control Connection Charges		Capital Contributions for Standard Control Services	Pioneer charge for existing network extension	Contestable Services
				New Connection	Connection Alteration			
Temporary supply, e.g. for carrying out building work, connecting a blood bank or holding a special event	Less than 100 amps per phase (or 70 kVA)	No	Basic*	Connection charge for temporary connection	N/A	N/A	N/A	No
	Greater than 100 amps per phase (or 70 kVA)	Potentially	Negotiated	Connection application services fee Pre-connection services fee (if required) Connection charge for temporary connection	Connection application services fee Pre-connection services fee (if required) Connection charge for temporary connection	Capital contribution towards augmentation of connection assets (if required) Capital contribution towards network extension (if required) Capital contribution towards shared network augmentation (if required)	Potentially	No
Unmetered supply, e.g. watchman lighting, lighting for public amenities, street lighting, bus shelters	N/A	No	Standard*	Nil	Connection charge for connection alteration service	N/A	N/A	No
	N/A	Yes	Negotiated	Connection application services fee Pre-connection services fee (if required)	Connection application services fee Pre-connection services fee (if required) Connection charge for connection alteration	Capital contribution towards augmentation of connection assets (if required) Capital contribution towards network extension (if required)	Potentially	No

* To be eligible for a basic or standard connection offer, the connection service must not require extension or augmentation of the distribution network and, in the case of micro-embedded generators, must comply with the requirements of Energex's Connection Standard Small Scale Parallel Inverter Energy Systems up to 30 kVA which is available on our website.

Customers may elect to pursue a negotiated connection process for a basic or standard connection where the customer would prefer to negotiate the terms and conditions on which the connection service is to be provided.

From time to time, Energex may seek the AER's approval to offer other basic or standard connection offer types in addition to those listed above. Current information on basic connection offers approved by the AER will be maintained on our website