

Powercor Connection Policy



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1 Introduction

This document provides an outline of our connection services, when connection charges may be payable by customers and how those charges are calculated.

1.1 About Powercor

Powercor is the most efficient and reliable regional and rural electricity network in Australia, and is one of Victoria's five privately owned electricity distributors. We own and manage assets that deliver electricity to more than 765,000 homes and businesses across Melbourne's outer western suburbs, and central and western Victoria.

Our electricity distribution network is vast and complex, covering more than 145,000 square kilometres and traversing difficult and remote terrain in some parts of the State.

Our key activities include connecting homes and business customers to a safe and reliable electricity supply and extending and upgrading the network so that the future power supply needs of customers are met when required.

1.2 Purpose and scope of document

This connection policy 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 in accordance with Part DA of the National Electricity Rules (the **Rules**), as applied in Victoria via the *National Electricity (Victoria) Act 2005*, as amended by the *National Electricity (Victoria) Further Amendment Act 2016*, which requires distributors to prepare a connection policy setting out the circumstances in which a retail customer or real estate developer may be required to pay for a connection charge for the provision of a connection service under Chapter 5A of the Rules. This document is also has also been prepared in accordance with:

- the connection charge principles set out in Part E of Chapter 5A of the Rules, as applied in Victoria;
- 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 Victorian distributors for the 2016-2020 regulatory control period.

The connection policy applies to connections requested after 1 January 2017 for new or modified connections. However, the policy does not apply to Registered Participants or intending Registered Participants (such as large generators) seeking to connect to our network, as such connections will be considered under Chapter 5 of the Rules.

1.3 Connecting to our network

A connection is the physical link between the distribution system and customers' premises to allow the flow of electricity. We are responsible for providing the following connection services to customers in our distribution area:

- connecting new premises to our distribution network (new connection);
- making alterations to existing connections that no longer meet customer's requirements, such as increasing the supply capacity or 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; and

- connecting generators embedded to the distribution network such as solar or wind power generators.

1.4 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.

Where we are the metering provider, charges will also apply for metering services required for the connection. However, metering charges are determined separately.

Post connection services, including service such as de-energisation and re-energisation, have been categorised by the AER as alternative control services and a fixed fee applies.

A full list of our fees and charges can be found in the Powercor General Service Charge Pricing Schedule which is available on our website, www.powercor.com.au.

1.5 Contact details for further information

Further information on our connections policy can be obtained by contacting Customer Service:

- General Enquiries 1300 301 101
- website www.powercor.com.au

The customer service team may direct detailed enquiries to appropriate personnel within our organisation.

2 Customer connection services

We will offer two types of connection services:

- basic connection services; and
- negotiated connection services.

This section describes the types of connections that fall within each category.

While we have not defined any standard connection services, these may be introduced at a later date.

2.1 Basic connection service

Basic connection services are provided to retail customers where the provision of the connection service does not require an upgrade to the network i.e. no augmentation.

Basic connections are typically:

- connection of residential dwellings and small commercial premises, including both temporary and permanent connections;
- unmetered supply connections, such as electronic parking meters, bus shelters or phone boxes; and
- micro-embedded generator connections, such as inverter energy systems using solar, thermal or wind.

These connections will typically require a basic, low voltage connection to our distribution network. It will not involve any augmentation including capacity or extension of the network. Where the connection service requested does not meet the criteria of a basic connection service, or where augmentation of the network is needed to provide the connection service, the connection service is a negotiated connection service.

2.1.1 Residential and small commercial premises

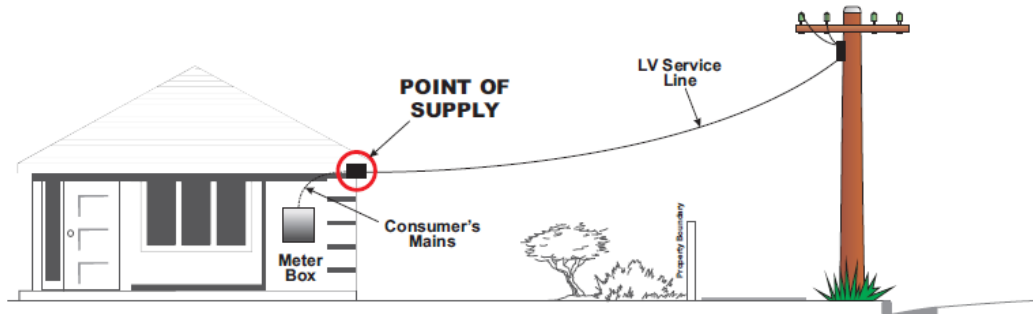
Most connections of residential and small commercial premises to our network will involve either a low voltage overhead service connection or a low voltage underground service connection, depending on whether the distribution network in the customer's area is overhead or underground. Basic connections generally involve a load of less than 25 kilo-volt amperes (**kVA**) (i.e. 25kVA), or 170 amperes (**amps**) where no network augmentation is required. For connections to a single phase substation or on a Single Wire Earth Return (**SWER**) line, the load must be less than 10kVA, or 40 amps.

Basic connection services are defined as connections below 100 amps for direct connected (**DC**) meters and below 170 amps for current transformer (**CT**) meters with no augmentation of the distribution network required.

For premises located in an area with overhead power lines, the connection involves an overhead service wire to a point of supply (typically a fuse) on the customer's premises. The overhead service wire can be no longer than 20 metres on the customer property.¹ This is illustrated in the following diagram.

¹ The overhead line must comply with the requirements of the Victorian Service and Installation Rules, available from: <http://www.victoriansir.org.au/>

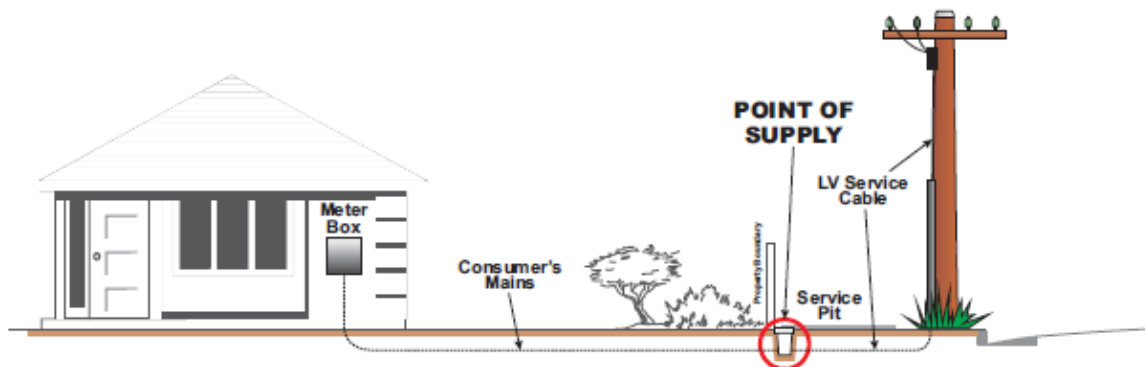
Figure 2.1 Typical overhead connection for residential or small commercial premises



Source: Powercor

For premises located where there is an underground service, a basic connection involves a service line from our pole to a point of connection in an existing underground pit. The customer is then responsible for the consumer's mains to the premises. This is illustrated in the following diagram.

Figure 2.2 Typical underground connection for residential and small commercial premises



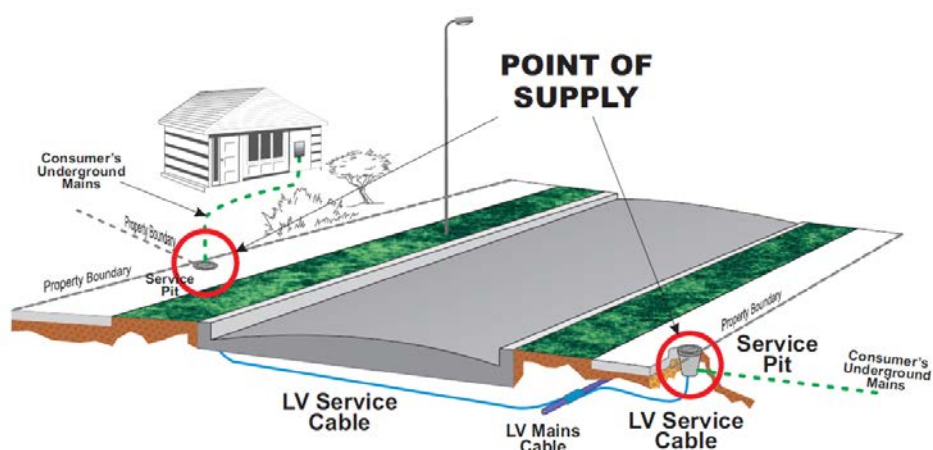
Source: Powercor

Where there is no existing underground pit, it can be installed as a negotiated connection service. Once installed, a basic connection service is required to connect the premises.

Customers may choose an underground connection where the overhead line would exceed 20 metres, where the line may cross a neighbouring property boundary or for aesthetic reasons.

Customer connections are often underground in new housing estates. Generally, the electricity infrastructure would be installed under a negotiated connection contract with the developer and then each dwelling would be connected as a basic connection service. A typical customer connection in an underground residential housing development is shown in the following diagram.

Figure 2.3 Typical underground connection in a residential housing estate



Source: Powercor

Basic connections also include alterations and additions to existing services, such as upgrades from a single phase connection to a three phase connection up to 170 amps, or a connection upgrade of the service fuse. The alterations must not require augmentation of the network.

2.1.2 Unmetered supply

We offer unmetered supply when it is considered impractical to read or maintain meter or where metering equipment would be susceptible to damage. Connections eligible to be unmetered must be small (i.e. less than 2 amps) and have a steady and uniform load e.g. where the energy consumption can be accurately assessed without the need for a meter.

Unmetered supply connections are typically provided for facilities such as electronic parking meters, bus shelters or phone boxes.

2.1.3 Micro-embedded generation

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

Basic connection services include the connection of small scale renewable energy micro-generation systems (i.e. micro-embedded generators) to the network via an inverter, and do not require network augmentation. The inverter must have a capacity of no more than 5 kilowatt (kW) single phase, or no more than 30kW for a three phase connection, and the customer must have sought and received pre-approval from us for the requested capacity of the generator. The pre-approval process is discussed in section 6.

Micro-embedded generators must comply with Australian Standard (AS) 4777.

2.2 Negotiated connection service

Negotiated connection services are those that do not meet the criteria for a basic connection service. That is, the connection may be too large or complex, or require network augmentation. This may include, for example:

- connection of residential dwellings and small commercial premises requiring greater than 170 amps, or more than 40 amps on a SWER line or from a single phase substation;
- micro-embedded generation requiring greater than 5kW per single phase connection and greater than 30kW for a three phase connection;

- embedded generation that is not micro-embedded generation (i.e. not compliant with AS4777);
- high voltage, reserve capacity or dedicated assets;
- establishment of embedded networks; or
- real estate developments.

Negotiated connection services may also include connections where we construct the connection assets or the customer constructs and gifts the connection assets to us under our contestability framework, such as residential housing developments. Contestable services are discussed in section 5.

3 Connection offers

We provide two types of connection offers for new connections or connections alternatives in accordance with Chapter 5A of the Rules: basic and negotiated.

The type of connection offer required will depend on criteria such as connection type, the size and complexity of the connection and whether we 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 3.1 Connection offer types

I want to have a new connection or change an existing connection for...	With a demand/ capacity of...	This connection is typically a...
Residential premises or small commercial premises such as small shops (excluding SWER or single phase substation connections)	Less than 100 amps	Basic connection
	Greater than 100 amps and less than 170 amps, providing supply is available and no augmentation is required	Basic connection
Temporary supply, e.g. for carrying out construction works or holding a special event (excluding SWER or single phase substation connections)	Less than 100 amps	Basic connection
	Greater than 100 amps	Negotiated connection
Residential premises, small commercial premises, temporary supply to a SWER line or single phase substation	Less than 40 amps	Basic connection
	Greater than 40 amps	Negotiated connection
Unmetered supply e.g. electronic parking meters, bus shelters or phone boxes	Less than 2 amps	Basic connection
Micro-embedded generator with pre-approval of exported capacity e.g. solar panels	With an inverter capacity of less than 5kW single phase, or less than 30kW for a three phase connection	Basic connection
	With an inverter capacity greater than 30kW for a three phase connection	Negotiated connection
Embedded generator that is not a micro-embedded generator e.g. thermal or wind generating systems	N/A	Negotiated connection
Multi-tenancy residential and/or commercial premises e.g. apartment building, shopping complex	N/A	Negotiated connection
New land subdivision/ real estate development	N/A	Negotiated connection

Source: Powercor

Upon receiving a customer request for connection, we will review the application to assess whether or not it meets the criteria for the connection type. This will involve assessing the customer's maximum demand and/or estimated energy consumption based on information supplied in the connection application and in conjunction with actual energy consumption from similar customers.

In addition to determining the type of connection service for which the premises qualifies (i.e. basic or negotiated), the assessment will establish the design parameters for network augmentation and connection assets and may be used in determining the amount of any capital contribution payable. We note that if the customer is seeking to connect to a network extension that is subject to a pioneer scheme, then the connection will be considered a negotiated connection.

3.1 Basic connections

We are required to publish model standing offers (**MSO**) for the provision of basic connection services which are approved by the AER. The MSOs are available on our website.

The process for a customer to apply for a basic connection service is as follows:

1. The customer engages a Registered Electrical Contractor (**REC**) to advise them on supply availability, prepare the premises for connection and to provide a certificate of electricity safety (**CES**)
2. The customer applies for the basic connection service by contacting their retailer who will apply for the basic connection service on their behalf.

Their retailer will use an electronic service order as the connection application form. By using this connection form, the retailer is accepting the applicable MSO for Basic Connection Services on behalf of the connection applicant. The basic connection service contract is formed when an electronic service order is received from the customer's retailer of choice. Once the basic connection contract is formed, the basic connection service will be performed.

Alternatively, if the customer would like to receive a written letter of offer for the basic connection service prior to the connection service being performed, the customer must complete the basic connection service application form which is found on our website.

When a connection applicant requests a written letter of offer, we will provide the letter of offer based on the MSO to the connection applicant within 10 business days of receiving a completed application (or within 10 business days of receiving additional information sought in relation to the connection offer). The offer will remain open for acceptance for 45 business days.

Once the offer is accepted and an electronic service order is received from a retailer of the connection applicant's choice, the basic connection service contract is formed. Once the basic connection contract is formed, the basic connection service will be performed.

If the connection application does not meet the criteria for a basic connection service, we will advise the customer of the negotiated connection service process and of possible costs and expenses related to the negotiations.

If a customer rejects our model standing offer for basic connection service, or wishes to negotiate the terms and conditions of an offer, then the customer may seek a negotiated connection offer. A connection application fee may apply for negotiated offers.

3.2 Negotiated connections

Customers may seek to negotiate a connection offer, or seek an offer where the connection service does not meet the criteria for a basic connection service.

The connection charges associated with negotiated connection offers will vary, depending on customer type and the specific requirements of the connection service.

An upfront fee may also be levied on customers seeking a negotiated connection offer. The fees will be calculated using our AER approved network tariffs and charges, available from:

- <https://www.powercor.com.au/about-us/electricity-networks/network-tariffs-and-charges/>

A negotiated connection service offer will be provided to the customer within 65 business days of the date of the completed application being received (not counting any time in which further information that we have sought from the customer is provided). The offer will remain valid for 20 business days.

A negotiated connection service contract is entered into when a customer accepts our negotiated connection service offer.

4 Charges for connection services

This chapter sets out how we will calculate charges for basic and negotiated connection services.

Charges for a basic connection service will be for the component services classified by the AER as alternative control services.

Charges may be payable for negotiated connection services, in addition to the payment of security fee.

Capital contributions are not required towards augmentation costs where the connection is a basic connection service, or the connection does not exceed:

- 10kVA (40 amps) on SWER lines and customers supplied from single phase substations; and
- 25kVA (100 amps) elsewhere in the network.

In addition, pioneer schemes may apply to negotiated connection services. Pioneer schemes apply to dedicated network extensions which have been funded by a customer. 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.

4.1 Basic connection services

A fixed fee is charged for a basic connection services.

In addition, where a customer is seeking the connection of embedded generation, a charge for reconfiguration of the electricity meter (where we are the meter provider) may be levied.

The relevant fees will be the AER approved tariffs for the calendar year, contained within our published General Service Charge Pricing Schedule.²

4.2 Negotiated connection services

A connection charge is calculated according to the following formula:

$$\text{Connection charge} = AS + CC + PS$$

where:

AS is the total charge payable for all applicable ancillary services

CC is the total capital contribution payable for all standard control connection services, which are calculated with reference to the cost-revenue-test set out below

PS is the total charge payable to account for any pioneer scheme applying to the assets to which the customer connects

To determine the connection charge, we will calculate the charge for each component based on the least cost technically acceptable standard necessary for the connection. The least cost technically acceptable standard may change depending on the location of the connection, for example a higher standard may apply in high consequence bushfire areas that are declared under the Electricity Safety (Bushfire Mitigation) Amendment Regulations 2013.

Where the connection applicant is a real estate developer, we may include the cost of providing efficiently for forecast load growth when determining the least cost technically acceptable standard.

² Available from: <https://www.powercor.com.au/about-us/electricity-networks/network-tariffs-and-charges/>

Where a connection applicant requests a higher standard, which may include an applicant requesting a point of supply to the property requiring additional extension works or a request for a reserve high voltage feeder, the connection applicant shall pay the additional cost of providing the service to the standard requested.

Certain connection applicants may also be required, or in some cases may request, to make a pre-payment to initiate design or purchasing of long lead time material. Full payment of connection charges is generally required before construction commences.

Some connection applicants may also be required to pay a security fee.

4.2.1 Ancillary charges

An upfront fee may be levied on customers seeking a negotiated connection offer. This fee is to cover our expenses incurred in assessing the application and making a connection offer.

Depending on the requirements of the customer's connection, other fee based charges may be payable for the provision of relevant ancillary services, including specification and design enquiry and audit design and construction. Ancillary services are those services categorised as 'alternative control' services by the AER.

Specification and design enquiry services are provided where we determine that an element of detailed design is required to fairly assess the costs so that a connection offer can be made to the customer. The service is considered appropriate if uncertainty exists with respect to matters including, but not limited to, the following:

- the route of the network extension required to reach the customer property;
- the location of other utility assets;
- environmental considerations including the likely impact on native vegetation or trees or cultural or heritage impacts;
- obtaining necessary permits from state or local government bodies.

Specification and design enquiry services may also be required where a customer requests us to provide information to assist them to undertake feasibility studies or to provide budget estimates.

Audit design and construction services are provided where our review, approval or acceptance of works undertaken by third parties is requested by a third party or where we consider it necessary. This may be required in situations including, but not limited to:

- customer provided buildings, conduits or ducts used to house our electrical assets;
- customer provided connection facilities including switchboards used in the connection of an electrical supply to the installation;
- any electrical distribution work completed by one of our approved contractors that has been engaged by a customer;
- provision of system plans and system planning scopes e.g. to bidders for contestable works; and
- reviewing and/or approving plans submitted by bidders for contestable works.

Ancillary services are charged on a quoted fee for service basis. The fee will be calculated as the AER approved labour rate in our General Service Charge Pricing Schedule, multiplied by the hours worked plus materials used.

4.2.2 Capital contributions

Capital contributions are calculated using a cost-revenue-test. We will only seek a capital contribution where the incremental cost of the connection exceeds the estimated incremental revenue expected to be derived from the

connection. The test only applies to the components of the connection classified as 'standard control' services by the AER.

We will determine the level of capital contribution in a fair and reasonable manner, which will be reflective of the efficient costs of performing the service.

The capital contribution component of a connection is calculated as follows:

$$CC = ICCS + ICSN - IR + SF$$

where:

ICCS is Incremental Cost Customer Specific, reflecting the incremental cost incurred by the distributor for the connection services used solely by the connection applicant

ICSN is Incremental Cost Shared Network, reflecting the costs incurred by the distributor for connection services that are not used solely by the connection applicant

IR is Incremental Revenue which is calculated as the present value of expected distribution revenue over 30 years (residential) or 15 years (non-residential).

SF is the amount of any security fee

Each element is described in more detail below.

Incremental Cost Customer Specific

The Incremental Cost Customer Specific (**ICCS**) is the incremental costs that we incur that are specific to the customer's connection, for services solely used by the customer. For example, this may include network extension assets and augmentation of connection assets at the customer premises. The ICCS is calculated as the sum of the incremental costs specific to the connection, such as:

- costs to augment connection assets at the customer's premise;
- network extension costs;
- administration costs (including any design and certification costs);
- tender costs (where relevant); and
- cost of providing any other connection services which are used solely by the customer.

Overheads will be applied in addition to the costs specific to the connection.

Incremental Cost Shared Network

The Incremental Cost Shared Network (**ICSN**) is the network cost of augmenting our shared network to provide capacity for the new or modified connection.

The augmentation charge applies if the connection has a total combined maximum capacity greater than 25kVA or 10kVA on SWER lines or customers connected from single phase substations. This component of the augmentation charge does not apply to non-registered embedded generators based on the generation output.

The ICSN is determined on the basis of unit rates as follows:

$$ICSN = \text{unit rate} \times \text{demand estimate}$$

where:

Unit rate is the average cost of augmentation per unit of added capacity

Demand estimate is the estimated maximum demand at the connection point, measured in kVA

The average cost of augmentation represents the cost that we incur in adding each unit of capacity to the network (excluding customer specific costs), measured in kVA, based on a review of recent actual augmentation project costs.

The calculation of incremental cost shared network takes into account the useful life of the network component and the assumed period for which the connection applicant will be using the network. If the incremental revenue is assumed to be earned over a 30 year period, which is the default period for residential customers, then the augmentation unit rate will be discounted if the economic life of the augmentation assets is longer than 30 years. Similarly, the augmentation rate will be discounted for non-residential customers where the connection is assumed for 15 years.

The augmentation unit rate varies at different levels of the network. The rate for the average cost of augmentation that applies for a particular connection will be calculated as the discounted cumulative rate to the level of the network at which the connection occurs. The augmentation unit rates to be applied in 2017 are shown in the table below. The average augmentation unit rates are escalated each subsequent year by the Consumer Price Index (CPI).

Table 4.1 Augmentation unit rates for residential customers (\$ per MVA, \$2017)

	Discounted cumulative unit rate
LV feeder	572,623
Distribution substation	389,247
HV feeder	158,796
Zone substation	127,169
Sub-transmission line	53,062

Source: Powercor
Note: excludes overheads

Table 4.2 Augmentation unit rates for business customers (\$ per MVA, \$2017)

	Discounted cumulative unit rate
LV feeder	374,760
Distribution substation	254,747
HV feeder	103,926
Zone substation	83,227
Sub-transmission line	34,727

Source: Powercor
Note: excludes overheads

Overheads will be applied in addition to the augmentation rates.

Incremental Revenue

The Incremental Revenue (IR) is the present value of the incremental revenue stream expected to be received from the new or modified connection, less the component recovering operating and maintenance costs, over a pre-defined period. An assumed connection period of 30 years applies for residential customers. For business customers, a period of 15 years is assumed for the connection however where it does not reflect a reasonable estimate of the time that the connection service will be connected, an alternative connection period may be applied.

The incremental revenue is calculated by taking into account the following:

- forecast the distribution revenue, less the component recovering operating and maintenance costs, using the price path set out in our distribution determination for the 2016-2020 regulatory control period;
- forecast the distribution revenue, less the component recovering operating and maintenance costs, for the period from 2021 and for the remaining life of the connection, using a price path that escalates the tariff in 2020 by CPI each year;
- discount the revenue stream by our real pre-tax weighted average cost of capital as set out in the AER's final determination.

4.2.3 Estimating maximum demand and energy consumption

We will assess the customer's maximum demand and/or estimated energy consumption based on information supplied in the connection application and in conjunction with actual energy consumption from similar customers. The assessment of demand and consumption may be used in determining the amount of any capital contribution payable, and will be set out in our connection offer.

For new connections to residential and small commercial premises with no previous load history, we will assess the likely consumption based on the information supplied in the connection application, including expected energy usage, supply voltage and meter type. Using this information, estimates will be made with reference to existing similar loads and taking into account the particular circumstances and load characteristics such as seasonality, load consumption curves, load factors and power factors.

For commercial and industrial premises, or real estate developments, we will assess the customer's maximum demand and estimated energy consumption based on information supplied by the customer and with reference to existing similar loads.

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

- 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 (kW/m²) from a similar building or project and scaling.

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).

Where we cannot reach agreement with the connection applicant (other than a real estate developer)³ on the estimated demand and consumption for use in determining the capital contribution payable, we may apply a provisional estimate.

Where a provisional estimate has been used to determine a capital contribution, the connection applicant may be subject to an additional charge or refund for the difference between the actual consumption and demand and provisional estimates of consumption and demand. We will assess the additional charge or refund payable within three years of the connection being energised. The amount of the additional charge or refund will be the difference between the actual capital contribution paid and that calculated on the actual demand and consumption.

An additional charge or refund is only applicable where the connection applicant is still solvent and continuing to utilise the premises.

4.2.4 Pioneer scheme

If a network extension asset ceases, within seven 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 our pioneer scheme.

This pioneer scheme will apply to new offers made after 1 July 2016. The pioneer scheme in place at the time of an offer made prior to this date will continue to apply to those connections.

The 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, with the exclusion of service pits. The original premises must be occupied and using the extension for the scheme to apply.

Pioneer schemes do not apply to real estate developments where an equalisation scheme applies. The equalisation scheme is discussed in section 5.3.

Pioneer schemes are not applied to shared network augmentations. For example, the scheme applies to assets that are dedicated for the exclusive use of that customer such as a radial HV extension that only services the connecting customer. Extensions of the HV network that form part of the HV interconnected network are not eligible for cost sharing.

When a subsequent customer connects to a network extension which is subject to a pioneer scheme, we will provide each customer already connected to the extension with a partial refund and charge subsequent customers the amount determined by the pioneer scheme. Each extension is subject to a separate cost sharing arrangement, even if the connection is to a pre-existing extension.

We 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 the extension assets on a straight line basis over a 20 year period.

³ Private agreement may be reached with real estate developers.

If the original extension was built to a higher standard than the least cost technically acceptable standard or capacity, then only the cost of constructing to the least cost technically acceptable standard or capacity will be used for the purposes of the pioneer scheme. Where the cost is not known, for example due to contestable works, then we will determine the relevant cost.

If the pioneer scheme calculates a total refund to any customers already connected to the extension that is less than \$1,000 (\$2012, real) adjusted for CPI, we will not pay a refund to those 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. We will also advise all new customers who apply for connection services that they may be required to contribute towards a pioneer scheme (where applicable).

In order to receive a pioneer payment, the customer must be either the current occupier of a premise or the original occupier (who paid for, or for part of, an extension) of the premise. If there is a dispute between the current occupier and the original occupier of a premise as to who is eligible for a refund, if there is no written evidence or an agreement to the contrary, the current occupier of the premise shall be taken to be entitled to any refund.

4.2.5 Security fee

Some connection applicants may be required to pay a security fee. The security fee is applied to manage our risk associated with not receiving the distribution revenue amount that was assumed when calculating a connecting customer's incremental revenue. Subject to actual energy consumption the security fee is refundable.

Generally a security fee will only be required for large new customer works where the net present value (**NPV**) of the incremental revenue for the connection is greater than \$750,000. The security fee will be evaluated against the project location, industry type, and project size in terms of dollar value of the customer's incremental revenue.

The security fee may be in the form of either a prepayment or a financial guarantee in the form of a bank guarantee.

We will operate the security fee in accordance with the following principles:

- the security fee will not be greater than the amount of the incremental revenue which we assess as having a risk of not being recovered;
- the security fee will not exceed the present value of the incremental costs that we will incur in undertaking any relevant new works and augmentation; and
- we will not recover more than the total estimated incremental revenue through the security fee scheme. If the actual incremental revenue realised over the period of the security fee scheme exceeds the estimated incremental revenue, we will refund the security fee in full.

In terms of refunding the security fee, we will provide an annual rebate over the period of the security fee scheme. The first qualifying period is 12 months from the tie-in date. In order to receive the maximum allowable refund amount, we will verify that actual electricity consumption is in agreement with the minimum electricity usage the connecting customer agreed to use when requesting a firm offer. Interest will be payable on the refund amount, based on the 90 day Bank Bill rate less a 0.25 per cent administration charge. Interest will not be payable on security held in the form of a bank guarantee.

5 Contestable services

This section sets out the connection services that are contestable. In addition, this section covers gifting of assets and our approach to calculating charges for real estate developments.

The tasks that we consider to be contestable and non-contestable are shown in the table below.

Table 5.1 List of contestable and non-contestable works

Contestable	Non-contestable
<ul style="list-style-type: none">• Project management• Underground Residential Subdivision (URD) Design, including surveying and drafting services• Construction, which includes the provision of all materials and 'as-constructed' plans	<ul style="list-style-type: none">• System design• Plan approval• Updating records• Augmentation works• Works that need to be completed on existing power lines

Source: <https://www.powercor.com.au/media/2458/powercor-customer-guideline-for-making-an-electricity-supply-available.pdf>

For safety reasons, works on or near our live assets are not contestable.

5.1 Competitive tendering

We are required to call for tenders for certain works on our network, in particular augmentation works or where we make an offer to modify our network.

We may charge the applicant the reasonable costs incurred in conducting the tender process, or assisting in the tender process. An estimate of the costs will be provided to the connection applicant before the tender process is commenced.

Our policy for tenders requires that our processes for determining the price for augmentation or modification works are fair, reasonable and transparent. Our tender policy is available from our website.⁴

Where a competitive tender has been sought by the applicant for modification works, and we receive a request in writing for information pertaining to that offer, we will provide:

- an itemised breakdown of the materials, labour costs and overheads, and the final price, offered to us by any person who submitted a tender; and
- an explanation of why a person was selected as preferred tenderer for the performance of works associated with the modification.

If agreed with the person to whom the offer is made, we will not call for tenders.

5.2 Gifted asset rebate

Assets constructed on a contestable basis must be gifted to us, and we will then own and maintain the connection assets after we assume ownership.

The gifted asset rebate is an amount that we pay to the connection applicant that is determined by applying the cost-revenue-test described in section 4.2, where the incremental cost is based on our assessment of the value of the gifted assets.

⁴ Refer: <https://www.powercor.com.au/our-services/electricity-connections/provision-of-new-or-upgrading-electricity-supplies/new-and-upgraded-supplies-powercor/tender-policy-for-extension-works/>

5.3 Real estate developer

We operate an equalisation scheme for real estate developers.

Developers meet the cost of connection assets inside the subdivision and any work outside the development required to bring electricity supply to the subdivision boundary. When determining the requirement for a capital contribution:

- a real estate developer is treated as a single customer for the purposes of calculating a capital contribution;
- incremental costs may include the costs of providing efficiently for forecast load growth;
- incremental revenue is the estimated revenue that we will receive from all the sites/connection services within the real estate development.

Under an equalisation scheme applied to real estate developers, we may provide contributions towards the cost of installing high voltage assets within residential subdivisions. Payment of the rebates will depend on average incremental costs less estimated revenue. The low voltage assets within the residential subdivision will be assessed using the cost-revenue-test outlined in section 4.2.

For a low density subdivision (subdivisions with two or more lots with an average density of <5 lots per hectare), we may contribute towards the cost of installing both high and low voltage assets.

Within a continuous medium density residential subdivision (>5 lots per hectare) we may fund an amount toward the high voltage assets excluding bedding sand and all civil works. The HV rebate is administered by a HV equalisation scheme which applies averaged costs between developments for the provision of high voltage infrastructure.

We pay rebates for the installation of HV assets within the subdivision to the developer. These rebates are based on the average cost for the HV components across our network, which are published on our website in the HV Rebate Claim Sheet.⁵

⁵ Refer <https://www.powercor.com.au/working-with-us/suppliers/forms-reports-and-bulletins/forms/>

6 Embedded generators

This section sets out our pre-approval process for connecting embedded generators, and the exceptions for customer contributions for non-registered embedded generators.

The Rules set out two sets of provisions relating to connecting embedded generators:

- Chapter 5.3A applies to connecting of generators or large embedded generators for a registered or intending market participant, which exceeds the exemption limit (currently 5MW) for registration as a participant with AEMO;
- Chapter 5A applies to connecting non-registered or micro-embedded generators (that is, embedded generators connections that comply with AS4777).

The Chapter 5A connection process is more flexible and shorter than Chapter 5. This policy only applies to Chapter 5A connections.

6.1 Pre-approval process

We have a pre-approval process for the export of electricity onto our network from embedded generators.

Where the generation is less than or equal to 5kW for connections to the single phase network, or 30kW for connections to the three phase network, then a pre-approval application can be made through our eConnect portal. Once the pre-approval is provided, the installer or Registered Electrical Contractor (**REC**) can submit a solar connection form to us in addition to the basic connection service application form.

For generation between 30kW and 200kW, then we need to undertake a detailed assessment of the connection. This requires lodgement of a written application form. Once we receive the application, we will contact the connection applicant to assist with the approval and connection processes.

Further information on the pre-approval process is available from our website.⁶

Pre-approval of export capacity is required prior to connection of a basic connection service.

6.2 Charges for non-registered embedded generation

Capital contributions for non-registered embedded generators that are also load customers will be calculated on the total cost of the works required to support both the load and generation components of the connection service.

Non-registered embedded generators will be charged for augmentation that is necessary to facilitate the connection. The relevant load for the purposes of calculating the incremental cost shared network (**ICSN**) will be the gross peak demand of the load, regardless of the embedded generator's expected electricity output. The augmentation unit rate component of the ICSN calculation does not apply based on the generation output, as discussed in section 4.2. No incremental revenue will be received from the generation component for the purposes of the cost-revenue-test.

⁶ Refer <https://www.powercor.com.au/our-services/electricity-connections/solar-and-other-generation/>

7 Modification of assets

This section discusses our approach to the modification of assets, which includes the undergrounding, relocation, replacement or removal of assets.

Where we receive a request in writing, we will participate in the development of a proposal to modify any of our distribution assets.

We will make an offer to modify our assets within 20 business days of receiving the request, or the date when we receive all information that we reasonably require to make an offer, whichever is later.

Our fair and reasonable offer will include:

- a price payable by the applicant that has been determined on the basis that we contribute an amount towards the costs of the modification on the basis of our avoided costs;
- the cost that we will incur for the modification works, including the costs of materials and labour; and
- other terms and conditions that are fair and reasonable.

Following receipt of the offer, the applicant may make a written request for an itemised breakdown of our material, labour and overhead costs contained within the offer, in addition to our calculation of the avoided costs set out below. Our response will be provided within 10 business days.

7.1 Avoided costs

Our avoided costs will be calculated as follows:

$$AC = AM + DAR$$

where:

AC is the amount of our avoided costs

AM is the present value of the maintenance and vegetation management that we will avoid incurring in connection with existing distribution fixed assets as a result of their modification

DAR is the amount of our deferred asset replacement costs

The deferred asset replacement costs are calculated as follows:

$$DAR = RC_E - RC_N$$

where:

RC_E is the present value of the future capital costs that we will avoid incurring in connection with the replacement of existing distribution fixed assets as a result of their modification

RC_N is the present value of the future capital costs that we will avoid incurring in connection with the replacement of new modified distribution fixed assets

The future capital costs in the calculation of DAR include the cost of materials, labour and a margin of up to 10 per cent for overheads.

In determining the present value, we will use a discount rate equal to our pre-tax weighted average cost of capital set in our distribution determination for the prevailing regulatory control period. The asset life used in the calculation will also be consistent with that set out in our distribution determination for the prevailing regulatory control period.

8 Dispute resolution

We aim to resolve disputes using our dispute resolution processes. However, customers are entitled to seek to have their disputes determined by the AER.

Any dispute with us in relation to connection offers will be managed via our complaints and dispute resolution processes.⁷

We aim to resolve customer complaints at the interface between the customer and the officer responsible for service provision. Where agreement on the terms and conditions of the connection offer cannot be reached, the customer may seek to have AER determine the dispute in accordance with Part G of Chapter 5A of the Rules.

Information on the AER's customer connection dispute resolution process is available on the AER's website at www.aer.gov.au.

⁷ Our complaints policy is available on our website, from the following link: <https://www.powercor.com.au/contact-us/customer-feedback/>

9 Glossary

Term	Definition
Amperes (amps)	A measure of electrical current
Australian Energy Regulator (AER)	The federal government body responsible for the economic regulation of electricity distribution services in the National Electricity Market
Augmentation	Augmentation of a distribution system means work to enlarge the system or to increase its capacity to distribute electricity, for example, via the installation of a larger transformer
Connection applicant	An applicant for a connection service of one of the following categories: (a) retail customer (b) retailer or other person acting on behalf of a retail customer (c) real estate developer
Connection offer	An offer by a distributor to enter into a connection contract with: (a) a retail customer or (b) a real estate developer
Connection policy	A document, approved as a connection policy by the AER under Chapter 6, Part E, setting out the circumstances in which connection charges are payable and the basis for determining the amount of such charges
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 (although this does not apply to basic connection services)
Extension	An augmentation that requires the connection of a power line or facility outside the present boundaries of the distribution network owned, controlled or operated by a distributor
ICCS	Incremental Cost Customer Specific, being the incremental cost incurred by the distributor for the connection services used solely by the connection applicant
ICSN	Incremental Cost Shared Network, being the incremental costs incurred by the distributor for connections services that are not used solely by the connection applicant
IR	Incremental Revenue, reflecting the present value of the expected revenues for the distributor from the connection over 30 years for residential customers, or 15 years for non-residential customers
Kilo-volt amperes (kVA)	1000 volt amps. A volt is electrical pressure. An amp is electrical current. Apparent power is equal to the product of the volts and amps
Kilowatt (kW)	1000 watts. A watt is a measure of power
Micro-embedded generator connection	A connection between an embedded generating unit and a distribution network of the kind contemplated by Australian Standard AS 4777 (Grid connection of energy systems via inverters)
Micro-embedded generator	A retail customer who operates, or proposes to operate, an embedded generating unit for which a micro EG connection is appropriate
Model standing offer	A document approved by the AER as a model standing offer to provide basic connection services (see clause 5A.B.3 of the Rules) or as a model standing offer to provide standard connection services (see clause 5A.B.5 of the Rules)

Term	Definition
Pioneer scheme	A scheme to enable original customers to be refunded for their capital contributions where the network extension funded by the capital contribution is used by other customers
Premises connection assets	The components of a distribution system used to provide connection services. These assets may be located internal or external to the customer's premises
Real estate developer	A person who carries out a real estate development
Registered Participant	A person who is registered by the Australian Energy Market Operator (AEMO) in any one or more of the categories listed in rules 2.2 to 2.7 of the Rules (in the case of 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 of the Rules. However, as set out in clause 8.2.1(a1), for the purposes of some provisions of rule 8.2 of the Rules only, AEMO, connection applicants, metering providers and metering data providers who are not otherwise Registered Participants are also deemed to be Registered Participants.
Retail customer	Includes a non-registered embedded generator and a micro-embedded generator
Rules	National Electricity Rules

