



Jemena Electricity Networks (Vic) Ltd

2021-26 Electricity Distribution Price Review Regulatory Proposal

Attachment 05-09

Connection policy



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Glossary

Augmentations	means augmentation of a distribution system means works undertaken to enlarge the distribution system or to increase its capacity.
Basic connection	has the meaning set out in section 4 of this Connection Policy.
Basic micro embedded generator connection	Means a connection between an embedded generating unit (with aggregate inverter capacity of up to 10 kVA per phase) and a distribution network of the kind.
Business customers	a retail customer whose connection service is used for business purposes but not including residential homes from which business is conducted.
Connection applicant	means 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 assets	those components of a transmission or distribution system which are used to provide connection services.
Connection charge	charge imposed by Jemena for a connection service in accordance with this Connection Policy.
Connection offer	an offer by a Jemena to enter into a connection contract with: (a) a retail customer or (b) a real estate developer.
Connection service	means connection service(s) 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.
Connection services	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.
Embedded generator	a person that owns, controls or operates an embedded generating unit.
Extensions	an extension of the distribution network (owned, controlled and operated by Jemena) to provide a connection.
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.
Basic micro embedded generator connection	means a connection between an embedded generating unit and a distribution network of the kind contemplated by Australian Standard AS 4777.
Model standing offers	a document approved by the AER as a model standing offer to provide connection services.
New connection	a connection established or to be established, in accordance with Chapter 5A of the NER and applicable energy laws, where there is no existing connection.
Non-registered embedded generators	an embedded generator that is neither a micro embedded generator nor a registered participant in the National Electricity Market under the NER.
Original customer	the original connection applicant who triggered the requirement and paid for the construction of an extension asset

Pioneer scheme	a scheme to enable original customer(s) to be refunded for their capital contributions where the network extension is used by other customers. See section 7 of this Connection Policy.
Real estate developer	a person who carries out a real estate development
Real estate development	means the commercial development of land 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 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.
Residential customer	a retail customer whose connection service is used for residential purposes.
Retail customer	a person to whom electricity is sold by a retailer, and supplied in respect of connection points, for the premises of the person, and includes a non-registered embedded generator and a micro embedded generator.

Abbreviations

AER	Australian Energy Regulator
Ampres (amps)	a measure of electrical current
DUoS	Distribution Use of System
ICCS	means Incremental Cost Customer Specific. It is the incremental cost incurred by us for the connection services, which are used solely by the retailer customer. This may include network extension and augmentation of connection assets at the premises of the retail customer.
ICSN	means Incremental Cost Shared Network. It is the incremental cost of augmentation of the shared distribution network attributable to the new or increased connection service.
IR	means Incremental Revenue Incremental Revenue. It is the present value of the DUoS revenue we expect to earn in providing the connection service over 30 years for residential customers, or 15 years for non-residential customers.
Jemena	Jemena Electricity Networks (Vic) Ltd
kVA	means 1000 volt-amps
LCTA	Least Cost Technically Acceptable
NER	National Electricity Rules
Rules	National Electricity Rules
SIRs	Service & Installation Rules

Overview

Jemena Electricity Networks (Vic) (**Jemena**) owns and operates the electricity network that safely, reliably and affordably services over 350,000 homes and businesses across North West Melbourne—from Clarkefield to Footscray, and Gisborne South to Heidelberg. Our role is to deliver power when our customers need it. We build and manage the infrastructure that transports electricity through more than 950km² of Melbourne's north-west suburbs, and provides energy to support businesses and critical infrastructure such as Melbourne Airport, which sits almost in the middle of our patch.

Anyone who is currently connected to the electricity distribution network in our area, is a customer of ours. We also connect new customers and provide distribution services to other groups like property developers, landlords and businesses of all sizes, from sole traders all the way through to large energy consumers such as Melbourne Airport and hospitals. Our distribution area covers approximately 12 per cent of the population of Victoria and nearly 13 per cent of the state's manufacturing output.

Below is a map of Jemena's distribution area. To find out if you are in our distribution area, please refer to the Victorian Government's website¹.



Purpose of this document

This document is Jemena's connection policy for the 2021-26 regulatory period. The document outlines:

- our **connection services**
- sets out the circumstances in which a **retail customer** or **real estate developer** may be required to pay for a connection charge to Jemena in respect of connection services
- how those charges are calculated.

The connection policy has been prepared in accordance with Part DA of chapter 6 of the National Electricity Rules (NER)². It has also been prepared in accordance with the:

¹ <https://www.energy.vic.gov.au/electricity/electricity-distributors>.

² As applied in Victoria through the *National Electricity (Victoria) Act 2005*, and as amended by the *National Electricity (Victoria) Further Amendment Act 2016*

- Connection charge principles set out in Part E of Chapter 5A of the **Rules**, as applied in Victoria
- Connection charge guidelines for electricity retail customers published by the Australian Energy Regulator (AER)³
- AER's final framework and approach (**F&A**) for the Victorian distributors for the 2021-26 regulatory control period.

The connection policy applies from 1 July 2021 to all new or modified connections. It does not apply to **Registered Participants** or intending Registered Participants (such as large generators) (as those terms are defined under the NER) seeking to connect to our distribution network, as such connections are considered under Chapter 5 of the Rules.

For definitions and abbreviations used in this document please refer to the **Glossary and Abbreviations** section, or otherwise refer to the definitions under the NER.

Related information

This Connection Policy should be read in conjunction with:

- [Jemena's model standing offers](#) for the provision of basic connection services to retail customers
- the schedule of AER approved charges for basic connection services in our published [Distribution Services Price Schedule](#)
- [Negotiated connection offer](#) and acceptance processes on our website
- [Victorian Service and Installation Rules 2014 \(SIRs\)](#).

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

1. Connecting to Jemena's distribution network

Jemena is the distribution network service provider responsible for providing connection services to retail customers, real estate developers and **embedded generators** in Jemena's distribution area.

We offer a range of connection services including:

- connecting new premises and developments
- making alterations to existing connections including additions, upgrades, **extensions**, relocation or any other kind of alterations (for example to increase the number of phases that supply a premises, to relocate a supply connection point at a premises or to change from overhead to underground service)
- establishing connections for micro-embedded generators and embedded generators.

Chapter 5A of the NER sets out the criteria Jemena needs to take into account in setting a charge for connecting retail customers to the distribution network, including charges for **connection assets**, network extensions and **augmentations**. The NER also requires customers to enter into a connection contract with Jemena when connecting their premises to the network or altering an existing connection. To do so, customers will apply to Jemena for a **connection offer**.

The type of connection offer we provide to you (which may either be a basic connection offer or a negotiated connection offer) and the associated **connection charges** will vary depending on the type of connection service you need. This is explained in further detail in the remainder of this Connection Policy.

Contact us

For further information, you can contact us via our [website](#) or by calling our New Connections Team on 1300 131 871 or via email network.connections@jemena.com.au.

2. Connection services

We offer two categories of connection services, which cover a range of different connection types:

- basic connection services
- negotiated connection services⁴.

2.1 Summary of connection services and associated offers

When we receive a connection application, we will assess whether your requirements meet the criteria for a basic connection service or a negotiated connection service and provide you with the relevant connection offer that sets out the terms and conditions for the connection service. The majority of customers seeking to connect to Jemena's distribution network or alter an existing connection will normally not require a network extension to or augmentation of the distribution network and are therefore eligible for a basic connection service.

We have two **model standing offers** approved by the AER for basic connection services—one for load connection and the other for **basic micro embedded generator connection**. Both of these are available on our website.

Error! Reference source not found. summarises the most common connection types and the type of offers we make.

Table 2–1: Connection types and related connection offers

Connection type	Demand (capacity)	Type of connection offer
New connection including connection alterations	Up to 100 amps per phase	Model standing offer for basic connection services
Temporary connection (e.g. builder's supply)	Up to 100 amps per phase	Model standing offer for basic connection services
Basic micro embedded generator connection for solar panels and battery storage	With inverter capacity of up to 10 kVA per phase	Model standing offer for micro embedded generator basic connection services
Temporary supply for construction of buildings and major public infrastructure	Greater than 100 amps per phase	Negotiated connection offer
Undergrounding an existing overhead electricity supply to an underground supply	Not Applicable	Negotiated connection offer
New connection including connection alterations (small commercial property, e.g. small shops, other small commercial premises)	Greater than 100 amps per phase	Negotiated connection offer
New connection (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	Negotiated connection offer

⁴ We may at a later date offer standard connection service for a particular class of connection service (that is currently offered as negotiated services) for which there will be a model standing offer approved by the AER. Such offers when approved by the AER will be published on our website.

Connection type	Demand (capacity)	Type of connection offer
Large commercial or industrial premises, e.g. manufacturer, shopping centre, university, hospital	Greater than 100 amps per phase	Negotiated connection offer
Real estate developments/ new land subdivision (residential or commercial)	Not Applicable	Negotiated connection offer
New public lighting in real estate developments	Not Applicable	Negotiated connection offer
Embedded generator connection	More than 10 kVA per phase	Negotiated connection offer

All connections must comply with the technical standards set out in the current Victorian Service & Installation Rules (**SIRs**) and Jemena's relevant technical standards. In case of inconsistency between the SIRs and our technical standards, our technical standards will prevail.

2.2 Basic connection service

Basic connection services are for connections that require capacity of no more than 100 amps per phase (or 70kVA). They are routinely provided by us to residential and small business retail customers, and involve minimal or no augmentation to the distribution network and where no network extension is required.

More specifically, our basic connection services include:

- new connection
- connection alteration
- basic micro embedded generator connection to the distribution network via an inverter that conforms to the Australian Standard AS 4777.

The scope of these services is set out in Table 2-2.

Table 2–2: Scope of basic connection services

Connection Type	Description
Basic new connection up to 100 amps (or 70kVA)	<p>A <i>basic new</i> connection service means the establishment of a permanent or temporary connection (single or three-phase) with a capacity less than 100 amps per phase that is either:</p> <ul style="list-style-type: none"> a physical connection between an agreed connection point at the supply address and Jemena's distribution network where: <ul style="list-style-type: none"> the connection assets are comprised of an overhead single span service cable from an existing pole; and where the length of the service cable does not exceed 45 meters in total; and does not exceed 20 metres over the customer's property at the supply address; or a physical connection between the supply address and Jemena's distribution network via an underground cable where the connection point is in an existing service pit located at the property boundary at the supply address.
Basic connection alteration	<p>A basic connection alteration includes upgrades and alterations to an existing connection. Alterations may include:</p> <ul style="list-style-type: none"> connection upgrade to a higher capacity up to 100 amps per phase; connection upgrade from single phase to three phase supply up to 100 amps; and relocation of an existing connection up to 100 amps per phase.
Basic micro embedded generator	<p>A basic micro embedded generator connection service is:</p> <ul style="list-style-type: none"> a basic connection service for a retail customer who has a micro embedded generator (such as a roof top solar power system) that is connected to the distribution network via an inverter that conforms to the Australian Standard AS 4777, and the total generating capacity at the connection point is no greater than 10 kVA per phase or the maximum limit specified in our model standing offer for basic micro embedded generator. In case of inconsistency between this connection policy document and the model standing offer, the model standing offer will prevail. <p>For connection of embedded generators where the total generating capacity is greater than 10 kVA per phase, a negotiated connection service will be required. See section Error! Reference source not found.</p>

Notes

A new connection or an upgrade that requires installation of a service pit and extension of the distribution network to the pit does not fall within the scope of the basic connection services. A negotiated connection service will be required.

Our approval to connect a micro embedded generator is not automatic and is subject to the network's capacity to receive export energy from your micro embedded generator. The micro embedded generator connection process is described in our [model standing offers](#) for basic micro embedded generator, and can be found on our website.

Jemena has two [model standing offers](#) approved by the AER for basic connection services—one for load connection (i.e. new connections and connection alterations where electricity supply is delivered to a connection point) and the other for basic micro embedded generator connections. Further detail is provided on our website. Even if a customer is eligible for a basic connection service, a customer may elect to negotiate the terms and conditions of the basic connection service (in which case a negotiated connection service will be provided).

The connection charges for basic connection services are set out in our [Distribution Services Price Schedule](#).

The process for applying for a basic connection service is set out in the [model standing offers](#).

2.3 Negotiated connection services

Where a connection request does not meet the criteria for a basic connection service, the **connection applicant** will be required to apply for a negotiated connection service for which a negotiated connection offer applies.

Typically, a negotiated connection service is required when the connection applicant requires supply capacity exceeding 100 amps per phase (or 70 kVA) or a network extension. Examples include:

- new connection or connection alteration where the electricity demand is up to 100 amps per phase (or 70 kVA) and a network extension and/or augmentation is required
- new connection or connection alteration where the demand is greater than 100 amps per phase (or 70 kVA)
- connection of an micro-embedded generator with a capacity up to 10 kVA per phase and a network extension and/or augmentation is required
- connection of an embedded generator where single or multiple inverters in aggregate exceeds 30 kVA
- connection of new real estate developments and subdivisions.

Negotiated connection services are provided under a negotiated connection contract. Accordingly, we will provide a connection applicant a negotiated connection offer in accordance with chapter 5A of the NER.

Information of our [negotiated connection processes](#) including preliminary enquiry, connection application, offer and acceptance processes is published on our website.

3. Overview of charges for connection services

Jemena's connection services are classified by the AER and the service classifications determines how the charges are determined.

The connection charges payable by a customer to Jemena 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.

Key features of these charges are summarised in Table 3–1, and further detail is provided in the following sections.

Table 3–1: Key features of connection charges

Connection charge	Connection charges for alternative control services	Capital contributions for standard control services	Connection charges under a pioneer scheme
Circumstances in which the charge may be imposed	Where the connection is a basic connection for which we have a model standing offer approved by the AER—e.g. a new connection, supply upgrade or alteration of an existing connection up to 100 amps per phase. See section 2.2.	Where the connection is not a basic connection—e.g. a new connection, supply upgrade or alteration of an existing connection above 100 amps per phase. See section 5.	Where the connection is made to a network extension which was fully funded by one or more customers. See section 7.
Persons who may be required to pay the charge	The connection applicant or the retailer representing the retail customer seeking a connection.	The connection applicant, real estate developer or embedded generator.	Subsequent customers who connect to the network extension in the period of seven years from the time of commissioning the network extension.
Aspects of JEN's connection services to which the charge relates	The connection charge relates to the cost of labour and material incurred by Jemena in providing the connection service.	The connection charge is the shortfall between the incremental cost incurred by Jemena in providing the connection service and the incremental revenue expected to be earned by Jemena from the new or upgraded connection. See section 5.3.	The charge relates to the amount we are required to refund the original customer or customers who funded the network extension. See section 7.
Basis on which the charge is calculated	The charge is approved by the AER.	The capital contribution is calculated in accordance with AER's connection charges guideline which is the basis of our method of calculating the capital contribution. See section 5.	The charge is calculated by taking into account the portion of the network extension used and depreciation. See section 7.2.

The box below provides an overview of how the total connection charge payable by a connection applicant is calculated.

Total connection charge = AC + CC + PS

Where:

- AC—is the total charge payable to us for all relevant alternative control services (refer to section 4)
- CC—is the total capital contribution payable to us for all relevant standard control connection services. This is calculated with reference to the cost-revenue-test (refer to section 5.3 Method for calculation capital contributions)
- PS—is the total charge payable to us to account for any pioneer scheme applying to the distribution network to which the connection applicant connects (refer to section 7.)

Under certain circumstances, customers may be required to pay a security fee (see section 6.2).

4. Charges for connection services classified as alternative control services

4.1 Overview

Alternative control services are customer specific or customer-requested services. Where alternative control services are provided by Jemena, the full cost of the service can be recovered from customers using that service.

Connection services including basic new connections, connection application and management services, and enhanced connection services are classified as alternative control services.

Alternative control services are charged on either:

- fixed fee basis – this is where the scope of the connection service is predictable and generally uniform and the AER has approved a fee for the service. See section 4.2
- quoted basis – using the labour rates approved by the AER, along with a pass through of material, and contractor costs, margin and tax. We determine charges on a quoted basis where the scope of the service vary significantly between customer requests and prices can only be determined when the scope of the work is known. See section 4.3.

The list of connection service which are delivered on a fixed fee basis by Jemena are set out in the [Distribution Services Price Schedule](#).

4.2 Charges applicable to basic connection services

Customers of basic connection services described in section 2 are required to pay the relevant fees approved by the AER. These customers are not required to pay any capital contributions as they only apply to connection services classified as standard control services (as detailed in section 5.1).

We have fixed fees for basic connection services such as:

- new single or three-phase basic connections (permanent and temporary) up to 100 amps
- supply upgrade from a single to three phase up to 100 amps
- replacement of an overhead supply cable up to 100 amps—for example, due to customer changing the point of attachment at the property to another position.

Where a basic micro embedded generator is connected to an existing connection, a remote meter reconfiguration fee will apply. The remote meter reconfiguration is necessary to enable the meter to record export energy flowing into the distribution network.

Where a micro embedded generator is connected alongside a new connection service, the remote meter reconfiguration charge will not apply as the meter would have been preconfigured to record the export energy.

Where a connection is made to a network that is subject of a pioneer scheme (i.e. the network extension was fully funded by one or more retail customers), then an additional pioneer scheme charge may apply in addition to the relevant connection charges. Refer to section 7 for details on pioneer schemes.

4.3 How we calculate connection service charges on a quoted basis

Our method for determining the charge for an connection service on a quoted basis is set out below.

Method for determining quoted price

Price = Labour + Materials + Contractor Services + Margin + Tax

Where:

- Labour costs consist of all labour costs directly incurred in the provision of the service including labour on-costs, fleet on-costs and overheads. The AER approved labour rates are escalated annually for CPI and labour escalators approved by the AER
- Materials costs reflect the cost of materials directly incurred in the provision of the service, material storage and logistics on-costs and overheads
- Contractor Services costs reflect all costs associated with the use of external labour including overheads and any direct costs incurred. The contracted services charge applies the rates under existing contractual arrangements. Direct costs incurred are passed on to the customer
- Margin is an amount equal to JEN's nominal vanilla WACC approved by the AER for standard control services. The margin will be applied to the total cost of Labour, Contractor Services and Materials
- Tax reflects the tax JEN incurs on the capital component of the expenditure.

4.4 Charges for connection application and management services

The AER has classified a range of connection and connection related services as alternative control services. These customer requested connection services include, but are not limited to:

- connection application related services such as:
 - undertaking design work to assess connection costs and technical studies to assess network impacts of new connections
 - assessing applications to undertake network asset relocations
- non-basic connection services related to connections that are greater than 100 amps per phase (or 70 kVA) such as:
 - services temporary connections
 - overhead service line replacements or relocation
- upgrade from overhead to underground service.

Each of these connection services are provided on a quoted basis and are only applicable if obtaining a negotiated connection service.

We may require a connection applicant for a negotiated service to pay a connection application fee upfront to cover the reasonable costs of work anticipated to be incurred by Jemena in preparing to make a negotiated connection offer. The application fee will be commensurate with the size and complexity of the negotiated connection service. As it will vary between projects, Jemena will advise the connection applicant of the connection fee amount at the time of responding to connection enquiry.

4.5 Charges for enhanced connection services

Reserve feeders are provided to customers who request higher supply reliability. Connection applicants are required to fully fund the cost of constructing the reserve feeder and any augmentation of shared distribution network required to support the reserved capacity. Connection applicants will be provided with a negotiated connection offer and the charges will be determined on a quoted basis.

A separate charge (\$/kVA) will apply for the ongoing operation and maintenance of the reserve feeder. The approved unit rate is shown in our [Distribution Services Price Schedule](#) published on our website.

For avoidance of doubt, the reserve feeder charge will apply where the capacity is reserved on a feeder that is not the retail customer's normal supply. Where the retail customer has arranged a stand-by supply that is connected to the same feeder that normally supplies the customer, the reserve feeder charge will not apply.

5. Capital contribution for connection services classified as standard control services

5.1 Overview

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

The AER has classified negotiated connection services as standard control services, and therefore a capital contribution may be payable in addition to any applicable charges for alternative control services. As discussed in section 5.2, capital contributions are not payable in respect of basic connection services.

Specifically, a capital contribution will be charged when it is determined, through the application of the cost-revenue-test described in this section 4.4, that there is a difference between the cost to provide the connection service (i.e. incremental cost) and the revenue that will be earned by Jemena from the connection service through network charges (i.e. 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 a network augmentation, acts as a pricing signal to discourage customers from requesting additional capacity in excess of their requirements.

5.2 Shared network augmentation threshold

The shared network augmentation threshold is a demand or capacity threshold below which retail customers (other than **non-registered embedded generators** and real estate developers) will not be required to make a capital contribution towards the cost of any augmentation of the distribution network.

The shared network augmentation threshold in Jemena's distribution area is a maximum capacity of 100 amps per phase (or 70 kVA).

Connections below this threshold are referred to as basic connections for which we have a model standing offer approved by the AER. Therefore, a connection applicant who seeks basic connection services is exempt from the requirement to pay a capital contribution towards network augmentation.

5.3 Method for calculation capital contributions

The amount of any capital contribution payable for a negotiated connection service will be determined using the following cost-revenue-test.

Cost-revenue-test

$$CC = ICCS + ICSN - IR$$

Where:

- CC = Capital contribution for negotiated *connection service*
- $CC \geq 0$
- ICCS = Incremental cost of customer specific connection assets
- ICSN = Incremental cost of the shared distribution network
- IR = Incremental revenue.

We require a connection applicant to pay capital contribution in circumstances where the incremental cost of the negotiated connection service exceeds the estimated incremental revenue expected to be derived from that connection service.

A real estate developer will be treated as a single customer for purposes of calculating capital contribution.

The calculated capital contribution amount is the difference between the incremental cost attributable to the negotiated connection service and the incremental revenue. Where the calculated capital contribution is equal to or less than zero, no capital contribution is payable by the connection applicant.

Our approach to calculating the incremental costs and how they are calculated are detailed in sections 5.4, 5.5 and 5.6 of this policy. Only the incremental cost attributable to the negotiated connection service will be included in the cost-revenue-test.

Incremental revenue is the revenue stream (directly attributable to the new load connection) in present value terms expected to be received by us over a period of time. Our approach to calculating the incremental revenue is detailed in section 5.7 of this policy.

5.4 Principles for determining the incremental cost

There are two components that make up the incremental cost under the cost-revenue-test:

ICCS—this is the incremental cost incurred by us for the design and construction of connection assets, which are used solely by the retail customer. This may include network extension and augmentation of connection assets at the premises of the retail customer.

ICSN—this is the incremental cost of augmentation of the shared distribution network attributable to the new or increased connection.

We will determine the cost of each component:

- on the least cost technically acceptable (**LCTA**) design, plant and equipment necessary for the connection service, which is explained in section 5.6.2
- in a fair and reasonable manner and ensure that the cost estimate is reflective of the efficient costs of performing the service.

5.5 Incremental cost of shared distribution network

The ICSN represents the capital cost that we incur in adding capacity to the shared network as a direct result of the new or altered connection, measured in kVA.

The augmentation unit rates we use to determine the incremental cost of the shared network are those that are approved by the AER in the electricity distribution price determination process for the 2021-26 regulatory period.

The incremental cost of the shared network (ICSN) will be calculated as follows:

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

Where:

- Unit rate is the average cost of *augmentation* of the shared network expressed in \$/kVA of added capacity based on the recent actual project costs
- Demand estimate is an estimate of the maximum electrical energy flow (measured in kVA) that will be consumed by the *connection applicant* at the connection point.

We have augmentation unit rates for the following network components:

- a) Sub-transmission line
- b) Zone substation
- c) High voltage feeder
- d) Distribution substation
- e) Low voltage mains.

The augmentation unit rates were determined by analysing the costs of recent augmentation projects. We apply the same unit rates in all areas of our distribution network.

The calculation of augmentation unit rates 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**, and the augmentation assets is longer than 30 years, then the augmentation unit rate will be discounted. Similarly, the augmentation rate will be discounted for **business customers** where the incremental revenue is assumed to be earned over a 15 year period.

The augmentation unit rate that applies for a particular connection will be the discounted cumulative unit rate of the level of the network at which the connection occurs. If the connection does not make use of one or more of the network components, those components will not be included in the calculation of the incremental cost of shared network. For example, if the tie-in point of the connection assets is at the high voltage component, then only the discounted cumulative rate of the high voltage feeder would be used in the calculation of the incremental costs of the shared network.

We will use the augmentation unit rates for calculating the incremental costs of the shared distribution network for all negotiated load connections where the cost-revenue-test is applied, except for very large high voltage customers. For very large customer connections which require major augmentation of zone substations and/or 66 kV sub-transmission network and the augmentation can be largely attributed to the large customer, we will calculate the incremental cost of augmenting the shared distribution network by either:

- using the augmentation unit rates; or
- the estimated project cost of the augmentation, if known.

This latter approach may be taken because the augmentation unit rates, which represent the average cost of augmentation across the network, may not yield the best estimation of the incremental cost of the shared network for the very large high voltage load connections.

The discounted cumulative augmentation unit rates to be applied in the 2021-26 regulatory period are shown in Table 5–1⁵. The average augmentation unit rates are escalated each year by the Consumer Price Index (CPI).

Table 5–1: Augmentation unit rates for residential and business customers - \$ per kVA (\$ June 2021, dollars)

Network component	Residential customers	Business customers
Low voltage mains	\$1,080.36	\$771.68
Distribution substation	\$735.13	\$525.10
High voltage feeder	\$559.90	\$399.93
Zone substation	\$376.08	\$268.62
Sub-transmission line	\$53.16	\$37.97

Note: Unit rate excludes overheads.

⁵ The augmentation unit rates are subject to the AER's approval as part of the Electricity Distribution Price Determination process.

5.6 Incremental cost of customer specific connection assets

5.6.1 Customer specific connection cost

The cost of customer specific connection assets is the sum of the following cost items:

- a) design and construction of new customer specific connection assets
- b) augmentation of the premises connection assets at the retail customer's connection point
- c) network extension
- d) administration (including any design approval and contractor accreditation, certification)
- e) conducting a tender process in accordance with the contestability options provided in section 5.6.3 of this Connection Policy
- f) provision of any other connection services which are used solely by the connection applicant.

5.6.2 Costs based on least cost technically acceptable (LCTA) standard

We will calculate the incremental cost of the connection assets and network extensions (if any) on our LCTA standard necessary for the load connection, unless the connection applicant requests a connection service, or part thereof, to be performed to a higher standard. In such case, the connection applicant will be required to pay the additional cost of providing the service to the higher standard.

If we elect to perform the work to a higher standard or capacity than necessary to meet the connection applicant's requirement (other than a real estate developer), then we will not charge the connection applicant for the additional cost of performing the connection service to a higher standard or capacity. The exception to this approach will be when the connection applicant is a real estate developer, in which case we may perform the work to a higher capacity that efficiently provides for the forecast load growth in the area being developed and charge the real estate developer accordingly.

Where a connection applicant's requirement falls between the capacities of two standard size network elements, we will install the larger standard size network element to meet the connection applicant's requirement. In such a case, the installation of the larger size network element will not be considered as Jemena electing to perform the work to a higher standard or capacity than necessary to meet the connection applicant's requirement.

If we are required by the connection applicant to prepare a design specification to allow a connection service to be performed on a contestable basis, we will design the connection service based on the LCTA standard. If the connection applicant is a real estate developer, we will prepare a design specification that efficiently provides for the forecast load growth.

5.6.3 Options to contest connection design and construction work

A connection applicant may choose us to undertake both the design and construction works as per the connection offer and waive their rights to call for tenders. Alternatively, the applicant may choose to contest the connection design and construction work. However, not all works attributable to a connection service are contestable. We will identify the contestable and non-contestable components of the connection service in the connection offer.

Non-contestable works may include, but are not limited to:

- a) Audit of design undertaken by the connection applicant
- b) Audit of construction where the connection applicant undertakes the construction works
- c) Overall project management of the connection service having regard to the contestability options chosen by the connection applicant
- d) Commissioning and testing of the constructed connection assets to Jemena

- e) Integrating the newly created connection assets including any extensions and augmentation into our asset management systems
- f) Writing switching instructions and issuing of access permits for line workers to access our network for tie-in works.

The design and construction of connection assets, network extensions and real estate developments are considered contestable works by us. In such circumstances, a connection applicant has the following options:

- a) A connection applicant may elect us to only undertake the design, but request us to conduct a tender process for the construction works on behalf of the connection applicant for a fee to recover the reasonable costs incurred by us in conducting the tender. We will provide the connection applicant an estimate of the cost of conducting the tender process and seek agreement before we commence the tender process
- b) A connection applicant may elect us to only undertake the design for a fee and elect to undertake the construction works themselves. Under such an arrangement, the connection works must be performed to our issued design and construction standards and by contractors approved by us
- c) A connection applicant may elect to undertake the design and connection works. Under such an arrangement, the design must first be approved by Jemena and connection works performed to Jemena's technical and construction standards and by contractors approved by us.

Contestable works guideline

Jemena has developed a [contestable works guideline](#) to provide guidance around those tasks which are contestable and non-contestable for the different type of projects undertaken on our network when a connection applicant has elected to undertake the design and construction works themselves under this Connection Policy. Our contestable works guideline is published on our website.

5.7 Incremental revenue calculation

The incremental revenue (**IR**) calculated under the cost-revenue-test is the present value of the distribution use of system (**DUoS**) revenue that we expect to earn in providing the negotiated connection service.

When calculating the incremental revenue, we will:

- a) Use the forecast energy consumption and minimum demand applicable to a tariff that we believe is reasonably suited for the retail customer based on the information provided by the connection applicant, unless a maximum demand has already been specified in the connection contract. Further information is provided in as section 5.8. Assume a connection period of:
 - i) 30 years when calculating the expected DUoS revenue recoverable from residential customers in a real estate development
 - ii) 15 years when calculating the expected DUoS revenue recoverable from a business customer. However, where a 15 year connection period does not reflect a reasonable estimate of the time that the connection will remain in service, we may apply an alternative assumed connection period for that connection service.
- b) Use the network tariffs that will be assigned to the retail customer (or customers) by agreement at the time the connection offer is made; or in circumstances where the retail customer is not known, the forecast energy consumption and minimum demand for the tariff suitable for the connection will be determined by us based on the information provided by the connection applicant on likely use of the development.
- c) When estimating the incremental revenue, we will remove the component attributable to the operational and maintenance costs from the network tariff (consistent with not including the same costs in the calculation of the incremental cost).

- d) Use a flat real price path after the end of the current price determination period, for the remaining life of the connection—that is, the expected real DUoS tariff in the final regulatory period will be escalated by forecast CPI in nominal terms.
- e) Use a discount rate equal to Jemena's real pre-tax weighted average cost of capital as set out for the relevant year in the relevant AER price determination, when calculating the present value of the revenue stream.

In circumstances where the retail customer and we cannot agree on the demand, we may require a security fee. See section 6.2 for details of our security fee policy.

5.8 Estimating customers' energy consumption and demand

When a connection applicant submits a connection application to us, the connection applicant is also required to submit a range of information including the maximum demand estimate calculations in accordance with AS/NZS 3000 and details of any large equipment to be connected.

5.8.1 Energy consumption

We will estimate the energy consumption taking into consideration the information submitted by the connection applicant and load factor having regard to the connection applicant's specific connection characteristics e.g. load factor, whether the connection is a medium or large, low or high voltage, or combined load and generator connection.

Where the connection applicant is uncertain of the usage pattern, we will apply typical load factors for similar customer installations or industry types. The estimated consumption will be used to calculate the incremental revenue, where the cost-revenue-test is applied.

5.8.2 Maximum demand

We will estimate the maximum demand at the connection point having regard to the submitted information and the connection applicant's specific connection characteristic, including connection voltage, type of load, combined load and generator connection.

The maximum demand agreed between us and the connection applicant will be used to calculate the incremental costs of the shared distribution network for all negotiated load connections, as well as incremental revenue, where the cost-revenue-test is applied.

The agreed maximum demand at the connection point between us and the connection applicant will be used in the contractual demand agreement.

When a retail customer applies for a contract demand reset to a lower demand than was agreed to at the time of the connection offer and acceptance process, it will trigger a reapplication of the cost-revenue-test and may result in the retail customer being charged a true-up payment by us.

5.8.3 Provisional estimate

If we and a connection applicant (other than a real estate developer) cannot reach agreement on appropriate estimates of consumption and/or demand, then:

- a) A provisional estimate will be determined and applied by us.
- b) No later than three years after the connection works occur, a refund or additional charge will be payable to/by the relevant connection applicant based on the difference between the estimated and actual consumption or the demand experienced over the period.
- c) The additional charge or refund will be calculated assuming the actual consumption or demand experienced over the period will continue for the duration of the total connection period.

- d) If the connection applicant becomes insolvent, or ceases to utilise the property within three years, then we will not make a refund.

We and real estate developers may enter into agreements with similar effect to the above arrangement that applies to a retail customer, if an estimate for consumption and/or demand cannot be agreed upon.

5.8.4 Real estate development

A real estate developer's incremental revenue will be estimated based on all the connection points within the real estate development.

When a real estate developer submits a connection application that relates to commercial and or industrial premises, the maximum demand details of prospective retail customers may not be known at the time of the connection offer. In such circumstances, we will use the information gathered from the real estate developer and typical loading figures from a similar development to:

- a) agree an assumed total maximum demand required for the development and
- b) determine the total energy consumption based on assumed maximum demand for each of the premises within the real estate development.

New public lighting services

Real estate developers are required to fully fund the provision of new public lighting assets. The cost of the new public lighting will not be included in the cost-revenue-test.

A real estate developer may request the design and construction of new public lighting services in a real estate development to be included in the negotiated connection offer for the design and construction of the connection assets in a real estate development, given the design and construction for both public lighting and connection assets are generally undertaken together.

Embedded networks

In the case an embedded network that is a residential and or commercial real estate development, the forecast energy consumption and minimum demand applicable to the tariff that we believe would be suited for the connection as reasonably determined by us based on the information (e.g. number of residential apartments, number of commercial connections, development phases etc) provided by the connection applicant and similar installations.

5.9 Charges for embedded generator connection services

A connection applicant seeking to connect an embedded generator (excluding retail customers who apply to connect a basic micro embedded generator) must pay the full costs of the connection assets and any cost of removing distribution network constraints that are specific to the connection of the embedded generator.

The connection applicant is required to pay a non-refundable application fee at the time the connection applicant submits the connection application. The application fee is to cover the expenses reasonably incurred by us in responding to any information the applicant reasonably requires in order to negotiate on an informed basis and assessing the applicant's application and making a connection offer. The fee will be commensurate with the size and complexity of the negotiated connection service. As it will vary between connection projects, we will advise the connection applicant of the connection fee amount at the time of the connection enquiry.

The capital contribution for the connection of an embedded generator that is also a load connection will be calculated based on the total cost of the connection works required to support both the expected generation output and load. The relevant load for the purposes of calculating the incremental cost of the shared network (i.e. the ICSN component) will be the gross peak demand of the load, regardless of the embedded generator's expected electricity output. As no revenue will be received by us from the generation component, the incremental revenue

component in the cost-revenue-test will only include the expected distribution use of system (**DUoS**) revenue earned by us from the load connection.

6. Connection payments

We may require prepayment of the connection charges applicable for any connection service. Our prepayment policy is outlined in section 6.1 below.

In certain circumstances, we require security fees, either in the form of a prepayment, or a bank guarantee. Our security fee policy is outlined in section 6.2 below.

6.1 Prepayments

For connection services involving construction works, connection applicants can either pay the total connection charge up front at the time the connection offer is accepted or in instalments in accordance with the following prepayment policy.

We require advance payment of the connection charge before the commencement of any construction work, unless the upfront total connection charge is greater than \$5,820 (\$ June 2021) and:

- a) the construction work is not scheduled to commence for 3 months or more after the connection offer is accepted; or
- b) the construction work can be logically segmented into distinct stages of construction.

Where the construction work is of the nature described above in (a) or (b), we will request payment, at the time the connection offer is accepted, of all the costs we have already incurred to that point in time and prepayment of any costs that it will incur before the commencement of construction work. The prepayment may include but is not limited to:

- a) the costs of any specialised or non-standard connection assets (that are not normally held in our store); and
- b) design, tendering and administration costs.

The balance of the connection charge that is not recovered under this prepayment policy must be paid by the connection applicant to us no later than one month prior to the commencement of the construction work.

Where the construction work can be logically segmented into distinct stages of construction, we will include details of prepayment(s) required in its connection offer, prior to commencement of each construction stage. Each prepayment will be reasonably reflective of the costs that will be incurred in that particular construction stage.

6.2 Security fee

Section 5.7 of this policy outlines a fair and reasonable assessment of the incremental revenue used in the cost-revenue-test when determining the required capital contribution.

In circumstances where we believe there is a risk that Jemena will not earn the estimated incremental revenue, we may require a security fee, which may be in the form of either an upfront prepayment, or a bank guarantee.

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

- a) 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.
- g) 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.
- h) Where the security fee has been provided as an upfront payment, we will rebate the security fee annually over the period of the security fee scheme. The first rebate will be in the calendar year after the connection

services are provided and subsequent rebate payments will be made annually on the same date thereafter until the earlier of:

- i. the actual incremental revenue realised over the period of the security fee scheme exceeds the estimated incremental revenue; or
 - ii. we refund the security fee in full.
- i) The security fee scheme will not result in us recovering more than the total estimated incremental revenue. 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.
- j) The period of the security fee scheme will not be more than the revenue period applied in the calculation of the customer contribution.
- k) Where the security fee has been provided as an upfront payment, we will pay interest on the security fee, commensurate to the manner in which the security fee is treated by us. Interest is not payable on security held in the form of a bank guarantee.
- l) The connection applicant will not be rebated an amount greater than the total of the security fee deposit plus interest from us over the security fee period.

7. Pioneer schemes

We operate a pioneer scheme, where the connection applicant (being the original customer) is required to pay the full cost of the extension assets, but some of the upfront cost of the extension assets may be refunded if other retail customers subsequently connect to the extended network.

Where connection applicants collectively make a connection request that requires a network extension, we will determine on a fair and equitable basis the contribution that each connection applicant must make towards the group extension having regard to the location and/or load of each connection.

All real estate developers are entitled to access our pioneer scheme for extension assets they fund.

7.1 Pioneer scheme charge

We will levy a pioneer scheme charge to subsequent customers who connect to a network extension that was triggered by the original customer by:

- a) taking into account the physical length of line a subsequent customer requires relative to other customers already connected to the extension; and
- b) taking into account the amount of electricity demand used by a subsequent customer relative to other customers already connected to the extension; and
- c) depreciating the extension assets over 20 years using a straight line depreciation method.

If an original customer requests a connection to be constructed to a higher standard or capacity, then only the cost of constructing the connection to the LCTA standard or capacity will be subject to the pioneer scheme—that is, the cost attributed to the higher standard or capacity will be completely borne by the original customer and not be included in the pioneer scheme.

If we require an extension 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 be required to pay for the extension built to the LCTA standard or capacity required by the original customer and only the extension necessary for the original customer will be subject to a pioneer scheme.

When an independent service provider accredited by us performs the extension work in green field sites, we will establish the pioneer scheme using an estimate of the amount it would have charged the original customer to perform the extension.

Note

The connection assets to low density real estate development (residential units) generally involve installation of a cable from an existing distribution network (distribution pole or underground mains) to a service pit located at the boundary of the real estate development. A pioneer scheme is not appropriate under these circumstances because the connection assets are usually built to the capacity required by the real estate developer and there is minimal or no prospect of any other retail customers connecting the connection assets.

Who would pay the pioneer scheme charge?

Subsequent customers who connect to a network extension that is still subject to a pioneer scheme must pay the pioneer scheme charge determined by us. We will pay the total amount received from subsequent customers to the original customer and other eligible customers who may have already connected to the network extension. We will operate our pioneer scheme such that it remains financially neutral.

A pioneer scheme has a life of seven years from the time of commissioning the network extension. In other words, there shall be no refunds in relation to a pioneer scheme after seven years. Pioneer scheme refund payments will be made only if those payments exceed \$1,164 (\$ June 2021). If we do not refund customers because of this

threshold, then we will not levy the pioneer scheme charge to any subsequent customer connecting to the network extension.

In some circumstances, we may not be able to find the customers who are party to a pioneer scheme because they have sold their premises. In such circumstances, we will discount the pioneer scheme charge to subsequent customers by the amount not refunded—that is, we will remain financially neutral.

8. Dispute resolution

Disputes between Jemena and customers in respect of connection services will be managed in accordance with [Jemena's standard complaints and dispute resolution procedure](#), details of which are available on our website. Jemena 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 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.