

Draft Decision

**Power and Water Corporation
Electricity Distribution
Determination 2024 to 2029
(1 July 2024 to 30 June 2029)**

**Attachment 18
Connection Policy**

September 2023

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18 Connection Policy

We are required to approve a connection policy prepared by a distributor under the National Electricity Rules – Northern Territory (NT NER).¹

A connection policy sets out the nature of connection services offered by a distributor, when connection charges may be payable by retail customers, and how those charges are calculated. A connection policy:²

- must be consistent with the:
 - connection charge principles set out in chapter 5A of the NT NER,
 - connection policy requirements set out in part DA of chapter 6 of the NT NER,
 - our connection charge guideline published under chapter 5A,³ and
- must detail:
 - the categories of persons that may be required to pay a connection charge and the circumstances in which such a requirement may be imposed,
 - the aspects of a connection service for which a connection charge may be made,
 - the basis on which connection charges are determined,
 - the way connection charges are to be paid (or equivalent consideration is to be given), and
 - a threshold (based on capacity or any other measure identified in the connection charge guideline) below which a retail customer (not being a non-registered embedded generator or a real estate developer) will not be liable for a connection charge for an augmentation other than an extension.

Our connection charge guideline for electricity retail customers

Under the chapter 5A of the NT NER, we are required to develop and publish our connection charge guideline to set out how electricity distributors should charge new electricity customers for connecting to their networks.⁴

Following a rule change,⁵ we initiated a review of the connection charge guideline to specify the conditions under which a distributor may impose a static zero export limit on rooftop solar in limited situations. Static zero export limit means a customer may not export electricity at any time. These conditions are intended to strengthen customer safeguards.

Our final decision on the review of the connection charge guideline was published in April 2023, after the due date for the regulatory proposal. Hence, there is also a need to modify the proposed connection policy to line up with the final connection charge guideline. These

¹ NT NER, Part DA of chapter 6.

² NT NER, cl. 6.7A.1(b).

³ AER, *Connection charge guideline for electricity retail customers, Under chapter 5A of the National Electricity Rules Final Version 3.0*, April 2023.

⁴ NT NER, cl. 5A.E.3(a).

⁵ Available at <https://www.aemc.gov.au/rule-changes/access-pricing-and-incentive-arrangements-distributed-energy-resources>

changes (along with other minor amendments) have been agreed by Power and Water Corporation.⁶

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

- are reasonable and consider the efficient costs of providing the connection services arising from the new connection or connection alteration
- provide, without undue administrative cost, a user-pays signal to reflect the efficient costs of providing the connection services
- limit cross-subsidisation of connection costs between different classes (or subclasses) of retail customers
- are competitively neutral, if the connection services are contestable.

18.1 Draft decision

We do not approve Power and Water Corporation's connection policy as it:

- does not contain all the necessary information required under the NT NER, and
- contains conditions that are inconsistent with our connection charge guideline.

We have identified various deficiencies in the policy in that:

- It does not contain the new conditions set out in our amended connection charge guidelines on how it may impose a static zero export limit on new rooftop solar.
- It lacks clarity for the connection applicants that the policy applies to both the inter-connection network and regulated standalone power systems.
- It does not outline how it will apply an incremental revenue rebate against the capital contributions customers make towards the cost of these services.

For this draft decision, in consultation and agreement with Power and Water Corporation, we have amended the distributor's connection policy to the extent necessary to meet the NT NER requirements and our connection charge guideline.⁷

18.2 Power and Water Corporation proposal

Power and Water Corporation's revenue proposal included a connection policy to provide an outline of its connection services when connection charges may be payable by its retail customers and how those charges are calculated.

⁶ Power and Water Corporation, *Email to AER re: information request PWC IR#012 – [Connection Policy] – 20230428– [PUBLIC] - AER comment - Power and Water Connection Policy 2024-2029 - 25 May 2023 comments*, 8 June 2023.

⁷ NT NER, cl. 6.12.3(j)(2); *Ibid.*

18.3 Stakeholder consultation and Framework and Approach

Following stakeholder consultation, we classified basic connections as standard control. We then classified standard connections, negotiated connections, enhanced connections and connection application and management services as alternative control services.⁸

No submissions were received related to the connection policy.

18.4 Assessment approach

We examined the proposed connection policy against the requirements of Part DA of chapter 6 of the NT NER as stated above—whether it:

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

In addition, we also examined whether:

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

18.4.1 Interrelationships

Power and Water Corporation proposed classification of “standard”, “negotiated” and “enhanced” connection services as alternative control services.⁹ Since all connection services include the following three components, “premises connection”, “extension asset” and “shared network augmentation charge on a \$/kVA demand basis”, we consider a blanket statement of classifying “standard”, “negotiated” and “enhanced” connection services as alternative control services could be mis-interpreted that all the three above charge components are under the category of alternative control services. Hence, we consider it necessary to classify each component of connection services separately to avoid confusion.

That is to classify:

- Premises connection asset as alternative control services
- Extension asset as alternative control services
- Shared network augmentation charge as standard control services.

⁸ AER, *Framework and approach Power and Water Corporation (Northern Territory) Regulatory control period commencing 1 July 2024*, July 2022, pp. 58–59.

⁹ Power and Water Corporation, *Regulatory Proposal, attachment 7.01 – Service Classification*, 31 Jan 2023, p. 11.

Power and Water Corporation has accepted our classification of each component of the connection services discussed above. Please refer to the services classification draft decision attachment for further details.

Power and Water Corporation also proposed not to provide standard connection services in the 2024–29 period and we have updated our draft decision on classification of services to reflect its circumstances.¹⁰

18.5 Reasons for draft decision

We are not satisfied that Power and Water Corporation's connection policy is compliant with the NT NER. Amongst other things, we have amended Power and Water Corporation's connection policy to the extent necessary to:

- allow the business to apply an incremental revenue rebate against the capital contributions customers make towards the cost of extension services as per clause 5A.E.2(c) of the NT NER,
- clarify how it may impose a static zero export limit on new rooftop solar as per the connection charges guideline,
- clarify how Power and Water Corporation will charge for removing export constraint on request from a micro embedded generator as per the connection charge guideline, and
- clarify that the policy applies to both the inter-connection network and regulated standalone power systems.

We have discussed these changes with Power and Water Corporation, which has agreed with our amended connection policy.¹¹

We consider that the amended connection policy is consistent with our connection charge guideline. Specifically, the purpose of the connection charge guideline includes:¹²

- to provide, without undue administrative cost, a user-pays signal to reflect the efficient cost of providing the connection services; and
- to limit cross-subsidisation of connection costs between different classes (or subclasses) of retail customer.

18.6 Approval of upstream charge rates

We benchmarked Power and Water Corporation's proposed upstream augmentation unit rates (in table A of the connection policy) against its historical cost. This analysis is set out in Table 18.1.

¹⁰ Power and Water Corporation, *Email to AER re: information request PWC IR#012 – [Connection Policy] – 20230428– [PUBLIC] - AER comment - Power and Water Connection Policy 2024-2029 - 25 May 2023 comments*, 8 June 2023.

¹¹ Ibid.

¹² NT NER, cl. 5A.E.3(b)(2) and (3).

Comparison with historical cost

We calculated that Power and Water Corporation's historical average overall network cost at low voltage levels to be about \$4706 per kiloVolt amperes (kVA) based on its latest Economic Benchmarking Regulatory Information Notices report for 2021–22.¹³ This equates to a charging rate of \$2668 and \$1609 per kVA for residential and non-residential customers connecting at the low voltage networks respectively.

This rate should reflect the long run marginal cost of Power and Water Corporation.

The long run marginal cost represents the average cost of each additional unit of capacity, for the purpose of upstream charge rates. Once an augmentation asset is added, the additional capacity stays with the distributor. However, each new connection has a finite timeframe for remaining connected. Hence, there is a need for an adjustment factor corresponding to each customer's assumed connection life. For example, business customers are assumed to stay connected for 15 years. Hence, distribution businesses should expect to receive the upstream charge every 15 years. The net present value of the multiple contributions should end up being equal to the long run marginal cost at present value. We applied the above adjustment factors for business and residential customers, based on the expected aggregate life of connections and the weighted average cost of capital for the 2024–29 period.¹⁴

The above historical average costs are significantly higher than Power and Water Corporation's proposed charge rates for shared network augmentation for low voltage networks at \$985 and \$674 for kVA for residential and non-residential customers respectively. Hence, we conclude that Power and Water Corporation's proposed shared network augmentation charge rates reasonable because the rates are less than the actual historical cost.

Table 18.1 Upstream charge rates comparison

	Power and Water	AER
Full cost (MCR) per kVA	\$1659	\$4706
Charge rate for residential customers	\$985	\$2668
Charge rate for non-residential customers	\$674	\$1609

Note: the rates are GST exclusive; the rates for Power and Water Corporation rates combined the lower voltage and high voltage rates.

Source: AER analysis.

¹³ Available at [www.aer.gov.au](https://www.aer.gov.au/networks-pipelines/performance-reporting) at <https://www.aer.gov.au/networks-pipelines/performance-reporting>.

¹⁴ AER, *Explanatory Statement, Proposed Connection charge guidelines: under chapter 5A of National Electricity Rules For retail customers accessing the electricity distribution network*, 22 December 2011, p.33; AER, *Guidance Paper, The AER's Conclusion on the Benchmark Upstream Augmentation Charge Rates for CitiPower's Network*, 25 June 2010.

18.7 AER approved connection policy.

We have modified Power and Water Corporation's proposed connection policy to reflect the above draft decision on this matter.¹⁵ This amended connection policy is appended to this chapter.

¹⁵ Power and Water Corporation, *Information request PWC IR#012 – [Connection Policy] – – 20230428– [PUBLIC] - AER comment - Power and Water Connection Policy 2024-2029 - 25 May 2023 comments*, 8 June 2023.

AER approved connection policy for Power and Water Corporation

Connection Policy, Apr 2023

2024 – 2029

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1. Introduction

1.1 Power and Water Corporation

Power and Water Corporation (Power and Water) is the Government Owned Corporation responsible for the provision of electricity networks and water and sewerage services across the Northern Territory (NT).

This document refers to Power and Water in its capacity as a distribution network service provider of regulated electricity services, licensed by the Utilities Commission under the *Electricity Reform Act*.

References to defined terms within this document have been italicised.

1.2 Purpose and Scope of Document

This Connection Policy (the Policy) sets out the circumstances in which Power and Water requires a *retail customer* or *real estate developer* to pay a *connection charge* for establishing a new connection or making a connection alteration, and how these charges are calculated for the provision of *connection services*. The Policy provides the framework for *connection charges* that will be included in a connection offer to *connection applicants*.

The Policy applies to connections requested from 1 July 2024 for new or modified connections during 2024–29 regulatory control period (1 July 2024 to 30 June 2029 inclusive).

The Policy was prepared in accordance with the:

- NT National Electricity Rules (NT NER) Chapter 6 Rule 6.7A.1 (a);
- connection charge principles set out in Part E of Chapter 5A of the NT NER;
- connection charge guidelines for electricity retail customers published by the Australian Energy Regulator (AER); and
- AER's Framework and Approach decision for the proposed classification of services for the 2024–29 regulatory control period.

The Policy applies only to *connection applicants* for electrical installations in the local electricity systems as defined in Schedule 2 to the *National Electricity (Northern Territory) (National Uniform Legislation) Act*. At the time of writing, these local electricity systems are:

- Darwin-Katherine Electricity System;
- Tenant Creek Electricity System; and
- Alice Springs Electricity System.

Note:

This Policy does not apply to connections to the network by registered participants or intending registered participants in the wholesale market. These connections are covered by Chapter 5 of the NT NER.

[This Policy would also apply to any regulated stand alone power systems \(SAPS\) established by Power and Water in the Northern Territory. At the time of publication there are no regulated SAPS in the Northern Territory and no plans to introduce any regulated SAPS.](#)

1.3 Contact Details for Further Information

For further information about this Policy, please contact:

Executive General Manager Power Services, Power and Water Corporation

GPO Box 1921

Darwin NT 0801

Phone: (08) 8924 5400

Email: customerservice@powerwater.com.au

2. Who is a Connection Applicant?

A *connection applicant* is typically one of the following:

- a *retail customer*;
- a retailer or other person acting on behalf of a *retail customer*; or
- a *real estate developer*.

3. What are Connection Services?

Connection services involve the following types of work:

- connecting a home, business or other premises to the electricity *distribution network* (new connection);
- extending or increasing the capacity of the existing network to reach a *connection applicant* (extension or shared network *augmentation*) where adequate supply is not available to make a new connection; or
- enhancing aspects of an existing connection.

There are two types of *connection services* offered by Power and Water:

- *basic connection services*; or
- negotiated connection services.

Under Chapter 5A of the NT NER there is also the possibility of standard connection services, although this has not been offered to date by Power and Water.

[Power and Water also offers two connection services to manage other activities associated with connections:](#)

- [enhanced connection services; and](#)
- [connection management services.](#)

3.1 Basic Connection Services

In general, *basic connection services* include:

- connection of *residential* and small non-residential premises where:
 - supply is available (i.e. there is a power asset (overhead or underground) available at the required voltage and with sufficient capacity for the proposed connection);
 - no network *augmentation* required; and
 - the maximum demand of the electrical installation is less than or equal to 100 amps per phase;
- connection of *micro embedded generation* (e.g. solar PV installations) or storage with total system capacity as per the requirements of AS4777 (Grid connection of energy systems via inverters installation requirements) that are: (1) smaller than 30 kVA 3-phase or 10 kVA single-phase; and (2) consistent with Power and Water’s process regarding small inverter connected generators,¹ where there is no network *augmentation* required;

Based on the above definition and scope, *basic connection services* do not apply to:

- *real estate developers*;
- residential and non-residential customers with maximum demand of the electrical installation greater than 100 amps per phase; or
- embedded generating unit operators that are not *micro embedded generators*.

3.2 Negotiated Connection Services

Negotiated connection services are those *connection services* that do not meet the definition of a *basic connection service* or where the *connection applicant* elects to negotiate the terms upon which the connection is provided. Under the NT NER, Power and Water may charge a *connection applicant* a reasonable fee to cover expenses directly and reasonably incurred in assessing the applicant’s *connection application* and making a negotiated *connection offer*.

Negotiated connection services may include:

- large embedded generators (30 kVA 3-phase or above and 10kVA single-phase or above);
- dedicated services that only supply the *connection applicant* that are more than one span of low voltage overhead or 25 metres of low voltage underground cable, at the time of application;
- *connection services* that do not meet the least cost technically acceptable (LCTA) connection standard for the capacity requirements of the *connection applicant*;
- connections that are made to an existing part of the Power and Water network that is subject to a pioneer scheme; and
- temporary low voltage connections that need network augmentation works.

Examples of negotiated connection services may include:

¹ Power and Water’s small inverter connected generators process can be found at powerwater.com.au/solar

- *extension* of the existing high voltage and low voltage networks, including suitable substations;
- establishment of a dedicated zone substation and/or high voltage feeder(s);
- connections to a *real estate development*;
- an embedded generator that is not a *micro embedded generator*;
- *augmentation* of the shared network only if the requested increase in demand is greater than planned for by Power and Water;
- public lighting; and
- public electric vehicle charging facilities.

There are three potential components to negotiated connection services:

- Premises connections – for services to connect or modify the existing connection of a connection applicant’s home, business, or other premises to Power and Water’s distribution network, such as the overhead services main to connect a house’s point of connection to Power and Water’s distribution network. Premises connection assets are mostly situated within the customer’s property and serve only the specific customer.
- Extensions – for connections that require the addition of assets outside the present boundaries of Power and Water’s distribution network to connect the connection applicant. Extensions may be used to connect subsequent customers, where appropriate.
- Shared network augmentation – for connections where the additional demand would require work to enlarge or increase the capacity of the upstream shared network either immediately or in the future beyond what is planned for by Power and Water.

3.3 Enhanced Connection Services

Enhanced connection services are connection services provided at the request of a customer or third party to provide service levels other than that are associated with the least cost technically acceptable option, for example:

- provided with higher quality of reliability standards, or lower quality of reliability standards (where permissible) than required by the NER or any other applicable regulatory instruments; or
- in excess of levels of service or plant ratings required to be provided by the distributor.

Enhanced connection services include enhancements for both consumption and export. Connection charges for enhanced connection services provided by Power and Water will be in accordance with Power and Water’s published Pricing Schedule for Connection Charges for Alternative Control Services.

3.4 Connection Management Services

Connection Management services include all activities that relate to customer connection applications and managing connections on an ongoing basis. This includes:

- connection application related services; and
- connection point management services.

[Connection charges for Connection Management Services provided by Power and Water](#) ~~may seek the~~ will be in accordance with Power and Water's published Pricing Schedule for Connection Charges for Alternative Control Services.

4. Types of Customer Contracts

There are two types of connection contracts:

- a (physical) connection contract associated with establishing or altering the physical *connection* to the *distribution network* (described within this Policy); and
- a customer (supply) connection contract associated with the ongoing supply of electricity to a *retail customer's* premises. This contract is normally deemed to apply and the customer does not need to sign or agree to the contract.² It commences upon energisation or when a customer starts consuming energy.

4.1 (Physical) Connection Contract – Establishing or Altering a Physical Connection

There are two types of physical connection contracts for establishing or altering connections:

- **Model standing offer (MSO)** – that must be approved by the AER and can be accepted by a *retail customer*, either by:
 - accepting the terms and conditions of the MSO when they make an application for a new or altered connection (i.e. an expedited process); or
 - formally receiving and accepting a connection offer.
- **Negotiated connection contract** – where a connection applicant wants to negotiate for contract conditions different to that contained in the MSO, Power and Water will negotiate the terms and conditions with a connection applicant, including the price of the connection offer. A formal offer by Power and Water and acceptance of the connection contract by the connection applicant occurs via this process.

4.2 Customer (Supply) Connection Contract

There are three types of customer connection contracts for the ongoing supply of electricity:

- **Deemed Standard Supply Contract**³ – applies to all small customers (i.e. electricity consumption less than 750MWh per annum) unless they have a negotiated customer connection contract (Negotiated customer supply contract – see below). The Deemed Standard Supply Contract

² These contracts are always deemed to apply unless they have been negotiated between Power and Water and the retail customer. If negotiated, they commence when signed by both parties.

³ Power and Water's DSSC is based on the Model terms and conditions detailed in the National Energy Retail Rules (NERR) Schedule 2.

commences when a customer's premises is energised or when a customer commences consumption of electricity.

- **Deemed Large Supply Contract** – terms and conditions must be approved by the AER. Where a Deemed Large Supply Contract has not been approved, the Deemed Standard Supply Contract applies to a large customer (i.e. electricity consumption is more than 750MWh per annum) unless they have a Negotiated customer supply contract. A Deemed Large Supply Contract commences when a customer's premises is energised or when a customer commences consumption of electricity.
- **Negotiated customer supply contract** – terms and conditions are negotiated between Power and Water and the customer and a fee covering the costs of the negotiation will be charged in advance.

Note: copies of both deemed contracts are available on Power and Water's website.

5. Who Can Provide Connection Services?

5.1 Basic Connection Services

All *basic connection services* are provided by Power and Water.

5.2 Negotiated Connection Services

Power and Water can provide negotiated connection services to a *connection applicant* or, subject to agreement with Power and Water, the *connection applicant* can choose to undertake some elements of connection works as contestable works as set out below.

The *connection applicant* may choose to use an *accredited service provider* (e.g. electrical consultant / contractor) as an alternative to Power and Water to undertake the design and / or construction work downstream of the connection to Power and Water's existing network, where it can be constructed safely in isolation of Power and Water's existing network. This may include [the premises connection and extension works component of a negotiated connection service](#) and all reticulation within property developments.

Under this circumstance, the following is required:

- The infrastructure must be designed and constructed to Power and Water standards and guidelines as published on Power and Water's website.
- The *connection applicant* must create registered electricity easements in favour of Power and Water, as required, for the accommodation of the necessary network assets, in accordance with Power and Water's [Guidelines for Developers of Subdivisions and Electricity Infrastructure \(NP020\)](#). The costs associated with establishing registered easements will be met by the *connection applicant*.
- The contestable works that are undertaken and funded by the *connection applicant* are to be gifted to Power and Water upon acceptance by Power and Water. Acceptance will include installation audits, satisfactory testing results and making the final connection to works undertaken by Power and Water.

- The *connection applicant* is to provide a warranty on the installed infrastructure covering workmanship and defects for two years.

Power and Water will undertake these works as requested by a *connection applicant* as soon as practicable.

The non-contestable elements of *connection services*, to be undertaken by Power and Water, may include but are not limited to:

- preparation and issue of design specifications;
- review and approval of design undertaken by the *connection applicant*;
- audit of construction where the *connection applicant* undertakes the construction works;
- conduct of physical inter-connections to Power and Waters' *distribution network*;
- commissioning and testing of the constructed connection assets to Power and Waters' *distribution network*; and
- integrating the newly created connection assets including any *extensions* and *augmentation* into Power and Waters' asset management systems.

6. Shared Network Augmentation

Shared network *augmentation* refers to works on the shared network to increase the capacity of the *distribution network* to supply more than one customer. The types of work under this category include:

- creating new zone substations or increasing the capacity of existing zone substations;
- creating new transmission lines or increasing the capacity of existing transmission lines; and
- increasing the capacity of distribution lines and distribution transformers that supply more than one customer.

All shared network *augmentation* is performed by Power and Water.

Power and Water produces an annual update to its Transmission and Distribution Annual Plan that considers the forecast changes in electricity demand to all parts of the network and develops an efficient investment plan to meet the required reliability for that demand. Any increase in capacity by a *connection applicant* that causes a demand increase beyond the expected incremental demand forecast within the planning horizon will be treated as a negotiated connection service, [and there will be a shared network augmentation component to the connection service.](#)

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 is the maximum demand of 100 amps per phase.

7. What are the Charges for Connection Services?

This section sets out how Power and Water will calculate charges for basic and negotiated connection services it undertakes. It is important to note that different connection service charges will apply depending on the AER's classification of services.

The *connection charges* payable to Power and Water will (where applicable) be comprised of the following:

- *connection charges* for services classified as an alternative control service (ACS) [in accordance with Power and Water’s published Pricing Schedule for Connection Charges for Alternative Control Service , which includes the premises connections and extensions components of negotiated connection service;](#)
- capital contributions for services classified as a standard control service (SCS)
- [} for any shared network augmentation component of a negotiated connection service; and](#)
- [Pioneer Reimbursement Scheme](#) charges for extensions to which a pioneer scheme applies.

Connection applicants may also be required to pay a security fee (see section 8 below).

7.1 Connection charges for ACS

Connection services, which are classified as an ACS, are customer specific or customer-requested services with the full costs recovered from the customer requesting that service. Power and Water may also charge additional fees to recover reasonable costs incurred for site inspections to provide a negotiated connection service and to recover the cost of negotiating a connection offer. [This charge is based on the least cost technically acceptable construction method.](#)

All connections must be metered except where the energy consumption can be accurately assessed without the need for a meter. Power and Water is responsible for providing types 1–6 metering services,⁴ and these metering services are classified by the AER as an ACS and therefore will be charged separately.

The relevant fees for ACS are set out in Power and Water’s published Pricing Schedule, which is approved by the AER.⁵

7.2 Capital contributions for SCS

Basic connection [customers are](#) not required to make a capital contribution towards the cost of [any augmentation of the distribution network.](#)

[When a connection applicant is seeking a connection that does not meet the classification of a basic connection service and that requires augmentation of the upstream shared network beyond the demand planned for by Power and Water \(i.e. a negotiated connection service with a shared network augmentation component\), the connection applicant may be required to make a reasonable capital contribution towards the cost of the augmentation.](#) The capital contribution (CC) will apply per connection point and will be calculated as follows.

$$CC = \text{Max}[ICCS - IR(n = X), 0]$$

$$\text{Capital Contribution} = \text{Max}[ICCS + ICSN - IR(n = X), 0] + \$PS$$

⁴ Type 5 meters are currently not approved for use in the Northern Territory. When referring to types 1 to 6 metering services, this includes services relating to pre-payment meters

⁵ Power and Water’s Pricing Schedule is available at powerwater.com.au/networkpricing

Where:

X = 15 years for non – residential; 30 years for residential

ICCS = incremental cost customer specific.

~~IR~~ICSN = incremental cost shared network IR = incremental revenue.

\$PS = any relevant pioneer reimbursement scheme charges.

ICCS = Incremental Cost Customer Specific

These costs are for any standard control services undertaken by or contracted by Power and Water, which are dedicated to the connection applicant.

ICSN = Incremental Cost Shared Network

This term is for the incremental costs of works (either immediate or in the near future) due to the new connection. The types of work under this category include:

- creating new zone substations or increasing the capacity of existing zone substations;
- creating new transmission lines or increasing the capacity of existing transmission lines; and
- increasing the capacity of distribution lines and distribution transformers that supply more than one customer.

These costs will be based on the estimated maximum demand of the connection applicant on a \$ per kVA demand basis (see Appendix A. Shared Network Augmentation RatesA: Shared Network Augmentation Rates for the charge rates).

IR = Incremental Revenue

The incremental revenue will be the net present value of the expected distribution use of system (DUoS) charges that we expect to recover from the customer. When estimating the incremental revenue, Power and Water will remove the component attributable to augmentation and the operational and maintenance costs from the network tariff

When calculating the incremental revenue, Power and Water will apply the following:

- Forecast DUoS revenue will be based on the price path set out in the AER determination for the 1 July 2024 to 30 June 2029 period and the relevant tariffs as set out in the approved Pricing Proposal and Tariff Structure Statement. For the period from 1 July 2029, Power and Water will assume a constant tariff in real terms.
- A discount rate based on Power and Water's approved regulatory weighted average cost of capital converted into pre-tax terms using the estimated average effective tax rate for the regulatory control period as set out in the AER determination for the 1 July 2024 to 30 June 2029 period.
- If the connection applicant is a residential customer, then an assumed connection life of 30 years applies when calculating the expected DUoS charges recoverable from the connection applicant
- If the connection applicant is a business customer, then an assumed connection life of 15 years will apply when calculating ~~the~~ the expected DUoS charges recoverable from the connection applicant.

However, where a 15 year connection life does not reflect a reasonable estimate of the time that the connection will remain in service, Power and Water may apply an alternative assumed connection period.

\$PS = Any relevant pioneer reimbursement scheme charges

For new customer connections to an existing dedicated network extension where a Pioneer Reimbursement Scheme applies, the new customer may be required to pay a connection charge to refund a portion of the costs of the original customer who contributed to the dedicated network extension (section 7.3).

7.3 Pioneer Reimbursement Scheme

An *original customer* who has been provided with a connection service with an extension component is entitled to have some of their costs reimbursed by Power and Water if a *subsequent customer(s)* connects to that network *extension* within seven years of the asset being energised.

When an independent service provider or *accredited service provider* performs an *extension* and the cost of the *extension* is unknown to Power and Water, the pioneer scheme will use an estimate of the amount it would have charged the *original customer* to perform the *extension*.

Power and Water may recover the refund amount from the *subsequent customer* as part of the *connection charges* paid by the *original customer*. Power and Water will pay the refund as soon as practicable after the *subsequent customer* pays Power and Water the refunded amount.

Power and Water will pay the refund to either:

- the current owner of the original premises, if the original premises is owned by a single entity; or
- where two or more *connection applicants* have jointly procured and/or funded the original works, the rebates will be divided between the current owners in accordance with the proportions in which they procured and/or funded the works.

The reimbursement payable under the pioneer scheme by a *subsequent customer* to the *original customer* is calculated as:

$$(\$PS) = (\text{Asset Value}) \times (\text{Asset Fraction}) \times (\text{Capacity Fraction})$$

- Asset Value - the current original connection applicant(s) funded value of the network extension assets, depreciated on a straight-line basis over a 20 year period.

$$(\text{Asset Value}) = (\text{Original Applicant(s) Funded Value}) \times \left[1 - \frac{(\text{Asset Age})}{20} \right]$$

- Asset and Capacity Fractions - the share of the common part of the extension used by the *subsequent customer* relative to other connection applicant(s) already supplied by the extension in terms of maximum capacity, and/or other physical attributes (e.g. length) as applicable.

$$(\text{Asset Fraction}) = \frac{\sum_{k=1}^n (\text{Length of Common Segment})_k}{(\text{Total Length})}$$

$$(\text{Capacity Fraction}) = \frac{(\text{Est Max Demand})}{(\text{Est Max Demand}) + (\text{Existing Max Demand})}$$

The pioneer scheme commences on the date the *extension* asset is energised by Power and Water. The reimbursement amount is determined at the date the *subsequent customer* accepts the connection offer.

If Power and Water's pioneer scheme calculates a total refund to all customers already connected to an *extension* that is less than \$1,260 (\$2022) adjusted subsequently for CPI, then Power and Water is not required to make a pioneer scheme refund.

If the *extension* assets were constructed to a higher standard or capacity than the least cost technically acceptable standard required by Power and Water, then only the cost of constructing the *extension* to the standard required will be subject to the pioneer scheme.

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

8. Security Fee

Power and Water may require the payment of a security fee if it determines there is a reasonable risk that it may not earn the estimated incremental revenue from the provision of *connection services*. The amount of the security fee will not be greater than the amount of the incremental revenue, which Power and Water has assessed as having a risk of not being recovered.

Power and Water may require an applicant to make a prepayment, or provide an unconditional, irrevocable bank guarantee (or equivalent financial instrument), under terms acceptable to Power and Water. The bank guarantee or other financial instrument must guarantee the portion of revenue that Power and Water considers to be at risk of not being recovered (excluding the operating and maintenance component) while providing services to the *connection applicant*.

Circumstances where Power and Water may require a security fee, include but are not limited to, the following:

- the *connection applicant* is a *connection applicant* or concurrent multiple applicants; and
- the forecast capital costs associated with the new connection including augmenting the shared network exceed \$100,000 for any *connection applicant*.

If Power and Water determine there is reasonable risk that an extension or upgrade will not proceed, Power and Water may require a *connection applicant* to enter into an Early Works Agreement and provide an unconditional, irrevocable bank guarantee (or equivalent financial instrument), under terms acceptable to Power and Water, to cover the costs incurred during the design, construction and commissioning phases of the project.

Where a *connection applicant* is required to provide security under this clause, they will be required to provide such security before the commencement of works to connect to Power and Water's network.

The Security Fee will be progressively released annually to the applicant as the incremental revenue is realised. Where the security fee is provided as an upfront payment, Power and Water will rebate the security fee via annual instalments and will pay interest on the security fee commensurate to the manner in which the security fee is treated by Power and Water.

9. Prepayments

For works undertaken by Power and Water with a value greater than [\\$6,300 \(Real 2022\)](#), the payment of the *connection charges* will be recovered through a single up-front payment from the *connection applicant*. The payment must be made to Power and Water before the related works commence, unless otherwise negotiated with the *connection applicant*. For staged construction works, partial prepayments for works with a value greater than [\\$6,300](#) may be applied by Power and Water.

10. Embedded Generators and energy storage systems

Non-registered embedded generators are not eligible for the exemption from being charged for *augmentation* (insofar as it involves more than an *extension*) and must pay the full costs of removing network constraints that are specific to the connection of the embedded generation.

For the purposes of this Policy, energy storage (e.g. batteries) which both charge from Power and Water's network and discharge / generate back into the network, is considered as load when charging and embedded generation when discharging. The predominant purpose of the connection will be taken into consideration when deciding what connection charges will apply.

11. Real Estate Development

For the purposes of this Policy, *real estate development* includes the commercial development of land, such as:

- subdivision of a block of land into more than one premises;
- construction of commercial and / or industrial premises (e.g. shopping centres); or
- construction of multiple new *residential* premises.

All *real estate development* connections will be processed as a negotiated connection service, [with any premises connection and extension component classified as ACS, and any shared network augmentation component classified as SCS...](#)

12. When Can Static Zero Export Limits Apply?

The circumstances in which Power and Water may offer [an application for a new micro embedded generators, or alteration to an existing micro embedded generator](#), a connection with a static zero export limit condition are outlined below.

[A static zero export limit means that a customer is prevented from accessing the network to export electricity at any time.](#)

Power and Water is required to offer to provide *basic connection services* on specified terms and conditions for *micro embedded generators*, or negotiate a *connection contract* with a *connection applicant*. However, the connection of a *micro embedded generator* to the *distribution network* does not of itself guarantee the ability to export electricity.

[The AER's connection charge guidelines specify the conditions under which we may apply a static zero export limit.](#)

[Power and Water will apply](#) a static zero export limit condition for *basic connection services* or a negotiated *connection contract* [\(for new or significantly altered connections after 1 July 2024\) when:](#)

- the export from the *micro embedded generator* will have a high probability of resulting in Power and Water [either](#) not meeting a regulatory obligation (such as a voltage level [or](#) power quality standard), or not being able to maintain the *distribution network* within its technical limits; and
- the cost of augmenting the *distribution network* to allow a reasonable export capacity level by the *connection applicant* [more than marginally](#) outweighs the benefits arising from providing the additional export capacity; [\(taking into consideration the expected future new micro embedded generation outputs that will be able to export to the distribution network arising from the augmentation, and unless the connection applicant elects to fund the necessary network augmentation\);](#)

Or when:

- requested by the connection applicant.

[Power and Water may establish a standard assessment policy to undertake the above assessment and, if so, must publish it on Power and Water's website.](#)

Power and Water will not [apply](#) a static zero export limit if the *micro embedded generator* has a suitable dynamic response system as specified by Power and Water [for a particular location](#), except where a *connection applicant* specifically seeks a static zero export limit connection condition. [Power and Water must use its best endeavours to identify and specify suitable dynamic response systems for all locations in Power and Water's distribution area.](#)

When a static zero export limit condition is offered by Power and Water as necessary, in the *connection offer*, Power and Water will inform the *connection applicant* of:

- the technical and economic considerations that led to the static zero export limit condition [being applied](#);

- their option to install a suitable dynamic response system if available and as specified by Power and Water to avoid a static zero export limit condition being [applied](#);
- [how to access an independent technical review of Power and Water’s reasons for applying the static zero limit condition](#);
- their option to raise a dispute with Power and Water (see section 13 below) and other dispute resolution channels available; and
- their option to seek a review of the static zero export limit condition five years after the initial connection is completed.

If the connection applicant seeks a review of the static zero export limit condition after five years of completing the initial connection and, following this review, Power and Water assesses [applying](#) a static zero export limit condition is no longer justified based on the above circumstances, Power and Water will inform the connection applicant that they can reapply to have their static zero export limit condition lifted.

Power and Water will review static zero export limit conditions [applied](#) on existing *micro embedded generators* following any network augmentation works [designed to expand](#) the export hosting capacity of the *distribution network* in a particular location. If additional export capacity becomes available as a result of that augmentation, Power and Water will inform the relevant *connection applicant* that they can reapply to have their static zero export limit condition lifted.

[Where a connection applicant for a negotiated connection service wishes to fund shared network augmentation to remove a static zero network limit, the customer may be required to make a capital contribution towards the cost of augmenting the network. This capital contribution would be determined based on the difference between the actual cost of the network augmentation and the net present value over the connection life of the export charge revenue received from the customer and any projected future micro embedded generator connections. Power and Water is not proposing export charges for this regulatory period. Therefore, the customer would be required to pay the full actual cost of augmenting the shared network.](#)

13. Dispute Resolution

Any dispute with Power and Water in relation to connection offers will be managed in accordance with Power and Water’s standard complaints and dispute resolution procedure, details of which are available on our website. Power and Water will make every endeavour to resolve connection disputes in a timely manner. This includes informing the *connection applicant* on whether there are alternative dispute resolution channels available to help negotiate a suitable export limit other than a static zero export limit (see section 12 above).

Where agreement on the terms and conditions of the connection offer cannot be reached, the AER may consider and make determinations regarding connection disputes under Part 10 of the National Electricity Law. Information on the AER’s customer connection dispute resolution process is available on the AER’s website: www.aer.gov.au

14. Definitions and Glossary

The following definitions and terms are provided to assist a connection applicant in understanding some of the terminology that may be used in relation to connections and interpreting this Policy.

Table 1 Definitions and Glossary

Term	Definition
Accredited Service Provider	A service provider who has been accredited by Power and Water in accordance with its relevant policies to design, construct, install and commission electricity distribution system assets.
ACS	Alternative Control Services
AER	Australian Energy Regulator
Augmentation	Work to enlarge the system or increase the capacity to transmit or distribute effectively.
Basic Connection Service	A connection service related to a connection (or a proposed connection) between a distribution system and a retail customer's premises (excluding a non-registered embedded generator's premises) in the following circumstances: <ul style="list-style-type: none"> (a) either: <ul style="list-style-type: none"> 1) the retail customer is typical of a significant class of retail customers who have sought, or are likely to seek, the service; or 2) the retail customer is, or proposes to become, a micro embedded generator; and (b) the provision of the service involves minimal or no augmentation of the distribution network; and (c) a model standing offer has been approved by the AER for providing that service as a basic connection service.
Business customer	A customer who is a <i>non-residential customer</i> .
Connection	A physical link between a distribution network and a retail customer's premises to allow the flow of energy.
Connection alteration	Any kind of alteration to an existing connection including, but not limited to, an addition, upgrade, extension, expansion or augmentation.

Term	Definition
Connection applicant	An applicant for a connection service from one of the following categories: <ul style="list-style-type: none"> • a retail customer; or • retailer or other person acting on behalf of the customer; or • real estate developer.
Connection charge	A charge <u>applied</u> by Power and Water for a connection service.
<u>Connection charge guideline</u>	<u>The Australian Energy Regulator’s Connection Charge Guidelines for electricity retail customers, published under Chapter 5A of the National Electricity Rules.</u>
Connection service	Means either or both of the following: <ol style="list-style-type: none"> (a) a service relating to a new connection for premises; (b) a service relating to a connection alteration for premises, but, to avoid doubt, does not include a service of providing, installing or maintaining a metering installation for premises.
Contestable service	A service is contestable if the laws of the participating jurisdiction in which the service is to be provided permit the service to be provided by more than one supplier as a contestable service or on a competitive basis.
Distribution network	The 22kV and 11kV electricity system owned and operated by Power and Water.
Distribution substation	A modular 22kV or 11kV to low voltage ground mounted transformer and switching assembly to provide capacity and facilitate connection of multiple supplies and customers.
Embedded Generator	A Generator who owns, operates or controls an embedded generating unit.
Extension	An augmentation that requires the connection of a power line or facility outside the present boundaries of the transmission or distribution network owned, controlled or operated by Power and Water.
Low voltage network	The 400V / 230V electricity system connecting low voltage supplied customers.

Term	Definition
Micro Embedded Generator	A small customer, large customer or MSGA customer who operates, or proposes to operate, an embedded generating unit for which a micro EG connection is appropriate.
MSO	Model Standing Offer means a document approved by the AER as a model standing offer to provide basic connection services or as a model standing offer to provide standard connection services.
MSGA customer	Means a person who owns, operates or controls, or proposes to operate or control, a small generating unit and who has an agreement with a Market Small Generation Aggregator relating to the small generating unit under which the Market Small Generation Aggregator is financially responsible for the market connection point at which the small generating unit is connected to the national grid.
Network coupling point	The point at which connection assets join a distribution network, used to identify the distribution service price payable by a Customer.
Non-Registered Embedded Generator	An embedded generator that is neither a micro embedded generator nor a Registered Participant.
Non-residential Customer	A customer who is not a <i>residential customer</i> .
NT NER	Northern Territory National Electricity Rules
Original customer	The connection applicant who triggered the requirement and paid for the construction of an extension asset.
Peak demand	A connection service's electricity demand, megawatts, in the region during the period, determined in accordance with the National Electricity Rules.
Peak Coincident Demand	A connection service's electricity demand at times when the network or relevant segment is experiencing its maximum Demand.
Real Estate Developer	A person who carries out a real estate development.
Real Estate Development	The commercial development of land including its development in 1 or more of the following ways: <ul style="list-style-type: none"> (a) Subdivision of a block of land into more than one premises; (b) the construction of commercial or industrial premises (or both);

Term	Definition
	(c) the construction of multiple new residential premises.
<u>Regulated stand alone power system</u>	<u>Has the same meaning as defined in the National Electricity Rules.</u>
Residential customer	A customer who purchases electricity principally for personal, household or domestic use at premises.
Retail customer	A person who is one or more of the following: <ul style="list-style-type: none"> (a) a small customer; (b) a large customer; (c) a micro embedded generator; or (d) a non-registered embedded generator, other than a non-registered embedded generator who has made an election under clause 5A.A.2(c) for connection under Chapter 5 of the NT NER.
Standard Connection Service	A connection service (other than a basic connection service) for a particular class (or sub-class) of connection applicant and for which a model standing offer has been approved by the AER.
SCS	Standard Control Services that are central to electricity supply and therefore relied on by most (if not all) customers such as building and maintaining the shared distribution network. These services are regulated by the AER.
<u>Static zero export limit</u>	<u>Has the same meaning as in the National Electricity Rules.</u>
Subsequent customer	A connection applicant, other than the original customer, who connects to an extension subject to the pioneer scheme.
Zone substation	A substation for the purpose of connecting a distribution network to a sub-transmission network.

Contact

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PowerWater

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A. Shared Network Augmentation Rates

Unit rate (\$/kVA)		
	Connection to low voltage	Connection to high voltage
Residential and residential real estate developers	863	668
Business tariff customers	591	457

These unit rates will be escalated from \$2024 for subsequent years by the Consumer Price Index.

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Shortened forms

Term	Definition
AEMC	Australian Energy Market Commission
AER	Australian Energy Regulator
NER	National Electricity Rules
