Eglington Village Residential Estate – Customer Self Supply Guidelines

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Document Prepared/Reviewed/Approved by Details:

Full Name	Job Title	Date
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Reviewed By: Navin Chalisey	Power System Engineer	4/11/2025
Approved By: Jason Good	General Manager	5/11/2025

Amendments in this Version:

Section No:	Section Title	Amendment Summary

Document References:

Document Number	Revision	Document Title
		Electricity Act 1945 (WA)
		Electricity Regulations 1947 (WA)
		Electricity Distribution Regulations 1997 (WA)
		Electricity (Licensing) Regulations 1991 (WA)
		Electricity Industry Act 2004 (WA)
		Electricity Industry (Metering) Code 2012 (WA)
		Electricity (Network Safety) Regulations 2015 (WA)
		Energy Coordination Act 1994 (WA)
		Energy Operators (Powers) Act 1979
		Work Health and Safety Act 2020
		Work Health and Safety Regulations 2022
		AS/NZS 2067 Substations and High Voltage Installations exceeding 1 kV a.
		AS/NZS 3000 Electrical Installations (Wiring Rules)
		NICC-270 Guide for Connecting Large Embedded Generation

		AS 60038-2000 Standard Voltages
		AS/NZS 61000 Part 3.3:2012 Electromagnetic compatibility (EMC) Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current =16 A per phase and not subject to conditional connection
		AS/NZS 61000 Parts 3.5 Electromagnetic compatibility (EMC) Limits - Limitation of voltage fluctuations and flicker in low-voltage power supply systems for equipment with rated current greater than 16 A
		AS/NZS 61000 Parts 3.7 Electromagnetic compatibility (EMC) Limits - Assessment of emission limits for fluctuating loads in MV and HV power systems (IEC 61000-3-7:1996, MOD)
		AS/NZS 61000 Parts 3.2 Electromagnetic compatibility (EMC) Limits - Limits for harmonic current emissions (equipment input current =16 A per phase)
		AS/NZS 61000 Parts 3.6:2012 Electromagnetic compatibility (EMC) Generic standards - Emission standard for residential, commercial and light-industrial environments
		EVE Connection Application
		EVE Connection Enquiry
		EVE HV Submission
		EVE Disconnection Application
		EVE Reconnection Application
		EVE Connection Offer

		EVE Sensitive Loads Application Form
		AS/NZS 61000 Part 3.3:2012 Electromagnetic compatibility (EMC) Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current =16 A per phase and not subject to conditional connection
		AS/NZS 61000 Parts 3.5 Electromagnetic compatibility (EMC) Limits - Limitation of voltage fluctuations and flicker in low-voltage power supply systems for equipment with rated current greater than 16 A

Table of Contents

1. INTRODUCTION

The Eglinton Village Residential Estate Customer Self Supply Guidelines (**Guidelines**) have been prepared by Zenith for the purposes of governing customer self supply arrangements.

All generators seeking a connection to the Network must comply with these Guidelines.

These Customer Self Supply Guidelines may not cover all circumstances. This may include unusual connections, inadvertent omissions or changes to applicable legislation and codes. In these circumstances, Zenith must be consulted for further advice or information.

These Guidelines are effective from 05/11/2025.

1.1. Licensee details

Eglinton Village Energy (EVE) holds an electricity distribution licence issued by the Economic Regulation Authority for the operation of the private electricity network located at the Eglinton Village Residential Estate (**Network**).

1.2. Company Details

Name: Eglinton Village Energy Pty Ltd

ABN: 60 665 916 085

Address: 52 Belmont Ave Rivervale WA 6103

1.3. General

These Guidelines will be maintained and administered by EVE specifically for Customer self-supply installations and embedded generation connecting or connected to the Network.

The key objective is to ensure all technical and safety requirements relevant to Customer self-supply electrical installations are complied with prior to its electrical connection to the Network.

Key fundamental considerations relevant to the ongoing management of these Guidelines include:

- promoting consistency between this document and Network Provider's requirements in respect of the Western Power Network and the Microgrid;
- minimising risk for personal injury or property damage;
- minimising risk of supply interruptions and supply reliability issues;

- ensuring compliance of electrical installations with all relevant standards, codes and guidelines;
- ensuring an appropriate quality of supply is maintained for all users of the Network;
- ensuring a clear understanding and delineation of responsibility between customers and EVE as far as customer self-supply electrical installations are concerned; and
- providing appropriate uniformity & consistency for efficient operations, repair & maintenance.

Further background and information on how these Guidelines will be managed and maintained is provided below.

1.4. Update and Revision

These Guidelines will be updated from time to time, in accordance with industry best practices.

Without limiting the foregoing, a range of considerations will apply in preparing future revisions outside the document review process to these Guidelines including:

- changing regulatory and legislative requirements;
- changing technical requirements, standards and codes;
- feedback from applicable stakeholders (including customers and their agents);
- in response to changing requirements as the Network develops;
- following associated compliance/review and safety assessments;
- through involvement with industry forums and related consultation;
- to help maintain consistency with Western Power requirements; and
- ongoing practical experience in managing the Network, connecting installations and other operational aspects.

1.5. Availability and Distribution

The most recent revision of these Guidelines will be readily available to the general public free of charge through the Eglinton Village Energy website https://eglintonvillageenergy.com.au/

1.6. Failure to Comply with These Guidelines

Where an installation connected or intending to connect to the Network is deemed to not satisfy these Rules, connection of electricity to the installation may be delayed, withheld or removed until such time as the non-compliance has been rectified.

This may result in a requirement for re-inspection of the installation by EVE to confirm the installation's compliance with these Guidelines.

1.7. Exemptions

These Guidelines may not cover all circumstances, including unusual situations, inadvertent omissions, or recent changes to legislation and codes.

EVE must be consulted in these circumstances and a limited exemption to the Guidelines may be granted.

Where necessary, amendments may be made to the Guidelines.

In other exceptional circumstances specific requirements may be formally waived or modified by submission of a request in writing to the EVE Responsible Person including:

- background statement outlining why non–compliance with these Rules is required;
- detailed description of the proposed alternative, exclusion or modified condition, including supporting safety and technical assessments; and
- letter from the owner or controlling body of the installation giving their consent to the request.

No action should be taken until a written reply to such a request has been received from the EVE Responsible Person.

If suitable exceptional circumstances along with demonstration of safe installation arrangements is not provided, EVE will be unlikely to approve the request. Similarly, if the requested exemption interferes with ability for EVE to satisfy its obligations, then approval of the request will be denied.

1.8. Employing a Licensed Person

The *Electricity (Licensing) Regulations 1991* (WA) requires that all electrical work carried out on electrical installations connected to or intended to be connected to the Network will be performed by persons holding the appropriate electrical worker's licensed (as issued by the Electrical Licensing Board).

1.9. Scope

These Guidelines apply to customer self-supply generation installations connected to the Network and prospective new connections.

These Guidelines should be read in conjunction with the Customer Connections and Contributions Guidelines.

1.10. Relationship with the Network Service Provider (Western Power Network)

Western Power has a direct interest in any expansion, modification or operation of the Microgrid. This is because:

- the Microgrid is electrically connected to the Western Power Network on the basis that the Microgrid is a “customer” of the Western Power Network; and
- Electricity consumed on the Microgrid comes from the Western Power Network and via Local Generation and Storage Infrastructure.

As such, the operation and modification of the Microgrid can impact on the operation of the Western Power Network and in certain circumstances under its contracts with Western Power and the supplier of electricity from the Western Power Network, EVE may be required to seek approval in relation to certain New Connections or Modified Connections.

These Guidelines are subject to any requirements of Western Power. Accordingly:

- where EVE is required to approve or consent to anything, it may be required to seek a comparable approval or consent from Western Power;
- such consent or approval may be required to be sought from Western Power under a Western Power connection application and associated studies by Western Power;
- all fees and charges that are referable to a Connection Application made by a Customer must be paid for by the Customer in accordance with the terms of these Guidelines and any Connection Offer.

1.11. Objective

The key objective of these Guidelines is to provide Customers and registered electrical workers with an overview of the technical requirements for electrical self supply installations connected to the Network.

These requirements are intended to comply with Australian Standards, applicable legislation, Western Power’s requirements (including the Western Power Network Technical Rules) and other rules/codes applicable to the Network.

EVE is committed to the safe and efficient operation of the Network in compliance with all statutory legislation and its other legal obligations.

1.12. Definitions

Term	Description
Augmentation	means the capital upgrade of the Microgrid or the Western Power Network required to meet the electrical growth requirements of Customers but does not include capital Works that are Connection Works.
Basic Connection	mean the establishment of a New Connection in accordance with the table of charges.
Consumer Mains	the electrical infrastructure on the downstream side of the Point of Supply.
Connection Assets	means all of the Network Assets that are used only in order to provide supply at the Connection Point.
Connection Offer	an offer from EVE to a Customer to enter into a contract in respect of a new connection or an existing connection.
Connection Point	means the point described, or to be described, as such in an electricity supply agreement in respect of the applicable premises.
Customer	means, as applicable, a current or prospective consumer in respect of a Premises.
Customer's Agent	means: a) any person acting on behalf of a Customer; and b) any developer, owner of a premises, builder, registered electrical contractor and equipment manufacturer, Third Party Retailer or other person acting on behalf of any of the foregoing
Deemed	means regarded, considered or judged.
Disconnection Application	means an application made by the Customer or the Customer's Agent for the purpose of disconnecting or de-energising electricity at a premises but does not affect a removal of EVE's distribution network infrastructure or Meters.
Economic Regulation Authority	means the body established under the *Economic Regulation Authority Act 2003* (WA).
Electricity Industry Act	means the *Electricity Industry Act 2004* (WA).
EVE Connection Enquiry or Connection Enquiry	means an application made in the form set out at schedule [x], which is also available on EVE's website.
EVE Connection Offer or Connection Offer	means an application made in the form set out at schedule [x], which is also available on EVE's website.
EVE Connection Application or Connection Application	means an application made in the form set out at schedule [x], which is also available on EVE's website and includes an HV Submission.
EVE Disconnection Application or Disconnection Application	means an application made in the form set out at schedule [x], which is also available on EVE's website.
EVE HV Submission or HV Submission	means an application made in the form set out at schedule [x], which is also available on EVE's website.

EVE Reconnection Application or Reconnection Application	means an application made in the form set out at schedule [x], which is also available on EVE's website.
EVE Sensitive Loads Application or Sensitive Loads Application	means an application made in the form set out at schedule [x], which is also available on EVE's website.
Forecast Costs	means any or all of the costs that EVE forecasts, acting reasonably, will be suffered or incurred by EVE in connection with regards to Works.
Guidelines	means this document.
HV	means high voltage.
HV Submission	means an application for the new connection of plant and equipment at a premises or the material modification of load consuming plant and equipment, a material change in its operation or the installation or removal of such plant and equipment.
Legislative and Industry Requirements	means obligations on EVE, the Customer, any Customer's Agent and licenced electrical contractors or other persons, which relate to the matters contemplated by this Guidelines, the design, construction and operation of the Network, the local generation and storage infrastructure and the interface between the Microgrid and the Western Power Network, including that arise in relation to: • the *Electricity Act 1945*; • the *Electricity Regulations 1947*; • the *Electricity (Licensing) Regulations 1991*; • the *Electricity Industry Act 2004*; • the Metering Code; • the *Electricity (Network Safety) Regulations 2015*; • the *Energy Coordination Act 1994*; • the *Energy Operators (Powers) Act 1979*; • the *Work Health and Safety Act* 2020; • the *Work Health and Safety Regulations* 2022; • the Code of Practice "Safe Low Voltage Work Practice by Electricians" (published by Energy Safety); • the Code of Practice for Persons Working on or near energised electrical installations(published by Energy Safety); • the Guidelines for the management of vegetation near powerlines (published by Energy Safety); • the Guidelines for the safe management of high voltage electrical installations(published by Energy Safety); • the Utility Providers Code of Practice (published by dial before you dig); • the WAER; the WADCM;
Local Generation and Storage Infrastructure	• means generation and battery storage infrastructure connected to the Network that is operated by EVE.
LV	means low voltage.
Meter	has the meaning given to that term in the Metering Code.

Metering Code	means the *Electricity Industry (Metering) Code 2012* (WA).
Microgrid	means the Network and all Local Generators.
Microgrid Electricity Transfer Access Contract or METAC	means the document of that name published on EVE's website from time to time under which EVE grants an electricity supply and connection service to Third Party Retailers.
Microgrid Technical Rules	means the WPN Technical Rules applied to the Microgrid by Western Power.
Modified Connection	means in respect of a Connection Point, any proposed modification, addition or removal of plant and facilities at a Connection Point or any proposed increase in the transfer capacity at that Connection Point, where any of the foregoing could have an impact on the Microgrid.
MPS	means a "modular package substation" as that term is used in the WADCM.
Network	unless identified otherwise this refers to EVE's distribution network infrastructure at the Eglinton Village Residential Estate.
New Connection	means the establishment of a new Connection Point and related Connection Assets in respect of a premises.
Point of Supply	means the juncture of the Consumer Mains with the conductors of the Network, including the service cable.
Prudent Integrated Operator	means a person in the position of EVE responsible for operating a vertically integrated electricity supply system comparable to the Microgrid with an open access approach to the supply of "wholesale" electricity to Third Party Retailers along the lines described in the METAC.
Related Body Corporate	has the meaning when used in the *Corporations Act 2000* (Cth).
Self Supply Terms and Conditions	means the terms and conditions described as such on EVE's website.
Service Main	mains owned by EVE that are generally dedicated to a customer and run from the Network to the Point of Supply as defined in AS/NZS 3000.
Shared Assets	means Network Assets that are not Connection Assets and Local Generation and Storage Infrastructure assets that are not installed by EVE for the purposes of supplying a particular Customer in response to a Connection Application or a HV Submission, as applicable.
Standard Connection	mean the establishment of a New Connection in accordance with the table of charges described.
Standard Supply	means a supply from the Microgrid with Connection Assets not exceeding 200kVA per hectare at the applicable premises.
SWIS	means the South West Interconnected System as that term is defined in the Electricity Industry Act.
Temporary	The term temporary shall mean for a period no longer than 12 months, unless otherwise agreed in writing by EVE.
Third Party Retailer	means an electricity retailer other than EVE that is licenced under the Electricity Industry Act to retail electricity in the SWIS and is party to a Microgrid Electricity Transfer Access Contract with EVE.
UPS	Uninterruptible Power Supply
WADCM	means the Western Australian Distribution Connections Manual.

WAER	means the Western Australian Electrical Requirements, (2019).
Western Power	means Electricity Networks Corporation established under the *Electricity Corporations Act 2005* (WA) trading as Western Power.
Western Power Network	means the network owned and operated by Western Power.
Works	means all works required to be undertaken to provide a Customer or a Customer's Agent with the service sought by the Customer and/or Customer's Agent in a Connection Application, including works associated with designing, constructing, operating and maintaining Connection Works and Shared Works and other non-capital works.
WPN Technical Rules	means the Western Power Technical Rules (2016), approved by the Economic Regulation Authority.

1.13. Competency and Use

This document is intended for use by EVE in its capacity as an operator of the Microgrid and as a licenced retailer, third party retailers, customers, customer's agents, and associated industry parties and personnel.

Users of this document should have general familiarity with systems, equipment and practises commonly used for electrical installations as well as associated distribution systems, particularly in Western Australia.

The *Electricity (Licensing) Regulations 1991 (WA)* requires all electrical work carried out on electrical installations connected to or intended to be connected to the Network will be performed by persons holding the appropriate electrical worker's licenced (as issued by the Electrical Licensing Board).

1.14. Contact Information

Contact for any matters related to the content of these Guidelines may be made through written correspondence to EVE. Any enquiries relating to specific installations are coordinated by EVE's customer service team.

1.15. About the Network

The Eglinton Village Residential Estate is a residential estate located approximately 40 minutes' drive from Perth.

The geographical boundaries of the Eglinton Village Residential Estate are shown in Figure 1 below:

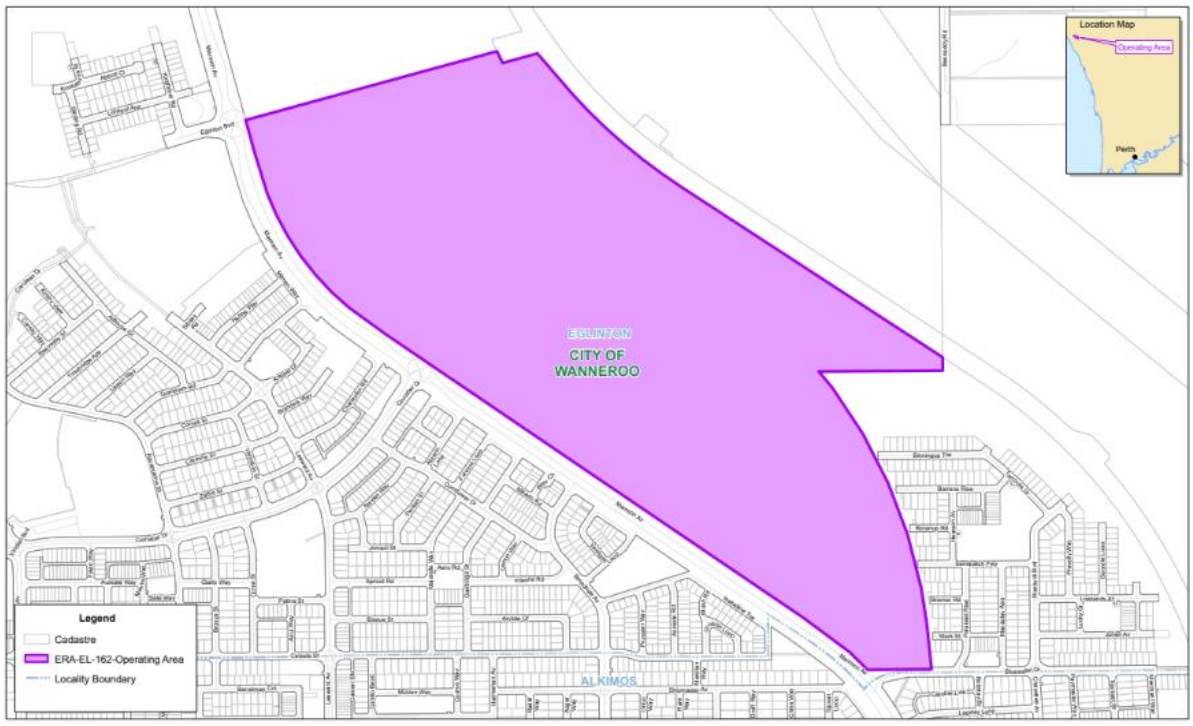

Figure 1 Eglinton Village Residential Estate

EVE owns and operates the Microgrid, which includes the distribution Network, generation and storage infrastructure. The Microgrid supplies all customers within the Eglinton Village Residential Estate. The Network is connected to the Western Power Network at the connection point.

The majority of customers are presently connected to the Distribution Network at low voltage i.e. 240 volts single phase / 415 Volts three phase taking network supply at 22kV.

2. PERMITTED GENERATION CONNECTION

EVE allows for the installation of distributed generating systems, being generation systems that are directly connected to the EVE's distribution Network but do not export electricity to the Western Power Network. Distributed generation system capacity will depend on available hosting capacity within the EVE network.

These systems may consist of one or a combination of engine driven, renewable or inverter energy systems installed and maintained by a Customer for the purposes of providing an alternative energy source, load reduction and/or parallel operation with the Microgrid.

Defining generation system categories assists EVE in developing assessment criteria and processes, therefore ensuring that the requirements for different sized systems are

consistently managed and communicated to customers, industry, network personnel and related government agencies.

Classification band	Technical definition	
Micro	AS 4777 compliant systems rated up to and including 5kVA; single phase or multiple phase connection to the low voltage network via the customer service connection.[1]	
Mini	AS 4777 compliant systems rated greater than 5 kVA and up to 30 kVA. Three phase connection to the low voltage network via the customer service connection.[2]	
Small	(Low Voltage)	Systems greater than 30 kVA up to 150 kVA connected to the LV network (typically with more than 1 customer on the network).[3]
Small	(High Voltage)	Systems greater than 30kVA up to 1 MW connected via transformers to a HV customer connection point.[4]
Medium	Having a nameplate rating greater than 1 MW but no more than 5 MW and connected to the high voltage (HV) network.	
Large	Having a nameplate rating greater than 5 MW to 10MW.	

[1] Based on manufacturer's published AC power rating output values for maximum power, or maximum and nominal power where the values are the same or nominal power where the maximum value is not published.

[2] Ibid.

[3] Based on the total combined AC power rating/output for the combined generation installation. Non inverter connected generation systems less than 30kVA must comply with the Microgrid Technical Rules.

[4] Ibid.

3. APPLICATION PROCESS

The process of obtaining a connection to the Network may take a number of different forms, including a new, altered, or upgraded connection or a requirement to reconfigure, modify or remove an existing connection.

This Section of the Guidelines is designed to provide directions on processes applicable to acquiring either a new or upgraded connection or removing an existing connection to the network.

3.1. Application process to connect new inverter-based generation

Steps in the connection approval process

1. Complete a site evaluation
2. Update agreement with Eglington Village Energy
3. Submit application for connection
4. Install EVE approved PV system
5. Receive approval to Operate

Note at the time of publication: Customer Applications cannot be processed until EVE receives approval from Westen Power to accept new rooftop solar connections within the microgrid. This application is currently in progress. Once the application is approved and early trials of the DERMS has been completed, the application process will be opened for EVE Customers.

3.2. Application form (generator detail requirements)

Content to be gathered in the application form hosted on the EVE website:

- Account holder's name
- Account holder's NMI (printed on the premises meter)
- Letter of authority from Account holder in the case a 3rd party is applying on behalf of the account holder
- Description of equipment to be installed
    - Intended Solar inverter capacity (kW)
    - Intended Battery capacity (kW)
    - Intended EV charger (type 2+) capacity (kW)
- Attachment of single line drawing (SLD) indicating existing site main switch board
- Attachment of single line drawing (SLD) indicating proposed site main switch board

3.3. Access to Customer premises requirements

Under the Terms and Conditions, Customers agree to grant EVE and EVE's Permitted Persons a right of safe and unimpeded access at all times, where EVE requires access in relation to generation infrastructure located at the premises.

3.4. Technical impact considerations (w.r.t to network planning criteria, WPN Technical Rules, and WA regulations)

Refer to the Zenith Energy "Service and Technical Installation Rules for Connected Energy for all metering requirements.

3.5. Connection augmentation process

The Customer should refer to the Customer Connections and Contributions Guidelines for information about connections where augmentation is required.

3.5.1. Customer contribution policy

The Customer should refer to the Customer Connections and Contributions Guidelines for information about EVE's customer contribution policy.

3.5.2. Augmentation methodology and application

The Customer should refer to the Customer Connections and Contributions Guidelines for information about EVE's augmentation methodology and application.

3.6. Network Provider's WPN Technical Rules consideration

3.6.1. Applicable clauses

While other parts of the Technical Rule's document can apply to small generators, the requirements for embedded generators are found primarily in WPN Technical Rules Section 3.6 "Requirements for connection of small generators to the distribution network".

Table 3.4 of section 3.6 provides references to the applicable clauses of section 3.3 "Requirements for connection of generators".

To further assist Users, sections of the WPN Technical Rules (other than 3.6) that may be of significance to an embedded generator facility are listed in Table 1 below.

Table 1 - Clauses of WPN Technical Rules applicable to distribution connected generators

Clause	Requirement	Note on content
1	General	
2.2	Power system performance standards	Standards for voltage, frequency, harmonics, flicker etc to the extent required by clause 3.6.8.
2.3	Obligation of the Network Service Provider in relation to power system performance	NSP study of system performance with proposed connections may determine particular User performance requirements and network augmentations.
2.5.5	Planning criteria: High Voltage Distribution System	Relates to standards of reliability of the network.
2.5.6	Planning criteria: Low Voltage Distribution System	Relates to standards of reliability of the network. Obligation to connect underground.
2.5.7	Fault limits.	Relates to permissible User contribution to fault current at point of connection
2.5.8	Maximum fault currents	Design and construction standards for fault current withstand.
2.7	Design and construction standards	Obligation of the NSP (and hence User) to comply with recognised standards.
2.8	Distribution conductor or cable selection	Obligation of the NSP to accommodate forecast load growth in selection of conductor or cable size.
2.9	Transmission and Distribution system protection	Includes reference to requirement for independence of islanding protection types.
3.2.3	User's power quality monitoring equipment	Possible requirement for the User to accommodate NSP power quality monitoring and recording equipment.
3.3	Requirements for connection of generators	Additional parts thereof referred to in Table 3.5 of clause 3.6.
3.4	Requirements for connection of loads	Where the facility subject of the access application includes an associated load.
3.5	User's protection requirements	The qualifier of clause 3.5.1(a) applies to the islanding protection for all small power stations under clause 3.6.

3.7	Requirements for connection of energy systems to low voltage distribution system via inverters	Whereas clause 3.7 only covers installations up to 30 kVA in accordance with AS 4777, the requirements nevertheless apply in principle to larger inverter-connected energy systems otherwise covered by clause 3.6.
4.1	Inspection and testing	All aspects of rights, requirements and obligations related to testing and commissioning of an installation.
4.2	Commissioning of User's equipment	The requirements of clause 4.2 form part of the commissioning requirements for distribution connected generators.
4.3	Disconnection and reconnection	Defines circumstances under which the NSP will exercise right to disconnect. Relevant for power stations of all sizes.
5.1	System operation and coordination: Application	Relates to roles of market operations and network operations.
5.3	System operation coordination responsibilities & obligations	Defines both NSP and User obligations.
5.7	Power system security operation and coordination	Relates to the obligations of the User to advise the NSP and NSP management of supply shortfall events, including requirement to reduce loads.
5.8	Operation and maintenance planning	For power stations exporting more than 1MW.
5.9	Power system operating procedures	Requirement for User to follow procedures and rules.
5.10	Power system operation support	Relates to remote control and monitoring, standards and protocols.
5.11	Nomenclature standards	
Attachment 10	Distribution system connected generators up to 10MW	Information to be supplied with application for connection.
Attachment 12	Testing and commissioning of small power stations	Testing and commissioning requirements for connection to the distribution system.

3.6.2. Initial assessment of impact of a generator on the distribution system

Without diminishing EVE's requirement for a formal application, which will generally be required to undertake load-flow, fault level, and in some cases, harmonic and dynamic studies, it is usually possible to conduct an approximate initial assessment of the extent to which proposed installation would impact the local power system. Requirements and assessment processes may change as per the network operator's requirements.

Sections that follow provide methods for quick assessment (where feasible) of the extent to which a proposed installation might affect the integrity of the network and operational safety.

3.7. Network stability criteria

A review of network stability criteria for embedded generation would only be requested on a case-by-case basis but generally only on an embedded generation package larger than 200 kVA.

This study work would be discussed at the time of network connection applications.

3.8. Rating of Photovoltaic and Battery Storage Inverters

- Connection Voltage less than 1000 Volts AC for total inverter capacity
    - Three phase not greater than 15 kVA
    - Single Phase 5 kVA
    - For solar and battery storage these are assumed to be coupled on the DC side of the inverter
- Connection Voltage less than 1000 Volts AC for total inverter capacity
    - Three phase not greater than 15 kVA for the Solar PV and 15 kVA for the BESS for a total of 30 kVA
    - Single Phase 5 kVA for the solar PV and 5 kVA for the BESS for a total of 10 kVA
    - For solar and battery storage these are assumed to be coupled on the AC side of the inverter and totalled together

4. PROTECTION REQUIREMENTS

4.1. 0-30 kVA

Protection requirements for small generators are defined by clause 3.6.10 of the WPN Technical Rules.

4.2. 0 - 200kVA PV Inverters

Protection systems are required for PV inverters within this range. These inverters must be registered on the CEC approved inverters list and meet the requirements of Australian Standard AS 4777 Grid Connection of Energy Systems by Inverters parts 1 and 2.

Duplicate anti-islanding systems may be required in addition to direct fibre connection to the inverter for emergency control.

4.3. Rotating Generators and PV systems up to 1MVA

4.3.1. Inverter generating units between 200kVA and 1 MVA at 415 Volts

Protection Required at Point of Connection	Technical Rules Clause	200 kVA to 1 MVA	
Under and Over Frequency	3.6.10.1(f) and 3.6.10.3	Yes	
Under and over voltage	3.6.10.1(f) and 3.6.10.3	Yes	
Overcurrent	3.6.10.1(f)	Yes	
Loss of one or more phases	3.6.10.1(h)	Yes	
Directional Power export	3.6.10.1(h) & (i)	Yes	Only required when there is an export limit
Directional over current	3.6.10.1(h) & (i)	Not required	
Rate of change of frequency	3.6.10.3	Yes	
Voltage Vector Shift	3.6.10.3	Yes	
Neutral Voltage Displacement	3.6.10.1(g)	Not required	Only required for HV connection point
Earth fault	3.6.10.1(g)	Yes	
Sensitive earth fault	3.6.10.1(g)	Not required	Only required for HV connection point
Pole slip	3.6.10.2	Not required	
Loss of protection supply		Yes	

4.3.2. Small Rotating Generating Units up to 10 MVA.

Would generally not be permitted as a permanent connection. EVE would consider these on a case-by-case basis. All rotating generator applications would be required to meet the requirements of the WPN Technical Rules and in particular section 3.6.

5. DERMS SYSTEM INTERFACE

5.1. Introduction

EVE operates a Distributed Energy Resources Management (DERMS) system at the Eglinton Village facility.

The Eglinton DERMS allows EVE the capability for remote connection and disconnection of the individual inverters to suit the networks' requirements. The DERMS also allows EVE to ramp back and up the output of inverters.

As part of the EVE DERMS system, all embedded generation (EG) applicants must allow for the installation of a DERMS interface device. This device enables secure communications (via 4G) between EVE's DERMS platform and the customer's inverter(s), allowing EVE to manage inverter operation in line with network requirements.

5.2. General Requirements

- Applicants must allow for a minimum clearance of 500 mm x 500 mm at a suitable location near the inverter for installation of the DERMS interface device.
- A dedicated 10 A single GPO must be installed to supply power to the device.
- The location must be accessible, out of direct sunlight, and not directly above the inverter.

5.3. Cost and Supply

- The DERMS interface device will be supplied by EVE as part of the connection approval process.
- The applicant will be required to purchase the device through EVE and arrange for installation by their nominated installer.
- The applicant's installer will also be required to commission and test the system once installed.
- EVE will provide commissioning instructions and supporting information at the time of approval.

5.4. Operations and Maintenance

- The DERMS interface device must remain permanently installed at the premises as part of the approved EG connection.
- The system owner must not tamper with, disconnect, or de-power the device.
- EVE may require reasonable access to the premises to inspect, maintain, troubleshoot, or replace the device.

6. CONNECTION REQUIREMENTS

The decision to install a district or sole use substation always remains with EVE and not the customer. The decision as to which type of substation will be installed is dependent on a number of factors including but not limited to:

- Size of the customer's requested load and embedded generation
- Proposed location of the customer's load centre on the property, and distance from the property and distribution network.
- Type and nature of the customer's load (disturbing or passive).
- Nature and capacity of the existing distribution or transmission network.
- The need for LV street feeds to or from the substation for the purposes of providing:
    - A back up supply to the customer's installation.
    - Future capacity and growth in the immediate area.
    - Additional capacity to accommodate any growth in the customer's load.
    - The customer's supply reliability and security requirements.

For both district and sole use substations, EVE owns, operates and maintains the network equipment. Where HV switchgear is required for a district or sole use substation, the setback limits for the switchgear are shown in the relevant HV Network Operator substation technical drawings.

6.1. Low voltage supply

6.1.1. Detailed connection arrangements

See Service and Technical Installation Rules (CE-ALL-AM-NA-PLN-000001) via the EVE website.

6.1.2. Customer premise and switchboard access

See Service and Technical Installation Rules (CE-ALL-AM-NA-PLN-000001) via the EVE website.

6.1.3. Metering requirements

Generally, the maximum electrical load that can be LV-metered is 2 MVA.

Sites with a CMD of less than or equal to 100 amps with be direct connect or whole current meter.

Sites with a CMD greater than 100 amps will be current transformer interface metered.

Where high voltage metering is required, EVE will provide a quotation, inclusive of the costs to provide, install and commission of the metering equipment.

Queries about metering, including details of installation facilities, should be referred to EVE.

EVE will, for all embedded generation systems installed at premises electrically connected to the Microgrid, require the installation of a Meter that records electricity consumed from the Microgrid and electricity that is generated by the embedded generators at the Customer's premises.

6.2. Protection Requirements

Protection requirements are outlined in detail on AS/NZS 4777.2:2020 and AMD-2 2024 and by clause 3.6 and 3.7 the WP Technical Rules.

Accredited installers shall comply with the current version of the following standards and may require export limiting devices based on available hosting capacity of distribution network.

Relevant standards and requirements:

AS/NZS 3000:2018	Wiring Rules
AS/NZS 5033:2021	Installation and Safety Requirements for Photovoltaic (PV) arrays
AS/NZS 4509.2:2012	Stand-alone power systems – Design
AS/NZS 1170.2:2011	Structural design actions – Wind actions
AS/NZS 4777.1:2024	Grid connection of energy systems via inverters – Installation requirements
AS/NZS 4777.2:2020 AMD-2 2024	Grid connection of energy systems via inverters – Inverter requirements
AS/NZS 1768:2007	Lightning protection
AS/NZS 3008.1.1:2017	Electrical installations – Selection of cables

Grid Connected Solar PV Systems- Install and Supervise Guidelines for Accredited Installers	Clean Energy Council
Basic Embedded Generator Connection Technical Requirements -2025	Western Power Technical Requirements

6.3. Network connection and isolation

For all installation that have basic embedded generation within EVE Microgrid Network, the user installation main switch (CMS) shall be a circuit breaker with type B trip curve and current rating in accordance with the service provided.