

Service and Technical Installation Rules (Elec) - PBP

05 January 2021

Version 1.0

Document Number	BMSDOC-18-2330
Document Owner	Engineering Manager
Due Date for Review	1/01/2022

Review Required by:

- | | |
|-------------------------------------------------|------------------------------------------------------|
| <input type="checkbox"/> CEO | <input type="checkbox"/> COO |
| <input type="checkbox"/> Commercial | <input type="checkbox"/> Corporate Services |
| <input checked="" type="checkbox"/> Engineering | <input type="checkbox"/> Finance |
| <input type="checkbox"/> Gas Pipeline Victoria | <input type="checkbox"/> Network Operations |
| <input type="checkbox"/> Safety & Compliance | <input type="checkbox"/> Tas Gas Retail |
| <input type="checkbox"/> Peel Renewable Energy | <input type="checkbox"/> Peel Renewable Energy Genco |

Applicable to:

- | | |
|-----------------------------------------------------------|-----------------------------------------------------------------|
| <input type="checkbox"/> Tas Gas Holdings | <input type="checkbox"/> Tas Gas Retail |
| <input type="checkbox"/> Tas Gas Networks | <input type="checkbox"/> Regional Energy Victoria |
| <input type="checkbox"/> Gas Networks Victoria | <input type="checkbox"/> Gas Pipeline Victoria |
| <input checked="" type="checkbox"/> Peel Renewable Energy | <input checked="" type="checkbox"/> Peel Renewable Energy Genco |
| <input type="checkbox"/> Other: | |
-

Document History

Version No.	Date	Description of Change
1.0	5 January 2021	New Document

References

Cited in this Document

Title	Document Number
-------	-----------------

Additional Reading

Title	Document Number
-------	-----------------

Approved By:

Name	Position	Signature	Date
Andrew Bambridge	Engineering Manager		

Document Management:

This document is publicly available on the Peel Renewable Energy website at:

www.peelrenewableenergy.com.au

These Rules are provided for general public access free of charge.

Printed copies may also be purchased at the Peel Renewable Energy Operations Office:

65 Hay Street
Subiaco
WA 6008

©**Copyright:** Peel Renewable Energy Pty Ltd

Table of Contents

1. GENERAL	6
1.1 SCOPE	6
1.2 OBJECTIVE	6
1.3 DEFINITIONS	7
1.4 COMPETENCY AND USE	7
1.5 CONTACT INFORMATION	8
2. FORWARD	8
3. DESCRIPTION OF THE OPERATION	9
3.1 INTRODUCTION	9
3.2 DISTRIBUTION NETWORK OVERVIEW	9
3.3 TYPICAL SERVICE CONNECTIONS.....	10
3.3.1 <i>Low Voltage Services</i>	10
3.3.2 <i>High Voltage Services</i>	10
3.4 GENERAL INFORMATION	10
3.4.1 <i>Organisational Context</i>	10
3.4.2 <i>External Stakeholders</i>	11
3.4.3 <i>Update and Revision</i>	11
3.4.4 <i>Availability and Distribution</i>	11
3.4.5 <i>Failure to Comply with These Rules</i>	11
3.4.6 <i>Exemptions</i>	11
3.4.7 <i>Related Offences</i>	12
3.4.8 <i>Employing a Licensed Person</i>	12
4. SUPPLY, APPLICATION, CONNECTION & DISCONNECTION	12
4.1 RELATED DOCUMENTS	12
4.2 CONDITIONS OF SUPPLY	12
4.3 NEGOTIATIONS AND PREMATURE EXPENDITURE	13
4.4 TYPICAL CONNECTION PROCESS	13
4.4.1 <i>New Connections</i>	13
4.4.2 <i>Alterations and Reconnections</i>	14
4.5 APPLICATION FOR CONNECTION	14
4.5.1 <i>Applications</i>	14
4.5.2 <i>Agreed Maximum Demand</i>	14
4.5.3 <i>Proposed Electrical Installations on Public Land</i>	14
4.5.4 <i>Control of Customer Demand</i>	15
4.6 NOTIFICATION OF ELECTRICAL WORK.....	15
4.7 FORMS.....	15
4.8 CHARGES	15
5. GENERAL RULES	16
5.1 SAFETY	16
5.2 NETWORK ACCESS AND EXCAVATION	16
5.2.1 <i>Supply Isolation</i>	17
5.2.2 <i>Remote De-energisation, Re-energisation</i>	17
5.3 COMPLIANCE WITH REGULATIONS, CODES OF PRACTICES, GUIDELINES AND THESE RULES.....	17
5.4 TESTING.....	18
5.5 ACCEPTANCE OF CONNECTION EQUIPMENT AND ARRANGEMENTS.....	18
5.6 SERVICE LABELLING.....	18
5.7 ACCESS TO DISTRIBUTORS' EQUIPMENT.....	18

Service and Technical Installation Rules (Elec) - PBP

5.8	SEALING AND LOCKING.....	18
5.9	PRIVATE ELECTRICITY ASSETS OR INSTALLATIONS ON PUBLIC LAND	18
5.10	ATTACHMENT OF OTHER EQUIPMENT TO POLES OR ASSETS (BELONGS IN GENERAL?)	19
5.11	MULTIPLE OCCUPANCY BUILDINGS AND SUBDIVISIONS	19
6.	SUPPLY TYPES, USE AND PROTECTION.....	19
6.1	NETWORK SUPPLY.....	19
6.1.1	<i>Supply Characteristics</i>	19
6.1.2	<i>Sensitive Customer Equipment</i>	19
6.1.3	<i>Prospective Short Circuit Current</i>	19
6.1.4	<i>Protective Earthing Systems</i>	19
6.2	CONNECTION POINT (POINT OF SUPPLY)	20
6.2.1	<i>General</i>	20
6.2.2	<i>Number of Services</i>	20
6.2.3	<i>Number of Phases</i>	20
6.2.4	<i>Location</i>	20
6.3	CONSUMER MAINS	20
6.4	ZONE DIAGRAMS	20
6.5	SUPPLY USE OBLIGATIONS AND LOAD REQUIREMENTS	20
6.5.1	<i>Consistency with WA Distribution Connections Manual</i>	20
6.5.2	<i>5.5.2 Power Factor</i>	21
6.6	TYPE OF SUPPLY AND LOAD.....	21
6.7	SUPPLY CAPACITY AND MAXIMUM DEMAND.....	21
6.8	INSTALLATION & SUPPLY PROTECTION	21
6.8.1	<i>General Requirements</i>	21
6.8.2	<i>Low Voltage Services</i>	22
6.8.3	<i>High Voltage Services</i>	22
6.8.4	<i>Security</i>	22
6.9	SOURCES OF ALTERNATIVE SUPPLY	22
6.9.1	<i>General</i>	22
6.9.2	<i>Responsibilities and Requirements</i>	23
6.9.3	<i>Consistency with WA Distribution Connections Manual</i>	23
6.9.4	<i>Labelling</i>	24
6.9.5	<i>Reverse Power Protection</i>	24
6.9.6	<i>Metering</i>	24
7.	CONNECTING TO THE LOW VOLTAGE (LV) NETWORK.....	24
7.1	DISTRIBUTION LV NETWORK AND CONNECTION	24
7.1.1	<i>General</i>	24
7.1.2	<i>Consistency with WA Distribution Connections Manual</i>	24
7.2	UNDERGROUND SERVICES	25
7.2.1	<i>General</i>	25
7.2.2	<i>Consistency with WA Distribution Connections Manual</i>	25
7.2.3	<i>Supply Protection</i>	25
7.3	OVERHEAD SERVICES	25
7.4	SEGREGATION	26
7.5	CONSUMER'S MAINS & SUB MAINS.....	26
7.5.1	<i>General</i>	26
7.5.2	<i>Consistency with WA Distribution Connections Manual</i>	26
7.6	LV ISOLATING DEVICES.....	26
7.7	BUILDER'S AND TEMPORARY SUPPLIES.....	27
7.7.1	<i>General</i>	27

Service and Technical Installation Rules (Elec) - PBP

7.7.2	Consistency with WA Distribution Connections Manual	27
7.8	MULTIPLE OCCUPANCY BUILDINGS AND SUBDIVISIONS (SUPPLY ARRANGEMENTS)	27
7.8.1	General	27
7.8.2	Multiple Occupancies	27
7.8.3	Subdivisions	28
7.9	UNMETERED SUPPLIES	28
7.10	SUBSTATION REQUIREMENTS	28
8.	LOW VOLTAGE METERING	28
8.1	SCOPE	28
8.2	TARIFFS & METERING	28
8.3	METERING OBLIGATIONS	28
8.3.1	General	28
8.3.2	Consistency with the WA Distribution Connections Manual.....	28
8.4	PROTECTION AGAINST DAMAGE, INTERFERENCE AND PERSONAL INJURY	29
8.5	LIMITS OF OPERATION AND FAULT LEVELS.....	29
8.6	METERING TYPES	29
8.6.1	General	29
8.6.2	Consistency with WA Distribution Connections Manual	29
8.7	METERING FACILITIES	30
8.8	LOCATION AND ACCESS	30
8.9	DIRECT CONNECTED METERING	30
8.10	LV CURRENT TRANSFORMER METERING.....	30
9.	HIGH VOLTAGE SUPPLY AND ELECTRICAL INSTALLATIONS.....	31
9.1	GENERAL.....	31
9.2	CONNECTION APPLICATION AND DESIGN SUBMISSIONS.....	31
9.2.1	Considerations and General Requirements	31
9.2.2	Initial Application Submission	32
9.2.3	HV Design Submission.....	32
9.3	INSTALLATION REQUIREMENTS	32
9.3.1	General	32
9.3.2	Circuit Connections	32
9.3.3	Power Factor.....	32
9.3.4	Supply Quality and Disturbances	33
9.3.5	Protection Discrimination	33
9.3.6	Earthing Systems	33
9.3.7	Insulation Coordination.....	33
9.4	HV EQUIPMENT REQUIREMENTS.....	33
9.5	METERING.....	34
9.6	INSPECTION, TESTING AND COMMISSIONING	34
9.7	ACCEPTANCE OF HV INSTALLATIONS.....	34
9.8	HV INSTALLATION SAFETY, OPERATION & MAINTENANCE	34
APPENDIX A	35

1. GENERAL

1.1 Scope

These Rules apply to all new and altered installations connected to the Peel Business Park Distribution Network (Microgrid) owned by Peel renewable Energy (PRE). All proposals for the establishment or modification of private customer electrical installations within the Peel Business Park, will generally be required to demonstrate, and be undertaken in compliance with these Rules.

Most applicable arrangements and necessary details are described within these Rules. However, unique situations and unusual conditions may arise that have not been fully contemplated or covered, including those arising from changes to applicable legislation, codes, guidelines and standards. Should these situations occur, or where any doubt exists, Peel Renewable Energy should be contacted to discuss and agree on suitable arrangements.

These Rules represent an adjunct to the Western Australia Electrical Requirements (WAER) published by the WA Department of Mines, Industry Regulation and Safety. Additional requirements are also contained in other related codes, legislation and regulations including, but not limited to:

- Code of Conduct for the Supply of Electricity to Small Use Customers 2018,
- Electricity Networks Access Code 2004
- the Electricity Industry (Customer Transfer) Code 2016,
- the Electricity Industry (Metering) Code 2012,
- the Electricity Industry (Network Quality and Reliability of Supply) Code 2005,
- WA Distributions Connections Manual (WADCM)

Where a proposed connection or alteration to an electrical installation occurs and is likely to affect the PBP connection to Western Power, then additional consultation and conditions may be applicable. In these situations, further detailed assessments and consultation with Western Power will be necessary before any proposals are finalised or implemented.

Related information and requirements are also contained in the following Peel Renewable Energy documentation:

- PRE Customer Connection and Contribution Guidelines,
- PRE Customer Self Supply Guidelines,
- PBP Network Performance and Planning Criteria Manual, and
- Connection and Supply Contract,

To the extent allowable, where an electrical installation also consists of a distribution system (as defined in the Electricity Industry Act 2004 (WA)) the requirements of these Rules apply to the operator of the distribution system (parent) and their electrical installation. A downstream distribution system customer (sub-metered) must liaise with the operator of the distribution system for conditions relating to their supply.

1.2 Objective

The key objective of these Rules is to provide Peel Business Park (PBP) customers, their agents and registered electrical workers with the technical requirements for electrical installations connected to the Peel Business Park distribution network (micro-grid). These requirements are intended to comply with relevant Australian Standards, legislation and other applicable rules and codes.

PBP is committed to the safe and efficient operation of the Micro-grid in compliance with all statutory legislation. This will be achieved through adherence to the elements described in these Rules, reflecting the ultimate goal of achieving operations which can be confidently claimed as best practice for operations of a similar purpose, size and technology.

Service and Technical Installation Rules (Elec) - PBP

1.3 Definitions

Term	Description
Peel Tas Gas	Peel Renewable Energy is a subsidiary of Tas Gas Holdings Pty Ltd, Tas Gas Holdings Pty Ltd includes, but is not limited to, the following subsidiaries: <ul style="list-style-type: none"> • Tas Gas Holdings Pty Ltd (TGH) • Gas Holdings Tasmania (GHT) • Tas Gas Networks Pty Ltd (TGN) • Tas Gas Retail Pty Ltd (TGR) • Regional Energy Victoria Pty Ltd (REV) • Peel Renewable Energy Pty Ltd (PRE) • Peel Renewable Energy Genco Pty Ltd (PRE) • Gas Networks Victoria Pty Ltd (GNV) • Gas Pipeline Victoria PTY Ltd (GPV)
Consumer Terminals	The junction at which the consumer mains connect to the Peel Renewable Energy Distribution Network Service Main or conductors
Connection Offer	An offer from Peel Renewable Energy to enter into a contract to provide Connection Services.
Connection Service	A service relating to a new connection or connection alteration for premises (as defined in Chapter 5A of the National Electricity Rules).
CT	Current Transformer
Deemed	Regarded, considered or judged.
Distributor	For the purpose of these Rules Peel Renewable Energy is the Distributor
Distribution Network Distribution System Embedded Network Microgrid	For the purposes of these Rules refers to the electrical infrastructure, including cables, transformers, substations and related equipment, operated by Peel Renewable Energy, which transports electricity to a Customer's Connection Point within Peel Business Park.
HV	High Voltage
LV	Low Voltage
PBP	The Peel Business Park (as supplied by the Peel Renewable Energy distribution network).
PRE	Peel Renewable Energy
Network	Unless identified otherwise this refers to the Peel Renewable Energy distribution network
RMU	Ring Main Unit (typically for 22kV switching).
Rules	these Service and Technical Installation Rules, unless otherwise specified.
WP	Western Power. The upstream distributor of electricity to the Peel Business Park embedded network.
Service Protection Device (SPD)	A device provided by Peel Renewable Energy, generally a fuse or circuit-breaker, to protect the Peel Renewable Energy service to a customer's installation.
Service Main	Mains owned by Peel Renewable Energy that are generally dedicated to a customer and run from the PBP Microgrid to the Point of Supply (as defined in AS/NZS 3000).
STIR	These 'Service and Technical Installation Rules'.
Temporary	The term temporary shall mean for a period no longer than 12 months, unless otherwise agreed in writing by Peel Renewable Energy.
UPS	Uninterruptible Power Supply
WADCM	Western Australian Distribution Connections Manual
WAER	Western Australia Electrical Requirements

1.4 Competency and Use

This document is intended for use by Peel Renewable Energy, Retailers, their customers, customer's agents, and associated industry parties and personnel.



Service and Technical Installation Rules (Elec) - PBP

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 Peel Business Park distribution network will be performed by registered Electrical Worker(s) who are suitably licensed by the WA Electrical Licensing Board.

1.5 Contact Information

Contact for any matters related to the content of these Rules may be made through written correspondence to Peel Renewable Energy. Any enquiries relating to a specific installation matters should be directed to the Peel Renewable Energy General Manager.

Responsible Person:

Peel Renewable Energy - General Manager
Mobile: 0439 821 253
Email: rob.breden@peelrenewableenergy.com.au
Address: 65 Hay Street, Subiaco, Western Australia, 6008

2. FORWARD

The Service & Technical Installation Rules, (*Rules*) have been developed by the Peel Renewable Energy in conjunction with Western Power.

This edition of the Rules will commence operation on first approval and apply to all connections to the electricity supply networks operated by Peel Renewable Energy. The Rules form the major part of WA Electricity Distributors' "reasonable technical requirements" as referred to in the Electricity Distribution Code. The Electricity Distribution Code is applied under the Electricity Industry Act 2000 and is administered by the Essential Services Commission WA. The Rules have been subject to industry consultation during their development and offer users with industry agreed specifications intended to assist distributors, retailers, customers and customers' agents to meet their regulatory and electricity supply obligations. The Rules lessen the need to reference the complex, extensive and expanding range of regulations and documentation relating to connection of installations. All installations connected, or to be connected, to the Peel Renewable Energy must comply with the Rules as a condition to acquiring and maintaining an electricity supply. The Rules may not cover all circumstances. These may include unusual connections, inadvertent omissions or changes to legislation and codes. Peel Renewable Energy does not accept responsibility where this occurs. The Peel Renewable Energy Distributor must be consulted in these circumstances.

3. DESCRIPTION OF THE OPERATION

3.1 Introduction

Peel Business Park (PBP) is a large industrial and agri-business precinct located near Nambelup, and approximately 7km north-west of Mandurah, WA. PBP has an overall area of approximately 1,000 hectares and is being developed in several stages. Reticulation of power within the first precinct is through a network referred to as the PEEL Micro-grid, owned and operated by Tas Gas Holdings.

The PEEL Microgrid takes supply at 22kV from Western Power and incorporates an internal 22kV cable network supplying several 22kV/433V distribution substations. Individual sites within the PBP are typically supplied via radial low voltage supplies from these distribution substations.

Approximate geographic boundaries for PBP and the first precinct are outlined in **Figure 1** below.

Figure 1: Peel Business Park Overview (courtesy CBRE/Landcorp)



3.2 Distribution Network Overview

The PBP distribution network (microgrid) presently supplies customers within Precinct 1 and has the following general features:

- One Main 22kV Switchboard - with incoming 22kV supply from the Western Power network and two outgoing circuits supplying the microgrid 22kV ring feeders,
- Associated 22kV ring-feed reticulation network,
- Several 630kVA 22kV/LV distribution substations with associated HV RMU's and LV distribution boards,
- Several standalone LV kiosk switchboards for various customer and miscellaneous supplies,
- LV service main cabling to various customer installations within the precinct.

Ongoing expansion of network is anticipated as necessary to supply continuing development within the business park.

3.3 Typical Service Connections

3.3.1 Low Voltage Services

LV services to customers within PBP are typically one of the following:

- Direct Substation Supply – consisting of customer mains running directly to a Type 2 LV Kiosk within a distribution substation.
- Standalone Kiosk Supply – consisting of customer mains running to a Standalone Type 1 LV Kiosk.

Further details are also provided in Sections 5,6 and 7 of these Rules.

3.3.2 High Voltage Services

High voltage connections will only be considered in exceptional circumstances. Where customers are seeking or require supply at high voltage then specific arrangements will need to be determined subject to specific requirements.

Requirements for high voltage installations will generally be consistent with the WA Electrical Requirements. Also refer to Section 8 of these Rules for further details.

3.4 General Information

These Rules will be maintained and administered by Peel Renewable Energy Pty Ltd specifically for installations connecting or connected to the PBP distribution network. The key objective is to ensure all technical and safety requirements relevant to customer electrical installations are complied with prior to connection and supply of electricity.

Fundamental considerations relevant to the ongoing management of these rules include:

- 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 distribution network,
- Ensuring a clear understanding and delineation of responsibility between customers and Peel Renewable Energy as far as customer electrical installations are concerned,
- Providing appropriate uniformity & consistency for efficient operations, repair & maintenance.

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

3.4.1 Organisational Context

Peel Renewable Energy is a wholly owned subsidiary of Tas Gas Holdings Pty Ltd.

Tas Gas employs over 100 permanent employees and engages consultants and sub- contractors for a range of planning, design, operating, maintenance and construction activities on an as required basis.

Tas Gas staff assist the on-site team by providing advice, guidance and technical expertise as required in areas such as Asset Maintenance and Engineering; Safety and Compliance, Finance; Human Resources; and Corporate Services.

Appendix A outlines key business units within Tas Gas relevant to the PBP operations.

Peel Renewable Energy's General Manager is responsible for administering these Rules in consultation with relevant personnel including the Engineering and Safety and Compliance Managers.

3.4.2 External Stakeholders

A number of stakeholders external to Tas Gas Holdings are relevant to the ongoing maintenance and administration of these Rules including:

- End use customers connected to the distribution network,
- Future customers and existing facilities not connected to the distribution network,
- Tenants, landholders and general public within PBP,
- Electrical contractors, subcontractors, consultants, designers and other service providers operating within PBP,
- Electricity Retailers,
- Relevant regulatory and government authorities including Development WA, WA Department of Mines, Industry Regulation and Safety (DMIRS), WA Director of Energy Safety and WA Economic Regulation Authority, Energy and Water Ombudsman of Western Australia,
- Western Power (WP)

Peel Renewable Energy strives to maintain a line of communication with all relevant stakeholders in administering and managing these Rules. All users, stakeholders and interested parties are invited to provide input and suggestions that may contribute to future revisions of these Rules.

3.4.3 Update and Revision

In line with Peel Renewable Energy standard QMS and Document Control procedures this document will be reviewed at least every 2 years. A range of considerations will apply in preparing future revisions outside of the standard document review process 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 and related requirements,
- Ongoing practical experience in managing the network, connecting installations and other operational aspects.

3.4.4 Availability and Distribution

The most recent revision of these Rules will be readily available to the general public free of charge through the Peel Renewable Energy website.

Printed copies are also available from the Peel Renewable Energy PBP Operations Office for a reasonable fee to cover printing and administration costs.

Peel Renewable Energy PBP Operations

65 Hay Street, Subiaco, Western Australia, 6008

3.4.5 Failure to Comply with These Rules

Where an installation connected or intending to connect to the distribution network is deemed to not satisfy these Rules, connection of electricity 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 Peel Renewable Energy to confirm the installation's compliance with these Rules. Re-inspection fees may apply as outlined in the connection charges documentation available on the Peel Renewable Energy website. Failure to comply could also result in prosecution under the Electricity (Licensing) Regulations 1991.

3.4.6 Exemptions

These Service and Technical Installation Rules may not cover all circumstances, including unusual situations, inadvertent omissions or recent changes to legislation and codes. Peel Renewable Energy must

Service and Technical Installation Rules (Elec) - PBP

be consulted in these circumstances and a limited exemption to the rules may be granted. Where necessary amendments may be made to the Rules as outlined in Section 2.4.3.

In other exceptional circumstances specific requirements may be formally waived or modified by submission of a request in writing to the Peel Renewable Energy 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,
- 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 Peel Renewable Energy Responsible Person. If suitable exceptional circumstances along with demonstration of safe installation arrangements is not provided Peel Renewable Energy is unlikely to approve any request. Similarly, if the requested exemption interferes with ability for Peel Renewable Energy to satisfy its obligations, then approval of the request will be denied.

3.4.7 Related Offences

Offences under the various regulations and legislation may include, but not limited to:

1. Work on the Peel Renewable Energy network assets without authorisation from Peel Renewable Energy.
2. The damage to or interference with distribution network assets including:
 - fuse cartridge removal or insertion,
 - making or breaking of any seals, locks or connections,
 - dismantling or detaching any Distribution Network cables or equipment,
 - interference with electricity meters, time switches, equipment and/or service mains,
 - obtaining electricity by fraud.
3. Unauthorised entry to Peel Renewable Energy substations or assets.

The above offences can incur substantial fines, prosecution, together with an order for damages for any losses incurred.

3.4.8 Employing a Licensed Person

The Electricity (Licensing) Regulations 1991 (WA) requires all electrical work carried out on electrical installations connected to or intended to be connected to the Peel Business Park distribution network will be performed by registered Electrical Worker(s) who are suitably licensed by the WA Electrical Licensing Board.

4. SUPPLY, APPLICATION, CONNECTION & DISCONNECTION

4.1 Related Documents

In addition to these Rules, customers and their agents are also referred to the following Peel Renewable Energy documents which provide a range of information applicable to supply, application and connection to the PBP distribution network:

- PBP – Customer Connection and Contributions Guidelines
- PBP – Customer Self Supply Guidelines
- PBP – Network Performance and Planning Criteria Manual

4.2 Conditions of Supply

It is a condition of supply that compliance is demonstrated with the WA Electricity Act 1945, Electricity Industry Act 2004, Electricity (Licensing) Regulations 1991 and all other relevant acts, regulations and

Service and Technical Installation Rules (Elec) - PBP

codes associated with the supply of electricity. This includes compliance with AS/NZS 3000, these Rules and all contracts and agreements applicable to the installation's connection to the Distribution Network.

Conditions of supply will also be specified in various contracts or agreements relevant to an installation including the following:

- an electricity supply contract with a Retailer
- a specific electricity distribution connection agreement or contract
- a deemed electricity distribution connection contract
- an extension or network augmentation agreement with the Distributor
- an electricity distribution demand tariff agreement or contract

All applicable general conditions of supply may not necessarily be included in a specific contract or agreement (such as contained in the various Acts, Regulations, codes of practice and guidelines enabled by those Acts).

Valid notifications of electrical work must also be submitted for successful energisation of a customer's installation. Notifications considered to be invalid or inadequate will be denied or may need to be withdrawn. Further information regarding notification requirements within PBP is provided in Section 3.6 of these Rules.

4.3 Negotiations and Premature Expenditure

Negotiations should commence as soon as practical to determine availability of supply for the following:

- Connection of a new electrical installation.
- Additions or alterations to an existing electrical installation.
- Additional load or generation within an existing installation.
- Extension or augmentation of the distribution system to supply one or more separate electrical installations.

A suitably detailed description of load, installation and other requirements should be submitted with an Application for Connection in accordance with these Rules at the earliest possible opportunity. The customer or developer should be prepared to meet associated costs and allow sufficient time for Peel Renewable Energy to plan, determine and negotiate appropriate supply arrangements.

Customers/developers are warned not to make any commitments (e.g. contractual arrangements), for works until they receive formal confirmation from Peel Renewable Energy describing the terms and conditions of the connection and customer supply contracts that will apply to the supply of electricity.

Peel Renewable Energy will provide a connection offer for the proposal as outlined in section 3.4 & 3.5. All connection offers will be conditional on compliance with these Rules.

4.4 Typical Connection Process

4.4.1 New Connections

An overview of the steps typically followed during the connection process is provided below;

1. The Customer considers supply requirements to suit their intended electrical installation in consultation with their agent (such as an electrical consultant and/or electrical contractor).
2. Customer or Customer's Agent applies to Peel Renewable Energy for supply as outlined further below.
3. Peel Renewable Energy undertakes necessary technical assessments and determines the connection requirements.
4. Peel Renewable Energy and the Customer negotiate conditions for supply and Peel Renewable Energy prepares and provides a Connection Offer which upon acceptance becomes a connection agreement.
5. Customer selects their Retailer, who provides the customer with an associated Customer Reference Number (CRN).



Service and Technical Installation Rules (Elec) - PBP

6. Customer's Agent determines electrical installation requirements, including associated metering arrangements in consultation with Peel Renewable Energy.
7. Electrical Contractor submits a Preliminary Notice (via eNotice) with at least 3 working days before any work begins.
8. Electrical Contractor completes the electrical installation and submits a Notice of Completion (via eNotice).
9. Peel Renewable Energy installs associated meters, connects and energises the electrical installation upon receipt, review and acceptance of the Notice of Completion.
10. The Electrical Contractor is also responsible for submitting/providing an Electrical Safety Certificate to DMIRS and the customer within 28 days of completing the electrical work.

4.4.2 Alterations and Reconnections

Alterations to existing installations will generally follow similar steps to those outlined in clause 3.4.1 above, with the exception of the retailer/metering aspects unless required.

Peel Renewable Energy will also generally require a new Notice of Completion prior to reconnection of any electrical installations that have been disconnected for an extended period of time.

4.5 Application for Connection

4.5.1 Applications

A person who wishes to connect a new installation, alter an existing installation or extend the distribution network for supply to multiple installations, must first complete an Application for Connection describing their requirements.

Following receipt of the application, Peel Renewable Energy will review the details and may request additional information where necessary. A response and/or connection offer will then be provided by Peel Renewable Energy outlining details of the proposed supply, and the Authorised Service Capacity, until such time as it is varied by agreement with Peel Renewable Energy or the connection is removed.

Peel Renewable Energy should be consulted as early as possible, particularly in complex situations, such as high voltage connections or situations that may require extension or augmentation to the distribution network (such as a new distribution substation).

Further information relating to application requirements is provided in the PBP Customer Connection and Contributions Guidelines available from the Peel Renewable Energy website or from the Peel Renewable Energy Operations Office as detailed in section 1.5.

4.5.2 Agreed Maximum Demand

Subject to tariff arrangements the Agreed Maximum Demand may be used to calculate the demand component of a customer's network demand charge and should not exceed the Authorised Service Capacity. A customer may re-negotiate their agreed maximum demand subject to the various conditions of supply outlined earlier and the associated connection contract.

Where a customer requests that the Agreed Maximum Demand is reduced and any applicable conditions are satisfied, then any new Agreed Maximum Demand will also become the new Authorised Service Capacity.

4.5.3 Proposed Electrical Installations on Public Land

Peel Renewable Energy must be contacted prior to commencing any proposal to install an electrical installation on public land including extending wiring and equipment from an electrical installation into or across public land.

4.5.4 Control of Customer Demand

In some situations, new electrical installations may be required to provide demand limiting control to ensure the Agreed Maximum demand is not exceeded. Where applicable, details will be negotiated and advised in response to an associated Application for Connection.

4.6 Notification of Electrical Work

A range of statutory obligations and requirements apply to notification of electrical work, as outlined in Section 8 of the WA Distribution Connections Manual (WADCM). These requirements also apply to all electrical work undertaken within the PEEL Business Park.

Peel Renewable Energy uses the eNotice system administered by DMIRS for submission of Preliminary Notices and Notices of Completion. Any notices considered invalid or inadequate will be denied and the notice may need to be withdrawn.

Preliminary and Completion Notices are required for all electrical installation work with the exception of the following:

- Maintenance activities not requiring disconnection of supply, reconnection of supply or the replacement of service apparatus,
- Alteration of a final sub-circuit
- Addition of single final sub-circuit

Preliminary Notices must be submitted sufficiently early to allow Peel Renewable Energy to review and fully consider the requirements for making supply available, noting larger, more complex or unusual situations may require considerable assessment and planning. Preliminary Notices must also include a valid Customer Reference Number (CRN) as provided by the customer's Retailer. Completion Notices and Electrical Safety Certificates should also be submitted using the DMIRS eNotice system. Also refer to Section 8 of the WA Distribution Connections Manual for further information.

These statutory obligations are in addition to the application for connection requirements described in clause 3.5 of these Rules.

Additional notifications may also be required, including the Notification 70A to Landgate described in clause 3.6.2 of the WAER and clause 12.3.2 of the WADCM in situations where multiple supplies may exist.

4.7 Forms

All eNotice forms are available on-line through the DMIRS website. In addition, the following forms are available from the Peel Renewable Energy website and Operations Office upon request:

- Electrical Works Request
- Application for Connection
- Request for Supply Disconnection (Abolishment)
- Request for Reconnection
- Field Works Order

4.8 Charges

Works relating to the establishment or modification of a connection requested by a customer may incur charges. This may include charges associated with but not limited to the following:

- Assessing and processing connection applications
- Connecting or altering a customer's supply
- Disconnection works
- Metering works
- Inspection of installations

Additional costs may also be incurred for:

- Works required to take place outside normal business hours
- Repeated or cancelled works carried out due to a failure of the customer or their agent to appropriately prepare for these works
- Works required to be carried out as a result of a failure to comply with these Rules

Further details of related fees and charges are available from the Peel Renewable Energy website or Operations Office upon request. Details of charges should be assessed and confirmed with Peel Renewable Energy by the Customer or their Agent prior to the commencement of work. Peel Renewable Energy may also require the Customer or their Agent to enter into a written agreement and pay associated charges prior to commencement of the work or connection of supply.

5. GENERAL RULES

5.1 Safety

All work performed must be undertaken safely and in compliance with all relevant acts, regulations, codes of practice, standards and these Rules. The WA Department of Mines, Industry, Regulation and Safety website should also be referenced for further information related to electrical safety and safe work practices.

Any conductors or wires that form part of the customer's electrical installation are not to be connected to the Peel Renewable Energy distribution network prior to formal energisation of the connection by Peel Renewable Energy

Where Peel Renewable Energy becomes aware of an immediate risk to safety within an existing connected electrical installation, supply to the installation will be de-energised. Re-energisation will be subject to demonstration that suitable arrangements have been put in place to ensure the electrical installation is safe (including submission of applicable notices and reconnection requests as necessary). Peel Renewable Energy will endeavour to notify the installation customer as soon as reasonable in these situations. Written notice of the disconnection of supply will also be provided at the customer's installation.

All applicable safety clearances and approach limits must be maintained at all times when working on or near electrical equipment. All other appropriate steps must also be taken when working on or near electrical equipment including:

- Provision of suitable protection from adjacent live electrical conductors or adjacent live parts of electrical equipment,
- Use of insulated tools and equipment,
- Use of appropriate equipment and plant in accordance with recognised electricity industry practice.

5.2 Network Access and Excavation

Any access to the electrical assets on the Peel Renewable Energy Distribution Network must be carried out with the approval of Peel Renewable Energy and in accordance with all Peel Renewable Energy requirements. This includes:

- Joining of any electrical assets to the Peel Renewable Energy Distribution Network,
- Excavating in close vicinity to distribution network assets,
- Entering an Peel Renewable Energy distribution substation,
- Accessing distribution network service pits,
- Climbing any distribution network assets or related structures,
- Locating new assets electrical or otherwise in close proximity to Peel Renewable Energy assets,
- Accessing distribution network earth-grids and associated earthing systems.

Prior to the commencement of any underground excavations, a "Dial Before You Dig" enquiry must be carried out to confirm the area of excavation is free of assets or other services. Suitable risk assessment

Service and Technical Installation Rules (Elec) - PBP

and methods (such as “pot-holing”) must be carried out to positively confirm location of any identified underground assets. Peel Renewable Energy should be contacted prior to proceeding with any excavations in the vicinity of their assets.

5.2.1 Supply Isolation

In circumstances where appropriate isolation is not possible within a customer’s electrical installation (such as the main isolation switch), Peel Renewable Energy should be contacted at the earliest opportunity to isolate supply to enable work to be performed safely.

Where the isolation of an installation’s supply is required to be carried out by Peel Renewable Energy then charges may apply. Details of applicable fees and charges are available from the Peel Renewable Energy website or Operation Office upon request.

5.2.2 Remote De-energisation, Re-energisation

In situations where de-energisation and/or re-energisation of electrical equipment is possible from remote operation (such as through operation of a contactor within a meter) then all suitable safety measures must be implemented to eliminate the risk of contact with live parts, in the event remote re-energisation should occur.

5.3 Compliance with Regulations, Codes of Practices, Guidelines and these Rules

Compliance with these Rules as well as all relevant legislation, codes and guidelines is required for any connection or re-connection to the Peel Renewable Energy Distribution network. Applicable references include but are not limited to:

- Electricity Industry Act 2004 (WA),
- Electricity Network (Safety) Regulations 2015 (WA)
- Electricity (Licensing) Regulations 1991 (WA)
- Occupational Safety and Health Act 1984 (WA)
- Electricity Networks Access Code 2004 (WA)
- Electricity industry (Customer Transfer) Code 2016 (WA)
- Electricity Networks Quality and Reliability of Supply Code 2005 (WA)
- Electricity Corporations (Electricity Generation and Retail Corporation) Regulations 2013 (WA)
- Electricity Industry (Metering) Code 2012 (WA),
- Western Australian Electrical Requirements (WAER),
- Western Australian Distribution Connection Manual (WADCM),
- Peel Business Park Customer Connection and Contribution Guidelines,
- Peel Business Park Customer Self Supply Guidelines,
- Peel Business Park Network Performance and Planning Criteria Manual,
- AS/NZS 3000 Electrical Installations (Wiring Rules),
- AS 4741 Testing of Connections to Low Voltage Networks
- AS 2067 Substations and High Voltage Installations exceeding 1 kV a.c.
- Other applicable Australian Standards.

Where references included in these Rules (or otherwise) have been superseded then all updated provisions shall apply.

These compliance requirements apply to all of the following:

- New electrical installations,
- Alterations to existing installations (as prescribed in AS/NZS 3000)
- Additions to existing installations (as prescribed in AS/NZS 3000)
- Any special electrical installations.

Peel Renewable Energy may request an inspection of an electrical installation or occupancy to review general compliance with these Rules. Such a request should not be unreasonably withheld.

5.4 Testing

All electrical work must be appropriately tested by the installing electrical contractor prior to connection to the Peel Renewable Energy distribution network in accordance with the Electricity (Licensing) Regulations 1991. Further details on testing requirements for the various types of installation are provided in Section 6 and Section 8.

5.5 Acceptance of Connection Equipment and Arrangements

Equipment and arrangements used for interfacing to overhead distribution systems will not generally apply or be accepted for use given the nature of the Peel Renewable Energy distribution network. Otherwise, equipment and connection requirements outlined in Section 5 of the WAER and Section 12.5 of the WADCM also apply to underground connections to the Peel Renewable Energy distribution network.

Peel Renewable Energy should be consulted where there is any doubt whether equipment or arrangements are accepted for use and may refuse to connect equipment considered not to be acceptable.

5.6 Service Labelling

The requirements outlined in clause 3.5 of the WAER also apply to all service labelling used within Peel Business Park.

5.7 Access to Distributors' Equipment

Peel Renewable Energy representatives must be provided with suitable, safe and unhindered access to Peel Renewable Energy equipment and assets at all times, as required to ensure Peel Renewable Energy can undertake all necessary work and activities associated with:

- Supply, metering or billing of electricity,
- Inspection and testing of customers electrical installations,
- Connection, disconnection or reconnection of supply,
- Operation, maintenance and inspection of the distribution network

5.8 Sealing and Locking

Suitable sealing and locking provisions that restrict unauthorised access to un-metered terminals and other equipment must be implemented where required by these Rules.

All portions of a customer installation on the Peel Renewable Energy supply side of the main supply meters shall be installed ready for sealing using an authorised industry participant security seal, including but not limited to access panels, junction boxes, metering equipment, lockable isolators, fuse boxes, enclosures and escutcheon panels.

Peel Renewable Energy metering equipment must have restricted access through the use of an approved lock compatible with the Peel Renewable Energy locking system. Where an Peel Renewable Energy lock is used to secure unmetered portions of an electrical installation, then this shall also be regarded as a suitable security seal.

Where any doubt exists for a given situation, Peel Renewable Energy should be consulted for details of applicable sealing and locking requirements.

Any un-authorised tampering or breaking of an Peel Renewable Energy seal or lock may lead to substantial fines, prosecution and a compensation order for any damages or losses incurred.

5.9 Private Electricity Assets or Installations on Public Land

Peel Renewable Energy must be contacted prior to installing a private electrical installation or any associated private wires, lines or cables, on public land. All such installations are required to comply with

the WAER, WADCM and these Rules, as well as any specific Peel Renewable Energy requirements (such as termination and labelling requirements). Also refer to clause 13.10 of the WADCM.

5.10 Attachment of Other Equipment to Poles or Assets (belongs in general?)

The Peel Renewable Energy network does not include overhead distribution systems and associated poles for attachment of third-party assets. Any poles and standards used for public lighting will not generally be made available for attachment of other assets except under exceptional circumstances.

Peel Renewable Energy must be contacted for pre-approval if attachment of third-party equipment to any of their assets is being considered.

5.11 Multiple Occupancy Buildings and Subdivisions

A range of specific requirements relating to multiple occupancy buildings and subdivisions are provided within these Rules including Sections 6.8. It is the responsibility of the electrical designer and licensed electrical contractor to ensure all associated design and installations work is undertaken in accordance with all relevant standards and legislation, including the Electricity Industry Act 2004 and Electricity Network (Safety) Regulations 2015.

All appropriate information, including copies of proposed and final building and/or subdivision plans, should be provided and discussed with Peel Renewable Energy throughout the planning, design and implementation stages to help ensure delays and any unnecessary expenditure is avoided.

6. SUPPLY TYPES, USE AND PROTECTION

6.1 Network Supply

6.1.1 Supply Characteristics

Section 3 of the PBP Network Performance and Planning Criteria Manual outlines the various supply characteristics and limits applying within PBP including applicable voltage, frequency and short-circuit fault currents. Adherence to defined limits may be assessed where considered necessary, and in response to user requests or complaints.

6.1.2 Sensitive Customer Equipment

Transient voltages, fluctuations and frequency disturbances may occur on the upstream network at any time and Peel Renewable Energy can't always control or limit these disturbances. Customers are advised to provide suitable protective devices, such as phase failure, over/under voltage and over/under frequency protection, to help minimise effects on their installation or any sensitive equipment.

6.1.3 Prospective Short Circuit Current

Electrical installations are to be designed with consideration for the prospective short-circuit currents that may exist within the electrical installation. Short circuit currents (or fault levels) at the customer's terminals will vary dependant on the location of the installation with respect to the upstream source of supply.

Prospective LV short-circuit currents within the Peel Renewable Energy distribution network could be as high as 63kA in close proximity to large distribution substations. In all cases (including supply at HV) Peel Renewable Energy must be contacted to provide prospective short-circuit currents and associated durations when designing any electrical installations to be supplied from the Peel Renewable Energy network.

6.1.4 Protective Earthing Systems

Peel Renewable Energy should be contacted to confirm the earthing system employed for a given location or proposed installation. Earthing of all installations must comply with AS/NZS 3000 and AS 2067 and be

suitably maintained to ensure ongoing adequacy. Suitable accessibility for inspection and testing of earthing systems must also be maintained.

6.2 Connection Point (Point of Supply)

6.2.1 General

Peel Renewable Energy will nominate the required location and arrangement for the connection point, in accordance with applicable regulations and the Electricity Networks Access Code. This will be in response to an Application for Connection as outlined in Section 3.5 of these Rules, and described further in the PBP Customer Connection and Contribution Guidelines. A range of related requirements are also described in Sections 6 and 8 of these Rules as well as the PBP Customer Connection and Contributions Guidelines available from Peel Renewable Energy.

6.2.2 Number of Services

Each lot will generally be provided with a single point of supply only. This requirement may only be waived under exceptional circumstances following a detailed submission from the customer or their agent outlining applicable safety considerations and measures, and only in situations where the requirements of clause 3.6 (and applicable subclauses) of the WAER have also been met.

6.2.3 Number of Phases

Service connections within PBP will generally comprise balanced three-phase supplies only. Single or two-phase LV connections may only be permitted at the discretion of Peel Renewable Energy in unusual situations subject to specific requirements and conditions.

6.2.4 Location

Location of the connection point will be nominated by Peel Renewable Energy in response to an Application for Connection. Typical arrangements for various types of connection are described in Section 6 and Section 8 of these Rules as well as the PBP Customer Connection and Contributions Guidelines.

6.3 Consumer Mains

Consumer mains must be designed, configured and installed in accordance with clause 12.2.3 and clause 12.6 of the WADCM and all applicable subclauses. Where relevant, clauses 9.2, 9.3 and 9.4 of the WAER also apply. Further details and requirements are provided in Sections 6 and 8 of these Rules.

6.4 Zone Diagrams

Suitable zone diagrams for all customer sites must be prepared and posted in accordance with the WAER and clause 12.3.1 of the WADCM. Proposed arrangements and associated diagrams should be provided for review by Peel Renewable Energy during the application process, prior to finalising any site arrangements.

6.5 Supply Use Obligations and Load Requirements

6.5.1 Consistency with WA Distribution Connections Manual

Customer's supplied from the Peel Renewable Energy distribution network are required to comply with the obligations and requirements as set out in the following related clauses and all applicable sub-clauses of the WA Distribution Connections Manual (where references to the Network Operator refer to Peel Renewable Energy):

- 10.5.1 Obligations
- 10.5.2 Maximum demand
- 10.5.3 Noncompliance
- 10.7 Balanced electrical loads

- 10.8.3 Ripple control and blocking systems
- 10.9 Voltage fluctuations - including:
 - 10.9.1 Voltage transients
 - 10.9.2 Flicker
 - 10.9.3 Harmonics
 - 10.9.4 Voltage drop
 - 10.9.5 Neutral voltage rise
- 10.11 Customer Responsibilities - including:
 - 10.11.1 General
 - 10.11.2 Using equipment from outside Australia
 - 10.11.3 Purchasing and protection of sensitive equipment
 - 10.11.4 Customer with disturbing loads
 - 10.11.5 Insurance and warranty
- 10.12 Customer supply critical installations

6.5.2 5.5.2 Power Factor

All customer's within PBP are generally required to maintain the power factor of their electrical installation load between 0.9 lagging to 0.9 leading, unless otherwise agreed or specified by Peel Renewable Energy.

6.6 Type of Supply and Load

Peel Renewable Energy will generally provide various details pertaining to supply within the connection offer and/or supply contract including:

- Terms and conditions for connection to the Peel Renewable Energy distribution network
- Type of supply including the applicable voltage and number of phases
- Capacity details including the authorised service capacity and agreed maximum demand

Where details are unavailable, then Peel Renewable Energy should be contacted to clarify and document supply arrangements that apply.

6.7 Supply Capacity and Maximum Demand

Customer's must ensure the electrical demand on their electrical installation does not exceed the authorised service capacity. In some situations, Peel Renewable Energy may require appropriate load limiting control to be provided within the customer's installation to ensure agreed limits are not exceeded.

Where the demand of an installation is identified as exceeding the authorised service capacity, the customer must take appropriate corrective action which may include one or more of the following:

- Maximum demand limiting control,
- Reduction or disconnection of loaded circuits within the installation to below the authorised service capacity,
- Application to Peel Renewable Energy for an increase to the authorised service capacity.

If a customer does not take the appropriate corrective action, Peel Renewable Energy may disconnect the supply until adequate measures have been adopted.

6.8 Installation & Supply Protection

6.8.1 General Requirements

All services and electrical installations shall have suitable protection devices in accordance with the applicable requirements of the WAER, AS/NZS 3000, and AS 2067.

Service and Technical Installation Rules (Elec) - PBP

Customers are also advised to install supplementary protective equipment to limit possible damage to their electrical installation in the event of voltage variation, transients, and loss of one or more phases of supply. All customer protective equipment is required to grade with the upstream Peel Renewable Energy Distribution Network protection device unless otherwise agreed in writing by Peel Renewable Energy.

6.8.2 Low Voltage Services

For low voltage services the requirements set out in clause 6.2 of the WAER (and all associated sub-clauses) as well as clauses 11.11.6 and 12.7.1 of the WADCM also apply to electrical installations within PBP. Further related information is also provided in Section 6 of these Rules as well as Chapters 11 and 14 of the WADCM.

6.8.3 High Voltage Services

Establishing a high voltage connection to the Peel Renewable Energy network will only be applicable in exceptional circumstances. Where customers are seeking or require supply at high voltage then service arrangements and associated protection requirements will be determined subject to specific details. Requirements will generally be consistent with Section 7 of the WAER and Chapter 13 of the WADCM. Section 8 of these Rules provides further details applicable to high voltage services.

6.8.4 Security

Service protection devices should be located and arranged to limit the ability of unauthorised persons to interfere with and operate the device. One acceptable method to restrict unauthorised interference is to locate the service protection devices in an enclosure fitted with facilities to accommodate an Peel Renewable Energy lock or seal in accordance with Section 4.8 of these Rules.

6.9 Sources of Alternative Supply

6.9.1 General

Sources of alternative supply represent any source of electricity other than that provided by the Peel Renewable Energy distribution network and include, but not limited to:

- Embedded generators (diesel, gas, photovoltaic, wind etc),
- Standby generators,
- Regenerative braking equipment,
- Uninterruptible power supplies (UPS)
- Energy storage systems (batteries etc).

Alternative supply sources will be generally classified by Peel Renewable Energy as either:

- Independent: generators or supply sources that operate separate to, and independent of, the distribution network. These are not, and cannot, physically connected to the distribution network, such as portable generators used for temporary supply at a construction site,
- Standby: sources of supply that provide back-up when supply from the distribution network has become unavailable and may include UPS facilities. By definition standby supplies are not capable of parallel operation with the distribution network and must have facilities to ensure paralleling cannot occur (such as mechanical interlocks),
- Embedded generators: are capable of operating in parallel and synchronising with the distribution network. This include fully parallel operation as well as sources that may operate in parallel for short periods while transferring over to back-up supply.

Sources of alternative supply are required to comply with a range of applicable standards including (but not limited to) AS/NZS 3000, AS/NZS 3010, AS/NZS 3947.6.1, AS/NZS 4777 and AS/NZS 5033.

The PBP Customer Self Supply Guidelines also provide further information relating to the processes and requirements for connections incorporating alternative sources of supply (e.g. customer generation) to the PEEL Microgrid.

It should be noted customer-owned alternative sources of supply will generally be permitted for non-export purposes only. This constrains sources of alternative supply to new or existing customer installations having sufficient load to utilise all generated energy.

6.9.2 Responsibilities and Requirements

All proposals for the connection of standby or embedded generating equipment to the Peel Renewable Energy distribution network (including within installations supplied from the distribution network) are required to be assessed and formally agreed by Peel Renewable Energy prior to connection.

Peel Renewable Energy must be consulted in the earliest stages of planning and design when considering any generation that may be required to connect or operate in parallel with the distribution network. A range of information will be required including but not limited to the following:

- Details of the proposed connection arrangement,
- General details for the proposed generator,
- Proposed protection arrangements,
- The power transfer requirements,
- Proposed power factor and reactive power capability,
- Technical data and schematics including associated installation.

Further details and associated application requirements for alternative sources of supply are included in the PBP Customer Connection Self Supply Guidelines available from the Peel Renewable Energy website or the Peel Renewable Energy Operations Office as detailed in section 1.5.

6.9.3 Consistency with WA Distribution Connections Manual

The following clauses in Chapter 15 of the WADCM also apply to alternative sources of supply within the PEEL Business Park:

- 15 Alternative sources of supply or generation,
- 15.1 Definitions: including all subclauses,
- 15.2 Generation categories: also noting types of systems defined in the PBP Customer Self Supply Guidelines,
- 15.3 Customer/agent responsibilities: including all associated subclauses,
- 15.4 Customer equipment and appliances,
- 15.5 System designers and installers,
- 15.6 Generation license requirement,
- 15.7 Connection arrangements: including all subclauses,
- 15.9 Fault Protection,
- 15.9 Interlocks and change over,
- 15.10 Islanding prevention and protection schemes,
- 15.11 Metering, monitoring, control and data-acquisition: noting export and buy-pack tariffs will not generally apply,
- 15.12 Power Quality: including all subclauses and noting applicable information included in PBP Customer Self Supply Guidelines,
- 15.14 Commissioning and maintenance: including all subclauses,
- 15.15 Additional requirements for parallel connected generation: including all subclauses and noting applicability of the PBP Customer Self Supply Guidelines to the PEEL Microgrid,
- 15.16 Additional requirements for inverter connected generation: including all subclauses,
- 15.17 Portable Generation systems.



Relevant requirements outlined in the following Western Power documents (available on Western Power website) should also be reviewed and may be taken into account when assessing connections to the Peel Renewable Energy distribution network:

- WP Technical Rules
- Generator and Load Model Guidelines
- Generator Performance Guidelines
- Small Generator User Guide
- Technical Guidance for Solar Installers

6.9.4 Labelling

All switchboards associated with alternative supply sources must be clearly and permanently labelled as having alternative power systems connected. The circuit breaker, fuse or switch must also be similarly labelled. A suitable label shall also be fitted at the meter position and main switchboard.

Labelling requirements described in clause 3.5.5 of the WAER and clause 15.13 of the WADCM apply to all installations with alternative sources of supply within the PBP distribution network.

Further details of labelling requirements are provided in AS 1319, AS 3000, AS 4777 and other Australian Standards applicable to generation systems.

6.9.5 Reverse Power Protection

In addition to the requirements outlined elsewhere in these Rules, the WAER, WADCM, alternative sources of supply within PBP may be required to install suitable protection systems to ensure export of power from the installation is always prevented (reverse power protection).

6.9.6 Metering

Despite limited scope for export of power, installations with alternative sources of supply that may operate in parallel with the network are required to abide by the bi-directional metering requirements described in clause 11.16 of the WADCM and applicable standards.

7. CONNECTING TO THE LOW VOLTAGE (LV) NETWORK

7.1 Distribution LV Network and Connection

7.1.1 General

Peel Renewable Energy will provide an appropriate connection to each low voltage installation in accordance with the Electricity Industry Act, the Electricity Network Access Code and these Rules. The customer is responsible for providing suitable facilities for accommodating applicable Peel Renewable Energy service equipment at their cost. The customer is also responsible for the installation and all equipment beyond the connection point (with the exception of the Retail meters).

7.1.2 Consistency with WA Distribution Connections Manual

Peel Renewable Energy adopts the approach and requirements set out in the following related clauses of the WADCM (where all references to the Network Operator refer to Peel Renewable Energy):

- 12.2.3 Connection of services,
- 12.2.4 Number of connections (and associated subclauses),
- 12.2.6 Underground (point of supply) noting residential lots don't apply,
- 12.2.7 Location,
- 12.2.8 Access, noting Peel Renewable Energy contact details given in Section 1.5.

- 12.3 Multiple points of supply (and associated subclauses),
- 12.7 Protection (and associated subclause),
- 12.8 Cable ducts and conduits,
- 12.9 Labelling,
- 12.11 Special LV supply arrangements (and all associated subclauses),
- 12.13 Western Power section references.

7.2 Underground Services

7.2.1 General

All areas within PBP are underground service areas, and only underground services will apply, unless specifically agreed in writing by Peel Renewable Energy under exceptional circumstances.

7.2.2 Consistency with WA Distribution Connections Manual

Peel Renewable Energy adopts the approach and requirements set out in the following related clauses of the WADCM (where all references to the Network Operator refer to Peel Renewable Energy):

- 12.5.1 General
- 12.5.2 Point of supply (PoS)
- 12.5.3 Location
- 12.5.4 Inappropriate point of supply connection
- 12.5.5 Access (and all associated subclauses)
- 12.5.6 Network pillar identification (where applicable)
- 12.5.7 Pillar or pit not installed (and associated subclauses where applicable)
- 12.5.8 Pillar or pit not energised (and associated subclauses where applicable)

7.2.3 Supply Protection

As outlined in section 5.8 all services will be required to be protected by a suitable Service Protection Device. This will normally be a supply fuse or a circuit breaker and is required to be located as close to the property boundary as possible.

The requirements detailed in clause 6.2 (and all associated subclauses) of the WAER also apply to LV services within PBP. In addition, all related protection requirements outlined in Chapters 11 and 15 of the WADCM also apply including, but not limited to:

- 11.4 Metering equipment/protection enclosures (and all applicable subclauses)
- 11.5 Metering equipment location (and all applicable subclauses)
- 11.6.4 Meter equipment protection and main switches (and all associated subclauses)
- 11.9.4 Direct connected metering - Protection
- 11.11.6 Multiple master metering - Protection
- 11.12.5 Distributed master metering - Protection
- 11.13.5 LV CT Metering - Protection

7.3 Overhead Services

There are no overhead distribution areas within PBP. Overhead services will not apply unless specifically reviewed and agreed in writing by Peel Renewable Energy under exceptional circumstances. Any specific requirements will be advised during the application/review process.

7.4 Segregation

All installations and services will be required to meet the conditions of AS/NZS 3000 for segregation of cables to avoid unwanted voltages and equipment interference. This includes demonstration of suitable segregation between:

- High Voltage cables
- Low Voltage cables
- Telecommunication cables
- Other assets (including conductive assets, water and gas)

7.5 Consumer's Mains & Sub Mains

7.5.1 General

It is the customer's responsibility to provide, prepare and maintain consumer mains and sub-mains in accordance with the WAER, AS/NZS 3000, AS/NZS 3008 and these Rules. In particular, Section 9 of the WAER details specific requirements for consumers mains that apply in WA.

Peel Renewable Energy must be consulted where the suitability of proposed cables and conductors and their termination are not covered by these Rules or there is any ambiguity or doubt about requirements in a particular situation.

7.5.2 Consistency with WA Distribution Connections Manual

Peel Renewable Energy adopts the approach and applicable requirements as set out in the following related clauses (and associated sub-clauses and diagrams) of the WA Distribution Connections manual (where references to Network Operator should be to Peel Renewable Energy):

- 12.6.1 General
- 12.6.2 Consumer main sizes (noting domestic situations will not generally apply)
- 12.6.3 Voltage drop/rise
- 12.6.4 Acceptable wiring systems (and all applicable subclauses)
- 12.6.5 Location
- 12.6.6 Separation from other services
- 12.6.7 Identification of consumer mains (and all associated subclauses)
- 12.6.8 Jointing consumer mains
- 12.6.9 Termination of consumer mains (and all applicable subclauses, adopting Western Power termination references)
- 12.6.10 Minimum insulation resistance
- 12.6.11 Notification
- 11.11.5 Multiple master metering - Wiring configurations
- 11.12.4 Distributed master metering - Wiring configurations

7.6 LV Isolating Devices

Suitable LV isolating devices must be provided in accordance with section 6 of the WAER and all applicable requirements detailed through Chapters 11, 12, 14 and 15 of the WADCM.

7.7 Builder's and Temporary Supplies

7.7.1 General

Peel Renewable Energy should be contacted at the earliest opportunity in situations where temporary or construction supplies may be required from the PBP distribution network. Where available Peel Renewable Energy may provide supply subject to the conditions and all applicable requirements described in the WAER, WADCM and these Rules.

Builder's and temporary supplies are only available as LV connections and must not have any connected alternative sources of supply such as batteries, or solar inverter energy systems or other forms of generation.

It is the responsibility of the customer and/or their agents to make an application and confirm whether a temporary supply can be made available, and any specific conditions that might apply (including the agreed period) before planning the construction work. Any temporary supply must be disconnected prior to connection of permanent supplies and/or before expiry of an agreed period.

In situations where a temporary supply is proposed within a lot or site already having an existing point of supply, the minimum requirements described in clause 3.6.9 of the WAER must also be satisfied at all times. Requirements for builder's supplies given in clause 6.2.3.1 of the WAER also apply.

7.7.2 Consistency with WA Distribution Connections Manual

Peel Renewable Energy adopts the approach and applicable requirements as set out in the following related clauses (and associated sub-clauses and diagrams) of the WA Distribution Connections manual (where references to Network Operator should be to Peel Renewable Energy):

- 12.11.1 Standby/emergency supply
- 12.11.3 Short term events
- 12.11.4 Builders supplies (and all applicable subclauses except 12.11.4.4)
- 7.7.4 Temporary supplies

7.8 Multiple Occupancy Buildings and Subdivisions (Supply Arrangements)

7.8.1 General

Peel Renewable Energy should be contacted at the earliest opportunity where supply may be required to multiple occupancy buildings and subdivisions. In addition to provision of applicable details and plans an Application for Connection should also be submitted to Peel Renewable Energy as early as possible to help ensure supply can be made available within required timeframes.

7.8.2 Multiple Occupancies

A suitable plan shall be submitted to Peel Renewable Energy for agreement as part of the application process and prior to commencement of any installation work. The plan must show applicable property boundaries, general building layouts, meter locations as well as schematic details for proposed isolation, protection and metering arrangements.

All associated control, isolation, protection and metering facilities must be installed in accordance with AS/NZS 3000, the Electricity Industry (Metering) Code, WAER, Chapter 11 of the WADCM and these Rules. All unmetred parts, conductors and terminals must be appropriately segregated, secured, sealed or locked in accordance with AS/NZS 3000 WADCM and clause 4.8 of these Rules.

Suitable labelling and zone diagrams must be provided and maintained in accordance with AS/NZS 3000, the WAER and WADCM, with sufficient details to ensure clear identification of control, protection and metering arrangements for all occupancies across the site.

7.8.3 Subdivisions

Plans of subdivision should be prepared with due consideration for general supply arrangements and requirements described in these Rules such as points of supply, substation and switchboard/metering requirements.

Associated plans and allotments should be confirmed by the relevant authorities prior to submission to Peel Renewable Energy as part of the application process (as described in Sections 3 of these Rules). Once arrangements have been confirmed and agreed, it is the responsibility of the developer to advise prospective purchasers of proposed electrical and servicing arrangements within the subdivision.

7.9 Unmetered Supplies

Un-metered supplies are not generally available from the Peel Renewable Energy distribution network unless for special approved services/agencies or under emergency situations. Peel Renewable Energy must be consulted for formal approval and requirements for any proposed unmetered supplies. Further related information is also included in clauses 7.7.5 and 9.3.9 of the WADCM.

7.10 Substation Requirements

The requirements in situations where an Peel Renewable Energy substation may need to be installed, modified or upgraded in order to accommodate a connection, are consistent with Chapter 14 of the WADCM (noting MPS type substations may not typically apply within PBP).

8. LOW VOLTAGE METERING

8.1 Scope

This section sets out Peel Renewable Energy requirements related to low voltage metering and associated switchboards and service equipment connected to their distribution network. Details of metering and associated requirements for high-voltage installations is provided in Section 8 of these Rules. Where any doubt exists, Peel Renewable Energy should be contacted for any clarifications relating to the requirements contained in these Rules.

8.2 Tariffs & Metering

The customer or their agent should consult with Peel Renewable Energy or an alternative Retailer to determine applicable tariffs and establish an account for a given installation. Once an account is established the Retailer should provide the customer with a Customer Reference Number (CRN). The CRN is required in order to submit a Preliminary Notice as part of the connection process described in Section 3 of these Rules.

8.3 Metering Obligations

8.3.1 General

Suitable metering must be installed at each connection point to the PEEL Microgrid (with the exception of any specifically approved unmetered supplies as outlined in Section 6.9).

All metering facilities must comply with AS/NZS 3000, the Electricity Industry (Metering) Code, WAER, WADCM and these Rules. The customer is responsible for providing suitable arrangements and facilities to accommodate the installation, operation and maintenance of the associated Peel Renewable Energymeters. Peel Renewable Energy should be consulted as early as possible in the planning, design and construction of new electrical installations to ensure suitability of metering facilities.

8.3.2 Consistency with the WA Distribution Connections Manual

The general obligations and requirements given in the following clauses of the WADCM) equally apply within the PEEL Business Park (where references Network Operator refer to Peel Renewable Energy):

11.1.1 Metering obligations

- 11.1.2 Alterations and additions
- 11.1.3 Maintenance, repairs and replacement
- 11.1.4 Metering installation
- 11.1.5 Installing metering equipment
- 11.1.6 Unauthorised access to metering equipment
- 11.1.7 Stakeholder responsibilities
- 11.16 Metering for inverter energy systems
- 11.19 National meter identifier (NMI)
- 11.20 Meter energisation
- 11.21 Meter distribution

8.4 Protection against Damage, Interference and Personal Injury

The customer must provide suitable methods of protecting against damage to metering equipment and injury to persons working on metering equipment. This shall include, but not limited to, the protection against vehicles, normal and adverse weather conditions, spread of fire and unauthorised access.

8.5 Limits of Operation and Fault Levels

All metering facilities, enclosures and panels shall be designed so that meters are not subject to conditions or temperatures in excess of their specified operating range and in accordance with NMI M6-1 (as published by the National Measurements Institute) and the National Measurements Act. Appropriate air circulation, ventilation, shading or siting of the metering equipment should be considered in meeting the applicable operating limits.

All metering facilities and equipment must also be capable of withstanding the maximum prospective fault levels applicable for the location (also refer to clause 11.7 of the WADCM).

8.6 Metering Types

8.6.1 General

A range of metering configurations and types may be employed subject to the specific installation requirements. This section outlines the various systems and configurations that are generally available, also noting:

- CT metering must be provided where the maximum demand could exceed 100A for any active conductor being metered (also refer to clause 11.13 of the WADCM),
- The maximum load that can be LV metered is 2MVA,
- In multiple metered situations (such multi-occupancy developments) mixed metering systems are not permitted on the same site (e.g. combination of “multiple master” and “distributed master” metering).

8.6.2 Consistency with WA Distribution Connections Manual

Peel Renewable Energy adopts the approach and applicable requirements as set out in the following related clauses (and associated sub-clauses and diagrams) of the WA Distribution Connections manual (where references to Network Operator should be to Peel Renewable Energy):

- 11.8.1 General metering types
- 11.8.3 Western Power metering types
- 11.8.4 Un-acceptable metering types
- 11.8.5 Existing meter locations

8.7 Metering Facilities

The requirements as set out in the following clauses (and associated sub-clauses and diagrams) of the WADCM equally apply within PBP (where references to the Network Operator refer to Peel Renewable Energy):

- 11.3 Meter panels
- 11.4 Metering equipment/protection enclosures
- 11.6 Equipment
- 11.10 Time of use metering (SWIS network only)
- 11.11 Multiple master metering
- 11.12 Distributed master metering
- 11.14 Automated meter reading systems
- 11.17 Subsidiary metering guidelines

8.8 Location and Access

The requirements as set out in the following clauses (and associated sub-clauses and diagrams) of the WADCM equally apply to metering facilities within PBP (where references to the Network Operator refer to Peel Renewable Energy):

- 11.5.1 General
- 11.5.2 Access requirements
- 11.5.3 Single domestic/commercial lots (noting domestic lots will not generally apply)
- 11.5.4 Battle-axe block lots
- 11.5.5 Multiple domestic/commercial lots (noting domestic lots will not generally apply)
- 11.5.7 Remote metering
- 11.5.8 Unsuitable locations
- 11.18 Relocation of existing metering point

8.9 Direct Connected Metering

The requirements as set out in the following clauses (and associated sub-clauses and diagrams) of the WADCM equally apply to metering facilities within PBP (where references to the Network Operator refer to Peel Renewable Energy):

- 11.9.1 General
- 11.9.2 Meter panels
- 11.9.3 Panel wiring configurations
- 11.9.4 Protection
- 11.9.5 Conversion of subsidiary meters to master meters

8.10 LV Current Transformer Metering

The requirements as set out in the following clauses (and associated sub-clauses and diagrams) of the WADCM equally apply to metering facilities within PBP (where references to the Network Operator refer to Peel Renewable Energy):

- 11.13.1 General
- 11.13.2 Sourcing of materials
- 11.13.3 Meter panels

- 11.13.4 Wiring configurations
- 11.13.5 Protection
- 11.13.6 Current transformers (and all associated subclauses)
- 11.13.7 Voltage circuit protection (and all associated subclauses)
- 11.13.8 Safety
- 11.13.9 Conversion of direct connected meters to CT metering (and all associated subclauses)
- 11.13.10 Multiple master CT metered installations
- 11.24.1 CT metering (drawings)

9. HIGH VOLTAGE SUPPLY AND ELECTRICAL INSTALLATIONS

9.1 General

The Peel Renewable Energy network includes high voltage distribution system operating at 22kV. High voltage connections to the Peel Renewable Energy network will only be considered under exceptional circumstances and may not be available or agreed subject to specific requirements.

The design, construction, commissioning, operations and maintenance requirements for high voltage installations are significant and must only be undertaken by personnel who are suitably skilled, qualified and trained. Proponents are also referred to “Guidelines for the Safe Management of High Voltage Installations” issued by the WA Director of Energy Safety.

Peel Renewable Energy requirements for high voltage installations and associated connection are set out in this section of the Rules and are in addition to the requirements of the WAER and WA Distribution Connections Manual, AS/NZS 3000, AS 2067 and other applicable standards. The requirements of Section 7 of the WAER specifically apply to HV installations.

9.2 Connection Application and Design Submissions

9.2.1 Considerations and General Requirements

Peel Renewable Energy must be consulted at the earliest possible opportunity where customers are considering supply at high voltage. The general connection process and application requirements outlined in Section 3 of these Rules will need to be followed for all new or altered HV connections, including conversion of an existing installation from an LV to HV supply.

Connection arrangements will need to be determined subject to specific requirements and could take extensive negotiations and a considerable time for finalisation. An associated connection agreement with Peel Renewable Energy and contract for the supply of electricity with Peel Renewable Energy or another Retailer, will also be required as described further in Section 3 of these Rules.

Customers are advised not to make any commitments (e.g. contractual arrangements), for commencement of works until they receive formal confirmation from Peel Renewable Energy describing the terms and conditions of the connection and contracts that apply to the supply of electricity.

The approach and general requirements set out in the following clauses of the WADCM equally apply within PBP (where references to the Network Operator refer to Peel Renewable Energy):

- 13.2 Responsibilities and contractual arrangements
- 13.3 Customer expenditure
- 13.6 Conversion from low voltage to high voltage supply

9.2.2 Initial Application Submission

As part of the connection application process a range of supporting information will be required. As a minimum the following preliminary information should be provided with the initial Application for Connection:

- A proposed Single Line Diagram of the installation identifying all HV assets
- A proposed site plan identifying the physical location of all HV assets (including cabling)
- Details of a preferred point of supply
- The anticipated maximum demand of the installation
- Outline of any proposed generation or energy storage equipment
- Outline of any proposed disturbing loads, large motors and the like
- Intended general metering, protection and earthing arrangements

Following an initial feasibility review by Peel Renewable Energy, additional information will be required as the process progresses, including a more detailed HV design submission.

9.2.3 HV Design Submission

In the event a proposed HV connection is initially considered feasible by Peel Renewable Energy, a detailed HV design submission will need to be prepared by the customer's agent after appropriate consideration of applicable network parameters and installation requirements.

The associated approach and requirements set out in the following clauses of the WADCM equally apply within PBP (where references to the Network Operator refer to Peel Renewable Energy):

- 13.7.2 Submission and design (HV submission)
- 13.7.3 Standard format for submission of HV proposal (and all associated subclauses)
- 13.7.4 HV submission outline (and all associated subclauses)

9.3 Installation Requirements

9.3.1 General

The approach and general requirements set out in the following clauses of the WADCM equally apply within PBP (where references to the Network Operator refer to Peel Renewable Energy):

- 13.4 Supply parameters
- 13.5 Connection arrangements (and all associated subclauses)
- 13.10 Installations on Public Land

9.3.2 Circuit Connections

High voltage supply will generally be provided through a single connection. In situations where more than one connection is requested and agreed, they will be required to terminate onto a common busbar and/or have suitable interlocking facilities to the satisfaction of Peel Renewable Energy. Alternative arrangements may be considered by Peel Renewable Energy in exceptional circumstances.

Connection point should be via an automatic HV circuit breaker

9.3.3 Power Factor

The power factor of all high voltage installations connected to the Peel Renewable Energy distribution network must be maintained between 0.9 leading and 0.9 lagging.

9.3.4 Supply Quality and Disturbances

The Peel Renewable Energy distribution network is designed, installed, operated and maintained so that supply of electricity to our customers is of a suitable quality in accordance with:

- Voltage requirements set out in AS 60038,
- Voltage fluctuations limits as set out AS/NZS 61000 Parts 3.3, 3.5 and 3.7,
- Harmonic distortion limits outlined in AS/NZS 61000 Parts 3.2 and 3.6.

High voltage customers must ensure their electrical installations do not cause unacceptable disturbances or quality of supply for other customers and their load is sufficiently balanced across all phases. All high voltage installations will be required to comply with the AS 60038 and AS/NZS 61000.

9.3.5 Protection Discrimination

The customer's protection systems must be designed to suitably discriminate with the distribution network protection systems. The Peel Renewable Energy protection systems shall not be required to protect any customer's equipment beyond their main supply circuit breaker. The customer's protection systems shall have suitable selectivity and discrimination to ensure operation of upstream protection systems do not occur.

Customers will be required to undertake a full and detailed study of protection requirements for their installation including discrimination studies with the upstream distribution network protection. Full documentation of protection studies and proposed settings must be provided to Peel Renewable Energy at the earliest possible opportunity.

High voltage protection settings must be accepted by Peel Renewable Energy and the main protection devices shall have suitable facilities in place such as a security seal (refer section 4.8) and suitable labelling to ensure that protection settings are not altered without prior consultation and approval by Peel Renewable Energy. Any necessary modifications or settings changes on the Peel Renewable Energy protection systems may be required to be undertaken at the customer's expense.

Also refer to clause 13.9.5 of the WADCM for related protection setting requirements.

9.3.6 Earthing Systems

The approach and earthing requirements set out in the following clauses of the WADCM equally apply within PBP (where references to the Network Operator refer to Peel Renewable Energy):

- 13.9.7 Earthing systems (and all associated subclauses)

9.3.7 Insulation Coordination

Safety clearances, separation of live parts and insulation levels (impulse strength) across HV installations must comply with requirements in AS 2067 and AS 1824.1.

9.4 HV Equipment Requirements

The approach and equipment requirements set out in the following clauses of the WADCM equally apply within PBP (where references to the Network Operator refer to Peel Renewable Energy):

- 13.9.1 Equipment requirements
- 13.9.2 Substation installation requirements
- 13.9.3 Main switch or switches
- 13.9.4 Circuit breakers
- 13.9.6 Cabling (and all associated subclauses except 13.9.6.2 Overhead lines)
- 13.5.2 Power factor correction (and all associated subclauses)

9.5 Metering

The approach and metering requirements set out in the following clauses of the WACDM equally apply within PBP (where references to the Network Operator refer to Peel Renewable Energy).

- 11.15 HV metering (and all associated subclauses)
- 13.9.8 High voltage metering

9.6 Inspection, Testing and Commissioning

A range of inspections and tests are required prior to commissioning of any new or altered high voltage installations. This shall include all applicable testing and inspections required to ensure compliance with the requirements of the WAER, Director of Energy Safety, equipment suppliers, AS/NZS 3000, AS 2067 and these Rules.

Clause 13.11 of the WACDM applies, also noting that these requirements apply to the Peel Renewable Energy high voltage connections to the Western Power distribution system. Sufficient notice must be provided for Peel Renewable Energy to review details, consult with Western Power and provide acceptance or request further information/clarifications where necessary. Review and witnessing may also be required from Western Power in situations where associated setting changes or modifications to the Peel Renewable Energy high voltage system is required.

Where any testing may be required to be undertaken by Peel Renewable Energy, the customer will be required to contribute to the cost. Peel Renewable Energy may consider, on application from the customer, carry out other specific testing of high voltage equipment at the customer's expense. Any testing by Peel Renewable Energy will only be done under conditions that allow personnel to use standard Peel Renewable Energy isolation and safe working procedures. This may involve upstream de-energising and isolation of the electrical installation, if proper provision has not been made for safe operation or isolation.

9.7 Acceptance of HV Installations

A range of documentation will need to be provided to Peel Renewable Energy prior to acceptance and connection of a high voltage installation. The details and requirements are set out in clause 13.13 of the WACDM must be adhered to, noting that these requirements also apply to the Peel Renewable Energy high voltage connection to the Western Power distribution system.

Sufficient notice must be provided for Peel Renewable Energy to review details, consult with Western Power and provide written acceptance or request further information/clarifications where necessary. Written acceptance may also be required from Western Power in situations where associated setting changes or modifications to the Peel Renewable Energy high voltage system is required.

9.8 HV Installation Safety, Operation & Maintenance

The approach and requirements set out in the following clauses of the WACDM equally apply within PBP (where references to the Network Operator refer to Peel Renewable Energy).

- 13.12 Safety (and all associated subclauses)
- 13.14 Maintenance
- 13.15 Customer HV installation audits

Service and Technical Installation Rules (Elec) - PBP

APPENDIX A

