WHOLESALE ELECTRICITY MARKET PROCEDURE

# TECHNICAL REQUIREMENTS FOR STANDARD SMALL USER FACILITIES

Version 1
29 January 2026

westernpower

ELECTRICITY INDUSTRY ACT 2004

ELECTRICITY INDUSTRY

(ELECTRICITY SYSTEM AND MARKET)

REGULATIONS 2004

ELECTRICITY SYSTEM AND MARKET RULES

This Wholesale Electricity Market Procedure was published 29 January 2026 and took effect from 8:00 AM (WST) on 1 May 2026.

**Version Release History**

| Version | Release Date | Summary of Changes |
|---|---|---|
| 0.1 | 25/11/2025 | Initial draft – released for industry consultation |
| 1 | 29/01/2026 | Minor updates in line with the public consultation process |

# Contents

# 1. INTRODUCTION

## 1.1 Relationship with the Electricity System and Market Rules

1.1.1 This Wholesale Electricity Market (**WEM**) Procedure: Technical Requirements for Standard Small User Facilities (**this Procedure**) is made under clause 3.25.2 of the Electricity System and Market Rules (**ESM Rules**).

1.1.2 The purpose of this Procedure is to document the prescribed technical requirements to be met by the Market Participant for a Standard Small User Facility connected to a Distribution Network. **[clause 3.25.2]**

1.1.3 This Procedure applies to Western Power in its capacity as the Distribution System Operator (**DSO**) in the South West Interconnected System (**SWIS**).

1.1.4 This Procedure does not apply to other DSO(s), or Western Power in capacities other than as the DSO in the SWIS.

1.1.5 In this Procedure where obligations are conferred on a Rule Participant, that Rule Participant must comply with the relevant obligations in accordance with clauses 2.9.7A, 2.9.7D and 2.9.8 of the ESM Rules, as applicable.

1.1.6 References to particular ESM Rules within this Procedure in bold and square brackets **[clause XX]** are included for convenience only and are not part of this Procedure.

## 1.2 Relationship with the Technical Rules

1.2.1 References to the Technical Rules refer to the version dated 1 December 2016.

1.2.2 Aggregate rated Inverter Energy System (**IES**) capacity exceeding 10kVA and up to 30kVA may be exempt from the requirements of Section 3.6 of the Technical Rules, and instead have the requirements of Section 3.7 of the Technical Rules apply. Exemptions are made in accordance with 1.9.1 of the Technical Rules and are subject to approval, refer to Western Power website for more information.

**Explanatory Note (1)**

(1) Section 3.7 of the Technical Rules covers the requirements for connection of IES, up to 10kVA single phase and 30kVA three phase, to the low voltage distribution system. IES exceeding 10kVA single phase are subject to the requirements of Section 3.6 of the Technical Rules, unless an exemption has been approved.

(2) IES that are compliant with this WEM Procedure and AS/NZS 4777 series of standards are expected to meet the requirements of Section 3.7 of the Technical Rules.

## 1.3 Definitions and interpretation

1.3.1 The following principles of interpretation apply to this Procedure unless otherwise expressly indicated:

- terms that are capitalised, but not defined, have the meaning given in the ESM Rules;
- to the extent that this Procedure is inconsistent with the ESM Rules, the ESM Rules prevail;

- a reference to the ESM Rules or WEM Procedures includes any associated forms required or contemplated by the ESM Rules or WEM Procedures; and
- words expressed in the singular include the plural and vice versa; and
- text located in boxes and headed as Explanatory Note (X) in this Procedure is included by way of explanation only and does not form part of this Procedure. The Procedure prevails to the extent of any inconsistency with the explanatory notes contained within it.

1.3.2 The words, phrases and abbreviations have the meanings set out opposite them in Table 1 when used in this Procedure.

**Table 1: Defined terms and abbreviations**

| Term | Definition |
|---|---|
| Low Voltage | LV - Any nominal voltage of 1 kV and below |
| Small LV Network | Include any of the following:<br>• LV distribution transformers less than 60 kVA;<br>• Single-phase 240 V LV networks; and<br>• Split phase 240/480 V LV networks. |
| Sole-use | Refers to a single user connection to a LV distribution transformer |
| Large LV Network | Includes all the three-phase 415 V LV distribution networks |
| WASIR | Western Australian Service and Installation Requirements |
| Standard Connection Service | As defined in the WASIR for Western Power |
| Generation limit | The permitted maximum generation, apparent power (kVA), within a Standard Small User Facility |
| Single-phase | Connection with an active of an individual phase and the neutral |
| Three-phase | Connection with three active phases and the neutral |
| Split-phase | Connection using two active conductors and the neutral from a single-phase transformer with a central tapped neutral. The two actives referenced to the neutral have 180° phase angle separation from each other. In some situations, a phase-to-phase connection is used to provide higher voltage capacity supply. Sometimes may be referred to as a 240V/480V supply. Also known as a two-phase connection in some circumstances |

## 1.4 Related documents

1.4.1 The Technical Rules details the technical requirements to be met by Western Power and all users of the South West Interconnected Network and is authorised under the Electricity Networks Access Code 2004.

1.4.2 The Basic Embedded Generator Connection Technical Requirements (**Basic EG CTR**) provides background additional information to this Procedure for users to apply to their basic EG installation on the Western Power LV network. The Basic EG CTR references relevant legislation, regulation, statutory requirements, Australian Standards and the Western Australian Service and Installation Requirements (**WASIR**). To the extent that the Basic EG CTR is inconsistent with this Procedure, this Procedure prevails.

1.4.3 The WASIR provides requirements for connection of user facilities to the Western Power network. This includes relevant Australian Standards other legislation and regulations that must be followed for those connections.

## 1.5 Consultation

1.5.1 Clause 3.25.3 of the ESM Rules requires consultation with the Coordinator and AEMO when developing or amending the Procedure, prior to publishing a Procedure Change Proposal.

1.5.2 Changes to this WEM Procedure will be in accordance with the Procedure Change Process outlined in Section 2.10 of the ESM Rules.

# 2. OVERVIEW

## 2.1 General

2.1.1 The definition of a Standard Small User Facility is captured in clause 3.25.1 of the ESM Rules.

**Explanatory Note (2)**
For convenience ESM Rules clause 3.25.1 is included below and reflects the wording at the date of publication of this document.

*"A Standard Small User Facility is a Facility of the type defined in clause 2.29.1B(c) that:*

*(a) -contains an Energy Producing System installed on or after 1 May 2026 (inclusive of alterations and modifications to an existing Energy Producing System) that comprises one or more Inverter Energy Systems;*

*(b) is, or is intended to be, connected to a Distribution Network with a connection voltage less than 1000 volts; and*

*(c) has, or is intended to have, for Inverter Energy System in the Energy Producing System, a maximum aggregate capacity of 30 kVA."*

Note that the definition of a Standard Small User Facility is similar to the terminology of *Basic EG System* used in the Basic EG CTR.

2.1.2 Only IES that have been assessed and approved by Western Power shall be installed.

## 2.2 Standard Connection Service

2.2.1 A Standard Connection Service refers to a 'standard connection service (supply) Western Power' as defined in the WASIR.

**Explanatory Note (3)**
For convenience the characteristics of the Western Power Standard Connection Service, as defined in the WASIR at the time of publication of this document, are tabled below.

| Connection service | Capacity (per Phase) | Nominal voltage* |
|---|---|---|
| Single-phase | 63 A | 240 V |
| Three-phase | 32 A | 415 V |
| Split-phase | 32 A | 480 V (Phase to Phase) |

* The voltage range is changing in accordance with voltage limits published in the *Electricity Industry (Electricity System and Market) Regulations 2004 in Oct 2025, in section 55B.* However, no modification of this is reflected here for consistency with the capacity (kVA) values used for rating of equipment and services. The voltage ranges are prescribed below:

- Single-phase voltage range is 207 to 254 V, with a nominal voltage of 240 V
- Three-phase voltage range is 360 V to 440V, with a nominal voltage of 415 V

# 3. TECHNICAL REQUIREMENTS

## 3.1 Maximum capacity limits for Inverter Energy Systems in a Standard Small User Facility

3.1.1 A Standard Small User Facility connected to a Standard Connection Service must not exceed 30 kVA of aggregate rated IES capacity.

3.1.2 For multiple-phase Standard Connection Services the IES generation in the Standard Small User Facility must be balanced and meet the power system performance standards specified in Section 2.2 of the Technical Rules and Appendix 13 of the ESM Rules.

3.1.3 Where single-phase IES are used by themselves or with any combination of single-phase IES and/or three-phase IES within a Standard Small User Facility on a three-phase Standard Connection Service, the maximum generation imbalance between any phases must not exceed:

(a) 3 kVA for single energy source IES; or

(b) 5 kVA for an IES with a Battery Energy Storage System (**BESS**).

3.1.4 Where single-phase IES are used by themselves or with any combination of single-phase IES and/or two-phase IES within a Standard Small User Facility on a split-phase Standard Connection Service, the maximum generation imbalance between phases must not exceed:

(a) 1.5 kVA for single energy source IES; or

(b) 5 kVA for an IES with BESS.

## 3.2 Maximum generation limit for a Standard Small User Facility

3.2.1 The maximum generation limit for the Standard Small User Facility must not exceed the capacity of the Standard Connection Service that the Standard Small User Facility is connected to.

3.2.2 The maximum generation limit of the Standard Small User Facility may be further reduced based on the network topology where the IES may not allow the power system performance standards specified in Section 2.2 of the Technical Rules and Appendix 13 of the ESM Rules to be met.

3.2.3 Where a Standard Small User Facility's aggregate rated IES capacity exceeds the maximum generation limit, as identified in Table 3.1, Table 3.2 or Table 3.3, the Standard Small User Facility must be controlled to not exceed the maximum generation limit. Generation limit control of the Standard Small User Facility must be in accordance with AS/NZS 4777.1:2024 clause 3.4.8 and AS/NZS 4777.2:2020 clause 6.2.

3.2.4 Western Power has categorised the topologies of all the LV networks as follows:

a) Large LV networks – includes all the three-phase 415 V LV networks.

b) Small LV networks – include any of the following:

i. LV distribution transformers less than 60 kVA;

ii. Single-phase 240 V LV networks; and

iii. Split phase 240/480 V LV networks.

Note: Small LV Networks have two types – shared networks and Sole-use.

3.2.5 For Large LV Networks Table 3.1 provides the Standard Small User Facility maximum aggregate rated IES capacity limits, Generation limits and Injection limits for each Standard Connection Service type on the network category.

**Table 3.1: Maximum capacity, Generation and Injection limits for Large LV Networks**

| Connection service (Large LV Networks) | Maximum aggregate rated IES capacity | Generation limit | Injection limit | |
|---|---|---|---|---|
| | | | Static Base limit | Maximum limit(1) |
| Single-phase | 30 kVA | 15 kVA | 1.5 kW | 5 kW |
| Three-phase | 30 kVA | 8 kVA/phase | 1.5 kW | 5 kW |

Notes:

(1) A higher Injection limit may be agreed per Clause 3.4.2

3.2.6 For Small LV Networks – Shared networks Table 3.2 provides the Standard Small User Facility maximum aggregate rated IES capacity limits, Generation limits and Injection limits for each Standard Connection Service type on the network category.

**Table 3.2: Maximum capacity, Generation and Injection limits for Small LV Networks - Shared networks**

| Connection service (Small LV Networks – Shared networks) | Maximum aggregate rated IES capacity | Generation limit | Injection limit | |
|---|---|---|---|---|
| | | | Static Base limit | Maximum limit(1) |
| Single-Phase | 30 kVA | 10 kVA | 1.5 kW | 3 kW |
| Split-phase | 30 kVA | 3 kVA/phase | 1.5 kW | 1.5 kW |
| Three-phase | 30 kVA | 5 kVA/phase | 1.5 kW | 3 kW |

Notes:

(1) A higher Injection limit may be agreed per Clause 3.4.2

3.2.7 For Small LV Networks – Sole-use Table 3.3 provides the Standard Small User Facility maximum aggregate rated IES capacity limits, Generation limits and Injection limits for each Standard Connection Service type on the network category.

**Table 3.3: Maximum capacity, Generation and Injection limits for Small LV Networks - Sole-use**

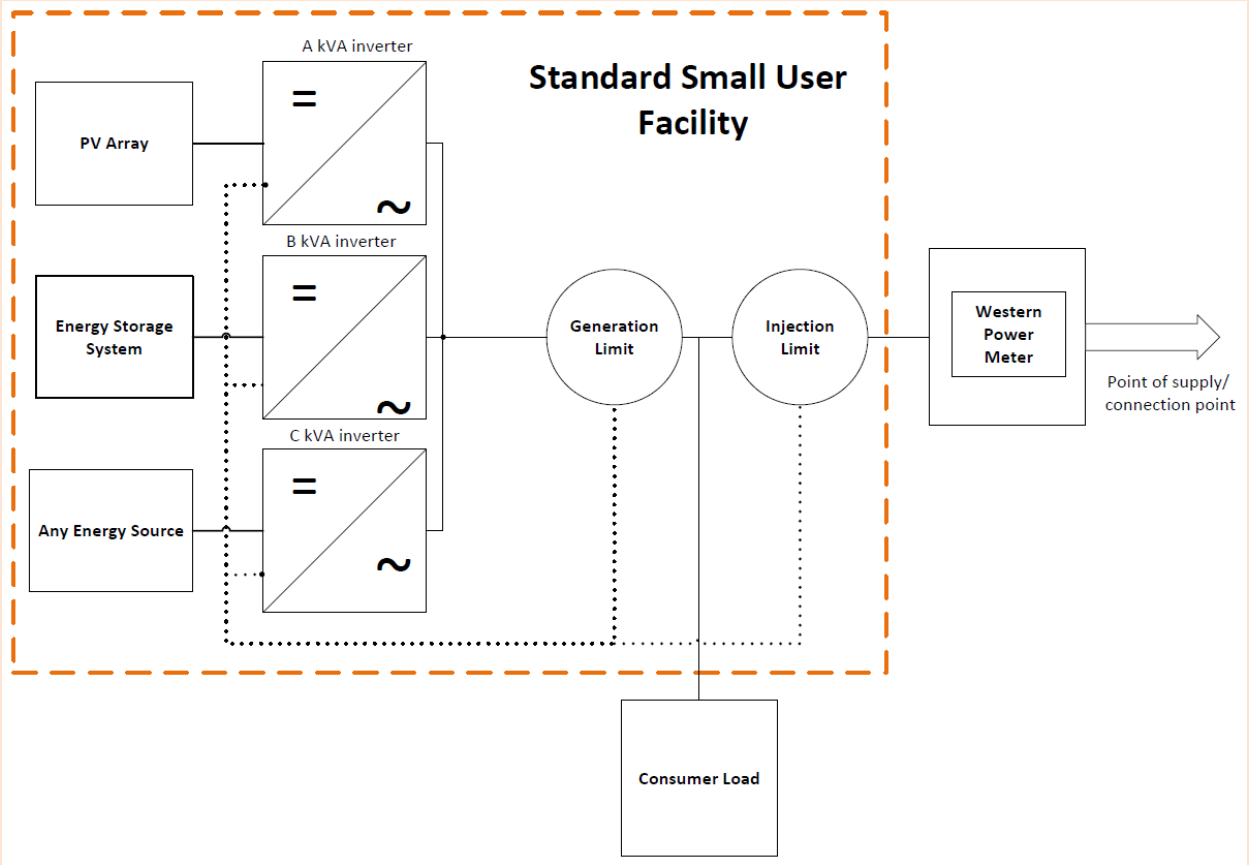
| Connection service (Small LV Networks – Sole-use) | Maximum aggregate rated IES capacity | Generation limit | Injection limit | |
|---|---|---|---|---|
| | | | Static Base limit | Maximum limit(1) |
| Single-Phase | 30 kVA | 10 kVA | 1.5 kW | 3 kW |
| Split-phase | 30 kVA | 5 kVA/phase | 1.5 kW | 1.5 kW |
| Three-phase | 30 kVA | 5 kVA/phase | 1.5 kW | 3 kW |

Notes:

(1) A higher Injection limit may be agreed per Clause 3.4.2

**Explanatory Note (4)**

The following diagram is a simplified diagram of a theoretical Standard Small User Facility to assist with the interpretation of Table 3.1, Table 3.2 and Table 3.3.




Notes:

- Aggregate rated IES capacity = "A+B+C" kVA ≤ 30kVA
  - Where A, B & C are the nominal rated inverter capacities
- Generation limit per Table 3.1, Table 3.2 or Table 3.3
- Injection limit per Table 3.1, Table 3.2 or Table 3.3

## 3.3 Requirements to comply with relevant AS/NZS 4777.2 standards relating to inverter requirements

3.3.1 The design of an IES within a Standard Small User Facility must be in accordance with all statutory requirements, the requirements of this document, WASIR, relevant Australian Standards and good electricity industry practice.

3.3.2 The IES within a Standard Small User Facility must only use inverters that have a type-test report or type-test certificate from an independent and recognised certification body showing compliance of the inverter with AS/NZS 4777.2. Evidence of this must be supplied to Western Power on request.

3.3.3 The inverter protection settings and power quality response mode setting of IES within a Standard Small User Facility must be set in accordance with Australia B region setting of AS/NZS 4777.2:2020 (amendment 2).

## 3.4 Requirements for Injection limit and/or remote disconnection

3.4.1 A Standard Small User Facility connected to a Standard Connection Service must either:

(a) have an Injection limit of 1.5 kW; or

(b) be able to respond to remote communication and control through a Market Participant responding:

i. to an Injection limit no greater than as determined in accordance with the appropriate maximum Injection limit in Table 3.1, Table 3.2 or Table 3.3, or in accordance with 3.4.2; and

ii. ensure that each IES in the Standard Small User Facility is capable of being remotely disconnected and reconnected to the Distribution Network.

3.4.2 A Market Participant, in agreement with Western Power, may receive a higher Injection limit for their Standard Small User Facility.

3.4.3 Where a Standard Small User Facility loses ability for communication and control from a Market Participant, the Standard Small User Facility must default to an Injection limit in accordance with the appropriate static base Injection limit in Table 3.1, Table 3.2 or Table 3.3.

3.4.4 A Market Participant's method for remote communication and control is to be approved by Western Power.

**Explanatory Note (5)**
Western Power does not specify a mandatory method for remote communication and control to be used by a Market Participant. However, Western Power recognises that Energy Policy WA released a *Statement of Interoperability of Distributed Energy Resources* in May 2025 that indicates that WA is aligning with the national approach and will use *Common Smart Inverter Profile – Australia* (**CSIP-AUS**) for non-contestable customer DER in the SWIS.