

# Wholesale Electricity Market

Procedure Change Proposal No:  
AEPC\_2022\_02

WEM Procedure: DER Register Information Procedure

**Published: December 2022**

[aemo.com.au](https://aemo.com.au)

New South Wales | Queensland | South Australia | Victoria | Australian Capital Territory | Tasmania | Western Australia

Australian Energy Market Operator Ltd ABN 94 072 010 327

## Executive Summary

Change requested by:	AEMO
Date submitted:	12 December 2022
Type of Procedure Change Proposal:	Amendment
Market Procedures affected:	WEM DER Register Information Procedure

The publication of this Procedure Change Proposal and the accompanying notice of call for submissions commences the Procedure Change Process conducted by AEMO under clause 2.10 of the Wholesale Electricity Market Rules (**WEM Rules**).

This Procedure Change Proposal relates to proposed amendments to the *WEM Procedure: DER Register Information* (**Procedure**).

AEMO has initiated this Procedure Change Proposal to amend the WEM DER Register Procedure to:

- incorporate electric vehicles (**EVs**) and electric vehicle charging equipment data in accordance with action 12 of the Electric Vehicle Action Plan: Preparing Western Australia's electricity system for EVs as developed by Energy Policy WA<sup>1</sup>;
- integrate changes following amendments to the Australian Standard AS/NZS 4777.2:2015 which has been superseded by AS/NZS 4777.2:2020<sup>2</sup>;
- implement minor changes that better reflect the changed operational expectations of DER in the WEM and SWIS (e.g. implementation of Emergency Solar Management<sup>3</sup>);
- improve the completeness and quality of data exchanged between Network Operators and AEMO (e.g. conveying additional context to reinforce clarity in the document; better aligning the Procedure with related technical specifications); and
- reinforce alignment to the WEM Rules, and make other minor administrative changes.

AEMO has also taken the opportunity to propose the following minor and administrative changes:

- move the Procedure to AEMO's new WEM Procedure template.
- make editorial and typographical changes.

AEMO considers the proposed changes are consistent with the WEM Rules, would better achieve Wholesale Market Objectives (a), (c) and (d), and are consistent with all other objectives.

AEMO will hold an AEMO Procedure Change Working Group (APCWG) meeting on 17 January 2023 to provide the opportunity for engagement on the proposed changes.

AEMO is seeking comment and feedback on:

- whether stakeholders consider the proposed amendments to the DER Generation Information are suitable to achieve the appropriate level of visibility for EVs and EV Storage Equipment to support Energy Policy WA's Electric Vehicle Action Plan and to balance risks to Power System Security and Power System Reliability, and the overall market;

<sup>1</sup> Available at: <https://www.wa.gov.au/government/publications/electric-vehicle-action-plan-preparing-was-electricity-system-evs>

<sup>2</sup> Available at: <https://www.standards.org.au/standards-catalogue/sa-snz/other/el-042/as-slash-nzs--4777-dot-2-colon-2020>

<sup>3</sup> Available at: <https://www.wa.gov.au/organisation/energy-policy-wa/emergency-solar-management>

- whether there is any other information that AEMO should collect as part of the DER Generation Information;
- whether stakeholders believe there are any other relevant issues that have not been considered; and
- whether the proposed changes to the Procedure effectively implement AEMO's intended outcomes.

Additionally, AEMO seeks feedback on the proposed Procedure amendment commencement date of 2 October 2023, which in AEMO's opinion, would allow sufficient time after the publication of the Procedure Change Report for Rule Participants to implement the changes required by the amended Procedure.

AEMO invites stakeholders to suggest alternative options for drafting, where they consider these would improve the proposed Procedure or better meet the Wholesale Market Objectives in section 122(2) of the *Electricity Industry Act 2004* (and clause 1.2.1 of the WEM Rules).

AEMO also requests that stakeholders identify any unintended adverse consequences of the proposed amended Procedure.

Should any stakeholder want to discuss the impact of the proposed changes with AEMO, please contact the WA DER Team at [WADERProgram@aemo.com.au](mailto:WADERProgram@aemo.com.au).

Stakeholders are invited to submit written responses on the proposed amended Procedure to [wa.marketdevelopment@aemo.com.au](mailto:wa.marketdevelopment@aemo.com.au), by 5:00 PM (Australian Western Standard Time) on 24 January 2023 in accordance with the call for submissions published with this Procedure Change Proposal.

# 1. Procedure Change Process

Clause 2.10 of the WEM Rules outlines the Procedure Change Process.

AEMO may initiate the Procedure Change Process in respect of WEM Procedures for which it is responsible by developing a Procedure Change Proposal. Rule Participants may notify AEMO where they consider an amendment or replacement of a WEM Procedure would be appropriate.

If an Amending Rule requires AEMO to develop new WEM Procedures or to amend or replace existing WEM Procedures, then AEMO is responsible for the development, amendment, or replacement of WEM Procedures so as to comply with the Amending Rule.

Clause 2.9.3 of the WEM Rules states that WEM Procedures:

- (a) must:
  - (i) be developed, amended or replaced in accordance with the process in the WEM Rules;
  - (ii) be consistent with the Wholesale Market Objectives; and
  - (iii) be consistent with the WEM Rules, the Electricity Industry Act and the WEM Regulations; and
- (b) may be amended or replaced in accordance with section 2.10 of the WEM Rules and must be amended or replaced in accordance with section 2.10 of the WEM Rules where a change is required to maintain consistency with Amending Rules.

The Wholesale Market Objectives are:

- (a) to promote the economically efficient, safe and reliable production and supply of electricity and electricity related services in the South West interconnected system;
- (b) to encourage competition among generators and retailers in the South West interconnected system, including by facilitating efficient entry of new competitors;
- (c) to avoid discrimination in that market against particular energy options and technologies, including sustainable energy options and technologies such as those that make use of renewable resources or that reduce overall greenhouse gas emissions;
- (d) to minimise the long-term cost of electricity supplied to customers from the South West interconnected system; and
- (e) to encourage the taking of measures to manage the amount of electricity used and when it is used.

AEMO has published this Procedure Change Proposal in accordance with the Procedure Change Process.

AEMO's indicative timeline for this consultation is outlined below. Dates may be adjusted depending on the number and complexity of issues raised in submissions and any meetings with stakeholders.

Process Stage	Indicative date
Publication of Procedure Change Proposal	12 December 2022
APCWG forum	17 January 2022
Closing date for submissions on Procedure Change Proposal	24 January 2023
Publication of Procedure Change Report	3 March 2023
Proposed commencement of amended WEM DER Register Information Procedure	2 October 2023

Before the closing date for submissions, stakeholders may request a meeting with AEMO to discuss the issues and proposed changes raised in this Procedure Change Proposal.

## 2. Background

### 2.1. Regulatory requirements

Clause 3.24.8 of the WEM Rules provides:

AEMO must develop and implement a WEM Procedure that specifies:

- (a) details of the DER Generation Information that Network Operators must provide to AEMO under clauses 3.24.3 and 3.24.5, including any minimum size of Small Generating Units or Storage Works for which a Network Operator is required to provide DER Generation Information;
- (b) when Network Operators must provide and update DER Generation Information;
- (c) how DER Generation Information should be provided to AEMO by Network Operators, including, for example, the format in which the information must be provided;
- (d) how the information in the DER Register is stored by AEMO;
- (e) the manner and form in which AEMO will publish details, in accordance with clause 3.24.7, on the extent to which DER Register Information has informed its load forecasts or its function for ensuring that the SWIS operates in a secure and reliable manner;
- (f) details of how AEMO will provide Network Operators with access to DER Register Information under clause 3.24.14; and
- (g) the contents, form and timing of the DER Register Report to be published by AEMO in accordance with clause 3.24.12 and how the DER Register Information to be included in that report will be aggregated.

Under clause 3.24.9, in developing and amending the WEM Procedure referred to in clause 3.24.8, AEMO must:

- (a) have regard to the reasonable costs of efficient compliance by Network Operators with the procedure compared to the likely benefits from the use of DER Generation Information as contemplated under this section 3.24;
- (b) consider any risk of unauthorised use or disclosure of confidential information or personal information that may arise from including information in the DER Register compared to the likely benefits of including that information in the register; and
- (c) subject to clause 3.24.10, comply with the Procedure Change Process.

The current version of the WEM DER Register Information Procedure commenced on 1 July 2020.

## 2.2. Context for this consultation

This Procedure Change Proposal was prompted by the Electric Vehicle Action Plan: Preparing Western Australia's electricity system for EVs<sup>4</sup> and the Distributed Energy Resources Roadmap<sup>5</sup> as developed by Energy Policy WA. Action 12 of the Electric Vehicle Action Plan outlines the present limited visibility of Electric Vehicles (EV's) and the need to ensure Electric Vehicle charging points are captured within the DER Register to assist with improving forecasting around the impacts of EV's on the grid.

To be taken as a step toward improving visibility of EV's and charging devices in the power system AEMO has been assigned as part of the Electric Vehicle Action Plan with updating the DER Register system and information flow processes to incorporate Electric Vehicle and Electric Vehicle charger information (Electric Vehicle Storage Equipment or **EVSE**). AEMO is aiming to complete amendments to the WEM DER Register Information Procedure by the end of the first quarter of 2023 with system updates to be completed mid-year 2023 and testing of data exchanges between AEMO and Western Power to be completed subsequently, consistent with the Electric Vehicle Action Plan.

DER Register Information is defined in the WEM Rules as information in relation to a Small Generating Unit and Storage Works with an export capacity of less than 5 MW. Storage Works and Storage Activities are defined in the Electricity Industry Act<sup>6</sup> however EVs and EV charging points are not currently captured as part of the DER Register information exchanged between Network Operators and AEMO.

In February 2021, the Distributed Energy Integration Program EV Data Availability Taskforce<sup>7</sup> released recommendations around EV data requirements. These recommendations were reviewed when considering the amendments to the WEM DER Register Information Procedure, and defining what additional DER Generation Information Network Operators should be required to provide to AEMO. AEMO also undertook initial consultation with Western Power prior to specifying this data.

In addition to EVs, AEMO recognises that the operational nature of DER is changing in the SWIS and WEM. New systems and control capabilities have been implemented that may expose the SWIS (given its isolation) to broader power system and market impacts. The proposed amendments therefore include additional DER Generation Information categories to provide greater visibility of and insights into these operational arrangements.

Since the implementation of the WEM DER Register in 2020 there have also been changes to DER installation standards and the format of the DER Generation Information required to be provided under the Procedure. In particular the revised AS/NZS 4777.2 standard significantly standardised network connection requirements, enabling the Procedure to require less information from Network Operators for inverter based DER equipment installed after December 2021.

Administrative changes are also proposed with the aim of improving clarity and providing additional clarification in relation to the DER Generation Information specified in the Procedure.

---

<sup>4</sup> Available at: <https://www.wa.gov.au/government/publications/electric-vehicle-action-plan-preparing-was-electricity-system-evs>

<sup>5</sup> Available at: [https://www.wa.gov.au/system/files/2020-04/DER\\_Roadmap.pdf](https://www.wa.gov.au/system/files/2020-04/DER_Roadmap.pdf)

<sup>6</sup> Available at: [https://www.legislation.wa.gov.au/legislation/prod/filestore.nsf/FileURL/mrdoc\\_42684.pdf/\\$FILE/Electricity%20Industry%20Act%202004%20-%20%5B03-b0-00%5D.pdf?OpenElement](https://www.legislation.wa.gov.au/legislation/prod/filestore.nsf/FileURL/mrdoc_42684.pdf/$FILE/Electricity%20Industry%20Act%202004%20-%20%5B03-b0-00%5D.pdf?OpenElement)

<sup>7</sup> Available at: [https://aemo.com.au/-/media/files/stakeholder\\_consultation/working\\_groups/der-program/deip-ev/2021/deip-ev-data-availability-taskforce-report.pdf?la=en](https://aemo.com.au/-/media/files/stakeholder_consultation/working_groups/der-program/deip-ev/2021/deip-ev-data-availability-taskforce-report.pdf?la=en)

## 2.3. Consultation

AEMO will hold an AEMO Procedure Change Working Group (APCWG) meeting on 17 January 2023 to provide the opportunity for engagement on the proposed changes. Any stakeholder wishing to attend the APCWG meeting or discuss the proposed changes with AEMO, should contact AEMO at [WEM.APCWG@aemo.com.au](mailto:WEM.APCWG@aemo.com.au).

## 3. Proposed procedure change

### 3.1. Detail of the proposed procedure changes

#### 3.1.1. Adapting to incorporate other DER technologies

The DER Register was developed to accommodate Small Generation Units and Storage Works, being uniformly defined by their ability to inject energy into the SWIS. As a result, references to equipment capacities generally only referred to generation (Storage Works were assumed to inject and withdraw electricity symmetrically). The introduction of electric vehicles as a form of Storage Works, and EVSE as a 'charge only' technology has led to a revised approach to DER Generation Information.

The amended Procedure now reflects that all DER can be characterised with three different operating modes, that could all be provided from a single Small Generating Unit or Storage Works:


- Injection of electricity (i.e. generation or export)
- Withdrawal of electricity (i.e. load, consumption or import) and
- Storage of electricity (i.e. potential energy stored as electrical energy)

In light of these developments, AEMO seeks to introduce new fields to the DER Register, as outlined in Table 1 below. AEMO considers that these are all fundamental characteristics which are reasonable for Network Operators to collect and hold in relation to every DER installation. The additional DER Generation Information added by these amendments will enable a deeper understanding of, and the extent to which, controllable load (in the form of EVSE) is installed across the SWIS.

EVs are anticipated to be a significant additional source of electricity demand over the coming 5-10 years, as EV prices fall and global business and government policies support and promote sales of EVs. The additional EV information provided will provide greater operational visibility and improve AEMO's ability to understand the potential for controllable generation and load capability from DER.

Table 1 provides an overview of changes to Appendix A (DER Register Data Model) to incorporate other types of DER technologies (e.g. Electric Vehicles with Vehicle to Grid capability, Electric Vehicles with no Vehicle to Grid capability, Hybrid Inverters).

Table 1

Installation – Level 1 Data
<p>Existing Data Category 'Approved Capacity' has been modified to capture both generation and load capacity:</p> <ul style="list-style-type: none"> <li>• Approved DER Generation Capacity.</li> <li>• DER Load Capacity (new Data Category to capture loads).</li> </ul>

AC Connection – Level 2 Data
<p>Existing Data Category 'AC Equipment Type' has been renamed to 'DER Equipment Type'.</p> <p>DER Equipment Types have been modified to capture other types of technology equipment:</p> <ol style="list-style-type: none"> <li>1. Battery Storage</li> <li>2. Controllable Load (e.g. hot water tanks, pool pumps, heating ventilation and air-conditioning)</li> <li>3. Hybrid Inverter (e.g. DC-Coupled, Solar PV &amp; Battery Storage/EV)</li> <li>4. Electric Vehicle V2G (Vehicle to grid enabled)</li> <li>5. Electric Vehicle (no V2G capability)</li> <li>6. Rotating Machine</li> <li>7. Solar PV</li> </ol> <p>The above 'DER Equipment Types' would replace the current 'AC Equipment Types' of 'Inverter' and 'Other'.</p> <p>Subsequently the 'Applies to category' has been updated to clarify the 'DER Equipment Type' in which a 'Data Category' and/or a 'Data Sub Category' applies to (e.g. applies to 'All Equipment Types' or applies to a specific Equipment Type e.g. 'if Equipment Type = Electric Vehicle').</p> <p>Existing Data Categories have been modified to not limit applicability to 'inverters' and to apply to 'equipment' more generally, this is to support information to be provided for other types of technology equipment (e.g. EV charging equipment), including:</p> <ul style="list-style-type: none"> <li>• 'Inverter Manufacturer' has been renamed to 'Equipment Manufacturer'.</li> <li>• 'Inverter series' has been renamed to 'Equipment Series'.</li> <li>• 'Inverter model number' has been renamed to 'Equipment Model Number'.</li> <li>• 'Inverter serial member' has been renamed to 'Equipment serial number'.</li> <li>• 'Status' has been renamed to 'Equipment Status'.</li> </ul> <p>Existing Data Category 'Inverter Device Capacity' has been renamed and modified to not limit applicability to inverters to capture both the injection and withdrawal capacity of the equipment:</p> <ul style="list-style-type: none"> <li>• Equipment Injection Capacity.</li> <li>• Equipment Withdrawal Capacity.</li> </ul> <p>A new Data Category has been incorporated to capture 'Electric Vehicle Supply Equipment Ownership Status' (to be provided as either as private, public, fleet).</p> <p>Existing Data Category 'What standards apply to the inverter' has been renamed to 'What standards apply to the equipment'. This is to support information to be provided for other types of technology equipment (e.g. EV charging equipment).</p>



### AC Connection – Level 2 Data

Comments have also be updated to include other examples of applicable Standards (e.g. applicable to DC EV supply equipment and electric vehicles).



### Device – Level 3 Data

Existing Data Category 'Device Type' which is used to indicate the primary technology used in the DER device has been amended and extended to include other device technology types such as controlled load (including electric vehicle chargers and storage including vehicle to grid electric vehicle).

1. Solar PV
2. Storage (including vehicle to grid electric vehicle)
3. Controlled load (including electric vehicle chargers)
4. Co / Tri-generation
5. Liquid fuel / Gas
6. Small hydro
7. Small wind
8. Waste to energy

The above Device Types would replace the current Device Types of 'Fossil', 'Hydro', 'Wind', 'Solar PV', 'Renewable/Biomass/Waste', 'Geothermal', 'Storage', 'Other'.

As a result of the proposed modifications above, it is intended to simplify the capture of the existing Data Sub Category 'Device Sub Types' by removing this and replacing it with an optional comments field which can be used to provide details of other types of devices which are not described in the above listing of Device Types.

Existing Data Category 'Nominal Rated Capacity' has been amended to capture both the generation and load nominal rated capacities of the device:

- Nominal Rated Generation Capacity (renamed to specify it is to apply to generation).
- Nominal Rated Load Capacity (new Data Category, not currently captured).
- Nominal Storage Capacity (existing Data Category).

### 3.1.1. Adapting to changing operational expectations


New technical requirements that significantly influence the operational characteristics of DER have been introduced in the SWIS since the implementation of the DER Register. These requirements are not always visible to AEMO. For example Network Operators routinely apply limitations on the export of solar PV from customer connection points to the Network, and the Emergency Solar Management scheme introduces new operational capabilities which are not visible to AEMO.

The amended Procedure seeks to increase AEMO's visibility by including additional information for these operational characteristics in the DER Generation Information required to be provided under the Procedure. AEMO's view is that when applied at large scale, as is being done in the SWIS, these characteristics can significantly influence AEMO's ability to forecast system conditions and understand potential risks. For example the introduction of Emergency Solar Management brings with it a high dependency on inverter equipment manufacturer control systems. By receiving information on the mechanisms used for Emergency Solar Management, AEMO can better understand any potential risks.

AEMO proposes to include additional data fields in the amended Procedure to support these new operational characteristics. Typically this information is either included in the Network Operator's own conditions of approval, or provided to or received by the Network Operator from other sources. AEMO considers that any additional costs incurred by Network Operators in providing AEMO with this information will be outweighed by the benefit of providing increased visibility for AEMO's forecasting and operational functions.

Table 2 provides an overview of changes to Appendix A (DER Register Data Model) to adapt to changing and operational expectations

**Table 2**

Installation – Level 1 Data
Modified to capture both Import and Export Limits: <ul style="list-style-type: none"> <li>• Import Limit (new Data Category, Import Limit is not currently captured).</li> <li>• Export Limit (this is an existing Data Sub Category which has been amended to become a Data Category to not limit its association to be provided where Central Protection and Controls are Enabled).</li> </ul>

AC Connection – Level 2 Data
A new Data Category has been incorporated to capture 'Authorised Agent' where enabled, the name of the entity facilitating the control of the DER equipment. This is as defined in the Network Operator's connection and DER management requirements.
A new Data Category has been incorporated to capture 'DER Management Method' where required by the Network Operator, the method of control of the DER Equipment used by the Authorised Agent (e.g. where installed, meter-based isolation, internet based).

### 3.2. Adapting to changing standards

Historically, network service providers and operators across Australia have implemented local connection requirements for DER, and in preference to requirements that may be stated in applicable Australian Standards. This approach has likely enabled greater penetration of DER across each network, whilst respecting the local network conditions. This has created a challenge for data collection for the DER Register, as specific data fields needed to be provided by individual Network Operators, rather than standard reference sources.

This issue has largely been overcome with the implementation of the revised Australian Standard AS/NZS 4777.2:2020<sup>8</sup>, which creates uniform requirements across 'regions' of Australia for all small scale inverter-based DER connected at low voltage and rated below 200 kVA. This new uniform approach enables the DER Generation Information provided to AEMO to be reduced, given that the selection of the appropriate region will enable AEMO to refer to the AS/NZS 4777.2:2020 standard.

Despite this, it is feasible that Network Operators may again implement their own requirements and override requirements set out in the updated AS4777 standard. The Procedure amendments implement a 'by exception' process to accommodate this in two ways. Firstly, the amended Procedure will require Network Operators to inform AEMO if they implement a new requirement (paragraphs 4.2.1 and 4.2.2).

<sup>8</sup> Available at: <https://www.standards.org.au/standards-catalogue/sa-snz/other/el-042/as-slash-nzs--4777-dot-2-colon-2020>

Secondly, the data model includes a free text field where the Network Operator must provide the specific amended requirement as DER Generation Information.

It is also feasible that a Network Operator could become aware of DER Generation Information for DER that was commissioned prior to the new Australian Standard coming into effect. Hence the existing data fields have been retained in the Procedure to support the completeness and accuracy of DER Generation Information for DER installed prior to the updated AS4777 standard coming into effect.

The WEM Rules do not limit the DER Register to inverter-based technologies; the DER Generation Information requirements also apply to Small Generating Units that are rotating machines and rated below 5 MW, despite these being less common. Hence, the existing fields for the relevant standard and settings for this DER Equipment type remain in the amended Procedure.

The proposed amendments remove significant complexity associated with the provision of individual DER Generation Information for the vast majority of DER installed after December 2021. As a result, these changes should result in lower costs of compliance for most Network Operators.

These proposed amendments are described in more detail in the following sections.

### **3.2.1. Australian Standard AS/NSZ.4777.2.2020**

The AS/NSZ.4777.2:2020<sup>9</sup> Grid Connection of Energy Systems via Inverters (which came into effect from 18 December 2021) introduced regional settings for inverter based resources, with a requirement that all new inverter based resources connected to the South West Interconnected System apply region 'Australia B' settings.

The DER Register has been updated to capture the region setting as part of Appendix A (DER Register Data Model) at the AC Connection Level 2 Data. Where the Network Operator provides the 'Region Setting' as Australia B, AEMO will interpret the Australia B settings as set and published in the Australian Standard AS/NZS.4777.

Table 3 provides an overview of changes to Appendix A (DER Register Data Model) to incorporate the Australian Standard AS/NSZ.4777.2.2020.

---

<sup>9</sup> Available at: <https://www.standards.org.au/standards-catalogue/sa-snz/other/el-042/as-slash-nzs--4777-dot-2-colon-2020>

Table 3

AC Connection – Level 2 Data
<p>A new Data Sub Type 'Region Setting' has been incorporated under the Data Category 'What Standards Apply to the Equipment' to capture the applicable region setting as per the Australian Standard AS/NZS.4.777.2:2020.</p> <p>'Australia B' is to be provided as the 'Region Setting' applicable for the South West Interconnected System.</p> <p>Subsequently the 'Applies to category' has been updated to clarify the 'DER Equipment Type' in which the "Region Setting" applies to. (e.g. if DER Equipment Type = Electric Vehicle V2G, Battery Storage, Solar PV).</p>
<p>A new Data Sub Category has been incorporated to capture 'Additional Network Operator Requirements'.</p> <p>This is to be provided by Network Operators where additional or alterations of prescribed settings in the relevant Standard have been imposed on the AC Connection equipment.</p> <p>Should Network Operators impose requirements onto the AC Connection equipment in additional to or in alteration of those prescribed by relevant Standards, this information must be provided to AEMO in accordance with paragraphs 4.2.1 and 4.2.2.</p> <p>Network Operators must provide comments (free text) detailing the variation, including the Standard name, version, paragraph reference number, setpoint naming as referenced in the relevant Standard and the divergent set point values.</p>

### 3.2.2. Australian Standard AS/NZS.4777.2:2015

The Australian Standard AS/NZS.4777.2:2015 <sup>10</sup> has been superseded by AS/NZ.4777.2:2020.

The current DER Generation Information captured in Appendix A (DER Register Data Model) under the AC Connection Level 2 Data has been amended to outline applicable 'Data Categories' and 'Data Sub-Categories' which must be provided where this standard is still relevant to the AC Connection equipment (equipment commissioned prior to AS/NZS.4777.2:2020 coming into effect). They are not required to be provided where the superseded AS/NZS.4777.2:2020 standard applies.

Table 4 provides an overview of changes to Appendix A (DER Register Data Model) to modify the superseded Australian Standard AS/NZS.4777.2:2015.

Table 4

AC Connection – Level 2 Data
<p>Existing Data Categories and Data Sub Categories included in the register and outlined to apply 'as described in AS4777.2:2015' have been modified to explain they are to apply where this standard is relevant to the AC Connection equipment (commissioned prior to the new standard AS/NZS.4777.2:2020 came into effect).</p>

<sup>10</sup> Available at: <https://www.standards.org.au/standards-catalogue/sa-snz/other/el-042/as-slash-nzs--4777-dot-2-colon-2015>

### 3.2.2. Other Standards

Minor amendments have been updated to Appendix A (DER Register Data Model) at the AC Connection Level 2 Data to existing Data Field Categories and Sub-Categories which apply to 'Non-Inverter Equipment Types' to modify naming conventions and to clarify these requirements are applicable to 'Rotating Machines'.

Table 5 provides an overview of changes to Appendix A (DER Register Data Model) to clarify existing 'Non-Inverter' Data Category requirements.

Table 5

AC Connection – Level 2 Data
<p>As a result of proposing revised DER Equipment Types, existing Data Field Categories which apply to 'non-inverters' have been amended to clarify that they are applicable where the Equipment Type = Rotating Machine.</p>
<p>Minor amendments have also been updated to add context to outline the requirements when to provide these Data Field Categories and Data Sub-Categories (e.g. to be provided when the Rotating Machine Frequency Response Mode is enabled).</p>

### 3.3. Other amendments

In undertaking the proposed amendments AEMO has also taken the opportunity to revise aspects of the Procedure where revisions were identified that would reinforce the completeness and quality of the DER Generation Information received by AEMO. For example where AEMO has identified areas of ambiguity or where changes are needed to align to AEMO's current Procedures.

These amendments are generally minor as they are either proposed to enact other changes subject to this consultation, or they are consistent with, and clarify the current DER Generation Information Procedure. AEMO's view is that these amendments will not materially impact Network Operators' costs to comply with the Procedure.

The specific amendments are described below.

#### 3.3.1. Amendments to definitions:

- Amendments to Table 1. (Definitions) to incorporate new definitions (inclusive of Connection Agreement, Electric Vehicle, Electric Vehicle Supply Equipment, Standards, Vehicle to Grid) and minor modifications to existing definitions (Connection Point, NMI and Application Programming Interface).

#### 3.3.2. Amendments to the Procedure paragraphs and body:

- Amendments to paragraph 1.1.4 (Purpose and Scope) to align with obligations as specified in clause 3.24.8 of the WEM Rules.
- Amendments to paragraph 2.1 (DER Register) to outline that AEMO will publish the WEM DER Register Technical Specification on the WEM Website.
- Amendments to paragraph 4.4 (Assessing the Accuracy of Information) to clarify an exception management process for communication between AEMO and Network Operators.

- Amendments to paragraphs 4.1, 4.3 and Appendix B (Existing DER Generation Information) which describes the DER Generation Information which was required to be provided by 30 September 2020 to make wording throughout retrospective.

### 3.3.3. Amendments to Appendix A DER Register Data Model:

- Amendments to data model descriptions.
- Amendments to the descriptions in the 'Data Category', 'Data Sub Type Category', 'Applies to Category' and 'Other Comments' columns have been updated.
- Addition of a new column (mandatory/optional) to outline data fields which are categorised as mandatory or optional to align to the category in which it applies to ('Applies to Category' column). The current Procedure advises 'all fields are mandatory, where relevant', the purpose of this additional column and modifications to the existing column 'Applies to Category' is to ensure the details of the DER Generation Information and when it is to be exchanged is certain.

Amendments to further describe the information in the different information levels and the general rules to support the interpretation of the data model.

### 3.3.4. Amendments to other Appendices:

- Minor amendments to Appendix C. DER Register Report to replace AC Connection Type with newly proposed 'DER Equipment Type' naming convention.
- A measurements abbreviations table has been created as part of Appendix D and measurement abbreviations have been removed from Definitions Table 1.
- Appendix E has been incorporated in alignment with AEMO's revised Procedure Template to outline the relevant clauses of the WEM Rules under which the Procedure has been developed. Subsequently paragraphs within the Procedure which are an exact copy of the current WEM Rule clauses have been removed and or amended within the Procedure and captured in Appendix E to minimise the need to amend the Procedure if changes occur to the WEM Rules in the future (e.g. paragraphs 3.1.1, 3.1.2, 6.1.1, 7.2.1, 7.1.5.).

## 3.4. Proposed drafting

AEMO has published a draft version of the DER Register Information Procedure incorporating the changes AEMO proposes for consultation.

Clean and change-marked versions are available [here](#).

## 4. Other matters

AEMO has also taken the opportunity to propose the following minor and administrative changes:

- Adapt the Procedure to AEMO's new WEM Procedure template.
- Make editorial and typographical changes.

## 5. Summary of matters for consultation

AEMO is seeking comment and feedback on:

- whether stakeholders consider the proposed amendments to the DER Generation Information are suitable to achieve the appropriate level of visibility for EVs and EVSEs to support Energy Policy WA's Electric Vehicle Action Plan and to balance risks to Power System Security and Power System Reliability, and the overall market;
- whether there is any other information that AEMO should collect as part of the DER Generation Information;
- whether stakeholders believe there are any other relevant issues that have not been considered; and
- whether the proposed changes to the Procedure effectively implement AEMO's intended outcomes.

Additionally, AEMO seeks feedback on the proposed Procedure amendment commencement date of 2 October 2023, which in AEMO's opinion, would allow sufficient time after the publication of the Procedure Change Report for Rule Participants to implement the changes required by the amended Procedure.

AEMO invites stakeholders to suggest alternative options for drafting, where they consider these would improve the proposed Procedure or better meet the Wholesale Market Objectives in section 122(2) of the Electricity Industry Act 2004 (and clause 1.2.1 of the WEM Rules).

AEMO also requests that stakeholders identify any unintended adverse consequences of the proposed amended Procedure.

Should any stakeholder want to discuss the impact of the proposed changes with AEMO, please contact the WA DER Team at [WADERProgram@aemo.com.au](mailto:WADERProgram@aemo.com.au).

Submissions on these and any other matter relating to this Procedure Change Proposal must be made in accordance with the accompanying notice of call for submissions by 5.00 pm (Perth time) on 24 January 2023.