

---

# **Guide to DER Register Installer Portal**

---

**0.03 Draft**  
**February 2020**

Provides information to Account-holders on how to use DER Register Installer Portal to edit DER records, AC Connections, and DER Devices.

# Important Notice

## **PURPOSE**

This Guide to DER Register B2C Portal (Guide), prepared by AEMO, provides guidance for DERR under Rule 3.7E of the NER (Rules).

## **NO RELIANCE OR WARRANTY**

This document does not constitute legal or business advice, and should not be relied on as a substitute for obtaining detailed advice about the National Gas or Electricity Law, the Rules or any other applicable laws, procedures or policies. While AEMO has made every effort to ensure the quality of the information in this Guide, neither AEMO, nor any of its employees, agents and consultants make any representation or warranty as to the accuracy, reliability, completeness, currency or suitability for particular purposes of that information.

## **LIMITATION OF LIABILITY**

To the maximum extent permitted by law, AEMO and its advisers, consultants and other contributors to this Guide (or their respective associated companies, businesses, partners, directors, officers or employees) are not liable (whether by reason of negligence or otherwise) for any errors, omissions, defects or misrepresentations in this document, or for any loss or damage suffered by persons who use or rely on the information in it.

## **TRADEMARK NOTICES**

Microsoft is a trademark of Microsoft Corporation in the United States and/or other countries.  
Oracle and Java are registered trademarks of Sun Microsystems, Inc. in the U.S. and other countries.

## **DISTRIBUTION**

Available to the public.

## **DOCUMENT IDENTIFICATION**

Business custodian: EMS  
IT custodian: IT Development  
Prepared by: Technology, Technical Writers

## **VERSION HISTORY**

0.1 Created Guide to DER Register B2B Portal.  
0.2 Added sections on new DER record, AC connections and DER Devices, and downloading Receipts.  
0.3 Added sections on editing existing DER records, adding new AC Connections and DER Devices and resolving exceptions  
Last update: Thursday, 20 February 2020 5:36 PM

## **DOCUMENTS MADE OBSOLETE**

The release of this document changes any previous versions of Guide to DER Register B2C Portal.

## **FEEDBACK**

Your feedback is important and helps us improve our services and products. To suggest improvements, please contact AEMO's support hub.

# Contents

|   |           |
|---|-----------|
| <b>Introduction</b>   | <b>1</b>  |
| Purpose   | 1         |
| Audience  | 1         |
| How to use this guide   | 1         |
| What's in this guide  | 2         |
| <b>Need to Know</b>   | <b>3</b>  |
| System requirements   | 3         |
| Related rules and procedures                                      | 3         |
| Glossary  | 3         |
| Accessing the DER Register Portal (Account-holders)               | 4         |
| <b>Accessing a Job (DER Record)</b>                               | <b>10</b> |
| Reviewing and Editing DER Installation Data (Existing DER Record) | 12        |
| Editing Existing AC Connections                                   | 15        |
| Editing Existing DER Devices                                      | 18        |
| <b>Downloading Receipts</b>                                       | <b>23</b> |
| <b>Managing AC Connections and DER Devices</b>                    | <b>26</b> |
| Adding AC Connections   | 26        |
| Adding DER Devices  | 30        |
| Linking DER Devices to AC Connections                             | 34        |
| Resolving Exceptions  | 38        |
| <b>Appendix: DER Register Terms</b>                               | <b>41</b> |
| AC Connections and DER Devices                                    | 41        |
| DER Register Actors   | 42        |
| DER Record Status   | 42        |
| <b>Appendix: First Validation Pre-submission</b>                  | <b>43</b> |
| <b>Appendix: Second Validation Pre-submission</b>                 | <b>48</b> |

# Introduction

|                                    |          |
|------------------------------------|----------|
| <b>Purpose</b> .....               | <b>1</b> |
| <b>Audience</b> .....              | <b>1</b> |
| <b>How to use this guide</b> ..... | <b>1</b> |
| <b>What's in this guide</b> .....  | <b>2</b> |

## Purpose

This guide explains how Account-holders use the DER Register Portal to:

- Access installation jobs
- Update and add connection and device information to DER records
- View receipts generated for completed jobs

## Audience

This guide is relevant to Account-holders who require an understanding of the DERR Portal. Account holders can be a DER installer or someone acting on behalf of the DER installer.

## How to use this guide

- This guide is written in plain language for easy reading.
- Where there is a discrepancy between the National Electricity Rules (NER), and information or a term in this document, the National Electricity Rules (NER) takes precedence.
- Where there is a discrepancy between the Procedures, and information or a term in this document, the Procedures take precedence.
- **Text in this format** indicates there is a resource on AEMO's website, for details, see [References](#).

## What's in this guide

[Introduction on the previous page](#) provides an introduction of DERR Portal .

[Need to Know on the next page](#) lists the prerequisites and provides the entity required for Participant User access.

[About the DERR Portal \(for Account-holders\) on page 1](#) provides information about accessing the DERR Portal, DERR actors and DER Record status.

[Accessing a Job \(DER Record\) on page 10](#) describes how Account-holders can access existing installation jobs, edit installation data and add or update AC connections and DER devices.

[Linking DER Devices to AC Connections on page 34](#) describes how to link DER devices under appropriate AC connections.

[Downloading Receipts on page 1](#) provides information on how to download installation receipts.

[Glossary on the next page](#) explains the terms and abbreviations used throughout this guide.

# Need to Know

|   |   |
|---|---|
| System requirements .....                                 | 3 |
| Related rules and procedures .....                        | 3 |
| Glossary .....  | 3 |
| Accessing the DER Register Portal (Account-holders) ..... | 4 |

## System requirements

The DERR Portal runs on both Windows and UNIX-like operating systems and requires:

- A compatible web browser (Google Chrome recommended).
- A mobile device (smartphone/tablet) with access to the internet

## Related rules and procedures

The following rules and procedures relate to DERR:

[DER Register Information Guidelines](#)

[DER Register Final Report](#)

## Glossary

### **Account-holder**

Any person (non-NSP) holding an account with AEMO that allows access to the DER Register. This may be a DER installer or someone acting on behalf of a DER installer.

### **AEMO**

Australian Energy Market Operator

### **AEST**

Australian Eastern Standard Time

**CEC**

Clean Energy Council

**DER**

Distributed Energy Resources

**DERR**

DER Register

**DNSP**

Distribution Network Service Provider

**MSATS**

Market Settlement and Transfer Solution for retail electricity

**NEM**

National Electricity Market

**NER**

National Electricity Rules

**NMI**

National Metering Identifier for electricity meters

**NSP**

Network Service Provider

## Accessing the DER Register Portal (Account-holders)

### Before you begin

Before accessing the DER Register Portal, you will need to create an account using:

- An active email address (to be used for verification and as the User ID).
- A DER Installation Job number
- A DER Installation NMI

**Note:** You must have a current installation job in order to access the DERR Portal and create an account.

### Accessing the DER Register Portal

On your mobile device browser, go to <https://derr.aemo.com.au>.

The Account Login page displays.

**AEMO**  
AUSTRALIAN ENERGY MARKET OPERATOR

## Account Login

Welcome to the Australian Energy Market Operator's Distributed Energy Register

The DER Register is a national database of Distributed Energy Resources or DER. It contains information about small generation assets like rooftop solar, grid-connected batteries and other small generators.

AEMO's role is always to manage the power grid for all Australians. The massive growth in DER in Australia means that at times the power grid is now more reliant than ever on these energy sources, so we need to understand them. We will use this information to support the effective and efficient operation of the electricity system.

Thank you for your contribution to this database. DER is emerging as a critical to the ongoing integrity of the grid. Providing accurate data here will enable AEMO to consider DER to the full extent possible. You can log into your account below.

Email Address

Password

[Forgot your password?](#)

**Sign in**

[Don't have an account? Sign up now](#)

Using this page, you can:

- Sign up for an account if you do not have an existing account. For more information, refer to [Signing up for an account below](#).
- Log in using your account details. For more information, refer to [Logging in using your account details on page 8](#)

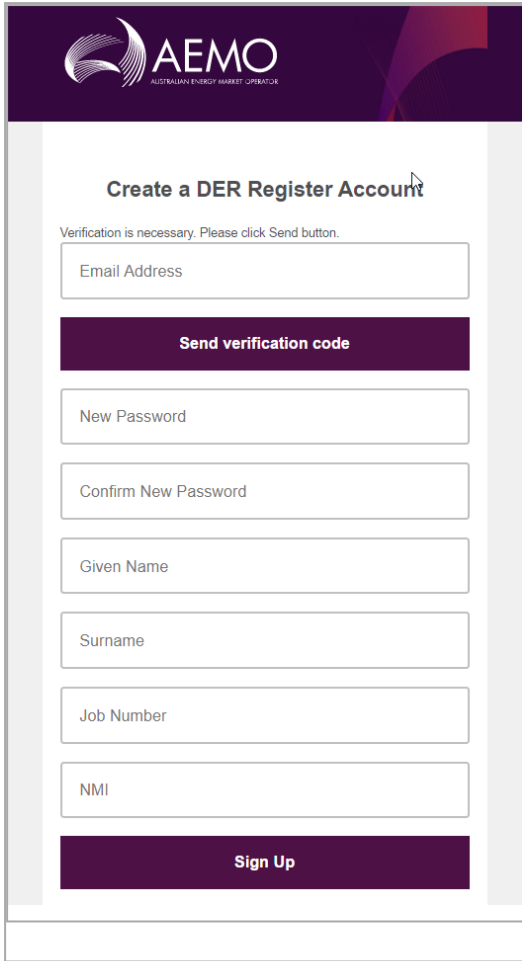
## Signing up for an account

When you access the DER Register Portal for the first time, you can sign up and create a new account using the Account Login page.

### To sign up for an account

1. On the Account Login page, click **Sign up now**. The **Create a DER Register Account** page displays.





The screenshot shows the AEMO logo at the top left, with the text 'AEMO AUSTRALIAN ENERGY MARKET OPERATOR'. Below the logo is the heading 'Create a DER Register Account' with a mouse cursor pointing to it. A note states 'Verification is necessary. Please click Send button.' The form contains several input fields: 'Email Address', 'New Password', 'Confirm New Password', 'Given Name', 'Surname', 'Job Number', and 'NMI'. There are two dark purple buttons: 'Send verification code' and 'Sign Up'.

- In the Email Address field, enter your email address and click **Send verification code**. An email is sent to your nominated address with a verification code.  
**Note:** It may take a few minutes to receive the verification code email.

The screenshot shows the AEMO logo at the top left. Below it, the heading 'Create a DER Register Account' is centered. Underneath the heading, a message reads 'Verification is necessary. Please click Send button.' Below this message is a text input field labeled 'Email Address'. At the bottom of the form, a dark purple button with the text 'Send verification code' is highlighted with a red rectangular border.

The page updates to display the Verification code fields and additional options.

The screenshot shows the same heading 'Create a DER Register Account'. Below the heading, a message reads 'Verification code has been sent to your inbox. Please copy it to the input box below.' Below this message is a blurred text input field. Underneath is another text input field labeled 'Verification code'. At the bottom of the form, there are two dark purple buttons: 'Verify code' and 'Send new code'.

- Once you have received the verification code, enter it in the Verification code field, and click **Verify code**.  
**Note:** The code expires after 45 mins. If the code expires, click **Send new code** to regenerate a new verification code.

4. Once the verification code is accepted, enter your password (twice to reconfirm), given name, surname, job number and NMI.

Ensure that your passwords match the following conditions:

- Must be between 8-64 characters,
- Contain 3 out of 4 of the following:
  - Lowercase characters,
  - Uppercase characters,
  - Digits (0-9), and
  - One or more of the following symbols: @ # \$ % ^ & \* - \_ + = [ ] { } | \ : ' , ? / ` ~ " ( ) ;

**Note:** Passwords are validated as you enter them on the login screen. If the password does not meet these conditions, a warning message is displayed on the login screen.


**All the fields on the sign-up page are mandatory.**

5. Click **Sign Up** to complete the sign up process.
  - a. If the sign up process is successful, you are logged in and the DER Register home page displays.
  - b. If the sign up process is unsuccessful, a relevant error message displays on the login screen. Resolve the error and try again.
 If repeated attempts fail, contact AEMO SupportHub for troubleshooting the error.

## Logging in using your account details

Once you have created an account, log in using your email address & password and click **Sign In**. The DER Register B2C Portal home page displays:


- **Access Jobs** - Allows you to access and update an existing Job (DER Record). You can also edit AC Connections and DER Devices information.
- **Receipts** - Once a DER device has been installed and recorded in the DER Register, Account-holders can view and download a receipt for the installation.

Access Job Receipts LOGOUT

---

## Access Job

Please input your NMI and Job Number details to access the job details.  
If you don't have these details, please contact the NSP

Access Job Receipts LOGOUT

---

## Download Receipt

Please input your NMI ,Job Number ,Installer ID details to  
access the Receipt details. If you don't have these details,  
please contact the NSP

# Accessing a Job (DER Record)

Account-holders can access a specific Job by entering the correct combination of the NMI and Job number, as recorded in the DER Register.

Accessing a DER Record using a job number is valid for 365 days from the date of submitting the job number for the first time.

When the Account-holder accesses a DER Record using the correct combination of an NMI and the Job number, and a receipt is generated for that job number, this access is blocked, until the NSP grants access. Granting access for a job number will reset the allowed time for accessing the DER Record.

Using the DER Register B2C Portal, Account-holders can:

- Retrieve existing DER record connection application parameters for **Initial** and **Idle** records and edit these details,
- Retrieve currently **Confirmed** and **Conditional** DER installation data for an NMI and edit them, if required,
- View the NSP's contact details if provided by NSP (Email, Role and Phone number), and,
- Save modified installation data, without submitting. The system will retain all changes made when the Account-holder logs back in.

Account-holders cannot view **Confirmed** and **Conditional AC Connections** and **DER Devices** with the **Decommissioned** status.

## Who can access Job (DER record)

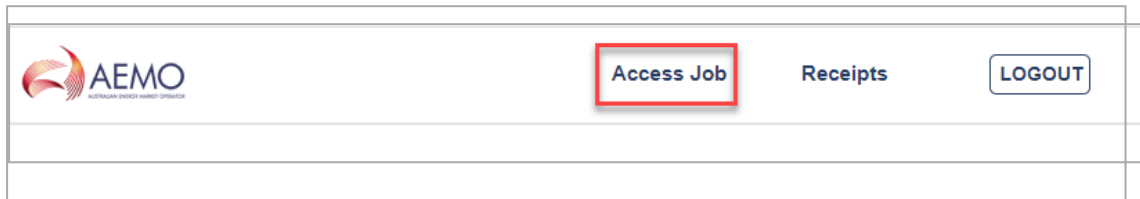
Account holders with access to the DER Register Portal.

## Before you begin

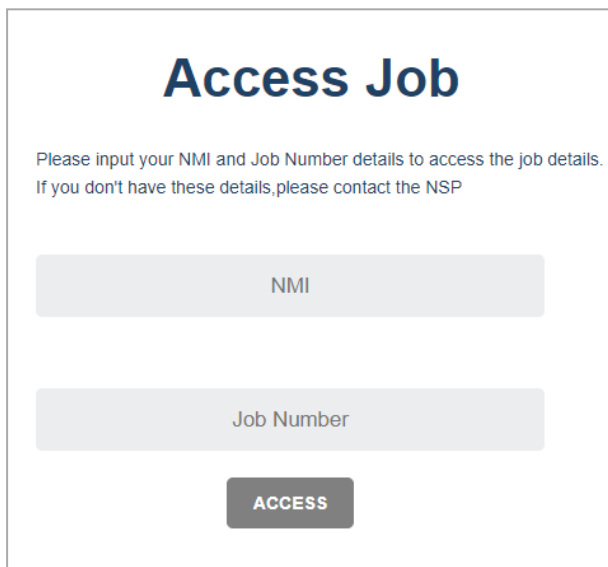
Ensure that you have the NMI and Job Number to access the DER record.

## To access the DER record

1. From the DER Register B2C Portal top menu, click **Access Job**.



The Access Job page displays.

A screenshot of the 'Access Job' page. At the top, the title 'Access Job' is displayed in a large, bold, blue font. Below the title, there is a message: 'Please input your NMI and Job Number details to access the job details. If you don't have these details, please contact the NSP'. There are two input fields: the first is labeled 'NMI' and the second is labeled 'Job Number'. Below these fields is a dark grey button with the text 'ACCESS' in white.

2. Enter the NMI and Job Number for the DER record you want to access, and click **Access**. The **Connection Agreement** page displays.

Using the DER Register B2C Portal, Account-holders can perform the following actions:

- [Review and edit DER installation data for an existing DER record](#) and save the modified data, without submitting the changes.  
**Note:** The system retains all changes made when the Account-holder logs back in.
- Edit existing AC Connections and DER Devices information.

## Reviewing and Editing DER Installation Data (Existing DER Record)

Account-holders can review and edit installation data for an existing DER record, as long as it does not alter the connection agreement in any way.

### Who can edit installation data (existing DER record)

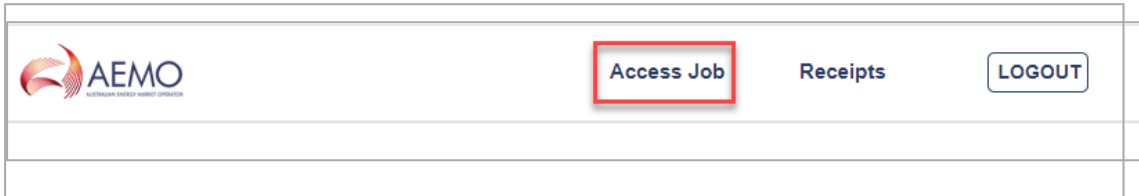
All Account-holders can edit installation data for an existing DER record for their organisation.

## Before you begin

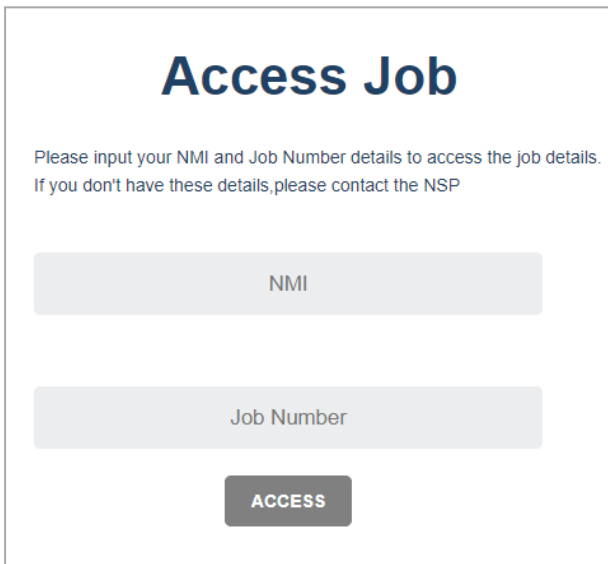
Ensure that you have the correct combination of Job Number and NMI in order to access the Job (DER Record) you want to edit.

### To edit installation data (existing DER record)

1. From the DER Register Portal top menu, click **Access Job**.



The Access Job page displays.

A screenshot of the 'Access Job' page. At the top, the heading 'Access Job' is displayed in a large, bold, blue font. Below the heading, there is a short instruction: 'Please input your NMI and Job Number details to access the job details. If you don't have these details, please contact the NSP'. Underneath this text are two light gray input fields. The first field is labeled 'NMI' and the second is labeled 'Job Number'. Below these fields is a dark gray button with the word 'ACCESS' in white capital letters.



2. Enter the NMI and Job Number for the DER record you want to access, and click **Access**. The **Connection Agreement** page displays.

## Connection Agreement

[DER Installation Details](#) Connections & Devices 3

---

**DER Installation**

NMI (National Metering Identifier)

6001066128

|   |   |
|---|---|
| <p><b>Connection Agreement 'Job Number'</b></p> <div style="border: 1px solid #ccc; padding: 2px; margin-bottom: 10px;">JOBAPH1000000000000000018</div> | <p><b>Installer identification</b></p> <div style="border: 1px solid #ccc; padding: 2px; margin-bottom: 10px;">Installer ID</div> |
| <p><b>Approved Capacity (KVA)</b></p> <div style="border: 1px solid #ccc; padding: 2px; margin-bottom: 10px;">30000</div>                               | <p><b>Number of phases available</b></p> <div style="border: 1px solid #ccc; padding: 2px; margin-bottom: 10px;">3 ▼</div>        |
| <p><b>Number of phases with DER connected</b></p> <div style="border: 1px solid #ccc; padding: 2px; margin-bottom: 10px;">3 ▼</div>                     | <p><b>Islandable installation</b></p> <div style="border: 1px solid #ccc; padding: 2px; margin-bottom: 10px;">Yes ▼</div>         |

🔒 SAVE FOR LATER

VALIDATE

SUBMIT

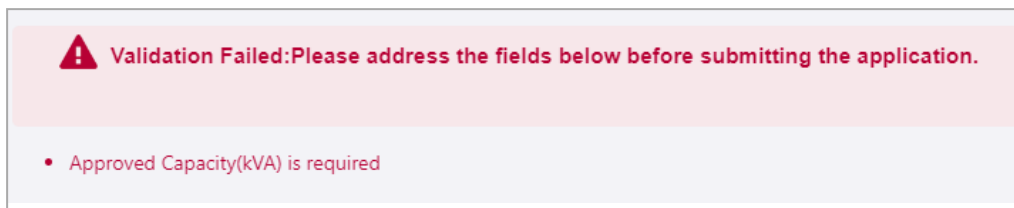
3. Edit the DER details as required.
 

**Note:** Account-holders cannot edit/update existing mandatory data (NMI, Job Number, Approved Capacity).

If you need to save your changes for later, click **Save for Later**.

**Note:** The system retains all changes made when the Account-holder logs back in.

4. Click **Validate** to validate your changes.
  - If the updated data fails a first level validation, an error message displays.



**Note:** You will need to fix the errors before you can proceed. The DERR Portal will not allow you to submit your DER record until you have completed the first level submission validations. For more information, refer to [Appendix: First Validation Pre-submission on page 43](#)

- If the updated data fails a second level validation, a warning message displays, and the **Update** button is activated.
5. To save your changes, click **Update**. The DER record is updated with second level exceptions displayed for actioning, if any.

## Editing Existing AC Connections

Using the DER Register B2C Portal, Account-holders can edit existing AC Connections associated with DER records.

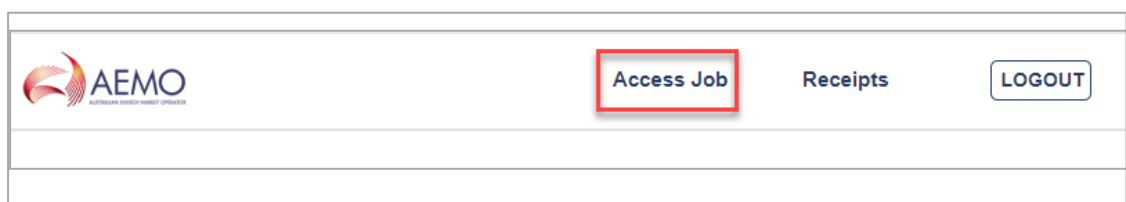
After editing existing AC Connection information, you will need to validate the entire DER record before submitting your updates for the DER Register.

### Who can edit AC Connections

All Account-holders can edit AC Connections associated with DER records for the job they have access to.

### To edit an existing AC Connection

1. From the DER Register Portal top menu, click **Access Job**.



The Access Job page displays.

**Access Job**

Please input your NMI and Job Number details to access the job details.  
If you don't have these details, please contact the NSP

NMI

Job Number

ACCESS

2. Enter the NMI and Job Number for the DER record you want to access, and click **Access**. The **Connection Agreement** page displays.

**Connection Agreement**

DER Installation Details Connections & Devices 3

**DER Installation**

NMI (National Metering Identifier)

6001066128

Connection Agreement 'Job Number'

JOBAPI10000000000000000018

Installer identification

Installer ID

Approved Capacity (KVA)

30000

Number of phases available

3

Number of phases with DER connected

3

Islandable installation

Yes

SAVE FOR LATER VALIDATE SUBMIT

3. Click **Connections & Devices** tab. This tab displays all the AC Connections and DER Devices associated with the NMI.
4. Click **Edit** to view the AC Connection you want to edit. The Edit AC Connection page displays.
5. Update the following mandatory fields for the AC Connection.

| Field                    | Description and Action  |
|--------------------------|---|
| Equipment type           | <p>Select from either Inverter or Other.</p> <p>Indicates whether the DER device is connected via an inverter (and what category of inverter it is) or not (e.g. rotating machine).</p>   |
| Commissioning date       | Select the date the AC Connection becomes <b>Active</b> .   |
| Number of AC Connections | Type in the number of AC Connections in the group. For a suite of AC Connections to be considered as a group, all the AC Connections included must have the same attributes.  |
| Status                   | <p>Select the status of the AC Connection. This will be used to identify if an AC Connection is active, inactive or decommissioned.</p> <p>This status also tracks commissioning and decommissioning date.</p> <p>When a new record is inserted in the database, the installation date/ start date is defined by the user and may be backdated.</p> |
| DRED interaction enabled | Select if the inverter is controlled remotely via the Demand Response Enabled Device function.  |
| Manufacturer             | <p>Select the name of the inverter manufacturer, from a list pre-populated with accredited manufacturers. If the manufacturer is not in the list, you can entered this information manually.</p> <p>When you select an accredited inverter manufacturer/model number, the form will auto-populate certain attributes from reference database.</p>   |
| Model Number             | <p>Select the model number of the inverter, from a list pre-populated with accredited model numbers. If the model number is not in the list, you can entered this information manually.</p> <p>When you select an accredited inverter manufacturer/model number, the form will auto-populate certain attributes from reference database.</p>        |
| Series                   | Select from the list of accredited model numbers. If the series is not in the list, you can entered this information manually.  |
| Other Inverter Series    | Used to indicate if an inverter series is accredited.   |

| Field                                 | Description and Action   |
|---------------------------------------|--|
| Serial Number                         | The number of AC Connections "count" shall determine how many serial numbers are required.   |
| What standard applies to the inverter | What standard/s is the inverter manufactured, tested and installed to?<br>Examples include AS4777.2:2015, IEC 62109-1 and -IEC 62019-2 |
| Inverter rated capacity (kVA)         | The rated AC output power that is listed in the product specified by the manufacturer.   |

**Note:** Depending on the manufacturer and model, you may need to complete additional non-mandatory information for the AC Connection.

6. Click **Done** to save your changes.

**Note:** You will need to **Validate DER Record below** before you update these changes in the DER Register.

## Validate DER Record

After you have edited existing AC Connection, you will need to validate the DER Record.

1. Click the **DER Installation Details** tab.
2. Click **Validate** to validate your changes.
  - If the updated data fails a first level validation, an error message displays and you will need to fix the error before you can proceed.
  - If the updated data fails a second level validation, a warning message displays, and the **Update** button is activated.

3. To save your changes, click **Update**.

**Note:** The DER Register Portal will not allow you to update your DER record until you have resolved any first level validations.

For more information on how to resolve exceptions, refer to **Resolving Exceptions on page 1**.

## Editing Existing DER Devices

Using the DERR Portal, NSPs can edit existing DER Devices associated with AC Connections for a DER record.

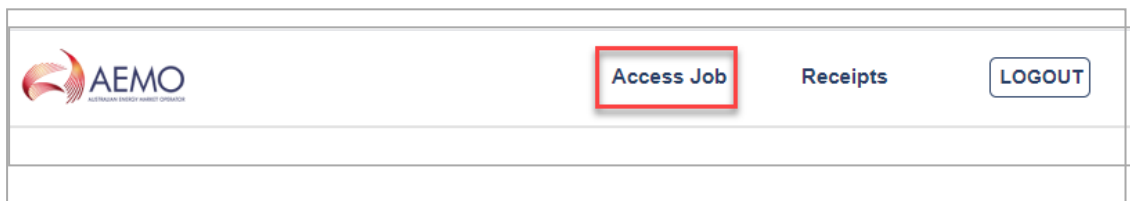
After editing existing DER Device information, you will need to validate the entire DER record before submitting your updates for the DER Register.

## Who can edit DER Devices

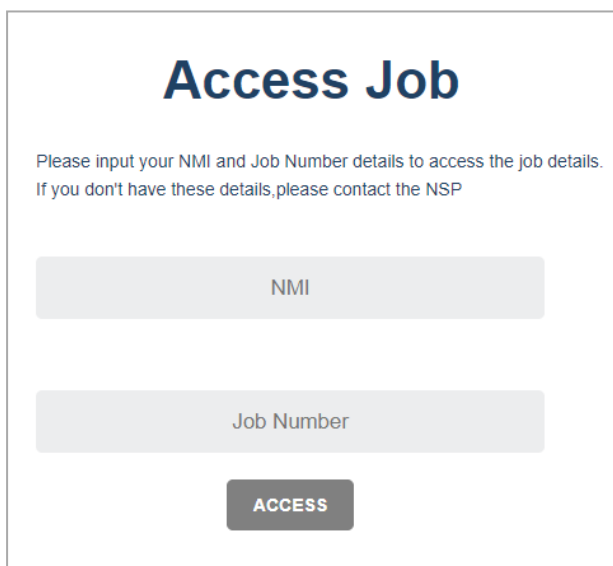
All NSPs can edit DER Devices associated with AC Connections for DER records for their organisation.

## To edit an existing DER Device

1. From the DER Register Portal top menu, click **Access Job**.



The Access Job page displays.



2. Enter the NMI and Job Number for the DER record you want to access, and click **Access**. The **Connection Agreement** page displays.

## Connection Agreement

[DER Installation Details](#) Connections & Devices 3

---

**DER Installation**

NMI (National Metering Identifier)

6001066128

|  |  |
|--|--|
| Connection Agreement 'Job Number'<br>JOBAPH1000000000000000018 | Installer identification<br>Installer ID |
| Approved Capacity (KVA)<br>30000                               | Number of phases available<br>3          |
| Number of phases with DER connected<br>3                       | Islandable installation<br>Yes           |

SAVE FOR LATER
VALIDATE
SUBMIT

3. Click **Connections & Devices** tab. This tab displays all the AC Connections and DER Devices associated with the NMI.
4. Click **Edit** to view the DER Device you want to edit. The Edit DER Device page displays.
5. Update the following mandatory fields for the DER Device.

| Field                      | Description and Action   |
|----------------------------|--|
| Device type                | <p>Indicates the primary technology used in the DER device. You can choose from:</p> <ul style="list-style-type: none"> <li>• Fossil</li> <li>• Hydro</li> <li>• Wind</li> <li>• Solar PV</li> <li>• Biomass/Waste</li> <li>• Geothermal</li> <li>• Storage</li> <li>• Co- / Tri-generation</li> <li>• Other</li> </ul>                                  |
| Device sub-type            | Indicates the secondary technology used in the DER device.   |
| Number of devices          | Number of devices in the group of DER devices.   |
| Status                     | <p>Select the status of the DER Device. This will be used to identify if an AC Connection is active or inactive or decommissioned.</p> <p><b>Note:</b> This status is only applicable to the DER Device. This is not a duplicate of the NMI level status, as devices may become active or inactive without a change of status to the overall system.</p> |
| Manufacturer               | <p>Select the name of the device manufacturer, from a list pre-populated with accredited manufacturers.</p> <p>When you select an accredited device manufacturer/model number, the form will auto-populate certain attributes from reference database.</p>   |
| Model Number               | <p>Select the model number of the device, from a list pre-populated with accredited model numbers.</p> <p>When you select an accredited device manufacturer/model number, the form will auto-populate certain attributes from reference database.</p>  |
| Rated capacity (kW or kVA) | Maximum output in kVA that is listed in the product specification by the manufacturer.   |

**Note:** Depending on the manufacturer and model, you may need to complete additional non-mandatory information for the device.



6. Click **Done** to save your changes.

**Note:** You will need to [Validate DER Record below](#) before you update these changes in the DER Register.

## Validate DER Record

After you have edited existing DER Device , you will need to validate the DER Record.

1. Click the **DER Installation Details** tab.
2. Click **Validate** to validate your changes.
  - If the updated data fails a first level validation, an error message displays and you will need to fix the error before you can proceed.
  - If the updated data fails a second level validation, a warning message displays, and the **Update** button is activated.
3. To save your changes, click **Update**.

**Note:** The DERR Portal will not allow you to update your DER record until you have resolved any first level validations.

For more information on how to resolve exceptions, refer to [Resolving Exceptions on page 1](#).

# Downloading Receipts

Once a DER device has been installed and recorded in the DERR, Account-holders can view and download a receipt for the installation. This receipt provides a summary of the installation and confirmation that the job is complete.

This topic describes how to view and download the receipt.

## Before you begin

Ensure that:

- The installation job has been completed and the status is confirmed,
- The job has been recorded in the DERR Portal, and
- You have a valid NMI, job number and Installer ID to access the receipt.

## To download the receipt

1. From the DERR Portal top menu, click **Receipts**. The **Download Receipt** page displays.

**Download Receipt**

Please input your NMI and Job Number details to access the Receipt details. If you don't have these details, please contact the NSP

NMI


Job Number

Installer ID

Get Receipt

2. On the Download Receipt page, enter the NMI, Job Number and Installer ID.  
**Note:** All these fields are mandatory. You cannot download the receipt if you do not enter all these details.

3. Click **Get Receipt**. A PDF version of the Receipt is downloaded.



*[Confirmation Date]*

### Automated Record Confirmation for a Distributed Energy Resource

This is to confirm that AEMO's records show that a small generating system, battery system or other distributed energy resource has been installed and is now operational, with the details below.

Installer identification: *[InstallerID]*                      Date record confirmed: *[Job Complete Date]*

Installation overview

The total approved distributed energy resource capacity for this site is *[approved capacity]* kVA, and the capacity of the installed system at his site is *[total AC connection capacity]* kVA.

Network Service Provider: *[NSP name]*                      Job Number: *[JobNumber]*

National Metering Identifier (NMI): *[NMI]*                      Export limit: *[if applicable then export\_limit, if not applicable then text: No limit]*

Installed system details

| Identifier                | Type                       | No.                               | Capacity (kVA)             | Total Capacity (kVA)    | Manufacturer               | Model Number          |
|---------------------------|----------------------------|-----------------------------------|----------------------------|-------------------------|----------------------------|-----------------------|
| <i>[AC connection ID]</i> | <i>[AC equipment type]</i> | <i>[number of AC connections]</i> | <i>[inverter capacity]</i> | <i>[Total capacity]</i> | <i>[manufacturer name]</i> | <i>[Model number]</i> |
| <i>[AC connection ID]</i> | <i>[AC equipment type]</i> | <i>[number of AC connections]</i> | <i>[inverter capacity]</i> | <i>[Total capacity]</i> | <i>[manufacturer name]</i> | <i>[Model number]</i> |
| Fill rows as needed...    |                            |                                   |                            |                         |                            |                       |

System source details

| Identifier         | Type                 | No.                        | Source Capacity (kW)           | Storage Capacity (kWh)                                      | Manufacturer                      | Model Number                 |
|--------------------|----------------------|----------------------------|--------------------------------|---|-----------------------------------|------------------------------|
| <i>[Device ID]</i> | <i>[Device type]</i> | <i>[number of devices]</i> | <i>[Total device capacity]</i> | <i>[if battery, then kWh, if not then text: No storage]</i> | <i>[Device Manufacturer name]</i> | <i>[Device Model number]</i> |
| <i>[Device ID]</i> | <i>[Device type]</i> | <i>[number of devices]</i> | <i>[Total device capacity]</i> | <i>[if battery, then kWh, if not then text: No storage]</i> | <i>[Device Manufacturer name]</i> | <i>[Device Model number]</i> |

Australian Energy Market Operator Ltd    ABN 94 072 010 327                      [www.aemo.com.au](http://www.aemo.com.au)    [info@aemo.com.au](mailto:info@aemo.com.au)

NEW SOUTH WALES    QUEENSLAND    SOUTH AUSTRALIA    VICTORIA    AUSTRALIAN CAPITAL TERRITORY    TASMANIA    WESTERN AUSTRALIA

## What's on the Receipt

The confirmation Receipt contains the following information.

| Section                  | Description  |
|--------------------------|--|
| Confirmation Date        | Date when the installation was confirmed   |
| Installer Details        | Provides installer id details  |
| Date record confirmed    | Date when the job was completed  |
| Installation Overview    | Provides NSP details including: <ul style="list-style-type: none"> <li>a. NSP name</li> <li>b. Job Number</li> <li>c. NMI</li> <li>d. Export limit</li> </ul>  |
| Installed system details | Provides a list of installed AC connection details, including: <ul style="list-style-type: none"> <li>a. Identifier</li> <li>b. Type</li> <li>c. No of AC connections</li> <li>d. Capacity (kVA)</li> <li>e. Total Capacity (kVA)</li> <li>f. Manufacturer</li> <li>g. Model Number</li> </ul> |
| System source details    | Provides a list of installed DER Device details, including: <ul style="list-style-type: none"> <li>a. Identifier</li> <li>b. Type</li> <li>c. No of devices</li> <li>d. Source Capacity (kW)</li> <li>e. Storage Capacity (kWh)</li> <li>f. Manufacturer</li> <li>g. Model Number</li> </ul>   |

# Managing AC Connections and DER Devices

Using the DER Register B2C Portal, Account-holders can:

- Edit existing AC Connection and DER Devices.
- Add one or multiple new AC Connection(s) and/or DER Device(s) (requires a new job number)
- Link new DER devices to new or existing AC connections.

## Adding AC Connections

Using the DER Register B2C Portal, Account-holders can add one or multiple new AC Connections to existing DER records.

**Note:** Every AC Connection must have an associated DER Device.

You must create a new job number before you add a new AC connections to a DER Record.

## Who can add AC Connections

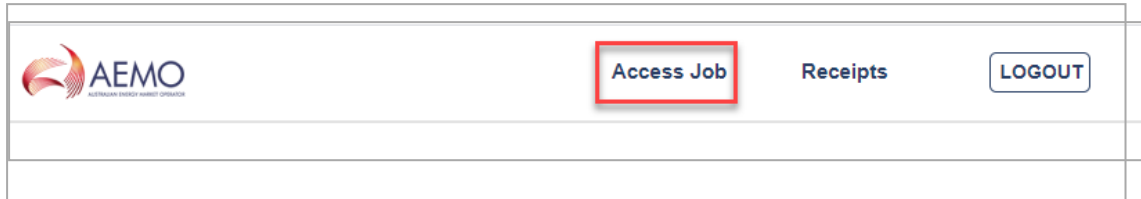
Account-holders can add AC Connections to DER records they have access to.

## Before you begin

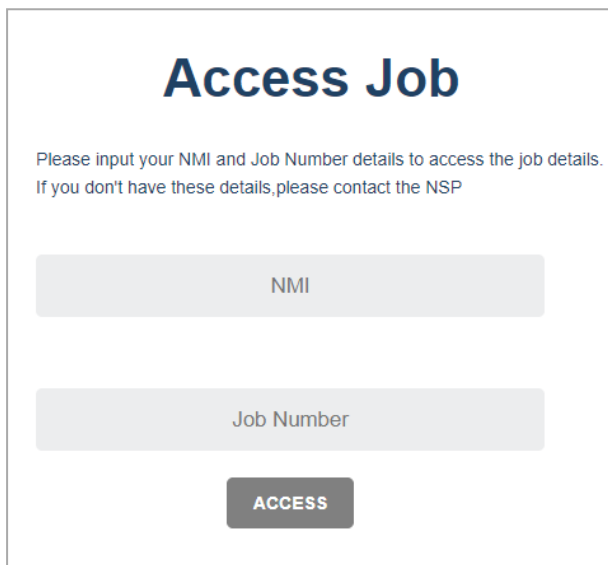
Ensure that you are authenticated and authorised to make changes to the DER record.

## To add a new AC Connection

1. From the DER Register Portal top menu, click **Access Job**.



The Access Job page displays.

A screenshot of the 'Access Job' page. At the top, the heading 'Access Job' is displayed in a large, bold, blue font. Below the heading, there is a short instruction: 'Please input your NMI and Job Number details to access the job details. If you don't have these details, please contact the NSP'. Underneath this text are two light gray input fields. The first field is labeled 'NMI' and the second is labeled 'Job Number'. Below these fields is a dark gray button with the text 'ACCESS' in white capital letters.

2. Enter the NMI and Job Number for the DER record you want to access, and click **Access**. The **Connection Agreement** page displays.

The screenshot shows the 'Connection Agreement' page. At the top, there are two tabs: 'DER Installation Details' (active) and 'Connections & Devices' (with a notification icon). Below the tabs, the 'DER Installation' section contains the following fields:

- NMI (National Metering Identifier): 6001066128
- Connection Agreement 'Job Number': JOBAPH1000000000000000018
- Installer identification: Installer ID
- Approved Capacity (KVA): 30000
- Number of phases available: 3
- Number of phases with DER connected: 3
- Islandable installation: Yes

At the bottom of the form, there are three buttons: 'SAVE FOR LATER', 'VALIDATE', and 'SUBMIT'.

3. Click **Connections & Devices** tab. This tab displays all the AC Connections and DER Devices associated with the NMI.
4. Click **+AC Connection**. The **Add New AC Connection** page displays.
5. Complete the following mandatory fields for the AC Connection.

| Field                    | Description and Action   |
|--------------------------|--|
| Equipment type           | Select from either Inverter or Other.<br>Indicates whether the DER device is connected via an inverter (and what category of inverter it is) or not (e.g. rotating machine). |
| Commissioning date       | Select the date the AC Connection becomes <b>Active</b> .  |
| Number of AC Connections | Type in the number of AC Connections in the group. For a suite of AC Connections to be considered as a group, all the AC Connections included must have the same attributes. |
| Status                   | Select the status of the AC Connection. This will be used to identify if an AC Connection is active, inactive or decommissioned.   |

| Field                                 | Description and Action  |
|---------------------------------------|---|
|                                       | <p>This status also tracks commissioning and decommissioning date. When a new record is inserted in the database, the installation date/start date is defined by the user and may be backdated.</p>   |
| DRED interaction enabled              | Select if the inverter is controlled remotely via the Demand Response Enabled Device function.  |
| Manufacturer                          | <p>Select the name of the inverter manufacturer, from a list pre-populated with accredited manufacturers. If the manufacturer is not in the list, you can entered this information manually.</p> <p>When you select an accredited inverter manufacturer/model number, the form will auto-populate certain attributes from reference database.</p> |
| Model Number                          | <p>Select the model number of the inverter, from a list pre-populated with accredited model numbers. If the model number is not in the list, you can entered this information manually.</p> <p>When you select an accredited inverter manufacturer/model number, the form will auto-populate certain attributes from reference database.</p>      |
| Series                                | Select from the list of accredited model numbers. If the series is not in the list, you can entered this information manually.  |
| Other Inverter Series                 | Used to indicate if an inverter series is accredited.   |
| Serial Number                         | The number of AC Connections "count" shall determine how many serial numbers are required.  |
| What standard applies to the inverter | <p>What standard/s is the inverter manufactured, tested and installed to? Examples include AS4777.2:2015, IEC 62109-1 and -IEC 62019-2</p>  |
| Inverter rated capacity (kVA)         | The rated AC output power that is listed in the product specified by the manufacturer.  |

**Note:** Depending on the manufacturer and model, you may need to complete additional non-mandatory information for the AC Connection.



6. Click **Done** to save your changes. A new AC Connection is created with validation status as **Pending Validation**. The AC Connection will be validated when you validate the DER record.

## Validate DER Record

After you have added a new (or editing existing) AC Connection or DER Device, you will need to validate the DER Record.

1. Click the **DER Installation Details** tab.
2. Click **Validate** to validate your changes.
  - If the updated data fails a first level validation, an error message displays and you will need to fix the error before you can proceed.
  - If the updated data fails a second level validation, a warning message displays, and the **Update** button is activated.
3. To save your changes, click **Update**.  
**Note:** The DERR Portal will not allow you to update your DER record until you have resolved any first level validations.

For more information on how to resolve exceptions, refer to [Resolving Exceptions on page 38](#).

## Adding DER Devices

Using the DER Register B2C Portal, Account-holders can add one or multiple new DER Devices to existing DER records.

You must create a new job number before you add a new DER Device to a DER Record.

## Who can add DER Devices

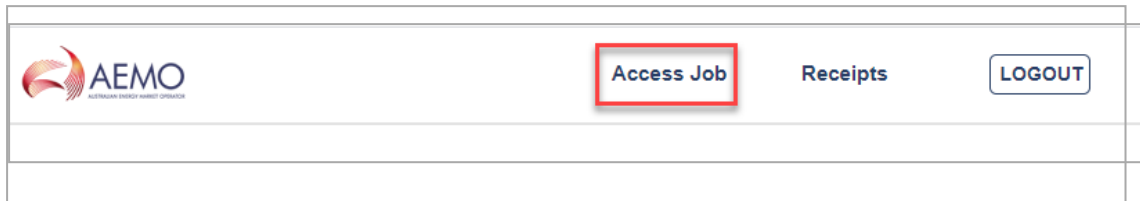
Account-holders can add DER Devices to DER records they have access to.

## Before you begin

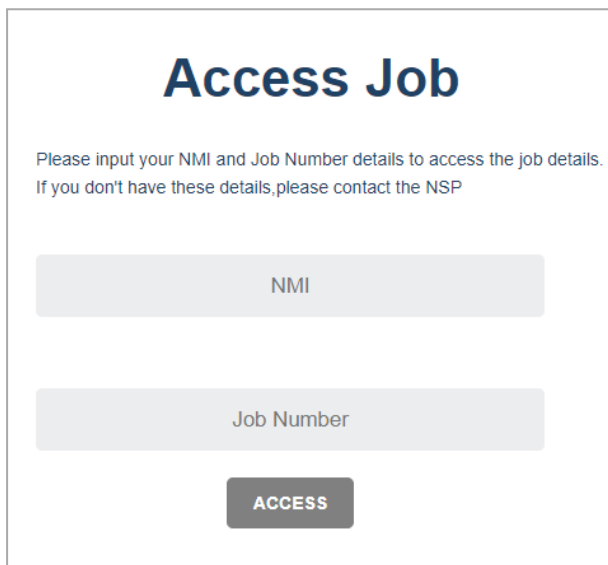
Ensure that you are authenticated and authorised to make changes to the DER record.

## To add a new DER Device

1. From the DER Register Portal top menu, click **Access Job**.



The Access Job page displays.

A screenshot of the 'Access Job' page. At the top, the heading 'Access Job' is displayed in a large, bold, blue font. Below the heading, there is a short instruction: 'Please input your NMI and Job Number details to access the job details. If you don't have these details, please contact the NSP'. Underneath this text are two light gray input fields. The first field is labeled 'NMI' and the second is labeled 'Job Number'. Below these fields is a dark gray button with the word 'ACCESS' in white capital letters.

2. Enter the NMI and Job Number for the DER record you want to access, and click **Access**. The **Connection Agreement** page displays.

## Connection Agreement

[DER Installation Details](#) **Connections & Devices** 3

**DER Installation**

NMI (National Metering Identifier)

**Connection Agreement 'Job Number'**  **Installer identification**

**Approved Capacity (KVA)**  **Number of phases available**

**Number of phases with DER connected**  **Islandable installation**

3. Click **Connections & Devices** tab. This tab displays all the AC Connections and DER Devices associated with the NMI.
4. Click **+DER Device**. The **Add new DER Device** page displays.
5. Complete the following mandatory fields for the DER Device.

| Field                      | Description and Action   |
|----------------------------|--|
| Device type                | <p>Indicates the primary technology used in the DER device. You can choose from:</p> <ul style="list-style-type: none"> <li>• Fossil</li> <li>• Hydro</li> <li>• Wind</li> <li>• Solar PV</li> <li>• Biomass/Waste</li> <li>• Geothermal</li> <li>• Storage</li> <li>• Co- / Tri-generation</li> <li>• Other</li> </ul>                                  |
| Device sub-type            | Indicates the secondary technology used in the DER device.   |
| Number of devices          | Number of devices in the group of DER devices.   |
| Status                     | <p>Select the status of the DER Device. This will be used to identify if an AC Connection is active or inactive or decommissioned.</p> <p><b>Note:</b> This status is only applicable to the DER Device. This is not a duplicate of the NMI level status, as devices may become active or inactive without a change of status to the overall system.</p> |
| Manufacturer               | <p>Select the name of the device manufacturer, from a list pre-populated with accredited manufacturers.</p> <p>When you select an accredited device manufacturer/model number, the form will auto-populate certain attributes from reference database.</p>   |
| Model Number               | <p>Select the model number of the device, from a list pre-populated with accredited model numbers.</p> <p>When you select an accredited device manufacturer/model number, the form will auto-populate certain attributes from reference database.</p>  |
| Rated capacity (kW or kVA) | Maximum output in kVA that is listed in the product specification by the manufacturer.   |

**Note:** Depending on the manufacturer and model, you may need to complete additional non-mandatory information for the device.

6. Click **Done** to save your changes. A new DER Device is created with validation status as **Pending Validation**. The DER Device will be validated when you validate the DER record.

## Validate DER Record

After you have added a new DER Device, you will need to validate the DER Record.

1. Click the **DER Installation Details** tab.
2. Click **Validate** to validate your changes.
  - If the updated data fails a first level validation, an error message displays and you will need to fix the error before you can proceed.
  - If the updated data fails a second level validation, a warning message displays, and the **Update** button is activated.
3. To save your changes, click **Update**.  
**Note:** The DERR Portal will not allow you to update your DER record until you have resolved any first level validations.

For more information on how to resolve exceptions, refer to [Resolving Exceptions on page 38](#).

## Linking DER Devices to AC Connections

Using the DERR Portal, Account-holders can link DER devices to existing AC Connections.

All DER Devices must be linked to an AC Connection in the DER Register Portal. A device can only be linked to one AC Connection.

### Before you begin

Ensure that you are authorised to update DER Devices information.

## To link a DER Device to an existing AC Connection

1. From the DERR Portal top menu, click **Access Job**. The Access Job displays.

**Access Job**

Please input your NMI and Job Number details to access the job details.  
If you don't have these details, please contact the NSP

NMI

Job Number

**ACCESS**

2. Enter the NMI and Job Number for the DER record you want to access, and click **Access**. The **Connection Agreement** page displays.

**Connection Agreement**

[DER Installation Details](#) [Connections & Devices](#) 3

**DER Installation**

NMI (National Metering Identifier)

6001066128

Connection Agreement Job Number

JOBAP11000000000000000018

Installer identification

Installer ID

Approved Capacity (KVA)

30000

Number of phases available

3

Number of phases with DER connected

3

Islandable installation

Yes

**SAVE FOR LATER** **VALIDATE** **SUBMIT**

3. Click **Connections & Devices**. A list of existing AC Connections and DER Devices for the DER record displays.

Connections & Devices 2

+AC Connection
+ DER Device

**AC Connection-1**

ID:200000003985410

Validation status:Confirmed

Type: Unknown\_equipment

Edit

Connection status: Active

**DER Device**

ID:200000005402997

Validation status:Confirmed

Type: Solar PV    Device status: Active

**Parent** AC Connection 1 ▼

Edit

**DER Device**

ID:200000004019509

Validation status:Confirmed

Type: Other    Device status: Active

**Parent** AC Connection 1 ▼

Edit

**AC Connection-2**

ID:200000005700873

Validation status:Confirmed

Type: Inverter

Edit

Connection status: Active

**DER Device**

ID:200000005744651

Validation status:Confirmed

Type: Storage    Device status: Active

**Parent** AC Connection 2 ▼

Edit

- For the DER Device you want to link, from the Parent dropdown, select the AC Connection you want to associate the device with. Ex, AC Connection 2.

**AC Connection-1**       Validation status: Confirmed      Edit  
 ID:200000003985410      Type: Unknown\_equipment      Connection status: Active

**DER Device**       Validation status: Confirmed      **Parent** AC Connection 1      Edit  
 ID:200000005402997      Type: Solar PV      Device status: Active

**DER Device**       Validation status: Confirmed      **Parent** AC Connection 1  
AC Connection 1  
**AC Connection 2**      Edit  
 ID:200000004019509      Type: Other      Device status: Active

The DER Device is now linked to AC Connection-2 and the Connections and Devices page is refreshed with these changes.

**AC Connection-2**       Validation status: Confirmed      Edit  
 ID:200000005700873      Type: Inverter      Connection status: Active

**DER Device**       Validation status: Confirmed      **Parent** AC Connection 2      Edit  
 ID:200000005744651      Type: Storage      Device status: Active

**DER Device**       Validation status: Confirmed      **Parent** AC Connection 2      Edit  
 ID:200000005744649      Type: Solar PV      Device status: Active

**DER Device**       Validation status: Confirmed      **Parent** AC Connection 2      Edit  
 ID:200000005744648      Type: Storage      Device status: Active

**DER Device**       Validation status: Confirmed      **Parent** AC Connection 2      Edit  
 ID:200000004019509      Type: Other      Device status: Active



## Resolving Exceptions

Using the DER Register B2C Portal, Account-holders can resolve exceptions and also:

- View attributes associated with the exception code which failed Pre-Submission checks, and review these for accuracy.
- Edit these attributes and re-submit data.

## Exception Types

### First level validations

You will need to fix/resolve any first level validations before you submit any changes to the DER record.

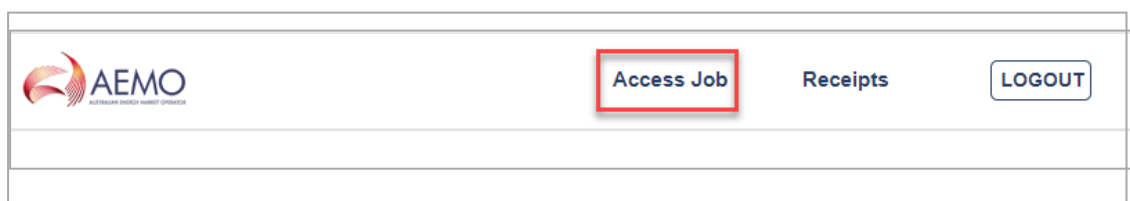


The DER Register B2C Portal will not allow you to submit your changes to the DER record until you have completed the first level submission validations. For more information, refer to [Appendix: First Validation Pre-submission on page 43](#)

### Second level validations

The DER Register B2C Portal displays all second level validations on the DER Installation details and Connections and Devices tabs.

1. From the DER Register Portal top menu, click **Access Job**.



The Access Job page displays.

## Access Job

Please input your NMI and Job Number details to access the job details.  
If you don't have these details, please contact the NSP

- Enter the NMI and Job Number for the DER record you want to access, and click **Access**. The **Connection Agreement** page displays.

## Connection Agreement

[DER Installation Details](#) [Connections & Devices](#) 3

**DER Installation**

NMI (National Metering Identifier)

**Connection Agreement 'Job Number'**

**Installer identification**

**Approved Capacity (KVA)**

**Number of phases available**

**Number of phases with DER connected**

**Islandable installation**

- Click **Connections & Devices** tab. This tab displays all the AC Connections and DER Devices associated with the NMI.

- Click the AC Connection (or DER Device) you want to resolve exceptions for.

## Edit AC Connection

**Equipment type \***

Inverter

**Commissioning date**

01 Aug 2020

Clear Commissioning Date

**Number of AC Connections**

2

**Status**

Please Select

**DRED interaction enabled**

Yes

**Other Manufacturer**

Victron Energy BV

**Manufacturer**

Other

- 2000-Update or Accept: Equipment (Manufacturer) not listed on third-party accredited product database.

**Model Number**

Other

- 2052-Review data: Model number not available for this manufacturer in third-party accredited product database.

- Review and update the relevant fields and click **Done** to save your changes.
- Click the **DER Installation Details** tab.
- Click **Validate** to validate your changes.
  - If the updated data fails a first level validation, an error message displays and you will need to fix the error before you can proceed.
  - If the updated date is validated successfully, the **Update** button is activated.
- To save your changes, click **Update**.
 

**Note:** The DER Register B2C Portal will not allow you to update your DER record until you have fixed any first level validations.

# Appendix: DER Register Terms

|                                      |    |
|--------------------------------------|----|
| AC Connections and DER Devices ..... | 41 |
| DER Register Actors .....            | 42 |
| DER Record Status .....              | 42 |

## AC Connections and DER Devices

### What are AC Connections?

An AC Connection refers to any form of DER generating unit/power source implemented at consumer premises. For example, inverters or rotating machines.

### What are DER Devices?

DER devices are consumer-owned devices that as individual units, can generate or store electricity.

Examples of DER devices include:

- Rooftop solar photovoltaic (PV) units
- Wind generating units
- Battery storage
- Solar farms

## DER Register Actors

| Actor                      | Role   |
|----------------------------|--|
| Account-holder             | A person (non-NSP) holding an account with AEMO that allows access to the DER Register under controlled access conditions. This could be a DER installer, or someone acting on behalf of a DER installer (e.g. a business acting for its employees). For example, Solar Retailers. |
| AEMO System Administrator  | AEMO staff authorised to manage the systems and data.  |
| NSP                        | NSP employee with read and write access to DER, to submit data.  |
| Participant administration | An NSP employee who grants participant users permission to use DERR.   |
| Participant                | NSP employees who use DERR.  |

## DER Record Status

The DER Register determines the installation progress of AC Connection(s) or DER Device(s). AC Connections and DER Devices can have one of the following statuses as it progresses through the connection and installation process.

| Status      | Description   |
|-------------|---|
| Idle        | When a record is "Initial" for 365 days, it becomes idle.   |
| Initial     | AC Connection/DER Device records exist but the DER system is not yet physically installed or operating.   |
| Conditional | AC Connection/DER Device records exist, and the DER system physically is installed and operating. The DER record is waiting on an action from the user. |
| Confirmed   | AC Connection/DER Device record exist and they DER system physically is installed and operating.  |

**Note:** The installation progress is associated with AC Connections and DER Devices and does not define an NMI installation progress.

# Appendix: First Validation Pre-submission

| Exception Code | Exception message  | Business Rules  | Applies to             |
|----------------|--|---|------------------------|
| 1000           | Invalid submission: Job number already in use.   | Job number must be unique for an NMI and for the NSP that sent it.<br>Job number must not have been submitted before for a different NMI by the same NSP. | NSP                    |
| 1010           | Invalid submission: NMI does not exist in MSATS  | NMI must exist in MSATS   | NSP                    |
| 1011           | Invalid submission: NMI is Extinct and cannot be used  | NMI must not be extinct   | NSP                    |
| 1012           | Invalid submission: NMI not aligned to NSP NMI allocation  | NSP currently holds the LNSP role for this NMI.   | NSP                    |
| 1020           | Invalid submission: Incorrect format   | Content must be in the correct format   | Account-holder and NSP |
| 1021           | Invalid submission: Mandatory field not provided   | All mandatory fields are completed  | Account-holder and NSP |
| 1030           | Invalid submission: DER installation information missing. Please link an AC Connection to this NMI | NMI must have at least one AC Connection linked to it.  | Account-holder and NSP |

| Exception Code | Exception message   | Business Rules   | Applies to             |
|----------------|---|--|------------------------|
| 1031           | Invalid submission: DER installation information missing. Please link a Device to this AC Connection  | Each AC Connection with status of null, Active or Inactive must have at least one Device linked to it  | Account-holder and NSP |
| 1032           | Invalid submission: DER installation information missing. Please link this Device to an AC Connection | Each Device with status of null, Active or Inactive must have an AC Connection linked to it  | Account-holder and NSP |
| 1040           | Invalid submission: DER Record mismatch to AEMO data  | If there is an existing Confirmed AC Connection or DER Device and status = Active, it must be included in every submission, i.e. Confirmed AC Connections or DER Devices cannot be removed<br>If Confirmed DER Record is decommissioned, status changes to "Decommissioned" and must be submitted. | Account-holder and NSP |
| 1041           | Invalid submission: DER Record mismatch to AEMO data  | If there is an existing Confirmed AC Connection or DER Device and status = Active, it must be included in every submission, i.e. Conditional DER Records cannot be removed<br>If Conditional DER Record is decommissioned, status changes to Decommissioned and must be submitted                  | Account-holder and NSP |
| 1050           | Invalid submission:<br>Invalid AC Connection identifier   | AC Connection ID must be null or generated previously by AEMO.   | Account-holder and NSP |
| 1051           | Invalid submission:<br>Invalid Device identifier  | DER Device ID must be null or generated previously by AEMO.  | Account-holder and NSP |
| 1060           | Invalid submission: DER installation not yet commissioned   | AC Connection status must be null or Inactive if commissioning date is null or in the future   | Account-holder and NSP |

| Exception Code | Exception message  | Business Rules   | Applies to             |
|----------------|--|--|------------------------|
| 1061           | Invalid submission: DER installation already commissioned. Status must be active or decommissioned | AC Connection status must be Active or Decommissioned if commissioning date is in the present or in the past | Account-holder and NSP |
| 1062           | Invalid submission: Device status not aligned to linked AC Connection                              | Device Status must be null or Inactive if the AC Connection linked to it has status of null or Inactive.     | Account-holder and NSP |
| 1063           | Invalid submission: Device status not aligned to linked AC Connection.                             | Device Status must be Decommissioned if the AC Connection linked to it has status of Decommissioned          | Account-holder and NSP |
| 1064           | Invalid submission: AC Connection status invalid   | AC Connection status cannot be Inactive if it was previously Active or Decommissioned                        | Account-holder and NSP |
| 1065           | Invalid submission: AC Connection status invalid   | DER Device status must NOT be Inactive if it was previously Active or Decommissioned                         | Account-holder and NSP |
| 1070           | Invalid submission: Value not approved by NSP  | Number values must be within the permitted range.<br>These ranges are specified in the tables in Section 7.  | Account-holder and NSP |
| 1080           | Invalid submission: Device type invalid for AC Connection type                                     | Device Type must be Solar, Storage, or Wind if the AC Connection linked to it = Inverter                     | Account-holder and NSP |
| 1081           | Invalid submission: Device type invalid for AC Connection type                                     | Device Type must be NOT Solar, Storage, or Wind if the AC Connection linked to it = Other                    | Account-holder and NSP |
| 1090           | Invalid submission: Missing information  | The count of submitted Serial numbers for an AC Connection must equal the number of AC Connections           | Account-holder and NSP |



| Exception Code | Exception message  | Business Rules   | Applies to             |
|----------------|--|--|------------------------|
| 1110           | Invalid submission: Not enough Devices in DER Record                               | Each ACTIVE AC Connection must have "number of AC Connection" equal to or less than total of Total of "number of DER Devices" that are linked to it, i.e.<br>$\text{number of AC Connections} \leq \text{SUM}\{\text{number of Devices 1} + \text{number of Devices 2} \dots + \text{number of Devices n}\}$<br>Where n is the number of Devices or group of DER Devices connected to that AC Connection<br>This validation is only applicable if AC Equipment Type = Inverter | Account-holder and NSP |
| 1111           | Invalid submission: Number of Devices and AC Connections must match                | If AC Equipment Type = Other, then "number of AC Connection" must equal to "number of DER Devices" linked to it  | Account-holder and NSP |
| 1120           | Invalid submission: Missing information. At least one field must be completed      | One of Protection and Control Modes attributes must be submitted   | Account-holder and NSP |
| 1121           | Invalid submission: Cannot enable reactive power AND voltage response modes        | Reactive power mode MUST be "Not Enabled" if any of Voltage response modes are Enabled   | Account-holder and NSP |
| 1122           | Invalid submission: Cannot enable fixed power factor AND voltage response modes    | Fixed power factor mode MUST be "Not Enabled" if any of Voltage response modes are Enabled   | Account-holder and NSP |
| 1123           | Invalid submission: Cannot enable variable power factor AND voltage response modes | Power factor curve / power response mode MUST be "Not Enabled" if any of Voltage response modes are Enabled  | Account-holder and NSP |
| 1130           | Invalid submission: Export limit exceeds approved capacity                         | If export limit is specified, it must be equal or smaller than approved capacity   | Account-holder and NSP |

| Exception Code | Exception message   | Business Rules  | Applies to                    |
|----------------|---|---|-------------------------------|
| 1140           | Invalid submission:<br>Value is percentage,<br>maximum is 100%                | If "Voltage set point unit" is %, then<br>"Voltage set point" must NOT be more than<br>100  | Account-<br>holder<br>and NSP |
| 1160           | Invalid submission:<br>Equipment type not<br>approved by NSP                  | Inverter default settings ranges must NOT<br>overlap  | NSP                           |
| 1161           | Invalid submission:<br>Default standards<br>capacity ranges already<br>in use | Inverter default NSP approval ranges must<br>NOT overlap  | NSP                           |
| 1170           | Invalid submission:<br>NSP-approved<br>information has been<br>edited         | Account holders must NOT edit "Non-<br>Editable" fields at any point.<br>Refer to DER Job Access for non-editable<br>fields for account holders | Account-<br>holder            |
| 1171           | Invalid submission:<br>NSP-approved<br>information has been<br>edited         | Account holders must NOT edit<br>commissioning dates for AC Connections<br>that were created with previous job<br>numbers                       | Account-<br>holder            |

# Appendix: Second Validation Pre-submission

| Exception Code | Exception Message  | Business Rules                           | Applies to             | Comments   |
|----------------|--|--|------------------------|--|
| 2000           | Update or Accept: Equipment (Manufacturer) not listed on third-party accredited product database | Manufacturer must be accredited          | Account-holder and NSP | <p>Exceptions generated by any of these business rules can be acknowledged by NSPs.</p> <p>Acknowledging these exceptions will change the "installationStage" the AC Connection or DER Device related to it to become "Confirmed".</p> <p>Refer to "DER Process Update".</p> |
| 2001           | Update or Accept: Equipment (Model) not listed on third-party accredited product database        | Inverter Model number must be accredited | Account-holder and NSP |  |
| 2002           | Update or Accept: Equipment (Series) not listed on third-party accredited product database       | Inverter Series must be accredited       | Account-holder and NSP |  |

| Exception Code | Exception Message  | Business Rules   | Applies to             | Comments |
|----------------|--|--|------------------------|----------|
| 2003           | Update or Accept: Equipment (Manufacturer) not listed on third-party accredited product database                     | Device Manufacturer must be accredited   | Account-holder and NSP |          |
| 2004           | Update or Accept: Equipment (Model) not listed on third-party accredited product database                            | Device Model number must be accredited   | Account-holder and NSP |          |
| 2010           | Update or Accept: Equipment listing on third-party accredited product database not current at time of commissioning. | Accredited inverter commissioning date must be within the accredited approved period | Account-holder and NSP |          |
| 2011           | Update or Accept: Equipment listing on third-party accredited product database not current at time of commissioning  | Accredited device commissioning date must be within the accredited approved period   | Account-holder and NSP |          |

| Exception Code | Exception Message  | Business Rules   | Applies to             | Comments   |
|----------------|--|--|------------------------|--|
| 2020           | Update or Accept: NSP Approval required for this record                            | NSP must be notified if the Approved Capacity for an NMI is in the range that this NSP specified to approve for  | Account-holder         |  |
| 2021           | Update or Accept: Default data input has been edited. Accept when ready to proceed | Account-holders must not edit pre-populated AC Connection attributes that were submitted by NSP  | Account-holder         |  |
| 2022           | Update or Accept: Default data input has been edited                               | Account-holders must not edit pre-populated DER Devices attributes that were submitted by NSP  | Account-holder         |  |
| 2023           | Review data: Data not provided   | NSP must be notified if optional fields are not submitted by Account-holders.  | NSP and Account-holder | NSP cannot acknowledge this exception.   |
| 2030           | Review data: Inverter capability does not provide required control mode            | Inverter must have the capabilities to support the inverter settings data, i.e. if user has entered inverter settings data for inverter capabilities, but the inverter entered does not have the capabilities that support it, the system will raise an exception. | Account-holder and NSP | NSP cannot acknowledge this exception. Exception will be resolved if the selected mode that resulted exception becomes "Not Enabled" |

| Exception Code | Exception Message  | Business Rules  | Applies to             | Comments  |
|----------------|--|---|------------------------|---|
| 2040           | Review data:<br>Installed capacity greater than approved capacity  | If no export limit is specified, approved capacity must be equal or bigger than AC Connection installed Capacity  | Account-holder and NSP | AC Connection Installed capacity is a calculated value. It represents what is the total capacity physically installed at site.<br>Exceptions generated due to this validation rule cannot be acknowledged.<br>All AC Connections and DER Devices that were newly added will be "Conditional". Refer to "DER Process Update" |
| 2050           | Review data:<br>Equipment capacity not aligned to third-party accredited product database for this model | For accredited inverters, "Inverter device capacity" must be aligned with the submitted model number.<br>Reference data shall be used for validating this alignment.                        | Account-holder and NSP | These exceptions cannot be acknowledged.  |
| 2051           | Review data:<br>Standards entered not aligned to third-party accredited product database for this model  | For accredited inverters, "What standard applies to the inverter" attribute must be aligned with the submitted model number.<br>Reference data shall be used for validating this alignment. | Account-holder and NSP |   |

| Exception Code | Exception Message   | Business Rules   | Applies to             | Comments |
|----------------|---|--|------------------------|----------|
| 2052           | Review data: Model number not available for this manufacturer in third-party accredited product database              | For accredited inverters, "Model Number" attribute must be aligned with the submitted Manufacturer Reference data shall be used for validating this alignment.                     | Account-holder and NSP |          |
| 2053           | Review data: Inverter series not available for this manufacturer and model in third-party accredited product database | For accredited inverters, "Inverter Series" attribute must be aligned with the submitted Manufacturer and model number Reference data shall be used for validating this alignment. | Account-holder and NSP |          |
| 2060           | Review data: Equipment capacity not aligned to third-party accredited product database for this model                 | For accredited batteries (storage), "Nominal rated capacity" must be aligned with the submitted model number. Reference data shall be used for validating this alignment.          | Account-holder and NSP |          |



| Exception Code | Exception Message  | Business Rules   | Applies to             | Comments |
|----------------|--|--|------------------------|----------|
| 2061           | Review data: Equipment capacity not aligned to third-party accredited product database for this model    | For accredited batteries (storage), "Nominal storage capacity" must be aligned with the submitted model number.<br>Reference data shall be used for validating this alignment. | Account-holder and NSP |          |
| 2062           | Review data: Model number not available for this manufacturer in third-party accredited product database | For accredited batteries (Storage) or Solar PVs , "Model Number" must be aligned with the Reference data shall be used for validating this alignment submitted Manufacture.    | Account-holder and NSP |          |