



CLEAN ENERGY COUNCIL
**ACCREDITED
INSTALLER**

ADVICE ON LABELLING REQUIREMENTS FOR GRID CONNECT PV AND BATTERY INSTALLATIONS

JUNE 2022

A decorative graphic in the bottom right corner of the page, consisting of a large number of orange dots arranged in a semi-circular, sunburst-like pattern. The dots are of varying sizes and are set against a white background, creating a modern, clean aesthetic.

TABLE OF CONTENTS

1	PREFACE	2
2	SCOPE AND GENERAL	3
3	RELEVANT STANDARDS	3
4	APPLICATION OF LABELLING	3
5	SUMMARY AND REQUEST FOR FEEDBACK	9

1 PREFACE

This advice document has been prepared by the Clean Energy Council (CEC) to assist accredited designers and installers understand, interpret and implement the labelling requirements for PV and Battery installations in relation to the relevant Australian Standards that relate to design and installation of renewable energy technologies.

This advice alone does not constitute a fully definitive set of rules and should be read in conjunction with existing relevant standards, codes, network service provider rules and manufactures documentation.

While all care has been taken to ensure this advice is free from omission and error, no responsibility can be taken for the use of this information.

The CEC will continue to work with the Clean Energy Regulator (CER), state, territory electrical safety regulators and industry bodies to keep this document updated in order to assist accredited designers and installers remain current with their requirements.

The objective of this advice document is to:

- improve the safety, performance, and reliability of photovoltaic (PV) arrays
- encourage industry best practice for all design and installation work.

The performance of a reliable installation that fulfils system owner expectations requires both careful design and correct installation practice. Further tools to assist you to interpret Australian Standards can be accessed via the installer [login section of the website](#).

2 SCOPE AND GENERAL

CEC accredited designers and installers are required to follow many obligations.

One of these obligations is to ensure that the correct labelling of PV and battery systems is applied as per the requirements in the relevant Australian Standards.

Australian Standards can be open to interpretation. Some questions that arise may need to be ruled on by your local electrical safety regulator.

Standards are living documents that reflect progress in science, technology, and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. These rules are amended and updated regularly to suit the constant changes in the electrical industry due to new materials and installation techniques.

Therefore, it is important that CEC accredited people ensure they are using a current Standard, including any amendments that may have been published since the Standard was purchased.

Please note, when amendments are made to any Standard, you must incorporate these amendments into your copy of the Standard. Amendments to Standards are often free.

3 RELEVANT STANDARDS

The Standard required will depend on the type of design and/or installation. This guide aims to capture the labelling requirements for accredited installers from:

Standard	Title	Version referenced
AS/NZS 3000	Electrical installations [known as the Wiring rules]	2018 Amendment 1&2
AS/NZS 4777.1	Grid connection of energy systems via inverters	2016
AS/NZS 5033	Installation and safety requirements for photovoltaic (PV) arrays.	2021
AS/NZS 5139	Electrical installations – Safety of battery systems for use with power conversion equipment	2019

4 APPLICATION OF LABELLING

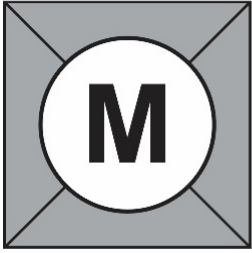
For Grid connected PV systems, the sections with no background colour may apply to your installation.

If your system also contains batteries, all of the following sections may apply to your installation.

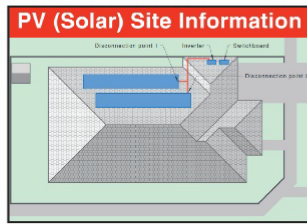
Please note, this is a comprehensive list of all possible labels that *could* be applied to a grid connected PV and/or Battery system, and the appropriate location.

It is the responsibility of the accredited installer to determine which labels apply to their installation.

Meter Panel



Fixed on the outside of the Meter Panel and Main Switchboard and be readily visible to approaching emergency workers.
AS/NZS5033 clause 5.4.1



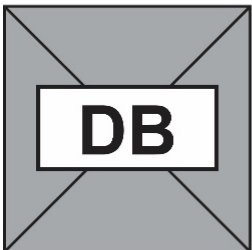
Fixed at the Main Switchboard and/or Meter Panel, Fire Panel.
AS/NZS5033 clause 5.6.1 & 5.6.1.1

Below are additional labels for systems that contain batteries

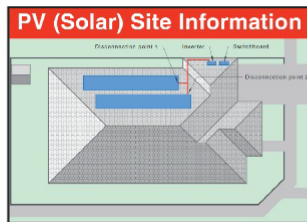


Fixed adjacent to the main metering panel, and main switchboard as to be visible to approaching emergency workers. The label must display the relevant UN# for the battery chemistry.
AS/NZS5139 clause 7.3

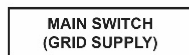
Switchboards



Fixed on the outside of the Meter Panel and Main Switchboard and be readily visible to approaching emergency workers.
AS/NZS5033 clause 5.4.1



Fixed at the Main Switchboard and/or Meter Panel, Fire Panel.
AS/NZS5033 clause 5.6.1 & 5.6.1.1



Fixed adjacent the MAIN SWITCH for the grid supply.
AS/NZS4777.1 clause 6.2 (c)



Fixed adjacent the Main Isolator/s for the normal supply to the DB
AS/NZS4777.1 clause 6.2 (d)



Fixed adjacent the MAIN SWITCH for the IES.
AS/NZS4777.1 clause 6.2 (b)



Provided in a prominent location on the switchboard where the inverter is not immediately adjacent to the switchboard.
AS/NZS4777.1 clause 6.2 & 6.4



Fixed at the Switchboard to which the IES is directly connected.
AS/NZS4777.1 clause 6.2 (a)



Fixed at the Main Switchboard and all intermediate distribution boards when the IES is connected to a distribution board.
AS/NZS4777.1 clause 6.3

Below are additional labels for systems that contain batteries



Fixed adjacent to the main metering panel, and main switchboard as to be visible to approaching emergency workers. The label must display the relevant UN# for the battery chemistry.
AS/NZS5139 clause 7.3

**MAIN SWITCH
(BATTERY SUPPLY)**

Fixed adjacent to the Main switch for the grid-interactive port of the multiple mode inverter.
AS/NZS4777.1 clause 6.2 (b)

**MAIN SWITCH
(STAND-ALONE
SUPPLY)**

Fixed adjacent to the Main Switch for the stand-alone port of the multiple mode IES.
AS/NZS4777.1 clause 6.11

BATTERY LOCATED

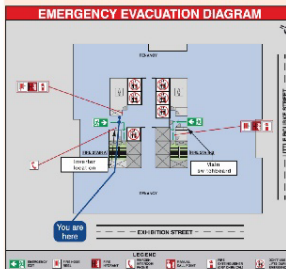
Fixed adjacent to the Main Switch for the Battery System.
AS/NZS4777.1 clause 6.2 & 6.4



Fixed at the Main Switchboard and all intermediate distribution boards.
AS/NZS4777.1 clause 6.11

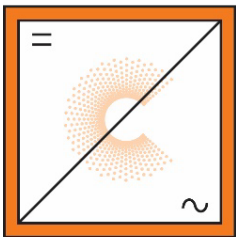
**BATTERY SUPPLY
SHORT CIRCUIT CURRENT 6000A
MAX DC VOLTS 160V**

Fixed at the Main Switchboard.
AS/NZS4777.1 clause 6.5



Fixed on Main Switchboard and/or Fire Panel when inverter locations are difficult to find or in large buildings.
AS/NZS4777.1 clause 6.3
AS/NZS5139 clause 7.4

Inverter



**INVERTER A.C.
ISOLATOR**

Fixed to AC isolator adjacent to inverter.
AS/NZS4777.1 clause 6.8 (a)

**PV ARRAY
D.C. ISOLATOR**

Fixed to DC isolator/s at the inverter.
AS/NZS 5033 clause 5.5.1 & 5.5.2.1

**SHUTDOWN
PROCEDURE**

INSERT
APPROPRIATE
STEPS FOR
SAFE SHUTDOWN.



WARNING

PV ARRAY D.C. ISOLATORS
DO NOT DE-ENERGISE THE PV
ARRAY AND ARRAY CABLING

Fixed at the inverter.
AS/NZS5033 clause 5.7 & AS/NZS4777.1 clause 6.7

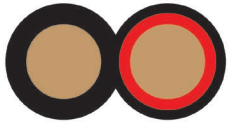


WARNING

MULTIPLE D.C. SOURCES
TURN OFF ALL D.C.
ISOLATORS TO ISOLATE
EQUIPMENT

Fixed at DC isolators when multiple devices are used that are not ganged together.
AS/NZS5033 clause 5.5.2.1

Wiring system between Inverter and Array



Fixed to array junction boxes containing PV DC cable terminations.
AS/NZS5033 clause 5.3.2



Fixed to the wiring system / wiring system enclosure where it is not directly behind and adjacent to the PV modules.
AS/NZS5033 clause 5.3.1.1

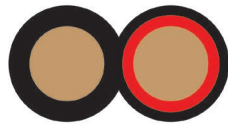


Solar d.c. cables in conduit have been installed in this ceiling space. The conduit is labelled 'SOLAR' and care must be taken while working nearby. The internal solar d.c. cables may be live and must not be disturbed or damaged.

Where disconnection points have been utilised and cables run within ceiling spaces / accessible floor spaces, fixed to the access point.
AS/NZS5033 clause 5.3.1.2

NOTE: This label does not need to be applied to the visible surface of a ceiling or floor space access point. It can be located within the ceiling or floor space, adjacent the access point and clearly visible.

Wiring system between Inverter and Battery

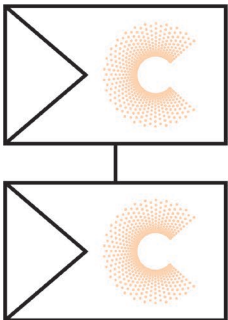


Below are additional labels for systems that contain batteries



Fixed to battery cabling / battery cabling enclosure every 2m.
AS/NZS5139 clause 7.14

Array



Fixed to Load Break Disconnector/s at the array
AS/NZS5033 clause 5.5.1 & 5.5.2.1

NOTE: AS/NZS5033 clause 5.5.1 also requires that Load Break Disconnectors are marked with an identification name or number consistent with the shutdown procedure.



Fixed to array junction boxes containing PV DC cable terminations.
AS/NZS5033 clause 5.3.2



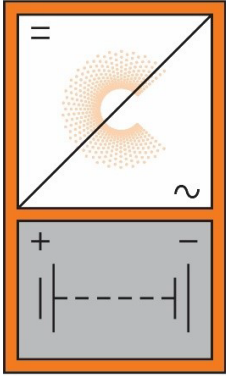
Attached to the PV module or structure within 300mm of the disconnection point.
AS/NZS5033 clause 5.5.2.2



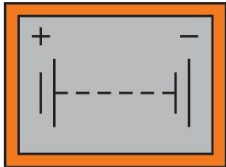
Attached to both the positive and negative cable within 100mm of the disconnection point.
AS/NZS5033 clause 5.5.2.2

NOTE: Although not a requirement, the CEC recommends marking disconnection points with an identification name or number consistent with the shutdown procedure. Similar to the requirement for Load Break Disconnectors under clause 5.5.1

Battery System



Section 4 BESS



Section 5 BS

Below are additional labels for systems that contain batteries

**BATTERY SYSTEM
A.C. ISOLATOR**

Fixed to AC isolator adjacent to BESS.
AS/NZS4777.1 clause 6.8 (b)

**BATTERY SYSTEM
D.C. ISOLATOR**

Fixed to the battery system isolation device in a prominent location.
AS/NZS5139 clause 7.12.2 *Note: See other clauses in 7.12 & 7.13.*

BATTERY SUPPLY
SHORT CIRCUIT CURRENT _____ A
MAX D.C. VOLTS _____ V

Fixed adjacent to the enclosure or on all doors where the battery system is located.

For systems over DVC-A an additional line shall be added to the sign stating 'Hazardous D.C. Voltage'.

Where multiple battery systems are installed within one electrical installation, there shall be a sign for each battery system.

AS/NZS5139 clause 7.6

BATTERY SYSTEM (specify location)
SHORT CIRCUIT CURRENT (specify) _____ A
MAX D.C. VOLTS (specify) _____ V
HAZARDOUS D.C. VOLTAGE

MULTIPLE BESS SUPPLIES
BESS # 1/4
SHORT CIRCUIT CURRENT _____ A
MAXIMUM D.C. VOLTS _____ V

**SHUTDOWN
PROCEDURE**
INSERT APPROPRIATE
STEPS FOR
SAFE SHUTDOWN

Fixed adjacent to the PCE to which the battery system is connected and adjacent to and visible from the equipment to be operated in the event of a shutdown.

AS/NZS5139 clause 7.16



Disconnectors for DVC-B & DCV-C systems and HRC fuse holders.
Fixed adjacent to or on each disconnector or HRC fuse holder.
AS/NZS5139 clause 7.12.4 and 7.13.3.



Fixed adjacent to the PCE connected to the multiple battery systems.
AS/NZS5139 clause 7.12.3



Where more than one sign is required at the same location they may be incorporated into one physical label.
AS/NZS5139 clause 7.2

NOTE: Hazard labeling is specific to the battery technology being installed, required labels must be identified as part of the Risk Assessment process required for all battery systems. See AS/NZS 5139:2019 Appendix G for further information.



Fixed adjacent to the enclosure or on all doors to the room where the battery system is located
AS/NZS5139 clause 7.5



Fixed adjacent to the enclosure or on all doors to the room where the battery system is located
AS/NZS5139 clause 7.5



Fixed adjacent to the enclosure or on all doors to the room where the battery system is located.
AS/NZS5139 clause 7.8



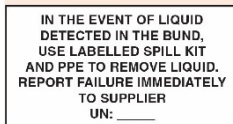
Fixed adjacent to the enclosure or on all doors to the room where the battery system is located.
AS/NZS5139 clause 7.9



Fixed adjacent to the enclosure or on all doors to the room where the battery system is located.
AS/NZS5139 clause 7.10



Fixed adjacent to the enclosure or on all doors to the room where the battery system is located.
AS/NZS5139 clause 7.11



Fixed adjacent to the battery systems.
AS/NZS5139 clause 7.19

5 SUMMARY AND REQUEST FOR FEEDBACK

Where possible, Section 2 of the [advice document AS/NSZ 5033:2021](#) has captured the labelling requirements listed across the relevant Australian Standards.

For questions, additional information, or observations, please use the CEC [online feedback form](#).