

Grid Connected Inverter requirements

Industry guidance: December 2021

About this guidance

A grid connected inverter is a vital part of a grid-connect solar electricity system as it converts the DC current generated by solar panels to the 230 volt AC current needed to run household appliances.

It is important they are manufactured in compliance with strict requirements to ensure safe operation.

Part 2 of Australian Standard 4777.2 Grid connection of energy systems via inverters (AS/NZS 4777.2) provides requirements and tests for inverters intended for the injection of electric power through an electrical installation to the electricity distribution network.

From 18 December 2021, AS/NZS 4777.2 will change; the 2015 version will be replaced by the 2020 version.

This document provides guidance to manufacturers, suppliers and registered electrical contractors (RECs) in relation to certification of inverters to AS/NZS 4777.2:2020. It does not replace any requirements and manufacturers and suppliers should ensure they understand their legal duties.

Background

Standards Australia updated the AS/NZS 4777.2 standard on 18 December 2020 (AS/NZS 4777.2:2020). The updated inverter standard has a 12 month transition period that ends on 18 December 2021.

The update of the inverter standard has included the requirements for inverters with integrated direct current (DC) isolators for isolation of PV array energy sources to conform with the requirements of AS 60947.3 "Low voltage switchgear and controlgear, Part 3: Switches, disconnectors, switch-disconnectors and fuse combination units (IEC 60947-3:2015 (ED. 3.2) MOD)".

Energy Safe Victoria (ESV) is aware that manufacturers and suppliers are having difficulty in getting their DC isolators certified to the Australian standard (AS 60947.3).

Guidance

Certification

ESV acknowledges the challenges manufacturers and suppliers currently face getting their DC isolators certified to AS 60947.3, due to the current unavailability of approved test labs with accreditation to carry out the required tests.

Therefore, while ESV will require all inverters installed in premises located in Victoria to comply with AS/NZS 4777.2:2020 (including the requirement that an inverter's integrated DC. isolators comply with AS 60947.3:2018) from 19 December 2021, it will allow suppliers/manufacturers until 30 June 2022 to achieve certification of those DC isolators.

The Clean Energy Council (CEC) has accepted this position and will not require evidence of certification to enable solar PV inverters incorporating DC isolators to be listed on the CEC list of compliant inverters and power conversion equipment (PCE) suitable for installation under the Small-Scale Renewable Energy Scheme (SRES) for the period up to and ending 30 June 2022.

Installation

The transition period for the updated inverter standard ends on 18 December 2021.

From 19 December 2021, the updated inverter standard becomes a requirement under reg 202 of the *Electricity Safety (General Regulations) 2019*. Therefore RECs must ensure any inverter that they install on and from 19 December 2021, is compliant with AS/NZS 4777.2:2020:

- RECs can rely on the supplier declaration of compliance to AS/NZS 4777.2:2020 as evidence that the inverter complies with the AS/NZS 4777.2:2020 standard.
- ESV uses the “date of completion” on a Certificate of Electrical Safety to determine the date that the inverter installation was completed.

Who we are

We are Victoria’s safety regulator for electricity, gas and pipelines.

Our role is to ensure that Victorian gas and electricity industries are safe and meet community expectations. We are also responsible for licensing and registering electricians, and educating the community about energy safety.

More information is available on the Energy Safe Victoria website: www.esv.vic.gov.au