Sungrow Inverter Compliance to AS/NZS 4777.2: 2020 Procedure

Disclaimer

The material in this document has been prepared by Sungrow Australia Group Pty. Ltd. ABN 76 168 258 679 and is intended as a guideline to assist solar installers for troubleshooting. It is not a statement or advice on any of the Electrical or Solar Industry standards or guidelines. Please observe all OH&S regulations when working on Sungrow equipment.

1. Background

With the new standard AS/NZS 4777.2:2020, which will supersede the current AS4777.2:2015, - Grid Connection of Energy Systems via Inverters Part:2 Inverter Requirements was released in 2020. Inverters that are not certified to the new 2020 standard by 18th December 2021, may not be able to be connected to the utility grid in Australia.

Please notice that a minimum software version is needed for inverters to be certified.

This document outlines the necessary procedure required to ensure compliance of Sungrow inverter range with AS/NZS 4777.2:2020.

The following Sungrow inverter series are relevant to this document

-   **PV Inverter**

    Model: SG2K-S, SG2K5-S, SG3K-S
    Firmware version: SG2K-S_SG2K5-S_SG3K-S_CrysG2S_V31_20211202

    Model: SG3K-D, SG5K-D
    Firmware version: SG3K-D_SG5K-D_CrysG2D_V31_20211202

    Model: SG8K-D
    Firmware version: SG8K-D_CrysG2T_V31_20211202

    Model: SG5.0RT, SG7.0RT, SG8.0RT, SG10RT, SG15RT, SG20RT
    Firmware version: BERYL-S_B000.V000.P020-20211214

    Model: SG30CX, SG50CX
    Firmware version: AGATE-S_B000.V000.P004-20211116

    Model: SG110CX
    Firmware version: AMBER-S_B000.V000.P004-20211113.zip

- **Hybrid Inverter**

Model: SH5K-30
Firmware version: SH5K-30_V01_unpack_20220124.zip
Model: SH5.0RS, SH6.0RS
Firmware version: SUNSTONE-H_B000.V000.P025-20220123.zip
Model: SH5.0RT, SH10RT
Firmware version: SAPPHIRE-H_B000.V000.P002-20211103

As of **18th, Dec. 2021** all inverters installed in Australia MUST meet the requirements of AS/NZS 4777.2:2020 and have one of the default Regions, listed below, activated upon commissioning:

AS/NZS 4777.2:2020 Australia A

AS/NZS 4777.2:2020 Australia B

AS/NZS 4777.2:2020 Australia C

It is the responsibility of the installer to confirm with the relevant DNSP as to which Region needs to be activated in the area of his installation. Following table is **ONLY** for reference.

Network	Standard	Default power quality setting
Western Power	AS 4777.2:2020	Australia B
Horizon Power, TasNetworks	AS 4777.2:2020	Australia C
All other Australian networks	AS 4777.2:2020	Australia A
Customer in New Zealand	AS 4777.2:2020	AS/NZS 4777.2:2020 New Zealand (in Country setting)

The default Region settings contain the required default Power Quality settings Volt-Watt, Volt-Var & Frequency Response settings and Protection settings. If changes are necessary, please refer to the knowledge base, available on request from Sungrow Technical Support.

2. Compliance Procedure
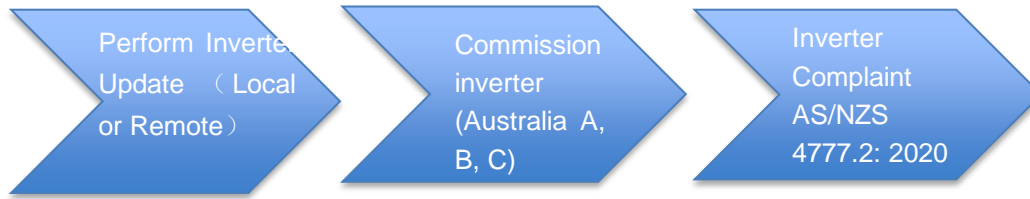
2.1 Local Firmware Upgrade via iSolarCloud

Preparation

- A Wi-Fi V24/V25/V31 module or Wi-Net Dongle
- A smart phone with **iSolarCloud** APP (Android or iPhone)

Firmware Upgrade

To download the new firmware files, login to iSolarCloud APP. Click on "**More**" on the bottom right corner and select '**Firmware download**' (Figure 1). A list of options will appear. The relevant inverter / communication module and downloaded files can be found using the buttons on the top right corner.
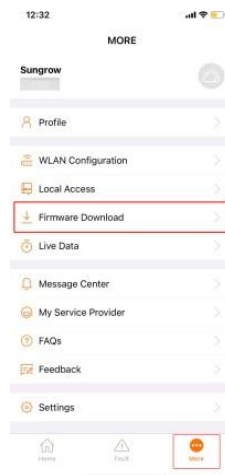
Figure1 Firmware List

Click on the corresponding firmware from the list and press the download button on the file. A message on the bottom of the screen will be displayed once the firmware file is downloaded succeed.

Figure 2 Firmware List   Figure 3 Firmware File
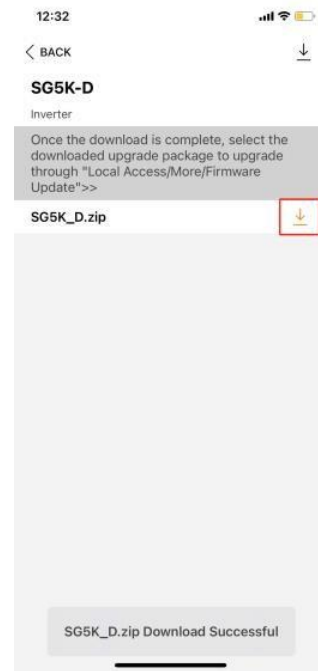
To filter between firmware for various inverters and communication modules, use the filter option and then select the relevant type (Figure 4 and Figure 5)

- **Inverter** – Grid-Connected Inverters
- **Energy Storage System** – Hybrid Inverters
- **Data Logger** – Loggers
- **Communication Module** – Wi-Fi Dongles
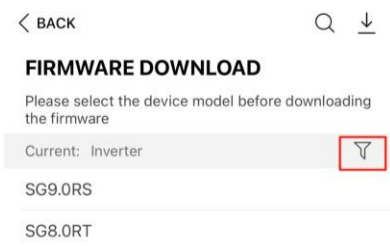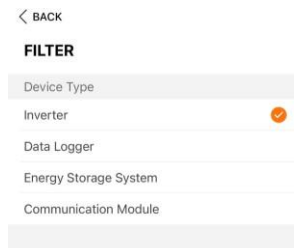

Figure 4 Firmware List   Figure 5 Firmware File

After the firmware file download is completed, it must be uploaded by logging in to the inverter through local access. For a detailed guide on local access methods, please click below.

- Local Access Methods Guide

Change the Wi-Fi network on your mobile phone from your home network to the Sungrow inverter network (network starting with SG). Open iSolarCloud app again and click '**Local Access**' → select **WLAN** access → enter the '**admin**' for the account and "**pw8888**" for the password →click '**Login**'. (Figure 6).
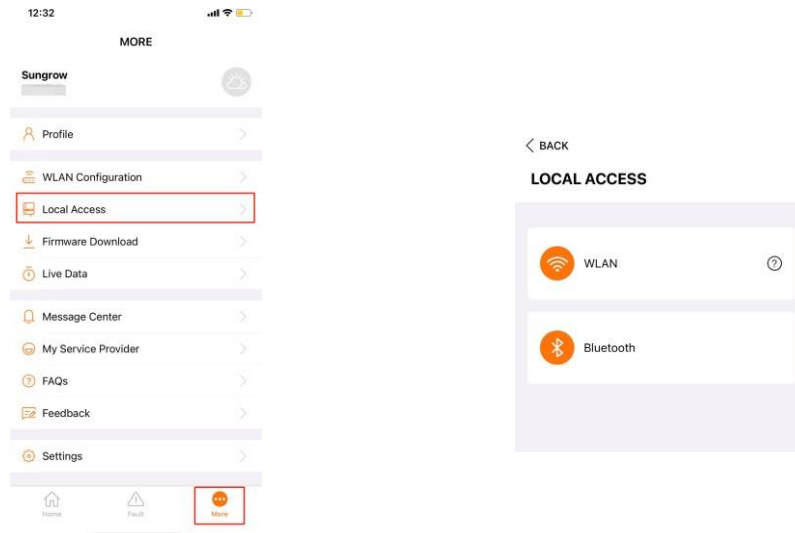
Figure 6 Local Access

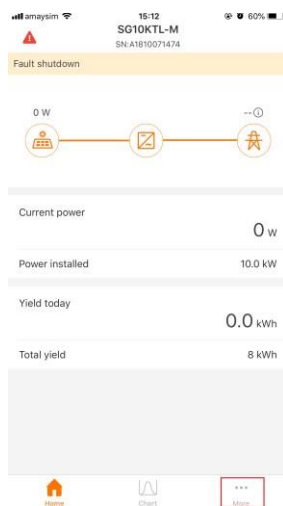Now click on the '**More**' button located on the bottom right corner of the iSolarCloud APP (Figure 7) and Select '**Update firmware**' (Figure 8).

Figure 7 Local Access   Figure 8 Device Upgrade
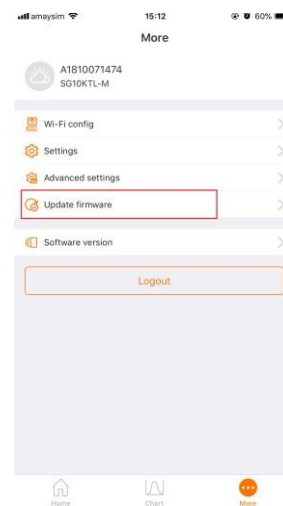
After that, it will display the firmware zip file. Select the corresponding firmware file and click on the '**Confirm**' button (Figure 9). Please wait about 10 to 15 minutes for the firmware upgrade.
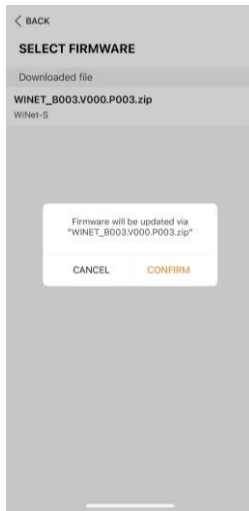
Figure 9 Upload Firmware   Figure 10 Firmware Upgrade   Figure 11 Upgrade Successfully
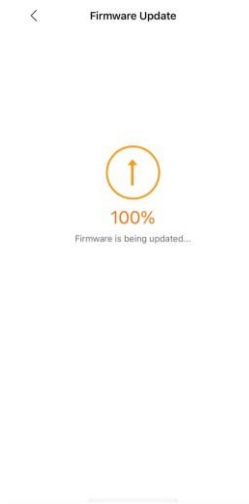
It will display the part number before and after the update, which can help ensure the correct files have been used to update.

Regardless of the update percentage, do not quit the app or disconnect from the SG Wi-Fi until the app indicates that the upgrade is complete

Click here to watch the instruction for upgrading the firmware via iSolarCloud app.

2.2 Remote Firmware Upgrades via iSolarCloud

Applicability: Sungrow Crystal G2 Series, Three Phase Residential and CX range, Single-Phase Hybrid (SH5K-20/30), Three-Phase Hybrid Range

Communication Device Requirements

Inverter Type	Communication Device
Single-Phase / Three-Phase Residential Range (Grid-Connect & Hybrid)	V25/V31 Wi-Fi Dongle
Three-Phase Commercial Range	EyeM4, Logger1000

Upgrade Procedure

The **Firmware Upgrade** option can be found in the main menu under "**Advanced**". Selecting it will allow the user to search for the plant which needs to be upgraded.
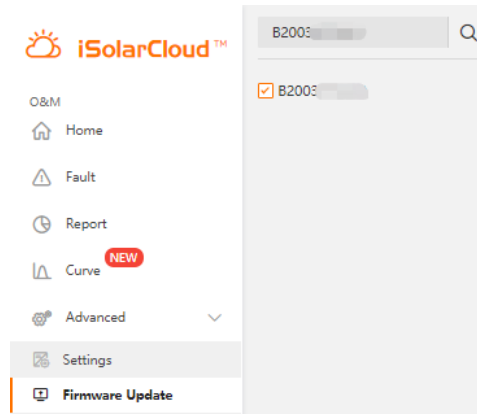
Firmware Update & Plant Search

On selecting the plant, the relevant device and type can be selected on the right. Please use the following guide with respect to Figure 2 to locate the device:

- Grid-Connected Inverters – **Inverter**
- Hybrid Inverters – **Energy Storage System**
- Loggers – **Data Loggers**
- Wi-Fi Dongles – **Communication Module**
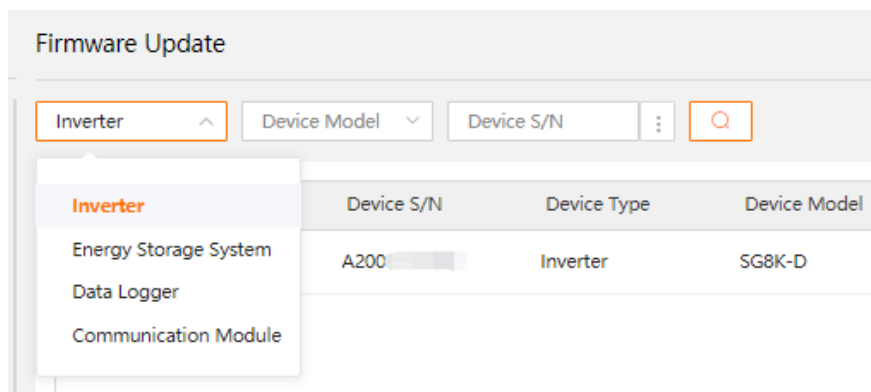
Device Type

Once the type has been selected, the relevant device must be selected and then click "**Firmware Update**". The clock symbol can be used to check the task history and status of the upgrade.
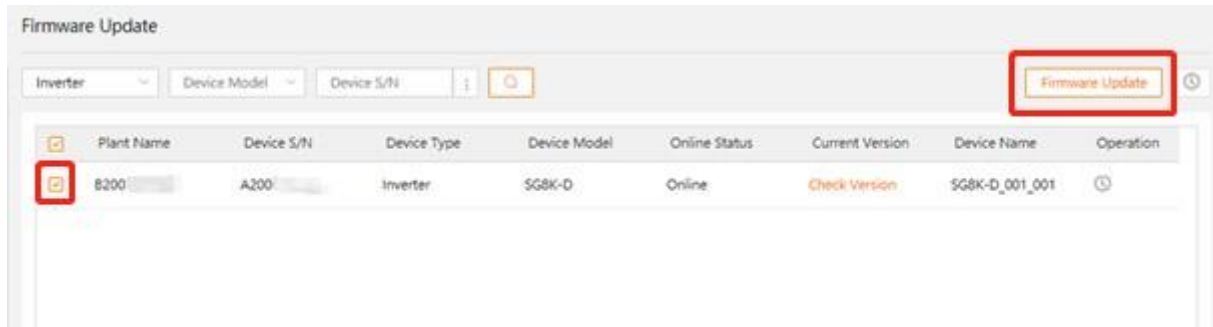
Firmware Update

This will give a prompt to select the updating package. Here "**Online Update Package**" can be selecting. This option will show if there is a newer update available and will update the device to it. Thereafter, simply click "**Update**".
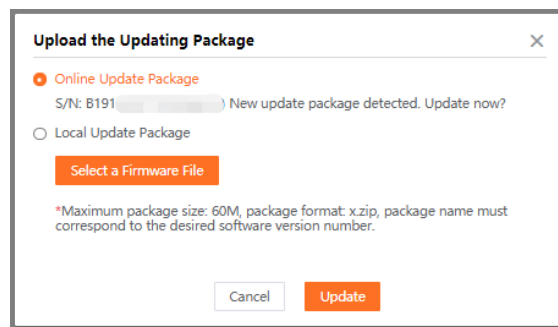
Update Package

To proceed further with the upgrade, a password must then be entered. This password is the same as **the login password for the account**.
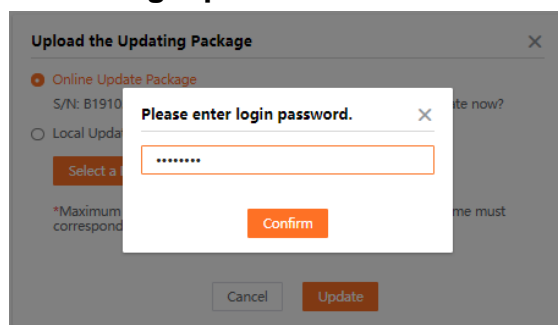
Login Password

A task name and a timeout period can then be selected. The timeout period is the time after which the upgrade will timeout if it is not complete.

Task Name & Timeout

After clicking confirm and update, the upgrade will begin. The status can then be checked using the "**Clock Option**". Clicking "**View**" will allow the user to view the exact status of each file being uploaded.

Task History & Status

To watch a step by step guide on upgrading the firmware remotely, click on the video link below:

- iSolarCloud Remote Firmware Upgrade

Please make sure the inverter with the following corresponding new firmware version after the firmware upgrade finish.

Type	Firmware Version
SG2K-S	MDSP_CrysG2S_V31_V72 SDSP_CrysG2S_V31_V21 LCD_CrysG2S_V31_V34
SG2K5-S	
SG3K-S	
SG3K-D	MDSP_CrysG2D_V31_V72 SDSP_CrysG2D_V31_V21 LCD_CrysG2D_V31_V34
SG5K-D	
SG8K-D	MDSP_CrysG2T_V31_V47 SDSP_CrysG2T_V31_V11 LCD_CrysG2D_V31_V34
SG5.0/7.0/8.0/10/15/20RT	BERYL-S_B000.V000.P020-20211214
SG30/50CX	AGATE-S_B000.V000.P004-20211116
SG110CX	AMBER-S_01011.01.19 AMBER-S_04011.01.14 AMBER-S_03011.01.17
SH5.0RT	SAPPHIRE-H_01011.01.17 SAPPHIRE-H_03011.01.14
SH10RT	

3. Commission Inverter

3.1 Commission via iSolarCloud APP locally
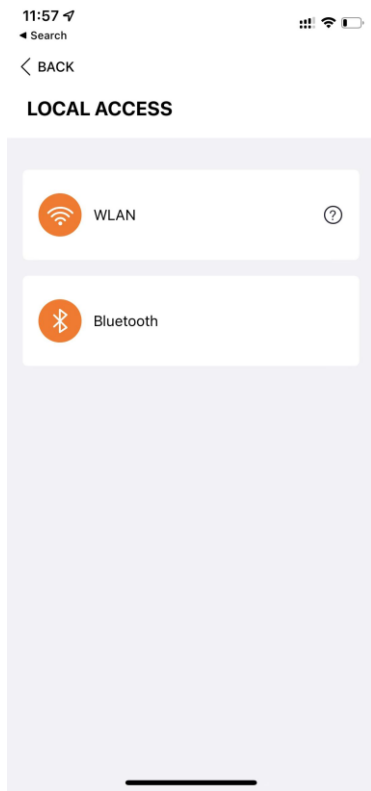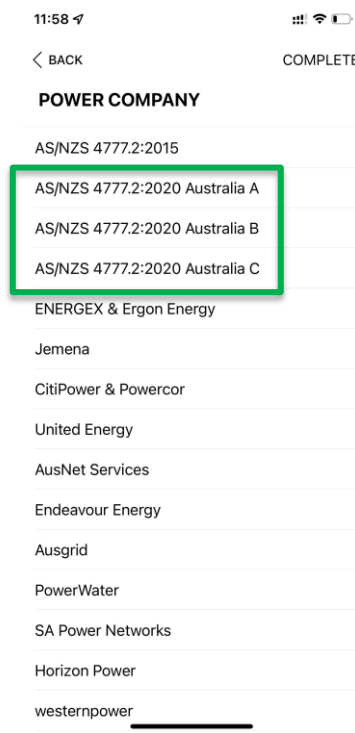

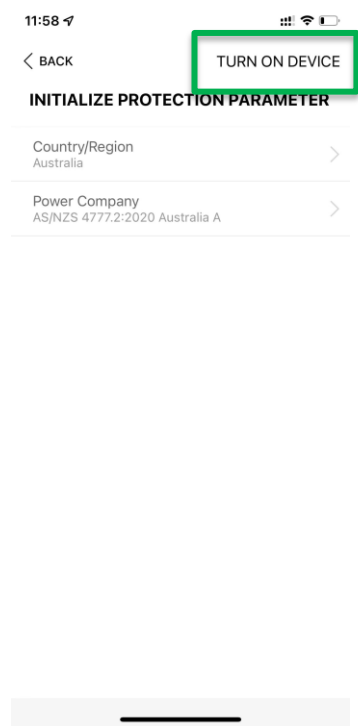***1 Local access via WLAN**   ***2 Login with admin with pw8888**   ***3 Enter initial grid setting**
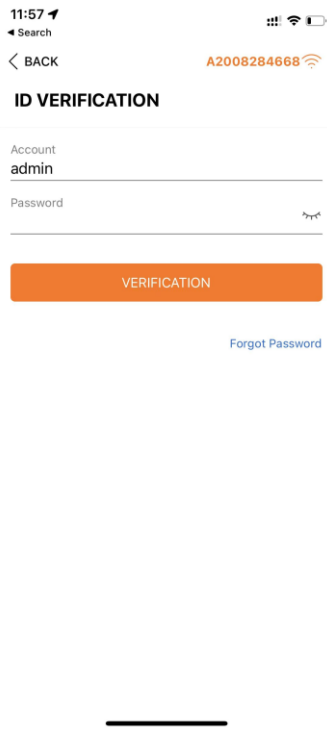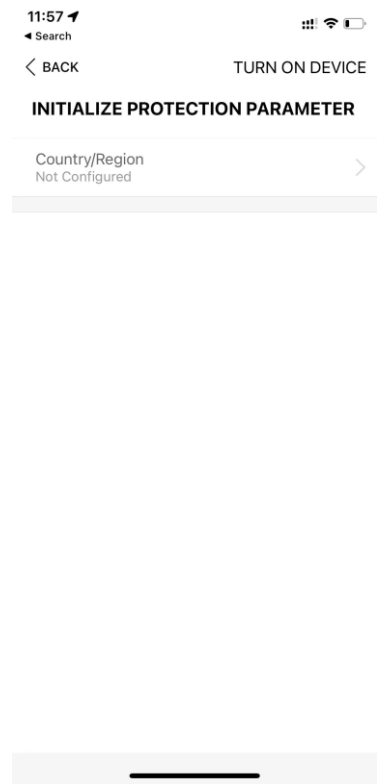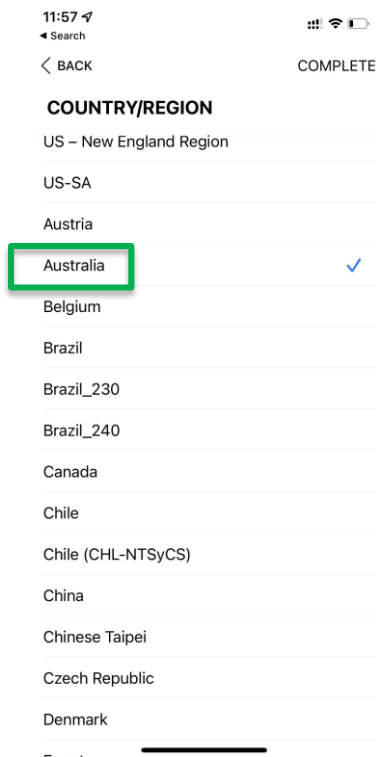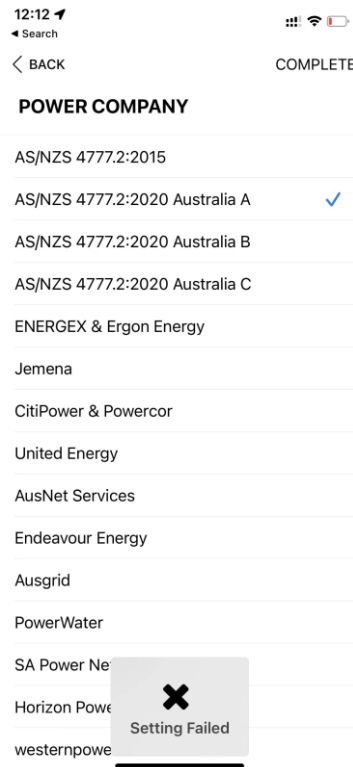

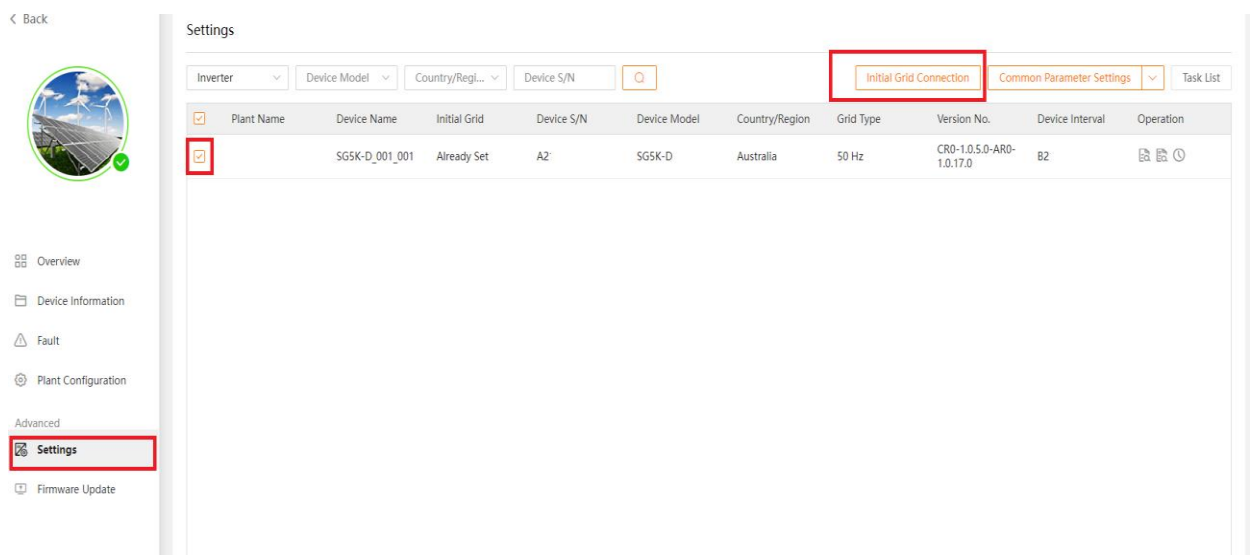***4 Select the country Australia**   ***5 Select the power company (A/B/C)**   ***6 Turn on the device**

If the inverter didn't upgrade to the latest firmware, it will pop up the setting failed when you select the power company according to the new AS.NZS 4777 standards.

3.2 Commission via iSolarCloud browser remotely

Login the installer iSolarCloud account, search the plant and enter the **Settings**. Click the tick box and select the plant, then click the **Initial Grid Connection.**

Select the **Country**, and select the **Power Pompany** AS/NZS 4777.2: 2020 Australia A o B or C. Then, click Apply Settings to finalise.

If the issue persists after following above procedures, please take photos testing on site and contact Sungrow Service Department on 1800 786 476 or email to service@sungrowpower.com.au, Monday- Friday 9am - 5pm (AEDT).