TECHNICAL BRIEF – AUS

Enabling Common Smart Inverter Profile (CSIP) process

Contents

Applicable countries

- Australia

Overview

This document describes the process to be followed by the installer to enable an Australia Common Smart Inverter Profile (CSIP-AUS) for sites under South Australia Power Networks (SAPN). This document applies to the new Enphase Energy Systems commissioned under the jurisdiction of SAPN.

Introduction

The solar energy systems commissioned in South Australia are mandated to comply with CSIP-AUS. The Enphase components required are as follows:

- IQ Gateway and IQ System Controller:
  - IQ Gateway Metered (ENV-S-WM-230)
  - IQ System Controller INT (SC100G-M230ROW)
- IQ8 Series Microinverters:
  - IQ8AC-72-M-INT
  - IQ8HC-72-M-INT
  - IQ8MC-72-M-ACM-INT
  - IQ8MC-72-M-ACM-INT-RMA
  - IQ8MC-72-M-ACM-INT-NM

AUS-CSIP compatible software

The CSIP-AUS functionality is available in IQ Gateway software version 8.2.5x and above.
If the software version is incompatible, Enphase Cloud upgrades the IQ Gateway software to 8.2.5x within 24 hrs of completion of commissioning.

References

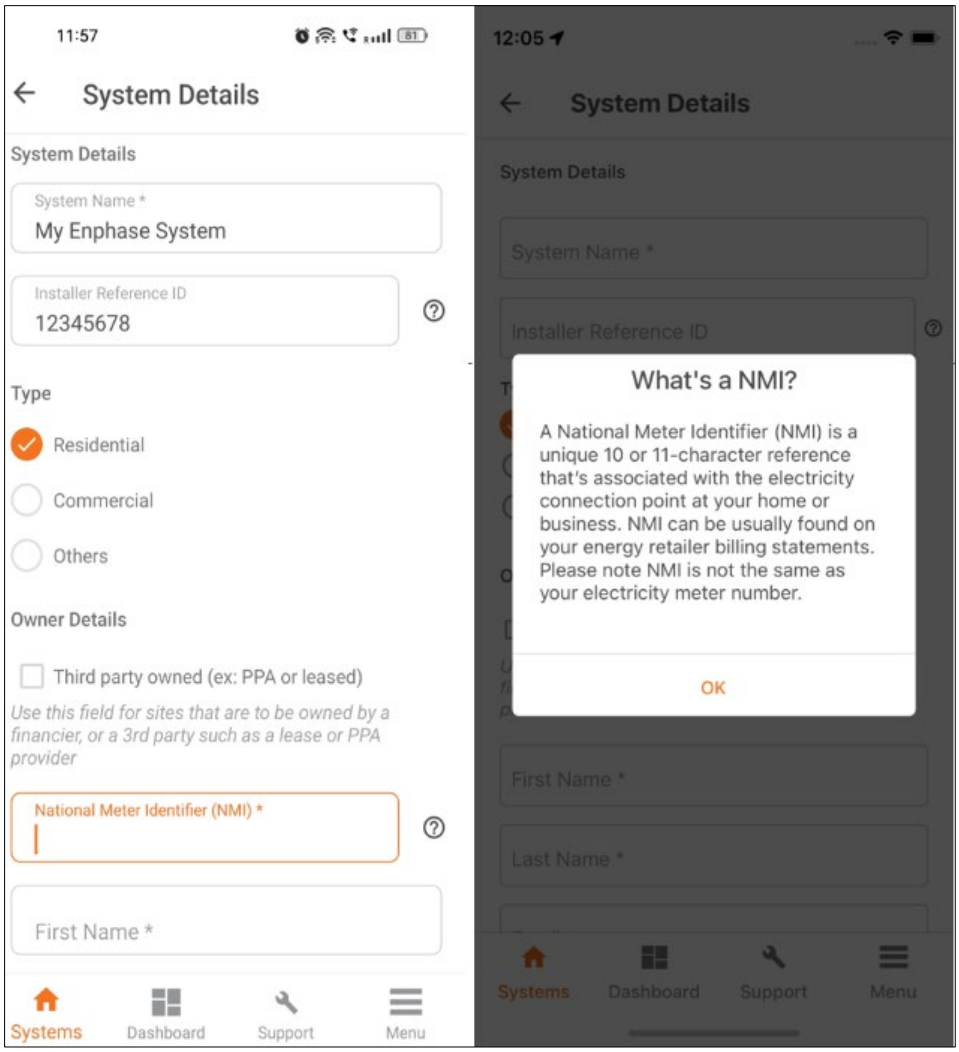
Refer to the article How do I read the LEDs on the Envoy-S or the IQ Gateway
Refer to the article Installer Information for Smart SA Installer web portal
Refer to the article Commissioning of grid-tied PV-only Enphase Energy System

Enabling CSIP for a new Enphase Energy System

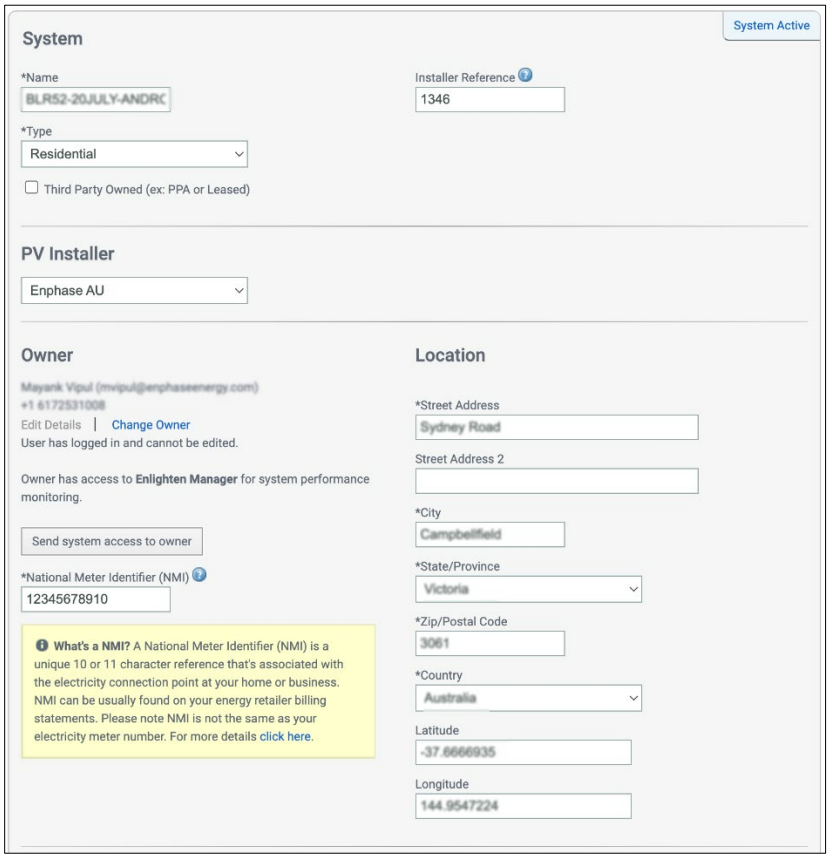
Follow the process to enable a CSIP-AUS for a new Enphase Energy System.

NOTE: The installer arrives at the site with IQ Gateway and IQ8 Series Microinverters.

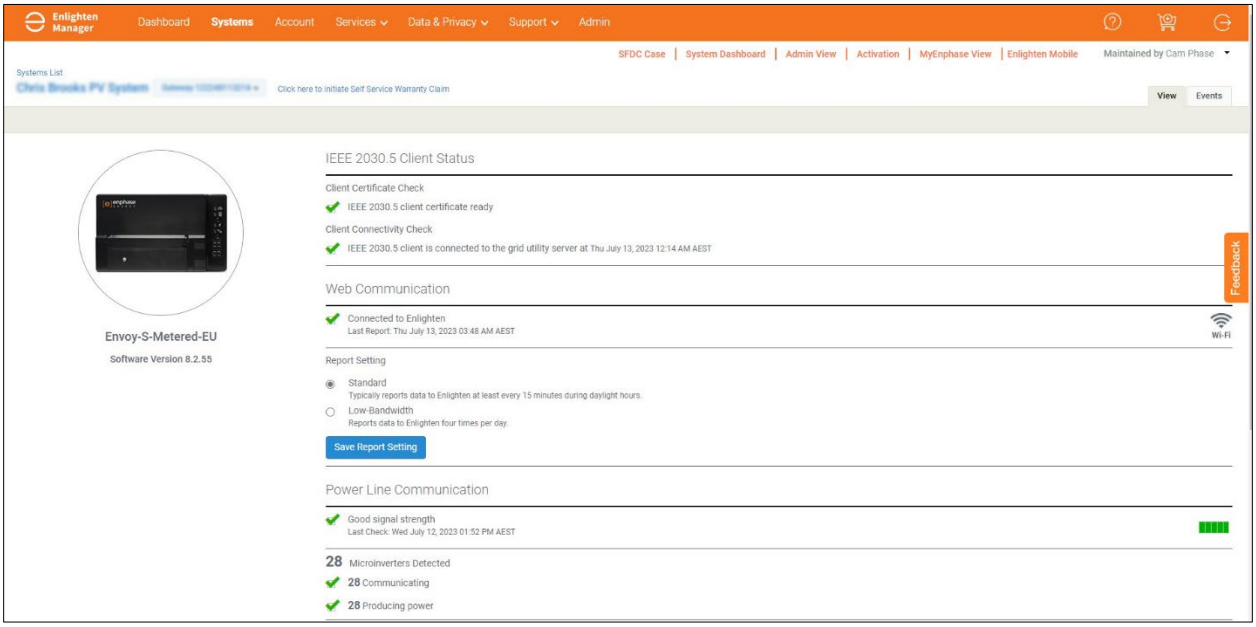
1. Enter the correct “National Meter Identifier (NMI)” code in Enphase Installer App as shown in the following screen:



2. Ensure the IQ Gateway is connected to the internet and reports to Enphase Cloud as part of step 4 in the commissioning process. Refer to the Commissioning of grid-tied PV-only Enphase Energy System.
3. Verify that the NMI code entered in Enphase Installer App is displayed in the “Activations” tab in Enphase Installer Portal. Update it if the NMI code is not correct.



4. After 24 hrs, the page under Devices > IQ Gateway > Enlighten Manager in the Enphase Installer Portal is updated. The IQ Gateway is connected to the SAPN server. If the "Client Connectivity Check" is not checked, the installer should call the Enphase Support team at (1800) 006-374.



5. Confirm the IQ Gateway connection with the SAPN server is established.
6. Open the Smart SA Installer web portal and execute the capability tests remotely using the SAPN portal (refer to the article Installer information for more details).
7. If any CSIP-AUS capability test fails, the installer should call the Enphase Support team at (1800) 006-374.

Features supported in AUS-CSIP implementation

The Enphase Energy System meets SAPN interoperability requirements of AUS-CSIP with IEEE 2030.5 communication. This brings the visibility (static and near-real-time) of DER and active management through the provision of dynamic (real power) import and export limits.

All DERs and related communications will support the autonomous and advanced control functionality. The advanced control functions are executed in response to commands from the utility server. The following lists the essential features related to AUS-CSIP requirements:

- IQ Gateway client with the IEEE 2030.5 interface to control and measure the power export to the grid at the point of common coupling (PCC). It is based on the utility server commands and scheduled exports.
- DER controls can be scheduled based on the commands from the utility server.
- The DER follows the AS/NZS 4777.2 regulations during connection or reconnection to the grid. Also, upon reconnection or startup of the IQ Gateway client, the default DER settings will be applied before communication establishment with the utility server and receipt of an active DER control event.
- DER readings are reported to the utility server at 5 minutes intervals, and the interval can be adjusted via the utility server.
- DER settings are updated at 5 minutes intervals, and the interval can be adjusted through the utility server.
- The operation and connection status values report to the server,
    - Whenever there is a change in the status
    - At the DER readings report interval.
- IQ Gateway client stores the default DER settings between communication and electrical network interruptions.
- The default DER settings will be in effect until it is changed or a DER control event occurs. The utility server will utilize the default DER settings to control the desired fail-safe behavior of the IQ Gateway client.

Glossary

AS/NZS 4777.2:2020 Specifies device specifications, functionality, testing, and compliance requirements for electrical safety and performance for inverters designed to facilitate connectivity between energy sources and/or energy storage systems and the grid, connected at low voltage.

CSIP: Common Smart Inverter Profile is a standard that further refines IEEE 2030.5 for application to smart inverters. It was developed to support California rule 21, which requires that distributed energy resources within investor-owned utilities (IOU) must utilize the IEEE 2030.5-2018 networking standard in a commonly agreed-upon manner for any grid-connected inverter. The standard is developed and maintained by the SunSpec Alliance, which also specifies test and certification procedures for devices that implement the standard.

CSIP-AUS: This is a companion document to the CSIP designed to outline minimal changes to support Australian use cases.

DER: An electricity resource behind a meter on customer premises or connected to a utility distribution system. This includes battery energy storage, renewable energy, distributed generation, demand response, energy efficiency, thermal storage, and electric vehicles and their supply equipment.

NMI: National Meter Identifier is a unique number assigned to each premise and links your electricity meter with your premise. All energy retailers must include the NMI on their electricity bills.

PCC: Point of common coupling point is where the generating facility's local electric power system connects to the utility's electric system, such as the electric power revenue meter or at the location of the equipment designated to interrupt, separate, or disconnect the connection between the generating facility and utility.

Revision history

Revision	Date	Description
TEB-00039-1.0	July 2023	Initial release