

# Commissioning of Enphase Energy System using Enphase Installer App 3.X

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## Applicable countries

- Australia
- New Zealand

## Overview

This guide provides the detailed steps and requirements to perform system commissioning of the Enphase Energy System. A successful validation confirms communication between the IQ System Controller, the IQ Battery(ies), and IQ Microinverters and validates that the system is operating as designed.

## Preparing the Enphase Installer App communications

Prior to commissioning:

1. Ensure the system is installed as per the Enphase Energy System installation manual.
2. Commissioning the IQ Series Enphase Energy System requires an Enphase certified installer to provision Enphase Energy System devices. For more information about Enphase installer certification, please visit [Enphase University](#).
3. Ensure that you have the latest version of the Enphase Installer App.  
iOS - [Enphase Installer Toolkit on the App Store \(apple.com\)](#)  
Android - [Enphase Installer Toolkit – Apps on Google Play](#)



4. Enable Bluetooth communication on your smart device or tablet used for commissioning and turn off your device's auto-lock feature to prevent interruption in the commissioning process.
5. Download IQ Gateway software version 8.XX (or the latest available version) on the Enphase Installer App.

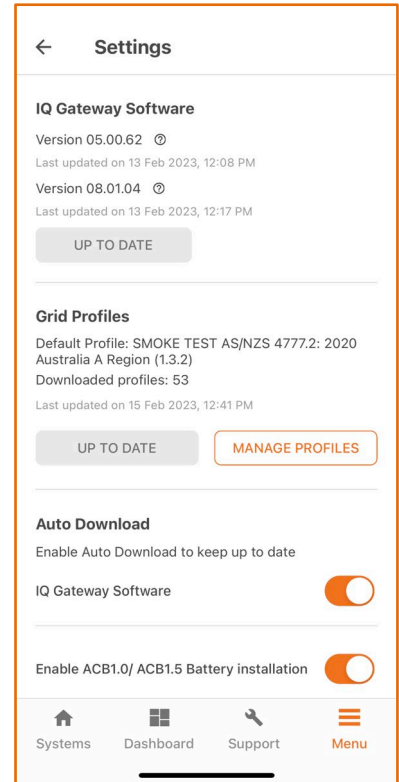
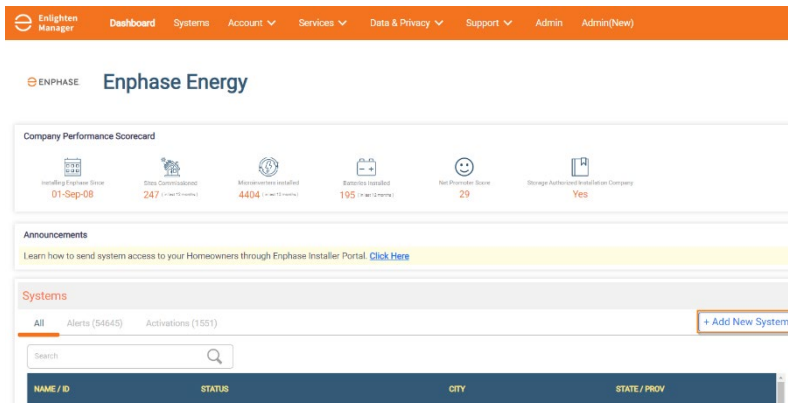
Go to “Menu” > “Settings” > “IQ Gateway Software”.

The update requires an internet connection. Please make sure you have a reliable connection during the update.

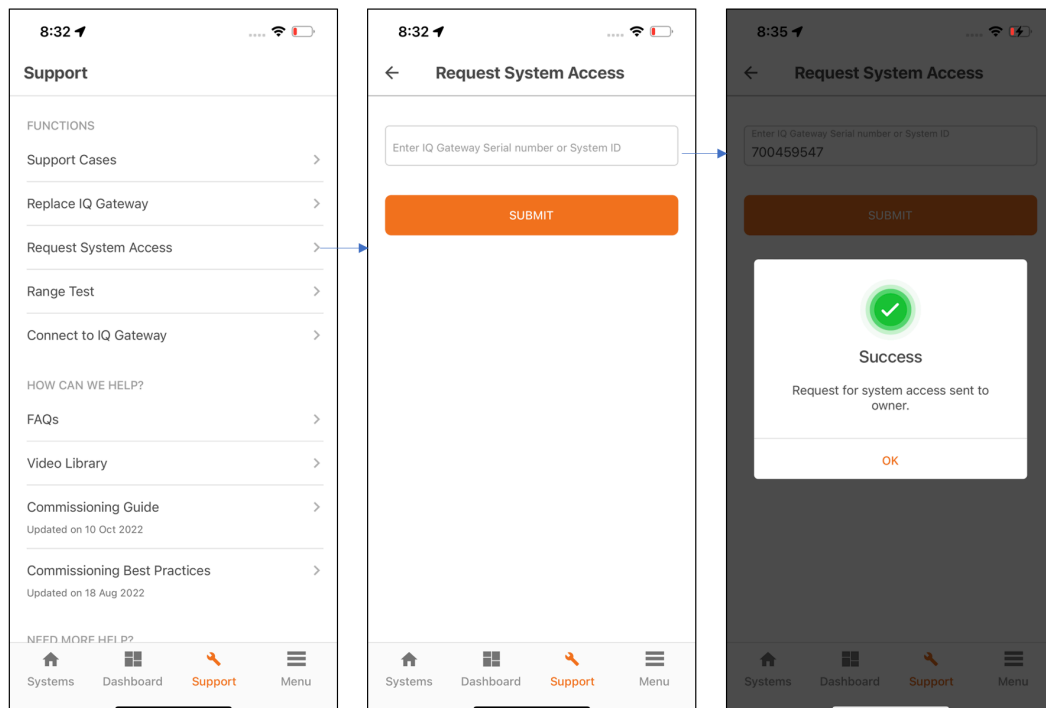
Tap the “Update Now” button to begin the IQ Gateway software update process.

6. Create a system activation by clicking on the “+” on the bottom right of the dashboard in the Enphase Installer App. We recommend entering the system details before commissioning on-site to save time and avoid mistakes.

Alternatively, the site can be created on the Enphase Installer Platform by clicking on “+ Add New System” on the system dashboard.



7. If you are not the original installer of the system, you must be granted access to the activation as a system maintainer. To request system access:
  - Go to “Support” > “Request System Access”.
  - Enter the IQ Gateway serial number and submit the request.
  - An email will be sent to the homeowner to provide access to the site.



**NOTE:**

- IQ Batteries are shipped with approximately 30% state of charge from the manufacturer.
- The default operational mode is *Self-Consumption*.
- If the battery state of charge is low, the battery can be charged on *Full Backup Mode* after the IQ Battery is commissioned.

**Important!**

- All IQ Series Enphase Energy System devices must be installed according to the installation manual, adhere to AS/NZS latest standards, and comply with local requirements.
- Always follow safety instructions in the Enphase Installation Manual and Quick Install Guide.
- After installation, IQ Batteries must always be connected to the AC supply.
- Once AC power is connected to the IQ Batteries, DO NOT turn on the DC switch until instructed by the Enphase Installer App.

## Commissioning instructions

Date and time	
Installer Name	
Site ID/Site Name	
Address	
Name and email address of supervising personnel	

To commission the IQ Series Enphase Energy System, use the Enphase Installer App commissioning wizard. Open the Enphase Installer App. Tap the “Systems” tab on the lower left side of the screen.

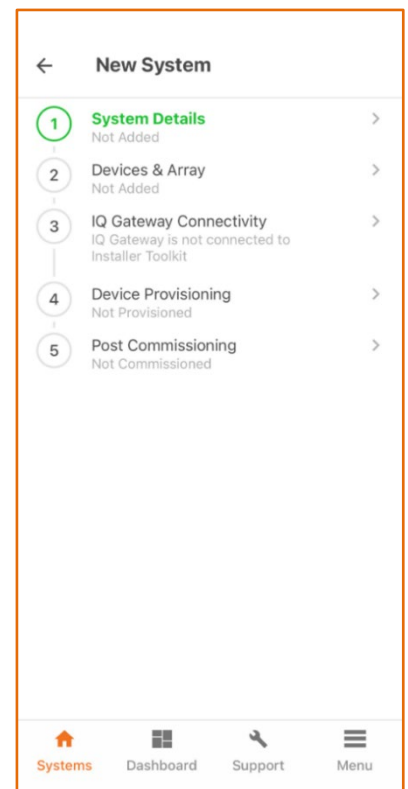
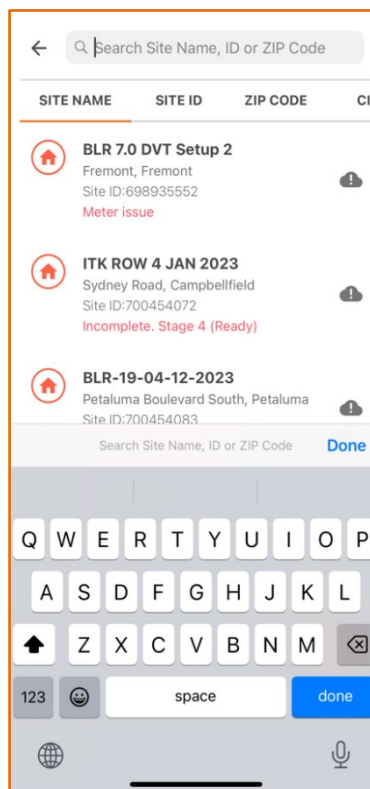
### Step 1: System Details

This step is part of an activation creation. This requires the following information:

- **System name**
- **Type**
- **Installer details**
- **NMI**
- **Owner details**
- **Address**

If the site activation is already completed on the Enphase Installer Platform, the site can be searched using the site name, site ID, postal code, city, installer reference, or IQ Gateway serial number.

Return to the “Commissioning” main page to progress to step 2.



### Step 2a: Devices & Array

This step allows the installer to populate the devices that form the system they are installing.

2.1 Tap each device and use the “–” and “+” buttons to decrease or increase the total count of the respective devices you are adding. Then press “Continue”.

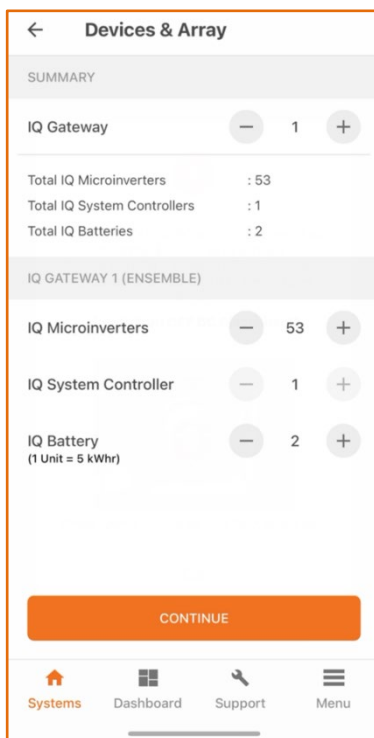
A prompt will appear specifying that the DC disconnect switch must be turned OFF before proceeding to the next step.

**NOTE:**

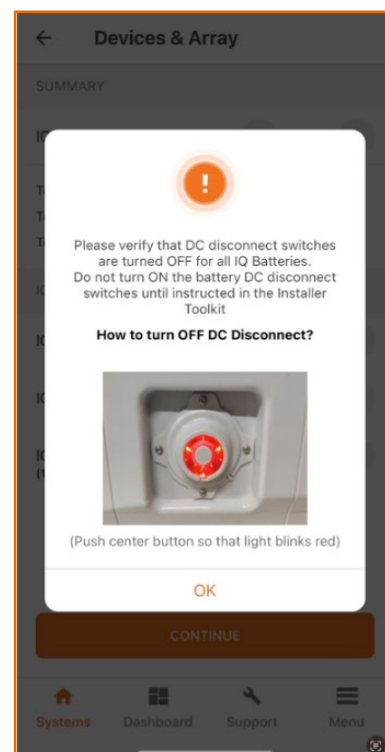
- Refer to the [Enphase Energy System Planning Guide](#) for details on PV-to-storage ratios, compatible microinverters, and other aspects of system design.

**Important!**

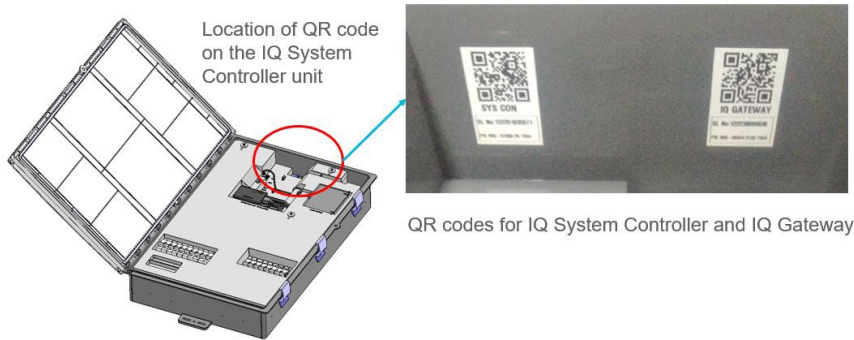
- Please verify that the DC disconnect switches are turned OFF for all IQ Batteries.
- Do not turn ON the battery DC disconnect switches until instructed to in the Enphase Installer App.



*Example of the system with a single IQ System Controller, two IQ Batteries and 53 microinverters*



*Follow the prompt to turn off the DC Disconnect*



Location of the QR code of IQ System Controller and IQ Gateway

- 2.2 Scan the IQ Gateway using the QR code on the top right of the IQ System Controller and select the appropriate grid profile for the system.

Recommended Label identifies the recommended and default grid profile for the location.

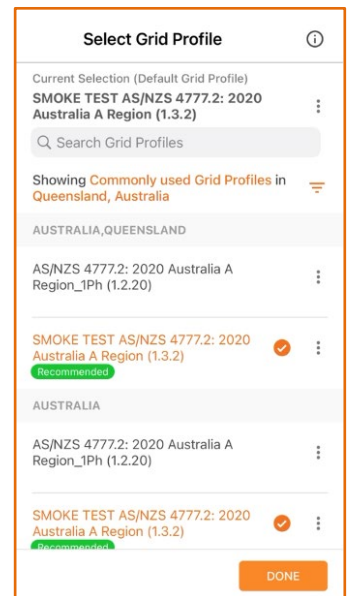
- 2.3 Scan the IQ System Controller using the QR code on the top left of the IQ System Controller.

- 2.4 Scan the IQ Battery using the QR code at the front of the battery.

- 2.5 Scan the microinverters' barcodes **[recommended]** or use the power-line communication (PLC) scan under the "IQ Gateway details" page in the Enphase Installer App.

#### NOTE:

- Ensure you have selected the right grid profile for the Enphase Energy System.
- If retrofitting an existing site, microinverters will be listed in the activation.
- We strongly recommend that you use the barcode scan to add the PV microinverters because a power-line scan can "poach" an incorrect serial number from a nearby site.
- The LED status indicator and state of charge in the Enphase Installer App will be inaccurate until IQ Gateway software is updated at the end of step 1.



### Step 2b: Site configuration [optional]

This step allows the user to configure the auxiliary contact for load shedding or PV shedding. The load shedding is required to shed motor loads or multiphase loads during backup operation. Similarly, the PV shedding is required to shed some microinverters to prevent over-discharging when the capacity of the PV system exceeds the maximum charging power of the battery system.

For more information, please see [PV shedding using NC contactor for NON-BACKUP MICROINVERTERS on EES \(Enphase energy systems\)- Version 1](#)

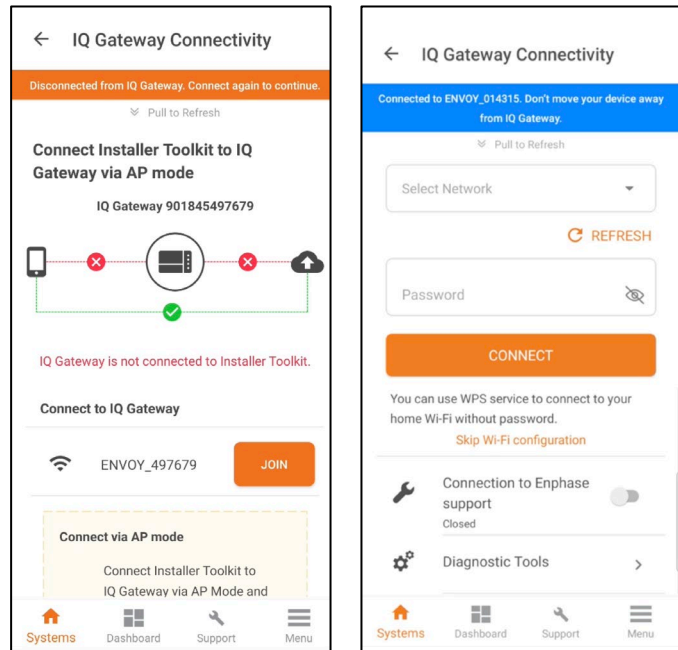
### Step 3: IQ Gateway connectivity

Step 3 brings up a screen that displays the connectivity status between the IQ Gateway, the internet (or Enphase Cloud), and your smart device.

3.1 Activate the IQ Gateway Wi-Fi access point (AP) by pressing the AP mode button (left button on the IQ Gateway). The network name is IQ GATEWAY\_[number], with the appended digits being the final numbers of the IQ Gateway serial number.

3.2 Connect your smart device to the access point broadcasted by the IQ Gateway by pressing the “JOIN” button.

- If your device cannot connect to the access point, go to your smart device’s settings, connect to the IQ Gateway access point manually, and return to the Enphase Installer App.
- Once connected, the Enphase Installer App will show that your smart device is connecting to the IQ Gateway but not to the cloud.



3.3 Connect the IQ Gateway to the customer’s Wi-Fi or Ethernet.

- For a Wi-Fi connection, the network name and password are required from the customer.
- For an Ethernet connection, simply plug the cable into the IQ Gateway.

3.4 Updating the IQ Gateway software (if applicable). Tap “UPDATE SOFTWARE” on the “IQ Gateway Connectivity” screen.

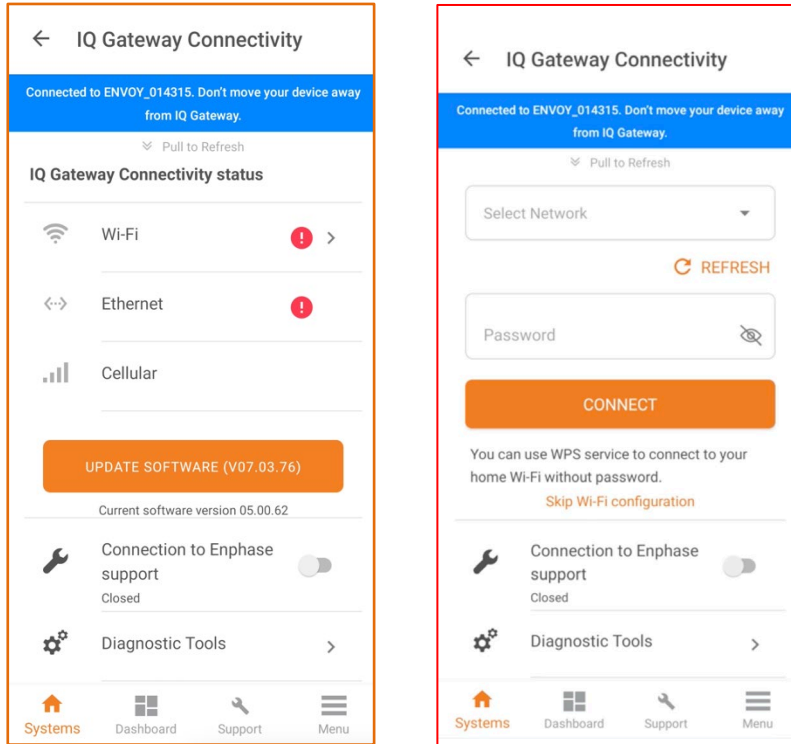
- The “Join” button will be disabled for 10 minutes after all the software is uploaded to IQ Gateway from the phone. During this time, the IQ Gateway will complete the internal upgrade process, which may lead to multiple IQ Gateway restarts.
- This step may take up to 25 minutes. Do not move the phone away from the IQ Gateway during the update process.
- Keep your device screen active during the update.
- Do not connect more than one device to the IQ Gateway access point.
- After the IQ Gateway firmware update, IQ Gateway will restart.

#### NOTE:

- While the IQ Gateway restarts, all four LEDs will flash red simultaneously.
- Once the restart is complete, the network communications LED will glow solid green.
- When the IQ Gateway reboots, the AP mode will be disconnected from your smart device.



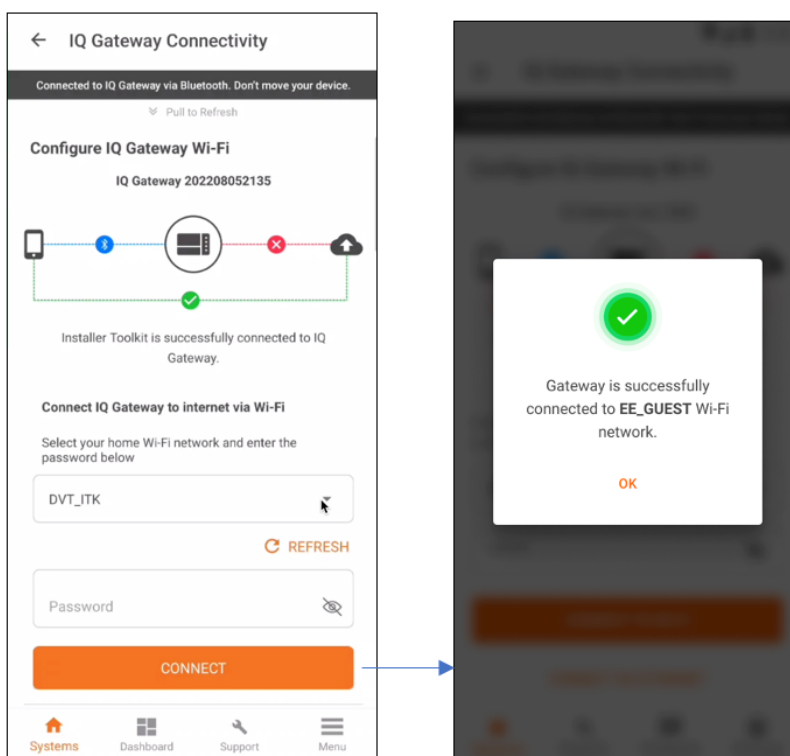
- Once the IQ Gateway has rebooted successfully, reconnect to IQ Gateway AP mode in the Wi-Fi settings menu of your smart device.
- If you have issues connecting to AP mode, turn OFF AP mode on the IQ Gateway by pressing the AP mode button for one second, and then “forget” the AP mode network in your smartphone or tablet Wi-Fi settings.
- Repeat the “IQ Gateway Connectivity” steps 3.2 to 3.5 above to reconnect to the IQ Gateway.



- The Enphase Installer App will take approximately 10 minutes to correctly display system metrics (including web connectivity) after reboot.
- The IQ Gateway requires a means of communicating to the web to display internet connectivity. Ensure that the IQ Gateway Wi-Fi access has been configured or that the Ethernet connection and cell modem connection is established.
- If, after completing the previous step, the IQ Gateway software version shown on the “UPDATE SOFTWARE” button does not match the IQ Gateway software version shown below the button, then the upgrade has failed, and you must tap “UPDATE SOFTWARE” again.
- Please wait for the “Join” button to become active again and then tap on the “Join” button to connect to IQ Gateway in AP mode.

#### [Optional] BLE-based Wi-Fi configuration

If your smart device cannot connect to AP mode, you will get an additional option to connect via BLE to configure Gateway Wi-Fi.



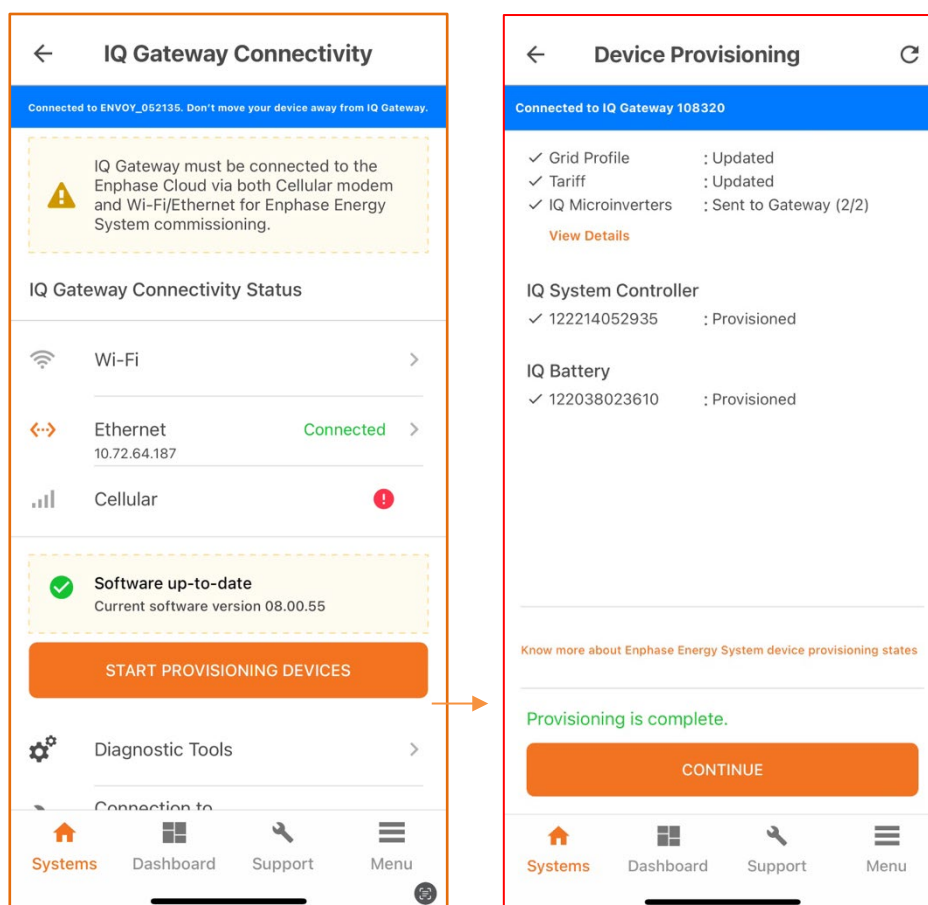
- The installer needs to connect to AP mode after the Wi-Fi configuration is completed to proceed with provisioning and validation.

## Step 4: Device provisioning

4.1 Press “START PROVISIONING DEVICES” while your smart device is still connecting to the IQ Gateway Wi-Fi AP. The process will run the following steps automatically:

- ✓ Update grid profile
- ✓ Update tariff
- ✓ Provision microinverters
- ✓ Provision IQ System Controller
- ✓ Provision IQ Battery

4.2 Once completed, the “Provisioning is complete” message will be displayed. Press “CONTINUE” to proceed to the next step.



## Functional validation instructions

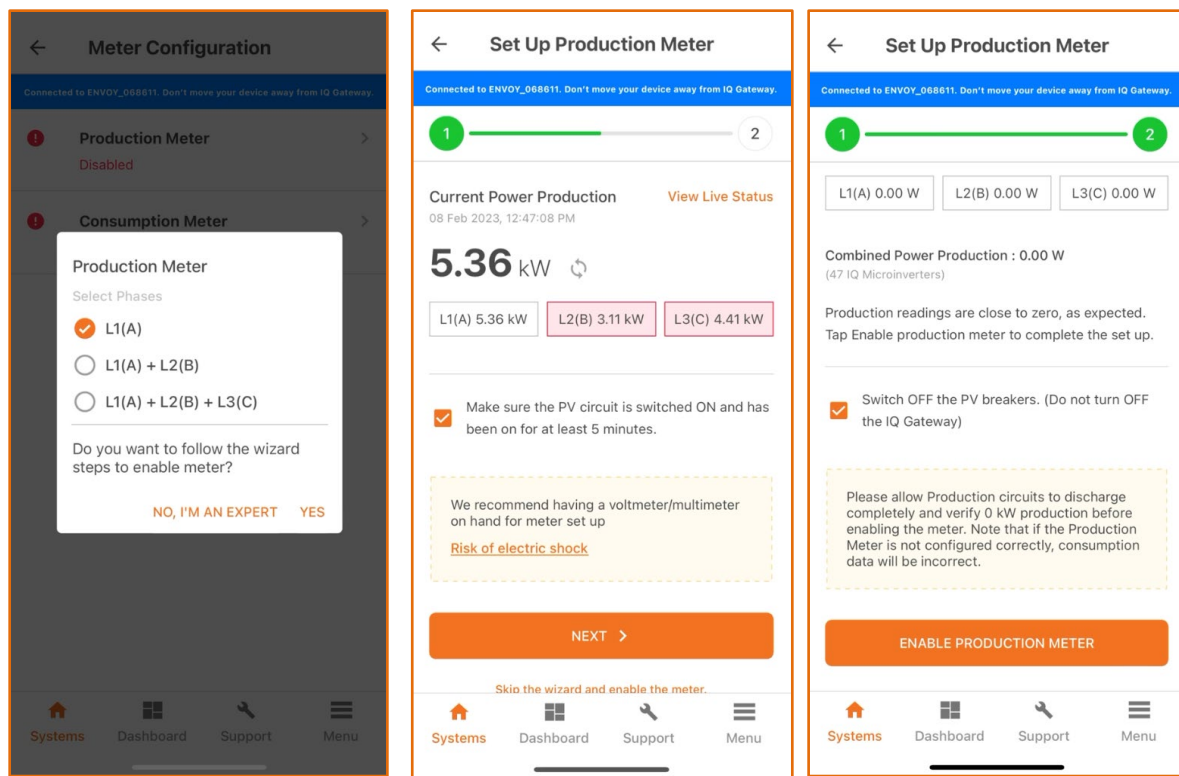
### Step 5: Validation

In this step, you will be configuring the production and consumption meters, updating the EES software, and running through the functional validation of the system to ensure it is operating correctly.

#### 5.1 Meter configuration

##### 5.1.1 Production meter

- Select the correct phase of how the microinverter branches were installed.
- Follow the steps mentioned in the meter wizard below to configure the Production CT. Once verified, tap on the “ENABLE PRODUCTION METER” button to complete this step.



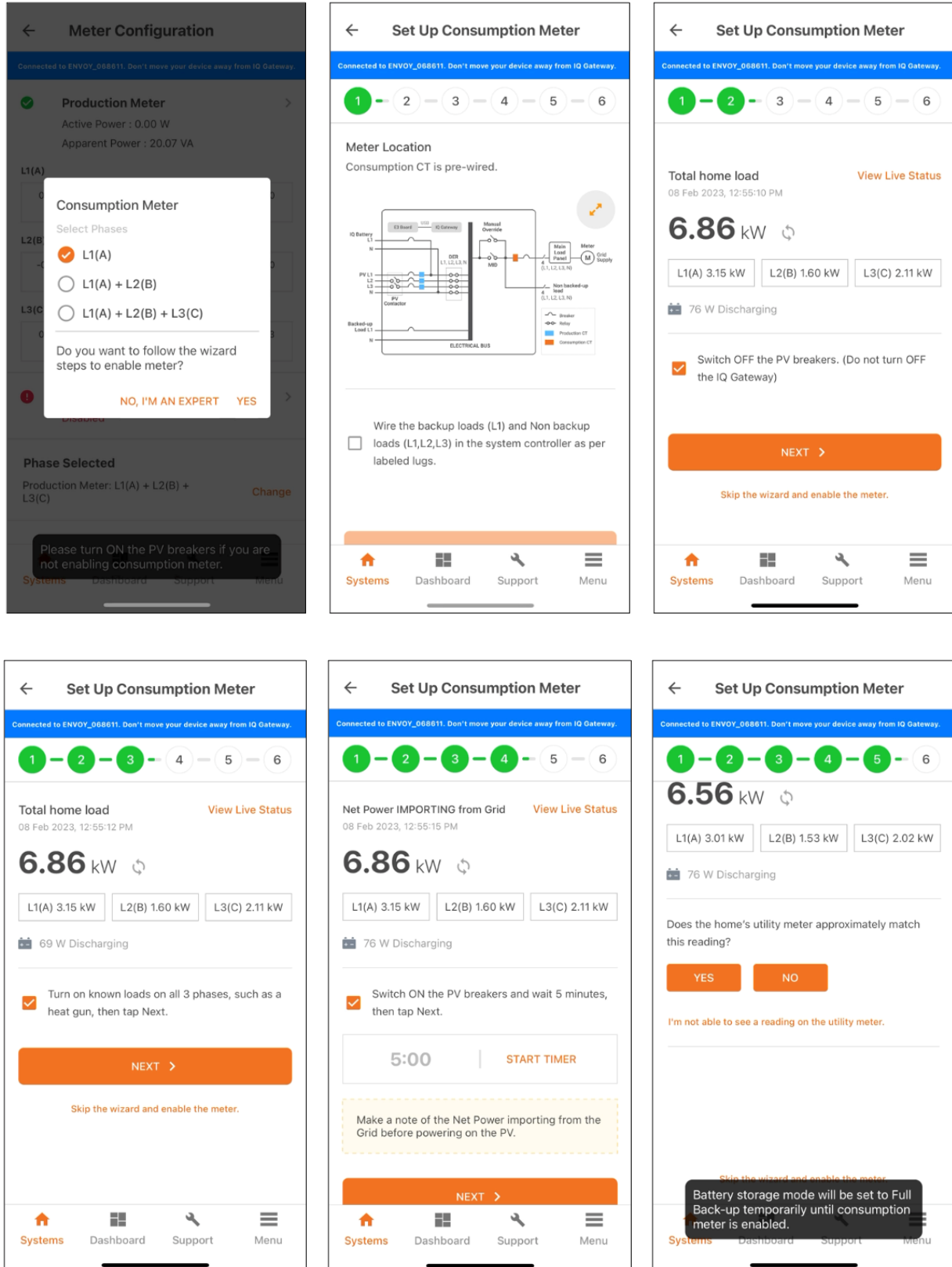
##### 5.1.2 Consumption meter

- Verify that the configuration matches what is installed (Partial vs. Whole Home Backup and the location of the CT) and the number of phases connected to the system.
- Enable the meters by verifying the readings by going through the meter wizard.
- While in the production meter wizard, switch OFF all PV breakers (microgrid and non-microgrid) as instructed to make sure the readings go to zero before enabling.
- While in the consumption meter wizard, turn ON the PV and a known load in the home to confirm consumption rises as expected.

## Important!

- The Consumption CT should be installed on the grid side.

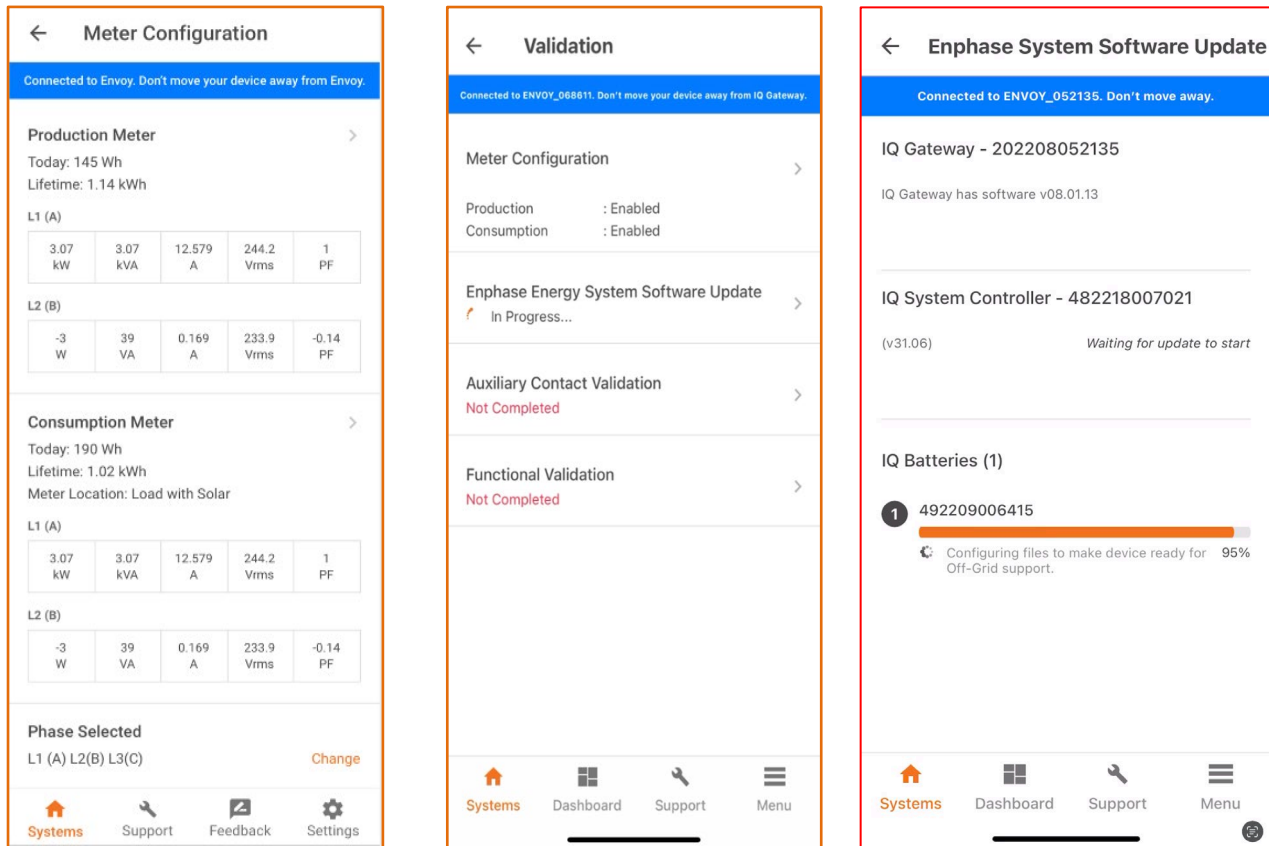
The images below show the process to configure the consumption meter.



Once the production and consumption meters are configured, return to the “Validation” main page to proceed with the Enphase Energy System software update.

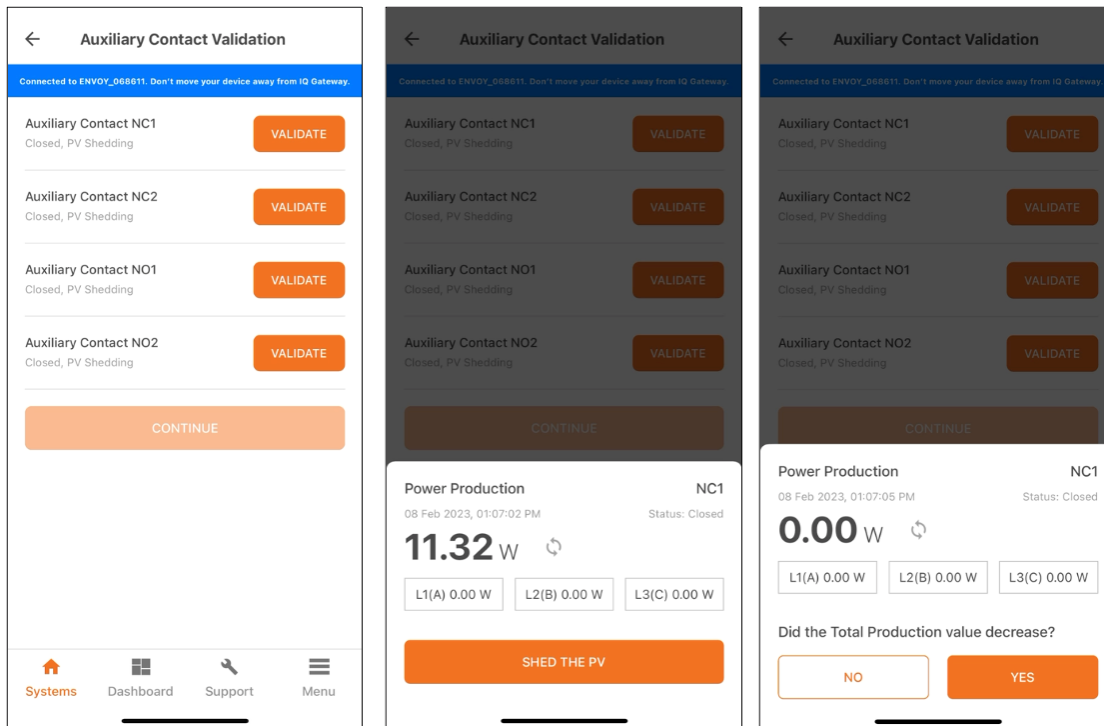
## 5.2 Enphase Energy System software update

- Tap “Enphase Energy System software update” and the update will start automatically.
- Please wait until all devices show “Ready for functional validation,” then press “CONTINUE.”



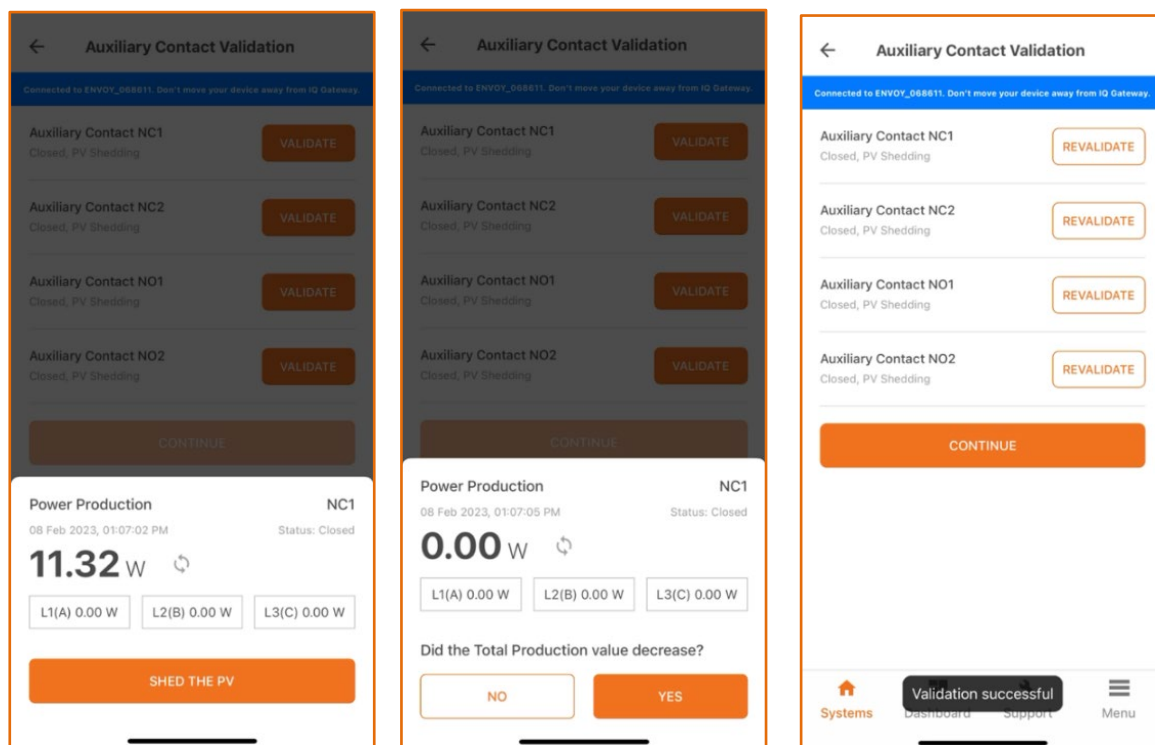
## 5.3 Validating the auxiliary contacts (Step 2b: Site Configuration)

- If you have configured Load Control, select “Validate” for each of the auxiliary contacts and confirm that the load or the PV was shed by the IQ Gateway.



## NOTE:

- The auxiliary contact can be revalidated if any settings are changed on-site.
- You can see the auxiliary contact state on the “Auxiliary Contact Validation” page to provide better assistance during commissioning.

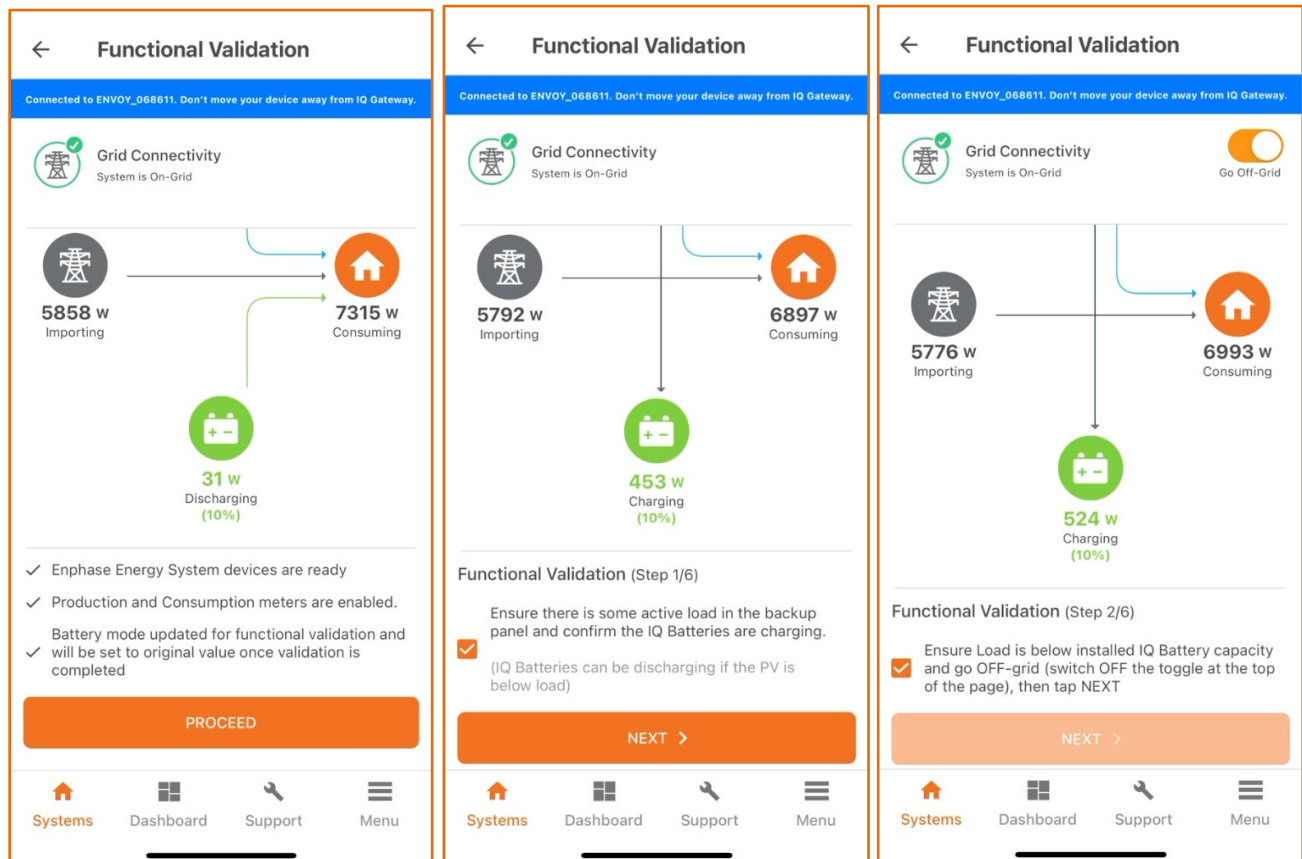




## 5.4 Functional validation

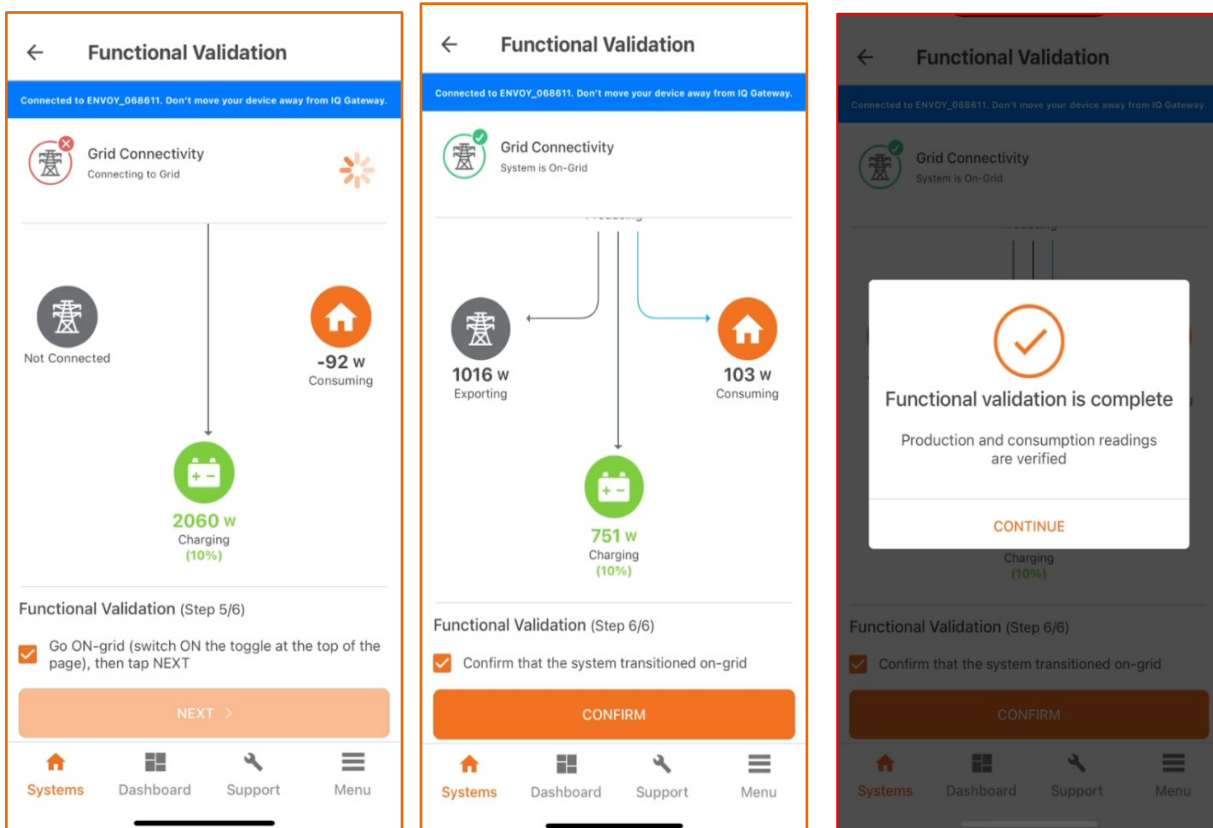
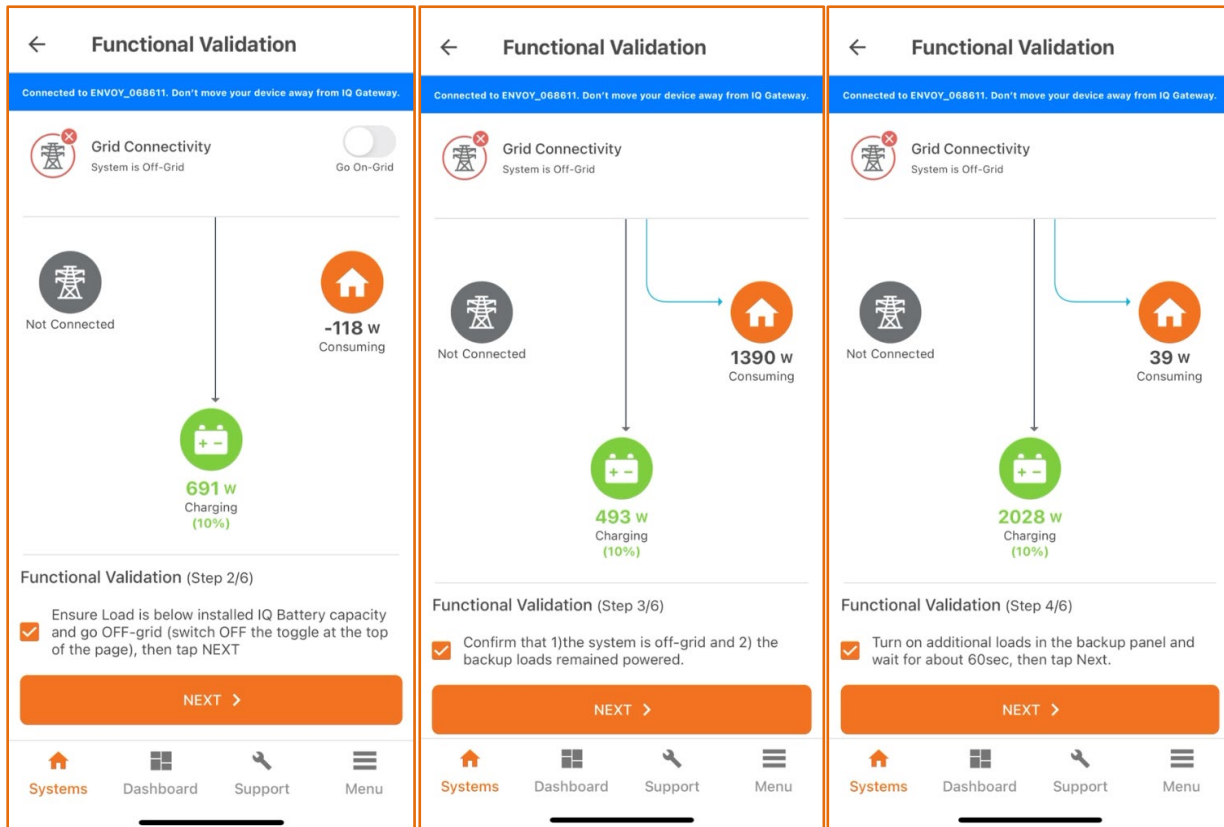
Functional validation includes six sub-steps where you must confirm the condition of each step to proceed to the next step.

- Val. 1/6** Ensure that there is an active load in the backup circuit and confirm the battery is charging.
- Val. 2/6** Ensure the Load is under the installed IQ Battery capacity, then tap on the “Go Off-Grid” toggle on the top right of the screen. Wait for *approximately 45 seconds for the microgrid interconnect device (MID) to open*. You will hear a click when this occurs.



- Val. 3/6** Confirm that the system is now off-grid and backup loads remain powered.
- Val. 4/6** Turn on additional backup loads and confirm the consumption value increases.
- Val. 5/6** Tap on the “Go On-Grid” toggle and wait for the MID to resync to the grid. You will hear a click when this occurs.
- Val. 6/6** Confirm that the system has transitioned to on-grid.





Your system is now functionally validated. The IQ Battery mode will be changed to Full Backup automatically by the Enphase Installer App to bring the state of charge to 100%.

## Step 6: Post-commissioning

In this step, you will be able to generate a summary report, provide the homeowner with a walkthrough and access, set the tariff, and make changes to the IQ Battery operating modes.

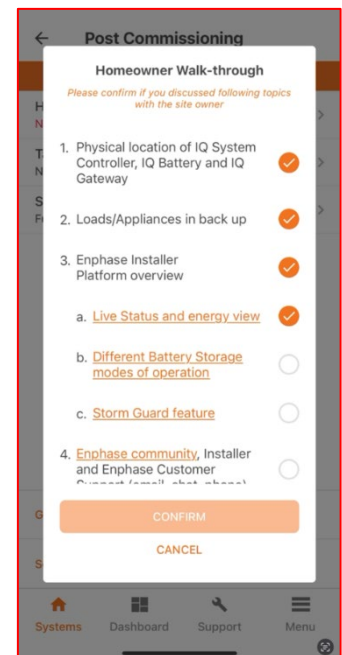
It is necessary to complete the summary report and homeowner walkthrough and access to complete the commissioning process.

These settings do not require your device to be connected to the IQ Gateway's AP mode, but it must be connected to the internet.

### 6.1 Homeowner walkthrough

In this step, you must verify each item on the checklist with the homeowner.

- Check all the tick boxes to acknowledge that you have communicated this information to the homeowner.
- Tap “Confirm” to complete this step and proceed to the next.



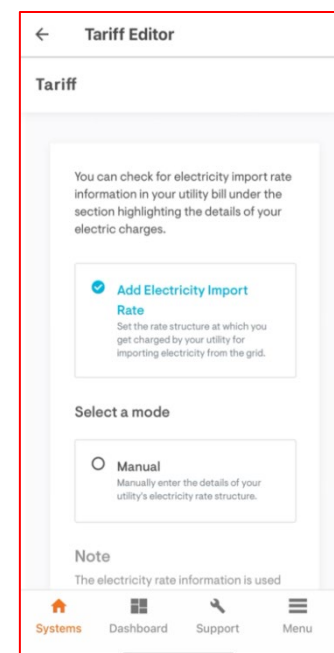
### 6.2 Tariff

There are two tariff settings in the “Tariff Editor”:

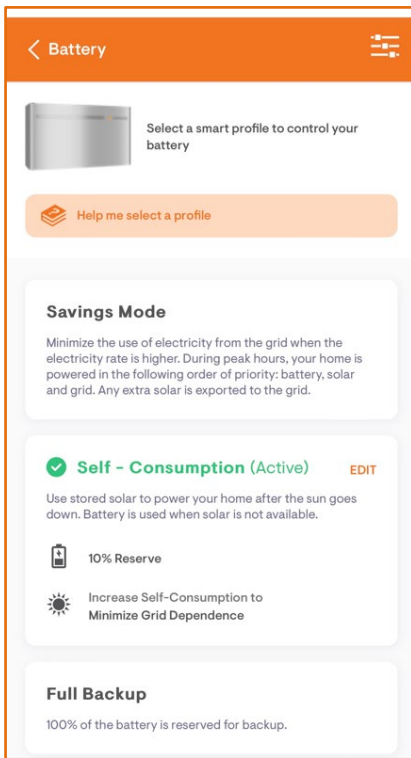
#### 6.2.1 Electricity Import Rate

#### 6.2.2 Electricity Export Rate

- Follow the prompts to set up the Import Rate.
- Check the tariff structure with the customer and enter the information accordingly.
- Then check “Add Electricity Export Rate.”



### 6.3 Storage configuration



The storage can be configured to meet the customer's specific needs. Select one of the following options:

- **Saving Mode:**  
To take advantage of tariff structure.
- **Self-Consumption:**  
To minimize the use of electricity from the grid.
- **Full Backup:**  
To maintain full charge in the battery for use during outages.

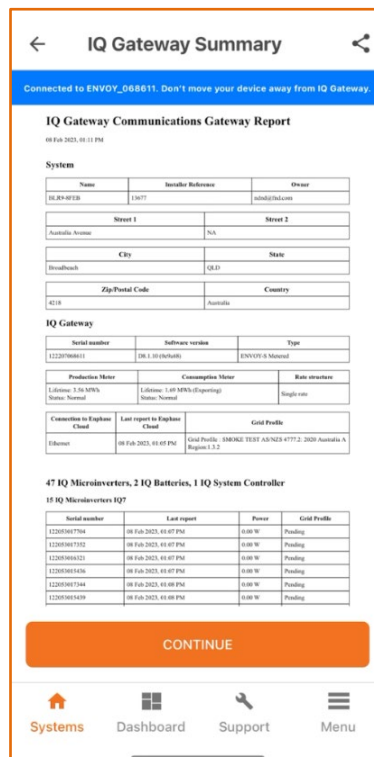
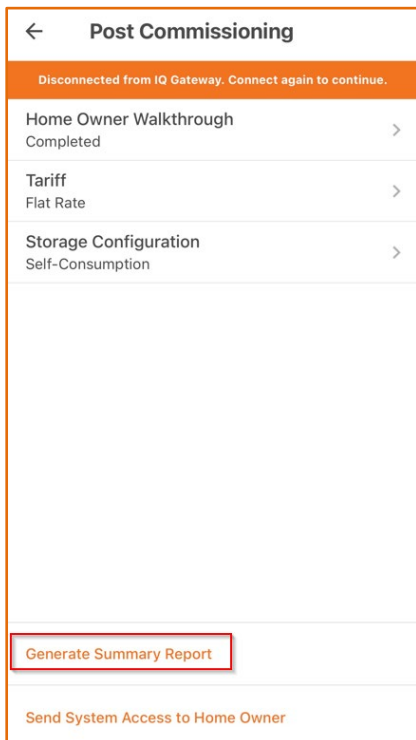
#### NOTE:

After functional testing, the battery mode will be changed to Full Backup automatically by the Enphase Installer App to bring the state of charge to 100%.

To learn more about the configuration, visit:

<https://support.enphase.com/s/article/What-is-a-profile-and-when-to-chose-each-one>

### 6.4 Generate Summary Report



The summary report shows important information about the system, including system details, device serial number, status, and grid profile.

You can share this report using email, GSM text, or AirDrop. It contains details of each provisioned device and the commissioned status of the system.

**NOTE:**

Before leaving the site, ensure all breakers feeding the IQ Battery and PV system are closed (if permitted by DNSP's Permission to Operate).

With the previous steps complete, it is important to set expectations about how many loads a homeowner should use during an outage. Some installation companies ask their homeowners to live in backup mode for the first couple of days after the system is installed, so they understand how to change their behavior during an outage. If they drain or overpower the batteries, they can turn the main breaker back ON.

## Appendix

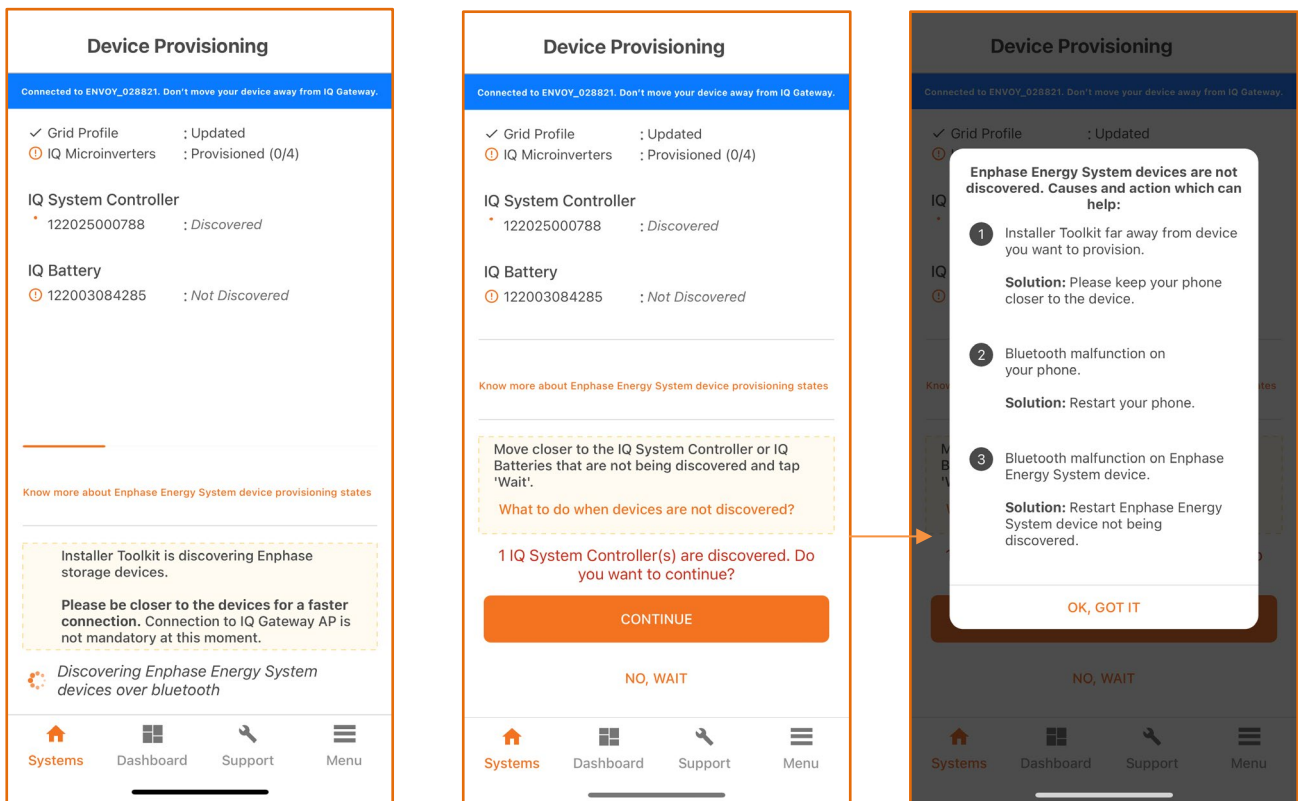
### Appendix A: Different states of IQ Batteries

State	Description
Un-commissioned	
Flashing blue	After booting up, when IQ Battery has paired with an IQ Gateway but has not passed the commissioning three-way handshake to confirm that it is an Enphase device
Flashing green	After passing the three-way handshake with the IQ Gateway
After commissioning (normal operation)*	
Rapidly flashing yellow	Starting up/establishing communications
Red flashes in sequences of two	Error
Solid yellow	Not operating because of the high temperature.
Solid blue or green	Idle. The color transitions from blue to green as the state of charge increases. You can check Enphase Cloud for charge status.
Slowly flashing blue	Discharging
Slowly flashing green	Charging
Slowly flashing yellow	Sleep mode activated
Off	Not operating

\* IQ Batteries have a one-hour orphan timer. If the IQ Gateway stops communicating with them after one hour, the IQ Batteries return to an “un-commissioned” state.

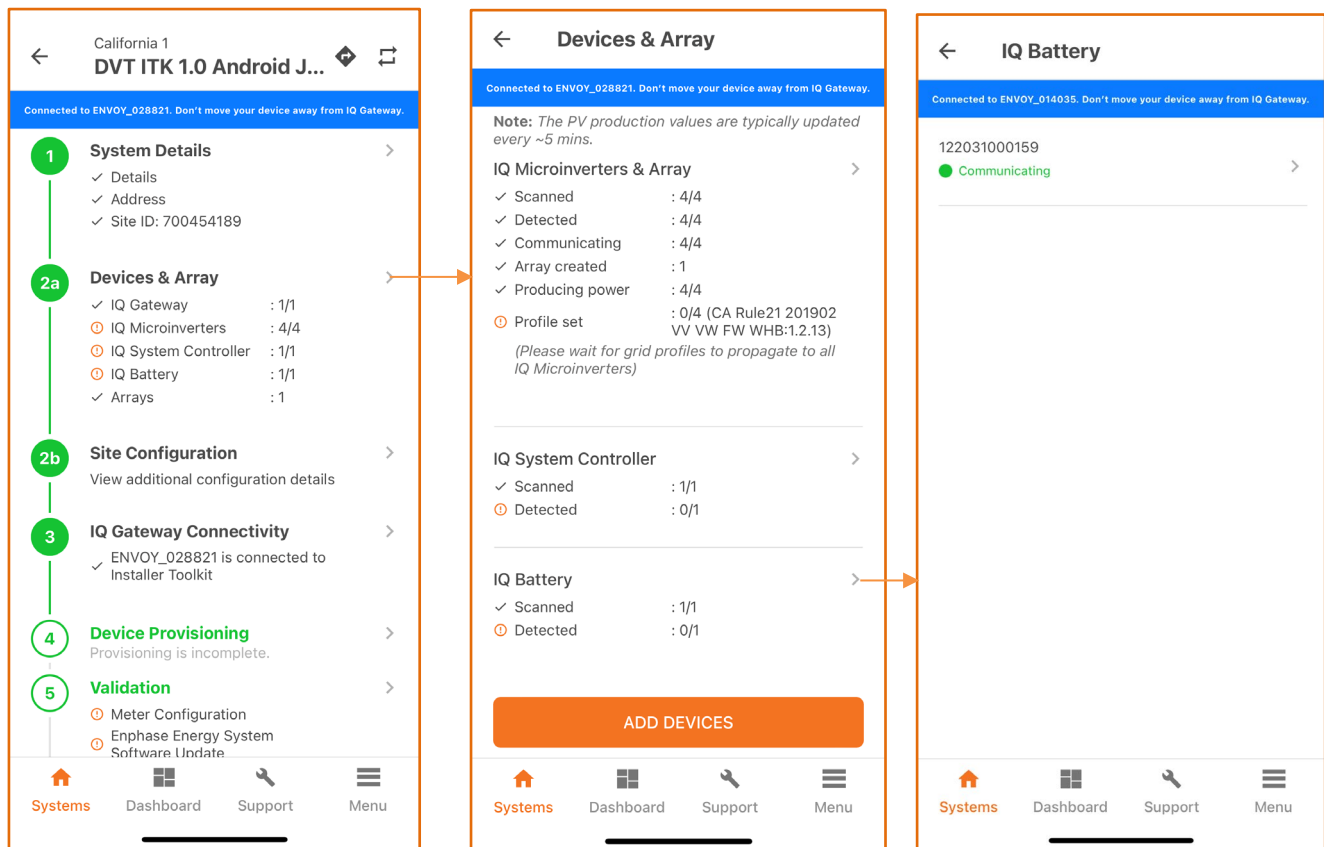
## Appendix B: Troubleshooting undiscovered IQ Batteries

When one or more IQ Batteries are not discovered over BLE, troubleshooting methods are as follows:



Confirm that the IQ Batteries are communicating with the IQ Gateway by checking Enphase Installer App **Step 2a: Devices & Array**.

The IQ Batteries should display “Communicating” as follows:



In the Enphase Installer App, LED status and state of charge will now display accurately.

If the IQ Batteries are not communicating with IQ Gateway, follow these steps to power-cycle the batteries:

- Ensure that the system is on-grid.
- Turn OFF the DC disconnect switches for all batteries.
- Turn OFF the IQ Battery breaker in the IQ System Controller.
- Wait for at least two minutes. The IQ Battery LEDs should be OFF at this point.
- Turn ON the IQ Battery breaker in the IQ System Controller.
- Allow the IQ Battery LEDs to flash red.
- Turn ON DC switches on all IQ Batteries. The IQ Battery LEDs should stop flashing red after the DC switches are turned ON.

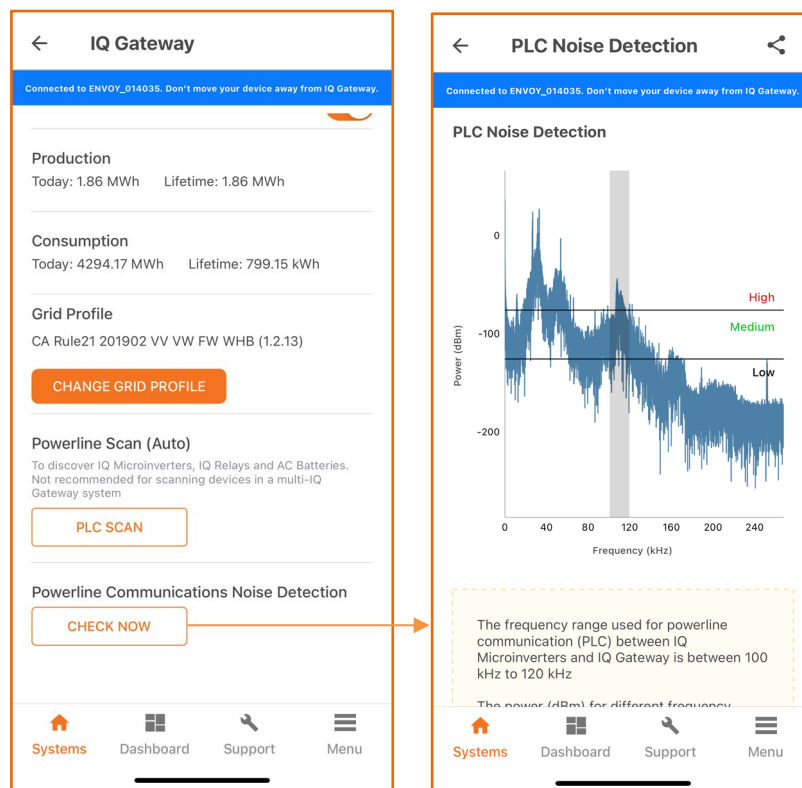
If IQ System Controller is not communicating with the IQ Gateway, follow these steps to power-cycle the system:

- Ensure that the system is on-grid.
- Turn OFF the DC disconnect switches for all batteries.
- Turn OFF the utility-side breaker in IQ System Controller or the supply breaker to IQ System Controller in the main panel.
- Wait for at least two minutes. The IQ Battery LEDs should be OFF at this point.

- Power ON IQ System Controller; that is, turn ON the utility-side breaker in IQ System Controller or the supply breaker to IQ System Controller in the main panel.
- Wait 60–330 seconds for the microgrid interconnect device relay to close.
- Allow the IQ Battery LEDs to flash red.
- Turn ON the DC switches on all the IQ Batteries. The IQ Battery LEDs should stop flashing red after the DC switches are turned ON.

## Appendix C: Noise detection over PLC

You can now monitor the quality of power-line communication between IQ Gateway and the microinverters. The PLC Noise Detection provides real-time data on the noise detected when communicating with IQ Gateway.



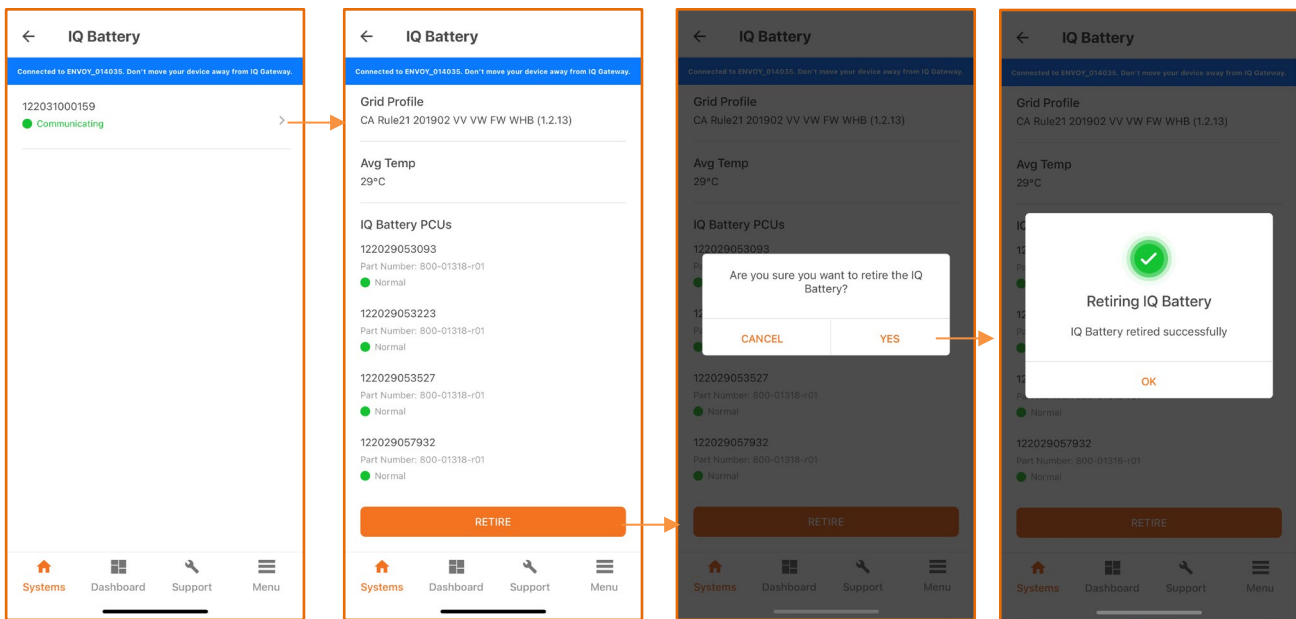
Please refer to Section 3 of the latest [Enphase Storage Best Practices document](#) to learn more about troubleshooting steps in Enphase Energy Systems.



## Appendix D: Replacing/decommissioning an IQ Battery/IQ System Controller while replacing it on-site

If you need to replace an IQ Battery/IQ System Controller on-site, the old IQ Battery must be retired using the Enphase Installer App.

1. Connect to the IQ Gateway using “AP mode”.
2. Go to Step 2: **Devices & Array** and select and retire the devices, as shown in the following images. The device will be removed from Enphase Cloud and will be synced to the Enphase Installer App after IQ Gateway reports the deletion.



3. After IQ Battery has been retired, turn OFF the DC switch.
4. Add and provision the new devices as documented in steps 2.1 to 2.6.

## Revision history

Revision	Date	Description
TEB-00011-1.0	June 2023	Initial release