FRANKLINWH



FranklinWH Commissioning Guide

App Version 2.23.0

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All brands and trademarks mentioned in this document are the property of their respective owners, and their use in this document does not imply the sponsorship or recognition of their products or services.

Please read this document carefully to ensure the best reliability of the product and your warranty eligibility. For further information about the warranty, please refer to the ***FranklinWH Limited Warranty***.

This document is intended for use by professional installation and maintenance service providers only and no statements, information or recommendations in this document constitute any express or implied warranty.

Read this document carefully before installing or using the FranklinWH System. Failure to follow any instructions or warnings in this document may result in damage to the equipment, personal electric shock, severe injury, or even death.

Product Information

The FranklinWH System is composed of aGate, aPower, and other electrical and software components.

FranklinWH Energy Storage Inc. (FranklinWH) reserves the right to make any improvements to the product, and the contents in this document shall be subject to updates without further notification.

All images and pictures provided in this manual are only for demonstration purposes and may differ in detail from the product based on the product version.

Feedback

If you have any questions or comments, please send us an email at: *service-au@franklinwh.com*

Disposal of Scrapped Products

Scrapped products (including their internal chemicals and electrical materials) should not be disposed of with household waste. Please refer to your local laws and regulations regarding disposal.

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Safety Statements

Read this entire document to ensure the proper use of the FranklinWH System. FranklinWH hardware are electrical devices. Please strictly follow the safety instructions in this manual during operation, failure to do so may result in equipment malfunction, electrical shock, serious injury or death, and may also void the warranty.

This document is intended only for FranklinWH personnel and certified installers.

DANGER

- Do not directly touch any exposed metal surfaces other than the aGate case.
- During commissioning, use insulated gloves or devices to perform operations and measurements to prevent electrical shock damage.

Commissioning Guidance

This manual describes the process for commissioning each aGate. If there are multiple aGate controllers installed on a single home, the commissioning steps must be repeated for each aGate on site.

Before Commissioning

Download the FranklinWH App

The FranklinWH App is required to configure the system parameters during the commissioning process.

To download the FranklinWH App, you can visit the App Store or Google Play:

App Store Google Play

Note: *Installation service providers and customers use the same FranklinWH App, but they access different functions based on the type of account.*

This manual only applies to the FranklinWH App v2.23.0

For the latest information, please visit *www.franklinwh.com/au/support*.

Inspect the System before Power-on

Tools needed: multimeter, network cable tester.

aGate Inspections				
General				
1	Are there foreign objects in the aGate?	☐ Yes	☐ No	
2	Is there bare wire near the installation site?	☐ Yes	☐ No	
Grid				
1	Are the grid input power cable fastening bolts properly tightened?	☐ Yes	☐ No	
2	Are the grid output power cable fastening bolts properly tightened?	☐ Yes	☐ No	
3	Are the Neutral and Ground lines short connected at the bonding jumper bar?	☐ Yes	☐ No	
4	Is the grid breaker OFF?	☐ Yes	☐ No	
aPower				
1	Are the aPower input cable fastening bolts properly tightened?	☐ Yes	☐ No	
2	Is the aPower breaker OFF?	☐ Yes	☐ No	
Solar				
1	Are the solar input cable fastening bolts properly tightened?	☐ Yes	☐ No	
2	Is the solar breaker OFF?	☐ Yes	☐ No	
Smart Circuit (If present)				
1	Are the Smart Circuits' cable fastening bolts properly tightened?	☐ Yes	☐ No	
2	Are the Smart Circuits' breakers OFF?	☐ Yes	☐ No	
Generator (If present)				
1	Are the generator input cable fastening bolts properly tightened?	☐ Yes	☐ No	
2	Is the generator breaker OFF?	☐ Yes	☐ No	
Communications				
1	Confirm the aGate is properly connected to the network①	☐ Network Cable	☐ Wifi	☐ 4G
		☐ Eth1 (Debug) ☐ Eth2	-	-
2	Is there communications between aGate and aPower(s)?	☐ CAN port	-	
3	Are the wireless module and USB cables connected?	☐ Yes	☐ No	

aGate power switch					
1	Is the aGate power switch OFF?	☐ Yes		☐ No	
aPower inspections					
1	Are all aPower power switches OFF?	☐ Yes		☐ No	
2	Are all aPower output cables tightly fastened?	☐ Yes		☐ No	
3	Where is the CAN matching terminal installed?②	☐ 1st aPower	☐ 2nd aPower	☐ 3rd aPower	☐ Other
Measurements					
1	Check that the CAN cable is wired according to the 568B standard using a cable tester③.	☐ Yes		☐ No	
2	Measure and check that there is no short connection on **grid input** lines L and N.	☐ Yes		☐ No	
3	Measure and check that there is no short connection on **generator** input lines L and N.	☐ Yes		☐ No	
4	Measure and check that there is no short connection on **load** output lines L and N.	☐ Yes		☐ No	
5	Measure and check that there is no short connection on **aPower AC** output lines L and N.	☐ Yes		☐ No	

Caution:

If any of the above check results is "No," except for ① and ②, please solve the abnormal item and check again.

① *If using a network cable, it must be connected to the aGate Eth2 port on the aGate.*

② *When multiple aPower units are working in parallel, it is necessary to remove the excess CAN matching terminals from all aPower units except for the one on the last aPower.*

③ *Incorrect cable sequence of the CAN may lead to system damage.*

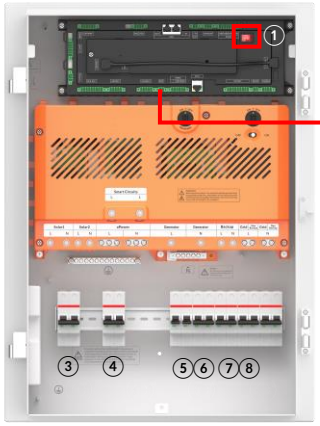
Preparation before Commissioning via Turning off all AC power to the aGate



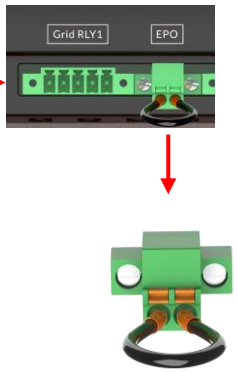
aGate



aPower



aGate Internal



EPO terminal

① aGate power switch ② aPower switch ③ Solar breaker ④ aPower breakers ⑤ Smart Circuits breakers ⑥ Generator breaker ⑦ Backup breaker ⑧ Grid breaker

1. During the commissioning or testing, when configuring the generator, Smart Circuits, or solar through the FranklinWH App, switch the relevant breakers to **ON**.

   NOTE: *For personal safety, the grid breaker, solar breaker, generator breaker (optional), Smart Circuit breakers (optional), backup breaker, and aPower breaker must be switched off before electrical wiring.*

2. Ensure that the aGate power switch is in the **ON** position. 

3. If an extra EPO switch is purchased and installed, set it to **ON**. If no EPO switch is installed, the factory-installed EPO terminal remains in its original configuration.

4. Press the aPower switch on the right side of each aPower to confirm that the switch is mechanically **ON**, and the power indicator on the aGate turns **ON**.

   NOTE: *During the commissioning, the app will receive device fault information due to abnormal system operation, which can be ignored.*

Commissioning

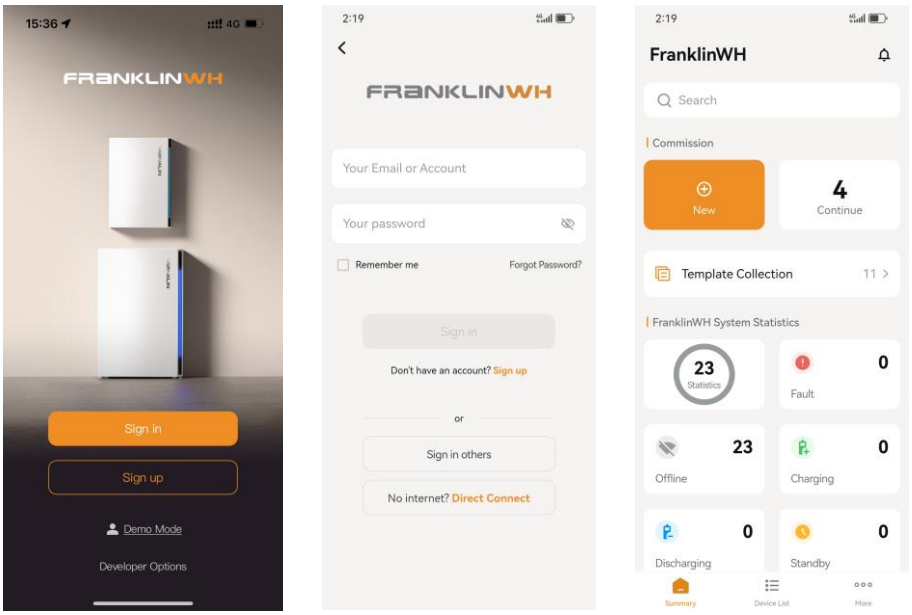
NOTE

The images provided in this document are for demonstration purposes only. Depending on product version, details may appear slightly different.

Basic Configuration

Step 1. Begin the commissioning

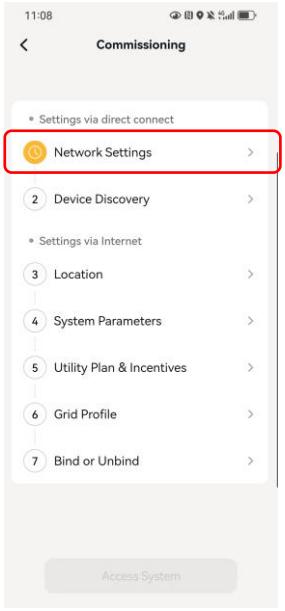
Login to the FranklinWH App with the installer account. If continuing a previous commissioning, tap **Continue**. Otherwise, tap **New** to establish a new commissioning.



***Note:** If you wish to see a demonstration system rather than the actual parameter configuration, tap **Demo**, then select **Homeowner** or **Installer** to access the sample parameter configurations.*

Step 2. Network Settings

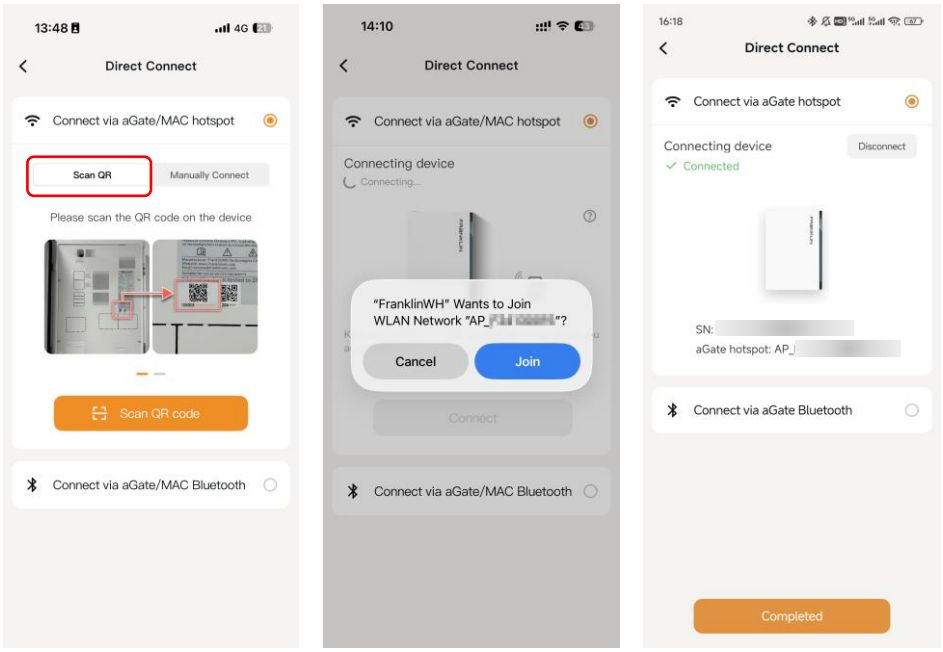
Tap **Network Settings** on the Commission page. Establish direct connection between the aGate and your mobile device.



Either scan the QR code on the aGate or manually connect to the aGate Wifi hotspot. It is recommended to scan the QR code for automatic connection. If the QR code scan fails, select manual connection and enter the password.

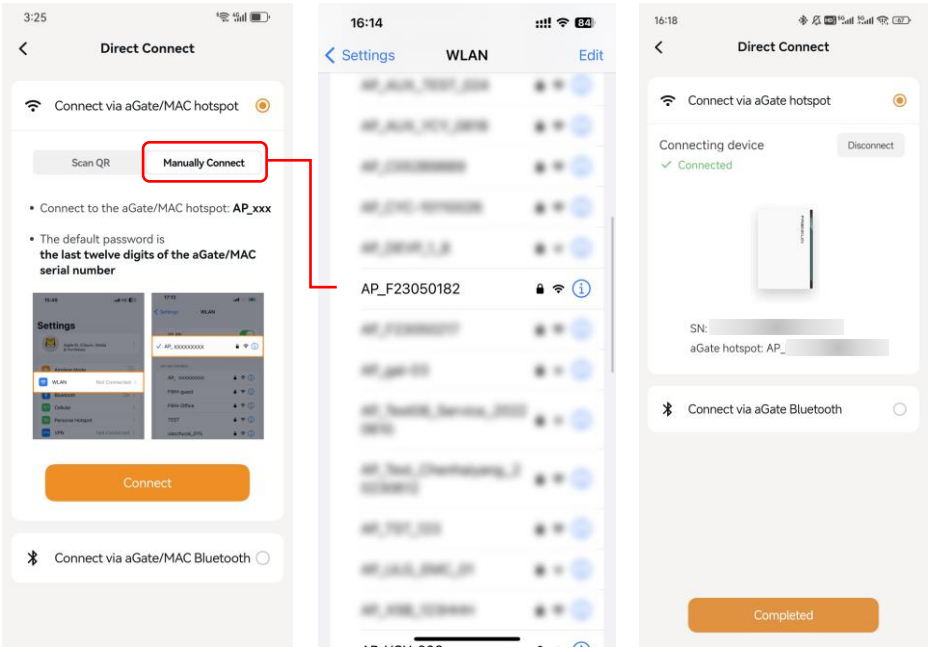
Scan the QR Code

Tap **Scan QR**, then scan the QR code on the aGate device. Your app will automatically connect to the aGate hotspot.

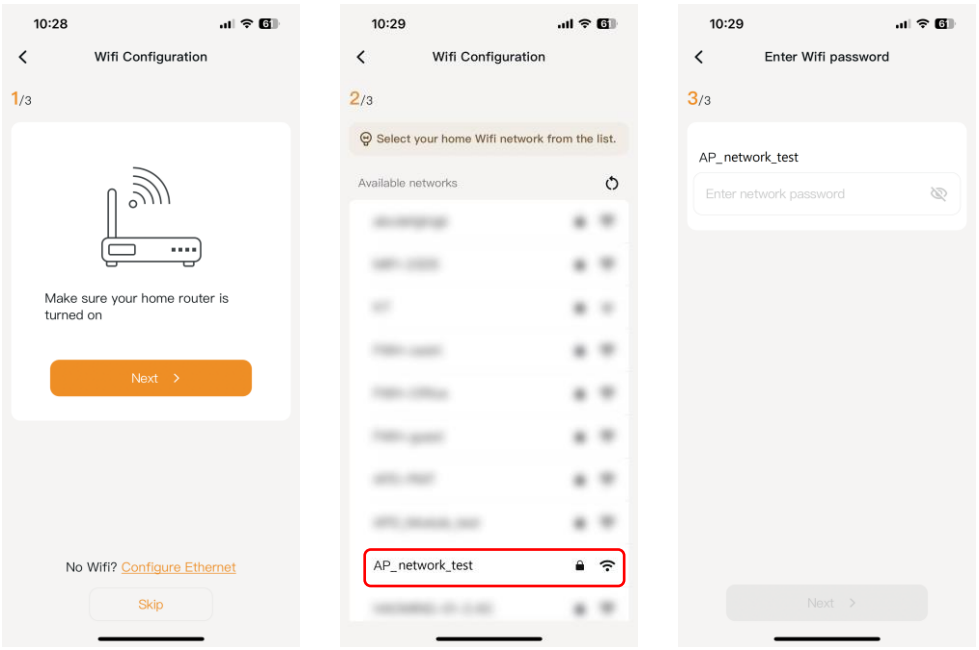


Manual Connection

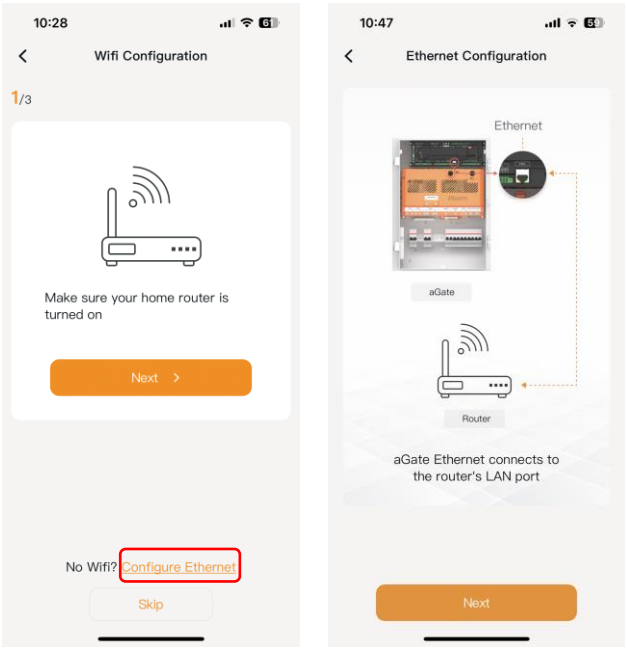
Tap **Manual Connect** > **Connect** to go to the Wifi settings screen, select the aGate hotspot, which is named with “AP_” followed by the last nine digits of SN (e.g., AP_F23050182). The default password is the last twelve digits of the aGate serial number.



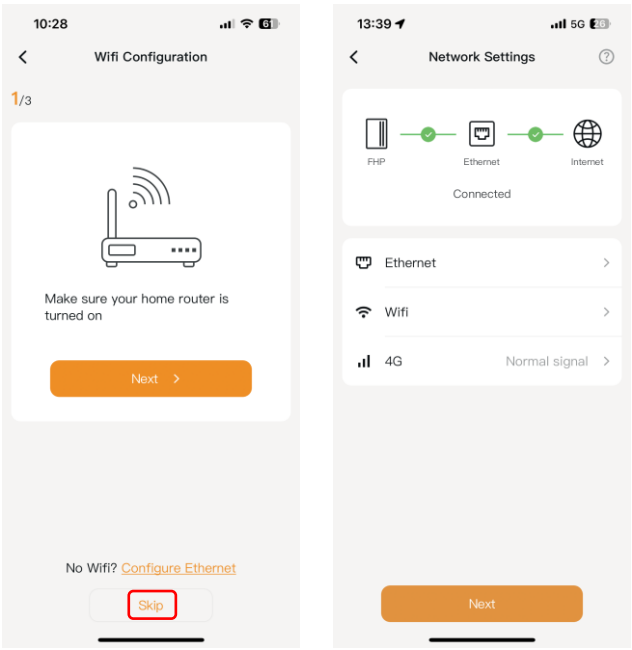
After finishing the system direct connect, follow the on-screen instructions to configure aGate to connect to the home router's Wifi network.



When Wifi is not an option, you can use a wired connection. Tap **Configure Ethernet** to connect to the Internet through the router's LAN port.



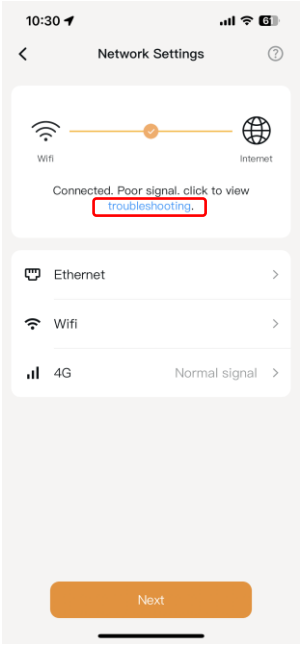
Or tap **Skip** on the **Wifi Configuration** page to use 4G connection (4G is connected by default).



NOTE: *A Wifi or Ethernet connection is preferred to the 4G cellular network, as 4G is easily affected by the carrier services and weather conditions.*

Sometimes the phone will drop the connection with the aGate after the Wifi connection has been successfully established. The mobile app will prompt to reconnect. Please follow the instructions and reconnect your mobile phone to the aGate.

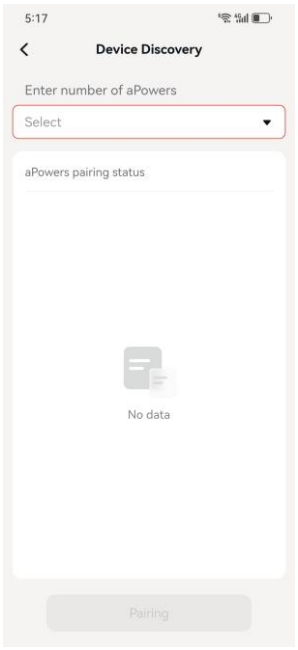
After network configuration, you can tap **troubleshooting** to view recommended solutions.



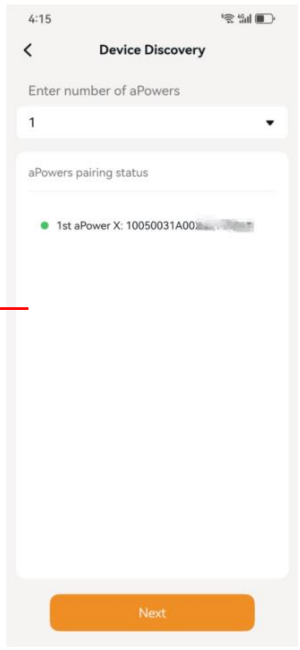
Step 3. Device Discovery

On the **Device Discovery** page, select the number of aPower units, then tap **Pairing** bar to start searching.

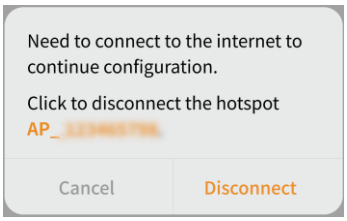
When the aPower batteries have been accurately identified, tap **Next** to save the configuration.



The paired aPower SN(s) will automatically display.

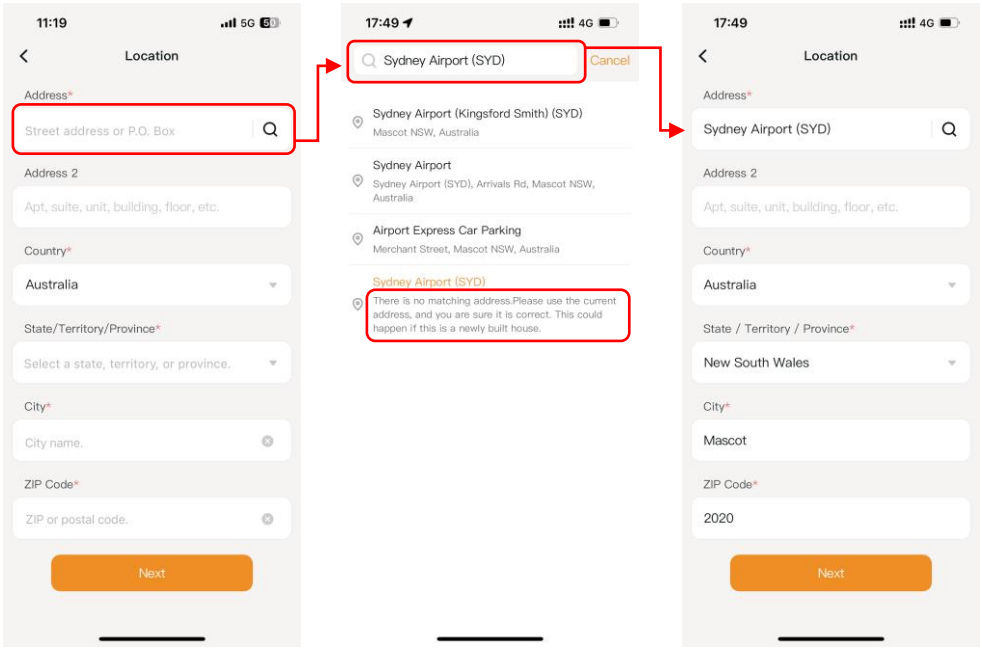


A popup will prompt you to connect to the internet. Tap **Disconnect** to disconnect the aGate hotspot, then connect your device to the internet. Continue the configuration.



Step 4. Location

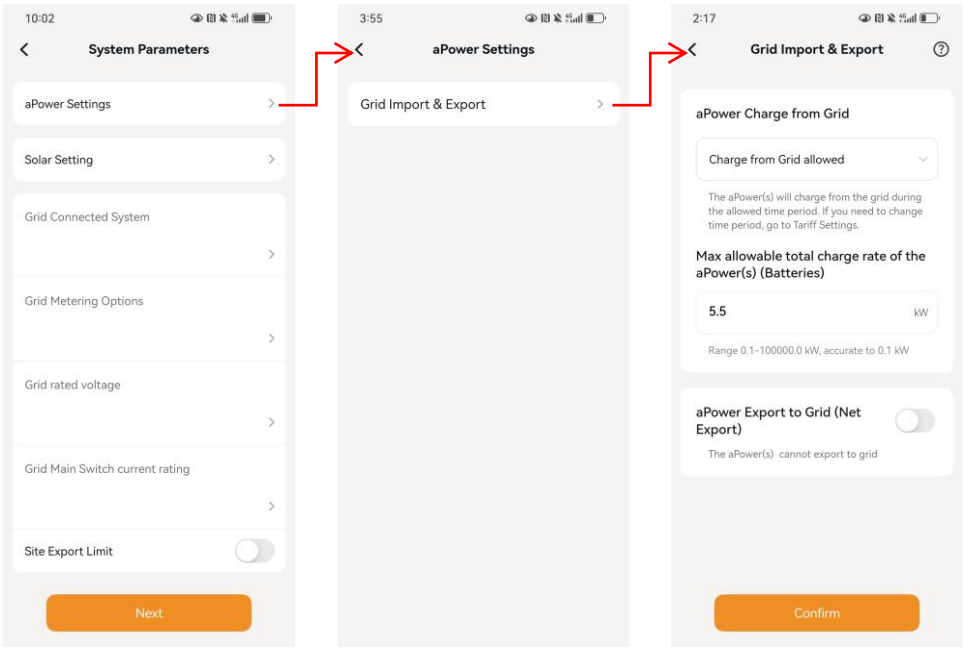
On the **Location** settings page, tap the **Address** bar (left image) and the search form (middle image) appears. Input the address and the search will attempt to match the address. If the correct address displays, tap on it to fill in the fields (right image). If there is no match, tap on **There is no matching address...** at the bottom of the address list, then enter the correct address information in the appropriate fields.



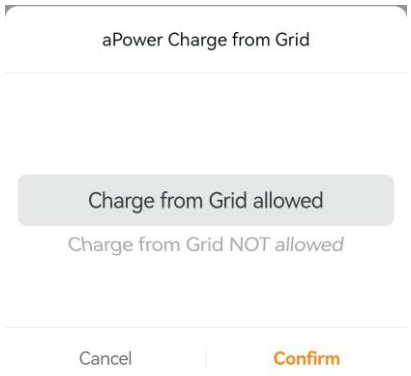
Step 5. System parameters

aPower Settings

Go to **System Parameters > aPower Settings > Grid Import & Export**.



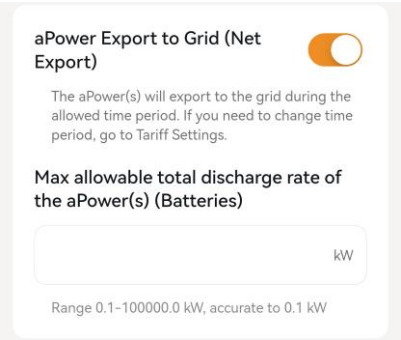
Grid Import & Export



Charge from grid allowed: The system will use the grid to charge the batteries in Time of Use mode during off-peak or super-off-peak periods.

Charge from grid not allowed: The aPower can only be charged by solar power.

Max allowable total charge of the aPower(s) (Batteries): Set the grid import limit value within the range from 0.1 to 100000.0 kW. Only applicable when **Charge from grid allowed** is selected.



Customize the energy source for energy export during on-peak periods.

aPower Export to Grid (Net Export): The aPower(s) will export to the grid during the allowed time period.

Max allowable total discharge rate of the aPower(s) (Batteries): Set the grid export limit value within the range from 0.1 to 100000.0 kW. Only applicable when **aPower Export to Grid (Net Export)** is enabled.

Note: *Some electric utility regulations may require that grid charging and battery export not operate on the same system. Check with your local utility for specific requirements.*

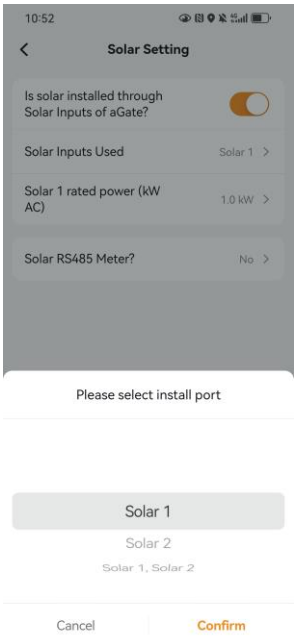
Tap **Confirm.**

Solar Setting

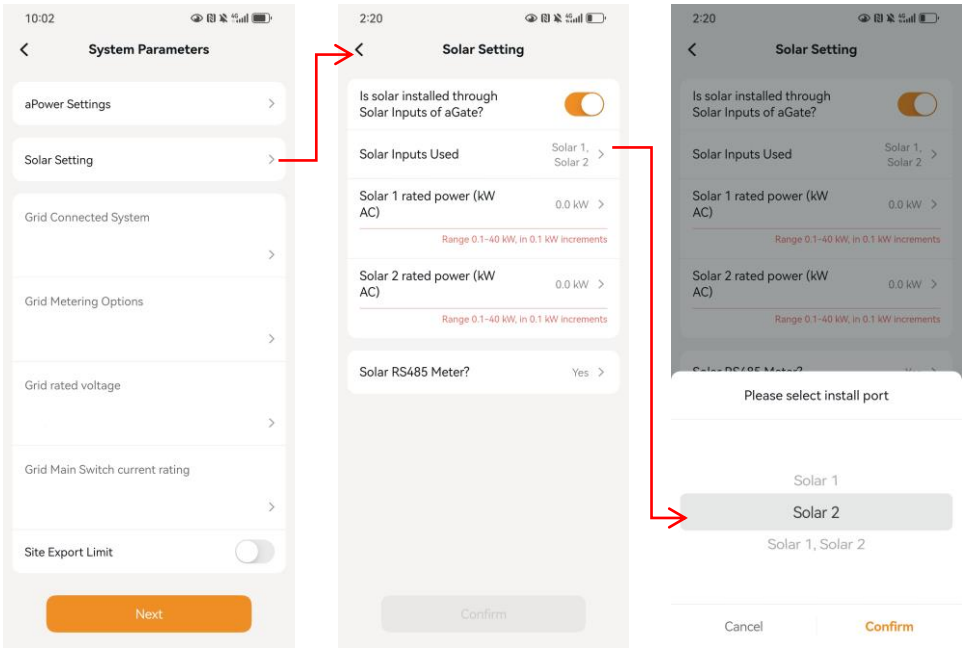
Go to **System Parameters** > **Solar Setting**, enter solar system information based on the local configuration.

Is solar installed through Solar Inputs of aGate: Enable if solar is connected to the aGate.

Tap **Solar Inputs Used** and select the solar input port based on the site conditions.

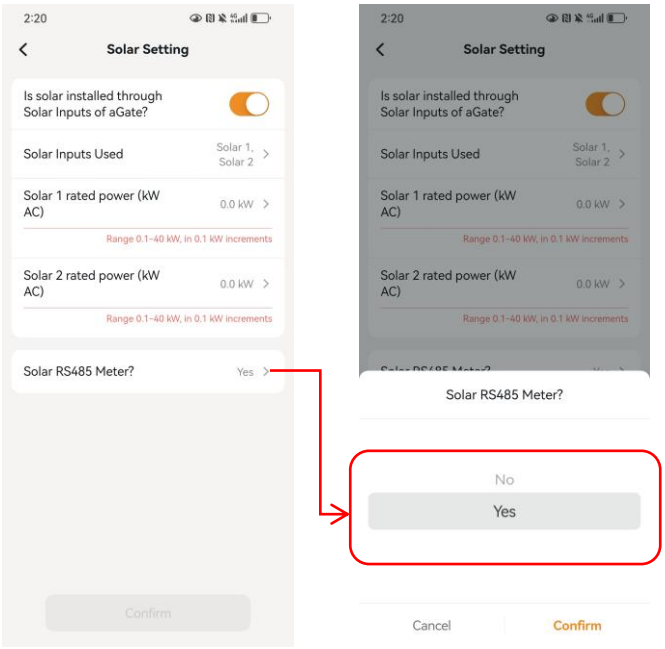


Set the **Solar 1 rated power (kW AC)** or/and **Solar 2 rated power (kW AC)** based on the site conditions.



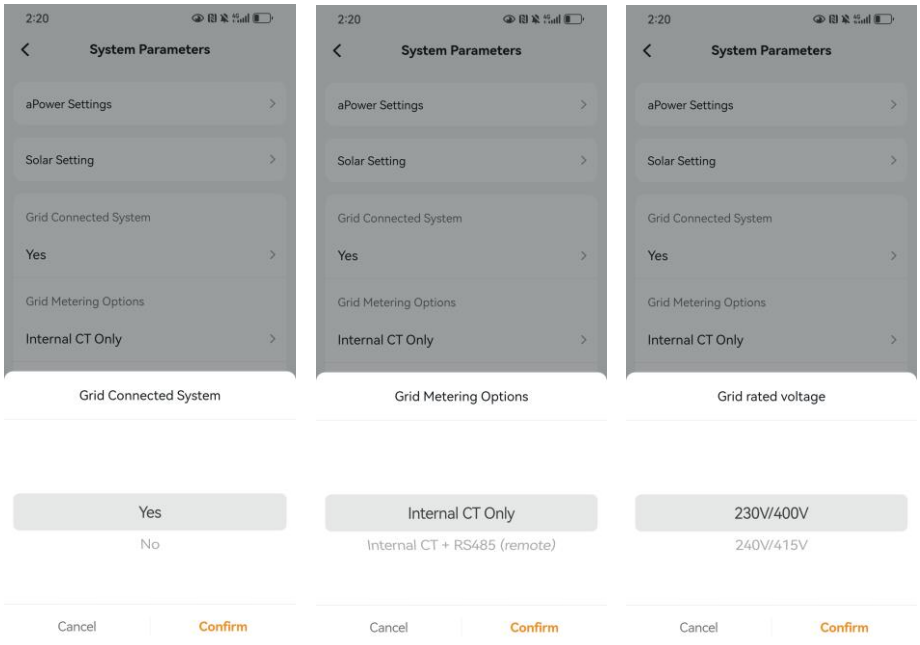
Solar RS485 Meter: Configure this setting to match the installation.

- **No**: Select if no RS485 meter is installed.
- **Yes**: Select if an RS485 meter is installed.

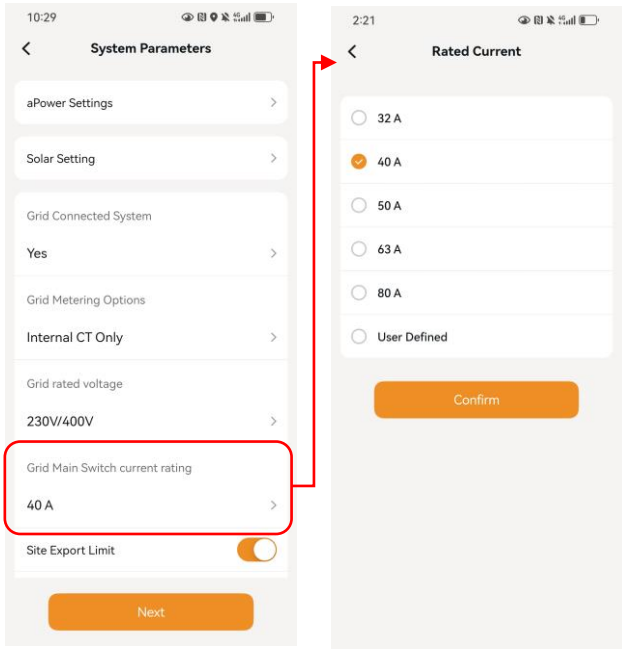


Configure the system's grid-related parameters

Tap **Grid Connected System** and select the system's grid connection status from the option box. If the system is connected to the grid, choose **Yes**, then configure **Grid Metering Options** and **Grid rated voltage**.



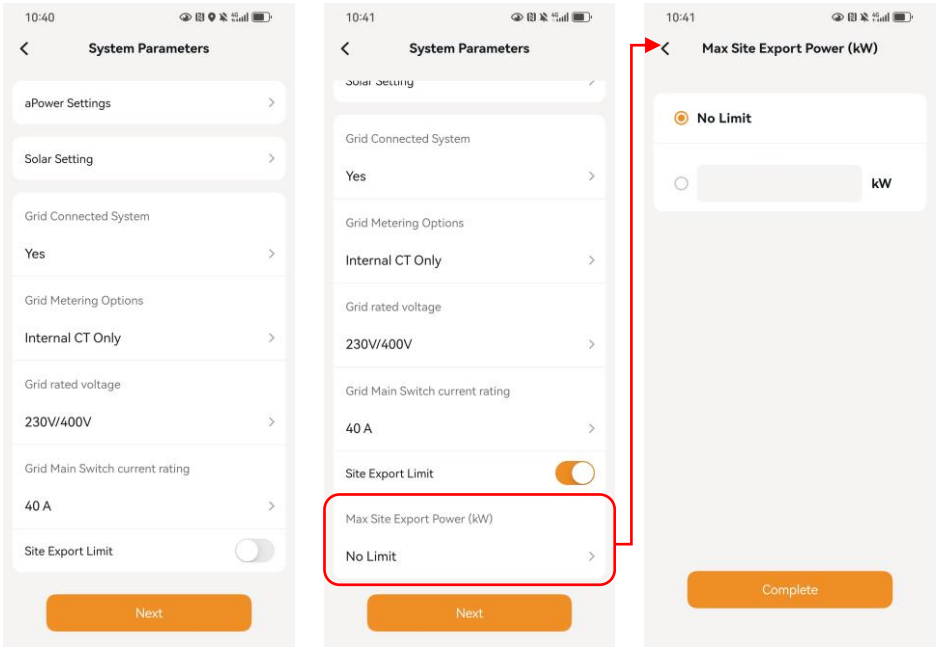
Configure the **Grid Main Switch current rating**. In addition to the provided specific options, custom input values are also supported.



Tap **Confirm**.

Site Export Limit: When enabled, the system can use its backup reserve to support the grid during peak demand.

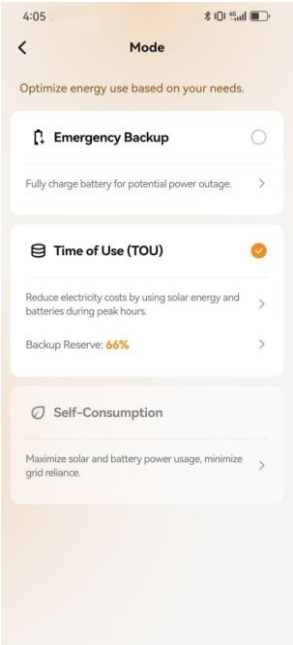
Max Site Export Power (kW): Select whether the system is permitted to export power to the grid. If enabled, the **Max Site Export Power (kW)** shall be set according to local utility requirements and site-specific conditions.



Tap **Next**.

Step 6. Utility Plan & Incentives

On the **Mode** page, select the system operating mode, such as Emergency Backup, Time of Use, or Self-Consumption, to optimize energy usage according to your needs.



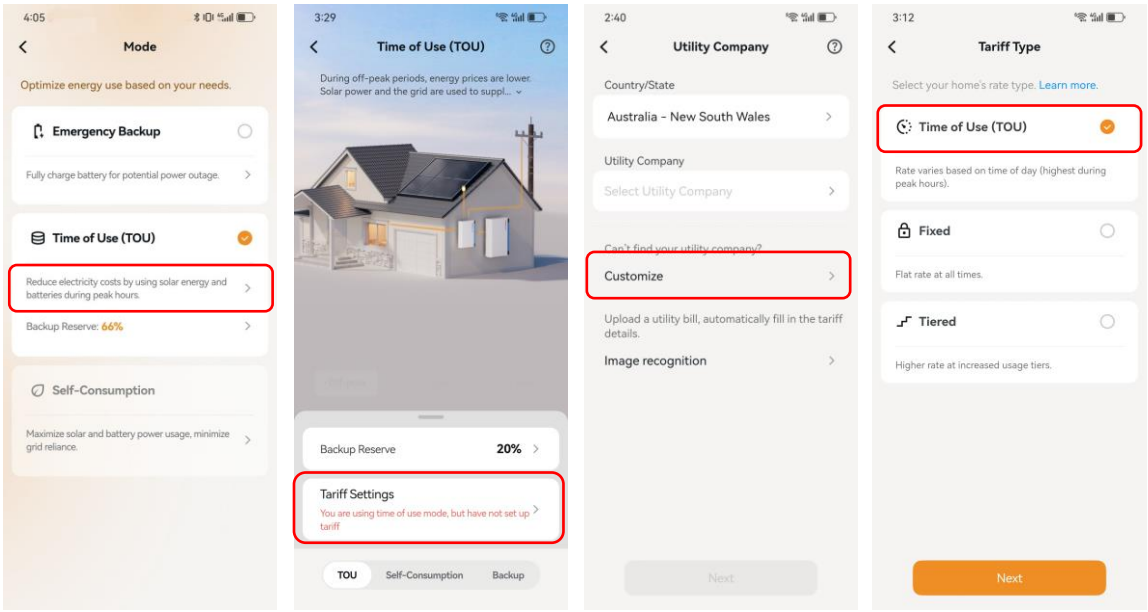
Tap **Next**.

Note: *The Self-Consumption option will only appear in the mode selector if you have PV connected to the aGate.*

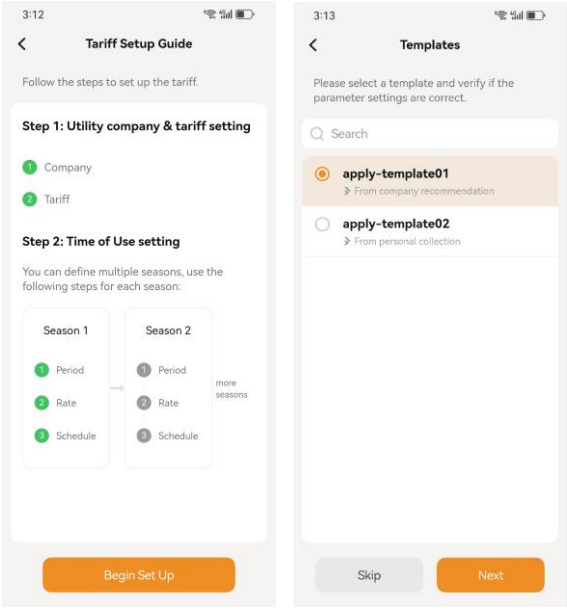
Use the preset TOU template

Installers can create **Time of Use** (TOU) templates in FleetView. These templates can then be directly referenced in the FranklinWH App, enabling quick setup of TOU tariff plans and dispatch schedules on site. Refers to ***FranklinWH FleetView Operations Manual*** to preset the TOU template.

To call a TOU template, from the **Mode** page go to **Time of Use (TOU) > Tarriff Settings > Customize > Time of Use (TOU)**. Tap **Next.**

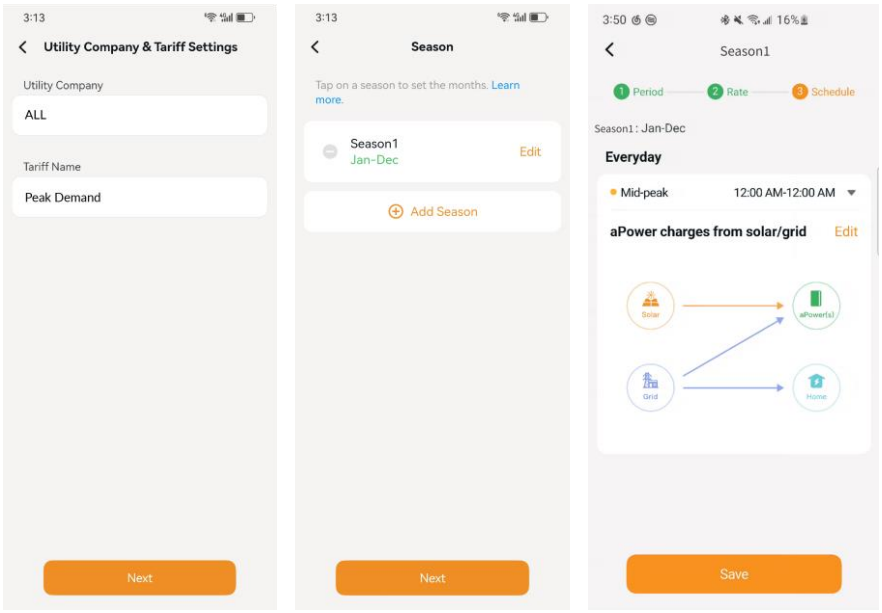


Tap **Begin Set Up**. The list of preset templates appears. Select the desired template, then tap **Next**.



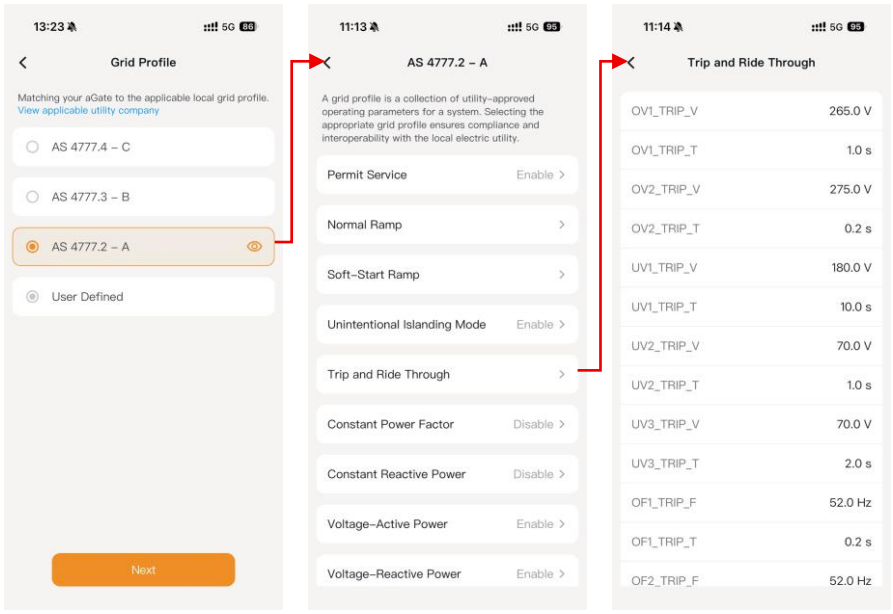
Adjust the settings based on homeowner's requirements.

If no changes are needed, tap **Next** repeatedly to go through all steps, and then tap **Save** on the last screen.



Step 7. Grid Profile

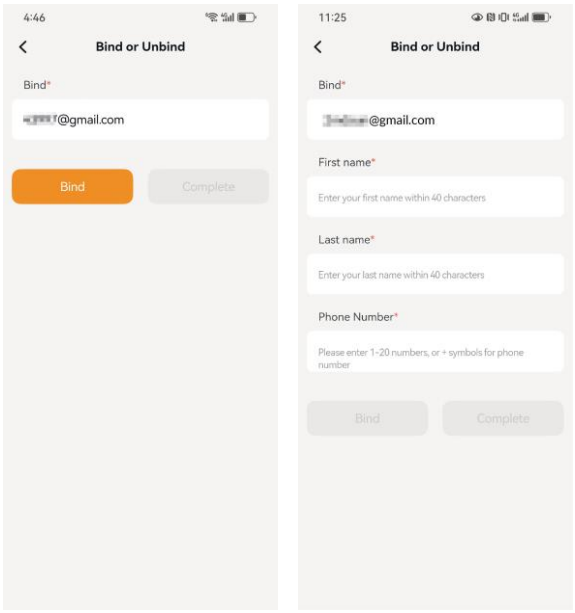
Select an applicable local grid profile.



If the local grid profile is not available, tap **Edit** in the **User Defined** bar to set the parameters.

Step 8. Bind or Unbind.

Enter the new customer email, tap **Bind**. Then enter the new customer's first name, last name, and phone number. Tap **Complete.**



NOTE

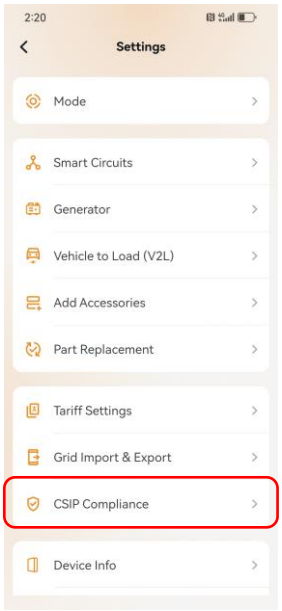
If the customer needs to change the bound account, tap **Commission** > **Bind or Unbind** > **Unbind** > **Complete**, then rebind.

Set CSIP-AUS Compliance (Australia only)

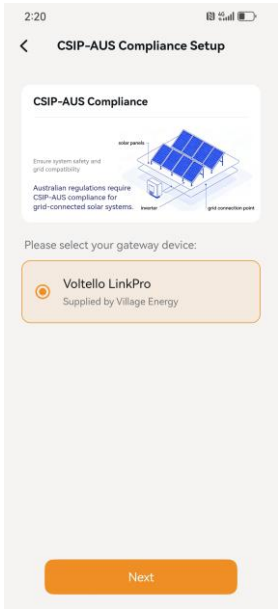
To meet Australian regulatory requirements, the FranklinWH System supports CSIP-AUS compliance, allowing DNSPs to manage export energy during grid events. Following the commissioning procedure, complete the CSIP-AUS compliance setup to comply with Australian regulations.

This section covers CSIP-AUS compliance setup, and guides installers to install the CSIP-AUS device and establish communication between the device and the aGate.

Step 1. Go to **Settings** > **CSIP Compliance**.



Step 2. Select your gateway device and tap **Next**.



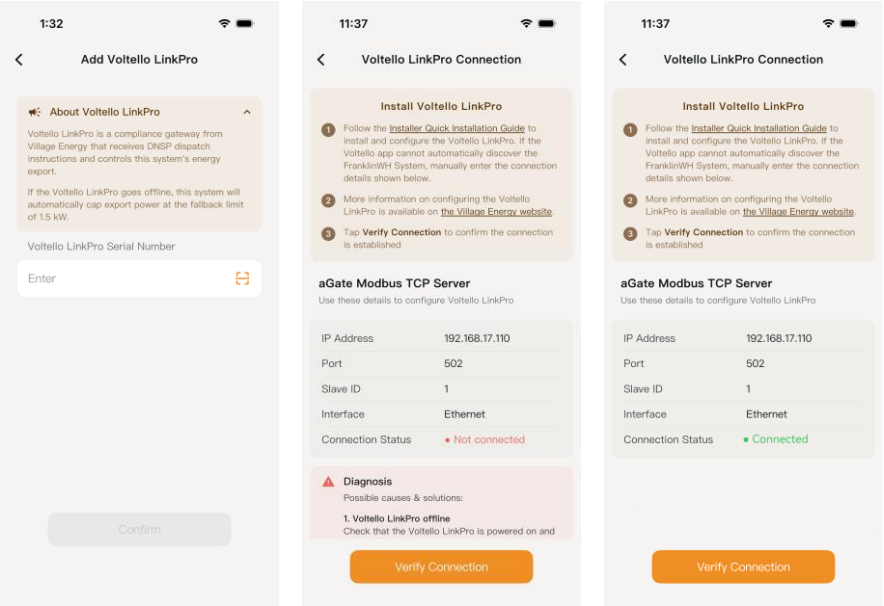
Step 3. Add Voltello LinkPro and bind it to the system.

1) Scan the Voltello LinkPro SN QR code or manually enter the SN to bind it to the system.

2) Tap **Confirm**.

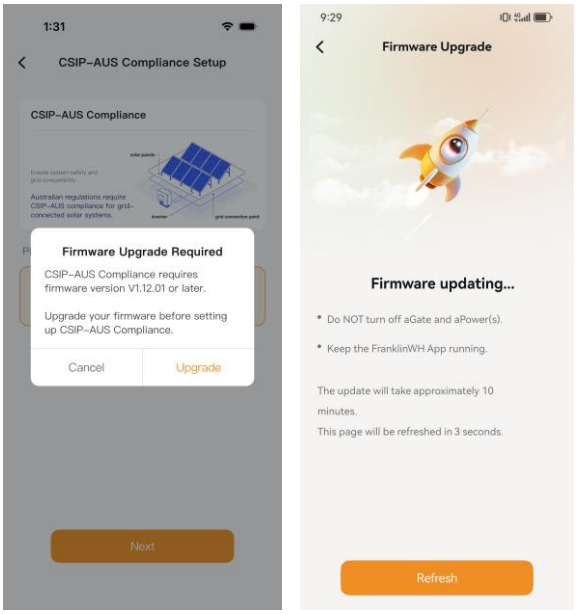
3) Install the Voltello LinkPro device, then log in to the Voltello app to complete the configuration.

4) Tap **Verify Connection** in the FranklinWH App.



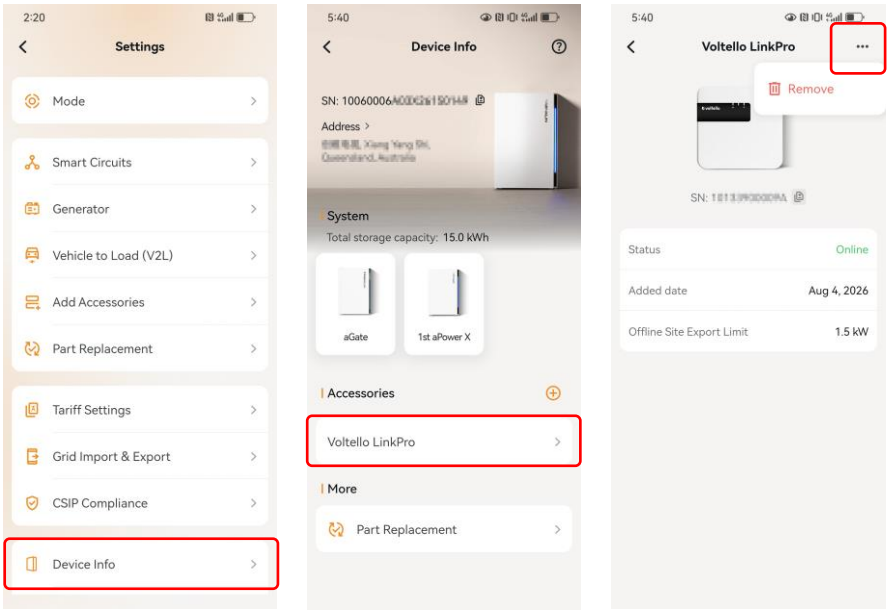
Connection verification may take a few seconds. Once connected, your system is fully compliant with Australian grid compliance requirements and ready for normal use.

If firmware upgrade is required, the following page will appear. Follow the on-screen instructions to complete the upgrade, then proceed with the compliance setup.



To view Voltello LinkPro device information, navigate to **Settings** > **Device Info** > **Voltello LinkPro**.

To remove Voltello LinkPro device, navigate to **Settings** > **Device Info** > **Voltello LinkPro** > ••• > **Remove**.

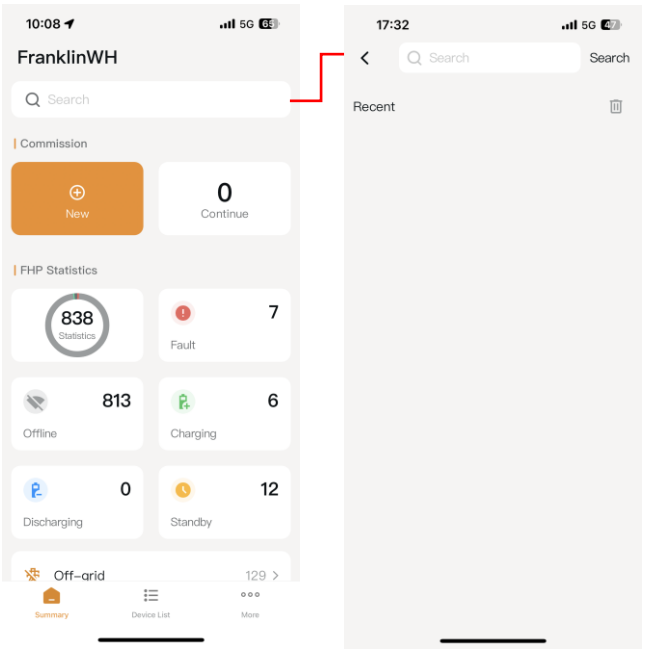


Optional Component Configuration

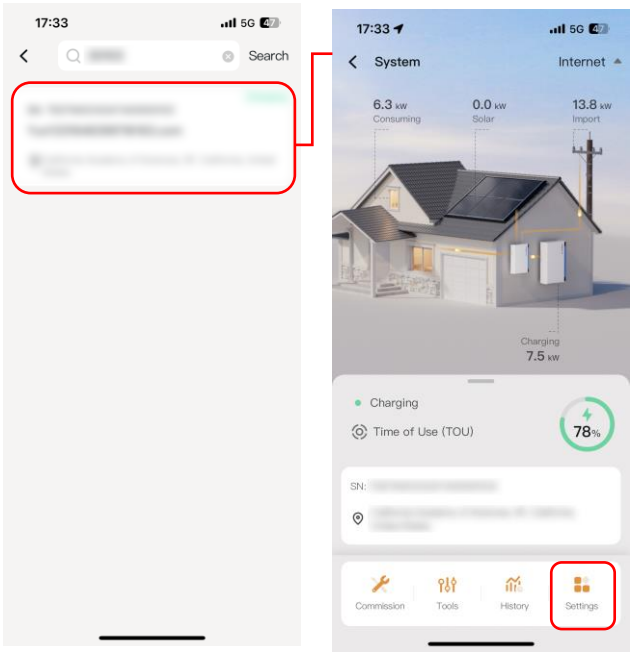
The FranklinWH System has two optional aGate components: the Smart Circuits Module and Generator Module.

Bind the installed components

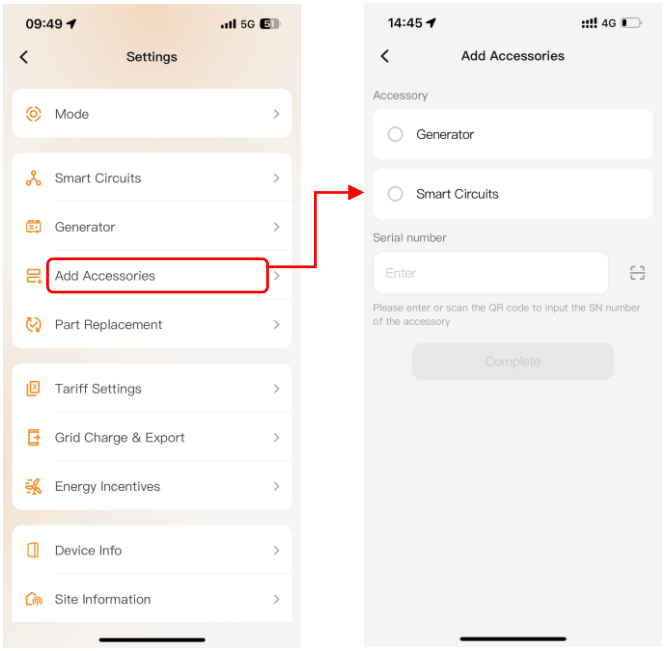
Step 1. Search for the serial number of the aGate for which the Smart Circuits Module, for example, is to be installed in the Search Device box.



Step 2. Tap on the search result to access the system and select **Settings**.

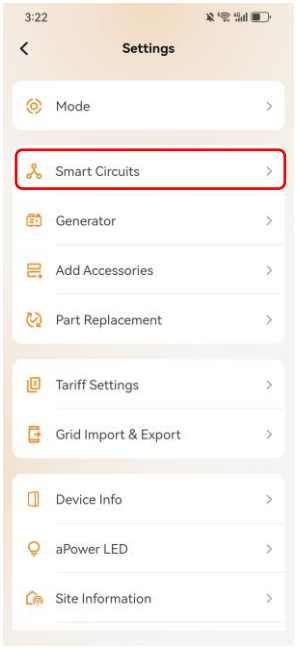


Step 3. On the **Settings** page, tap **Add Accessories**, then select the corresponding accessory. Scan the equipment QR code, or manually input the **SN**. Tap **Complete**.



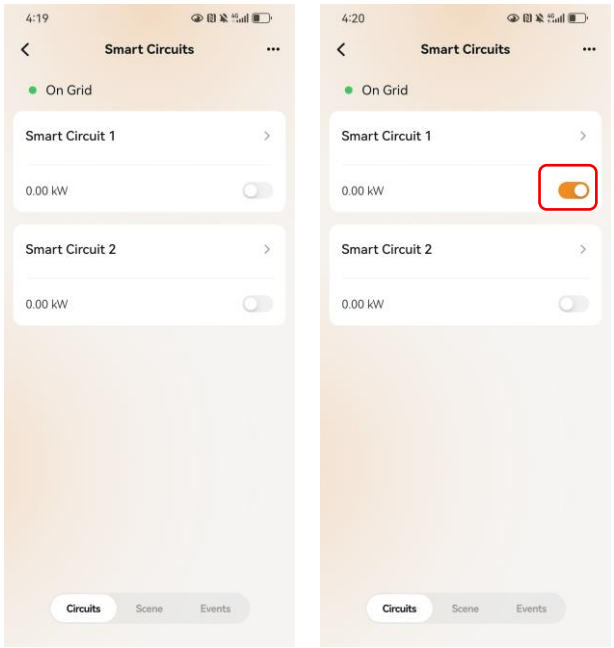
Smart Circuits Module

Step 1. On the **Settings** page, tap **Smart Circuits**.



Step 2. The bar at the bottom of the Smart Circuits page contains three icons: **Circuits**, **Scene**, and **Events**. Tap the icon for the component you want to view to access its details.

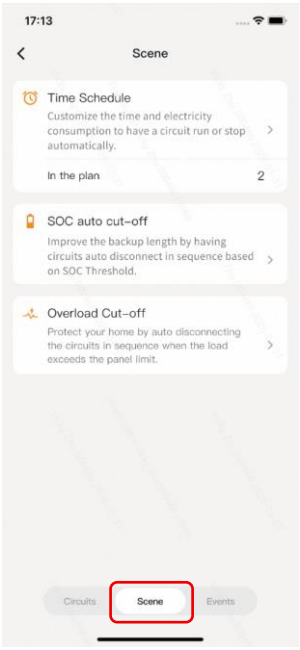
On/Off: Tap the slider to manually turn the circuit on or off.



NOTE

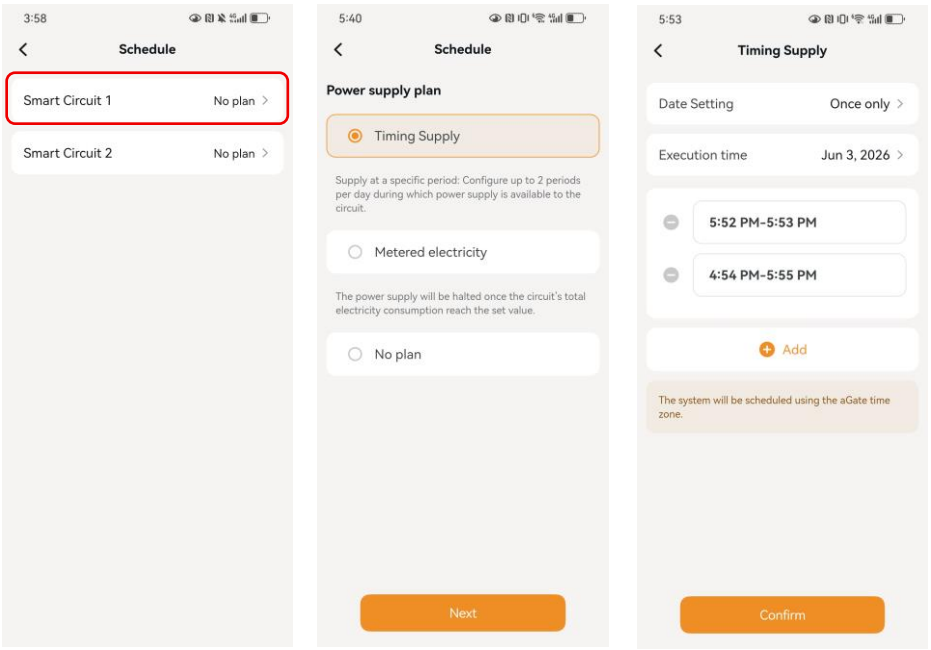
Circuits must remain in agreement with the physical electrical wiring.

Step 3. Tap the **Scene** tab to view the full list of available scenes. You can set the Time Schedule, SOC Auto Cut-off (only off-grid), and Overload Cut-off scenes for the circuit.



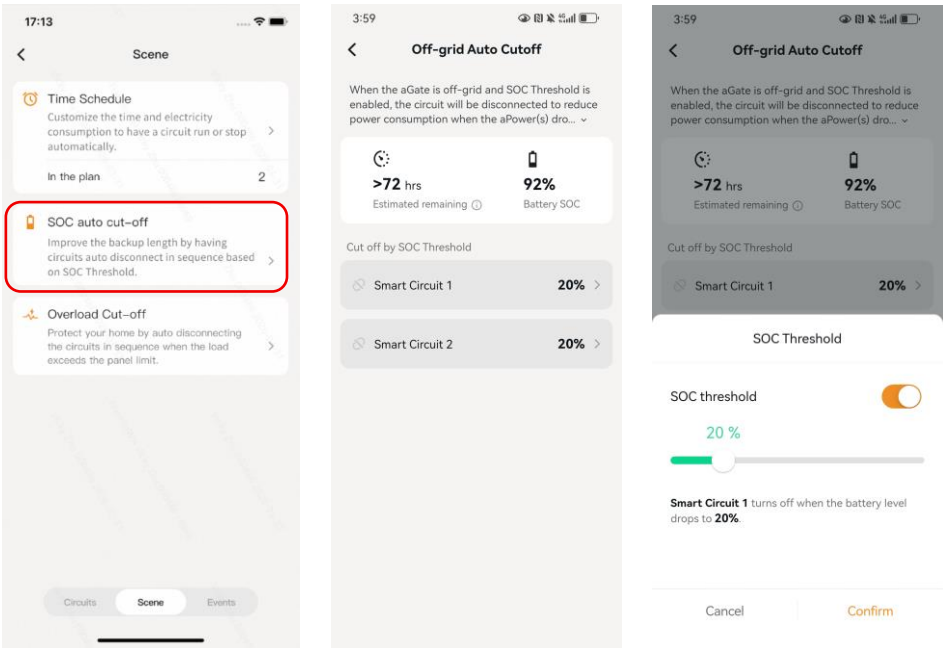
Time Schedule: Customize the time period or electricity consumption to automatically turn the circuit on or off.

You can set the cycle interval and execution time, allowing the system to work intelligently and meet the customer's power consumption requirements.

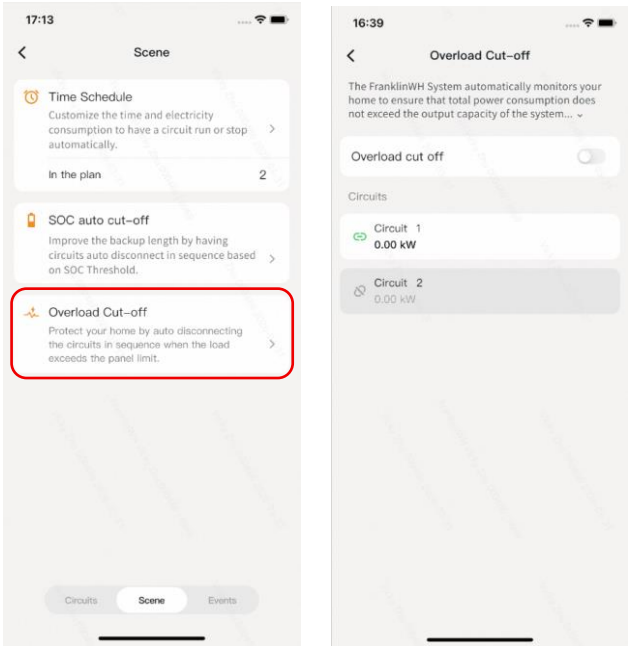


SOC Auto Cut-off (only off-grid): Extend backup hours by automatically disconnecting circuits in sequence based on battery SOC during a grid outage.

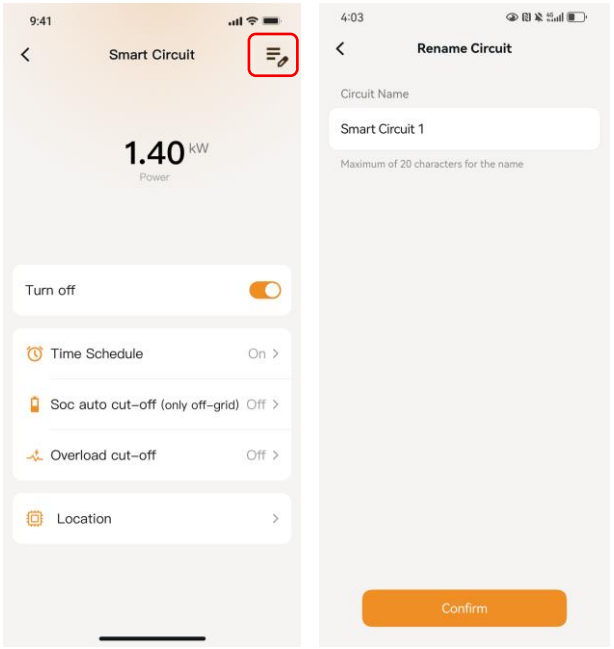
When the aPower battery capacity drops to the set SOC Threshold, each Smart Circuit will be automatically disconnected to reduce power consumption.



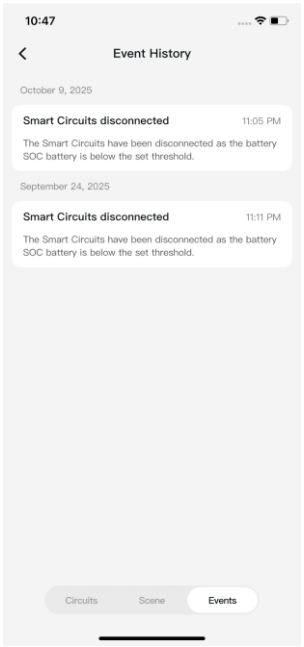
Overload Cut-off: If the load exceeds the main panel's capacity, the system will automatically disconnect circuits to prevent overload damage.



Name: Tap on the top right, then rename the circuit. Each circuit name may be up to 20 characters.



Step 4. Tap the **Event** tab to view the circuit disconnected event logs.

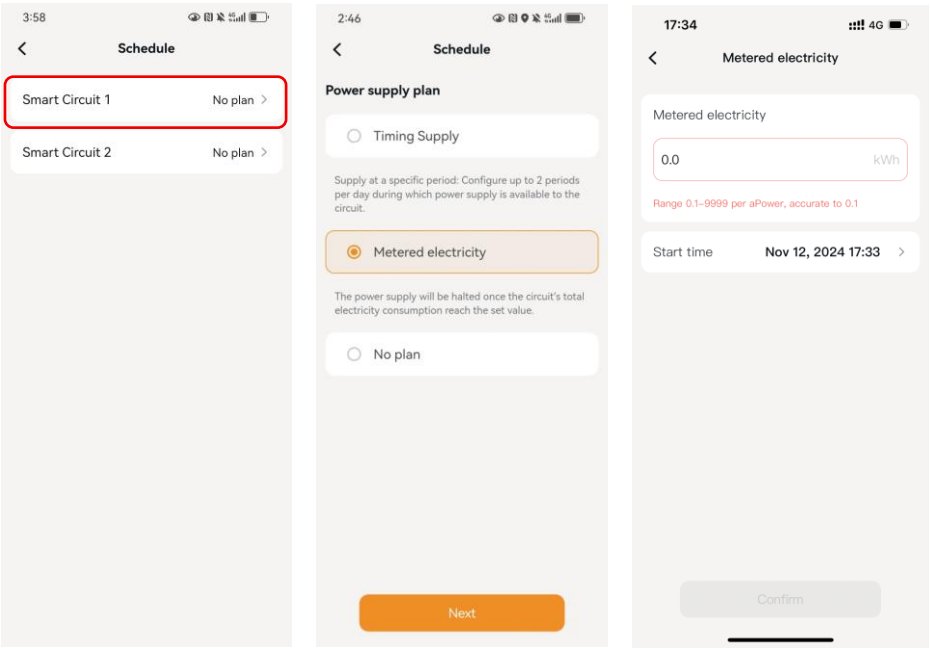


Step 5. Repeat the above steps to configure all Smart Circuits.

Step 6. Only Smart Circuit 1 supports metered electrical schedule settings.

Go to **Settings** > **Smart Circuits** > **Scene** > **Time Schedule**.

Users can set the pre-charge amount and start time to be used for charging an electric vehicle.

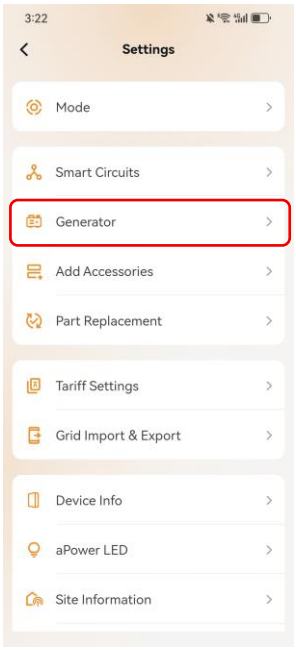


Generator

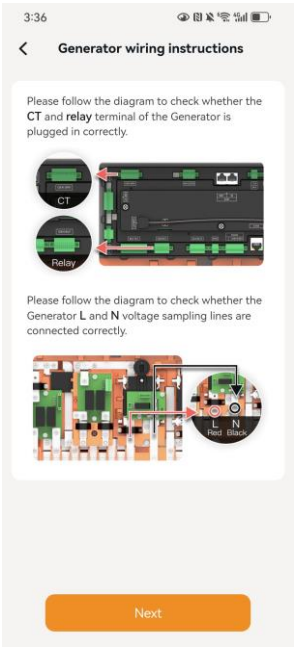
Step 1. On the **Settings** page, tap **Generator**.

Read the Generator feature description and tap **Install**.

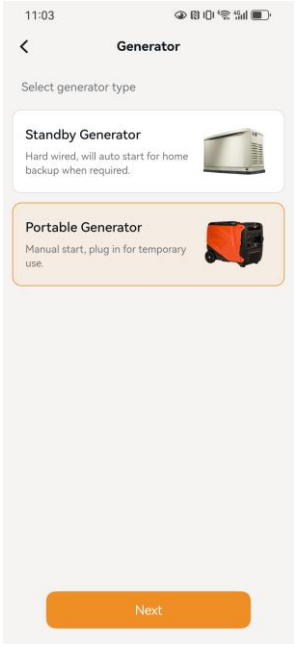
Check the generator CT, Relay, and L/N voltage sampling line connections as per wiring instructions. Tap **Next**.







Step 2. Select the desired generator type.



Step 3. Set the generator parameters.

NOTE

The generator connection settings in **Start control type** should not be changed without authentication and must keep in agreement with the actual electrical connections and wiring of the FranklinWH System.

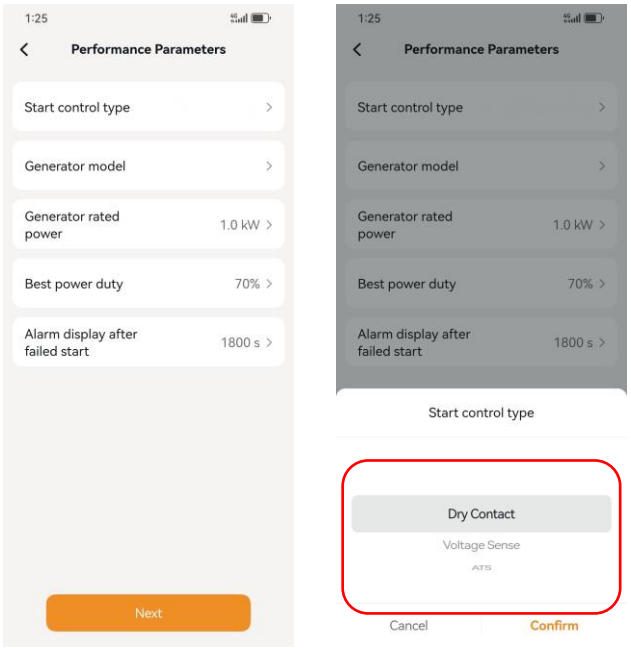
Start control type: Select the generator start type (Only available for Standby generator).

Generator model: Refer to the model number on the generator's nameplate.

Generator rated power: Refer to the value on the generator's nameplate.

Best power duty: Set the best duty efficiency point of the generator (70% by default). Please refer to the generator manual or consult the generator supplier for the optimal setting.

Alarm delay after failed start: Set the delay period for the generator to be started. If generator startup fails, the system will push a message to the customer.



Tap **Next**.

Step 4. Set the generator's operating mode.

Standby Generators support two operating modes: **Manual** and **Auto Schedule**. Portable generator automatically detects and connects to the system.

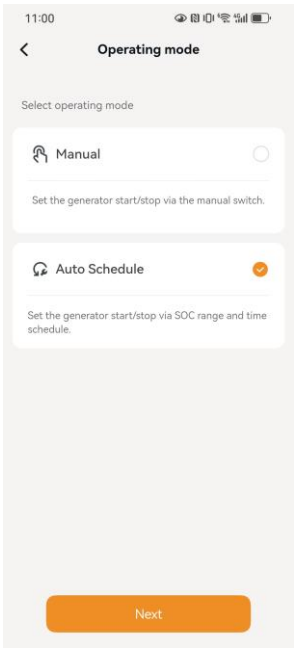
Manual: Check the option to select to manually start or stop the generator.

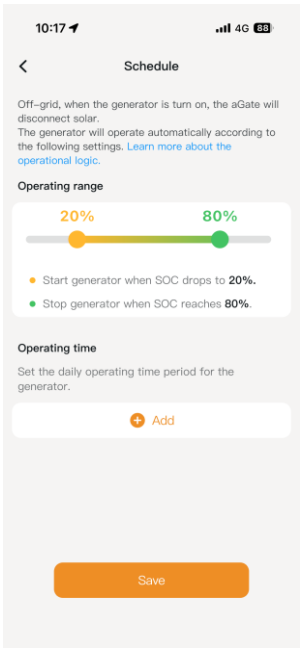
Auto Schedule: Check the **Auto Schedule** option. The generator will start only when both the battery SOC is below the lower limit and the set time period is active. The generator will stop immediately if the SOC reaches the set upper limit, or if the current time falls outside the set period.

a. **Operating range:** adjust the slider to set the SOC upper and lower limits.

b. **Operating time:** tap the plus icon (as shown) to set the operating time period. The system allows up to 3 non-overlapping periods (00:00-23:59 allowed for each) with an interval of at least 1 minute.

   If no time period is configured, the generator is allowed to operate without time restriction.





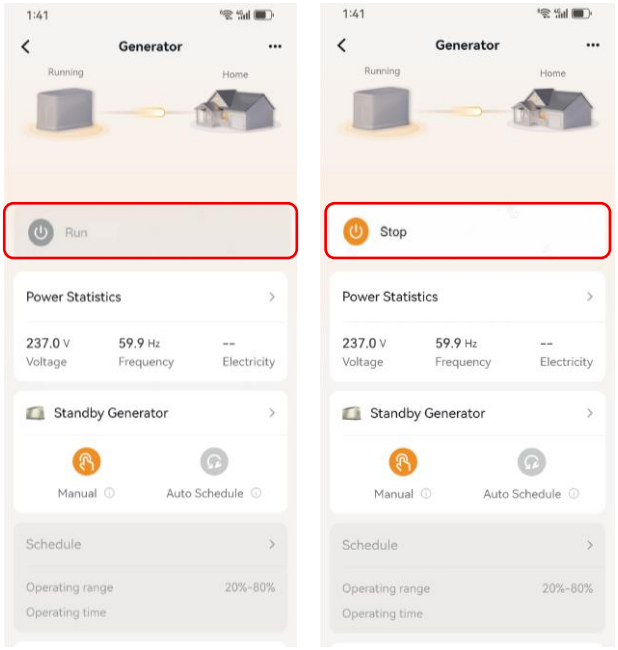


Tap **Save**.

Step 5. Once all previous steps are complete, a pop-up will confirm that the installation was successful. And the generator's home screen appears.

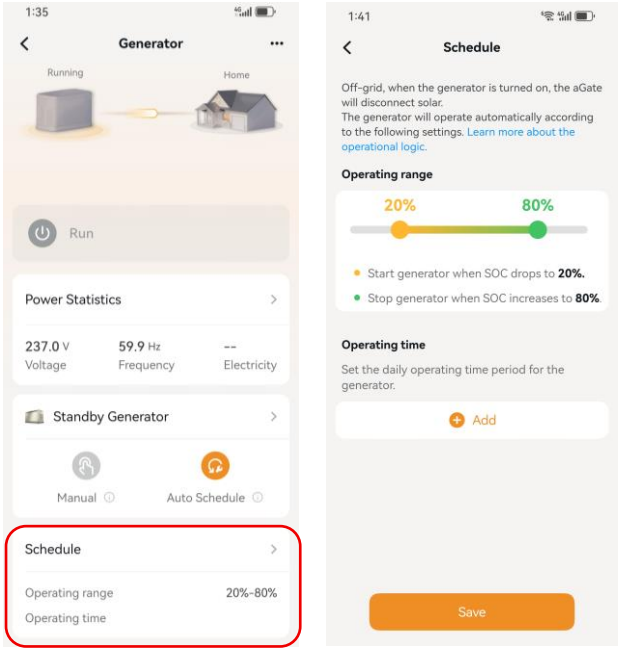
Standby Generator: Manual

Tap **Run** or **Stop** to start or stop the generator manually.



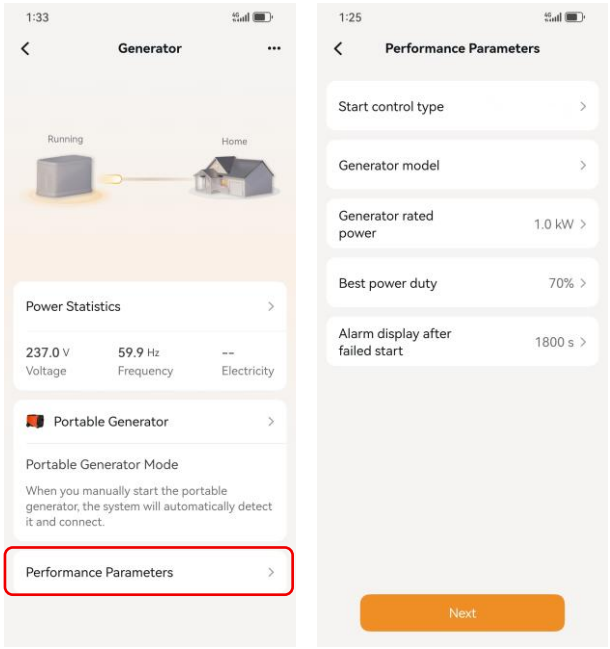
Standby Generator: Auto Schedule

The generator runs on the preset schedule.



Portable Generator

Manually switch the generator on/off using its own power switch. The system will automatically detect it and connect/disconnect the portable generator accordingly.



Power Statistics: View the generator's power output statistics.

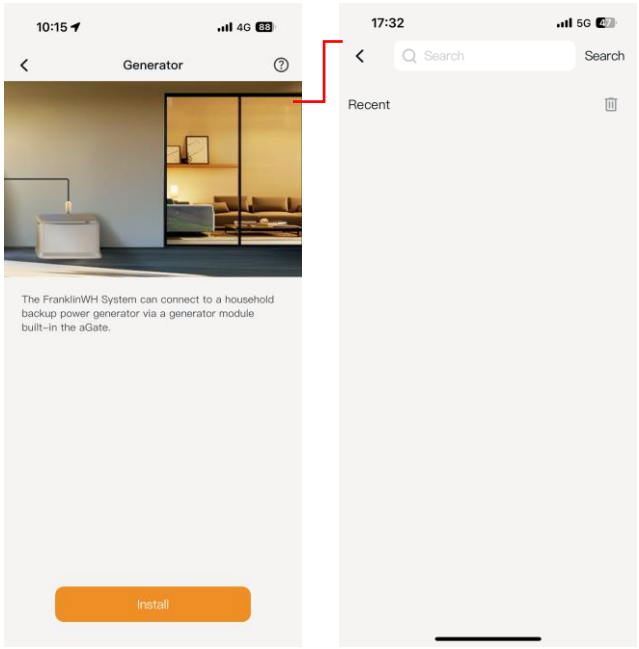
Performance Parameters: Set up the generator parameter (see Step 3).

Tap ••• on the upper-right corner to view the Guide, Generator wiring instructions, Generator operating logic, or to remove the generator.

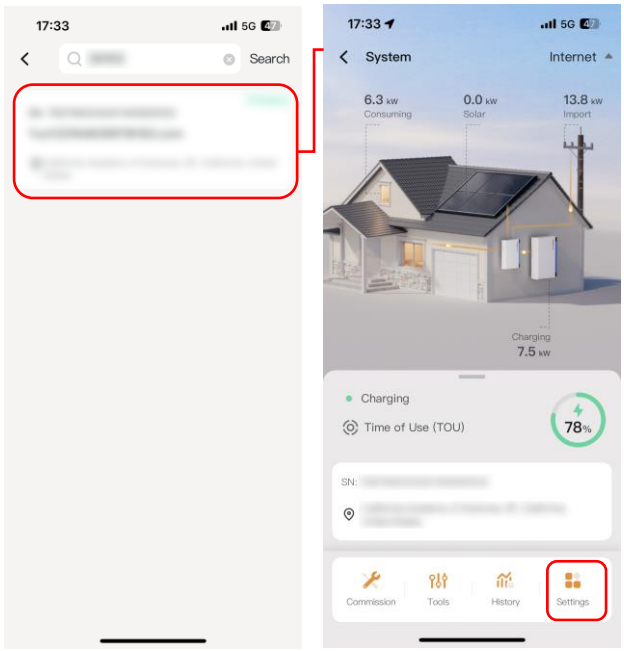
Part Replacement

If a part needs to be replaced, perform the physical replacement then follow the instructions below to register it in the app. Note that each aPower X and aPbox is associated with a specific aGate X. Steps 1-2 are to identify the correct aGate X. Only after that does the specific part replacement registration begin.

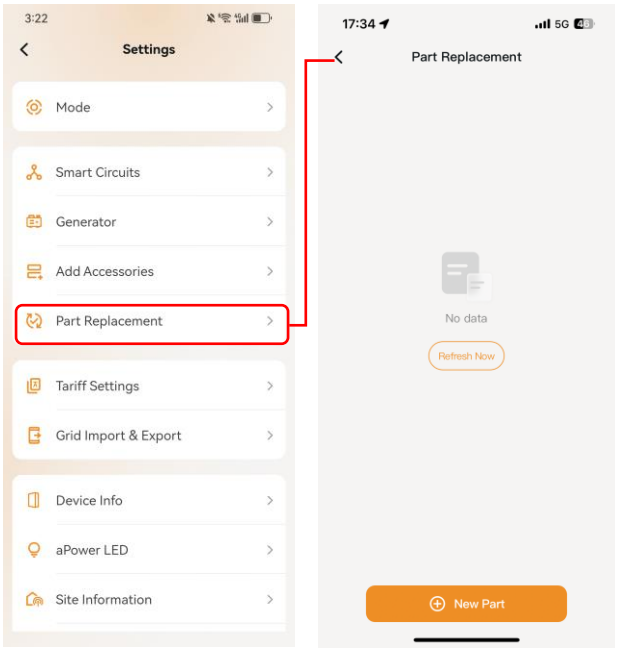
Step 1. Search, in the Search Device box, for the serial number of the aGate in which the part has been replaced.



Step 2. Tap on the correct aGate and select **Settings**.



Step 3. On the **Settings** page, select **Part Replacement**, then tap **New Part**, at the bottom of the page.

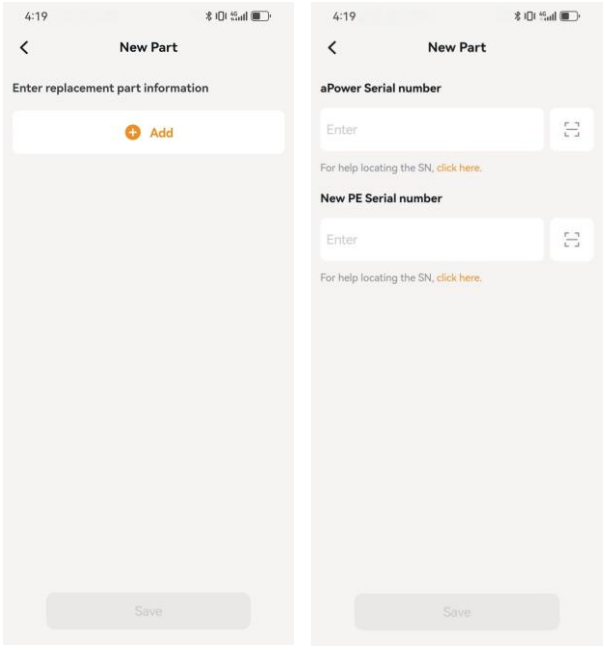


Step 4. This version defaults to PE for the part to be replaced. Tap **Next** to enter replacement part information.



If the aGate system version is not supported, you will be prompted to upgrade. Only after upgrading the version can you proceed.

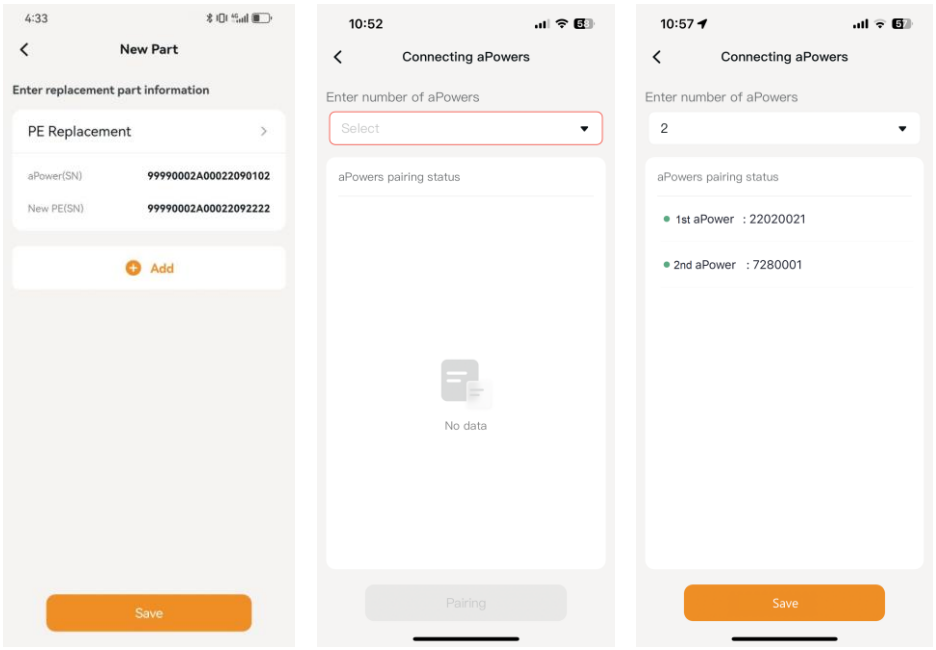
Step 5. Tap **Add**, scan the aPower and part QR code, or manually input the aPower and part SN. After adding the information, tap **Save**.



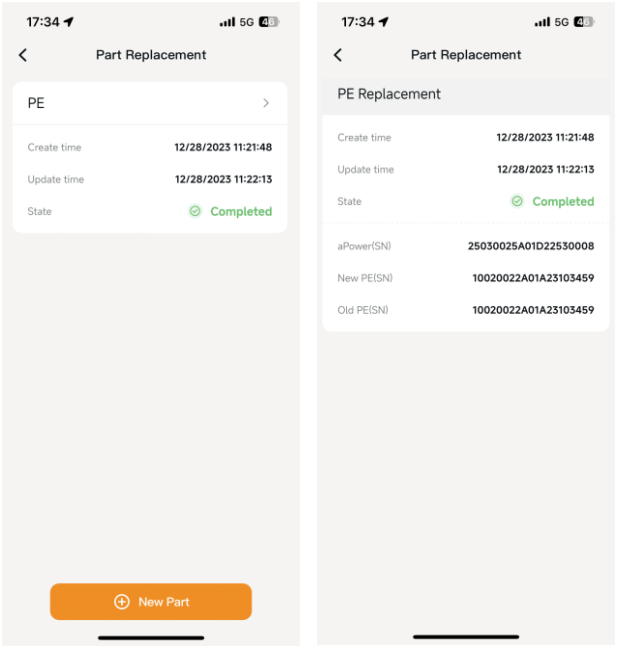
Step 6. After the information is added, tap **Next** to enter the **Connecting aPowers** page.

On the **Connecting aPowers** page, select the number of aPower units, then tap **Pairing** search.

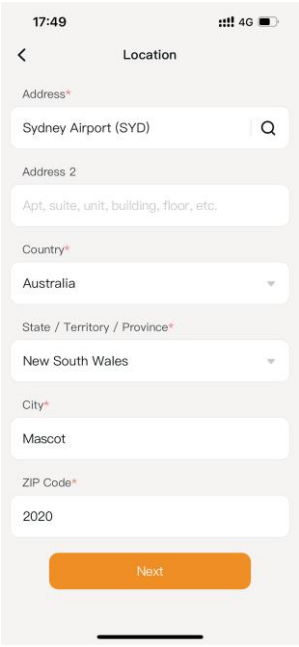
When the aPower batteries have been accurately identified, tap **Save**.



Step 7. On the **Parts Replacement** page, you can view the details of the replaced parts.

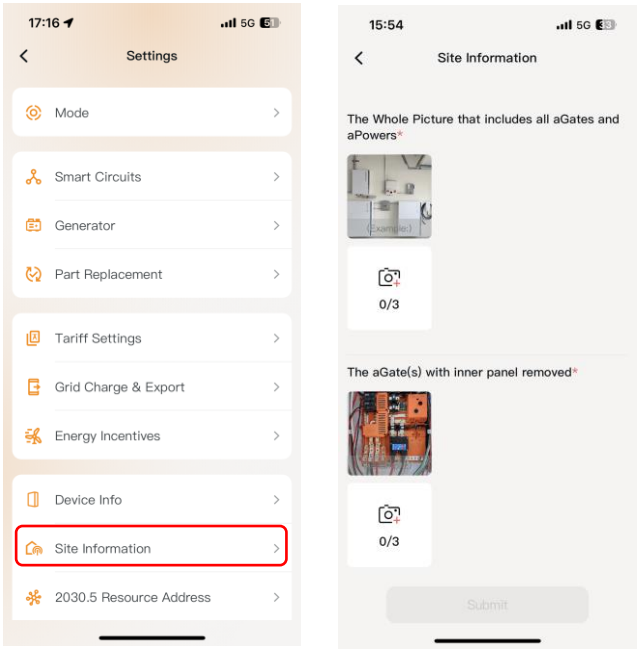


Step 8. Please re-enter the **Location** page. The system will automatically trigger an update to ensure the firmware is synchronized to the latest version after the parts are replaced.



After Commissioning

Upload site pictures when the commissioning has been completed.



Follow the instructions below to ensure the system is completely de-energized.

Step 1. Ensure that the aGate grid breaker, generator breaker (optional), solar breaker, Smart Circuits breakers (optional), and aPower breaker are all in the OFF position.

Step 2. Turn off the aGate power switch.

Step 3. Press the switch on the right side of all aPowers to confirm that they are turned OFF (switch is flush with the case).

Step 4. Turn the EPO switch (if installed) back to the ON position or reconnect the EPO plug, and wait for one minute before continuing.

Functional Validation

Checklist

Startup Steps and Measurements.

Tools	Multimeter				
Before startup	Account	1	Has the user signed into the mobile app?	☐ Yes	☐ No
	Networking	1	Is the family network working properly?	☐ Yes	☐ No
		2	Is the 4G LTE package selected?	☐ Yes	☐ No
	Switches	1	Is the power switch on the side of each aPower OFF?	☐ Yes	☐ No
		2	Is the aGate grid breaker OFF?	☐ Yes	☐ No
		3	Is the aGate generator breaker (if installed) OFF?	☐ Yes	☐ No
		4	Are the aGate Smart Circuits breakers (if installed) OFF?	☐ Yes	☐ No
		5	Is the aGate solar breaker OFF?	☐ Yes	☐ No
		6	Is the aGate power switch OFF?	☐ Yes	☐ No
		7	Is the aGate aPower breaker OFF?	☐ Yes	☐ No
		8	Are all other switches (e.g: Combiner Box breakers) between the aGate and aPowers OFF?	☐ Yes	☐ No
	Indicating LED	1	Are LED strips on all the aPower units OFF?	☐ Yes	☐ No
		2	Is the aGate power indicator OFF?	☐ Yes	☐ No

<table>
<tr><td rowspan="11">Startup</td><td rowspan="11">Off-grid startup</td><td colspan="4">Step: Turn on the aGate power switch.
Turn on the aPower breaker on the aGate.
Turn on all other switches between the aGate and the aPower unit(s).
Turn on the aPower switches on the side of each aPower.
NOTE: If there are multiple aPower batteries in the FranklinWH System, their aPower switches need to be turned on in sequence. Check whether the FranklinWH App reports any alarm for each activation.</td></tr>
<tr><td>1</td><td>Does the aPower LED flash and then stay solid after the aPower switch is turned on?</td><td>☐ Yes</td><td>☐ No</td></tr>
<tr><td>2</td><td>Does the aGate power indicator on the aGate turn on after the aPower batteries are switched ON?</td><td>☐ Yes</td><td>☐ No</td></tr>
<tr><td>3</td><td>Is the aGate hotspot found by the mobile phone?</td><td>☐ Yes</td><td>☐ No</td></tr>
<tr><td>4</td><td>Is the voltage of non-backup load port L to N 230 V ± 2 V in the aGate?</td><td>☐ Yes</td><td>☐ No</td></tr>
<tr><td>5</td><td>Is the voltage of backup load port L to N 230 V ± 2 V in the aGate?</td><td>☐ Yes</td><td>☐ No</td></tr>
<tr><td colspan="4">Step: Turn on the breakers between family loads and aGate</td></tr>
<tr><td>1</td><td>Do family loads (such as light bulbs) work properly?</td><td>☐ Yes</td><td>☐ No</td></tr>
<tr><td>2</td><td>Is the mode on the FranklinWH App set as off-grid, battery backup?</td><td>☐ Yes</td><td>☐ No</td></tr>
<tr><td>3</td><td>Is the L to N input voltage at the grid breaker on the aGate 230 V ± 10 V?</td><td>☐ Yes</td><td>☐ No</td></tr>
</table>

	On-grid	**Step: Turn on the grid breaker on aGate**			
		1	Does the mode shown on the FranklinWH App agree with the mode set during installation?	☐ Yes	☐ No
		2	Are the Grid, Home, and FranklinWH icons lit in the app?	☐ Yes	☐ No
	Solar only without grid power	**Step: Turn off the grid breaker on the aGate** **Turn on the Solar breaker on the aGate**			
		1	Is the output voltage at the solar breaker 230 Vac?	☐ Yes	☐ No

Caution:

If the above check results are "No," except for Networking 2 (4G), please solve the abnormal item and check again.

① *The total power of family loads should not be greater than the total power of aPower units, with the absence of grid power and solar production.*

② *If there is any large electrical load, such as air conditioners or electric motors, when the system is working in the off-grid mode, please turn off such loads first and restart them after the FranklinWH System has successfully started.*

③ *After the system has been activated, please turn off the power switch on the side of aPower and wait for 10 seconds before turning it back on.*

Validation

On-grid/Off-grid Switching

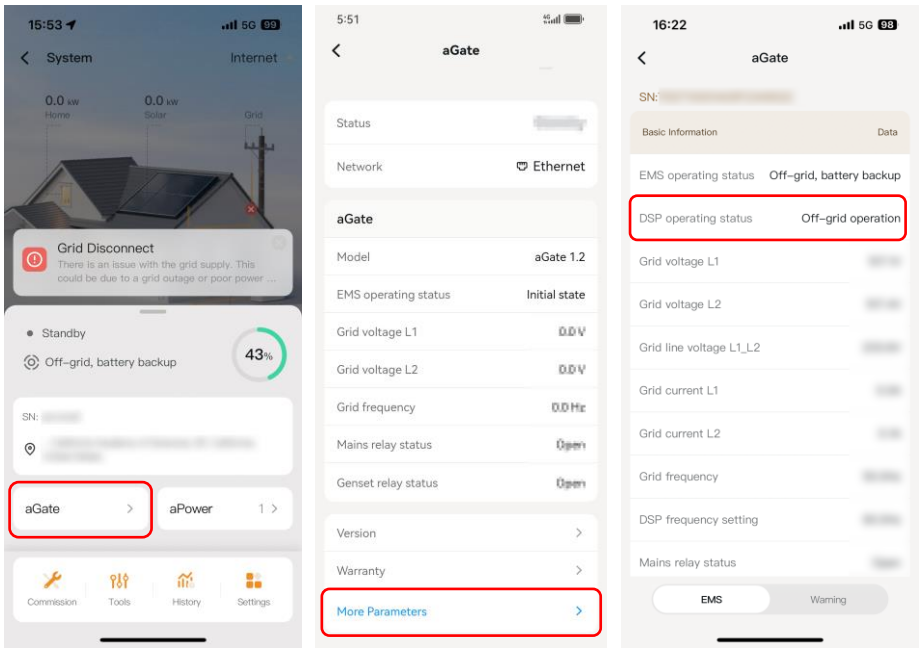
Switching from Off-grid to On-grid

Step 1. Turn off the grid breaker and solar breaker on the aGate.

Step 2. Sign in to the FranklinWH App on the installer account.

Step 3. Search for the aGate serial number for which the on-grid/off-grid switching is to be verified in the Search Device box, and then click into.

Step 4. Off-grid Startup: Check whether the system is running in **Off-grid operation**. If it shows that the FranklinWH System is working in **Off-grid operation**, then the system is working properly. Otherwise, it means the system is malfunctioning and has not been normally started (If there is an abnormality, please confirm whether the installation process is completed, and whether the grid breaker is successfully turned off).

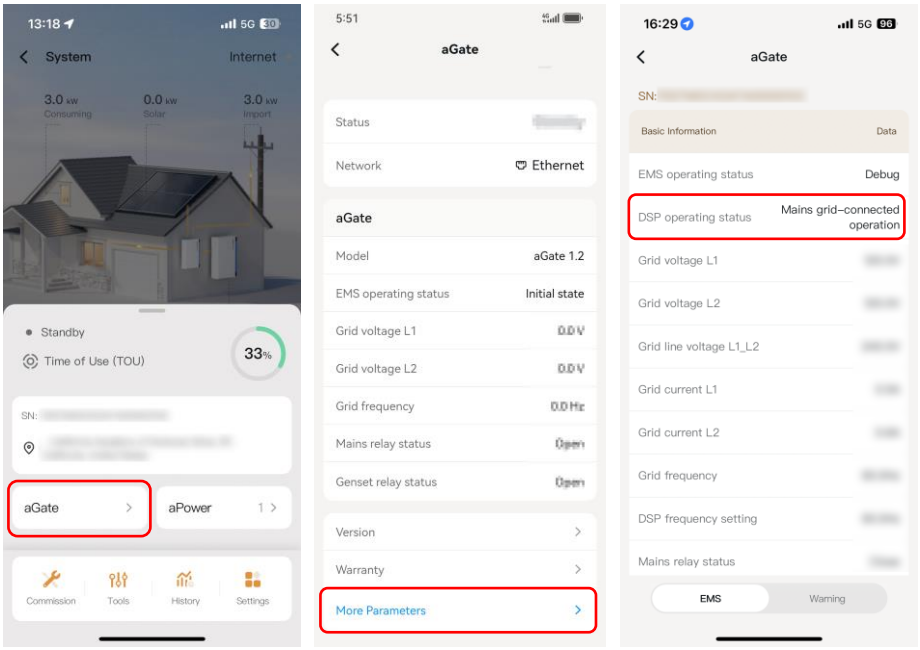


Step 5. Proceed with the following operations after the system is working properly in off-grid mode:

1) Measure with a multimeter and check whether the voltage between L and N on the Backup load terminal is 230 Vac.

2) If the output voltage is at a normal level, turn on the grid breaker, and FranklinWH will switch to on-grid operation in 5 minutes. On the app, the grid icon will display an energy-flow animation. Household loads will not experience any interruption during the transition.

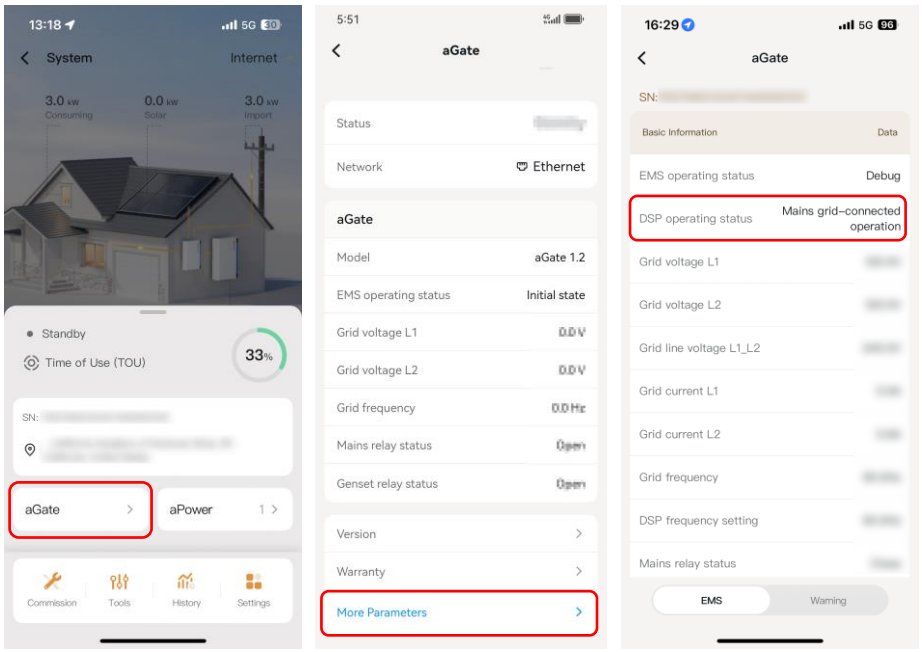
3) Check the EMS information to determine if DSP operating status is **Mains grid-connected operation**.



Switching from On-grid to Off-grid

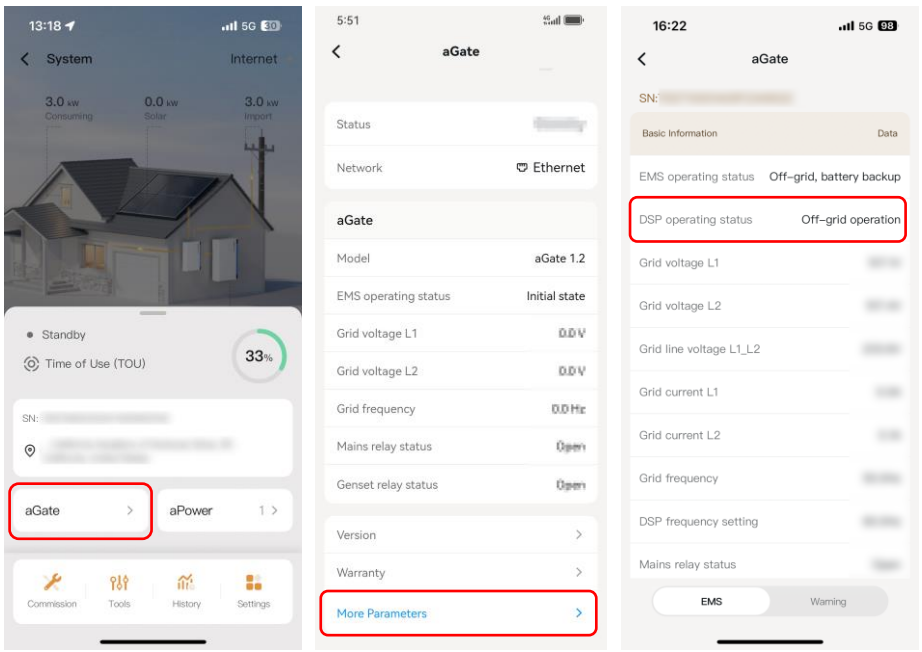
Step 1. After the system starts off-grid, turn on the grid breaker and system will switch to on-grid operation in 5 minutes.

Step 2. The grid icon will display an energy flow animation, and system mode will become the default mode as set in the grid package. Check the aGate details in the app to see if the DSP operating status is **Mains grid-connected operation** (If there is an abnormality, please confirm whether the installation process is completed, and whether the grid breaker is successfully turned on).

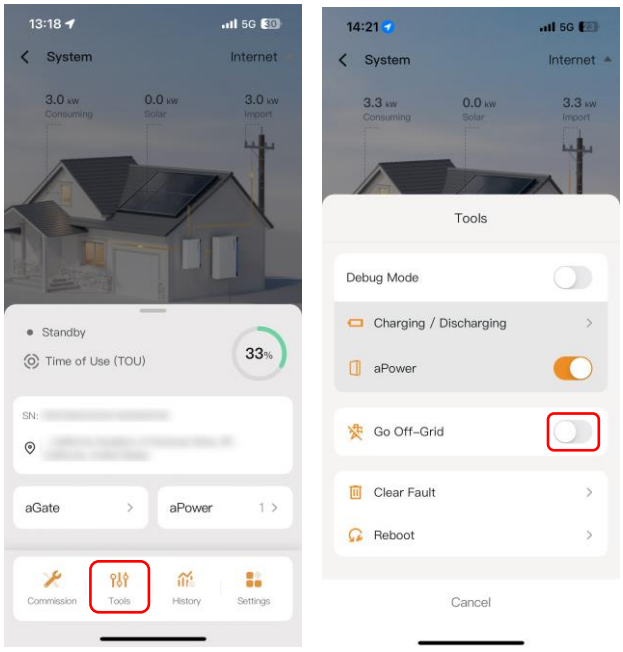


Step 3. After the system is connected to the grid, turn off the grid breaker to switch the system to off-grid operation. Household loads will not experience any interruption during the transition.

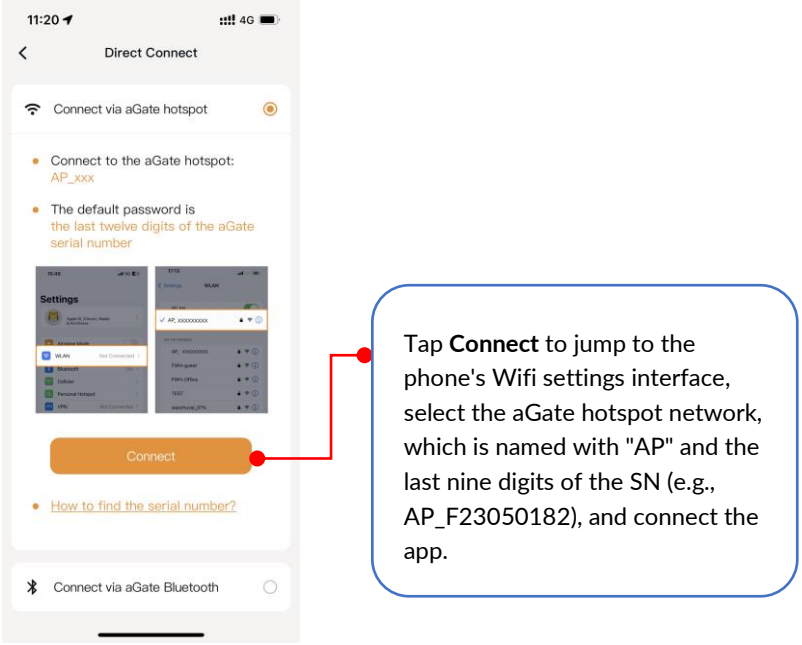
Step 4. In the app, the grid disconnect will be prompted on the energy flow chart. DSP operating status should be **Off-grid operation**.



Step 5. Turn on the grid breaker and the system will switch to on-grid operations within 5 minutes. After the system is connected to the grid, tap **Tools** > **Go Off-Grid** enable button.



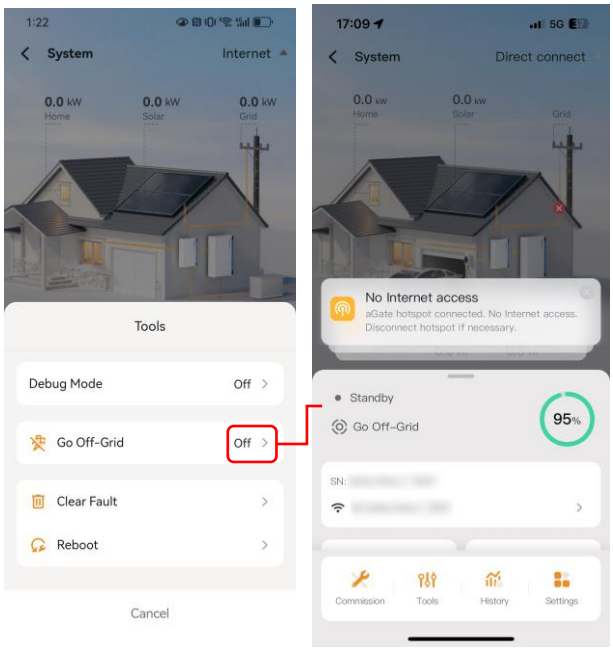
Step 6. Connect the app to the aGate hotspot.



Step 7. Tap **Tools** and enable **Go Off-Grid** to confirm and turn off the grid relay, switching the system to off-grid operations. Household loads will not experience any interruption during the transition.

WARNING

Despite the grid being **OFF** in the FranklinWH App, the status does not mean the relay has been physically disconnected. It is important to test the circuit status to avoid serious injury during the commissioning process.

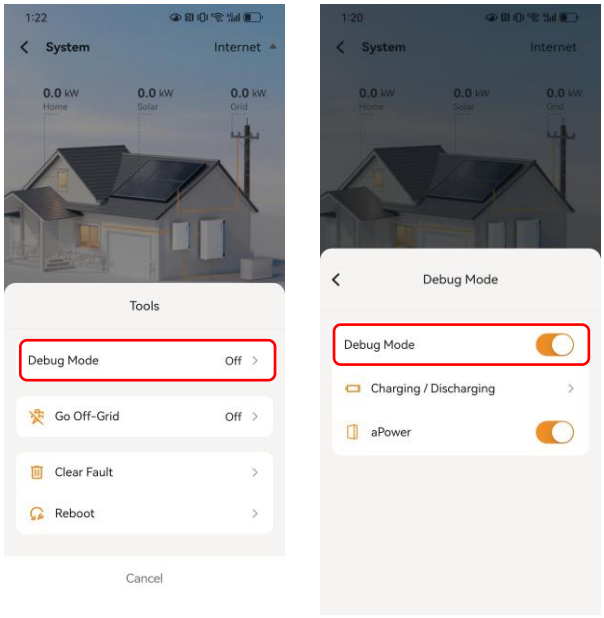


Tools

Debug Mode

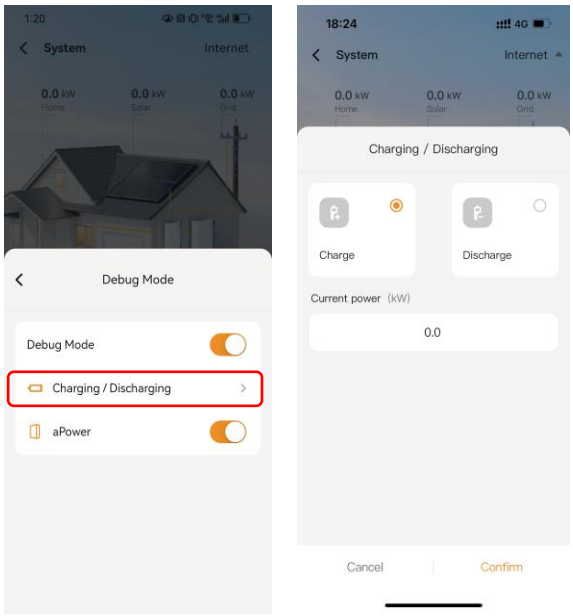
Step 1. Tap **Tools** > **Debug Mode**.

Step 2. Enable **Debug Mode** to set charging/discharging parameters and turn the aPower on/off.



Charging/Discharging

Tap **Charging/Discharging**, verify the system operates normally during charging/discharging cycles and identify any potential abnormalities.

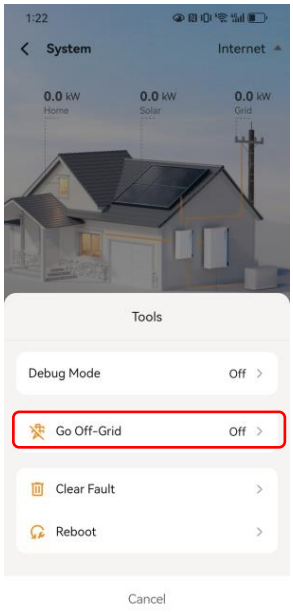


aPower ON/OFF

Use aPower ON/OFF button to check if it can turn aPower on/off.

Go Off-Grid

Enable **Go Off-Grid** to turn off the grid relay and switch the system to off-grid operations. If you want to know more information, please refer to Go Off-Grid.



Clear Fault and Restart

Clear Fault: This operation will clear the secondary DSP fault, PE general fault, and BMS non-locking fault.

Restart: This operation will restart the whole system but may cause a power shut down when off-grid.

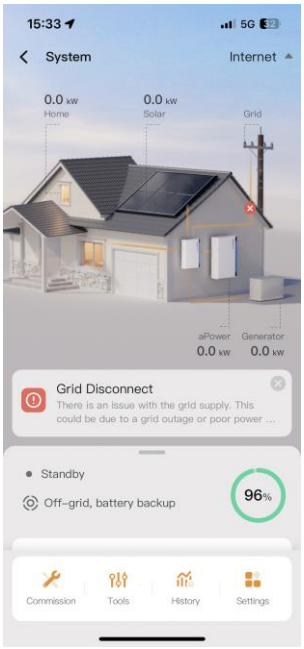
Verify the Display

Step 1. FranklinWH System Condition: Off-grid with load.

Step 2. Sign in to the FranklinWH App on the installer account.

Step 3. Search for the aGate serial number for which the display is to be verified in the **Search Device** box, and then click.

Step 4. Access the energy flow chart.



Step 5. Check the following:

1	Is the load power consumption of the load displayed?	☐ Yes	☐ No
2	Is the energy flow chart displaying properly?	☐ Yes	☐ No
3	Does the SOC (percentage) of each aPower shown on the chart agree with the LED strip levels?	☐ Yes	☐ No
4	Does the working mode shown on the app agree with the grid package set in the installation process?	☐ Yes	☐ No
5	Is every aPower showing online in the app?	☐ Yes	☐ No
6	Does the number of aPower units shown agree with the number addressed automatically in the installation process?	☐ Yes	☐ No

Solar Functions

Off-grid Solar Functions

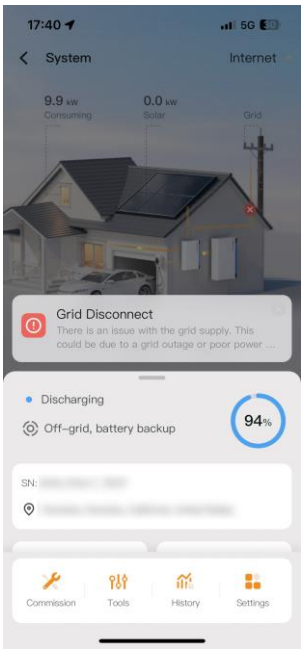
Step 1. Sign in to the FranklinWH App on the installer account.

Step 2. Search for the aGate serial number for which the solar functions are to be verified in the Search Device box, and then click into.

Step 3. After the system starts off-grid, the app should show **off-grid**, **battery backup mode**.

Step 4. Turn on the solar breaker and use a multimeter to measure if there is 230 Vac at the solar input terminals. If 230 Vac voltage is measured at both ends of the input breaker of the solar system, it means that the solar relay has been normally turned on, and it is only necessary to wait for the solar system to output power. If the 230 Vac voltage is not measured, it means that the solar relay is not operating normally.

- When the system is working normally in off-grid mode, turn on the solar breaker. Before the solar system is successfully started, the Solar icon on the energy flow chart in the app will show 0.0 kW, as shown below.



- When the system is working normally in off-grid mode and the solar relay has been turned on, if there is still sunshine the solar system will start in 5 minutes. Please check whether the Solar icon on the energy flow chart in the app shows the solar system power information, as shown below.

NOTE

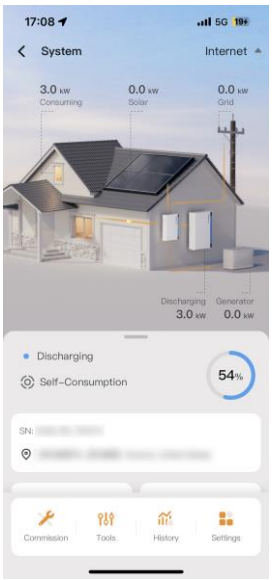
When photovoltaic power generation exceeds consumption, battery capacity, and what can be sold back to the grid, the solar system will be disconnected. This is normal.

On-grid Solar Functions

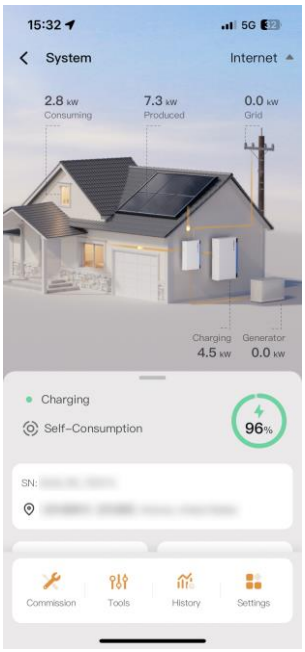
Step 1. Turn on the grid breaker, connect to the grid.

Step 2. When the system is working normally in on-grid mode, turn on the solar breaker and use a multimeter to measure if there is 230 Vac at the solar input terminals. If 230 Vac voltage is measured at both ends of the input breaker of solar system, it means that the solar relay has been normally turned on, and it is only necessary to wait for the solar system to output power. If the 230 Vac voltage is not measured, it means that the solar relay is not operating normally.

- With the system working normally in on-grid mode, turn on the solar breaker. Before the solar system is successfully started, the Solar icon on the energy flow chart in the app (Shown in the installer account) will show 0.0 kW, as shown below.



- When the system is working normally in on-grid mode and the solar relay has been turned on, if there is still sunshine the solar system will start in 5 minutes. Please check whether the Solar icon on the energy flow chart in the app shows the output power.



NOTE

When the selected package does not allow feedback to the grid, the photovoltaic power will be disconnected when there is over-generation power that is too heavy. This is normal.

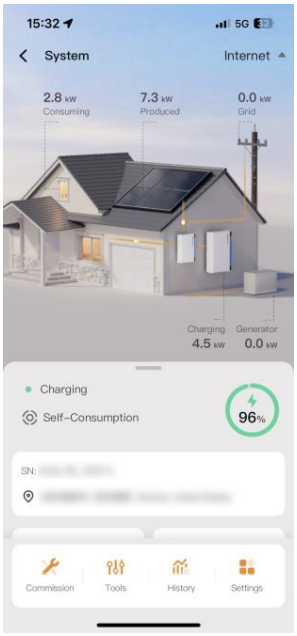
Smart Circuits Control Relay

After the Smart Circuits Module has been installed in the aGate and added to the system in the FranklinWH App, commissioning will be needed to be performed to test and confirm that the Smart Circuits Module is working properly. The commissioning process is as follows:

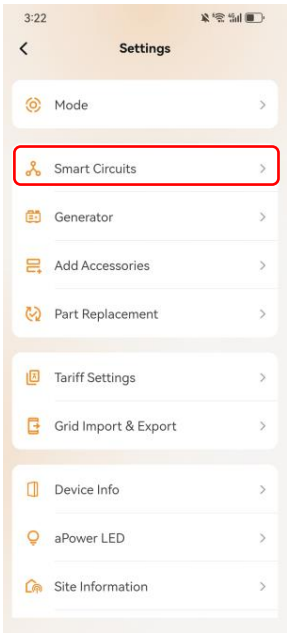
Step 3. Sign in to the FranklinWH App on the installer account.

Step 4. Search for the aGate serial number for which the Smart Circuits Module is to be commissioned in the **Search Device** box, and then click.

Step 5. Tap on **Settings** in the menu.



Step 6. Tap on **Smart Circuits**.

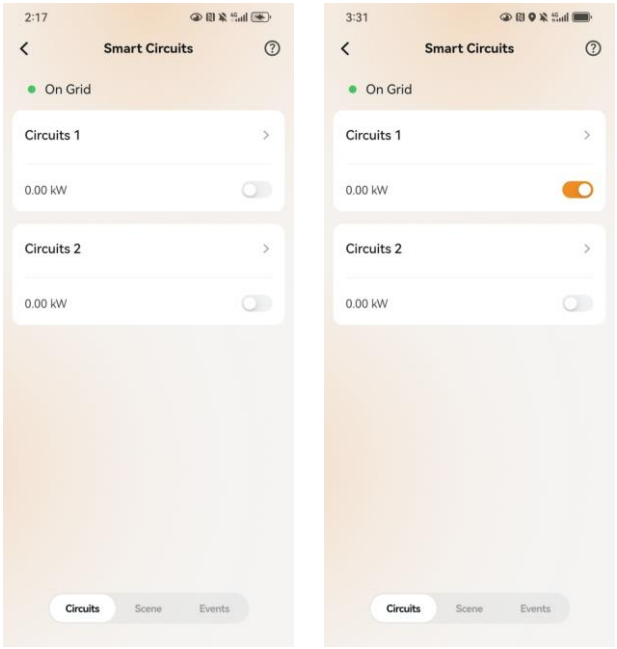


Step 7. Measure the voltage between both Circuit 1 and Circuit 2's individual output terminals and neutral.

Turn on the Smart Circuits breakers and use a multimeter to measure voltages between the Circuit 1 and Circuit 2 output terminals and neutral. If they are 0 volts, the system is working normally.

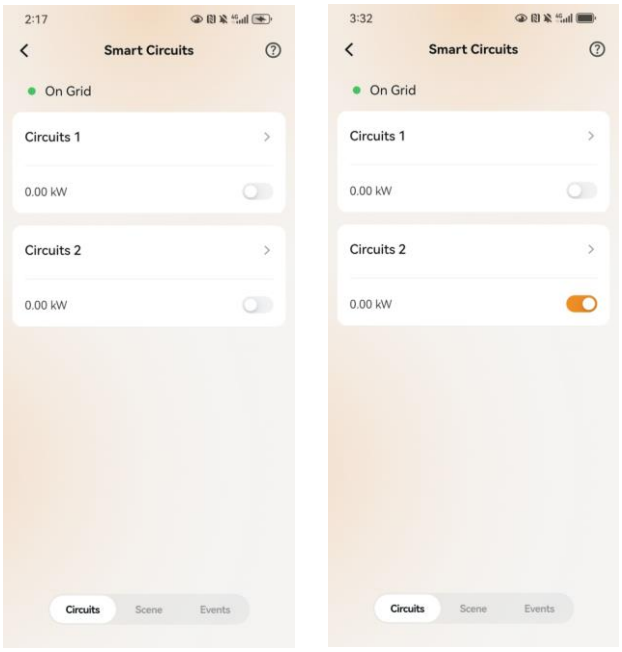
Step 8. Measure the voltage between the Circuit 1 output terminal and neutral.

The Circuit 1 switch button should be in a gray (OFF) state, by default. Turn on the Circuit 1 switch on your mobile app and use a multimeter to measure the voltage between Circuit 1 and neutral. If the voltage is 230 Vac, it means that the Smart Circuit relay has been successfully turned on. Otherwise, it means that the Smart Circuit relay is either in the open position or working abnormally.



Step 9. Measure the voltage between Circuit 2 and neutral.

The Circuit 2 switch should be in the gray (OFF) state, by default. Turn on the Circuit 2 in the app and use a multimeter to measure the voltage between Circuit 2 and neutral. If the voltage is 230 Vac, it means that the Smart Circuit relay has been successfully turned on. Otherwise, the Smart Circuit relay is in the open position or working abnormally.

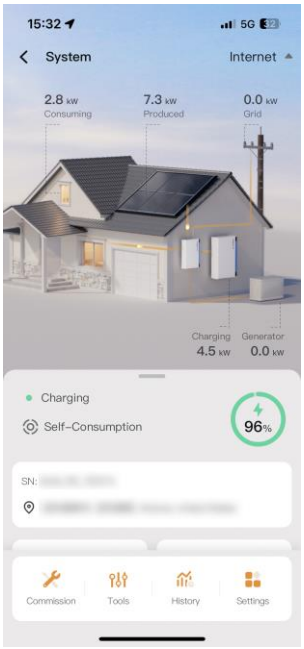


Generator Module

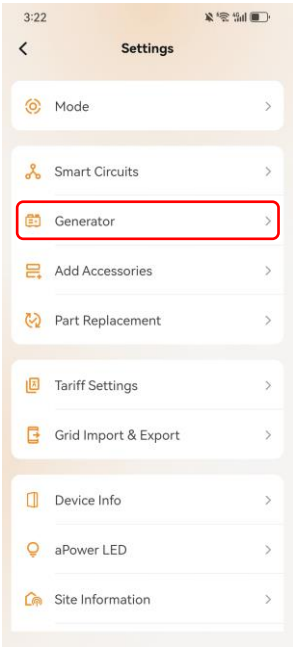
Step 1. Sign in to the FranklinWH App on the installer account.

Step 2. Search for the aGate serial number for which the Generator Module is to be commissioned in the **Search Device** box, and then click.

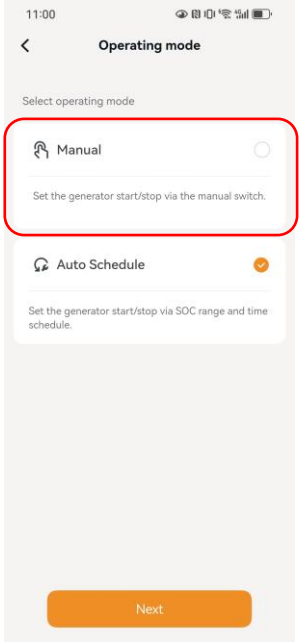
Step 3. Tap on **Settings** in the menu.



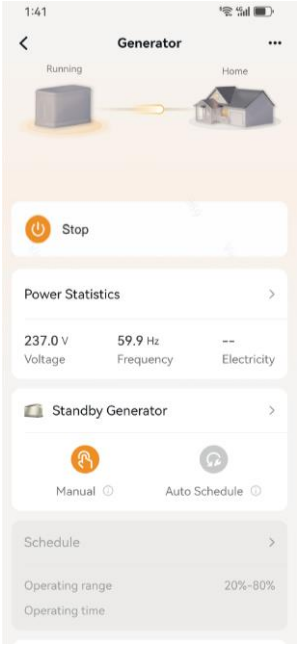
Step 4. Tap on **Generator**.



Step 5. Set the **Operating Mode** to **Manual**.



Step 6. Start up and shut down the generator manually, checking whether the generator is started and stopped as appropriate. If the generator is started and shuts down normally following the instructions, it means that the Generator Module is working properly.



Final Inspection

Step 1. Sign in to the FranklinWH App on the homeowner account.

Step 2. Check whether the devices are working properly.

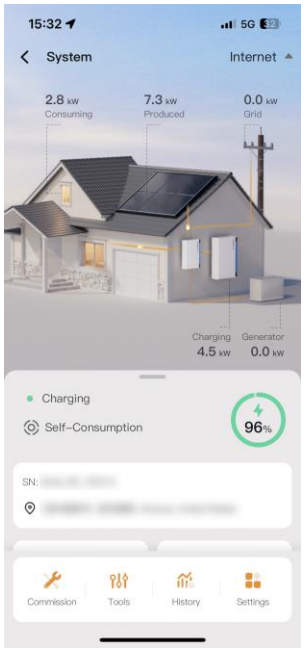
Consuming: When the home loads are connected, the values at the top of the screen indicate your home energy usage whenever any equipment is online.

aPower: The values at the top of the screen show aPowers charging and discharging. When an aPower is charging, a negative value is displayed. When an aPower is discharging to power the home or exporting energy to the grid, a positive value is displayed.

Solar: If a solar system is connected and running properly, the Solar icon will show the solar system power information, and the connection will show an energy-flow animation.

Grid: If the system is on-grid and the grid is working properly, the values at the top of the grid icon will show the energy totals for imports and exports, and the connection will show an energy-flow animation.

Generator: If a generator is connected and running properly, the value below the generator image will show the generated energy total, and the connection will show an energy-flow animation.



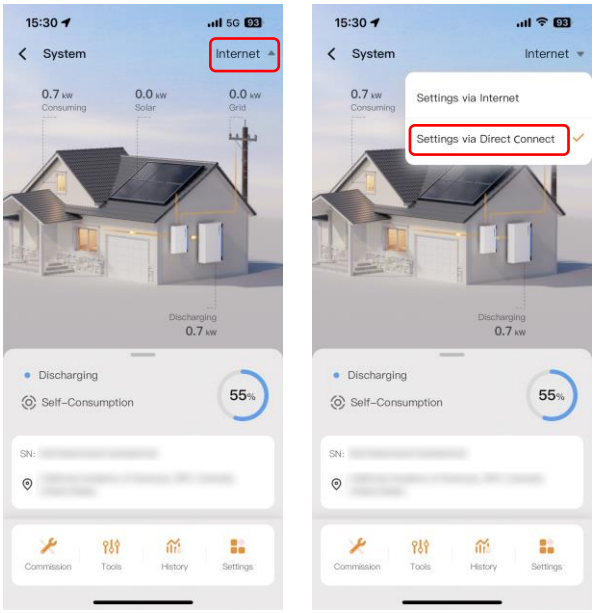
Step 3. The system commissioning is completed. For detailed user guide, please refer to ***FranklinWH User Manual*** and ***FranklinWH App User Manual***.

Appendix

Internet/Direct Connect Switching

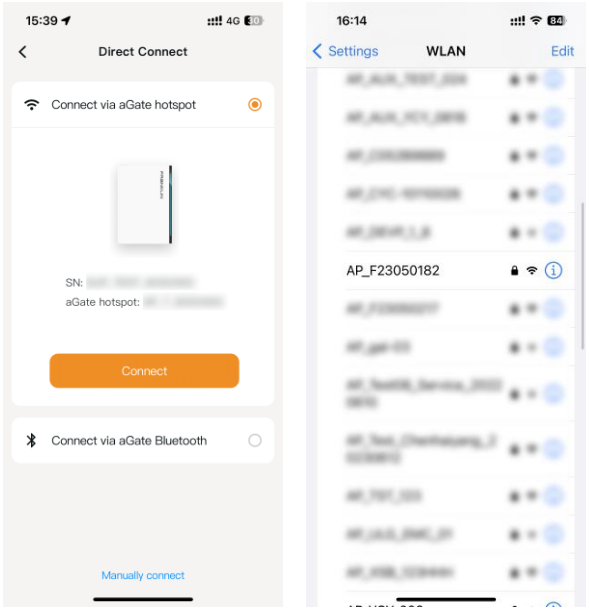
Switching FranklinWH App connectivity from the Internet to the aGate direct connect.

Step 1. Select **Settings via Direct Connect**.



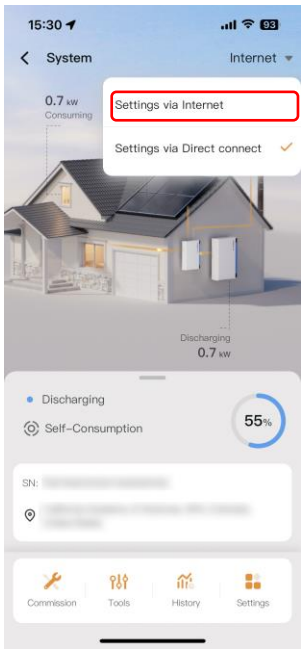
Step 2. For system direct connect: via aGate hotspot.

Default check the Connect via aGate hotspot option. Tap **Connect** to jump to the phone's Wifi setting interface, select the aGate hotspot network, which is named "AP_last nine digits of SN (e.g. AP_F23050182)," and connect the app to the aGate hotspot network.



Switching from the Direct connect to the Internet.

Step 1. Select **Settings via Internet**.



Step 2. Connect to the internet.

