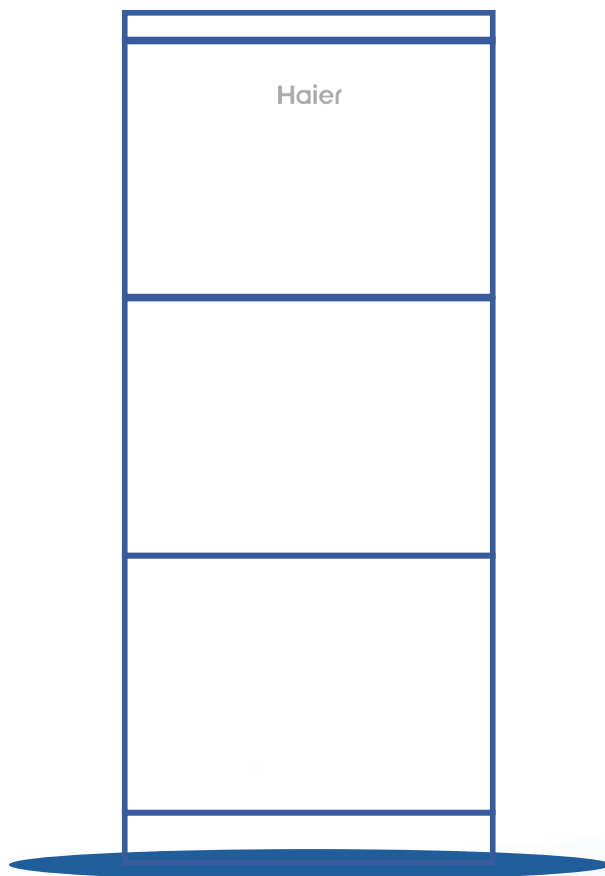




-Tower HV

HOME OWNER USER MANUAL

HA3PH-4/5/6/8/10/12/15KB1/HU9 and HBHS-4.8KB1/LPP



E-Tower HV

Homeowner User Manual

Welcome to Haier Energy. This manual has been created to help you understand, use, and get the most out of your photovoltaic system.

1. Thank You for Choosing Our Product

Thank you for choosing Haier Energy products. Your decision supports a smarter, more sustainable energy future. We are committed to providing reliable, innovative, and easy-to-use energy solutions for your home.

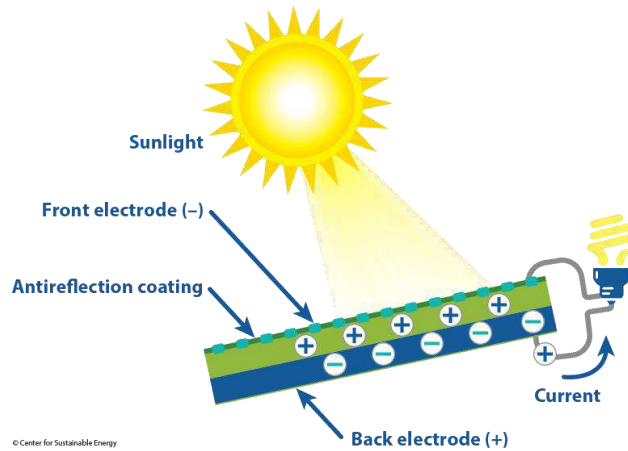
2. How a Photovoltaic System Works

A photovoltaic (PV) system converts sunlight into electricity. Solar panels produce direct current (DC) power, which is converted by the inverter into alternating current (AC) for your home. The energy is used by household appliances, and excess energy can be sent to the grid.

A photovoltaic (PV) system is a clean energy system that converts solar energy into electricity using solar panels. Its core operating principle is based on the photovoltaic effect (also known as the photoelectric effect) of semiconductor materials.

Core Principle

The Photovoltaic Effect When sunlight (photons) strikes the panel PN junction made of semiconductor material (such as silicon), the photon energy is absorbed. This energy excites electrons in the valence band, causing them to jump to the conduction band and create electron-hole pairs. These electrons and holes are separated by the built-in electric field of the PN junction: electrons move toward the N-type region, and holes move toward the P-type region. This creates a potential difference (voltage) across the PN junction. When an external circuit is connected, a direct current (DC) flow.



System Workflow

Photoelectric Conversion: During the day, sunlight strikes the solar panel array, which consists of multiple solar cells connected in series and parallel. Through the photovoltaic effect, direct current (DC) electricity is generated.

Power Regulation and Storage (for Off-grid Systems): The generated DC electricity is directed through a charge controller to charge a battery bank, storing the energy. The controller also protects the batteries from overcharging or deep discharging.

Current Conversion

The DC electricity, whether coming directly from the panel array (grid-tied systems) or released from the batteries (off-grid systems), needs to be converted into standard alternating current (AC) sine wave electricity (e.g., 220V/50Hz) by an inverter. This AC power is compatible with most household appliances and industrial equipment.

Power Distribution

The converted AC power is delivered to a distribution panel. Depending on the system design, it can directly power loads, be fed into the public grid, or (in off-grid systems) be supplied by the batteries during nighttime or periods without sunlight.

Photovoltaic systems require no fuel consumption, operate quietly, and are an environmentally friendly, sustainable energy solution. They are widely used in residential, commercial, industrial, agricultural, and large-scale power plant applications.

3. hOn Ecosystem: What It Is and Its Benefits

The hOn ecosystem connects your inverter and your compatible smart home devices. This allows centralized energy control, improved self-consumption, reduced energy costs, and greater comfort in everyday life.

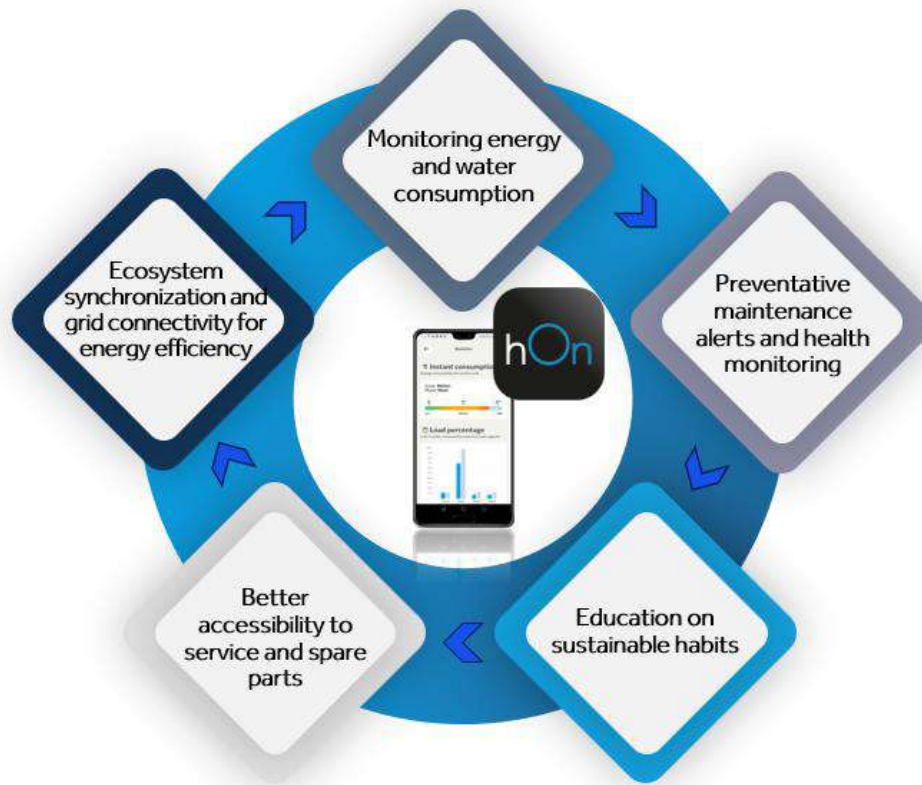
Our solution efficiently integrates and coordinates household storage and Photovoltaic panels, and other equipment using digital technology. It ensures holistic energy management, offering user cost-effective and comfortable energy solutions.

Use the solar power generated by yourself to heat your house. The energy management system converts electricity into hot water, so you can run the shower without booming oil, gas or pellets. It is clean, efficient, and free.

hOn ensures that your home appliances are operated when your PV system is delivering sufficient solar power, and thanks to the energy management it combines all energy flows in your home to create a smart system.

hOn increases your grid independence. The battery guarantees power during grid outages, while its integration with hOn Energy Management maximizes the use of green energy, even when grid electricity is unavailable.

hOn Energy Management supports sustainability by reducing the amount of energy you need to purchase from the grid.



4. Understanding Your Product's LEDs

The LEDs on your inverter indicate the system status. Different colors and blinking patterns show normal operation, standby mode, or warnings. This section helps you quickly understand what your system is doing and when action may be required.



Object	Name	Description
A	Charging	Charging Status Indicator Light Light on: The battery is charging now
B	Discharging	Discharging Status Indicator Light Light on: The battery is discharging now
C	Battery Light	Battery Level Indicator Light Light on: Display the status of the battery's SOC
D	Tap to wake	Touch Wake-up or turn off the screen
E	Battery light	Battery Fault Alarm Indicator Light Light on: Normal; Light off: Communication is lost
F	COM	Communication Indicator Light Light on: Normal; Light off: Communication is lost
G	SYS	System Operation Indicator Light Turn Red: System has a Fault(need to be checked) Flashing Bule: System has an Alarm (run normally)

The LED indicators on the front of the inverter cover provide information about the SOC operational status of the system batteries with lights displaying solid white or red.

LED Indicator	No	SOC	Description
LEDs show the SOC status	1		$SOC \leq 10\%$
	2		$10\% < SOC \leq 30\%$
	3		$30\% < SOC \leq 50\%$
	4		$50\% < SOC \leq 60\%$
	5		$60\% < SOC \leq 90\%$
	6		$90\% < SOC \leq 100\%$

5. How the Haier Energy App Works

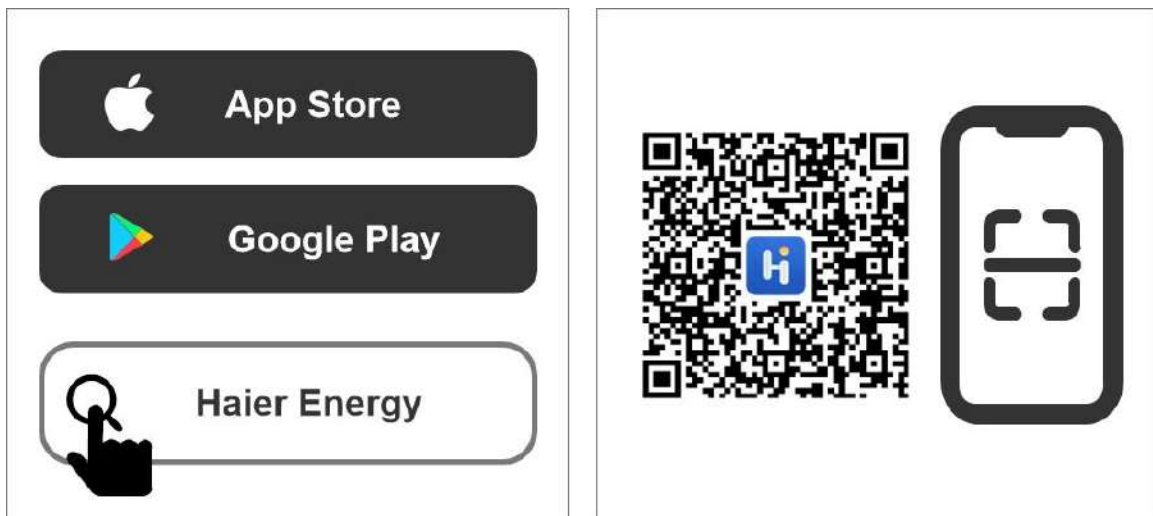
The Haier Energy app allows you to monitor energy production and consumption in real time. You can view historical data, receive notifications, and manage connected devices to optimize your energy usage.

5.1 Pre-check Setup

Make sure the installation and electrical connection are correct and reliable, the Wi-Fi network connection is 2.4GHz, then power on the system, please follow the steps below to commissioning the inverter.

5.2 Download and Install App

The App can be downloaded in the following two ways:



Note

1. Both the installer and the homeowner use Haier Energy app.
2. The screenshots given in this document are for illustration purposes only. Interfaces in different periods may differ. The actual interface display shall prevail.
3. For details about App instruction and function, see Haier Energy App User Manual.
4. Only accounts within Mainland China support registration with a mobile phone number.
5. For end users, accounts can only be registered through the Haier Energy APP.

5.3 Login the APP

5.3.1 Register an account.

- I. Tap "No account yet" on the app.
- II. Select "I'm a user"
- III. Enter your email you will use to see your plant.

Select "Get Code."

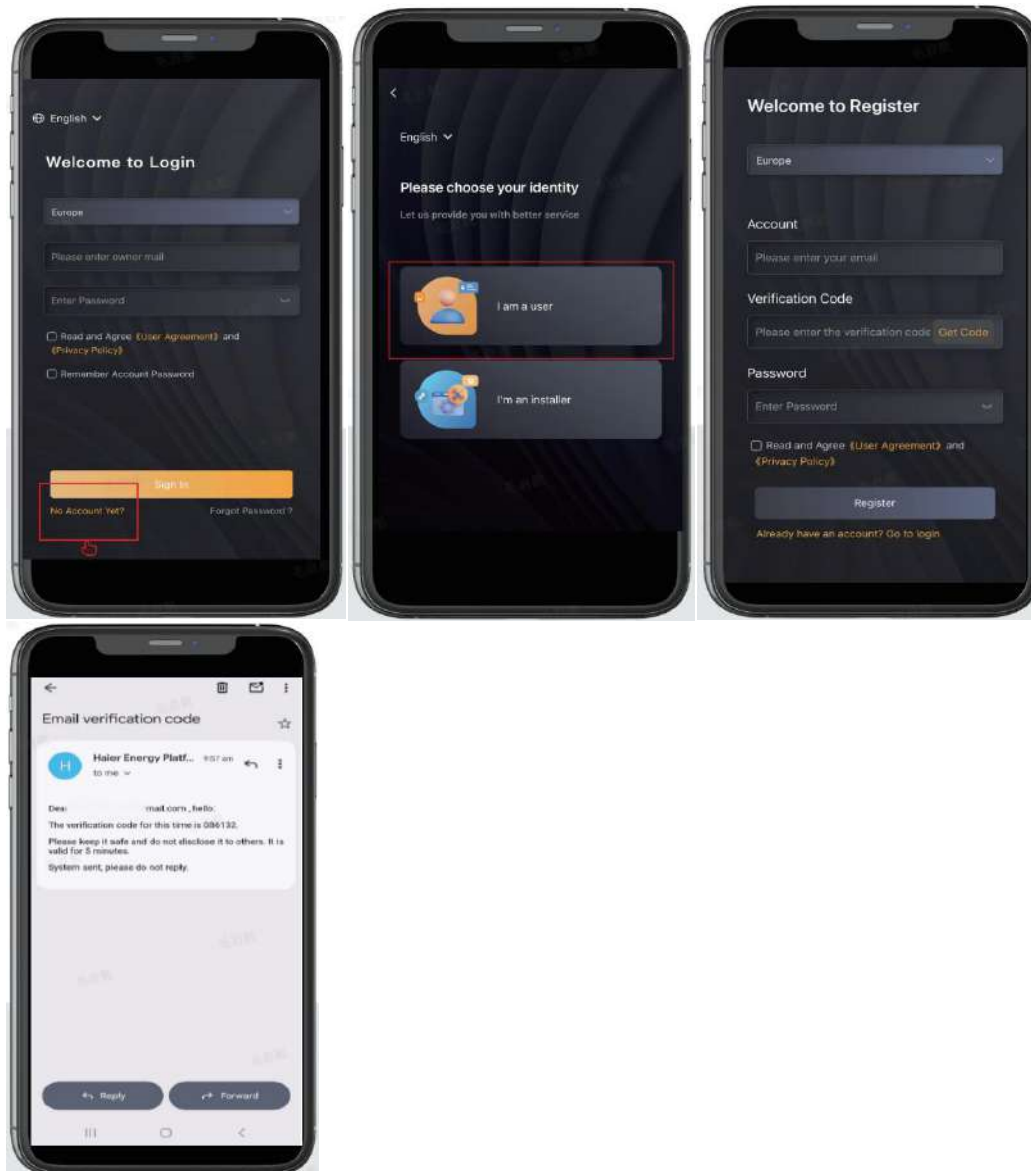
Check the email to retrieve the verification code.

Enter the code.

Then create a password.

Read and agree User Agreement and the Privacy Policy

Register.



Note:

Give all permissions to the App and turn ON the Bluetooth of your smartphone.

Choose data center and entering the account and password, then check the "Privacy Policy" and "User Agreement", then click "Sign In".

5.4 Enjoy your App

Once the installer have shared the plant with the end user, he can now access to the app and see his plant and enjoy all the app features

To start, he can see an overview of the energy flows in the home page as well as a dedicated part related to all the statistics of the plant by clicking on "more"

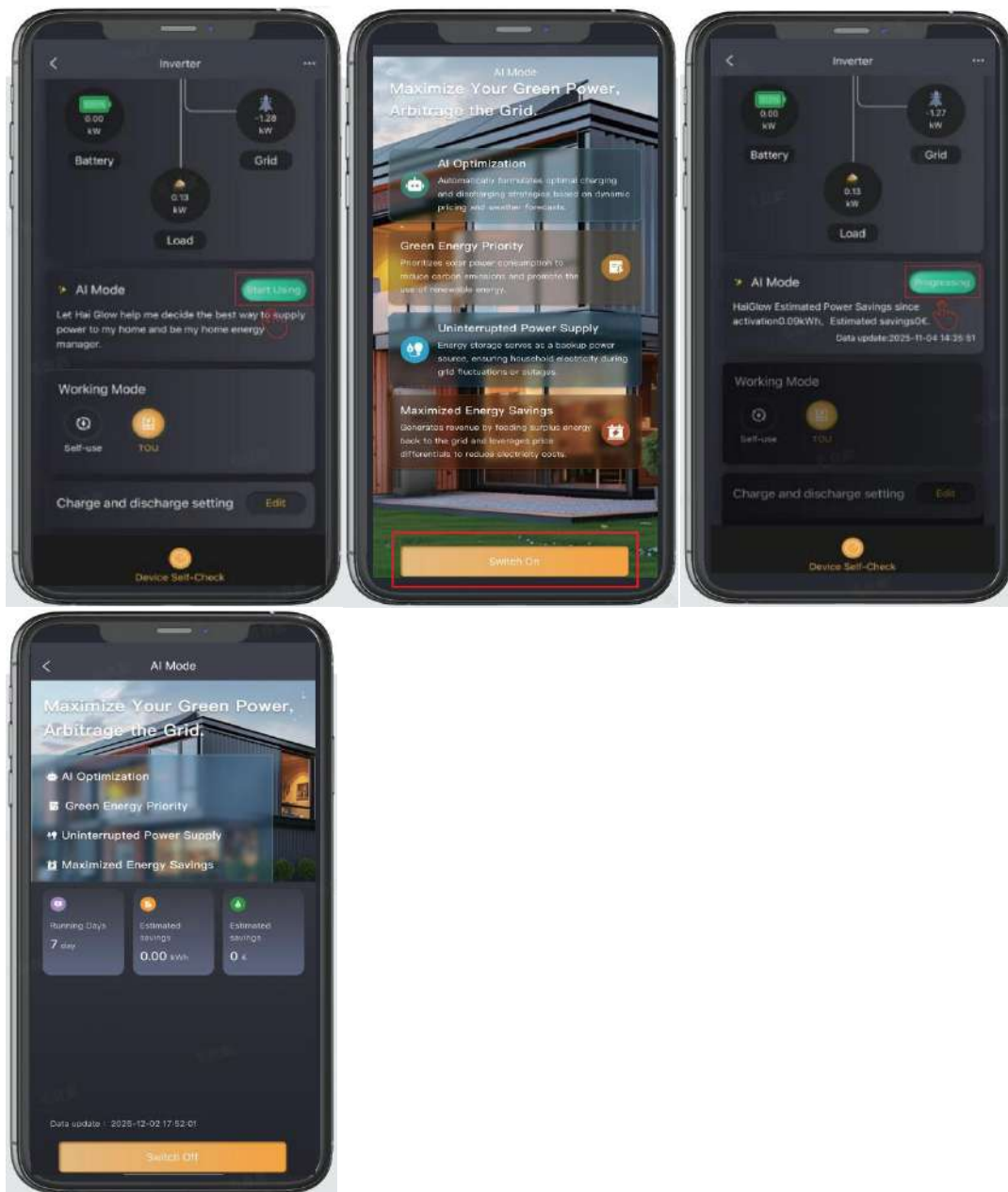


5.4.1 Dynamic Tariffs and AI mode

The app offers very advanced features to the end users, allowing them to get access to dynamic tariffs and combine them with AI strategies that allows the system to take smart decisions bringing important reductions in the home bill, since the system can charge the batteries when grid prices are low and use that energy when grid prices increase

1. Go to the home page and click on the dynamic electricity price banner " Click to experience"
2. Select the electricity price manually by selecting "Custom tariff" or get access to online portals by clicking on "Obtain the market price" according to your base country
3. Select 'Country, Unit, Energy Tax' and click 'Finish';

4. Once selected, go back to the home page and click on "Device"
5. Scroll down and enable the AI mode so the system can take his owns decisions taking into account the electricity price



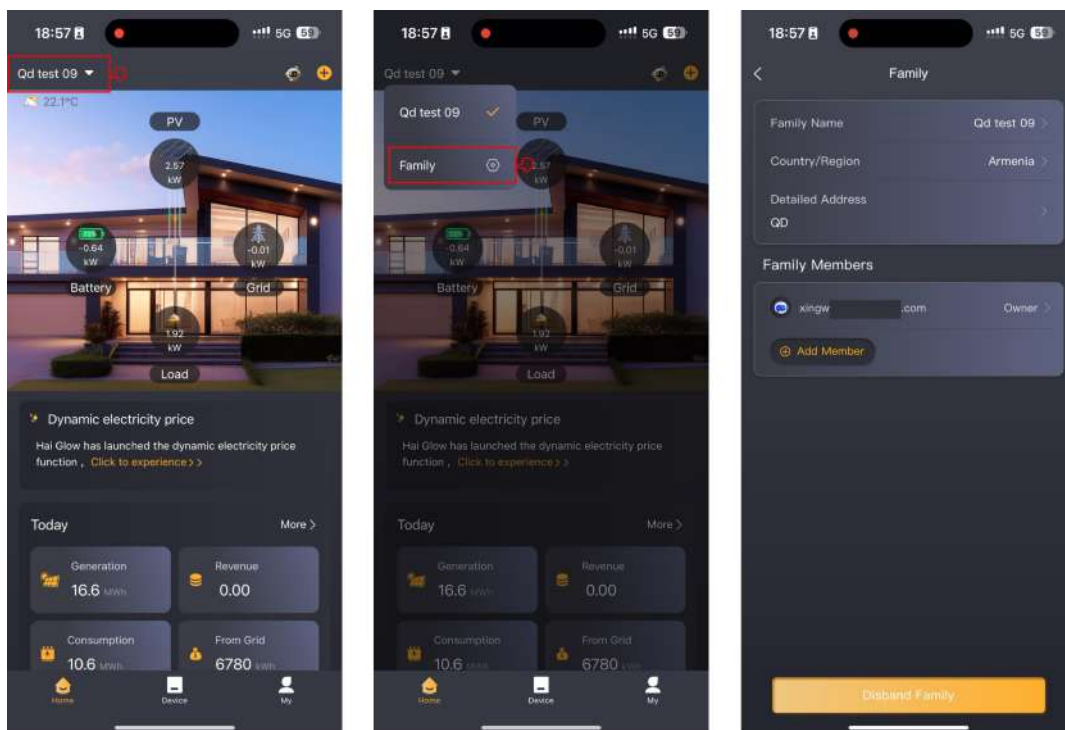
5.4.2 How to read device status

The plant and its devices may display different status indicators depending on their delivery, connection, and operating condition. These indicators allow the user to quickly understand whether the system is online, offline, or experiencing an alarm. The plant and device statuses are displayed as shown below.



5.4.3 Modify family information

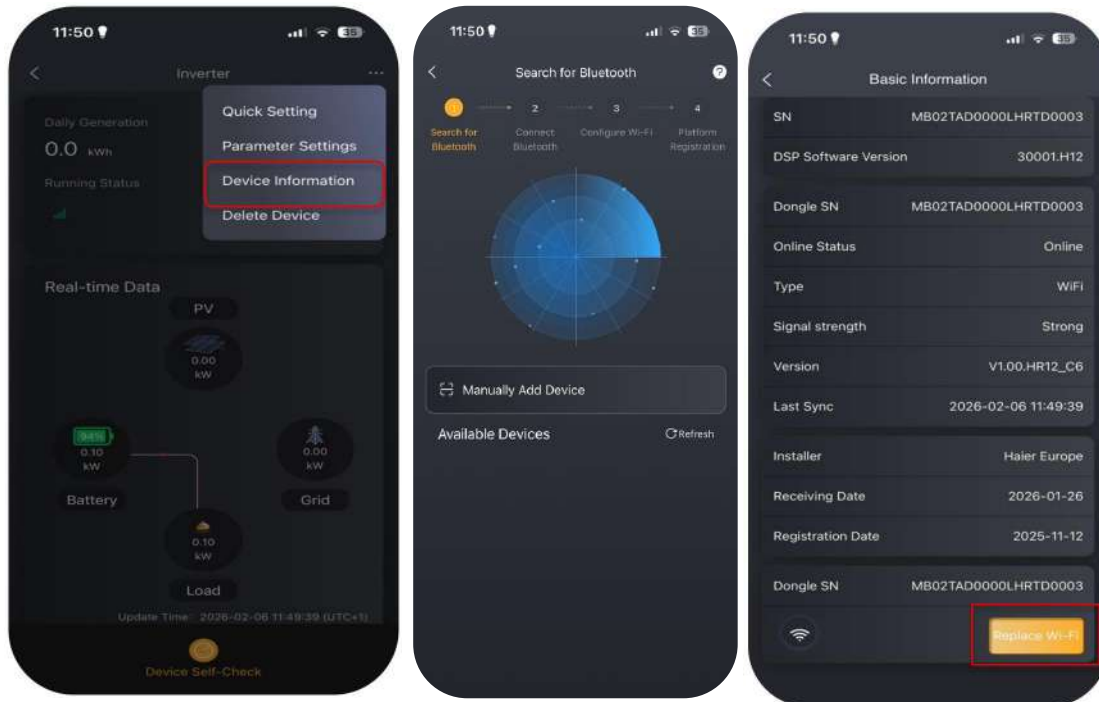
1. Select family in the upper left corner
2. Click on the settings icon.
3. Enter the family management page to modify the family name, country/region, detailed address, and add family members.



5.4.4 Change Wi-Fi credentials

If you have changed your home Wi-Fi network or password, the device will need to be connected again. This section guides you through the steps to update the Wi-Fi settings and restore the connection.

1. Go to "Device"
2. Click on "... " in the upper right corner and select "Device Information".
3. Scroll down and select "Replace Wi-Fi"
4. A new screen will appear where you need to select the dongle to make the Bluetooth connection and then insert the new Wi-Fi credentials or you can add the device manually by scanning the QR code located at the side of the inverter





Conclusions

Thank you for choosing our solution. This manual introduced the key features of the app, the hOn ecosystem, and the basic operation of your photovoltaic system. Enjoy exploring the possibilities of smart energy management and making the most of your connected energy experience.

This document only provides Quick Start Guide of Haier Energy APP, please scan the right QR code and refer to the user manual for more information.





小程序二维码

青岛海尔新能源科技有限公司

Qingdao Haier Energy Technology Co., Ltd.

www.haier-energy.com