SPH 10000TL-HU-US Introduction

SHENZHEN GROWATT NEW ENERGY CO.,LTD

To Build the World’s Largest

Intelligent Sustainable Energy Ecosystem for Humankind

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Specification & System solutions

SPH 10000TL-HU-US Specification

Input data (DC)	SPH 10000TL-HU-US
PV Power	15000W
Max. DC voltage	525V
No. of MPP trackers	3
No. of PV strings per MPPT	2
Max. input current per MPPT	22A
Output data (AC)	
AC nominal power	10000W
Max. output current	50A
Efficiency	
Peak. efficiency	97.50%
CEC weighted efficiency	97%
MPPT efficiency	≥99.5%
Battery data	
Max. charging/discharging current	200A
Battery voltage range	40~60V
Backup power	
AC nominal output power	10000W
Switch time	10ms

SPH 10000TL-HU-US Split Phase Inverter

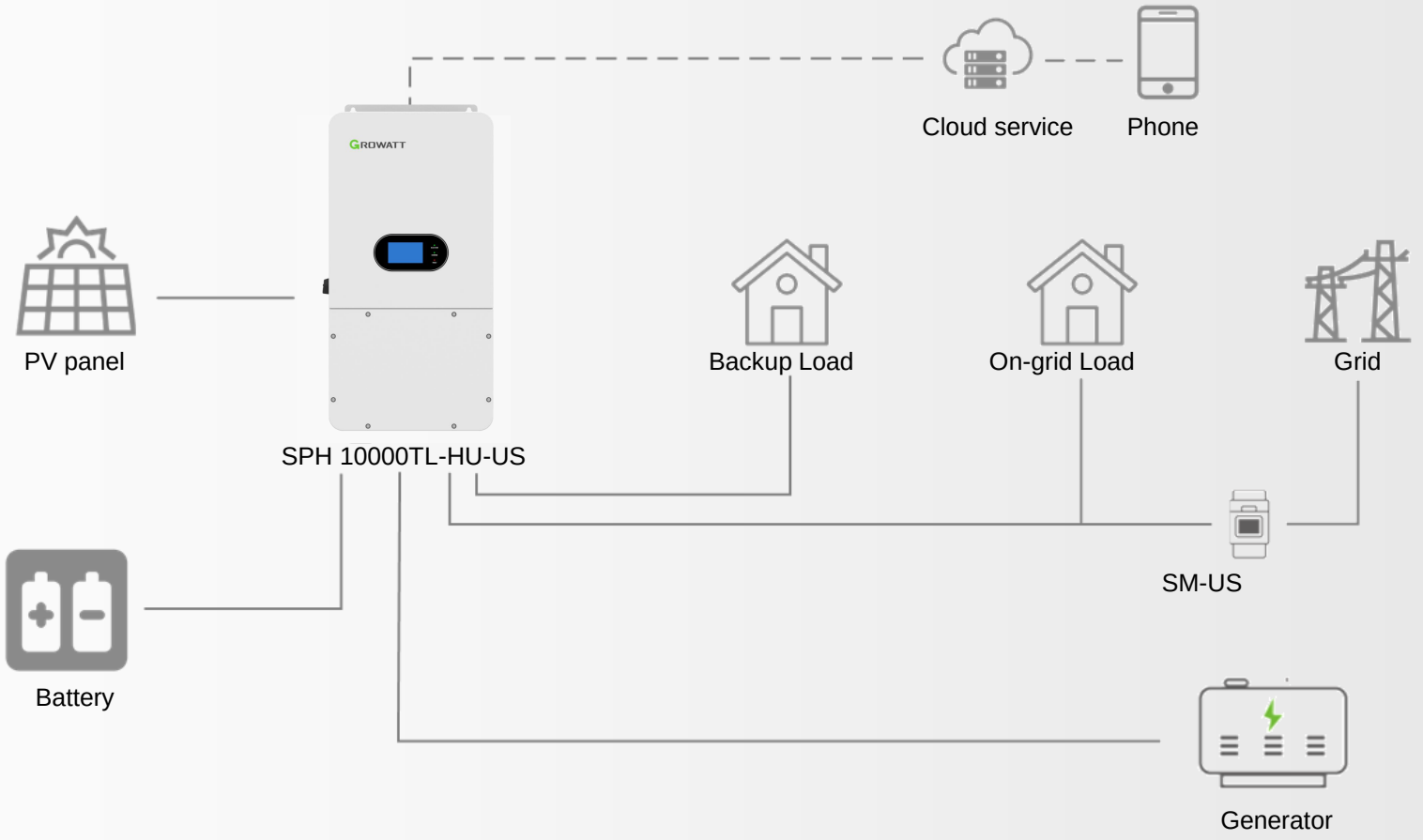
External split transformer free

SPH 10000TL-HU-US operates on-grid and off-grid with 120/240 VAC (split-phase) without need for external split transformer.

The maximum Split Phase Imbalance output up to 5kW. Load center is built in with easy bottom-to-top wiring

SPH 10000TL-HU-US Energy Storage System

SPH 10000TL-HU-US energy storage system generally consist of PV modules, inverter, battery, generator, SM, and utility power, monitoring devices ,electrical appliances.



Compatible Battery

Battery Module
ALP 5.0L-E2-US

ALP Low Voltage Battery System

- IP65, 5.0kWh / Module
- Remote firmware upgrade
- Flexible capacity : 5.0kWh ~ 240kWh
- Excellent safety of cobalt free LiFePO4 battery
- Up to 220A per string, no need for combiner box

Compatible Battery

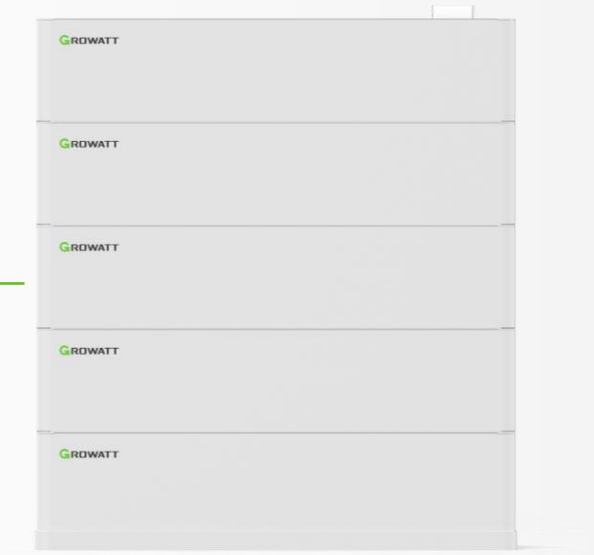
Battery Module
Hope 5.5L-A1

Hope Low Voltage Battery System

- IP20, 5.5kWh / Module
- Flexible capacity : 5.5kWh ~ 66kWh
- DoD up to 93%
- Excellent safety of cobalt free LiFePO4 battery
- Compact design and easy installation
- Remote firmware upgrade

Compatible Battery

Battery Module
AXE 5.0L – C1



AXE Low Voltage Battery System

- IP20, 5.0kWh / Module
- Flexible capacity : 5.0kWh ~ 400kWh
- Excellent safety of cobalt free LiFePO4 battery
- Modular stacked design without cable connection
- Remote firmware upgrade

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Product Overview

Product Overview

SPH 10000TL-HU-US Split Phase Hybrid Inverter

User Friendly

- LCD touch screen
- Multiple working modes to customize the energy management mode

One fits all

- Support AC-coupled, DC-coupled, AC-retrofit applications
- Support lithium and lead-acid battery
- Support Gas and Diesel generator

Enhanced Protection

- NEMA 4X rating. Dustproof & waterproof
- 10-year product warranty

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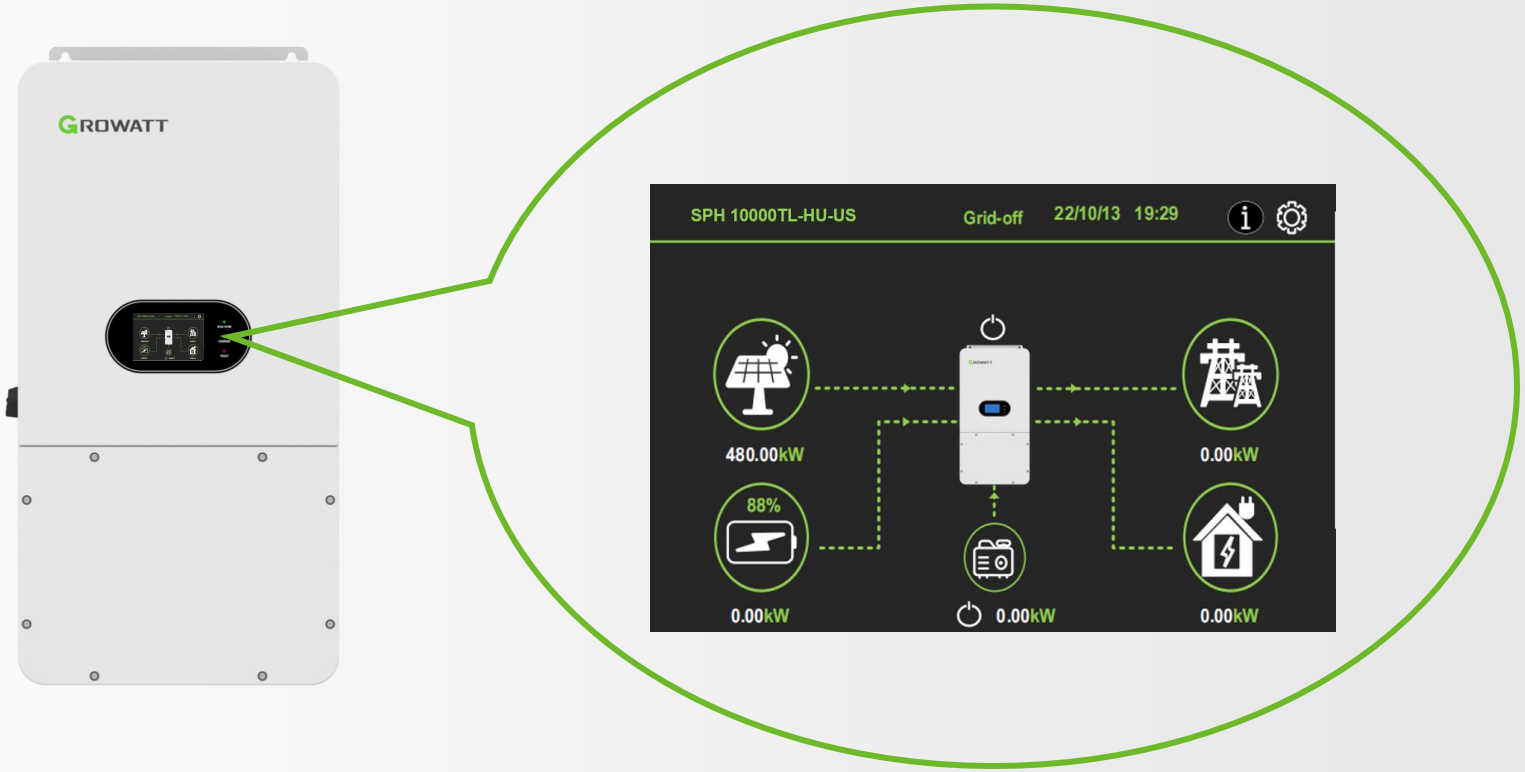
Leading Features

HMI Touch Screen

The touch screen on the inverter provide more convenience to users. Users could not only get basic PV plant information, but also do battery settings, grid settings, operation mode settings by touch screen.



Harsh Environment Adaptability

IP65

Waterproof and dustproof, better lifetime guarantee, indoor and outdoor installation

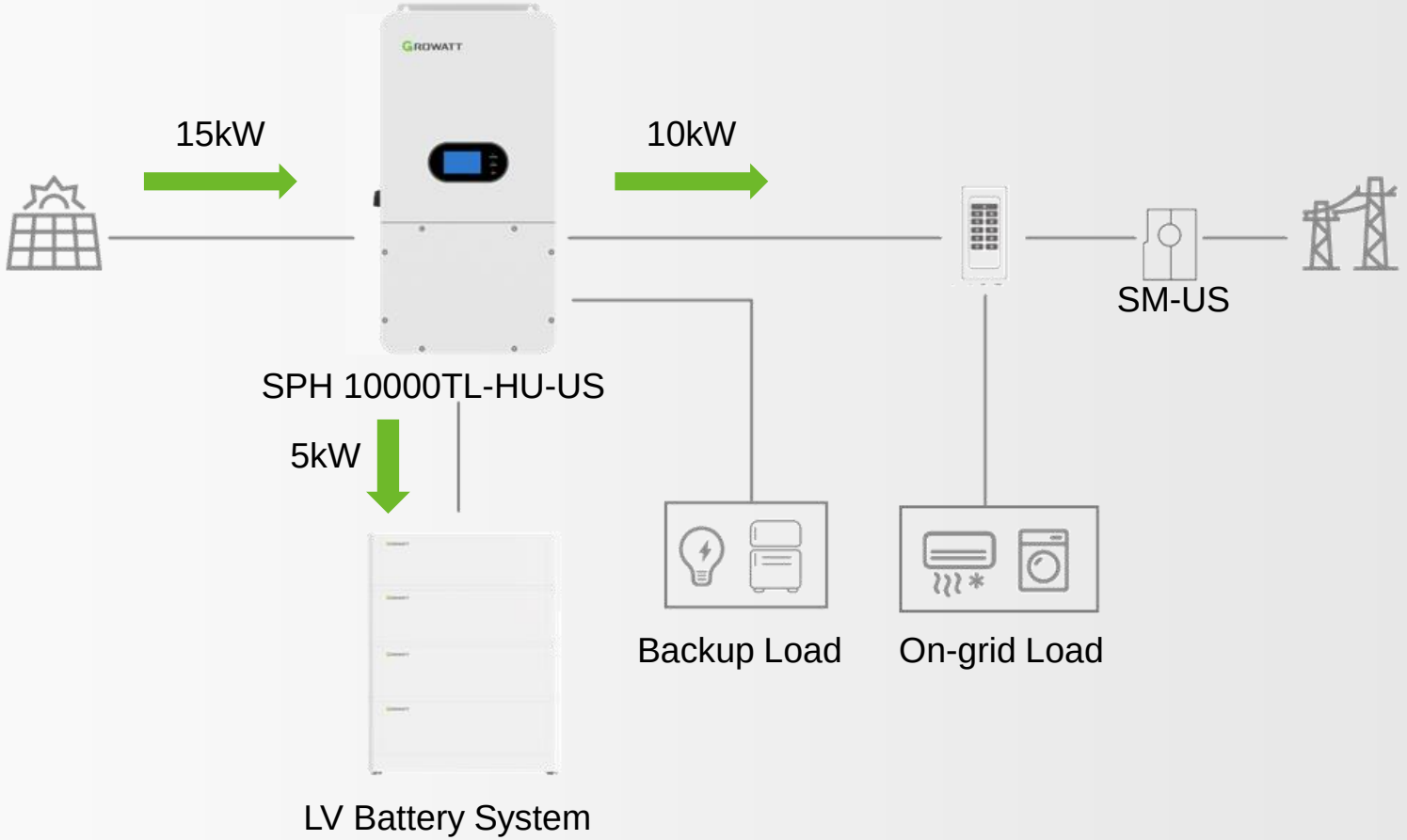
Wide Working Temperature Range

Operation temperature: -25℃ ~ 60℃

Secure energy supplies in extreme environments

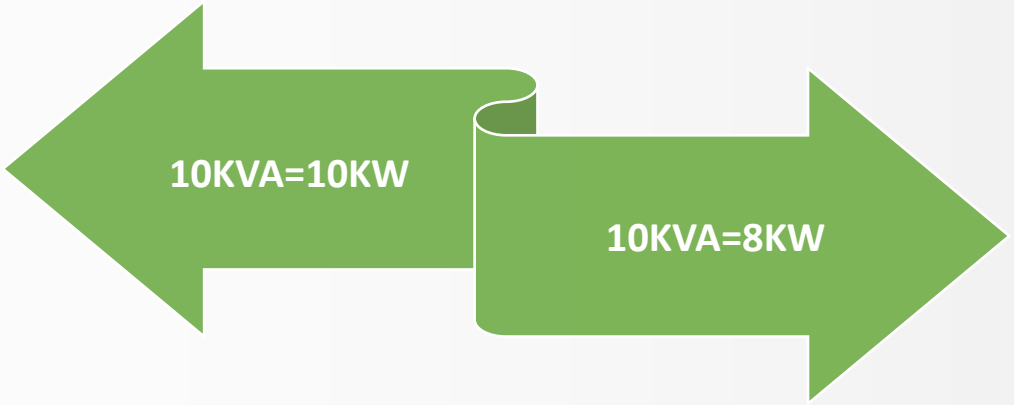
1.5 DC/AC Ratio

SPH 10000TL-HU-US supports the connection of 15000W PV panel. 10kW can be used to power load, and the surplus energy can be used to charge battery.



Power factor 1.0

Power factor 1.0



Power factor 0.8

Inverter 100% load, still work normally	1.0 < P ≤ 1.05times	2min protection
	1.05 < P < 1.3times	10s protection
	P ≥1.3times	5s protection

10KW Power Appliances

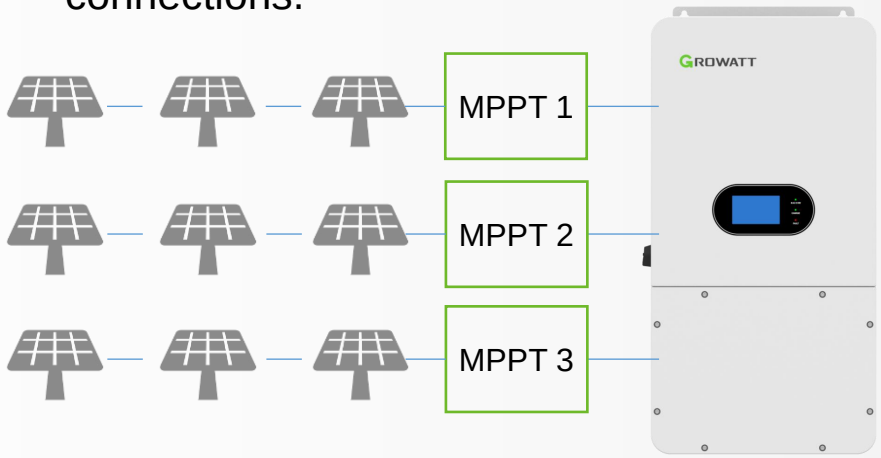
Multiple MPPT

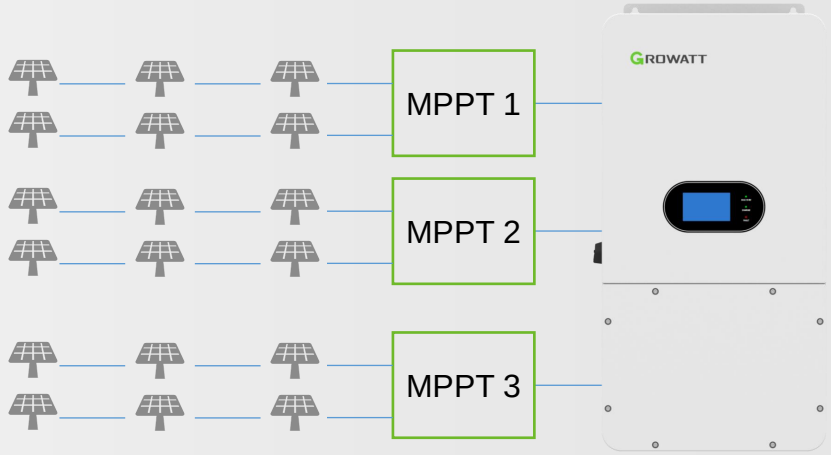
Multiple MPPT

SPH 10000TL-HU-US offers up to 3 MPPT to adapt different installation situations, and track the maximum power point differently. Max. input current for each MPPT is up to 22A.

Flexible connection

SPH 10000TL-HU-US also support one MPPT connects 2 stings of PV panels and 6 strings in total for the convenience of connections.





Uninterruptible Power Supply

Extreme Safe and Reliable

The overall protection of the SPH 10000TL-HU-US guarantees the operation safety and reliability.

One fits all

One-Fits-All solution, easier business

- One inverter for AC-coupled, DC-coupled, AC retrofit system
- One inverter for both lithium and lead-acid battery
- One inverter for both diesel and gas generator

System Expansion

SPH 10000TL-HU-US support 3 of them work in parallel to extend the system power to 30kW.

Split-phase parallel system

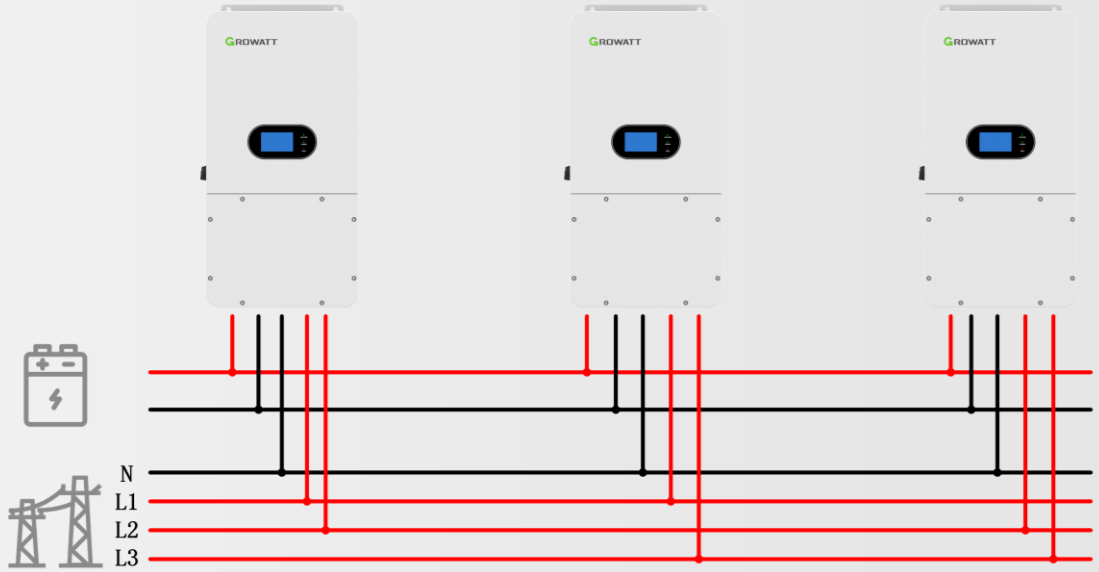
* Function will be available in Q2 of 2024

Three-phase Parallel System

SPH 10000TL-HU-US also support using 2 or 3 of them to build a 120/208V three phase system , which support 100% three phase unbalance output and provide enough convenience to customers.

Three-phase parallel system

Three-phase parallel system



* Function will be available in Q2 of 2024

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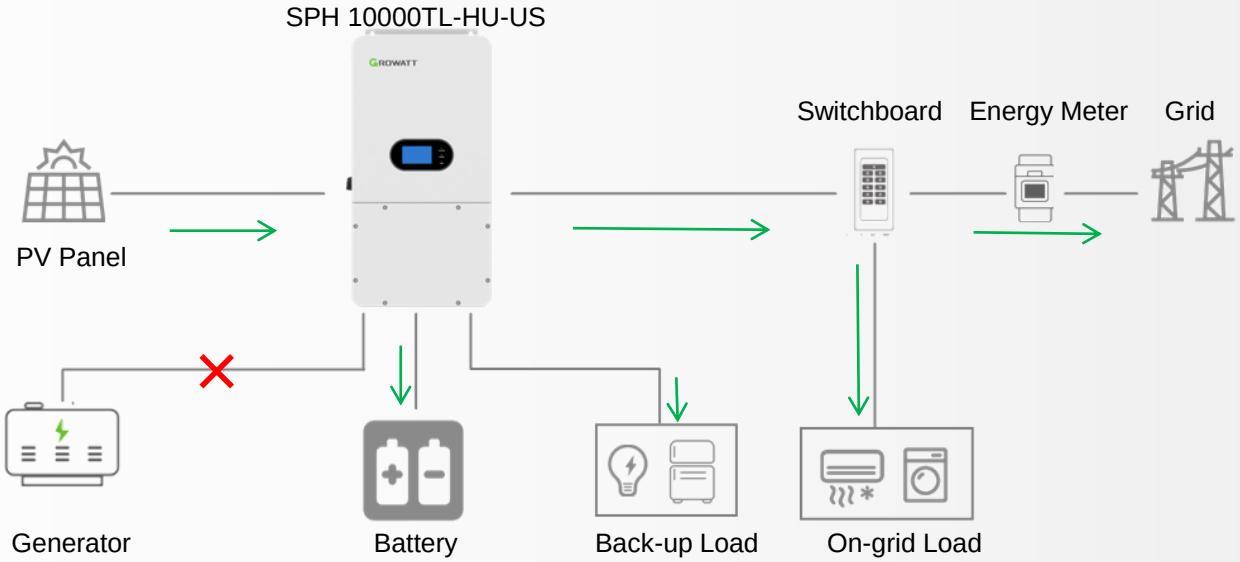
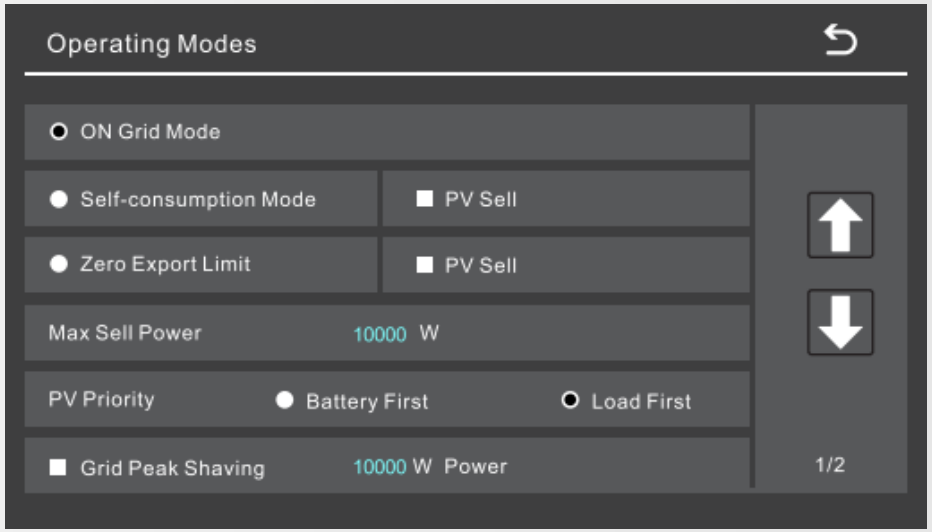
Operation Modes

On-grid Mode





- The power source priority to load is : PV > Grid > Battery

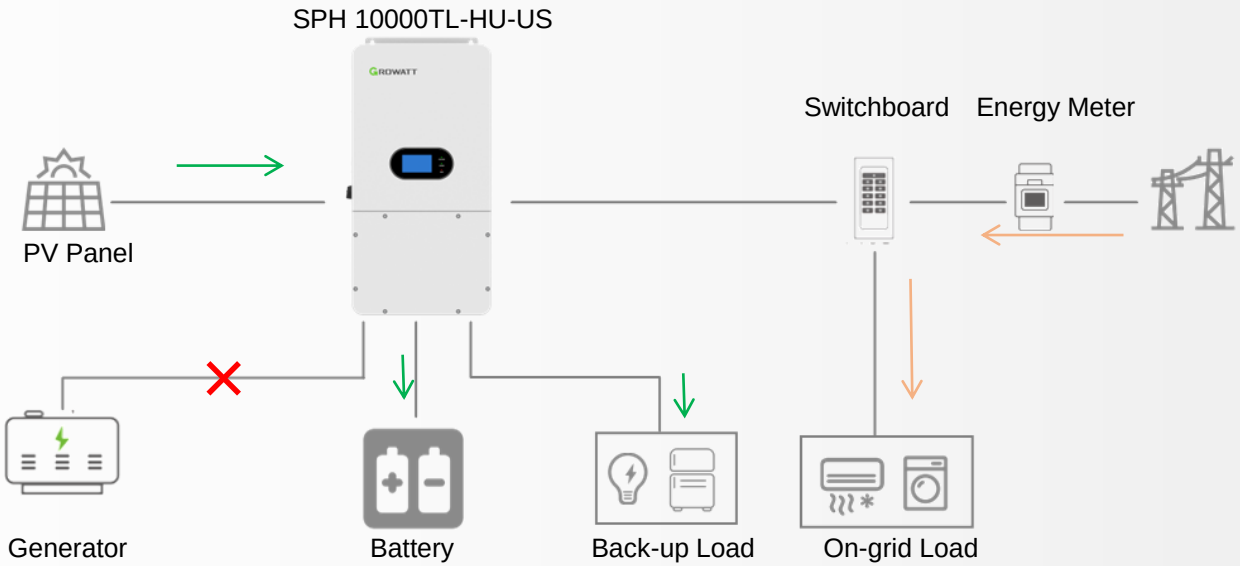
- **Energy pattern**

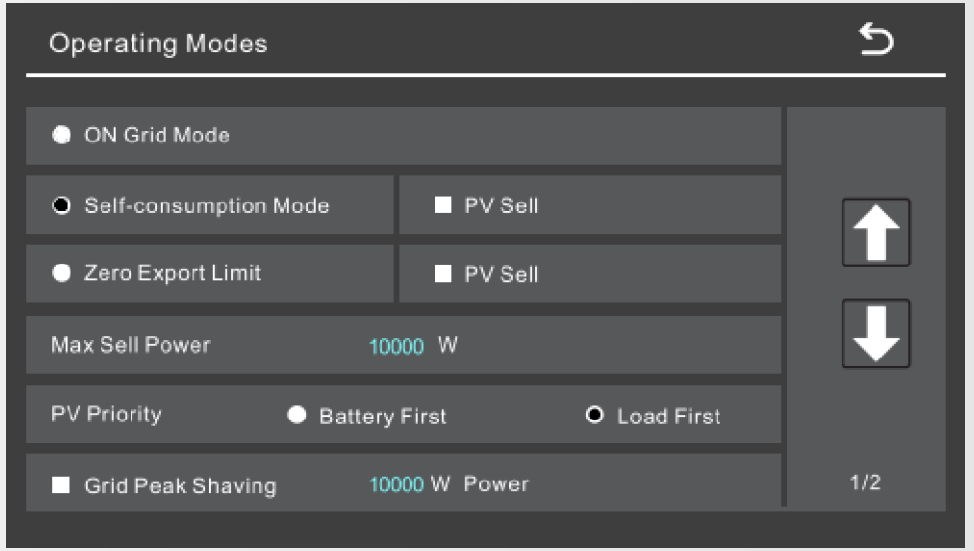
Load First as the Energy pattern, the PV power will first power the load.
Battery First as the Energy pattern, the PV power will first power the battery and Grid will offset the shortage part if PV power is not enough for power load.

- When PV power is bigger than the load consumption plus battery charging power, the surplus power will be exported to grid.

*Note: The solar sell function is default to be enabled in this mode.

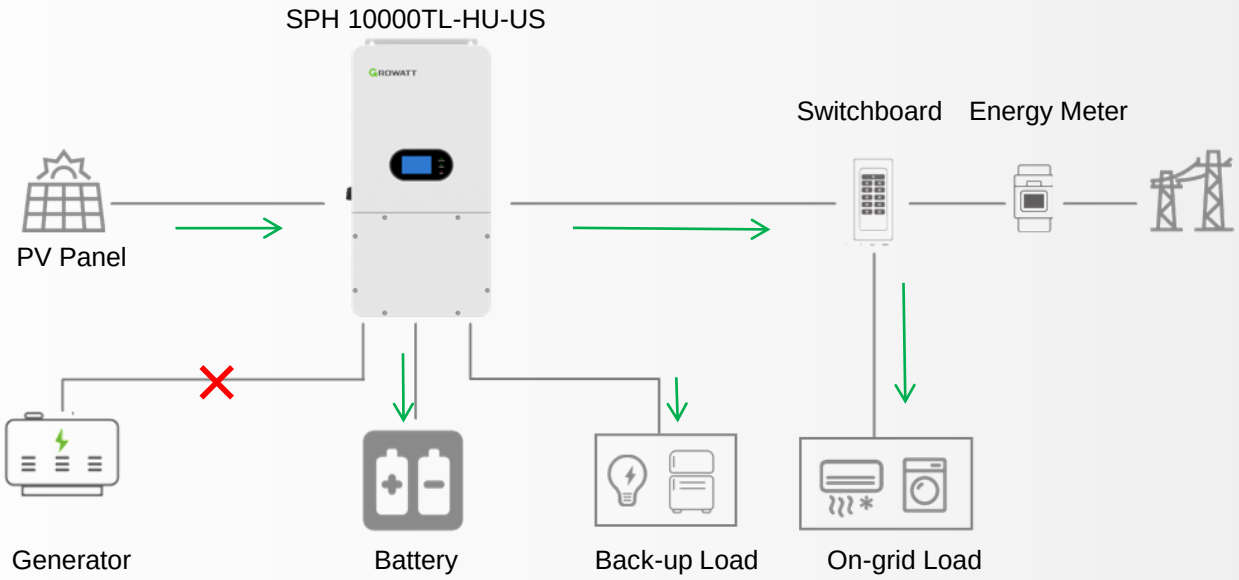
Self-consumption Mode

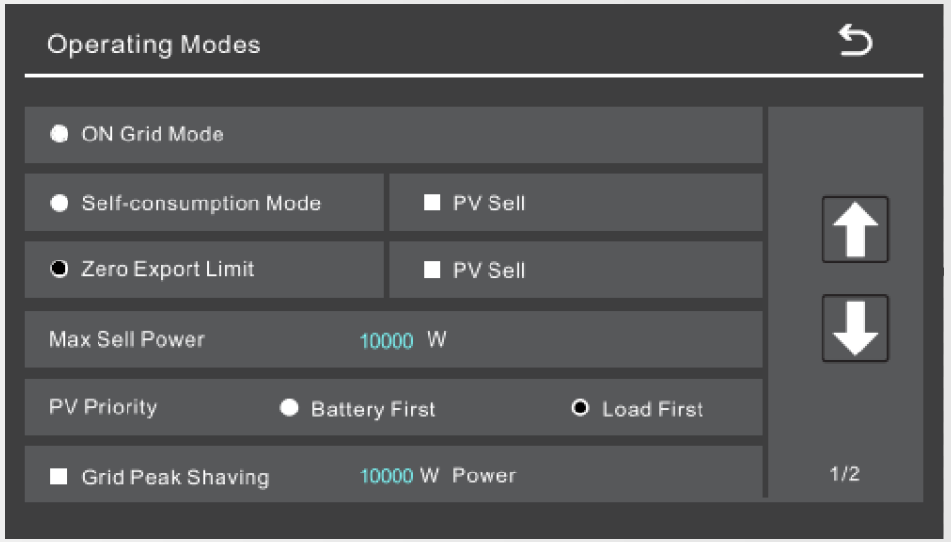




- The power source priority to load is : PV > Grid > Battery
- The priority of PV power consumption will be determined by the **Energy pattern**. Same logic as the on-grid mode.
- The inverter will only power the back-up load and charge the battery.
- The on-grid load will be power by grid.
- The default logic is that if there is surplus solar power after powering the back-up load and charging battery, the inverter will limit its power generation.
- If Solar sell function is enabled, the surplus solar power can be used to power on-grid load and be exported to grid.

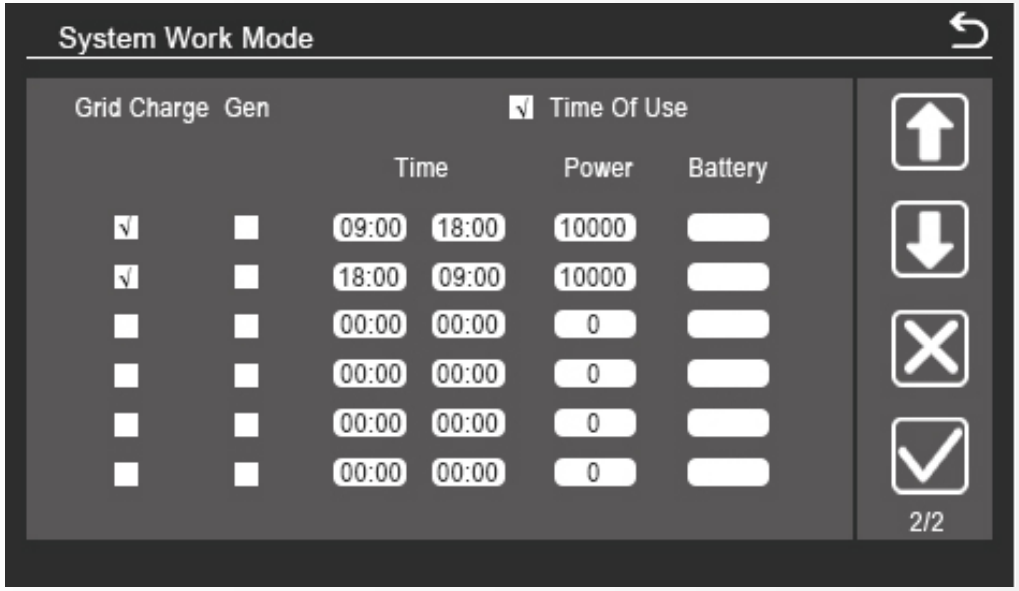
Zero-export limit





- The power source priority to load is : PV > Grid > Battery
- The priority of PV power consumption will be determined by the **Energy pattern**. Same logic as the on-grid mode.
- The default logic is the inverter will power the load and charge the battery. If there is surplus solar power the inverter will limit its power generation.
- If Solar Sell function is enabled, the surplus solar power will be exported to grid.

Time of Use



- Time: The time period that implement the setting.
- Power: Battery charging power.
- Batter: Input the voltage of battery or percentage of battery capacity
- Grid charge: Using grid to offset the shortage part when the battery charging power is less than the value set.
- Gen: Using generator to offset the shortage part when the battery charging power is less than the value set.

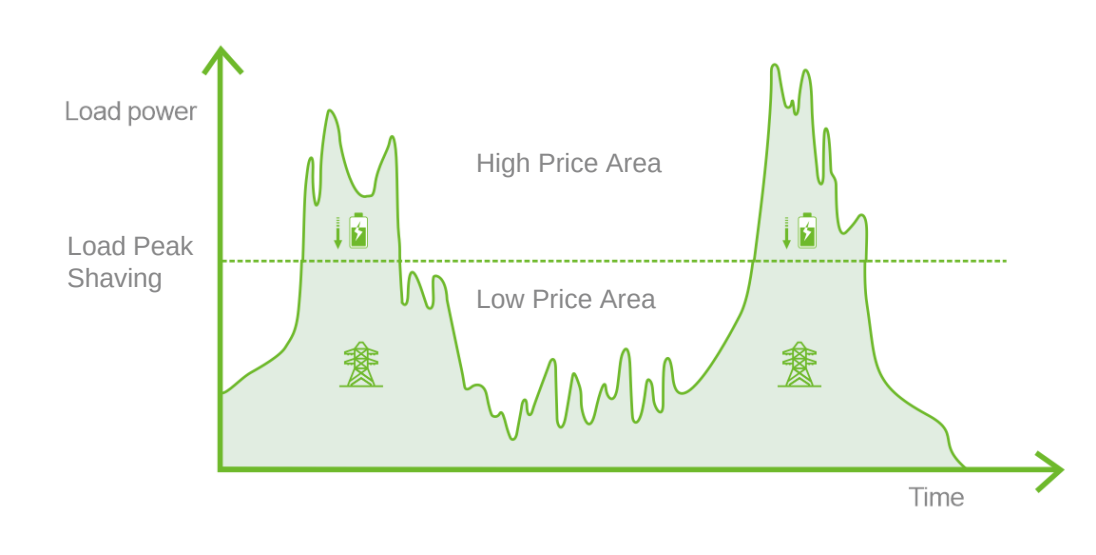
- When the voltage/capacity of battery is less than the value set by user, the inverter will use grid power or generator to charge the battery.

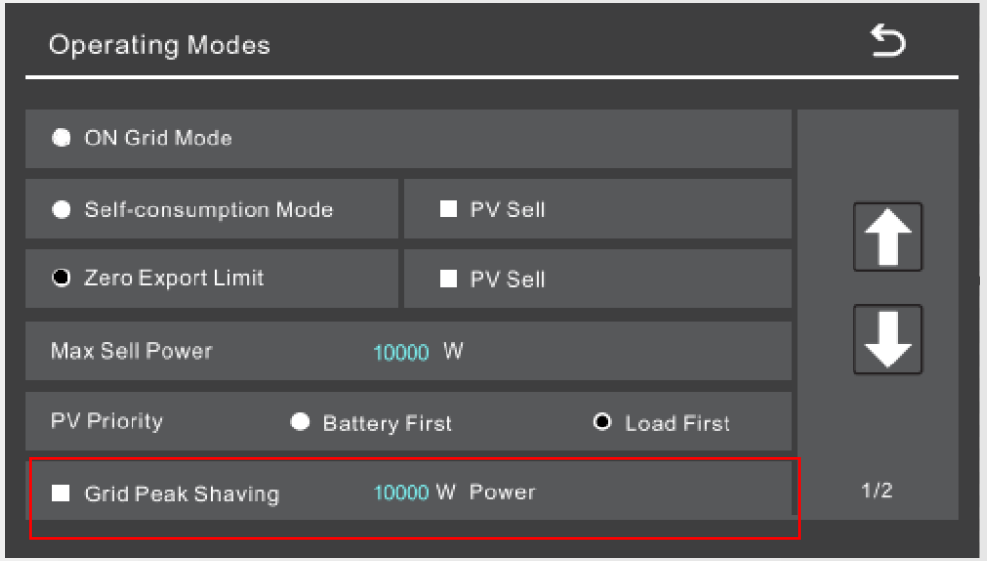
- When the voltage/capacity of battery is more than the value set by users,the power source priority would be: PV > battery > grid.

  Under the on-grid mode, the surplus battery power will be exported to grid.

  Under the self-consumption(Backup Load Only) mode and Zero-export limit(Home Load Only) mode
  When the solar sell function is enabled and the voltage/capacity of battery is more than the value set by users, the battery energy will be exported to grid.

Operation Function - Grid Peak Shaving



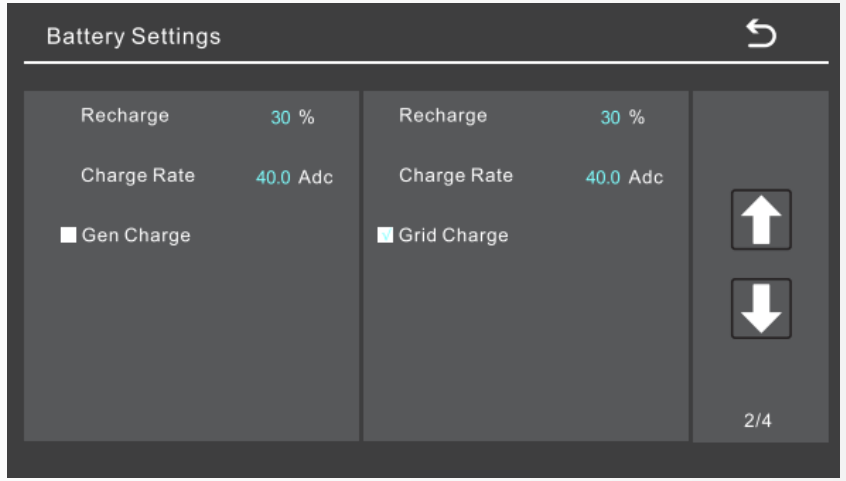


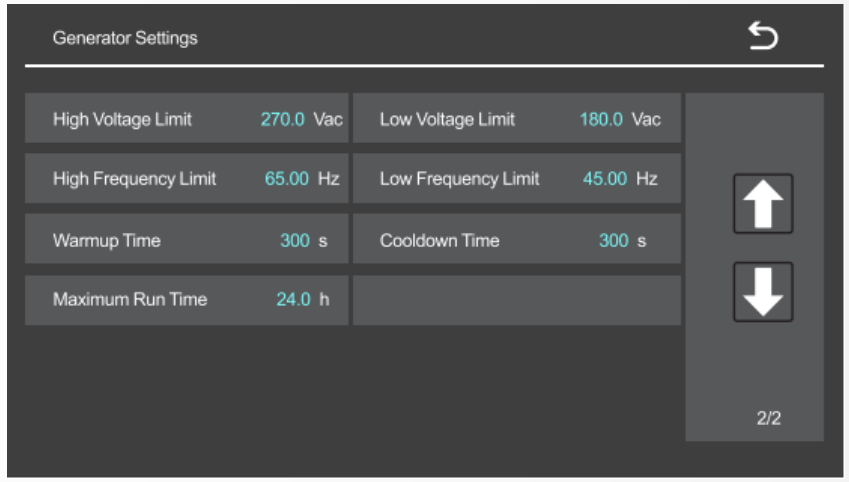
- The power import from the grid will be limited in a certain value, and the shortage part will be offset by battery power.

- The power source priority is :

  i: PV(first priority)
  ii: Grid (up to set value)
  iii: Battery (up to set value)
  iv: Grid(exceeds the set value to offset the shortage part)

Generator Setting





- Recharge: When there is a blackout, the inverter will automatically turn on the generator when the remaining battery capacity is less than this value.
- Charge Rate: The charging current generator used to charge the battery.
- Gen charge: Enable this, the generator will charge the battery when turned on.

*The generator/grid will automatically start to charge the battery when the battery voltage/capacity reached the value set by users. And when the generator runs longer than the Max Run Time, the inverter will send signal to generator to turn off after the Cooldown Time is passed. During the Cooldown Time the generator will operate without powering load.

Other Classic Setting - Load First

- Operating logic:

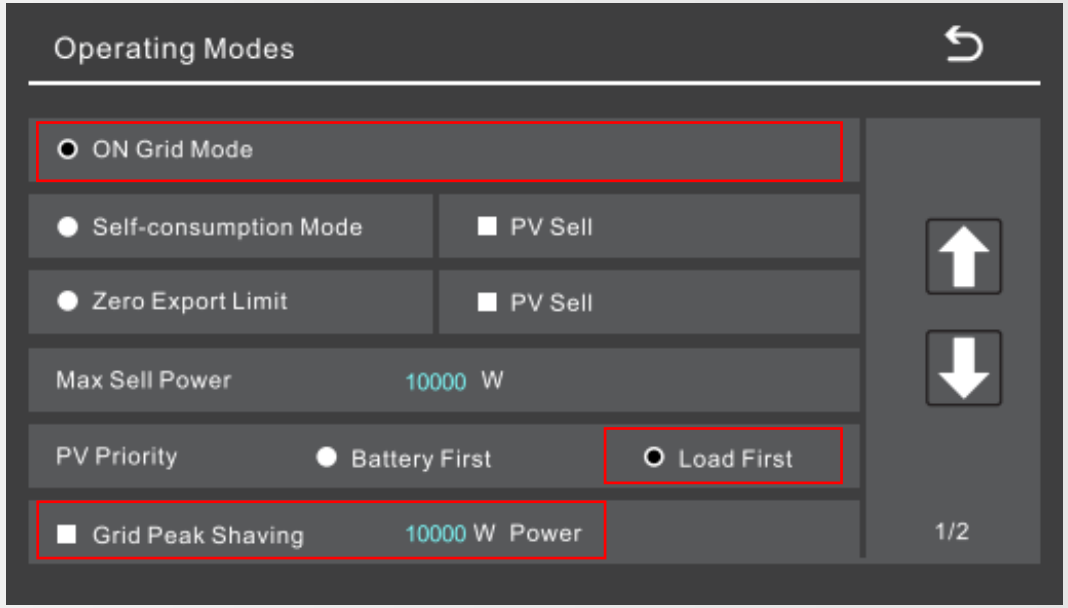
Power source priority:

1. PV
2. Battery
3. Grid

The PV power will be the first priority and the battery will power the load jointly when the PV power is insufficient. The grid will offset the shortage part if PV power + Battery power < Load Power.

How to set up this mode:

- On Grid Mode
- Load First
- Set Grid Peak Shaving to 0kW



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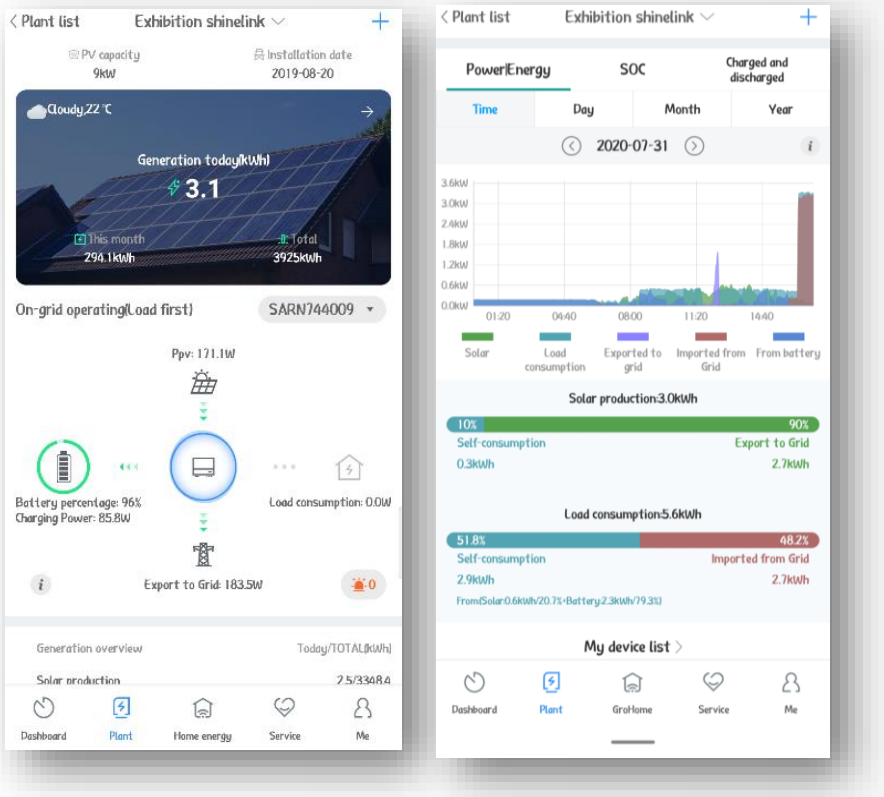
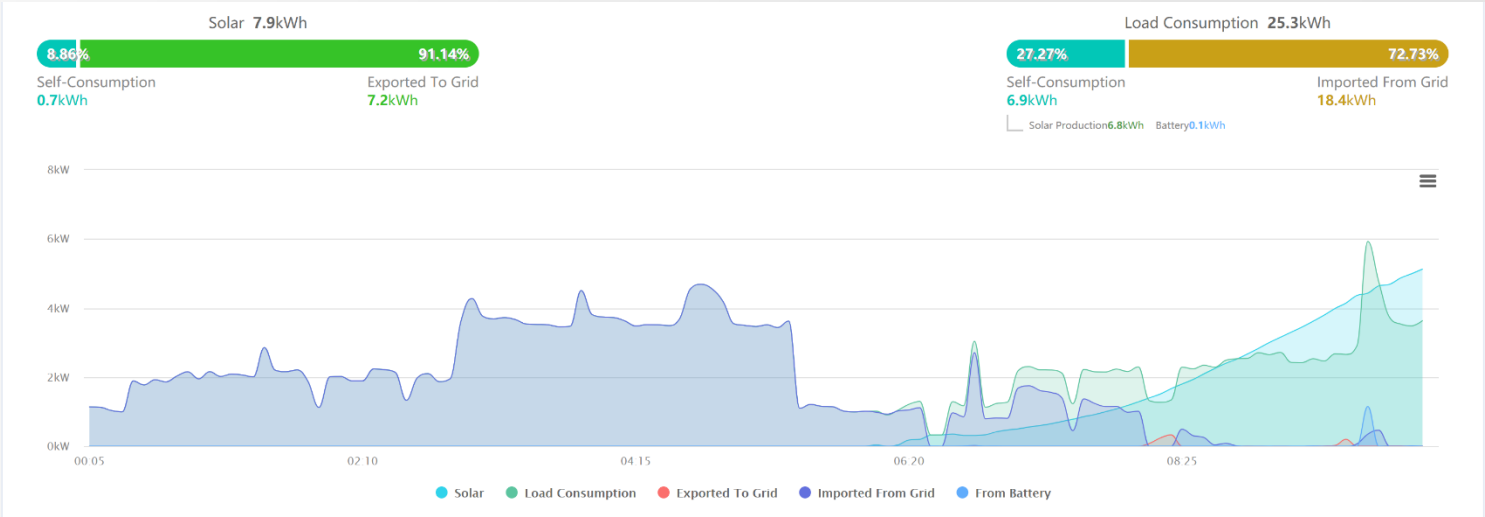
Smart Management

Smart management

Real-time data upload status. System states under observation.
Frequent transfer of lost data after recovery



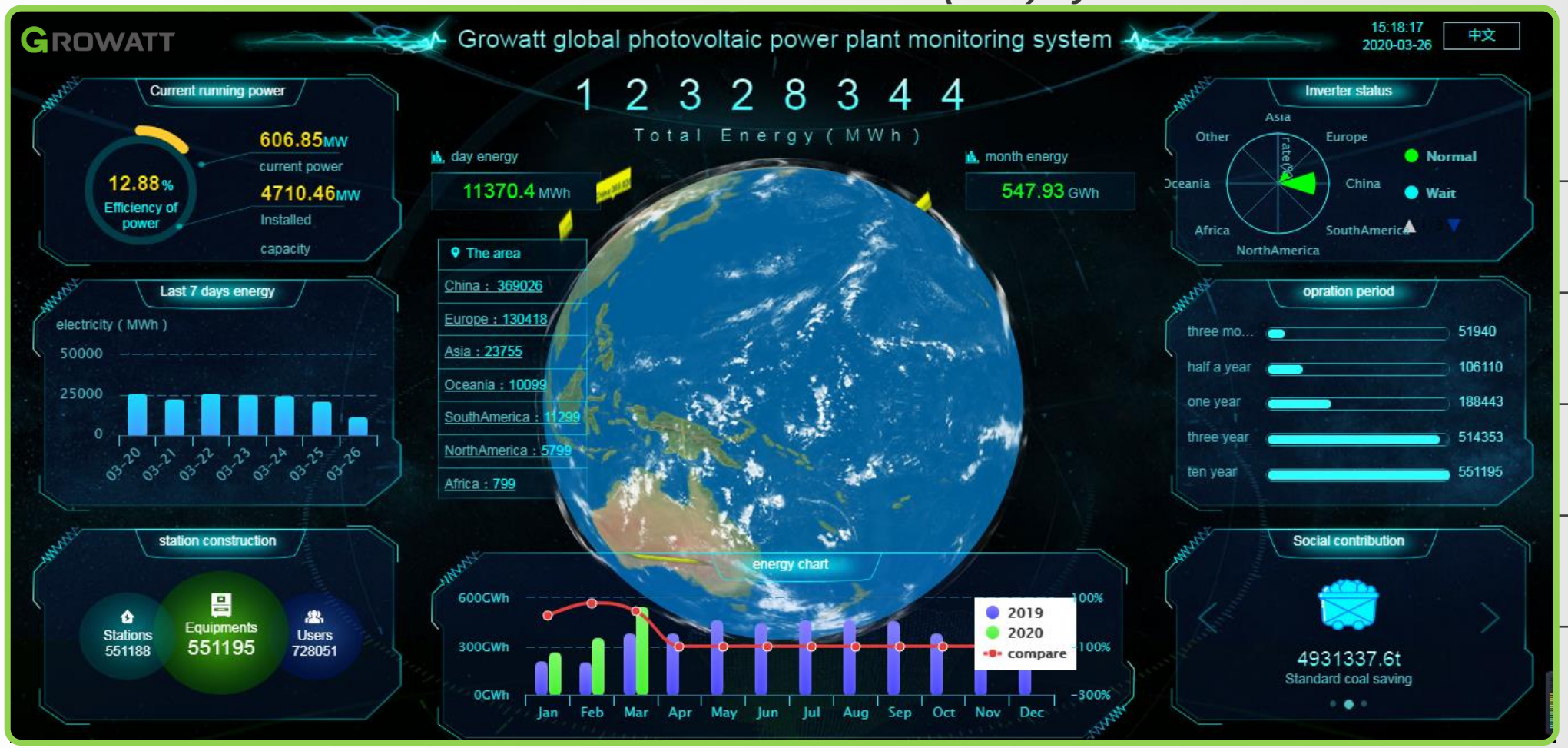
ShinePhone App



Server Monitor

Smart management

Online Smart Service (OSS) System



- Online failure reporting
- Remote parameter setting
- Remote firmware upgrading
- No need site travelling
- Reduce maintenance cost

THANKS

GROWATT

Growatt New Energy