Differences in Applying the SPE Series' One-Click Setting Function

To better meet market demand, Growatt introduces the SPE Series All-in-One Hybrid Inverter. Combining both off-grid and grid-tie capabilities, it features a one-click setting function that simplifies setup. Instead of complex configurations, users simply select their desired application scenario for quick and easy operation.

SPE 8000-12000 ES

Operation method:

long-press the screen ENTER key for 2 seconds, the inverter into the setting model. Then use the UP or DOWN button to select setting program, and finally press ENTER to confirm your selection.

The SPE series inverters have added a one-click setting function in the setting program 099. This setting program includes four classic application scenario modes to choose from, as follows:

一：Self-consumption Mode

TY0:Self-consumption(default)

SELF ty0 099

Operating principle:

When PV power is sufficient, it prioritizes the off-grid load and charges the battery with any surplus, without feeding into the grid. When PV power is insufficient, PV and battery energy jointly supply the off-grid load. During a grid outage, PV and battery discharge together to power the off-grid load. The on-grid load is always powered by the utility grid unless it fails.

1.1 Applicable scene

Unstable power grid: The power grid is unstable and of poor quality. After a power outage, combined with energy storage, the reliability of power supply can be enhanced.

High electricity price: The local electricity price is relatively high. During the day, photovoltaic power is used to carry the load and charge, and at night, the battery discharges, which saves electricity costs more significantly.
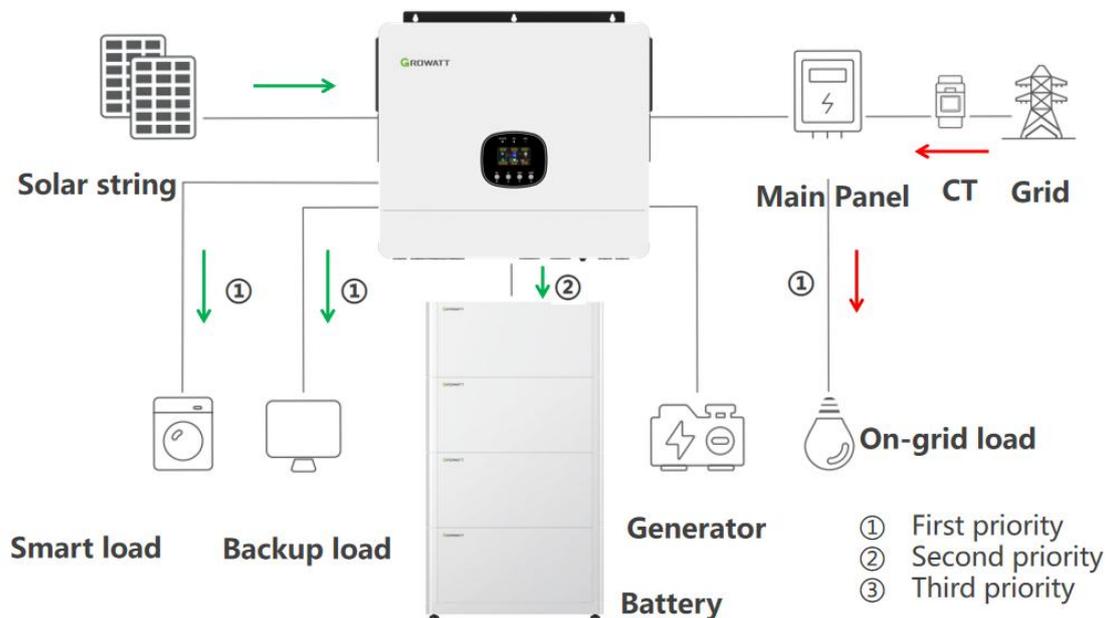
Backup power: After a power outage in the power grid, the battery supplies power to the main off-grid load through the inverter.

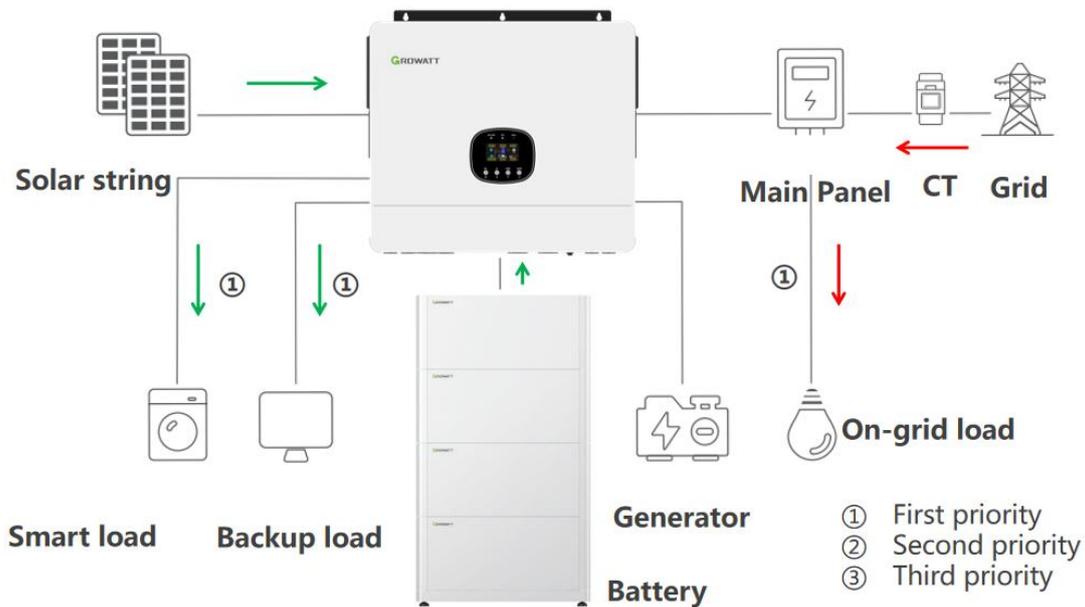## 1.2 The economic judgment criteria for scene selection

Scene features	Perfect	Suitable	Unsuitable
Grid power	Unstable	Stable	Extremely stable
Electricity price	High	Medium	Low
Backup power	Impendency	General	No demand

1.3 System work diagram

1.3.1 When the PV power generation is greater than the loads power:

1.3.2 When the PV power generation is less than the load power:

Solar string

Main Panel **CT** **Grid**

① ①

①

Smart load **Backup load**

Generator

Battery

On-grid load

① First priority
② Second priority
③ Third priority

二： Load First Mode （For 06 version hardware）

TY1:Load first

LOd.F tY1 099⚙

Operating principle: （The 06 version differs from the 00 to 05 version software, If you need to implement the load first function in version 00-05, following 2.4.1 to 2.4.4 instruction settings.）

When PV power is sufficient, the PV energy first prioritizes supplying power to the on/off grid load. The excess PV energy is used to charge the battery, after that any surplus PV energy will be fed into the grid. Conversely, When PV power is insufficient, both the PV energy and battery energy are used to supply power to the on/off-grid load, but the battery energy will not feed into the grid.

2.1 Applicable scene

Grid power: The local power grid is relatively stable, and customers have both off-grid and grid-connected load demands.

Load type: The user has both grid-connected and off-grid load requirements. Important loads are connected to off-grid output for use.
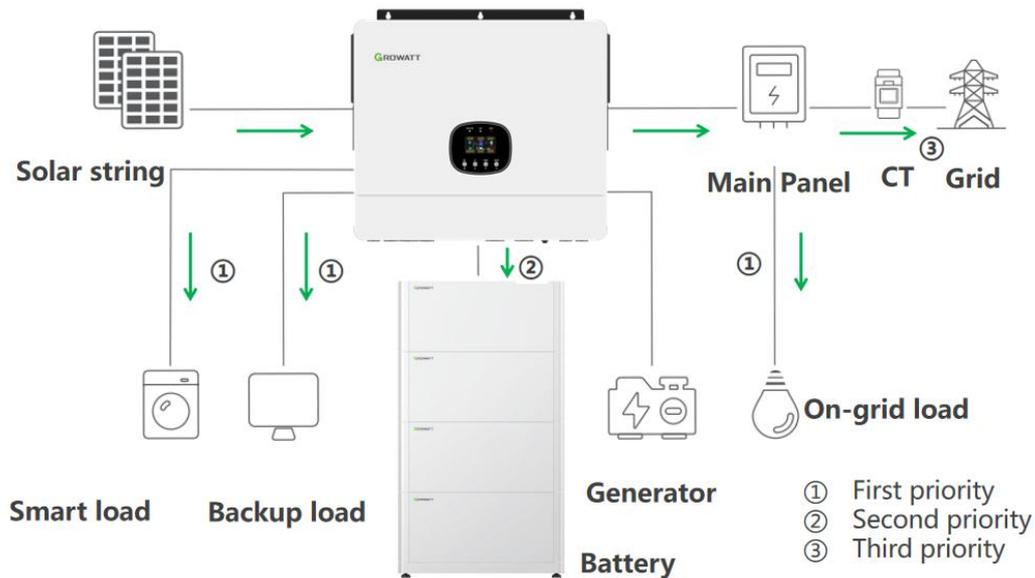
Income from grid : The local electricity price is relatively high. According to the policy, the electricity price of surplus power fed into the grid can be used for peak-valley arbitrage.

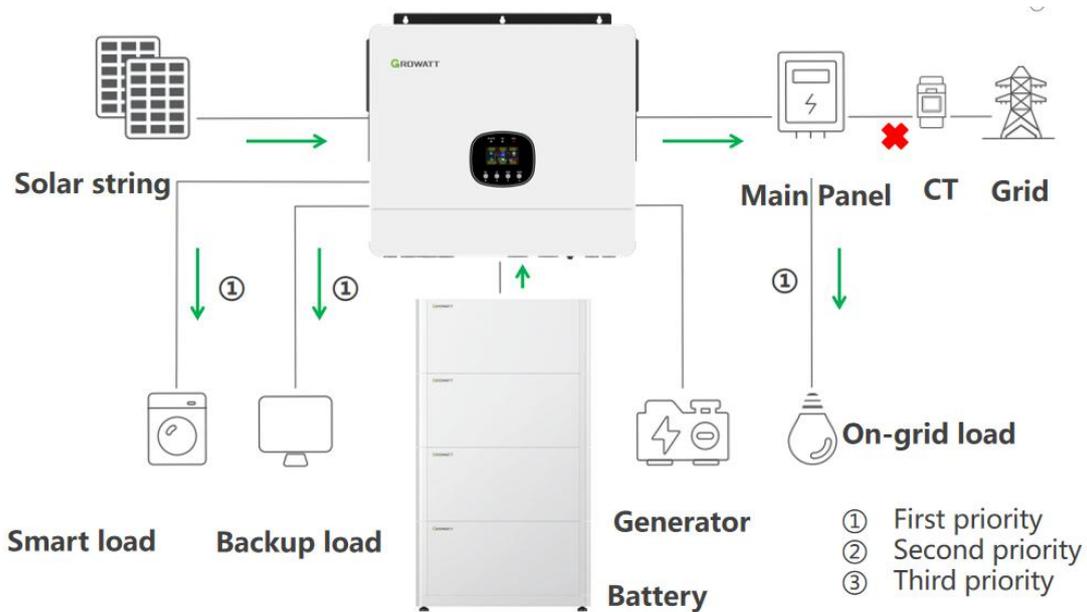## 2.2 The economic judgment criteria for scene selection

Scene features	Perfect	Suitable	Unsuitable
Grid power	Relatively stable	Stable	Extremely stable
Load type	Off-grid , Grid-tied loads	Off-grid loads	Grid-tied loads
Grid revenue	High	Medium	Low

2.3 System work diagram

2.3.1 When the PV power generation is greater than the loads power:

Solar string

① **Smart load**   **Backup load**   **Generator**

   Battery

Main Panel   **CT**   **Grid**

On-grid load

① First priority
② Second priority
③ Third priority

2.3.2 When the PV power generation is less than the load power:

Solar string

① **Smart load**   **Backup load**   **Generator**

   Battery

Main Panel   **CT**   **Grid**

On-grid load

① First priority
② Second priority
③ Third priority

NOTE: To implement the load first function in version 00-05, the following Settings need to be made.

2.4.1 Select Type 3 （Export Limit Mode）in Program 099

2.4.2 Set the power of PV energy fed into the grid through Program 78

2.4.3 Adjust all three times of the grid charging in Program 74 to 00:00- 23:59

2.4.4 Adjust all three times of the grid charging in Program 75 to 00:00- 00:01

If you need to change the charging time of the grid power, you must ensure that this time does not coincide with the battery discharge time from program 74

TY2:Battery first

bAt.F tY2 099

Operating principle:

When the PV power is sufficient, the PV energy gives priority to charging the battery. After that the excess PV energy is used to supply power to the on/off-grid load, and any excess surplus PV energy is fed into the grid. Conversely, when the PV power is insufficient, both the PV energy and the grid energy to supply power to the on/off-grid load. In the absence of grid power, the PV energy and the battery discharge together to power the off grid load, but the battery energy will not feed into the grid.

3.1 Applicable scene

Grid stability: The local grid is stable, and customers have both off-grid and grid-connected load demands.

Backup power: After a power outage in the power grid, the battery supplies power to the main off-grid load through the inverter.
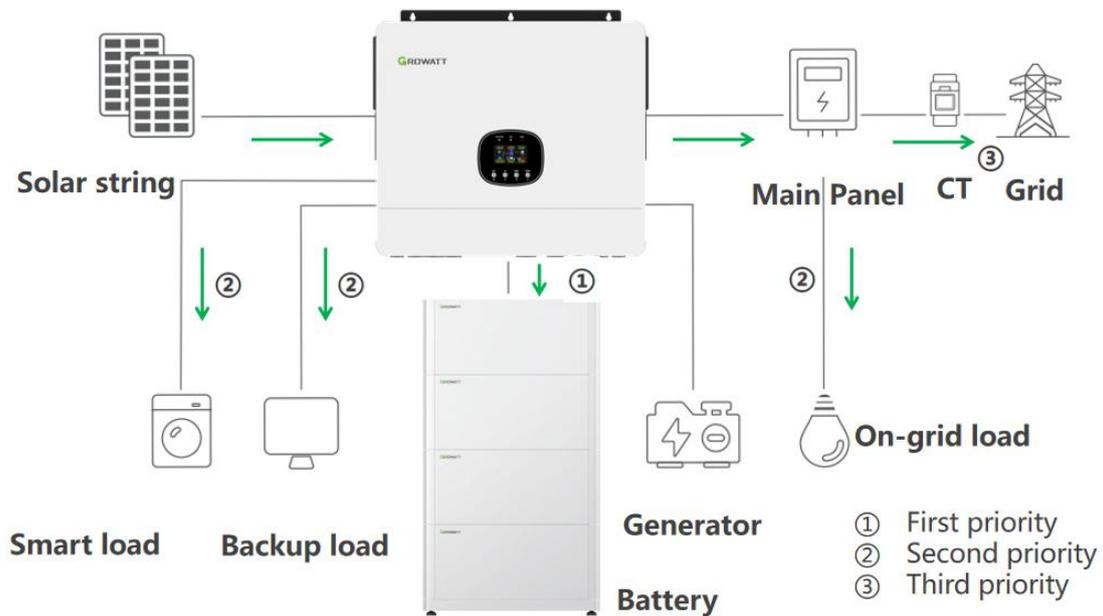
Income from grid: The local electricity price is relatively high. According to the policy, the electricity price of surplus power fed into the grid can be used for peak-valley arbitrage.

## 3.2 The economic judgment criteria for scene selection

Scene features	Perfect	suitable	unsuitable
Grid power	Relatively stable	Unstable	Extremely stable
Backup power	Impendency	General	No demand
Grid revenue	High	Medium	low

3.3 System work diagram

3.3.1 When the PV power generation is greater than the loads power:

3.3.2 When the PV power generation is less than the load power:
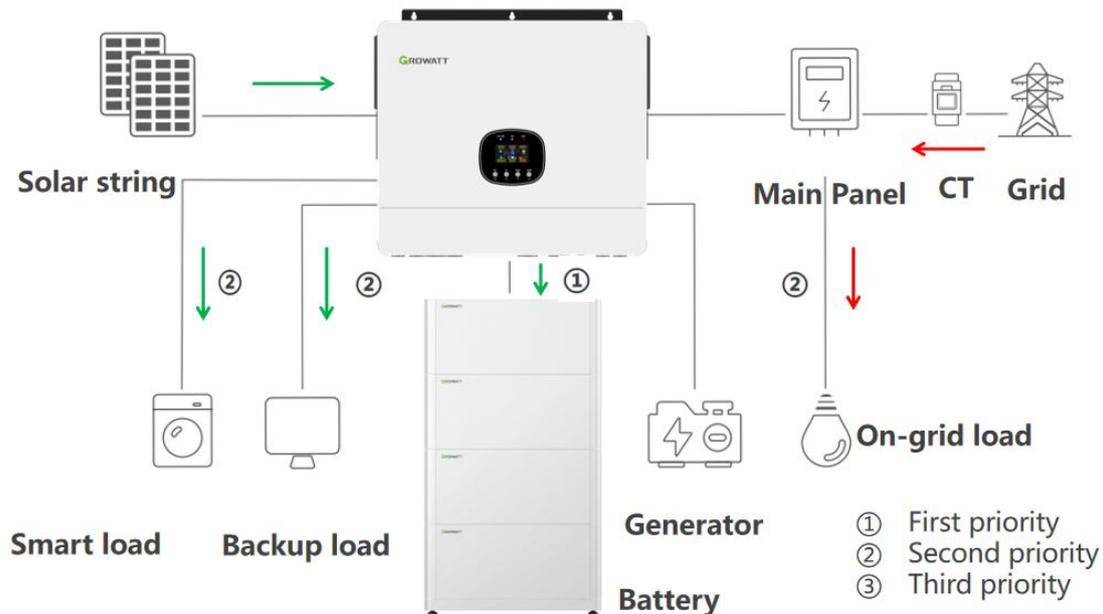
四: Export Limit Mode

Operating principle:

When PV power is sufficient, the PV energy first prioritizes supplying power to the on/off grid load. Any surplus energy is used to charge the battery, and the excess PV energy is not fed into the grid。 If you need PV energy to feed into the grid, you need to separately configure the inverter program。 Conversely, when PV power is insufficient, both the PV energy and the battery discharge together to power the on/off grid load. However, the battery energy is not fed into the grid。

4.1 Applicable scene

Grid stable: The local power grid is relatively stable, and customers have both off-grid and grid-connected load demands.

Load type: The user has both grid-connected and off-grid load requirements. Important loads are connected to off-grid output for use.
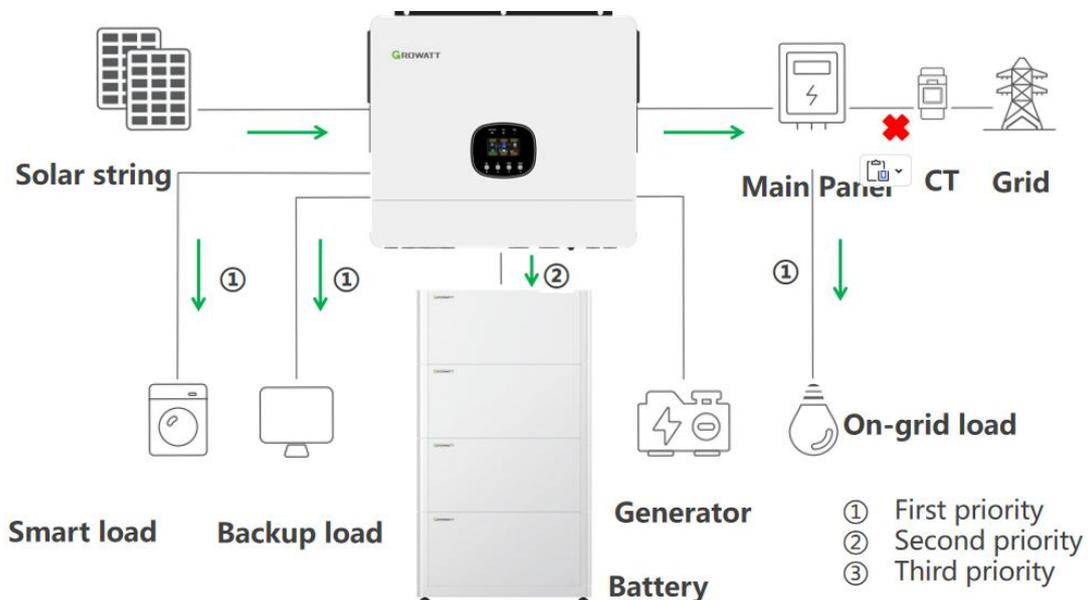
Electricity price: Users should rationally allocate load conditions based on electricity price situations to save on electricity bills.

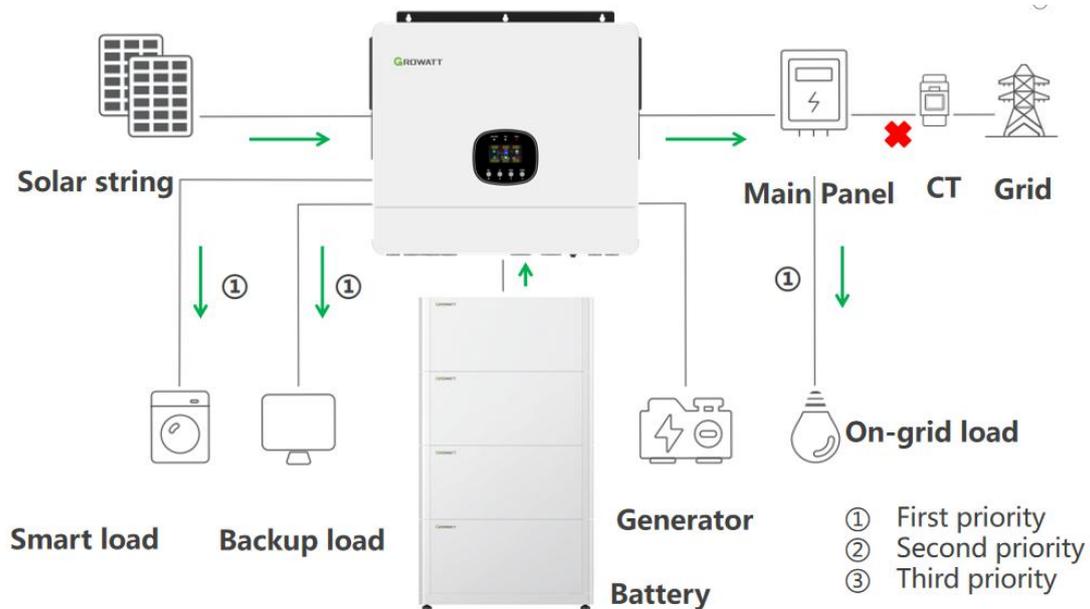## 4.2 The economic judgment criteria for scene selection

Scene features	Perfect	Suitable	Unsuitable
Grid power	Unstable	Relatively stable	Extremely stable
Load type	Off-grid loads	Off-grid Grid-tied loads	Grid-tied loads
Electricity price	High	Medium	Low

4.3 System work diagram

4.3.1 When the PV power generation is greater than the loads power:

Solar string

Smart load   Backup load

Battery

Generator

Main Panel   CT   Grid

On-grid load

① First priority
② Second priority
③ Third priority

4.3.2 When the PV power generation is less than the load power:

Solar string

① ①

Smart load　**Backup load**

Main Panel　**CT**　**Grid**

①

On-grid load

Generator

Battery

① First priority
② Second priority
③ Third priority

SPE Series Hybrid Storage Inverter is an integrated multi-scenario energy solution combining PV inversion, battery storage, and grid power management. It is suitable for residential, off-grid, and microgrid applications. The product supports multiple operation modes, including PV priority, battery charging/discharging, and seamless grid/off-grid switching.

Note: There are differences among various working modes. Users should set up corresponding programs based on their actual needs to ensure the best user experience. For more information, please contact the technical engineer .