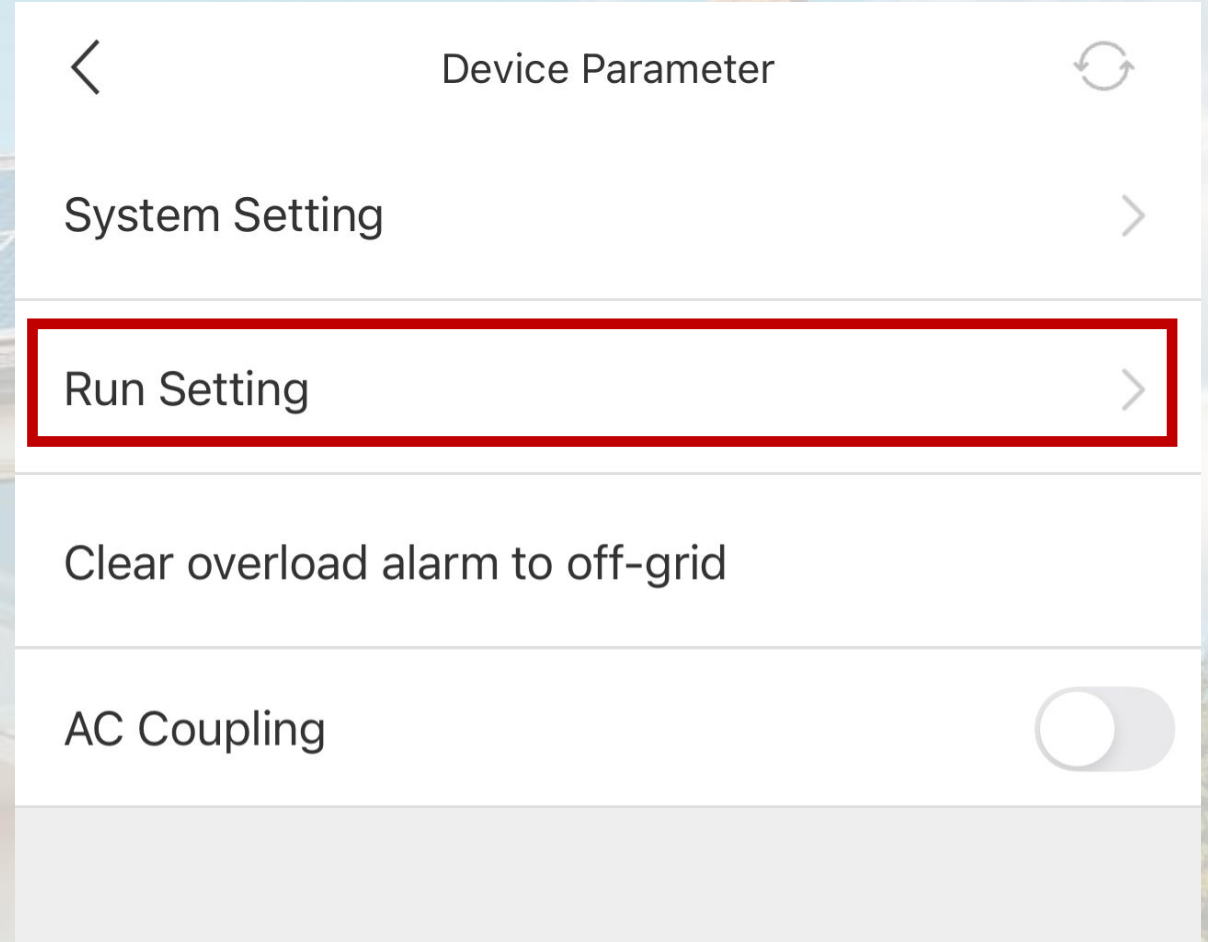


Operation Modes

✓ UCAN Power UHC series offers 4 fundamental operation mode to meet different energy management requirements:

- 1) General Mode
- 2) Backup Mode
- 3) Economic Mode
- 4) Off-Grid Mode

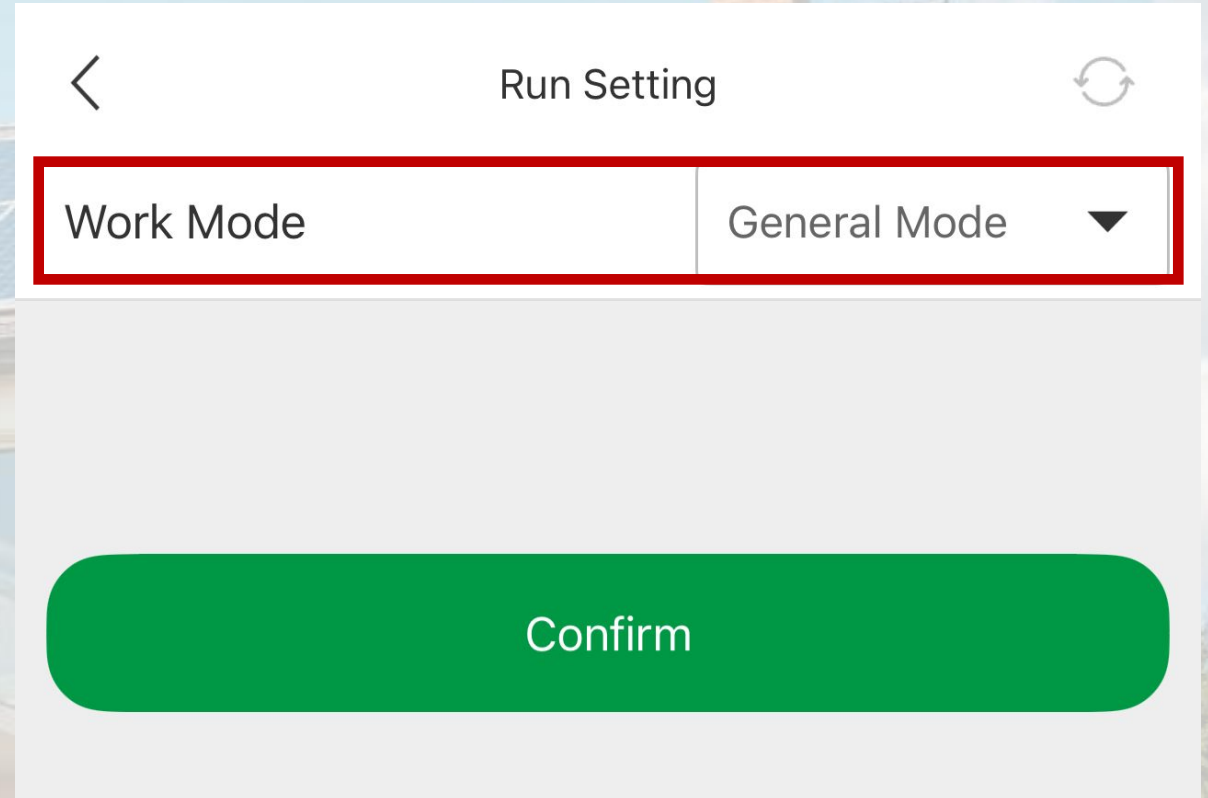
✓ These 4 operation modes can be set up via “Device Parameter” section by clicking on “Run Setting”



Operation Modes

1) General Mode (Match Load Mode)

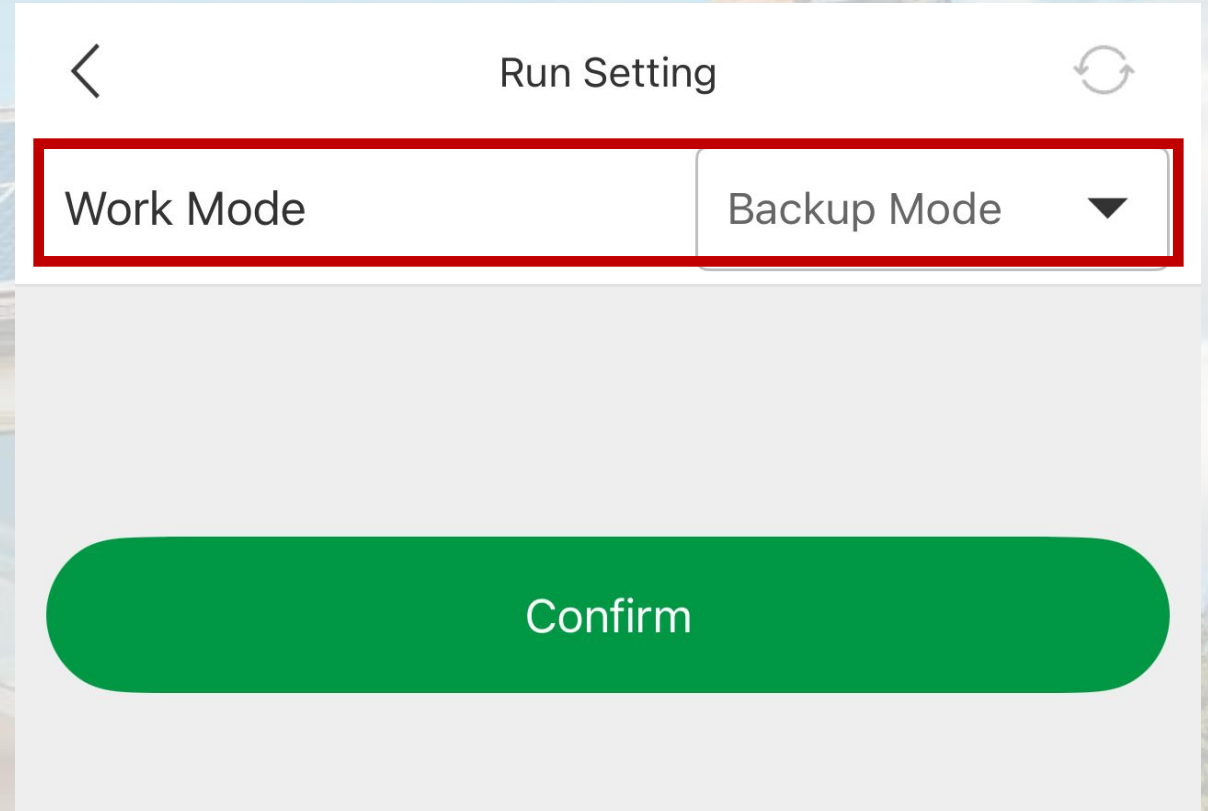
- ✓ In this working mode, when the power from the PV array is sufficient, PV power will supply the loads, battery and grid in the order of: Loads 1st, Battery 2nd and grid 3rd. In “Zero Export” scenario, which means we do not want to supply any energy to grid, system will provide energy only to loads and battery.
- ✓ When PV power is insufficient; the battery will discharge to supply loads, and grid will join in if the battery is not enough to supply loads.



Operation Modes

2) Backup Mode (UPS Mode)

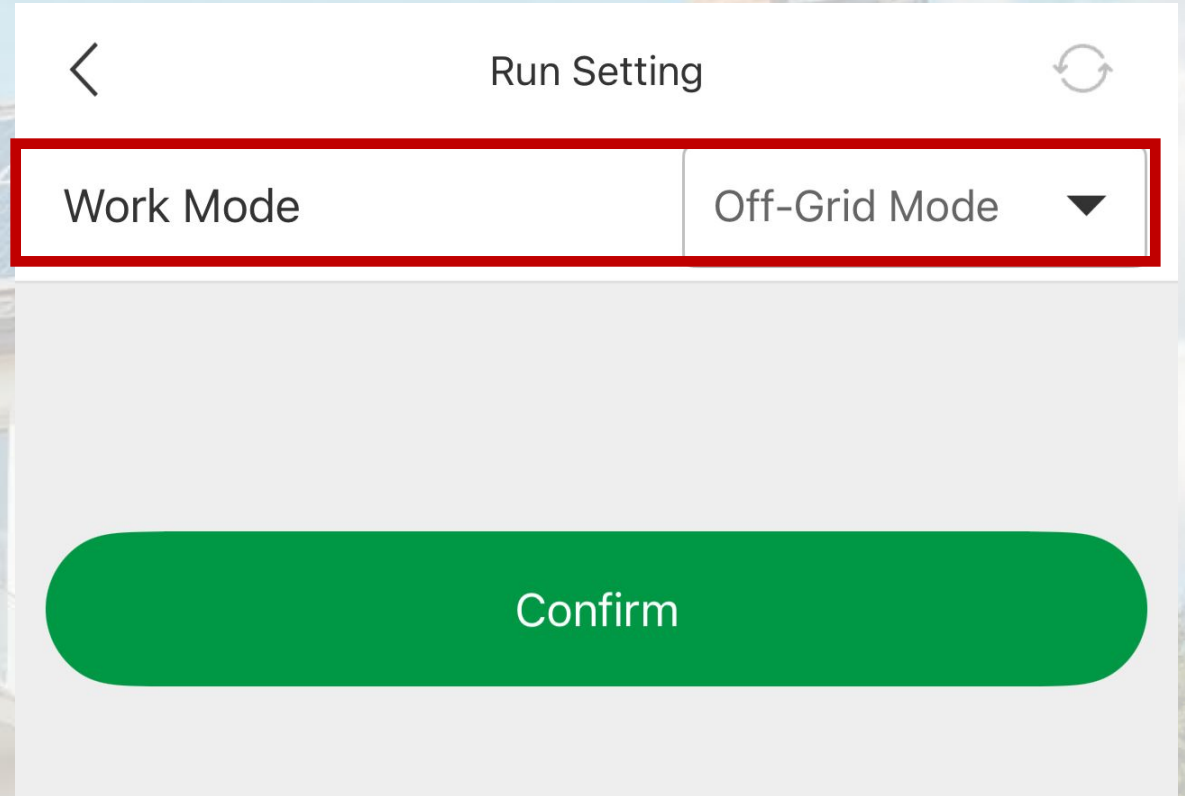
- ✓ In this working mode, the inverter will use the power from PV or grid to charge battery until it is fully charged. As long as grid is available, battery will not discharge.
- ✓ When grid fails, power from PV and battery will supply loads connected to the back-up side.



Operation Modes

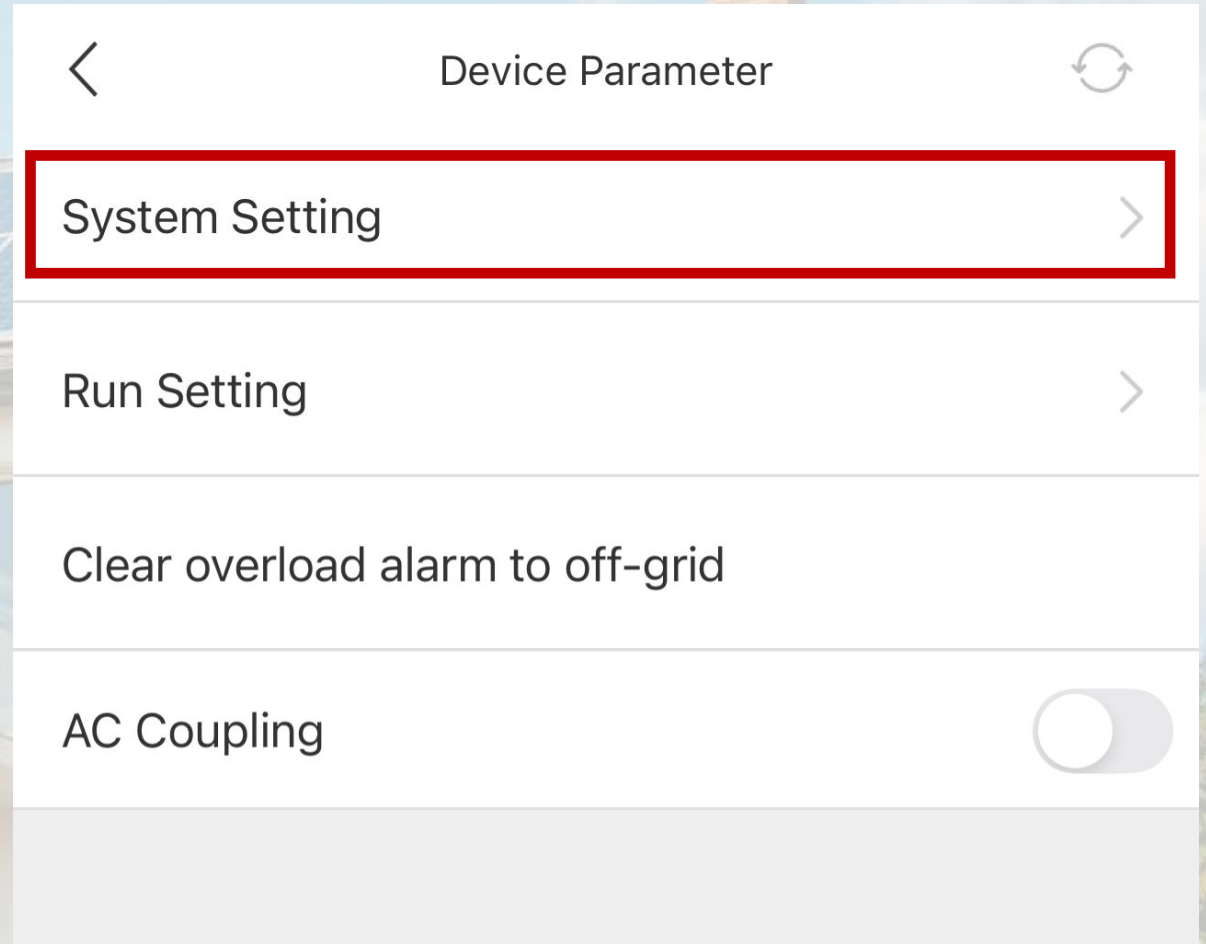
4) Off-Grid Mode

- ✓ In the purely off-grid mode, power from PV will supply the back-up loads first and then charge the battery if there is a surplus power.
- ✓ When the power from PV is not enough, the battery will discharge to supply back-up loads together with PV.



Battery Energy Storage Management

- ✓ UCAN Power UHC series offers smart management for stored energy in the batteries.
- ✓ For both on-grid and off-grid scenarios SOC (state of charge) levels can be determined based on your needs.
- ✓ SOC level settings can be done via “Device Parameter” section by clicking on “System Setting”.



Battery Energy Storage Management

1) On-Grid Discharge Cutoff SOC

- ✓ When grid is available, you can set the minimum SOC level for battery system that you want to stop discharging. As an example; if you set “*On-Grid Dischg Cutoff SOC*” value as 20%, battery will stop supply power to loads when SOC level drops to %20 while grid is available.

2) Off-Grid Discharge Cutoff SOC

- ✓ When grid fails, you can set the minimum SOC level for battery system that you want to stop discharging. As an example; if you set “*Off-Grid Dischg Cutoff SOC*” value as 10%, battery will stop supply power to loads when SOC level drops to %10 while grid is not available.

| | |
|----------------------------|-------------------------------------|
| SOC On-Grid Prot. Switch | <input checked="" type="checkbox"/> |
| On-Grid Dischg Cutoff SOC | <input type="text" value="20.0"/> % |
| SOC Off-Grid Prot. Switch | <input checked="" type="checkbox"/> |
| Off-Grid Dischg Cutoff SOC | <input type="text" value="10.0"/> % |

Example for Application Scenarios

1) Self Consumption

- ✓ Consume at maximum level of the power produced by PV Module
- ✓ During the day light, PV supplies loads and battery
- ✓ During the night, battery will continue to supply loads

Working Mode: **General Mode**
On-Grid Dischg Cutoff SOC: **20%**
Off-Grid Dischg Cutoff SOC: **20%**

2) Self Consumption with Backup

- ✓ Consume at maximum level of the power produced by PV Module
- ✓ During the day light, PV supplies loads and battery
- ✓ During the night, battery will continue to supply loads until predetermined SOC level
- ✓ When grid fails, batteries will supply power to back-up loads until SOC level reaches to 10%.

Working Mode: **General Mode**
On-Grid Dischg Cutoff SOC: **50%**
Off-Grid Dischg Cutoff SOC: **10%**